Restoration of Dragline Ditched Coastal Wetlands:

Cooperative Efforts for the Future of Our Coastal Systems

History of Dragline Ditching for Mosquito Control

What: Dragline ditches are extensive networks of deep, wide ditches and spoil piles cut through historical coastal wetland habitat severely reducing the acreage of wetland remaining.

When: Primarily in 1950s and 1960s

Where: The most extensive ditching occurred in Mosquito Lagoon (nearly 1,200 acres), though some ditching is present throughout Indian River Lagoon and the Northern Coastal Basins.

Why: The purpose of the ditches was to interrupt the life cycle of saltmarsh mosquitoes by altering their breeding sites. The ditching replaced wetland with ditch and spoil piles decreasing the area where mosquitoes lay eggs, altering the hydrology of the remaining wetland, and provide direct access for mosquito-eating fishes.

Figure 1.

How: Large excavators, called draglines, were used to construct these ditch networks. The draglines were typically mounted to small barges (see Figure 1). Material was excavated from the wetlands and piled on either side of the ditch (see Figure 2).

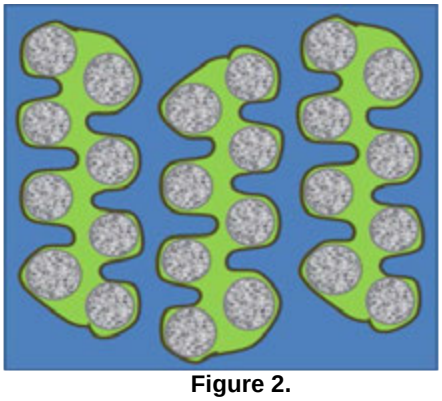
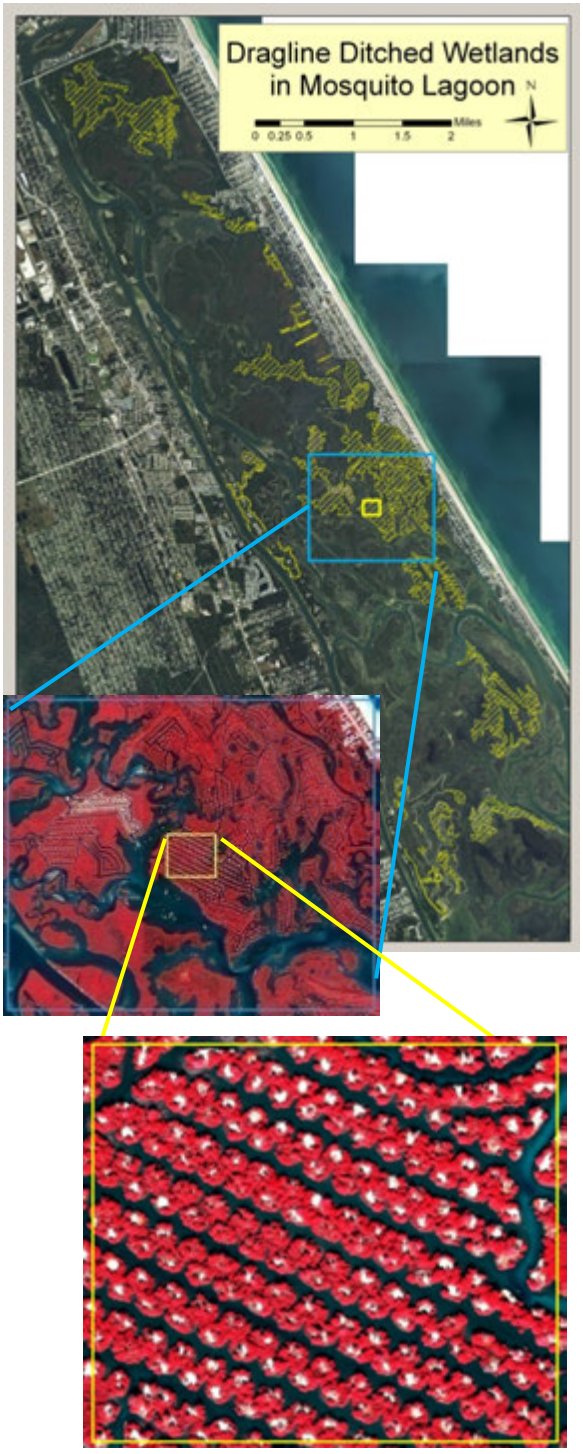


Figure 2.



Negative Impacts of Dragline Ditches

Decreased Wetland Habitat: The amount of wetland habitat lost varies with the intensity of ditching. In the most extensively ditched areas, up to 80 percent of historical wetland is replaced with ditch and spoil pile. On

average, half of an impacted area is ditch and spoil. This reduces ecological productivity, which in turn reduces the fish and wildlife the area can support. The protection from storms that wetlands can provide also is diminished.

Invasion of upland and non-native species: Spoil areas are substantially higher elevations than the surrounding wetland. This elevation allows the colonization of upland plant species, including invasive non-natives like Brazilian peppers. The mangroves that remain inhabit a narrow intertidal zone along the edges of spoil piles, but often are out-competed by terrestrial and exotic species on the upper portion of the pile.

Loss of juvenile fish habitat: The wetlands lose plants, especially grasses, which are critical for providing food and shelter for fishes, crabs, and shrimps. The deep water provided by the ditches allows large fish predators access to what was historically shallow water habitat utilized by small juvenile and resident fish.

Restoring Dragline Ditches

Amphibious Excavator: The project uses a long-reach excavator mounted on a pair of tracked pontoons (see Figure 3). This low bearing weight machine (less than 2 lbs/sq. in.) is owned and operated by Volusia County Mosquito Control.

Figure 3.

Vegetation Clearing: Vegetation is cleared from the spoil area and placed in the adjacent ditch. This process avoids burning the plants and permanently sequesters the carbon they contain.

Excavation and Grading: Spoil material is moved to the side “fingers” of the ditch (see Figure 4, large arrows). If additional material remains, the main ditch is narrowed (see Figure 4, smaller arrows). The area of the spoil pile and the newly filled ditch are graded to the adjacent wetland elevation. The result is that substantially more area is at coastal wetland elevation.

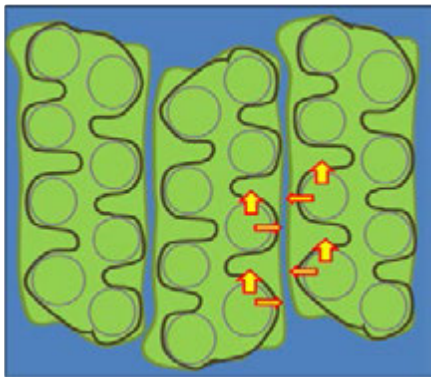


Figure 4.

Benefits of Dragline Ditch Restoration

Increased Wetland Habitat: To date, approximately 250 acres of impacted wetland have been restored returning approximately 100 acres to wetland elevation. Restored wetlands provide more space for wading and shore birds and greater production of fishes, crabs, and shrimps and the plants they depend upon. Restored wetlands can produce about 50 lbs of resident fish per acre per year.

Continued Mosquito Control: With the small relic ditches that remain after restoration, mosquito breeding has not increased in any of the previous project areas over the last eight years.

Native Wetland Plant Communities: Wetland plants recruit to the restored surface quickly. Early colonizers include black mangroves, sea purslane, and glasswort. Plants left on site and from neighboring wetlands provide recruits to the restored areas within months or years.

Increased Juvenile Fish Habitat: The restored wetland area and the relic shallow ditches are a perfect combination for fish productivity. The high levels of resident fish production from the restored wetland areas during the high water periods of the year and the shallow water access provided to juveniles of large fisheries species is a recipe for great fishing into the future.

Frequently Asked Questions

1. **How did the dragline ditch restoration effort come about and who has adopted / permitted it?**

The first pilot project was conducted in Canaveral National Seashore in 2000 by a team that included National Park Service, St. Johns River Water Management District (SJRWMD) and Volusia County Mosquito Control (VCMC). A second project was conducted in Tomoka State Park. Dragline ditch restoration was subsequently included in SJRWMD-developed Florida Department of Environmental Protection (FDEP)-approved Indian River Lagoon (IRL) and Northern Coastal Basins Surface Water Improvement and Management Plans. It was also included in EPA's IRL Comprehensive Conservation and Management Plan (National Estuary Program) and FDEP's Mosquito Lagoon Aquatic Preserve Management Plan. All of these planning efforts included input and comments from the public. Florida Fish and Wildlife Commission (FWC) Division of Habitat and Species Conservation is also fully supportive of this effort. These projects are implemented under environmental resource permits issued by FDEP and US Army Corps of Engineers in consultation with US Fish and Wildlife Service (FWS) and the NOAA's Habitat Conservation Division. Presentations about this and similar wetland restoration projects have been provided to homeowners, civic groups, county /city commissions, state/federal legislators, and organizations like the Sierra Club and Coastal Conservation Association.

2. **Who is responsible for the current restoration project?**This restoration effort is a partnership between the FWC, SJRWMD and VCMC. This team works with the managers of public lands to successfully restore these wetlands .

3. **How is this restoration effort being funded?**

Phase I of this restoration project is funded by regional, state and federal partnership money. VCMC is providing approximately $40, 000 of in-kind services (fuel, equipment maintenance, and field supervision). FWC and SJRWMD are supplying $220,000 of in-kind staff salary (grant and contract administration) and cash match (State and local sources). A federal grant of $520,000 provided to FWC by the National Coastal Wetlands Conservation Grant Program (administered by the FWS) supports the majority of the project's costs. This grant program is funded by federal excise taxes on fishing equipment and motorboat and small engine fuels.
http://www.fws.gov/coastal/CoastalGrants/

4. **How much of the marsh system is being restored?**

There were about 1,200 acres of dragline ditch wetland in the Mosquito Lagoon region. The Volusia wetland restoration project is directed toward restoring 600 acres of this damaged system. Currently, Phase I of the project is funded, so roughly 300 acres will be restored using existing funds.

5. **What are the timelines for this restoration project?**

The current project was funded and initiated during 2009 and, given continued regional, state and federal funding, will be completed in 2013.

Atlantic Coastal Fish Habitat Partnership
Steering Committee Meeting
November 4 - 5, 2015
World Golf Village Renaissance Resort
500 South Legacy Trail, St. Augustine, FL
Conference line: 1-888-394-8197, passcode: 222918
Go to Meeting: https://global.gotomeeting.com/join/514344773

Agenda

November 4th

- **Site Visit to Volusia Dragline Ditch Restoration Sites** 7:00 am
- **Welcome, Introductions, & Approval of Agenda** *(K. Smith/L. Havel)* 2:00 pm
- **Habitat Assessment Decision Support Tool** *(J. Devers)* 2:10
- **Status of the Indian River Lagoon Post Algae Blooms** *(C. Jacoby)* 2:40
- **NFHP Update** *(L. Havel)* 3:10
- **Break** 3:40
- **Overview of NFHP Evaluations** *(L. Havel)* 3:50
- **Coastal FHP Collaboration Update** (*L. Havel*) 4:20
- **Whitewater to Bluewater Update** *(L. Havel)* 4:40
- **Adjourn for day** 5:00

November 5th

- **Science and Data Committee Update** *(C. Shumway)* 8:00 am
- **Update on offshore reefs project and other funding opportunities** *(L. Havel)* 9:00
- **Implementation Updates** 9:30
  - Coastal development outreach action item *(C. Powell)*
  - Restoration priorities action item *(D. McReynolds)*
- **Break** 10:10
- **Review of 2012-2016 Conservation Strategic Plan** *(G. Schuler)* 10:20
- **Implementation Planning** *(C. Powell)* 11:20
  - Evaluating the success since spring meeting
- **Lunch** 12:20 pm
- **Issues Forum for next Conservation Strategic Plan** *(group discussion)* 1:20

- **FWS-NFHP Funding** *(J. Devers)* 2:10
  - Updates for FY2016 funding criteria
  - 2015 funded projects
  - FY2016 recommendations to USFWS
- **Break** 3:10
- **Update on ACFHP Business Plan** *(P. Campfield)* 3:20
- **ACFHP Operations** *(P. Campfield)* 3:30
- **Other Business** 3:40
- **Adjourn for day** 4:00

Please note: agenda subject to change.

Atlantic Coastal Fish Habitat Partnership
Steering Committee Meeting Notes

April 20 – 22, 2015
Hyatt Regency Pier Sixty-Six Crystal Room
2301 SE 17th St.
Ft. Lauderdale, FL
Conference line: 1-888-394-8197
Go to Meeting for April 20th: https://global.gotomeeting.com/join/692110477
Go to Meeting for April 21st: https://global.gotomeeting.com/join/579561149

ACFHP Staff Present: Lisa Havel, Patrick Campfield (on telephone).

Guests/Presenters: Jeff Beal (FL FWCC, also ACFHP Science and Data Committee), David Gilliam (Nova Southeastern University), and Erin McDevitt (FLFWCC), Jessica Coakley (MAFMC), Jessica Graham (SARP), Steve Perry (EBTJV)

SC Members Present: Russ Babb (NJ), Lou Chiarella (NMFS-NE), Julie Devers (USFWS-NE), Bob Groskin (International Federation of Fly Fishers), Jimmy Johnson (NC), Wilson Laney (USFWS-SE), Gary Mahon (USGS SE Ecological Science Center, proxy for Rachel Muir), Callie McMunigal (USFWS-NE), January Murray (GA), Cheri Patterson (NH), Chris Powell (RI), Dawn McReynolds (NY), George Schuler (TNC), Kent Smith (FL), Caroly Shumway (Merrimac River Watershed Council), Mark Rousseau (MA), and Marek Topolski (MD).

SC Members On telephone: Ben Lorson (PA).

Meeting Notes

April 20th

Welcome, Introductions, & Approval of Agenda *(K. Smith/L. Havel)* 1:00 pm

Kent Smith convened the meeting at 1:00 pm. He noted that we had moved the meeting from the Keys, to the spring break capital of the world. Kent asked that we all put our phones on vibrate. Kent noted that there is wireless access, with the password on the card on the table.

Kent asked that everyone limit their access to e-mail, since the partnership is paying for all of us to attend and deal with the agenda. Kent and Lisa provided the location and password connection information. We are in Crystal Ballroom #4. The guest room WiFi does not work well in this room. Lisa noted that the meeting room WiFi does work well.

Kent asked everyone to introduce themselves. Everyone did so.

Chris asked us to read the article on the screen, from USA Today, which is about the water wars in CA.

Kent noted that there are a few changes to the agenda, and Lisa reviewed those. The two early items for April 21st were reversed. We will have a break in there somewhere. We will have lunch provided by the hotel. We are cutting back a couple of items, so we can have the presentation from the North Carolina Coastal Federation regarding their application for membership in the partnership.

Kent will end our agenda tomorrow with the information on the field trip. He asked how many in the room would be going on the field trip, and a good many raised their hands. Kent thanked Erin, the Grassy Flats Project Manager for arranging everything. Kent noted that several partners will be bringing boats to carry all of us on the field trip. Kent indicated that this is a project which entails foundational ecosystem restoration work in an area which is heavily urbanized.

Caroly asked that Kent provide the wireless password again. He did so.

Kent asked if everyone was okay with the agenda changes. No one objected. Kent moved ahead with the agenda.

Introduction to the Local Habitat 1:10

Kent noted that they had arranged three speakers for us to get us oriented to the local community.

• **Southeast Coral Habitat Conservation** (*Dr. Dave Gilliam, Nova SE University*)

Dave thanked us for the invitation. He noted that their center is just on the other side of Port Everglades inlet. One of the major things they do is to work with a stony coral species, *Acropora cervicornis* (Staghorn Coral). Dave gave us an orientation to the state of Florida. He noted that the Florida Keys National Marine Sanctuary is in the lower part of the state where a lot of coral is located. The red box which he outlined on the map depicted the area where there is no regional-scale management, in SE Florida. There are several management options for the area currently being evaluated.

His lab works a lot in a four-county area. There is a lot of stress to the reefs. There are localized impacts from the seven million SE Florida residents. Other stresses include diseases, harmful algal blooms, and invasive species (Lionfish). The reefs are important for habitat, fisheries and ecotourism, among other things. They are investigating and promoting reef recovery via culturing corals in a nursery. Fragments from the nursery colony are taken from the nursery and planted on the natural reefs, which hopefully will aid in the recovery of the species.

Staghorn coral is important because it is a major contributor to Caribbean reef complexity and habitat.

Dave reviewed the coral's reproduction. Coral can reproduce sexually, as a simultaneous hermaphrodite, which spawns after the full moons of July or August. This increases genetic diversity. It can also reproduce asexually, by fragmentation.

David noted that natural fragmentation leads to thickets of coral. Here in SE FL they have some really healthy thickets close to shore, which is unusual.

There were dramatic population decreases of the species in the 1970's and 1980's, and it was listed as a threatened species under the ESA in May 2006. It was petitioned to be up-listed to endangered, but that didn't occur. Recovery is inhibited by dispersed populations.

Why Staghorn Coral nurseries? It is a keystone reef species, providing fish and invertebrate habitat; it is threatened species; it has traits appropriate for nursery efforts; it is a fast-growing, branching species; it reproduces sexually and asexually. Restoration results are: reef community scale; self-sustaining-fragmentation and increase sexual reproduction; it is measurable and see-able; and there is community involvement.

Dave reviewed how their process works. They collected three 10-cm segments from each of three donor colonies. They attached 3-cm fragments to bases. The fragments are allowed to grow into donor colonies. The nursery colonies are then clipped and further propagated, or taken directly to reefs.

Caroly asked what the depth requirements of the species are. Dave indicated it is normally found between 3 to 10 meters. He explained how they attach the fragments to hard substrate, using epoxy, or actually nails in some instances.

Dave showed us a series of photos which documented growth of the fragments.

They do monitoring for survival, branching events, linear growth, and tissue extension. Maintenance includes cleaning, predator removal, and disease pruning. Fire worms are one predator which they need to control.

Dave reviewed nursery construction, including platform designs, modules and arrays. They also use floating designs in the shape of trees and lines.

They began this work in 2007. Staghorn restoration was funded by TNC and NOAA through a Community-Based Restoration Project. This established their pilot nursery and outplanting. In 2009, TNC-ARRA funded threatened coral recovery in FL and USVI, which entailed nursery expansion, outplanting and outreach. Current work includes the TNC-NOAA Coral Reef Conservation Program, CNI Donations, and LBTS. Nursery efforts in Florida and the US Caribbean are a partnership.

Dave noted that their nursery is the northern most of all of them. They work together with other nurseries established in PR and elsewhere.

They began with 30 donor colonies, and 270, 3-cm clippings. The total linear extension has been 810 cm. currently they have over 2,000 colonies, with an average colony of 25 cm of tissues. Totally they have produced over 50,000 cm of tissue, a 6,000 percent increase. The overall total is over 4,500 colonies and over 200,000 cm of tissue.

There are 14 sites, all offshore Broward County. There are 4,000 colonies there, covering an area of about 1,200 m^2, or about half a football field. Their annual capacity is about 2,000 colonies.

Dave noted that four of his graduate students have contributed to this work: they have shown they can grow staghorn coral; nursery colonies grow/survive similar to natural colonies; fragmenting is best when water temperatures are cooler (late fall – late spring); predator removal increases nursery colongy survival and health; monthly maintenance is optimal for predator removal, structure upkeep, and colony pruning; predation and disease are reduced on floating-line platforms; nursery colonies can be relocated between nurseries (Broward corals do really well); nursery colonies can be reproductive.

Dave noted that unexpected things happen. Jellyfish swarmed their colony and caused some mortality. Marine debris is an issue, although damage from that threat has been fairly minimal. They do get divers on the reef during lobster season. They do have occasional help from octopi, and they do have Lionfish on the reefs.

Restoration-outplanting: site selection matters; outplanted colony survival growth is similar to natural colonies; outplanted colonies quickly create habitat for fish and other reef organisms; outplanted colonies often population surrounds areas through fragmentation; predation/disease are present but storms/waves cause most of the outplanted colony mortality.

Current and future research: are colony growth rates similar on all nursery structures? What is causing disease and does it spread? At what size and/or age will outplanted nursery colonies spawn? what defines good outplace sites? how should corals be outplanted; size?; technique?; spacing?; density? what size and/or age do outplant colonies spawn?

Outreach, education and media all are important. They have provided 15 online articles/videos/social media posts, 11 print articles, 5 tv news stories, 25 public lectures and outreach events, 15 scientific presentations, and 7 nursery field trips.

Future Plans: Maintain nursery population; outplant population, increase the number of colonies per year and add new sites; continue researching: improve nursery success and outplant success, evaluate species recovery and restoration benefits, reef restoration ecology and staghorn coral population ecology in particular.

The Coral Nursery Initiative electronic media outreach is maintained by Dave's students.

Dave thanked all of their partners.

Chris Powell asked how the fragments physically break off. David indicated that any type of branches will break. Some external force, like large fish, or a diver's fin, will break them.

Caroly asked about combating threats to keep natural reefs healthy in the first place. Dave stated that they can't grow enough coral to recover the species. Recovery will have to happen through natural processes. Dave noted that their ultimate goal is to put themselves out of business. Locally, they could do a better job of promoting the value of the reefs, and managing water quality. At some level what they are doing is helping the species maintain at this point. Reef restoration and fisheries recovery is going to take action. This is not the answer, it is just one tool. The species can be grown at the local scale, to help local reefs, and also the community involvement is good.

January asked about bleaching in the nursery. Dave indicated that they do not see that much bleaching up here. Last year was the worst bleaching event in the Keys. The bleaching seems to be less of an issue in this part of the range. Disease is a concern, as are storms. Disease is probably secondary to storms.

Bob asked how long it takes for a naturally-fragmented specimen to establish itself. Dave indicated that was a good question. He noted that it depends on a number of factors. Tissue can begin growing on hard substrate within a month. David noted that they have seen fragments that survived in sand, for a while, but after a period of time it is not likely to survive. If conditions are good, they can survive for a long while.

1:48 pm: Kent noted that Dave will be here through the break so we can ask him more questions then.

• **Effects of marine debris on marine habitat** (Erin McDevitt)

Erin welcomed everyone to south Florida. She noted that Dave had done a good job introducing the coral reefs. Erin noted that there are a lot of natural resources which draw visitors to south Florida. She noted that they have the largest coral reef in the continental US, and also the largest wetland, the Everglades.

Erin introduced us to marine debris types and their sources. Consumer debris, fishing and diving, household, boating, micro-plastics, derelict vessels, and others are all sources. Problems with marine debris include ingestion, habitat damage, and entanglement. Erin noted that she would focus today on habitat damage.

She indicated that she would focus on issues unique to South Florida: derelict vessels, abandoned fishing gear, tires, and other types.

At any given time there are up to 1.3 million vessels in FL waters, both foreign and domestic. Many of these vessels may become abandoned. They are called Derelict Vessels (DVs) for short. Once abandoned, the state has the authority to remove them. Reasons for becoming derelict include major hurricanes, FL's transient nature; recent economic downturn; lack of public outreach and understanding.

The concern is that when vessels are abandoned, they can damage sensitive habitats. The impacts include; initial impact; prolonged presence; movement from wind and waves; and release of hazardous materials (fuels and oils).

The challenges include, way too many of them (currently over 300 known DVs); removal is costly (current estimate is 1.5 million dollars to remove); legal issues (multiple jurisdictions; higher priorities). Erin noted that the legal issues are complicated and often not a very high priority legal issue for action by judges and the legal system.

Abandoned fishing gear is another issue, especially in the Keys where the lobster fishery is extensive. Types of gear include hooks and lines, and commercial gear. There are 2.4 million recreational anglers, and possibly 10,000 commercial fishermen.

Erin showed us photos of various types of abandoned gear. Causes for abandonment include cut-offs, hurricanes, theft, abandoned, intentional discard and gear degradation.

Traps dominate submerged debris in the Keys. Seventy percent consists of trap and rope. Habitat impacts include 52 percent of the abandoned traps on coral/hardbottom. When there is a storm, the abandoned traps move around. Trap movement is documented to cause habitat loss in coral/hardbottom and seagrass habitats.

There are also wildlife impacts. Ghost-fishing traps continue to fish for a long period of time. The current estimate is that about 650,000 lobsters annually die in abandoned traps. There is a FWC trap retrieval program which began in 1985. There is a lobster trap certificate program which greatly reduced the numbers of traps in the water.

Challenges included that the program mainly recovers buoyed traps. But, there are probably about 85,000 ghost traps, and about 1,000,000 non-fishing traps. There is also an awfully lot of lost line.

The Osbourne Tire Reef was constructed in the 1970s and 1980s, with approximately two million tires dumped offshore, bundled together. Tires do not make good habitat. Corals and other benthic organisms do not readily grow on tires. Tires are unstable and are now dispersed over a large area. Tires have caused physical damage to coral reefs.

Broward County was charged with addressing this issue. They conducted field surveys to define the bounds of the tire field and identified priority clean-up locations. There are approximately 700,000 tires over a 36 acre area. The estimated cost to remove the tires is $49 million.

The removal effort was initiated by the FL DEP, Broward County, NOAA, and the Department of Defense, which used the removal as a training exercise. They effort removed about 72,000 tires, 61 tractor-trailer loads. The work is being carried on by a local contractor. This is being done with 1.5 million dollars in funds. The tires continue to move around and damage the reefs.

Erin turned to "other" marine debris. This includes ghost nets, vessels grounded and unstable on or near sensitive habitats, vessels grounded on public beaches, cargo containers, any debris leaking hazardous materials, etc.

Erin gave us an example of the Tenneco Towers Net, which was reported on January 7, 2013. The debris consisted of a monofilament entangling fish net. It was approximately 30 feet high and 200 feet long. It was a net used legally in federal waters which had drifted into state waters. The net arrived at a popular artificial reef diver location; on the largest AR in SE FL. It was a danger to divers and wildlife, and in deep water 70-104 feet in depth. The net was entangled in structure; it was large and heavy; it happened during winter weather; there was no protocol in place for emergency debris. They put together a team to tackle removal. They had no funds. A lot of partners contributed toward the $12,000 needed to remove the net. NGOs actually contributed the largest amount of funding. They net was removed March 5, 2013. The cost was $11,500. Erin shared the lessons learned: the net was removed due to great cooperation among many partners; the incident highlighted definite needs for marine debris response and readiness; they realized the need to have statewide regional working groups to address this issue.

They identified a test case, which was an abandoned floating dock in the Keys. This was a good non-emergency case which could test the process. The funding mechanism is not quick, and permitting is an issue. They are still seeking a funding source which would be quicker.

2:11 pm: Caroly asked why a NEPA review was needed for debris removal. It is because the funding source is NOAA. Erin noted that they are trying to work up a blanket statement. She noted that another option is to find a different source of funding.

Julie asked if they had considered establishing a fund to which NGOs can contribute. Yes, they have, but all of the partners are not on-board. Erin noted that not all of the partners support the concept.

Wilson asked if they ever identified the source of the Tenneco net. Their LE personnel did try but did not track it to the source. Wilson noted that the resource is a public trust one, and it should be possible

to design gear which could be tracked back to the source. He noted that NMFS is requiring marking of black sea bass pots in the south Atlantic for use in identifying the cause of Northern Right Whale entanglement, etc. He noted that fishermen would not likely be very supportive of requiring their gear be uniquely marked in some fashion to allow traceability, since it would cost more money.

• **Lionfish in Florida waters: current and future issues** (*J. Beal*)

Jeff noted that much of the work that he will address today was done in partnership with one particular graduate student.

Jeff reviewed the particulars of the two introduced species of Indo-Pacific lionfish. Jeff noted the early reports, and the invasion history. It began in south Florida and they thought that they had removed all the specimens, but that proved false and the species has spread widely. They now believe the invasion began in deep water and wasn't realized early. The first specimen was captured in 1985 and removed. Off the Carolinas, a breeding population formed off NC early in the invasion. The species ended up in Bermuda by 2000. It is now widespread in the Caribbean and Gulf of Mexico.

There is now a continuous recruitment pipeline, with the south Florida population. The species is "venomous" NOT "poisonous." There are venomous spines on the dorsal and pectoral fins. There are two species in the Caribbean: Devil Firefish (*P. miles*), and Red Lionfish (*P. volitans*). Over 70 native prey species of fishes and invertebrates have been found thus far in Lionfish stomachs. There was one present every four feet, off Ft. Pierce, so in some locations there is a really dense population. They mature sexually at a small size and have an unpalatable egg mass. They probably pair up and spawn at night.

Jeff showed us a map which shows the potential range spread, which is very broad.

One specimen was found up the Loxahatchee River, at 5 ppt, and they have been photographed at depths up to 1,000 feet. The species grow larger here than in their native range, and they are more dense here than in their native range. Mercury concentrations in their tissue are low, and ciguatera has not been much of a problem.

Jeff showed us how they do a reef visual censure.

Known predators include several that will take speared Lionfish, but only Nassau Grouper will take them in the wild. Morays will also take them. Reef scavengers will come along and consume them, if you spear them. Humans are the best predators.

Jeff noted that *Caulerpa* algae was another invasive species, which was consumed by one of our native sea urchins.

Jeff reviewed the Cayman tethering experiment. Lionfish on an intensely culled reef were 13 times more likely to be eaten than those on rarely culled reefs, and 30 times more likely to be eaten than those in a seagrass bed.

Jeff noted the types of tools which can be used to remove lionfish.

Jeff noted that his primary interest is in invasion of back reef habitats, like inlets, manmade structures, oyster reefs, mangroves, lagoonal reefs, and possibly seagrass beds. They might undergo an ontogenetic shift.

Jeff noted the many locations where Lionfish have been found in Ft. Pierce Inlet, St. Lucie County.

The Gulf Stream comes very close to shore off the Loxahatchie River, and provides a source of Lionfish larvae.

Jeff reviewed the goals of the Lionfish study in the Indian River Lagoon. There is a significant size difference between the inshore, and offshore fish. The inshore ones are smaller, but the size range is very broad. Some specimens in the estuary are as large as 12 inches. They mature sexually at around 4 inches. They are finding sexually mature individuals in the estuary. They did find both females and males in the estuary, and Jeff noted that they are capable of spawning there.

The smaller the Lionfish, the more decapods they eat, especially in the mangroves.

Ninety-two percent of the Lionfish found in the estuary had food in their stomachs. They had blue crabs, penaeid shrimp and other important species. Offshore they were eating black sea bass.

With regard to habitat preferences, they found most Lionfish in erosional mangroves (i.e., with undercut banks).

They also did a tagging study. Of 27 tagged fish, 17 were recaptured at least once, and one fish remained in the same spot for 92 days. They have been found at all five inlets and four of five inlet mangrove habitats. The estuarine population increases from north to south.

Introduction of a novel predator into the mangrove habitats obviously is of concern. Snook and gray snapper are at risk, the former from competition for prey. In lagoonal reefs, they found Red Grouper, spiny lobster, or Lionfish, in every cavity.

The good news is that we are early in the estuarine invasion; they have strong site fidelity; we have a highly motivated Indian River Lagoon natural resource community; native predation is a learned behavior; opportunities for applied research; round-up events; they taste good. The FWCC has altered their rules to encourage harvest. There is no limit for commercial or recreational harvest. No recreational fishing license is required for certain gear types. You still cannot spear in prohibited areas.

Recommendations from the Lionfish summit: continue research on development and application of Lionfish-specific traps; what is the effort required to maintain control on managed sites; research on Lionfish in estuaries needs to be a priority in Florida.

2:36 pm: Jennifer Graham asked if there had been any studies on carrying capacity. Jeff was not aware of any and indicated that is a good question.

Kent noted that they have had to be very careful about encouraging restaurant sales, because of the potential for ciguatera. Jeff indicated that the filets are selling for 23 dollars per pound.

Lisa asked about volunteer removals. Jeff indicated that some of the dive clubs are hosting removal events.

Kent indicated that there are some really high densities on some of the Gulf of Mexico reefs. He noted that they now have a Lionfish Coordinator, and on one dive they removed over 600 Lionfish. There are very high densities in the northern Gulf of Mexico, for unknown reasons. Kent noted that these fish in tropical reef systems are indiscriminant predators, so if they take herbivores, that could lead to reefs being overgrown by algae.

Jessica asked if the introduction has been linked to just one site. Jeff stated that it appears to have started off southeastern Florida, from an aquarium release, but they aren't really sure. There are rumors about other release sites, but none have been documented.

Kent noted that we are scheduled for a break now, and asked that we return at 2:50 pm.

Break 2:40
Kent reconvened the meeting and introduced Marek Topolski to give us a presentation on ocean acidification.

Ocean Acidification Presentation *(M. Topolski)* 2:52

Marek noted that the understanding of ocean acidification has evolved. Both Maryland and Maine have done investigations of the issue. Marek noted that in the open ocean, pH is driven by atmospheric CO2 input. In the coastal ocean, NOAA noted that upwelling of deep sea water, and geochemical processes, along with decomposition of organic material (CO_2) are exported to deep water. The NOAA Version 3.0 addresses the estuarine issues. Input/removal occurs there by organisms from respiration and photosynthesis. Decomposition of organic materials (CO_2) remains in the system (shallow water). Marek noted that the estuarine issues are of major interest to Maryland.

Marek gave us a carbonate chemistry refresher to explain the chemistry. Increasing CO2 decreases the pH and increases the acidity.

Marek gave us another general data overview to overwhelm our eyeballs. The summary: CO_2 partial pressure (pCO_2) is the preferred metric; ocean acidification has an annual range of diurnal pCO_2 of about 125 ppm; pH fluctuates less than one unit diurnally, measurements are not precise enough to detect trends. In estuarine acidification, the annual range of diurnal pCO_2 is several thousand parts per million (ppm); pH can fluctuate up to about 3 units in a few hours; there is sufficient precision to detect trends; it correlates with DO trends.

The CO_2 drivers vary spatially. The Smithsonian Environmental Research Center (SERC) has done some work on this issue. There were spatial changes to the CO_2 level. They had two sites 1 km apart (Rhode River). At the SERC pier, CO_2 fluctuation driven by temperature, pH varied between 7.5 and 8.0; the upstream marsh, CO_2 fluctuation was driven by decomposition/respiration and tidal transport; pH varied between 6.5 and 7.5. Marek noted that assessing CO_2 fluctuations in estuaries will be much harder than in the ocean.

Biological responses to CO_2 include depressed growth rates in oysters and clams; delayed metamorphosis; smaller size at metamorphosis; shell erosion; for red abalone the larvae have less tolerance to temperature increase (hence less resistance to global warming due to synergistic effects).

SERC provided images to the task force. Lower pH results in smaller oyster spat, and altered biofouling community. The biofouling community is reduced under lower pH.

Crustaceans are also affected. For blue crabs, there is an increase in the time required for shell hardening. For finfish, Atlantic silverside has reduced larval survival and growth; inland silverside, reduced larval survival; summer flounder, reduced embryo survival, decreased larval energy reserves, smaller metamorphosis size, and development abnormalities; coral reef fish exhibited larval olfactory impairment, and settled at the wrong time of day/night, as well as showed no behavioral response to common predators; cobia had reduced otolith size in juveniles.

Marek addressed the ecosystem response. Acidification needs to be measured at ecologically relevant [spatial] scales. Need to look at the organism, community, discrete habitat, and sub-watershed. Effects on ecosystem services include: decreased oyster fouling community abundance, diversity, and ecological process when decreased pH. Multiple stressors such as pH, DO, temperature, salinity, calcite saturation, etc. can have synergistic effects.

The need to address ocean acidification has been driven by the shellfish community, and that is what drove Maine and Maryland to look into this issue.

Marek shared the Maryland Task Force species conclusions: for oysters, pH threatens ecological oyster restoration efforts; pH threatens wild oyster capture fisheries; pH threatened the economic feasibility of oyster aquaculture; monitoring programs are insufficient to assess chemical changes in ways useful to water quality dependent industries like shellfish aquaculture.

Blue crab: Scientific studies are insufficient to assess risks of declining pH to blue crab stocks and fisheries.

Striped Bass: prior pH experiments did not decrease pH by CO_2 so the effects of ocean acidification chemistry are not known.

Forage fish: there has not been sufficient scientific study of the effects of decreased pH in bay and near-shore coastal waters to predict risks to forage fish populations.

Finfish in general: decreased pH impacts physiology, growth, survival, and behavior in other species may be relevant; bay water pH can reach levels harmful to early life stages of some shallow-water species.

Compiled Task Force Recommendations (Washington, Maine and Maryland): reduce emissions of carbon dioxide; reduce land-based of runoff of N, P, etc.; investigate effects of ocean acidification on a key species and life history stage(s) biological communities, and various spatial scales of ecosystems; focus on ecologically and economically important species; provide direct support to affected industries (notify industries of potential water quality issues, so they can shut down intakes, etc.); assess socio-economic impacts form ocean acidification; increase capacity to adapt to the impacts of ocean acidification; coordinate with other states and the federal government.

Leverage and invest in existing programs to monitor acidification and biological responses; create an Ocean Acidification Council to coordinate data streams/monitoring and analysis; engage various levels of government, industry, environmental groups, and trained citizen scientists to actively monitor ocean acidification parameters (chemical and biological); identify additional needs and implement necessary programs; maintain a sustained and coordinated focus on ocean acidification; implement outreach and education programs for stakeholders; decision makers, industries, general public, etc.; implement legislation to establish necessary programs and secure funding.

Marek listed the federal programs related to ocean acidification, and also the web sites for the state commissions and task force. There was also a study by the Ocean Science Trust (California, Oregon, Washington and British Columbia).

Kent noted that they can't say "climate change" in Florida. Kent asked Jimmy and Wilson whether anyone in NC involved with oyster restoration is studying the acidification issue. Jimmy and Wilson were not aware of any studies directly examining that issue. [NOTE: After the meeting, Wilson asked his colleague Mike Wicker, FWS Coastal Program Coordinator for NC, whether there was any discussion of acidification as a concern for Eastern Oysters, at the recent Oyster Summit held in NC; Mike indicated that there wasn't any discussion of ocean acidification and how it might affect oysters in the future.] Wilson noted that given that the Corps of Engineers is finally providing some funding to provide some oyster reef mitigation for the Wanchese Seafood Park, which may prompt some additional studies, we could suggest that any monitoring and follow-up studies include monitoring the pH on any created reefs. Wilson noted that one advantage of bringing the North Carolina Coastal Federation (NCCF) as a new member into ACFHP is that they are heavily invested in oyster restoration.

Caroly noted that the chairman of her Board is with the Corps of Engineers and they are undertaking a study of ocean acidification in New England.

Marek suggested that it would be a good thing to contact leaders in the shellfish industry and suggest to them that industry get involved in assessing this threat.

Julie Devers asked what the goal of ACFHP would be in getting involved in this issue?

Marek suggested that conducting some outreach effort around this topic would be appropriate.

Kent noted that the last issue of Habitat Hotline addressed some of the concerns. But a big part of this is taking this back to some of our partners and getting them involved. Kent noted that he will take some of this back to the Florida Fish and Wildlife Conservation Commission and incorporate some of these threats into their planning efforts. Kent liked Marek's ideas about bringing in industry, early on. Cheri noted that industry is often more effective in lobbying than agency staff can be. Marek noted that if there are economic impacts on an important resource, the attention of legislators is more easily secured. He noted that industry's involvement in the process was important.

Kent noted that he wasn't sure that we answered Julie's question. Maybe we can create a one-pager out of the Habitat Hotline. Kent noted that we can't lobby, but our stakeholders can do so.

Marek asked Callie if we could bring this to the national level. Callie suggested that it be brought up via the Fish Habitat Partnership (FHP) coastal coalition; also Restore America's Estuaries (REA) would be a good venue. Julie noted that there was at least one presentation on ocean acidification at the recent

RAE meeting. Kent and Julie had attended that presentation, and Kent thought it was on Puget Sound. We can bring this up as a big issue.

Callie asked about bringing it up to the NFHAP Board. Steve stated that there is a meeting coming up in 2015. He noted that the marine habitat is a focus, on the west coast, for the marine assessment. That could be raised to the Board.

Callie asked who the contact is for the national assessment. Steve suggested Gary Whalen, as the chair of the national Science and Data Assessment group, would be a good contact.

George Schuler stated that we could provide some framework for incorporation of this issue. He has heard of some groups putting together principles, for other issues like SLR, but not for this issue.

Kent noted that the proximity to mangrove swamps can come into play.

Chris noted that this is one area where people's eyes glaze over, at all the chemical formulas. We need help in packaging this issue so the public can understand it. George noted that Coca-Cola has carbonic acid in it and may provide a ready means of understanding the issue.

Kent noted that a focus across the coastal FHPs, especially as it involves bivalves, is a good idea.

Callie suggested that each coastal partnership might be convinced to throw $5,000 into a fund to develop some outreach tools.

Action item: Lisa will contact Lisa Debruyckere to see if we can discuss OA during the next coastal FHP call, and see if we can bring someone in to talk about it. We could then see if the collective group would want to move forward on this issue.

Kent noted that all of these are good ideas. He noted that we don't want these to sit on a shelf somewhere.

Julie noted that we do have a list of items for inclusion in our next strategic plan, so we should definitely put this one on the list.

Jessica Graham noted that she suggested that we try to tie the benefits of different types of habitat restoration, to ocean acidification. She noted that it is very hard to do anything about it.

It was suggested that OA be front and center for the next Conservation Strategic Plan.

Bob noted that the relationship of acidification to DO seems to have effects on other fish species, like Striped Bass, and mycobacteriosis, as well as shellfish.

Kent noted that it is part of the larger habitat issue. Bob noted that referencing the habitat aspects and impacts on Striped Bass, would increase the appeal to a wider audience.

Steve noted that the EBTJV modeling can indicate presence of Eastern Brook Trout, in the future, based on projected conditions. He suggested that we could do some modeling to show what happens to the resource, and not dwell on the details. Steve noted that he can say that EBT may have an 80 percent

probability of occurrence now, but in the future could have 40 percent. That may grab people's attention more than details about chemistry and pH.

Marek noted that in Maryland, the Task Force deliberately detached ocean acidification, from climate change, in order to focus direct attention more on the acidification issue.

Kent noted that we would talk about this issue, in the context of the coastal ocean FHPs. Certainly the comments that everyone has made will incorporate this issue in to the larger context of how we do restoration, especially for finfish species. If anyone is interested in participating, we will put out a call to see if anyone wants to be involved.

Kent introduced Jessica Coakley to give the update on the Mid-Atlantic Fishery Management Council (MAFMC).

Update on Mid-Atlantic Fishery Management Council *(J. Coakley)* 2:50

Jessica noted that she is staff on the MAFMC, which is one of eight regional Fishery Management Councils (FMCs). The MAFMC is actually the largest of the eight councils. They manage a number of species. They have members from the ASMFC and other institutions. She noted that they were also aware of the New England Fishery Management Council (NEFMC) and South Atlantic Fishery Management Council (SAFMC).

Jessica noted that for a while, they were focused on rebuilding fish stocks as mandated by the reauthorization of the Magnuson-Stevens Fishery Management and Conservation Act. Beginning 2012, the Council shifted their focus a bit to begin working on building an Ecosystem-Based Management plan. Jessica is the Habitat Coordinator for the Council. Their Council began work on a pilot project, in the summer of 2014, with NOAA Fisheries. The NOAA wanted to have one pilot project on the West Coast, and East Coast. Jessica noted that the Council's habitat programs have not been especially objective-based. They began the program, which will have three parts: review/report on habitat practices; policy statement development and objectives for EAFM; identifying multi-species HAPCs, etc. (which will include EFH-five-year reviews). Jessica noted that they have only used HAPC in a limited way, such as mud habitat for tilefish. She noted that NOAA-Fisheries has for years been trying to write a report on Council habitat practices, so they have taken the lead on this. They will look at Council policies, such as on fishing, and non-fishing, activities. They will work with their Council to develop clear objectives. They will also revisit all of their HAPCs.

Jessica noted that an oversight team has been formed: NOAA Fisheries Habitat Division (Terra Lederhouse and Dr. Howard Townsend), NOAA Fisheries Northeast Fisheries Science Center (Dr. Vince Guida and Dr. Beth Phelan), NOAA Fisheries Greater Atlantic Region (Lou Chiarella and Dr. David Stevenson), and Council Staff (Chaired by Jessica Coakley)

They identified Contractor Services, the Fisheries Leadership and Sustainability Forum (aka Fisheries Forum); they used SAFMC policy documents as their model, and the contractor hopes to wrap this up in the next month or so.

They will provide information on current methods used in the identification of HAPCs and critical fish habitat areas in the US, as well as synthesize regional experiences with effective use of the HAPC provision.

The focus will be on five areas really big in the mid-Atlantic at present: Energy (petroleum, wind, LNG); marine transport (develop of infrastructure, etc.); coastal development and maintenance; offshore mining (sand); and fishing impacts (gears and operations).

The policy documents under development will provide an overview of the anthropogenic activity impacts on fish habitat; mechanism of impact; broad overlay of the activity with MAFMC resources and their habitat, and any indirect impacts.

The project timeline is: May 2015, wrap up document/report preparation with contractors; begin review/work with Ecosystem-Ocean-Planning Advisory Panel (+ some) and Committee on Policy Documents; the goal is to have the habitat objectives completed in 2015 to be part of the EAFM document.

The Council hopes to have improved engagement: identify how best to engage with partners; BOEM, MARCO, MARACOOS, RPB, ACFHP, ASMFC Habitat Committee; NALCC and urban waters; other groups? Jessica noted that the Council is not a regulatory body. They want other partners to know what is important to the Council. They noted that even though they manage species in federal waters, most of their species have one or more life stages in nearshore coastal waters.

Jessica indicated that is who they are and on what they are working with regard to habitats.

Chris Powell noted that he hoped that they had reviewed a lot of what the ASMFC Habitat Committee has done, so as to avoid reinventing the wheel.

Jessica noted that the contractors have been connected with all of the resource documents. The SAFMC policy guidance concept is their general guide. They are starting with the five general areas, but hope to expand in the future.

Lou noted that he had given them the habitat documents. Chris noted that the SAV document was provided to them.

Action item: Lisa will like the ACFHP website to the habitat committee papers on offshore wind, dredging, etc.

It was mentioned that Roger Pugliese from the SALCC should give a presentation at the fall SC meeting.

Action item: Lisa will follow up on the possibility of having Roger Pugliese present at the fall 2015 meeting.

Kent asked Pat from the phone for any comments. Pat stated that he actually had a comment on the ocean acidification. Perhaps it does tie in with what the Council is doing. Pat noted he thought that we have a major ally in the Greater Atlantic Regional Fisheries Office (GARFO), in that the Regional Administrator John Bullard is very much in tune with the ocean acidification problem. He has heard John say in multiple venues, 400 ppm and counting, in particular with regard to the scallop fishery. He suggested that we look at what the Northeast Fishery Science Center (NEFSC) is doing, with regard to ocean acidification. He noted that they are doing work on climate change impacts to fisheries.

Lou noted that he agreed John Bullard is definitely out there with regard to his endorsement and recognition of the need to do something about climate change. The problem is what are we going to do about it. We recognize that something has to be done, but Lou isn't aware of what we can do, other than to try to provide room for marshes to migrate inland, and so forth. We can deal with it a little bit, but the problem itself is way beyond us.

Caroly stated that there are some things that we can do, such as working with some of the Sandy-funded restoration projects. We have to educate, and highlight some of the restoration activities. Caroly noted that we need to try to maintain what we have, until mankind wakes up.

Lou stated that the Sandy Hook Lab in NJ is the focus of the ocean acidification work. The issue there is that there isn't any funding for the work.

Kent noted that Caroly made a good point that there are things we can do, such as identifying good locations for new oyster reefs, and there are other ways that we can think this through. As models become available, or we can influence their development, we can apply their results to planning. We have to ultimately go to scenario planning. Scenario-planning is ultimately the way we have to go.

Chris suggested that we home in on what our strengths as a group are, tomorrow. We can't do everything. A lot of the issues we can't touch.

Kent agreed that we do need to tackle these issues.

Wilson noted that we can work closely with the LCCs in terms of model development, as well as on how we better address future efforts to move the FWS into landscape-based, more strategic management.

Julie noted that the LCCs also solicit proposals for work.

Wilson noted that the SAFMC has not been sitting idle, while the MAFMC moved back into the habitat game. He noted that the SAFMC hosted a EBM workshop at their last meeting (speakers included Dr. Carl Herschner of the Virginia Institute of Marine Sciences [VIMS]; Dr. Jason Link of NOAA/NMFS; and Ms. Hilary Morris of the SALCC), and they also serve on the SALCC Steering Committee.

Mid-Atlantic FMC Funding Update *(M. Topolski)* 3:10

Marek noted that the MAFMC has funding available to fund a project and has distributed a Request for Proposals (RFP). He reviewed the project requirements. The criteria are, any project must involve blue water in the Delaware to Virginia region, and must benefit a MAFMC species. It could be that it benefits Summer Flounder, Black Sea Bass and Scup. They are looking for something on the ground, perhaps studying natural hard bottom habitat. This would be relatively low-profile bottom, such as the videos of such habitat provided by Monty Hawkins. We are not talking large-profile ARs.

Jessica Coakley suggested that there is no DE-VA constraint. The issues can be bluewater, and use of natural or artificial reefs. The RFP is pretty general, and they are looking for a group that can manage the funds and go through their own competitive process in awarding grants.

Marek noted that we have put a small group together that reviews proposals and manages funds for those projects. Also, we can demonstrate relationships with multiple partners, and also have the ability

to leverage funds. Part of this would require us having a rough framework of a project. We need to have a concept in mind, for if we got the money, we need to have some idea of what an RFP would be, and how much of the budget would be required, for example, for transporting materials. This would depend on the size of the area and its location.

Marek indicated that the subcommittee did have a conference call, and Lisa put together a meeting summary. They tried to flesh out the type of project that ACFHP would be interested in. They had a long discussion about where a project could be done. An existing area with an existing permit would make things a lot easier. There are some existing sites in DE and NJ (Russ Babb confirmed that was the case).

Marek noted that no site had yet been selected. There was some discussion about materials, and profile. ACFHP would probably be interested in rock as a material, with a relatively low profile. What could we build that would be reflective of what would normally be there? There was some discussion about monitoring but that was really premature. The next step is to identify what data are out there, to fill in some of the gaps. We need to identify areas already permitted, but we wouldn't want to put it right next to an existing area. Julie will help us put together some of the existing information on what ACFHP has done.

Kent asked for questions.

Chris asked if some of the funds could go to ACFHP overhead.

Jessica Coakley indicated that had been the case with other Council contracts, so she anticipated that this would be the same. Chris noted that we can't do things for nothing.

Wilson asked if the subcommittee had considered whether this would be designed as an experimental project, or if they had considered it as a possible Marine Protected Area (MPA). Marek indicated that the subcommittee had discussed that potential. Lisa indicated that for MPA designation there usually would be a requirement for some data to justify that action. Wilson noted that the SAFMC was considering such an approach, for new Special Management Areas designed to protect snapper-grouper spawning habitats.

January asked if the site could be kept confidential. Kent felt that we were getting too much into the weeds in our discussion.

Kent noted that …….. He asked if there was support for pursuing this proposal.

Wilson noted he supported moving forward with a proposal. He noted another concept that could possibly be worked into the proposal, would be to try local management of the resources associated with any AR established. He noted that Monty Hawkins would likely be supportive of such an approach, since he has advocated it often for use with Black Sea Bass. He noted that the Council might, or might not, have an interest in such an approach, since such management would pose some significant challenges for the Council.

Jessica Coakley noted that the project didn't necessarily have to be constructed as a part of this proposal.

Bob asked why this project was unique.

Kent explained that this sort of project has not been done before by ACFHP.

Caroly noted that …….

Jessica Graham noted……..

Bob noted that he hoped that some provision for monitoring should be included in any project funded.

Kent indicated that he would like to complete today's agenda. Jessica Graham noted that she had only eight slides in her presentation.

Update on Southeast Aquatic Resources Partnership (*J. Graham*) 3:40

Jessica noted that she is the new coordinator for the Southeastern Aquatic Resources Partnership (SARP). She has been in the positon for only about a month, so she may not have all the answers to our questions. Previously she worked with the Florida FWCC and worked mostly in freshwater. She has asked Lisa what the ACFHP would be interested in, and Lisa suggested that she focus on the SARP organizational structure and current projects.

Jessica Graham reviewed the organizational structure. She showed us their organization chart. They have a Finance agent, who actually works for The Southeastern Association of Fish and Wildlife Agencies (SEAFWA), and SARP. They also have a Program and Communications staff person, Lindsay Gardner. They have three other contractors. Jessica noted that she is a contractor as well. John Kaufmann is their State Liaison. He is a retired state employee. They have a GIS contractor, Kat Hoenke, who is amazing and is working on several projects. They also have Mary Davis as a Technical Advisor. She is funded from the Gulf Coastal Plain and Ozarks Landscape Conservation Cooperative (GCPOLCC). They have a Cartographer who is a SCEP intern with USFWS, who is primarily doing her MS. She is doing SEACAP in the TN-Cumberland area, for her MS. Her name is Emily Granstaff. There are a lot of committees as well, but Jessica didn't delve into those. All of these positions are funded via grants.

Chris had asked the funding question.

Jessica noted that in the next year, the Technical Advisor, and State Liaison, could both drop out after their grants expire. Their cartographer will leave after she graduates.

As far as projects, connectivity is a big one right not. Tools to determine what dams should be removed is a big need right now. The connectivity program entails assessment, desktop reconnaissance, connectivity teams, and actual on-the-ground projects. Thus far, they have been supporting existing teams on the ground. They will be having a meeting in Georgia soon to discuss establishing a team there.

They are also working on SEACAP (SALCC/SARP-funded), Chesapeake Bay Fish Passage Prioritization, NC BPT, and TN/CU Fish Barrier Inventory, which will be rolled into the Region 4 Barrier Inventory. The idea will be to determine how many dams are actually present in R4, and tie it to Fish Passage funding.

Mary Davis is also working on Habitat Suitability models, to assess Habitat Condition, and Habitat Location. The focus is on the species of greatest conservation need, for the states and the GCPOLCC. The focus is on species with specific habitat requirements. She produces maps of high, medium and low suitability. Jessica Graham described the way Mary uses the data to generate an occurrence model. The scores can be based on species, streams, basin, etc., at multiple scales.

There is also the Native Black Bass Initiative, which is funded primarily by the National Fish and Wildlife Foundation (NFWF). The business plan focuses primarily on Redeye Bass, Guadalupe Bass and Shoal Bass for the time being. Kat is presently building a Shoal Bass Management Plan for the entire Appalachicola-Chattahoochee-Flint (ACF) Basin.

Jessica Graham indicated that those are all the projects on which they are working at present.

Kent asked if they didn't have some paddlefish projects as well.

Jessica indicated they do, but that is largely funded by Texas.

George noted that it strikes him that Scott spent a lot of time writing grants. He noted that we want to take a new look at how this can be done, to fund projects.

Jessica Graham stated that there is a lot of talk in SARP, about doing bigger grants for bigger projects, versus doing smaller ones. She noted that she has been trying to direct SARP to smaller projects on the ground. However, SARP does not have a project manager.

Kent noted that many of the grants require a significant, one-to-one match. Kent noted that NAWCA requires such a match. He noted that some of these are three-year grants. This is a challenge. These are not sustainable relative to funding.

Jessica noted that it is hard when you have staff, and can't find funding. She noted that SARP is big right now and big in one way, not really balanced.

Kent noted that ASMFC has been our parent organization, and noted that he agrees with Jessica Graham regarding the other staff parallels. One issue Kent noted is what NFHAP is building in terms of foundational support. Kent noted that if the MAFMC funds come through he wasn't sure if they would be administered through the NFHP Fund or ASMFC.

Steve Perry noted that what he learned at the NFHAP Board meeting in early November is that the National Fish Habitat Fund is not being set up to administer grants. All it would do is administer donations. He had asked that question during the meeting and was told that it won't administer grants for the partnerships. Steve noted that they (EBTJV) are running their grants through other partners such as ASMFC or others. Steve stated if you could get funding in your account, the NFHAP will manage it, but it will only be donations. Steve stated that came out during the presentation that Matt Menaches and Mike Andrews made. He had asked the question and that was the response.

Callie stated that they had said though, that after the system was set up, each chapter would have the ability to have its own administrative capabilities. Steve stated that no grants could be run through the fund. Callie stated that they had missed the boat entirely then, on the concept that we had hoped would be incorporated.

Steve stated that you can manage any dollars but not grant funds.

Jessica Graham noted that she was told that funds depend on the donations. Some will want specific projects conducted; others may not care and those funds can be put out for an RFP by the partnership.

Steve stated that some funds may be distributed through some other mechanism, instead of going into a chapter account.

Kent stated that was all news to him. Steve suggested that we try to get clarification, since it was possible that someone had misspoken.

Kent noted that he was hoping that this would free us from the constraints of a governmental organization like ASMFC, although he noted that has not been a bad arrangement. Steve agreed that his hope was that the process would yield a 501(3)(c) umbrella, which would obviate the need for individual partnerships to do so.

Callie stated that since we have three coordinators sitting here, we consider sending the Board some input on this issue.

Steve suggested that the first step should be seeking clarification and looking over the bylaws.

Kent agreed that should be the first step. Kent noted that having an umbrella organization could really be helpful, if it had the functionalities it needed. Callie noted that ACFHP has to be able to accept funds. Kent noted that we would work forward on that issue.

Kent introduced Steve to address the next update.

*Note: this discuss has since been resolved, and NFHP can accept funds that are not just donation.

Whitewater to Bluewater Initiative Update *(S. Perry)* 4:00

• Accomplishments to date

Steve noted that at one time, he was the junior member of this partnership, and now he is the senior member. He noted that he would cover Phases three through five of this initiative. Steve noted that for Phase III, Action 1.1., significant activities occurred under this action in 2014. ACFHP and EBTJV collaborated with the NALCC and Downstream Strategies to develop decision support tools that would assist in prioritizing conservation actions for winter flounder, river herring, and brook trout. SARP worked with the Gulf Coast Prairie LCC to complete an Instream Flow Project that assists in making management decisions. SARP is also collaborating with the Gulf Coast Plain and Ozark LCC to develop Aquatic Species-Habitat Models that support the regional landscape conservation plan and assisted with completing the SEACAP, which provides a decision support tool that prioritizes the removal or bypass of dams. The EBTJV completed its second range-wide assessment of brook trout population status and partnered with the Appalachian LCC to complete a web-based project tracking system and an open source mapping platform.

Steve reviewed Action 2.1: coordinate ACFHP, EBTJV and SARP partner engagement and outreach activities to strengthen and expand an already robust base of on-the-ground conservation partners. The three eastern FHPs continue to maintain the Whitewater to Bluewater webpage; ACFHP, EBTJV, and SARP are also collaborating to develop a fish passage barrier removal informational template.

Action 2.2: Implement strategic develop done previously by the Whitewater to Bluewater partnership and via the NFHP Excellence Workshop to enhance organization capacities. The EBTJV is implementing its 5-year Business Plan, which is aimed at enhancing its organizational capacities; recommendations that resulted from organizational assessments completed by River Network and Water Words that Work.

Action 3.1: retain and enhance critical capacity to implement each of the individual FHPs Strategic Plans by facilitating completion of prioritized, on-the-ground, partner-led fish habitat conservation projects that achieve measurable results towards NFHAP goals and strategies. The three eastern FHPs each completed the process for submitting their Accomplishment Report and Work Plan to the FWS for 2015 NFHAP funding considerations. Our partnerships also worked with the NFH Board to develop a LOI for the 2015 MSCGP funding cycle.

Steve noted that Phase III is supported by a 2014 MSCGP grant, which is in the process of being approved for a 1-year extension, so the expected ending date for this grant is December 31, 2015.

The eastern FHPs were recently notified that Phase IV of Whitewater To Bluewater was approved for funding under a 2015 MSCGP grant. Total funding available from this grant is $150K, which is being divided equally so that ACFHP, EBTJV, and SARP will each receive $50K in funding support.

The eastern FHPs have submitted a scope of work for this phase of Whitewater To Bluewater, which is centered around building on the work we initiated during our previous phases as well as adding an additional focus on addressing aquatic habitat connectivity issues.

Steve noted that they are presenting assisting the NFH Board with developing a LOI for the 2016 MSCGP cycle. Phase V of the Whitewater to Bluewater is intended to build on what our partnerships accomplish during Phase IV.

Caroly congratulated Steve on getting the Phase IV funding. Kent noted that we had hoped that we could get the funding prior to now. Steve noted that we will have to go through the process of asking for a “no-cost” extension to be able to use the funding into the next year, with the extension.

Jessica Graham noted that Scott had made it sound like it was actually a 12-month grant. Steve stated that once the Association of Fish and Wildlife Agencies (AFWA) got involved, we were held to the calendar-year cycle, and were held to requesting extensions.

Kent stated that NFHAP will be reducing their request for funding. Steve noted part of the reason for that is the survey they want to fund. Steve said they will do another three-year ask for $900,000, but the anticipation is that only one year of funding will be forthcoming, but we can ask for additional years.

Caroly stated that the report in the briefing materials is really useful. She suggested that we not reinvent the wheel, but instead appropriate some successful elements of other proposals.

Kent agreed.

• **Future collaboration**

Steve stated that we still need to support collaboration, but move more toward on-the-ground activities. We are starting to see Whitewater To Bluewater shift towards an issue like connectivity, and how we can deal with it on the entire east coast, and not just as individual partnerships. We need to find projects that all three partnerships can support.

George noted that another project could be a study with Dewayne Fox, looking at freshwater inflows and how climate change may impact flows, and therefore habitat use by Atlantic Sturgeon. That was a nice Whitewater To Bluewater idea. George wondered if there might be other such ideas out there, about things that are linear and cumulative.

Steve suggested that fell into something Kent mentioned, such as ten waters to watch for 2014. It wouldn't have to be the same project, but perhaps within the same basin. Steve noted the concept is great, but each project would have to look at how they rank projects for the USFWS. He noted that EBTJV and SARP took a big hit in the amount of funding they had for projects.

Kent noted back when SARP had NOAA Community Restoration funds, they did focus on a particular area (the Altamaha River watershed was one). Kent suggested that we could take the same approach. He felt that was a wise idea moving forward.

Jessica Graham agreed that the three partnerships could likely find complementary projects, within the same area. Kent noted that we would like to get animals from the estuary into the higher reaches of the ecosystem. Jessica stated that they have a lot of data already, from VA south, which could be used in such an effort. She noted that it was very interesting to see different stages and refocus a bit.

Steve stated that there may be other positive ways to demonstrate the benefits of Whitewater To Bluewater, and how we can put it into effect. How can we benefit what we are doing from Whitewater To Bluewater and promote what the benefits will be in between.

Lisa indicated that the three coordinators have shared how each partnership ranks their projects, and they will be sharing that information.

Kent noted that he would like a thumbs-up from the group, regarding pursuing such an approach. He indicated that they will keep everyone informed about any progress made. He stated he was glad that the triumvirate partnership is being pursued. He noted that we had selected the Cape Fear River Basin as one location for focus.

Bob Groskin noted that connectivity resonates globally so is a good issue.

Kent noted that he was recently talking to staff about that issue, and noted that we got into this present habitat condition by the "death of ten thousand cuts," so it will take many little actions to get us out of it. Jessica Graham noted that it was just like the tires put on the artificial reef, it will take many small efforts to get them all out of the ocean.

Coastal FHPs Collaboration Update *(L. Havel)* 4:20

• Major 2014 accomplishments and expected 2015 outcomes

Lisa noted that at the Restore America's Estuaries meeting, she and several others had given a presentation about what the coastal FHPs have been doing. Lisa presented on the coastal FHP on-the-ground restoration work, Therese Thompson from WNTI presented on the science and data work, and Lindsay Gardner from SARP discussed the coastal FHP communication and outreach work. Lisa noted the talk was well-attended. The activity since then has died down. ACFHP just submitted an article for the spring newsletter. We are still doing phone calls every three months. They plan to meet during the American Fisheries Society (AFS) annual meeting in Portland, in August. They found that was a good opportunity for planning. They haven't done any other planning. Lisa asked for ideas, in addition to OA which she can bring up.

Caroly suggested that it would be good to pull together information ……on avian species.

Lisa thought that was a good idea.

Kent noted that we had also discussed the coastal FHPs collaborating on a large grant. That could go into a central bank, if such a financial process was established.

Action item: Kent and Lisa will look into large grants for the coastal FHPs to apply for together.

Jessica Graham noted that there is a letter in their regional office right now, dealing with this issue.

Kent noted that we have some projects that weren't funded, which we could submit very quickly. Kent suggested that we could go for one of the larger grants and do a project on each coast (Atlantic, Gulf and Pacific).

Lisa indicated that there was a suggestion to have the coastal group submit a proposal for one of the Multistate Conservation Grants but that didn't fly because we would be competing with ourselves.

George noted that it would seem to be in our interest, to have partnerships competing together for the larger grants, instead of competing for smaller amounts.

Kent noted that we can hopefully get clarification on a call tomorrow.

Steve stated that the Reservoir FHP was going to work outside of the NFHAP process, but decided to delay that action for a year. Steve noted that the Whitewater To Bluewater Phase I brought in two or three times what we are getting now.

George noted that on one past occasion, SARP and ACFHP didn't fare well, so we need to think carefully about the implications.

Jessica Graham…….

Steve Perry noted that given the need for care and feeding of AFWA, there has been less and less funding, and we are starting to see the impacts of that fact. Kent noted that SEAWFA has partially supported some of the partnerships.

Kent suggested that we are at the "end of our rope" for the day. He noted that ACFHP hats, in new colors, are available for $10.00 each. Kent noted that he had let some of the presentations go long today, since he finds it helpful to know what is going on in other states.

Kent noted that we hadn't made plans for dinner. Chris stated it is raining outside. Kent noted that there are restaurants across the bridge. He noted that he has a vehicle that can carry seven, so he could ferry people. Kent suggested that we meet in the lobby at 6:30, for those who are interested. Kent noted that we could walk around and look at other peoples' resources. Lisa and Caroly noted that Stephen Spielberg's yacht is here.

Kent noted that there is a port expansion project going on, which is going to knock out a lot of 100,000-year-old reef. They are trying to deal with the mitigation for the project.

Adjourn for day 5:30

April 21st

ACFHP Steering Committee Members Newly Present: Pace Wilber (NMFS-SE).
On Telephone: Pat Campfield (ASMFC).

8:15 am: Kent convened the meeting. He noted that he would try to keep us on time today. He noted that the rain bands will be coming through all day today, but he hoped that the weather would moderate at least enough so that we could get out and enjoy some of the surroundings.

Update on NMFS's National Recreational Fisheries Implementation Plan (*L. Chiarella*)

Lou called our attention to the NMFS website and their new plan. He noted that the "Support Ecosystem Conservation and Enhancement" section has a number of mandates, one of which is to Focus on Watershed-Scale habitat activities that leverage partnerships and directly benefit important recreational fisheries and the communities that depend on them. In particular, to increase angler engagement in the National Fish Habitat Partnership and NOAA's regional Habitat Focus Areas to better reflect recreational fishing priorities, among others.
http://www.nmfs.noaa.gov/sfa/management/recreational/policy/principle_1.html

Another aspect is to: Take an Ecosystem Approach to Ensuring Sustainable Fisheries. Lou noted that there is a lot in there that meshes well with ACFHP activities, and he asked if there was anything in particular in the policy, that we should pursue.

Kent noted that he recently met with the Coastal Conservation Associate (CCA)-Florida, and they are interested in participating in the partnership, in some capacity. Kent noted that we used to have representation from CCA-NH, on the Habitat Committee.

Steve noted that Brad Getner was the CCA representative on the NFHAP Board. He is no longer on the Board but might be a good source of a recommendation for a representative. Kent noted that there are some policy benefits to having CCA or similar organizations on our board. Of course MPAs can be an issue for them, but there may be some they would support. It might affect something that we may do in collaboration with the MAFMC, if we try to add a protective overlay.

Steve noted that early on, they had a representative from the commercial industry, and they may also have a problem with any potential closed area issues, since they want to keep areas open for fishing.

Kent noted that we could pursue this, recognizing the policy issues. He was okay with contacting Brad Getner.

Bob noted that the boating industry is not represented on ACFHP. He noted that Boat USA may be one potential member. Margaret Podluck (sp?) is the chair and Kent can approach her to ask.

Wilson noted that there are quite a few recreational angling organizations, and we may want to look at the list and see if there are others in addition to CCA which we might want to invite.

Action item: Kent will contact Brad and Margaret to discuss working with ACFHP.

Wilson noted also that we might want to consider some sort of relationship with the Guy Harvey Foundation, since his information is that they are now contributing five percent of their merchandise proceeds to conservation. Wilson gave an example of an event he attended at Belks in Raleigh, where he met both Guy and the Director of his foundation, and the five percent of proceeds from that event were going to the Triangle Land Conservancy.

Caroly asked if there was any funding associated with the NMFS policy. Lou wasn't sure but didn't think so.

Julie suggested that if we wind up with a number of additional partners, we may want to have a session of our future meetings that are set aside for them, to perhaps conduct some sort of issues forum, and separate that session from our Steering Committee business.

Bob stated that he liked the concept of an issues forum. Kent noted that we can't pay for other partners to attend, but they can come on their own. He suggested that if we hold such a session, we would need to advise everyone well in advance. Kent suggested that we could hold such a session during the fall meeting in St. Augustine.

George suggested that we need some sort of a "hook" to get stakeholders to attend.

Kent suggested that we plan on doing this for sure. He suggested that we need to have a call-in line available as well.

Action item: Lisa will share the link to Lou's presentation with the steering committee.
Action item: Lisa will work with Kent to invite all ACFHP partners to the fall 2015 meeting. A call will be placed in August to further discuss this.

Kent noted that we are moving into a section of the agenda where we will be talking about our Strategic Plan, Implementation Plan, and other actionable items.

Implementation Updates 8:30 am

• **Coastal development outreach action item** *(Chris Powell)*

Chris noted that some people have already seen parts of this presentation, so he asked them to bear with him. He noted that we did a conservation mooring project, using some $20,000 of funding we received from NOAA. Chris explained conventional versus conservation moorings and the benefit. There were multiple project partners: ACFHP, NOAA (funding), Town of Jamestown Harbor Commission, Town of Jamestown Conservation Commission, RIDEM Division of Fish and Wildlife, Aquidneck Mooring Service, Conanicut Marine Services, Clark Boatyard, and Jamestown Boatyard.

The plan is to take out existing mooring blocks, and replace them with embedded moorings. If the substrate is too hard, the existing blocks may have to be used as part of the system. The mooring lines are like giant rubber bands, and they require 2,000-pound blocks as anchor points, so we may have to replace some of them. Chris reviewed our selection of moorings to retrofit. We reviewed 2012 aerial photos of mooring areas; selected candidate moorings at three marinas; did a diver survey to confirm candidates in 2014; and selected three sites for implementation. Divers prepared diagrams showing the existing halos of grass removal. Chris shared the updated estimated cost per conservation mooring. The cost will be $2,493-$2,628.

Chris shared his conceptual design for new conservation mooring buoy design. It will be white with a green stripe and say "conservation" on it. Chris has also nearly completed the design, working with Lisa Hartman at ASMFC, for an informational sign that will be located near the conservation moorings. They will be placed on kiosks at the marinas where the moorings are located, in Jamestown, RI.

Chris shared the estimated project budget with us. It stays within the $20,000 funding available.

Chris projected a slide which shows where we are. We have completed the project cost estimates, the final draft of the interpretive sign is completed, the sites have been selected, pre-SAV monitoring has occurred, and the MOU language has been approved. The next step is to sign the MOU with the three boatyards.

8:40 am: Chris asked for questions.

Bob asked how quickly the eelgrass will grow back. Chris noted it moves around anyway, so it would be interesting to see how quickly it grows back. He stated it will grow back if you get the chain off the bottom.

Kent stated that this should be very effective.

Chris stated that NOAA does want the sites to be monitored. The funding is in our ACFHP account, waiting to be used.

Marek asked if there is a plan to take this out to a larger audience of marina operators in a greater geographic span in the NE. Chris stated that we should probably take some of the funding designated

for outreach and use it for publicizing the project. He noted that there are a lot of marine trade organizations which would be good possibilities. Chris stated that the MOU will cover the life expectancy of the project, which is at least ten years.

Lou noted that part of this is technology transfer, from Maine to Rhode Island. He noted that seagrass loss from this source is not an issue in Chesapeake Bay for example, but it is in New York, so there is a possibility there. Dawn stated that she has a seagrass coordinator who just started a couple of months ago, so that position may take some of this on. She noted that they have such a system sitting in their basement, unused.

Marek suggested that we try to identify some additional sites, for implementation down the road.

George asked how the technology transfer went from Maine to Rhode Island. Chris explained that we knew about the system already. One of our partners has already said, if this works as anticipated, he will change all of his moorings to this system. Kent noted that they are somewhat more expensive, but they do work. They are used in Florida.

Marek asked if it was possible to just get the new "conservation" buoys put on at the sites where this is already in use. Kent and Chris stated that was a great idea.

Action item: Chris will look into replacing all conservation mooring buoys with the green buoys.

Kent noted that there was some issue with the moorings in Sydney Harbor, Australia, and Kent was able to provide them with some information on this new system. He noted that it was unusual that they were not aware of this.

• **Coastal threats outreach action item** *(Wilson Laney)*

Wilson noted that he was still compiling outreach literature on coastal threats. He noted that the newest one is the SALCC State of the South Atlantic brochure. Wilson asked for feedback from the Steering Committee with regard to what sort of product they would like to see arise from this work. We could produce a brochure, similar to what the SALCC has done; or, we could simply make all of the literature available online.

Dawn noted that she liked the idea of a report card, but all the analysis done to rate threats is done differently, in different areas, so it might be hard to combine different studies to generate a report card for the entire east coast.

Caroly also liked the idea and suggested some intermediate product on which we could put the ratings.

Lou liked the idea of having some sort of regional threat analysis. He noted that we already have Moe's database of literature.

George noted that he was going to be somewhat of a contrarian. He asked us to consider how we would use any glossy brochure that we might publish. On the other hand, if we want to use it to measure our progress, that is another thing. He urged us not to consider a multi-pronged approach. There is something beyond just a report card, to make change happen.

Kent……..

Wilson noted again that the simplest thing to do with the information that he is compiling, would be to add all the documents to Moe's database. But, he would like to go beyond that and develop something that would either educate, or measure our progress. He noted that we have our Strategic Plan, and the handout that describes our partnership, but what does the SC want to do with this information that he has been gathering.

Marek suggested that the public would be overwhelmed by all the potential metrics. He suggested that we should consider who our target audience would be.

Kent noted that it will be a significant undertaking to produce an assessment.

Marek suggested that we need to consider what it means to give something a C.

Chris noted that when he thinks of this, he thinks about the status of east coast fish habitat reports (EPA Coastal Condition reports), and use GIS data to assess how things have changed, quantify what has been lost, and then get that out to the public. He thought that would be an easier thing to do.

Wilson wondered about some potential collaboration with the two Atlantic Coast LCCs (SALCC and NALCC), to produce some sort of Atlantic Coast Fish Habitat Assessment. He suggested that the NFHAP has already done an assessment of freshwater habitat, so perhaps we could partner with them as well, along with the NEPs.

Wilson noted that we do have a subcommittee working on this item and suggested we could have further conversation on the product desired, SINCE KENT WAS CUTTING OFF OUR DISCUSSION TIME.

Action item: The subcommittee on coastal threats action item needs to get together to discuss the desired product. Wilson will contact Lisa to set this up.

Lou noted that he would like to see a focus perhaps on selected species. We could get the Habitat Committee together with ACFHP to pick key species and look at the habitat conditions from a species perspective.

George stated that Wilson's idea was brilliant, for getting the two LCCs together. The SALCC created the platform for all of this.

Dawn noted that we could put out the grade, but we also need to say what we have done to make a difference.

Mark Rousseau had an idea, which didn't get shared during the meeting, but which he and Wilson discussed during the break. Mark suggested that we try to grade our own performance. I.e., take the projects we have funded and see how well they match up with existing coastal threats, and whether or not we need to better target projects in the future. Mark noted that we have metrics now, since we have five years' worth of projects, and can assess how well we have done to address current threats.

Action item: The subcommittee on coastal threat will consider Mark's suggestion.

• **Fish passage action items** *(Cheri Patterson)*

Cheri noted that she had 14 responses to the survey that she had distributed. She noted that she had good responses from the USFWS. She noted that she planned to work with her other subcommittee members to try to evoke responses from the non-responding states. She noted that she had asked for states to provide lists of priority barriers to her or Pat, but she received only two or three lists.

Action item: Cheri will continue to move forward with the fish passage action items, and get more information, and compile it in a form useful to the committee.

George noted that New York will have an issue in a few months that highlights why this is really important. The state will release a RFP for barrier removal in the Hudson River Estuary. There are three priority lists, one from NOAA, one from the state and one from TNC. He noted that this information will just be provided to the potential proposal-writers, with no additional information.

Kent noted that the SALCC has produced their Conservation Blueprint, which has corridors and priority habitats identified. He suggested it shouldn't be too hard to do something similar with these three lists.

Julie suggested that we might want to take on the task of identifying priority barriers, by region. She noted that one such report was produced for the Chesapeake Bay. George asked if that had made a difference, and Julie felt it had. Cheri noted that states are moving forward on their own, using the TNC connectivity projects. CT has done one, and NH and RI are working on theirs. Cheri stated that the states are taking the NE Aquatic Connectivity Project and going through it with a fine-tooth comb. She noted that we may want to consider going to states, when we see gaps in coverage, and ask what it takes to get things moving.

Jessica Graham [made a comment here that I missed].

Julie noted that in the Chesapeake Bay, NOAA has annually added funding to the project.

Kent asked if Cheri would continue this work. Yes, she will. Kent asked who was on her subcommittee. Wilson and Kent are, and Pace owes her something she has not received.

Kent noted that everything south of the St. Johns River is in the Peninsular FL LCC, and they haven't addressed this issue at all. Kent noted that he has made some good contacts with Rua and others, and believes that we can move this forward.

George noted that some states are not nearly as active as others, in this arena. Cheri acknowledged that is the case and noted that is part of the reason we are doing this action.

• **Restoration priorities action item** *(Dawn McReynolds)*

Dawn noted that we have compiled a list of about 262 on-the-ground practitioners. We sent out a survey to see what habitats and actions on which they are focusing. The survey was sent out in October. Cheri helped with the survey. We received 82 responses to the survey. Dawn showed us a pie chart which provided the percentage responses. Shellfish beds, SAV, emergent vegetation, and riverine bottoms were the highest percentages of interest. Dawn noted that some people provided contacts for

further information. She noted that she can go through and see what the regional responses looked like.

Kent noted that he thought that there were numbers and not percentages.

Caroly asked what the outcome of this would be.

Dawn noted it was just to help us with our future activity.

Caroly suggested that the slides would benefit by having short definitions of the habitats.

Kent noted that the results suggest that a lot of folks are working up-river, and that focus may be as a consequence of interest in sturgeon, etc. Dawn noted that may be a function of which organizations responded. Kent acknowledged that was true.

George asked if we have sufficient contact information that would allow Dawn to say where there were gaps in response. Yes, she believes that she can do so upon further analysis.

Dawn shared a table which addresses which habitats organizations plan on conducting restoration efforts in during the next five years. Dawn noted that she really hasn't had a chance to digest the responses. She only put the data together yesterday.

Another question asked about goals or strategies. She noted that a lot of respondents indicated that their work was not guided by any local or regional goal or strategy. She would be interested in looking further into to that aspect.

She shared a graph of Marine and Estuarine Shellfish Beds and perceptions of restoration.

She noted that many of the respondents indicated that they have "no current strategy or goal." Kent wondered if this was a reflection of local programmatic interest, or they are just shotgunning for funds.

Dawn noted that she had already noted that we really need to parse the data out and see who actually responded.

January noted that she took the survey, and answered "no goal," since they do not yet have a plan.

Wilson noted that perhaps part of the reason that folks responded the way they did is that goals and objectives in terms of population targets, are just in the formative stages. He gave an example for the SALCC and fish population targets, on which he is working. He asked Julie if the NALCC had developed targets yet for their surrogate species. Julie and Callie indicated that they did not believe the NALCC has developed population targets.

Jessica Graham noted that SARP has goals and objectives.

Kent noted that all the states have Wildlife Action Plans which have habitat goals. The respondents didn't know perhaps that they were working under such a plan.

Dawn indicated that she really needs to look into who the respondents were.

George stated that it would be nice to harmonize all of the plans, to see where the gaps exist. If ACFHP is filling a hole somewhere, it would be nice to know that is the case.

Kent noted that certainly for the ACFHP-funding targets, that work is being guided by our goals. Kent noted that if funding exists for a project, there are usually goals and objectives. He thinks that there is just a disconnect.

Jessica Graham noted that in any proposal, you usually have to reference plans and associated goals and objectives, so she was surprised at the response.

Caroly noted that American Rivers does have goals and objectives.

Dawn suggested that she might reach out to some of the respondents and see what they were thinking about this question.

George noted that small watershed groups may not be aware of the goals and objectives of the larger organizations and/or initiatives.

Dawn continued with her review. This question addressed the threats that people were trying to address. Riverine bottom came out on top again.

Dawn noted that the response to the question about particular habitats in need of restoration was a fill-in-the-blank one. She really needs to dig into this information and understand it better. Dawn noted that one hope in doing this was to try to identify areas that may be under-represented. She hopes that further analysis will be useful, and indicated that there will be more to come.

Kent suggested that before we get into the implementation planning effort with Chris, we take a ten-minute break.

Action item: Dawn will continue to analyze the data from the survey and will reach out to people who responded to the survey and determine why they gave certain answers to some of the questions.

Break 9:40-9:50

We reconvened at 9:54 am. Kent noted that he was trying to keep us on track as best he can. Kent asked that we kick into gear and noted that Chris will lead us in the evaluation process.

Implementation Planning *(Chris Powell)* 10:20

Chris noted that he has his whip out and will take us through as quickly as we can. We will go through what we did before and evaluate what we have done. He noted that the 2012 plan had 16 objectives; 37 strategic actions, and 79 tasks. We winnowed this for the Implementation Plan down to 9 objectives, 14 actions, and 29 tasks.

Today we are going to review the process, and current status of each task; agree on the current status of each task; decide on future actions; we need to: continue with no changes or additional tasks added; continue tasks selected and add new non-selected tasks; selectively add additional objectives, strategic

actions and tasks; or winnow a new set of objectives, strategic actions and tasks. Chris explained each of these options for action. Chris noted that we can if we choose go back and define a whole new set of objectives, actions and tasks.

• **Evaluating the success of the 2014 Implementation Plan**

Chris and Lisa have color-coded each of the tasks, using the following code: items selected are in red; completed tasks are in blue; ongoing tasks are in yellow, etc.

Chris reviewed the objectives selected, and NOT selected, under the Habitat Protection section. Chris noted that we can always revisit the objectives NOT selected. He moved to Protection Objective 1.

We began reviewing the individual tasks. The colors were adjusted as appropriate. Tasks 1, 3 and 7 were all deemed ongoing, per Cheri. Chris asked if these had an end point. Cheri indicated as far as she was concerned, once she was finished they were done.

Chris noted that Tasks 2, 4, 5 and 6 were not selected. Task 6 was to look in state Wildlife Action Plans to see if there are priority lists and/or information which could contribute to the development of such lists. Jessica Graham noted that all the states are revising their Wildlife Action Plans, so we might want to take a look at this one again.

Caroly asked that we move back to Task 3. She noted that there are some additional lists that are available to us. We can include Trout Unlimited and TNC's prioritization effort. Chris noted that Lisa is recording all of these comments.

Chris asked that we put a star then, by Task 6.

Protection Objective 4: Strategic Action 1: Task 2 was selected, Task 1 was not. Caroly asked why we aren't going ahead and selecting new tasks, when we see that we have done some of these. Chris and Kent indicated that is what we are doing today.

Dawn noted that in her work group last year, it was hard to decide which tasks to act upon. She noted that…….

Chris noted that Task 2 might well be turned to yellow, as ongoing, instead of blue (completed).

Protection Objective 6: Strategic Action: No tasks were selected. Chris couldn't remember why we did what we did in St. Pete. Lou suggested that there are some linkages between this one, and previous tasks. He asked that we look at whether we can meld some of these together.

Julie noted that this one sounds similar to the report card that Wilson was discussing this morning. Chris asked Lisa to make a note that we should refer this one back to the action 4.1 (especially concerning the conservation moorings).

George stated that this one is an ongoing project, since we are compiling outreach materials. He noted that it is therefore confusing. Marek suggested that we refer this one back to Strategic Action 1: Task 2.

Kent noted that this is important for how we report our activities. Chris noted it shows how complex this entire Strategic Plan is and which ones we pulled out for the Implementation Plan.

Habitat Restoration Objectives: Objectives Selected, 1 and 2. Objectives NOT selected, 3 and 4.

Caroly noted that it would be good to address 3. Kent suggested that even though we may not have selected one, didn't mean we weren't addressing it somewhere else.

Dawn noted that for Objective 4, there is a lot going on with regard to living shorelines, and resiliency. She suggested that we think about how we can help these move along. Chris noted that we didn't NOT select things because we feel that they are unimportant. We just didn't have enough time/resources to do them all.

Lou noted that NOAA is now looking at a lot of things, including grant programs, to deal with resiliency. It would be good to keep these tasks in the plan since there may be some funding associated with some of these in the future.

Chris moved to Restoration Objective 1: Strategic Actions selected were 2, 3 and 5. Chris said we would see each of these again. Cheri noted that number 5 was being addressed. Chris reviewed the ones NOT selected.

For Strategic Action 2: the selected task was to fund on the ground projects through USFWS NFHAP funding. The task NOT selected was to consult with NERRS regarding salt marsh restoration projects (culverts, berms, water control structures, etc.); instream flow models. Chris noted that we apparently felt that this one was not important enough to select.

Kent noted that relative to resiliency, per Lou's comment, there is a selection criterion that does address resiliency. Chris noted that we are using that one because things have changed in the last several years.

Restoration Objective 1: Strategic Action 3: Task 1 was selected (orange with an endpoint); Task 2 was NOT selected: solicit proposal for barrier removal in identified priority watersheds. Kent noted that we haven't put this one out in an RFP, but we just discussed doing this for Whitewater To Bluewater.

Kent noted that we are seeing that we are doing more than we think we are. He was trying to recall whether we said the tasks we were selecting were achievable. He noted that we did this in St. Pete in 2012 and we had a list of criteria we used.

George noted that we did this same exercise three years ago. We may not change a lot, but we might tweak these things. Chris noted that he can't believe that we actually wrote all these things down.

Restoration Objective 1: Strategic Action 5: There were no tasks identified for this one. Chris noted that he didn't recall why we didn't have a Task identified. George noted that there was a task under that item. He read it to the group. Jessica Graham noted it sounds similar to some of the tasks under other objectives.

Restoration Objective 2: Strategic Action 1 was selected; Action 2 was NOT selected. Tasks 1, 2 and 3 were selected. Task one is ongoing (now purple, not yellow); Task 2 is orange (compile list of projects by survey of the committee and or partners (National Estuary Program, state management plans, etc.) on

what sub-regional priority habitats they are focusing and specifics on restoration sites. This is the project Dawn did, so it is ongoing. Dawn noted that they did NOT get into specifics on restoration sites. Chris noted that the wording comes straight from the Strategic Plan. Dawn stated that the tasks were generated by the work group based on the objectives and actions.

Action item: Dawn will reword Restoration Objective 2 Action 1 Task 2 (Compile list of projects by survey of the committee and/or partners (NEP state management plants etc.) on what sub-regional priority habitats they are focusing and specifics on restoration sites) to reflect the actual work that has been carried out.

Kent noted that there is no further direction beyond the question mark on Task 3, which states: Develop assessment criteria to in order to prioritize? Kent stated that there is some guidance language. He noted that we definitely did the evaluation criteria for ranking proposals. Dawn noted that we had also prioritized habitats, regionally.

Kent felt that we had gone through a pretty exhaustive process to identify key habitats, and these were pretty well supported at the time by the majority. Dawn noted that some were questioned afterwards by some members.

Chris asked if everyone agreed with the coded status of these. No one objected.

Restoration Objective 2: Strategic Action 1: Tasks NOT selected were 4, 5 and 6. Chris asked if there were any of these we should star for future action. Dawn stated that Task 5 might be difficult ("steer restoration practitioners to sub-regional priority habitats via compiled list of sub-regional priority habitat restoration projects"). Dawn felt that this might be a GIS exercise. Chris asked if she wanted to star this one.

Kent noted that in FL, they are working to do this, regionally. They hope to produce a map of what has been done, and what needs to be done. This is challenging, based on all the projects done. The challenge is to see if they all connect toward common goals.

Dawn noted that we need to assess in terms of what ACFHP has done.

George noted that we have our small dataset of projects we have funded. USFWS surely has data on what they have funded nationally, and NOAA does as well. So, you could use these datasets to document where restoration has taken place on the ground. Someone must have all these data. You could then dig deeper into the data and see which species/habitats have benefitted. Chris suggested that we flag these and move on.

Cheri asked if we don't need to do Task 6, before we do Task 5. Lisa suggested that you could do the second half of Task 5, without doing Task 6.

We moved to the Science and Data Objectives. Objective 2 was selected.

Science and Data Objective 2: Strategic Actions selected were 1, 2 and 3. Actions NOT selected were 4 and 5.

Science and Data Objective 2: Strategic Action 1: Tasks 1, 2 and 3 were selected and are completed since the species/habitat matrix was completed. Caroly noted that the peer-review article has been submitted to two journals and rejected by both. She thinks is being submitted to a third. Kent noted that Jake has been assigned to new EDF tasks and has not had a chance to move it forward.

Science and Data Objective 2: Strategic Action 2: Tasks selected were 1, 2 and 3, with Caroly leading and these are all ongoing.

Science and Data Objective 2: Strategic Action 3: Tasks selected were 1, 2, 3, 4 and 5.

Task 6 was NOT selected. Chris noted that we don't have to select another Task. Caroly noted that now that we have the Downstream Strategies assessment, we may have an opportunity to integrate some things we have done together.

Lisa noted that she has had a lot of requests to put the Habitat Matrix into a map form. That task might be related to this one.

Communication and outreach Objectives: Objectives 1 and 2 were selected. Communications and Outreach Objective 1: Strategic Actions 1 and 3 were selected. Strategic Action 2 was NOT selected. Chris noted that there may be some Tasks under some of these that we may want to consider. Kent noted that we have done things under Actions 1 and 3.

Tasks selected under 1 and 2, are ongoing: update the funding, conference, other events, funded projects, endorsed projects and outreach pages; send out periodic Breaking News items and maintain archives. George suggested that we review these periodically and determine whether we need to continue them. Lisa noted that she can provide statistics to us regarding visits to the web page and so forth.

With regard to Task 3, which was "add a Whitewater to Bluewater page," or add a link to one, Steve noted that there is already a Whitewater To Bluewater page. Lisa will just add the link to the site. Chris noted so we could say that one is already done.

Communications and Outreach Objective 1: Strategic Action 3: Task 1 was selected. This one is to present at the AFS annual meeting and/or Restore American's Estuaries (RAE) Conference. Chris suggested that these just remain as ongoing items. George noted that we do these to make sure that our experiences are publicized to the larger community. George stated that we don't need to do this every year. Cheri asked why not do this every year. Gary suggested that there may be other venues in addition to AFS, or RAE. Kent agreed that there were other venues. He noted that he has used the ACFHP exhibit at four different meetings. He noted that Steering Committee members can do this, but other partners could do so as well.

Chris asked if everyone is happy with doing this down to the action level. Chris stated that at the time we went through this exercise, we zeroed in on AFS and RAE. Marek felt that we could provide some more flexibility by defining what we are actually doing. Chris noted that we don't have to do every task, every year, but this is our guidance document and should remind us what we should be doing.

Communications and Outreach Objective 2: We selected 2 and 3, and did NOT select 1.

Under Strategic Action 2: we selected Task 2, and did NOT select Task 1. Julie thought that we were actually doing Task 1. Lisa stated that we were doing quarterly calls, with the other coastal FHPs.

Communications and Outreach Objective 2: Strategic Action 3: There were not 2012 tasks identified for this action, but Lisa noted that she has been working on this one with the NFHAP Board.

Finance Objectives: The objective selected was 2, secure ACFHP operational funding. The Objective NOT selected was 1: develop a mechanism and infrastructure within ACFHP for managing finances. Cheri suggested that one was not selected because ACFHP is housed within ASMFC.

Kent noted that we are trying to work on the funding mechanism through NFHAP now.

Finance Objective 2: Strategic Actions 2 and 3 were selected. Strategic Action 1, leverage conservation dollars, was not selected, but it was noted by Kent and Cheri that we are actually doing this through the projects funded by USFWS NFHAP funds.

Finance Objective 2: Strategic Action 2: Tasks 2 and 3 were selected, and Task 1 was also addressed. Chris asked if everyone was happy with the designation. There was no objection.

Finance Objective 2: Strategic Action 3: The Task selected was to identify a short list of foundations and schedule a phone call or meeting. This was colored as ongoing, but Marek suggested that we make it green since we didn't think it was done. George thought that Emily had done something on this. Marek noted that we didn't have a current list. Lisa asked if we had someone in charge of this. Dawn thought that we had a Finance Subcommittee. Lisa thought that we had combined that with the Business Plan Group. Kent noted that there is a group assigned to finance.

Chris moved to the summary slide: he noted that the numbers will change based on the edits we made: completed task are blue, 13; ongoing yellow (now purple), 9, ongoing orange (with endpoint), 8; to do green, 2.

Chris asked what members think about adding any new Objectives, Strategic Actions and Tasks.

• Finalize 2015-2016 Implementation Plan

Cheri stated that some of the tasks that were NOT selected are actually being done. So, we should go back and look at those. Then we should move forward with the tasks that we are trying to complete. Then at the next meeting we can review further. She was basically saying to implement Chris's Option Number Two: Continue Tasks selected and add new non-selected Tasks.

Dawn agreed that is how we should proceed.

Chris asked Lisa to move through the presentation again and look at the non-selected Tasks.

Caroly stated she felt that we are really punting on climate change, and that we really need to do something. We just can't ignore it any more.

Kent stated if we focus on it as a key element, we can identify key projects, such as reducing barriers, or creating more living shoreline projects, or creating more marsh projects. A lot of what we are doing is already addressing it.

Chris noted that he can go back and pull out anything with climate change connectivity and we can take a look at it during the next meeting.

Lisa noted that we could add a question to address that aspect in our RFP for this year.

Lou noted that we are kind of dealing with the issue, and should pull it out and take credit for it. We can also think about reviewing the proposal work sheet and increase the amount of credit given to climate change resiliency projects.

Chris asked Lisa to continue moving through the Tasks NOT selected to let members review and flag any non-selected tasks that we might want to address.

Marek asked if we were going to punt on climate change.

Chris stated that we are NOT punting; we are going to go back and pull out anything dealing with climate change and review them.

Marek noted that hydrological changes in groundwater and discharge are definitely tied to climate change. When we discuss hydrology, we need to think beyond just the area upstream of the estuary. We are missing some of that thinking.

Chris stated that we may or may not be missing that aspect. Marek stated that every time he saw a mention of hydrology, it doesn't seem to go beyond the area upstream of the estuary.

George noted that USGS did a study in the mid-Atlantic highlands, and looked at known hydrologic impacts, and correlations between water temperature and other factors. The USGS collected all of the data but didn't have funding for analysis. There may be other similar studies.

Chris suggested that we pull out all the objectives dealing with hydrology and review them.

Pace noted that EPA had released a big literature review, in January, which deals with the hydrological linkages between headwater streams and isolated wetlands. That would be useful to us to review. Paced noted that he has skimmed the document.

For Restoration Objective 1, Tasks NOT selected, Lisa noted that we have funded projects that did remove some barriers.

Chris removed rapidly through the remaining non-selected tasks and discussed which ones would receive further review and consideration. Some of them we are either doing something to address or have already done (such as developing criteria for bringing in new partners).

Wilson clarified that for those non-selected Tasks, on which things have been or are being done, the color-coding will be changed and they will be moved up as appropriate to the "selected" category.

Action item: Lisa will work with Chris on updating the status of the tasks and incorporating the new tasks that are being addressed. Chris will present the updated version at the fall meeting.

Review of 2012-2016 Conservation Strategic Plan *(G. Schuler)*

11:13 am: We moved on to George and the review of the Conservation Strategic Plan. George noted that he will NOT move through the plan, bullet-by-bullet. He explained the difference between this one and the Implementation Plan. He noted that we developed this one in 2012, and it covers through 2016, so there is no reason to panic. George noted that he worked with the information Chris had provided. He thinks that this will set us up for discussion about what we do in our next Strategic Plan.

George gave his PowerPoint presentation. What did we do? Which goals and objectives were completed? What strategic actions were successfully implemented? Did it matter? Did we learn some lessons?

George rated our overall performance. Out of the objectives, we tackled 62 percent of them. Of the Actions addressed, we dealt with 42 percent of them (16 of 38). George noted that we should feel good because our plans have a ton of stuff in them. In reality, we are taking big bites out of our mapped course for moving forward. We are complete on 72 percent of the Tasks. We are doing a lot of stuff and are performing at a high level.

Performance-wise, Communications and Sciences were the most accomplished areas over the past few years. However, we overestimated our ability to accomplish Science tasks and our Restoration performance was enhanced by being able to fund on-the-ground projects. The grants program saved us. There was very little else that we did.

George noted he wanted to ask us some questions. Are our strategic actions being implemented as planned? Why or why not? Which objectives or strategic actions are receiving less attention than others? Should we revisit these? What do our previous answers suggest as to how (and when) we should adapt or change our Strategic Plan? George suggested that we discuss these questions and address them and consider any changes needed.

Caroly suggested that we had way too many action items in the plan. She thanked Chris, but noted that we hadn't planned in a very strategic way. She noted that if we can really prioritize, it will help us achieve our goals. It is too hard to work on something that is so big.

George noted that he had taken one bullet out, which was "How did we do?" It was really that question of whether the plan serves what we do now. He suggested that …….

Chris noted that is why we went through the winnowing process. He noted that we can go through the plan now and reassess which things we want to do. He agreed that we need to update and refocus on climate change and add ocean acidification.

George noted also that we had "lumpers and splitters" in the group. Teams do this all the time, adding items that we want to make sure are on our list. He suggested that if we do this now we might have a different answer, and/or a different balance.

Dawn suggested that we have struggled with how ACFHP can work on these actions.

George noted that a bunch of our tasks began with "restore," but we really need to consider how we can help to make this happen in the world. We can't do these ourselves. We need to think about these.

Steve noted that many times, the Fish Habitat Partnership (FHP) serves as a facilitator, as opposed to actually doing the work ourselves.

Lisa stated that this came up at the last Board meeting, where they asked the FHPs to specify how much of a watershed they actually fixed. Lisa noted that the FHPs stated that they didn't accomplish the big, grand numbers.

Jessica Graham noted that they just often provide dollars as a catalyst.

Chris asked if Lisa thought the box was broken.

Lisa felt that there is a disconnection.

Julie stated that we need to somehow quantify our impact. We need to determine if people are using our information. She noted that the Bird Joint Venture maps are being used in the state Wildlife Action Plans, so maybe that is an approach we can emulate.

Lou noted that when we began, we were grabbing for the world, and thought that millions of dollars would be forthcoming. Now that we have been hit with reality, perhaps it is time to reconsider.

Kent noted that the legislation we felt was coming [national Fish Habitat Partnership legislation], has not materialized. George noted that NOAA's Community Restoration grant funding had also diminished.

Chris noted that he knew from where Lou was coming. He suggested that we may want to renew the entire plan and see if there are objectives that we don't need to include any more.

Lou felt that we had the foundation. He suggested that we need to have a frank discussion of where we are, as a partnership, and what our role is. We are more than a body that hands out $90,000 a year. What can we do beyond that action?

Dawn stated that is what we tried to do with the Implementation Plan. What is the best way for us to fit into a given Strategic Action? That is why we did the Implementation Plan.

Kent noted that we have had to report, year-after-year, and telling the story of what we do, such as endorsement of projects, is important. Kent noted that the partnership's endorsement for the Grassy Flats Project had a significant impact. The broad scope of how living shoreline projects are being manifested, looking at what Maryland is doing, has led to other actions by other states, such as Florida. Trying to tell the story is somewhat difficult. Kent noted that he sees it every day, and talks to Lisa almost every day. He noted that groups are starting to come and talk to us now. He noted that he was talking in terms of big-picture kinds of items. This is not just for NFHAP as a whole, but us as a partnership.

Lou stated that he thinks it will be great, if we can focus our energies and resources for the next few years, and target specific activities that we want to be done, for fish habitat. We are kind of all over the place for the moment.

Kent noted that he gets that, but also thinks that we don't want to lose focus on other activities.

George noted that AFWA picks a different priority each year.

Kent noted that if it is fish passage, FL is kind of there already, but other things would be better.

Pace stated that we should consider, what is ACFHP doing, that is significant because of ACFHP. We need to consider what we are doing, versus what we are doing in collaboration with others. We need to consider what we are doing and what is happening because of our efforts.

Caroly agreed that we need to consider our niche. She noted that we put a lot of stock in the matrix, and that was great. But, the priority habitats don't really align with the matrix and that is problematic. We need to align the matrix priorities, with our own.

Callie wanted to move back to what Julie said earlier, about the Bird JVs. She noted that the reason we come together, is that we can get more done together, than we can individually. She noted that even if ACFHP was to receive a million dollars, and grant it out, that is still minimal relative to what we can all do together. We need to agree on priorities and then go back to areas where we can influence things and collectively make a difference.

Kent noted that he thought that the habitat matrix, and the north Atlantic modeling efforts, would not have likely happened, without ACFHP as a whole. Maybe we should focus more on those types of things, which we can bring to the larger conservation body. Kent noted that each day, he is aware of what his agency division has as a focus, but their mission is enhanced by the FHP. He noted he does think that we can over-partner to a degree. We may have 75 partners, for a $50,000 project. There may be state, and local layers.

Callie stated that approach works for the Bird Joint Ventures. One representative for each state can actually effect a change. Callie suggested that we need to narrow down the goals, and then work collectively toward them.

George noted that in TNC, they always talk about leverage. He noted that if this isn't captured in the Objectives, Actions and Tasks, we might not have as large an impact. He noted that the species/habitat matrix started as just a tool, but grew, and we haven't thought about how to leverage it.

Bob noted that he was going to put on his veterinary hat for a moment. In that community there is an initiative to look at human health and other interfaces. He suggested that ACFHP could make a significant contribution to showing how the health of the marine/estuarine environment can positively affect human health.

Kent noted that can be extended to economic health as well. He noted that if you go to society as a whole, not many understand ecological health, but everyone understands economic health. The FLFWCC has been somewhat successful at using this approach. He noted that their agency has to translate things into dollars and cents for their legislators. Then they see the benefits. The agency

doesn't necessarily have the expertise to provide, but there are lots of studies coming out on this, and Kent tries to capture this in factoids. He noted that the benefits of recreational fishing to FL are tremendous. The powers that be in FL are very much dependent on being relevant.

Steve noted that he wanted to follow up on what George said about bringing some clarity to our niche. The EBTJV used a template, from another group, and tried to define what was unique about their partnership. What is it that was unique? He noted that Pat is going through some sort of sustainability planning, and wondered if that was a tool we could use.

George stated that to Kent's point, two years ago the Hudson River Management Authority had a retreat. They thought that since there were scientists in the room, and business people, the topic of ecosystem health or economics would come to the top. But, the beauty of the system is what came out. That was heard by managers, therefore scenery was jammed in by the managers and it wound up taking them in a different direction. It may have been somewhat over-emphasized. The idea of fitting passion in and challenging other people is difficult.

George noted that when he tried to assess the overall impact, it was hard to do. What have we produced in terms of protection, restoration, science and data, communications and finance? How do we want to document or track our results and impacts? Right now, we don't have a good approach. We have been doing this on an ad-hoc basis as we need to report to NFHAP. George noted if anyone asks us to go through our plan, and pull out what we have done, we will have to reconstruct it from Lisa's and Wilson's notes and other sources.

George asked: What have been our measurable results or impacts so far? Protection, restoration, sciences, communications and finance? Are these the impacts or results that are needed (do they contribute to change? Are other outcomes a higher priority?) How long-lived, or "leverageable" are our impacts?

Caroly noted that she likes this slide. She noted that it is helpful for us to think about partnerships, and connectivity between them. She gave some examples, such as the river herring initiative, and our work with Downstream Partners, and we need to document these.

George noted that he hadn't thought about the fact that we are a lever for others.

Dawn noted that we also have to gather the information that NFHAP has asked us to track. We need to get all of the information in one place and understand what it means.

Kent noted that we do bring more than just addressing the SMART criteria that USFWS requires us to address. He liked George's pretty slide, with the ratings on it. He noted that how we put this together will be an important task for the future.

Julie noted that in terms of what we produced, and whether we are at the cutting edge of the matrix, or conservation moorings, do we need to be more intentional about taking these projects back to our agencies, and getting them incorporated into their priorities. Perhaps this should be an actual item in the Strategic Plan, for Marek and others for example to take items back to their own agencies.

Chris asked if the ASMFC Habitat Committee does that. He noted that RI took back to their agency the SAV policy, and RI changed their entire strategy. He asked if ACFHP should do this, or the Habitat Committee do it.

Kent noted that he does this on a regular basis. However, the agencies will have their own priorities and perspectives. He has incorporated some of the elements into his section's strategic plan.

Chris asked George if there is a template for developing a Strategic Plan, or does the NFHAP Board actually provide a plan. George noted that the Board did provide a general outline in the beginning. Steve said they didn't want to really prescribe any template. Chris asked if they didn't provide certain common elements. They do, but the elements are just really general. Chris wondered if we might want to bring someone in, and ask them to facilitate revision of our Strategic Plan.

Callie noted that there are the Board's guidelines, but there are also new FWS guidelines. One thing they ask is whether there is new science that should come into play. This comes out every five years. Callie stated that the Strategic Plan is good and thorough, but it almost says that everything is a priority, for habitats and species.

Chris stated again that is why we did the winnowing down.

Kent noted that Caroly's comments were good. The scattergun approach is not good.

Lou noted that when he does planning, he always considers ACFHP priorities and how they fit into his agency's planning. Also, after hearing yesterday's Whitewater To Bluewater presentation, we have a potential focal point there, where we can work on common goals and pursue funding. We should definitely put it in our Strategic Plan.

George agreed and noted that we hold a unique position organizationally and functionally.

Steve suggested that we need to consider what makes this partnership unique, and put it down in writing. The EBTJV came up with three strengths on which they focus.

Kent felt that would be a good place to focus upon. He agreed that putting them in a modified Strategic Plan would be good. Steve suggested that every task should link to one of the strengths.

George agreed that having an outside facilitator to help with the revision would be good. He noted that it is hard to facilitate "family." Kent noted that FLFWCC has trained facilitators who could be used, at no cost to the partnership.

Dawn noted that we really need information to back up what we have done, and where we have gone, to provide to any facilitator.

Kent agreed and suggested that we have to assign this task to a working group. George and Kent, and Chris, would be on the group. Dawn noted that we have to have the data to make the decisions about what to keep and what to discard.

Kent noted that we do need to do the background work.

Callie noted another way to look at what we do well, is to consider what we do as a partnership that we can't do alone. Kent suggested that would go to the working group. Caroly suggested that we could do that by the end of the meeting, or on the back of the color-coding sheets that Chris had given us.

Kent re-stated the question. What is it that we do well? What are the strengths of the partnership? George felt that was slightly different than what Callie had proposed, which is what is that you get from the partnership that you can't accomplish on your own?

George posed: What do we want to do for the next plan? What are our strengths for our next plan? New threats (e.g., ocean acidification)? New tools/efforts we can directly work on? How do we move forward with next Conservation Strategic Plan (timing, process, etc.)?

Chris asked if everyone has the Strategic Plan. It was noted on the web site.

Bob asked if we should also consider what each individual member of the partnership can bring to it.

Kent stated that is something that we tend to take for granted. In the current effort we don't need that so much. Each member knows what their resources are, so we really need to know what they are getting from the partnership. But, Kent noted that we do need to know what expertise each member brings to the table. Kent thought that we had done some sort of analysis of what each member's expertise is. Wilson thought that was in the Habitat Committee that we had done that exercise. Kent thought that was right and noted that it would be useful, since there is a lot of overlap in membership of the SC and the HC.

George noted that he is working on another project, which is fish habitat related, and one topic is how to engage with stakeholders, and how to extract information. He could bring some of these methods to us for our use. Kent agreed that capturing these methods would be good.

Chris summarized that we would pull out actions and begin looking at how we can revise our plan.

Kent stated that first we need to highlight the three things that we do really well. Chris stated that was slightly different.

Caroly asked Steve to share the three things they do. The first is a range-wide status of EBT populations. Priorities arose from those. A number of agencies revised their priorities based on the EBTJV report. They also devise decision support tools, and collaborate in regional partnerships, to try and address common and overlapping objectives.

Caroly noted that is interesting. She noted that the support tool and the range-wide assessment were both tangible products. Steve agreed and noted that the framework established a basis for conservation actions. Steve noted that another strength they see is bringing partners together and developing solutions to problems. Doing that individually would be difficult. Bringing all the partners together in one room enables the development of a consensus.

Kent noted that we have two minutes left in our morning agenda, so we have more time for discussion.

Kent noted that the lunch boxes are outside the room, so we can grab these and go outside if we want.

Lisa asked that when we share our thoughts on partnership strengths, we identify ourselves as submitters, so she can attribute the ideas.

Julie asked us to re-state the questions. They are; what do you get from ACFHP that you can't get from other organizations? Also, George stated it another way; how/why are you dependent on ACFHP?

Action item: All Steering Committee members should submit their top 3 answers to the question: What do we need from the Partnership that we can't do well without it? To Lisa at your earliest convenience.

Lunch *(provided by Hyatt Regency)* 12:20 pm

Kent asked if everyone was ready. They were. He asked if Julie was ready. She was. Kent noted that Julie had her coat on. He noted that he was glad that all the northern folks got to experience the south FL weather. He noted that he and Lisa have made requests that they adjust the temperature in the room, but this is what we get. He asked Julie to take it away.

FWS-NFHP Funding *(J. Devers)* 1:20 pm

Julie noted that she would review the projects funded last year and this year. She also will run through the projects ACFHP has funded since 2009. Also, she noted that we can discuss the scoring sheet and whether to make any changes.

• 2014 Funded Projects

Projects funded in 2014 were two oyster restoration projects, one in NC in Stump Sound, and the other one in NH. Julie noted that several of our top-rated projects had received funding from other sources, so the two oyster projects were the ones selected for funding. Julie reviewed for what we had used the FY 2014 Operations funding. We had/will conduct three in-person ACFHP meetings, two of them Steering Committee meetings and one Science and Data working group meeting. ACFHP operated under the USFWS Operational Funding ($75,000), NFHP ($30,000), AFWA MSCG ($35,876), and Wallop-Breaux ($39,380). Steve asked if the $12,000 of the total $42,000, actually goes to the partner. Julie advised it stays with the USFWS. Steve noted he just wanted to make sure they were doing it the same way.

She reviewed the specifics of the Oyster Reef and Salt Marsh Habitat Restoration project, Stump Sound, Holly Ridge, NC. The project protected 200 feet of estuarine shoreline in Stump Sound, NC, and restored 0.05 acres of fringing oyster reef and also 0.07 acres of salt marsh. It is being carried out by the North Carolina Coastal Federation. ACFHP provided $24,657 to the project (plus overhead) via NFHP, and $9,806 via NOAA.

The next project was Oyster Reef Restoration, Great Bay Estuary, Rockingham County, NH. This one restored two acres of native oyster reef and 0.5 million oysters in Great Bay Estuary, using proven reef restoration methods. The reef foundation was constructed on river bottom with surf clam shell spread by a barge. The finish layer is oyster seed in the form of spat on recycled oyster shell. ACFHP is providing $40,525 to the Nature Conservancy for this project.

Chris asked how the latter project compared with the former, relative to cost per acre.

Julie noted that 2014 ended up being the year of the oyster.

• **Project list submitted to USFWS**

Julie noted that we have put in $75,000 for ACFHP operations but it sounds as though we may not need all of it. Julie shared the list of the 2015 proposed projects. Some of the projects were not able to use funding, so the list was pared down. The objectives for ACFHP operations are about the same. We may get some funding from the multi-state grant. Lisa stated that we will get $50,000 from the multi-state, but ASMFC will take some of that for match. Chris noted that Wallop-Breaux does require a match. Jessica Graham asked how much ASMFC takes for their portion. Pat Campfield stated he thought that it was ten percent. He thought that they are handling the funds for all three partnerships. Chris asked where the 25 percent for the Wallop-Breaux match comes from. Pat wasn't sure. He noted that the ASMFC has received the grant for a long time, and it involves coastal fisheries work, so that is why they began using it for ACFHP.

Julie noted that Renewing Diadromous Fish Passage, Patten Stream, Surry, ME, will have funding from multiple sources. The funding amount requested is $50,000, with a total cost of the project $234,548. ACFHP funding will come from NFHP, $12,000; NOAA, $13,000 or maybe $13,550. Other funding would include proposed FWS-NFPP funding of $84,000.

Jessica Graham noted that they have been told lately that FWS would take the lead on all the fish passage projects. Callie noted that is a regional difference. The SE Region has set up a team that does these projects. They can implement all of the projects in-house, which eliminates the need for contractors. This enables them to get more bang for the bucks. In the NE Region, they are encouraging folks to do it in-house, but aren't yet there. They still have a competitive process in place, where offices submit projects for funding. She and Julie work with the field folks to get applications funded.

Pace noted that ACFHP has funded fish passage projects in the past. He noted that we were at a fork in the road, regarding whether to do a grant to SCDNR, or do the work in-house, and they decided to use the grant mechanism.

Callie stated that if ACFHP funds a NFHAP project in the SE Region, the funds are actually sent to USFWS in the SE Region.

Jessica Graham noted that ……..

Callie noted that fish passage projects are handled differently, depending on which source of funding is being used. Some projects are funded through the FWS National Fish Passage funding source. The NFHAP projects may also be fish passage projects. Callie indicated that if anyone had questions about this, they should call her.

Pace asked if passage projects should still be submitted to ACFHP.

Callie stated that they should continue to receive such projects.

Callie and Julie noted that they can look at funding from either source. Also, projects which apply to more than one FHP can be funded jointly.

Steve noted that it would be good to know how much funding was actually needed.

Callie noted that she recently worked with the FWS SE Region field group to get some projects done in VA, and the cost was much less than it otherwise would have been. She is getting another project done in WV, which was estimated to cost 1.5 million, for much less than that amount. She suggested that people keep this in mind, if they run into issues with projects.

Kent asked if they can work outside of the SE Region. Yes, they can.

Julie reviewed the Cotton Gin Mill Dam Removal and Fish Passage Project, Satucket River, East Bridgewater, MA. This project will remove a dam, restore connectivity to 4.4 river miles upstream; provide fish passage from the ocean to Robbins Pond; restore 124 acres of spawning habitat; and future improvements to Monponsett Ponds would provide 528 more acres. Funding for this one will go to TNC for $50,000. The total cost of the project is $500,000. $401,308 will come from NFWF Sandy Resiliency funding.

A third project could be, depending on the amount of funding we receive, the CFE Pond Lily Dam removal, West River, New Haven County, CT. This would entail dam removal, restoration of 2.6 miles of the West River and 76 acres of Konold's Pond to migratory fish passage. Funding would go to the Connecticut Fund for the Environment/Save the Sound. The funding amount requested is $50,000. Total cost of the project is $667,963. Proposed ACFHP funding is from NFHAP: $50,000, and other funding, USFWS Sandy resiliency, $628,425. There was some discussion here about the various sources of Sandy resiliency funding. Apparently there are several different sources.

Chris asked if we consider projects with existing fishways. Yes, we have. Julie noted that one factor would be whether the fishway works, or not. Pace noted that we should never penalize any project that would propose to remove a dam, even if it has a fishway on it.

Julie and Lisa showed us a map of the projects that ACFHP has funded, along the entire east coast. Lisa explained the color codes. The current crop of projects has not yet been added. Lisa noted that she needs to add the links to the one-page descriptions of the projects.

Action item: Lisa will add links to the one-page description of each project to the map.

Kent noted that this gets to what we were discussing previously. This is somewhat more advanced. Lisa noted that contact information for each project is provided, along with the one-pagers. Pace suggested that we need to update all of the projects. Lisa indicated that she can do that, since we now have all of the final project reports. The reports go to the FWS. Julie stated that the reports are required by the grants Board. Julie noted that we have some constraints regarding providing copies of the reports, due to the Paperwork Reduction Act.

Action item: Lisa will update all of the on-the-ground project one-pages to replace plans with accomplishments (including photographs).

Julie had one more slide which showed the complete list of projects and the completion dates. Steve noted that we have reached the 90 percent completion level.

Chris asked about the operational funds. Lisa explained.

Someone asked about the first project, the FY 2010 Alewife Brook one, which is listed as "not completed." Dawn explained that the funding was expended, and the project built, but Hurricane Sandy then wiped it out.

Julie noted that we have a pretty good rate of completion.

Pace asked about incorporating new photographs. Lisa indicated that she can do that when she updates the project one-pagers.

Lou asked if we would consider asking project applicants to provide us with a poster that we could use. Kent and Lisa indicated that we have not asked for posters. We have asked for photographs. Lisa stated that we got a flier from at least one project.

Lou noted that it would be good to have something that we could use ourselves, such as the posters.

Dawn noted that gets to how much we are going to request from applicants, for a limited amount of funding.

Callie noted that the EBTJV has a form that they ask successful projects to complete. This information is submitted directly to Steve. Julie asked if that is something that we could put in the grant agreement. Callie thought that we could probably do that. This can be done online, Callie stated. She noted that she and Steve have to do this for every project. Kent asked how good compliance was. Callie indicated that it was spotty.

Lisa noted that she usually just pulls information from the final reports that Julie sends her, using the Executive Summary and any photos.

Steve noted that you can query the USFWS database to get information you need. It depends on what information you need.

Pace noted that we can compare our list of projects, to what our priorities are. He noted that there is only one living shoreline project up there. Julie noted that we have had only a couple of applicants for such projects.

Kent noted that the applications have been sporadic. Some projects haven't really met our criteria.

Pace noted that he realized that, but if living shorelines are a priority, then we should consider making an effort to recruit more such projects. He noted that there seems to be a lot of emphasis on oyster restoration projects.

Bob asked that for the 2010 project that got blown out, is it possible to build in some sort of resiliency, so it won't be blown out.

Marek noted that resiliency is part of the evaluation criterion. He wasn't sure how we can work the loss of a project into the equation. Julie noted that we do ask applicants to address this. Kent noted that in this case, nature took care of the issue with us. The fish ladder, as well as the dam it was on, were removed by Hurricane Sandy.

Chris noted that NOAA had given us some funding for the conservation moorings project, so can we count that as a project. Yes, we can, but just not in this list of NFHAP-funded projects.

Chris asked if we have any measure of how much outreach we get from these projects. Julie suggested that it sounds like we need to get them to complete a form like the EBTJV is doing. Lisa stated that such information is usually included in the project final reports. Julie asked if she was getting everything she needs from the reports. Lisa noted that more specific information would be useful, such as the dates of events.

Lou noted with respect to resiliency, most sponsors are trying to design to resilient standards.

Kent noted that resilience also should consider whether marshes, for example, will last in the face of SLR.

Lou noted that we do define time horizons, in our application project. Lou noted that he hoped the project that was blown out, didn't check the perpetuity block on the form.

• **Criteria revisions/changes to discuss: tools to use to rank projects? 2:08 pm**

Kent asked how many members of the SC had been involved in project reviews. Quite a few had done so. Julie asked if we wanted to keep the same members doing the reviews. Kent asked if there were members who want to do reviews. Russ Babb and January Murray indicated that they would be willing to do reviews.

Action item: Lisa will include Russ Babb and January Murray in the reviews this year.

Julie noted that she didn't want to do a word-by-word review to revise the application instructions. But, she asked if we are ready to take any of the completed assessments and incorporate them into our criteria and our scoring sheet. If so, we need to make sure they are in the RFPs. The possibilities include the two Aquatic Connectivity projects, and the Chesapeake Bay fish passage prioritization, as well as the Downstream Strategies models for winter flounder and the river herring assessment. This is something we have to report on, each year. Julie noted that she wanted to open this up for discussion. We can wait until all of those projects are finalized. Kent asked Julie what she thought.

Julie suggested that we can say to applicants, if their project falls within one of the areas that have been assessed, we can ask them to say how their project falls in the scheme of priorities.

Jessica Graham made a comment that I couldn't hear.

Julie asked Steve Perry to comment. Steve stated they have three different mechanisms for adding value to a project. Once their members have developed Brook Trout Management Plans, they reviewed all of them and pulled out the state-level objectives which were common. They also ask applicants about how they are addressing the eight common objectives. They also ask for the sub-watershed priority score which EBTJV produced. Those serve as ranking criteria, but these three aren't going to push any project over the top, since there are so many other ranking criteria.

Julie noted that she was looking for regional priorities, based on the tools which have been developed for us. These can assign regional priorities. These would probably be complicated and would take a subcommittee to sort it out.

Callie suggested if we want a good example, the Ohio River Basin Partnership is probably the one at which to look.

Mark suggested that since we have a lot of fish passage projects, might we want to try to move to some other type of projects, within a region.

Julie stated yes, that would be one approach.

Mark asked if we could do it after the fact, basing it on the types of projects.

Callie noted that the priorities could be species, or watersheds, and not necessarily the type of projects. She asked if we need another year or so to consider this.

Lou suggested that we deal with this during the review and revision of our Strategic Plan. Even in that context, we may have to do some sort of workshop, to determine our priorities.

Chris noted that since our geography is so diverse, it is harder for us to deal with this priority issue, not like EBTJV, or the Ohio River Partnership.

Jimmy noted that we had talked about selecting a year to make planning documents, or project design, a priority, since we know that this type of project never scores very high.

Julie noted that there appear to be a bunch of ideas on the table. She noted that we have until July, before the RFP has to be issued. She asked if we wanted to have work groups, to develop options. Kent noted that we need to address the key questions, and then focus the RFP. Kent noted that we are not likely to come to consensus right now.

Kent suggested that it would be good to have four people that want to focus on this, instead of just the Review Committee. George volunteered. He noted that years ago, we wrestled with priority areas, and he developed a map. He can try to find that map.

Kent noted that we did come up with a list of focus areas, and he thought that would help. Kent noted that we will have to come up with some collaborative areas, for the three collaborating partnerships. Chris asked about incorporating Dawn's survey results. Kent agreed and noted that is another member for the subcommittee.

Steve suggested that the three partnerships could each decide how much funding they want to contribute, then designate that pooled funding for a different RFP. This could be done in a different way, using different criteria. This may be a more efficient way to proceed.

Kent asked, if we do something like that, could we take a look at the projects and determine which ones were a priority. Steve suggested that connectivity might be the common ground. Or, it could be some other area of common interest. He felt that it was six of one and a half-dozen of another. Each group may say they were willing to set aside 25 percent of their funding.

Jessica Graham stated that the boundaries don't fully overlap, and SARP is not in a position now to be able to set aside any of their funding for a collaborative project. Lisa suggested that we could modify our criteria to include a specific ranking criterion. Kent noted that ultimately there would need to be some collaboration. Jessica suggested that identifying a question would be beneficial.

Steve stated right now, each partnership is funding only a few projects. He was just trying to find another mechanism for generating a project which was supportable by all three partnerships.

Lou noted that we really do need to support the Whitewater To Bluewater concept. He noted that the leveraging that we have among ourselves would show the Board that we are really focused on connectivity areas.

Kent returned to his request for volunteers. Jimmy and Mark volunteered. Julie will be included as well.

Action item: Lisa will contact the Evaluation Criteria subcommittee to address the rewriting of the criteria: George, Dawn, Jimmy, Mark, Kent, and Julie.

Caroly noted that she was a little worried. She asked if we weren't concerned about overlap between the three partnerships and multiple counting. Kent noted that there was a duplication across regions. Kent noted that ……

Caroly……

Julie noted that we would need to consider benefits for coastal species.

Callie noted that there should be no reason that the three partnerships couldn't collaborate within the same watershed, but all benefit each other. Steve agreed. He noted that we could be doing three different projects, for three different regions, but all in the same watershed and all benefitting the system. Perhaps with the 501(3)(c) status that gives us the ability to combine our funds as well. We can be looking two to three years down the road. Jessica Graham agreed that we could begin looking for such mutual objectives.

Bob noted that we also haven't dealt with the project recruitment problem.

Julie noted that we don't have that much funding, so we really need projects that are ready to go.

Kent noted that some of these constraints are being imposed upon us by our USFWS overlords.

Julie noted that we do need to publicize these priorities more widely.

Kent noted that typically, we don't see that many applications in a given cycle. He asked Julie what the high number had been. It was 19.

Callie suggested that we at least select one watershed that we agree is important to all three partnerships, when they seek funding. Kent stated that we might be able to get a foundation interested, and agreed that we can do that. We can use the new NFHAP fund in order to do this.

Dawn asked if there is a map, that we can see, which shows all the FHP boundaries.

Lisa projected the map.

Bob noted that they have solicited pre-proposals, and that helps to minimize the amount of work done. Julie asked Callie if they had done pre-proposals. They had not. Jessica Graham noted that SARP has also begun requesting pre-proposals as well, for various reasons.

Callie suggested that all three partnerships might want to collaborate with each other, and approach NFWF to see if they were willing to tweak their RFP and make it more conducive for us to apply jointly.

Steve Perry noted that the Board was initially concerned about partnerships stepping on each other's toes, and instead we are trying to do collaboration.

Pace asked where the zone of overlap was on the map Lisa was projecting. He noted that he thought that the area which he was told was the overlap zone isn't really correct, because some of those areas on the map clearly drain to the Mississippi River. We discussed this a bit. Wilson suggested that what we need is a red boundary line on the map that shows the actual area of overlap. The rest of the group agreed that we need a better-defined area.

Action item: Lisa will work with Caroly and Marek to find the information needed for the Whitewater to Bluewater overlapping areas and common priority areas.

Kent agreed that we do need a better area that we can take to NFHAP for a Whitewater To Bluewater focus.

Kent noted that we now have a group who will meet with Julie to consider revisions, and we also will consider developing a focal area for applying for collaborative grants.

Kent noted that we have Pat scheduled to give a presentation at 3:05 and we will deal with that shortly.

Habitat Assessment Decision Support Tool Update *(J. Devers)* 2:05

Julie noted that the contractor selected for this project was Downstream Strategies. She noted that she, Steve, Callie and Caroly have been having bi-weekly calls with them for two years. The Eastern Brook Trout assessment in the Chesapeake Bay watershed is done, and Steve and Callie can be asked about that part of the project.

- **Winter flounder assessment update**

Callie noted that Narragansett Bay was the selected area for the assessment. The initial approach combined trawl and seine data, but that was not accepted by the Technical Committee. It was felt that instead of habitat suitability, the contractors were modeling gear selectivity. They had to decide whether to go with seine only and complete it, or do a trawl-only model. They decided to reserve that for future work. They moved to Long Island Sound, where there is a lot more data. They will not try the trawl and seine combined model there. There is not a lot of seine data; so, they decided to work on a trawl only approach. They are collecting predator data, which Caroly will address. The final report will

have an introduction, Narragansett Bay Seine Only, Long Island Sound Trawl Only, lessons learned, and discuss drawbacks of trying to use two gear types for a predictive model.

Lou asked what they are trying to predict. Julie indicated that they are trying to predict abundance, and tease out any anthropogenic effect. Lou asked what factors are in the model. Caroly stated impervious surface, outfalls, nutrient data, sediment, etc.

Chris noted that the goal is to develop a model that could be used elsewhere for restoration.

Caroly noted that one thing we discovered after the fact is that we needed high-resolution salinity and temperature data. There is a group out there, as it turns out, which has this type of data. Both MARACOOS and one other group, overlap. You can download the needed data, for each data point. Downstream Strategies has some ideas about how the physical data group can better benefit biologists. Caroly noted that it is hard for biologists who need physical data, to know where to look. She noted that it would be extraordinarily helpful to know where to look for temperature, salinity and other such data. She asked if people have thoughts on what data to obtain, that MARACOOS and other such institutions could provide.

Lou indicated that there is a North Atlantic Data Portal, to which a lot of data have been uploaded. This is where BOEM is getting a lot of their data.

Caroly noted that going to one of these data sites, has proved daunting. She stated that we can't be the only people out there looking for these sorts of data.

Jessica Graham noted that MARIS is another source of such data. SARP has been trying to focus on a standardized template to share such data with the states.

Caroly asked what the state representatives would want. She indicated that she would want to know where to look, in the sea of acronyms, and also who to contact. Caroly noted that she would like to know the resolution, and have the metadata.

Kent noted that it wasn't surprising that there might not be any metadata. Caroly stated that this was physical data. Kent noted that there was not an excuse then.

Jessica Coakley noted that she would want to know the extent of the data, and a point of contact (POC) for them. We could then ask the POC how useful the data may be. Otherwise, without a POC, you would have to wade through a lot of information. Caroly noted that some of the files are hindcasts of particular points in time, and someone has to average all of the data, but someone has likely already done this work.

Chris thought the University of Connecticut may have already done this work. Caroly noted that they would have had much better data for Narragansett Bay, had they known earlier about the site. For the predictive variables, they really needed higher resolution. If you have good water quality data with only a couple points, that won't work.

Lou provided a site (http://www.nmfs.noaa.gov/sfa/management/recreational/policy/principle_1.html), which he thought had a lot of good data. Lisa indicated that the site he referenced doesn't have temperature and salinity data. Lisa noted that it does have a lot of other good information.

Caroly suggested that we might be able to provide information on our web site, about these other web sites and how to use them. Caroly noted that it has to be more than just a sea of acronyms. There needs to be some pathway for navigating through these. Chris stated that the resolution that Caroly is seeking may not exist. Dawn suggested that no one may have data at this resolution.

Kent noted that we weren't finished with this discussion, but we have some other things scheduled. We need to take a break. We can perhaps spend some more time on this topic in discussion during "other business." Kent asked that Caroly move her presentation to after the other three that we have scheduled from the telephone.

Break 3:00 pm: Kent asked us to take a five-minute break.

3:10 pm: The SC reconvened. Kent noted that Pat's presentation is already on the screen.

Update on ACFHP Business Plan *(P. Campfield)* 3:10

Pat noted that he was sorry that he couldn't be here with us this week. He noted that he has been traveling a lot lately, and was in fact in FL last week. Pat noted that the business plan has been on the list of priorities to do for at least a year. What Lisa has put on the screen is a first attempt at such a plan. It leans heavily on several other documents, including the River Network template, and also the EBTJV Business Plan. Both of these were used as examples. The draft was up on the screen. Pat asked Lisa to scroll through it and explain what each section is intended to do. Like all good plans, it has an Executive Summary. Also, there are several potential audiences. Perhaps more urgently, the first audience is anticipated donors who hopefully will generate more non-federal funds. Pat sees that as audience 1A, who we would like to invest in the plan. The second audience is the partnership itself, to get us all on the same page, and agree on a common path with regard to the small amount of funding we have received in the first years of the partnership. We also will hopefully agree on the science and data funding, and funding for operational support.

Pat asked that we provide feedback and noted that he knew we were seeing this for the first time today. The Executive Summary explains the unique value of the partnership, which Pat noted we were discussing earlier today. In digging into the River Network's document, he used their unique perspective and tweaked it a bit to make one for ACFHP. The unique value is covered in the first paragraph. In short, it notes that we are a geographically broad and diverse group and should seek big goals because of that fact. The next part gets into dollars and cents, and chronology and current status. It addresses operational and budget needs and restoration needs. Pat noted that he did include the fact that there is room for growth. He put in a number for financial goals for the next three years and noted that can be adjusted. He noted that the plan is written to cover a five-year period, through 2019. Pat noted that he had discussed with George dollar amounts we would like to receive over the next three to five years.

Pat noted the document includes the mission statement, and the sponsoring institutions. The MOU signatories, their roles and capabilities will be described, which hopefully will impress potential donors. Pat noted that the ASMFC role as administrative home for the ACFHP is described. The core and fundamental programs for the partnership will be described, so that readers can understand the depth of activities in which ACFHP is involved. Pat noted that there have been ten to twelve ACFHP-funded projects along with a couple of others.

The next section is Financial Management. Pat noted that this section included the highlights of from where the funding has come, including the federal agencies and the NALCC. Pat apologized if he had inadvertently left anyone out. He noted that we can discuss what level of detail is desired. He noted that the information about fund management is rather mundane, but shows the ASMFC expertise in this regard.

The next section is to describe structure and governance. This is pretty straightforward. The SC is the oversight committee, but we can go into more detail about the four other committees: Science and Data, Finance, Project Review and Communications.

Pat noted that we can discuss whether we want to have a Board of Directors. He noted that Callie, Julie and others involved with the high-level NFHAP Board discussions can address this issue.

The next section, Prospect Analysis, describes the value of the partnership and documents that we have a successful track record in the development of science-based tools to guide where partnership resources are expended. We also conducted a gap analysis, looking at other organizations which don't completely overlap with ACFHP. The identified niche can then be used to find potential future supporters. This section can certainly be beefed up a bit, but that is the intent of it. Pat noted that the included table has a list of foundations, national in scope, that have interests in donating funding to institutions similar to ACFHP. Pat noted that the list is not all-encompassing. It will help to get our business plan out to targeted groups.

Cheri suggested that we add Steven Spielberg to the list. [Note: Cheri's somewhat tongue-in-cheek suggestion was based on the fact that Spielberg's very large and impressive yacht "Seven Seas" was docked at the hotel in which we were staying.]

Kent noted that we do want to participate in the pool of funding that NFHAP has decided to create, so we need to add that to the financial section. Pat indicated that he would add that to that section.

Pat noted that the last couple of sections get to the nuts and bolts. The Conservation Achievements Section gets to the high-level view of what has been done. Some of these may be harder than others to measure. There will be a description of the project funding received from the various sources. There will be a discussion of the number and diversity of contributing partners. The information on the socioeconomic benefits will be hard to address.

Conservation Priorities is the next section. Pat noted that he had begun a short list from the Conservation Plan, and had added to it. The list of six priorities can certainly be modified. The six are: Fish movement/Habitat Connectivity, Oyster Reef Restoration, Climate Change, Water Quality Degradation and Eutrophication, Science and Data Priorities, and Communicating Habitat Threats and Restoration Projects to Targeted Audiences.

Pat addressed the Action Strategies for Addressing Conservation Priorities. He reviewed the contacts and noted that we can also include the amount of matching funds we have received. He suggested that we also address the benchmarks that we have achieved.

Lastly, we would need to have a summary table of the funding needs for each of the six identified priorities. Appendix I would list all of the MOU signatories.

Pat stopped there and asked for questions.

Kent noted that we need to cruise right on into the next agenda topic.

Kent asked that everyone review the document and provide comments back to Pat within the next month to three weeks.

ACFHP Operations *(P. Campfield)* 3:25

We skipped the operations update to move on to the next item.

Kent noted that we will discuss the North Carolina Coastal Federation application ourselves, but we wanted to give the Federation staff an opportunity to address their application.

North Carolina Coastal Federation Presentation (*Christine Miller*)

Christine said hello and thanked everyone for the chance to explain who they are and what they do. Christine noted that she is the Assistant Director of the organization. She will share who they are and what sort of projects they have been doing, which they believe are complementary to what ACFHP is all about. They are known as the "No Wetlands, No Seafood" people. They try to have a broad constituency. They are a conservation partnership and have 30 staff working full time, in three different offices. They have scientists, educators, planners and advocates. They have a 29-member Board of Directors which includes fishermen, bankers, lawyers, philanthropists and so forth. They deal with a lot of students each year. Christine writes all of their grant proposals.

Their 2015 operating budget is 2.5 million. Their three program areas are: restoring and preserving habitat and water quality; advocating for stronger environmental standards, laws and enforcement; and educating students, community leaders and the general community. They do large-scale oyster reef restoration; ecosystem-scale wetlands restoration (working in just under 50,000 acres right now); stormwater retrofits; living shorelines (dozens done as demonstration projects); land acquisition and easements (acquire lands and turn over to NCWRC or NC State Parks); and science (monitoring and modeling).

Under advocacy: they champion low-impact development; advance natural beach preservation; support sensible coastal development and resource management, increase public access, support consistent and reasonable adoption and enforcement of laws and rules, and safeguard estuarine shorelines.

Education: accurate and timely information; hand-on learning; students, adults, professionals, and governments; field trips, workshop conferences and publication. They publish a lot: 100,000 copies of Our Coast, each year. They have a daily online news service to cover stories that the daily media no longer cover due to the reduction in number of environmental reporters.

Christine reviewed projects of interest to the ACFHP. They built over 60 acres of oyster reefs and supported 140 jobs, statewide. They are working with the Mattamuskeet Drainage Association (42,500 acres) put into the Conservation Reserve areas; billions of gallons pumped annually into conservation areas to keep the water out of the sounds; innovative partnership keeps runoff out of coastal waters and prevents subsistence.

The former North River Farms is now the North River Preserve. This consists of 6,000 acres of wetlands restoration; more than 200 acres of shellfish waters have reopened to harvest due in part to this project.

They have spent a lot of time getting the message across that coastal restoration is equal to jobs. They commissioned the Research Triangle Institute to document that the restoration work does benefit the coastal economy. Christine noted that she would be happy to send us their report.

They also work on low impact development projects and have done hundreds of such projects.

For living shorelines, they are trying to get permitting issues out of the way.

Christine noted that her contact information is on the last slide. The second URL is for the Coastal Review (www.coastalreview.org), which is their news site. You can reach her at:
Christine Miller, Assistant Director
3609 N.C. 24 (Ocean)
Newport, NC 28570
252-393-8185
christinem@nccoast.org

Kent asked Christine to hang up, so the SC could discuss their application.

She did so after thanking us for the opportunity to address the SC. No one had any questions.

Jimmy noted that he had a process question. Since he is a member of the NC Coastal Federation, does he need to bow out of the discussion. Kent just advised that he should abstain from the vote.

Chris Powell made the motion to ask NCCF to join. Cheri seconded the motion. Lou asked why in the world they needed us. He noted that they appear to be doing quite well on their own. Kent noted that we had funded some of their projects, and they have sought both our funding and our endorsements. Kent noted that they were somewhat reluctant to pursue membership, since they thought if they joined they would not be eligible to apply for additional grants from us. They were advised that is not the case.

The question was asked how long they have been around. Jimmy thought since about 1985.

We were asked who some of their scientists are. Wilson and Jimmy named some of them. Wilson noted that their Executive Director Todd Miller has served as the immediate past chair of the APNEP Policy Board, and that the NCCF has sponsored a number of important symposia such as a recent Oyster Summit.

Pace noted that there are times when the NCCF goals and objectives don't necessarily jive with those of NMFS, but that is likely the case with all the members.

The vote was taken and the NCCF was voted in as a member. Jimmy Johnson abstained since he is a member of the NCCF.

Kent introduced Ryan Roberts to give an update on the NFHAP.

National Fish Habitat Partnership Update *(R. Roberts/L. Havel)* 3:58

• Major items from November Board meeting

Ryan noted that he is the Communications Coordinator for NFHAP. The Board met twice in 2014. They approved the budget. The Board then at the March meeting revisited the budget in the hopes that they could fund a multi-day workshop for the FHPs, which has been done in the past. There was a one-day one last year, and a multi-day one the year before organized by the River Network. The Board approved a two-day workshop for this year. They are strategizing on having it either before or after October 21-22, when the Board will meet in California.

• Major items from March 2015 Board meeting

There were quite a few presentations at the March meeting. One of them had to do with partnership effectiveness measures, and results of a survey that FHPs completed. There is a review group working on those now. The Science and Data group met in TX and laid out some of the elements of the 2016 assessment. They have secured a writer for the assessment report that will be completed. She is Whitney Gray and works for the FL FWCC. They coordinated with Tom Champeau, the Board vice-chair, to have her do the writing. They are working hard to get the mapping in place, and the report-writing will come after that.

Kent asked what she will be writing. Ryan indicated the report will be the second iteration of a national assessment, based on the 2010 assessment. There will also be new datasets, coming from the online mapper that USGS created. Different uses on the landscape which certainly affect habitats will be taken into consideration. USGS will actually conduct a demonstration, probably at the June 24th Board meeting (meeting via webinar). We will have an idea of what the online version of the mapper will look like. Tom Champo is now the official designated representative from the Board, on the LCC Board. He will keep the Board briefed as the LCC grows.

There was also an update on the 501(3)(c) application. They are in the process of meeting all of the IRS requirements. They have by-laws, and have adopted a conflict-of-interest policy. Ryan anticipates that they will have completed the process in the next month and will be an official non-profit.

Just last week, letters were sent to all of the FHPs, inviting them to be partners in the non-profit, and Ryan anticipates positive responses from all 19 partnerships.

They have been working since last year, with a marketing expert, to develop powerful messages that they can take to corporations, to help with funding. The group is called Design An Image. The presentation included information on marketing and branding. Ryan noted that he had shared those with Lisa and she can share those with us. These will be discussed on May 28th, during the next FHP call. There was some discussion of branding for the national organization. The National Fish Habitat Partnership sounds rather "beltwayish." They have suggested a new name, Network of Fish Habitat Partnerships, to which all of the individual FHPs could append. Each one could have cards. Ryan noted that there will be more discussion on this point. Some of the Board members like retaining the old name, since it has "national" in it.

Action item: Lisa will share the images and branding with the SC after the May 28th FHP call.

Ryan noted that the next Board meeting will be in Sacramento, CA, in October. He asked Lisa if she add any other items.

• 2015 FWS Report

Lisa noted that ACFHP had submitted their reports to USFWS and to NFHAP.

• 2015 NFHP Review

• NFHP Foundation update

Ryan noted that he had completely forgotten about the reports. He noted that he did get a statement of work from ACFHP, EBTJV, and SARP, regarding another $150,000. He noted that he is meeting with their administrator this week, to finalize that contract. All that will be required is a signature. Ryan asked Lisa if the partnership intended to participate in the 2016 multi-state grant proposal. Lisa indicated that ACFHP did want to participate. Ryan noted that the Board plans to include all of the partnerships, under one application. He noted that he has received interests from a number of partnerships reflecting interest in the 2016 application.

Kent asked for any other questions or concerns. There were none.

Kent noted that NFHAP has done a lot to assist the partnership. The fund that Ryan had discussed was one of interest to us. Ryan noted that the idea is to have an ability to hold corporate funds, or other funds. He noted that he hoped that this will take off.

George Schuler asked, if an FHP becomes a chapter, is it required to have a Board of Trustees, and if so, would the fiduciary responsibility rest with the National Board. Yes, Ryan indicated it would lie with the national board. Ryan wasn't sure whether each FHP would have to have its own Board of Trustees. Ryan indicated that he would have to look at that question, but he thought it is addressed in the bylaws.

Chris stated if the national board goes in this direction, it would be good for the national board to keep the individual FHPs advised of which organizations they have contacted. Ryan stated that was an excellent point. Ryan noted that he mostly works behind the scenes, doing contracting paperwork and so forth. He agreed that would be an important point to get on the forefront with the partnerships on. Ryan asked if the ASMFC was a 501(3)(c) organization. Lisa was almost positive that they weren't. Ryan noted that the Reservoir Partnership has that status. For the most part, he felt that the partnerships are their own entities, but he agreed that you wouldn't want to be approaching the same organizations for funding if the Board was already doing so. He noted that one question is whether the Board Fund members would be doing their own work.

Steve Perry noted that he pulled up the bylaws for the Fund, and read some of them to us. Partnerships would be required to provide meeting minutes, and an annual report, and required coordination of fund-raising activities with the corporation. Steve noted that the Steering Committee would not be part of that process.

Winter Flounder Assessment Update (*Julie Devers*)

Julie showed us some slides from the winter flounder model which was thrown out. She noted that the density predictions were greater for Mount Hope Bay, and lower in the lower part of Narragansett Bay. There were no anthropogenic stressors that were in the top tier of predictors.

Pace asked if you do the math, how many fish does the model predict were in the Bay. Julie stated that wasn't done. The model was just designed to predict densities. The model wasn't a stock assessment. Caroly noted that it was just to predict habitat suitability.

Jessica Coakley noted that Jim Uphoff has done some work in Maryland looking at the impact of impervious surfaces, and she believed that many of the impacts occur at the smaller life stages. She suggested that the gear being used may not pick up some of those life stages.

Julie noted that they had focused on YOY, but she didn't focus on this because this model was thrown out. Julie noted that the number of fish captured in the trawls was pretty low. That is one reason that the model was discarded, because the Technical Committee felt that the model was really reflecting gear selectivity. Pace asked if nursery habitat was a limiting factor. Chris felt it was, based on his experience. Julie stated that they felt that this is one method which was tried, that didn't work.

Steve asked if she meant that using the boosted regression tree may not be appropriate for estuaries. Yes, that is correct. Chris noted that we already knew some of what the model concluded.

Chris noted that he had collected a lot of the seine data himself. Julie projected the seine data sites and noted that the model sought to predict densities along the Bay, and determine which variables predict density, and which of these might be anthropogenic. Julie showed us the predicted density results, and the model residuals. The three highest predictors were salinity zone, beaches and salt marsh. None of these were anthropogenic in nature. Julie noted that we didn't need to spend much time on this.

Chris noted again that he had collected these data for 25 years, and he found the predictions pretty reasonable based on his observations.

Julie wasn't sure what we could conclude. She noted that Chris already knew that salt marsh was pretty important, and beaches are easy to seine and therefore it is no surprise they came out significant.

The work moved on to Long Island Sound, because we thought it might be useful to try it in another location. So, all of the predictor datasets have to be collected again, and that is on what Caroly has been working. There is good data for Long Island Sound, so they will try to use trawl data and focus on adults. Julie stated that adults may not be as sensitive to habitat variables that we can influence.

Caroly noted that this was a huge challenge for those involved. The group felt that this wasn't going to work, so they had picked Narragansett Bay, since it was small and they felt that they had a lot of the needed data. For Long Island Sound, they will use adults and hope that this is useful. Bayesian modeling was not used because it didn't allow rapid assessment. Julie noted that was a good summary.

Julie noted that was winter flounder in a nutshell.

Julie noted that for river herring, we have some options. The contractors spent so much time on the EBT model, and the winter flounder model, that she isn't sure how much more work they can do for river herring. She discussed some of the options: they could build a predictive model based on the

available stock assessment data (there are abundance data for 64 sites, but the thinking is that the numbers are affected more by fish passage effectiveness, than by habitat). A second option is to build a predictive model using presence/absence and using previous work (Dauwalter et al. 2012 report), but the Downstream Strategies contractors felt that there weren't enough absence data. So, Downstream Strategies proposed using a surrogate resident species, like white perch. This was discussed by the Shad and River Herring TC and they rejected the concept because they felt that use of a resident surrogate would not at all be reflective of river herring. So, Downstream Strategies has recommended using data that TU put together for NFWF and TNC has already mapped to create a decision support tool. This would take what Erik Martin has already done and create an online tool. The last option is to do nothing with river herring in this contract and instead find funding for TNC to develop the decision support tool, and use leftover NALCC funds to do more winter flounder work.

Chris asked what additional work could be done on winter flounder. He noted that there are salinity data there, and he doesn't know why they didn't use them.

Julie asked Steve to comment.

Steve noted that many managers were not well-versed enough to use a GIS-based tool. He noted that he had attended a meeting to discuss this and said that if he could use the alternative, anyone could do so.

Julie noted that we could use the thresholds that Maryland has developed, and apply them to river herring larvae and juveniles.

George noted that it appears to him that this takes us back to an earlier discussion. He noted that the SALCC has already created a web platform. It seemed to him that it would be good to consolidate all of the data in one place. Julie noted that is one reason they selected the contractor used by the Midwest FHPs. Julie noted that she was thinking of the Chesapeake Bay Fish Passage tool, which is online.

Lisa stated that the SALCC/SARP one developed by Erik Martin is very easy to use. She went to a workshop in January.

Caroly noted that they are really trying to tap into existing resources, by using the EBT model and the TNC work already available.

Julie noted that she felt that this group should decide on the direction to go. Dawn asked how much funding is left. Lisa stated they didn't really give us dollar values, just that a couple of months are left.

Chris suggested that we poll some other groups. Caroly noted that they have discussed this *ad nauseum* with other groups.

Lisa noted that Downstream Strategies supports the fourth option, but that is dependent on how much time Erik Martin has to devote to the project. George indicated that he could influence that within TNC.

Julie concluded that everyone was supportive of the fourth option, which is to use TNC and EBT existing data to create an online support tool.

NFWF River Herring Project Update *(C. Shumway)* 2:35

Caroly noted that they are nearing the end of the river herring effort. She noted the goal was to prioritize, plan and strategize river herring needs by convening expert working groups in the SNE, Mid-Atlantic, and SE regions. Six rivers were chosen, because they were measurable for river herring.

NFWF's River Herring Program and the resulting NFWF Business Plan for river herring conservation describes a comprehensive 10-year strategy to guide NFWF conservation investments to achieve a 300% increase in river herring spawning runs in key rivers along the eastern seaboard from 2008. NFWF chose watersheds with historic or current important spawning runs that have a long time-series of measurable counts.

Caroly reviewed the work accomplished. Multiple workshops were held. The final report is on track for April 30, 2015. They did not do a webinar for public outreach, so Caroly indicated that is something that needs to be discussed. Kent asked if that was a deliverable for the funding. Caroly noted that it isn't required, but it would benefit ACFHP.

Caroly shared the results for Chesapeake Bay threats that were overarching. Each group had a separate workshop to address each threat. There are maps that identify priority watersheds for fish passage and barrier removal.

For the Santee-Cooper, the threats are barriers, predation (cormorants and fish), SAV destruction by power companies, and the restoration prioritiy was fish passage improvement.

For the Delaware River, threats were barriers on tributaries, altered predator-prey dynamics, impingement and entrainment, urbanization, and water quality. The restoration priorities were to assess efficacy of fish passages, dam removal, and to assess water quality and riparian impact.

For the Hudson River, threats included habitat loss and zebra mussels, loss of habitat complexity, sea level rise, urbanization, and barriers. The restoration priorities were side channel restoration, floodplain restoration, and fish passage improvement.

Connecticut River: threats include climate change, barriers, ocean bycatch, water quality, habitat degradation, and culverts. There is a map of flow alteration from the various dams. The restoration priorities are fish passage improvement at large dams, barrier removal and fish passage improvement, policy and demonstration projects for culverts, and green infrastructure/LID for water quality.

For the Gilbert Stuart (aka Narrow River), threats were barriers, water quality, ocean bycatch, sedimentation, and sea level rise. There is one dam, and two culverts that need to be addressed. Once those three actions are taken, there is a possibility to address two more dams. The restoration priorities are fish passage improvement, improve water quality, reduce sedimentation, and prepare for climate change.

Wilson noted that Caroly could add white pelicans to the Santee-Cooper list of predator threats, based on his recent conversations with colleagues in SC. He was told that there were 200-300 white pelicans foraging below the dam and fish lift.

Cheri stated that she didn't recall birds being discussed as an issue. Lisa confirmed that it was.

Caroly noted……..

Update on Science and Data Committee *(C. Shumway)* 4:05

Caroly noted that we haven't had funding for a while to convene the broader subcommittee. Caroly updated us on the matrix (desire to create a searchable database (and map?) of species and reference for the matrix; we discussed improving the matrix, incorporating rarity/vulnerability to climate change (seasonality?).

Assessment: improve assessment of existing information; add regional information. Caroly noted that Emily, Bob Van Dolah, Julie and she and maybe Wilson had discussed this item. Caroly noted that even though we didn't meet, we had actually done a lot. She had checked with Jake and he is committed to submitting the paper to a third journal, so it has to be reformatted. Marek noted that the comments from the second journal reviewers were very useful.

With regard to a web-based tool, we are discussing creation of a decision support tool that incorporates NALCC modeling, matrix and assessment.

Caroly asked for comments and whether they are missing something.

Chris suggested that the first task might be the easiest one to do. Marek noted that the map piece would take some work. Chris noted that you could always add the map later.

Kent suggested that having a searchable database would be very useful.

George noted that he has a person working for him now, who could probably produce a map, and database, very quickly. She has good database and map skills. George noted that he would have to find some additional funding in order to keep her on board.

Callie noted that we had some previous discussion with Emily about making the database searchable. She thought that it might have that capability already.

Marek said that if there is funding, he is willing to discuss the potential for mapping.

Caroly suggested that a conference call could be done in advance.

Julie noted that the NALCC had already done some aquatic habitat mapping.

Callie noted that she and Wilson had discussed during a break the need to get the two LCCs (NALCC and SALCC) together to discuss what mapping the LCCs have done, and how they can be complementary.

Steve Perry noted that he thought TNC had discussed moving their mapping into the maritime provinces of Canada. George noted that each state had taken the data they needed and used them. He noted that there is a Regional Conservation Network which has the data.

Caroly asked if people like the map idea. She asked if we should throw out matrix improvement. She asked about the assessment improvement.

Cheri and Chris said something I missed.

George noted that the assessment database needs to be more useful. Caroly noted that we had discussed in 2012, the need to tweak the assessment in order to move it forward. Julie noted that we need others to make it more user-friendly.

Pace asked Kent how similar this is to what the FWRI has created. Kent suggested that could provide a model since it is more user-friendly. Pace asked what it would take for FWRI to integrate the assessment into their database. Kent was not sure. He indicated he would have to talk to their data managers about it. He wasn't sure how to integrate the information from the entire coast. He is willing to talk to them about putting the assessment information into a format that would be more useable. He could share that information with the Science and Data Team.

Caroly concluded that the Matrix items should still be number one. The web-based tool could be moved to second. The assessment improvement will take a lot more time.

Kent stated if we do the web-based tool it would move the dial more. We do have the assessment information but it may be more important to get a web-based tool up and running.

Marek asked if Matrix Number One didn't have the tool as a sub-component. Caroly indicated it was. Number 1 would be done first, Caroly confirmed. Marek asked if Number Three (assessment update) would also be a component of Number 1. Caroly didn't believe it would.

Marek wondered if some database restructuring would be required in order to accomplish these tasks.

Caroly asked if it was a worthwhile plan to do the Matrix first, then the web-based tool, then the assessment.

Marek was okay with that, as long as we acknowledge that we may have to restructure the assessment.

Caroly reviewed the current members of the Science and Data Committee, with a view toward revising the membership as needed. She noted that one advantage of having a large membership was to allow for the establishment of subcommittees.

Julie asked who we might be missing.

The members listed were: Jeff Beal, Alison Bowden; Michael Celestino; Jaclyn Daly; Mari-Beth Delucia; Julie Devers; Roman Jesien; Dan Kircheis; Danielle Kreeger; Jacob Kritzer; William Lellis; Rachel Muir; David (Moe) Nelson; David O'Brien; Jay Odell; William Shadel; Caroly Shumway; Albert Spells; Marek Topolski; Robert Van Dolah; Alan Weaver; Bartholomew Wilson; and Craig Woolcott.

Callie asked Steve Perry to comment about his experience. Steve indicated that he also had a problem getting their committee together.

Pace stated that the committee didn't need to be any larger than to get the job done. He noted that he had put staff on it, and it wasn't meeting or doing anything, so it was out of sight, and out of mind.

Caroly noted that the list has 23 members on it. Julie wasn't sure what their status was.

George noted that this list has been there since the beginning of time, so perhaps it is time to reevaluate who and how many we need.

Steve Perry noted that the National Science and Data Committee just went through a similar exercise.

Caroly asked if for political reasons we shouldn't at least contact each of the members to see if they are still interested. Pace noted that some of them may not even realize they are still on the committee.

Pace stated that we had created the list after we had begun working on the matrix and that was a significant undertaking which required a lot of people.

Someone asked how many authors there were on the matrix manuscript, and Kent thought that there are around eight. Chris felt that those 23 on the list were the folks that needed to be contacted.

Jessica Coakley noted that MAFMC had recently gone through the process of revising all of their Advisory Panels and had contacted them as well to verify their continued interest in serving.

Caroly moved to the next slide. She gave us a proposed timeline. Meeting localities were discussed. Lisa indicated that Pat had requested that we consider venues near airports to which Southwest Airlines flies. Jessica noted that there is a Doubletree near the BWI which offers discounts for meetings. Marek noted that access to that facility is easy. The suggestion was made that Caroly e-mail the entire list to see who is interested.

Action item: Caroly will contact the Science and Data Committee to see if they are still interested in serving on the Committee.

George suggested that it would be productive to have a discussion with the two LCCs, prior to the Science and Data Committee meeting. Julie noted that they did have a discussion about the LCCs, after the last Science and Data committee meeting.

Callie and Wilson shared the essence of the discussion they had during break about the desirability of the two LCCs which overlap the ACFHP geography coordinating and collaborating, hopefully to ACFHP's benefit, but ACFHP could also hopefully benefit the LCCs.

Caroly asked about planning the meeting. Lisa said she can help her. Just contact her when she's ready.

Dawn noted that she is involved in the NALCC. She would like to see some commonality in how ACFHP couples with the two LCCs.

Kent noted that it would be good to get the Science and Data Committee back together.

Lisa gave Pat's one-sentence summary of ACFHP operations. We are set to go for 2016. Kent noted that we don't publish a budget, but he thought the information might be in an annual report. Lisa wasn't aware of that. Kent noted if that was something that the partnership would like to see, it can be provided. Kent noted that we have usually done that in a report to the SC, but we haven't sent it out to the entire partnership.

Bob asked if we are a 501(3)(c). No, we are not, but under the fund that the NFHAP is discussing, we would be able to take advantage of that status.

Kent noted that Lisa has a list of about 30 action items, on which we need to report. Lisa indicated it is on page 29 of the briefing materials, but she will send it out to everyone. If your name is on the list, you need to respond with a status update.

Action item: Everyone on the SC should go through the action items from last meeting (Appendix 1) and let Lisa know the status of the ones that you are involved in.

Other Business 5:30

There was no other business discussed.

Grassy Flats Restoration Project overview *(K. Smith) 5*:34

Kent noted that the field trip will be held, rain or shine. We will be boarding open boats. We will leave the hotel at 8:00. We will meet in the lobby and leave via the front doors. MEET at 7:45 and DEPART at 8:00. It should take between 30-40 minutes to get to the site but it will likely take over an hour due to rush hour traffic. Kent noted that he needs to know how many people need to be dropped off at the airport. He noted that we will be going by the airport around 11:30. Chris Powell was the only one who indicated he needed to be dropped off at the Ft. Lauderdale airport. Kent noted that those going to the airport would need to bring their luggage. Lisa and Toni will rent vehicles for use on the field trip.

Kent asked those to raise hands if they were going on the field trip. There are 16 members planning to attend, and perhaps Bob Van Dolah. Kent stated that they can carry everyone. He can carry six or seven as will each of the other vehicles. Kent doesn't anticipate many other folks showing up to participate.

Kent gave us a briefing on what we would see tomorrow. The presentation was in the briefing materials. Kent noted that there are two islands along a straight shoreline, which is the boundary of a golf course. They moved a lot of sediments and filled a depression to a level which will support seagrass. Kent reviewed the location of the Lake Worth Lagoon, and its habitat types. Much of the shoreline is privately-owned and does not afford much opportunity for restoration. There is a lot of muck in the lagoon which comes from stormwater discharge. Kent shared the final project design. Habitats are being created for birds, on both islands. A pair of oystercatchers very quickly built a nest on the north island as soon as the work was completed.

Kent shared the project goals. Three thousand tons of limestone rock have been placed to support oysters. They will be planting mangroves on the site as well. Palm Beach County is a partner, along with USFWS, NOAA, and the Army Corps of Engineers. The total project cost is 3.6 million dollars. The funding came from many different sources. The area is really shallow so they used barges as a base for moving sand to the site. Kent explained how the material was moved from the islands and deposited into the depression which was filled. They used a "sand shooter" to deposit the sand and pack down the muck. Kent addressed the muck capping process and operation of the sand shooter. The material is all dry sand. There is no water in the material at all.

Kent showed us an animation of how the process works. Ideally seagrass will colonize the area. The depth went from 6-8 feet, to 3-4 feet. Kent noted that seagrass will naturally recruit to the site. The species which will colonize is a protected species *Halophylla johnsonii*.

Chris asked what keeps the sand in place. Kent advised that the surrounding areas are all at the same elevation, so it won't move around.

Kent noted that the oystercatchers had built their nest and laid eggs within three days of project completion. This is the southernmost known nesting area for the species. They are monitoring the fish community in the area. Kent showed the preliminary first year results. They have captured 11,463 fish over four events. There were 58 species of fish total. Ninety-six percent of the catch was bay anchovy, menhaden, mojarras, scaled herring, and checkered puffers.

Kent shared a species list. They had three bonefish, and five snook, all caught after construction. They believe that this is doing what they want the site to do, for fishermen.

Kent noted that this is what we will see tomorrow. We will all get a package of information from Palm Beach County. Erin will not be there because she has a competing Earth Day event.

Kent suggested that we meet down in the lobby at 6:45 and we will develop a plan. Perhaps he can shuttle folks to a local restaurant for dinner, or we can walk. Kent thanked everyone for attending and waiting it out.

Adjourn for day 5:54

April 22nd

Depart hotel for field trip and drive to Palm Beach County 8:00 am

Boat to Grassy Flats (< 1 mile) 8:45

- **Snook Island**
- **Ibis Island**
- **Johns Island**

Arrive back at hotel 12:00 pm

Action Items Summary

Page 12

Action item: Lisa will contact Lisa Debruyckere to see if we can discuss OA during the next coastal FHP call, and see if we can bring someone in to talk about it. We could then see if the collective group would want to move forward on this issue.

Page 14
Action item: Lisa will like the ACFHP website to the habitat committee papers on offshore wind, dredging, etc.
Action item: Lisa will follow up on the possibility of having Roger Pugliese present at the fall 2015 meeting.

Page 22
Action item: Kent and Lisa will look into large grants for the coastal FHPs to apply for together.

Page 24
Action item: Kent will contact Brad and Margaret to discuss working with ACFHP.
Action item: Lisa will share the link to Lou's presentation with the steering committee.
Action item: Lisa will work with Kent to invite all ACFHP partners to the fall 2015 meeting. A call will be placed in August to further discuss this.

Page 26
Action item: Chris will look into replacing all conservation mooring buoys with the green buoys.

Page 27
Action item: The subcommittee on coastal threats action item needs to get together to discuss the desired product. Wilson will contact Lisa to set this up.
Action item: The subcommittee on coastal threat will consider Mark's suggestion, found in the text.

Page 28
Action item: Cheri will continue to move forward with the fish passage action items, and get more information, and compile it in a form useful to the committee.

Page 30
Action item: Dawn will continue to analyze the data from the survey and will reach out to people who responded to the survey and determine why they gave certain answers to some of the questions.

Page 33
Action item: Dawn will reword Restoration Objective 2 Action 1 Task 2 (Compile list of projects by survey of the committee and/or partners (NEP state management plants etc.) on what sub-regional priority habitats they are focusing and specifics on restoration sites) to reflect the actual work that has been carried out.

Page 37
Action item: Lisa will work with Chris on updating the status of the tasks and incorporating the new tasks that are being addressed. Chris will present the updated version at the fall meeting.

Page 43
Action item: All Steering Committee members should submit their top 3 answers to the question: What do we need from the Partnership that we can't do well without it? to Lisa at your earliest convenience.

Page 45
Action item: Lisa will add links to the one-page description of each project to the map.

Action item: Lisa will update all of the on-the-ground project one-pages to replace plans with accomplishments (including photographs).

Page 47
Action item: Lisa will include Russ Babb and January Murray in the reviews this year.

Page 49
Action item: Lisa will contact the Evaluation Criteria subcommittee to address the rewriting of the criteria: George, Dawn, Jimmy, Mark, Kent, and Julie.

Page 50
Action item: Lisa will work with Caroly and Marek to find the information needed for the Whitewater to Bluewater overlapping areas and common priority areas.

Page 56
Action item: Lisa will share the images and branding with the SC after the May 28th FHP call.

Page 63
Action item: Caroly will contact the Science and Data Committee to see if they are still interested in serving on the Committee.

Page 64
Action item: Everyone on the SC should go through the action items from last meeting (Appendix 1) and let Lisa know the status of the ones that you are involved in.

Appendix I

Action Items from Fall 2014 Meeting

Action Item: Kent will assist Wilson with upcoming steps for coastal threats outreach action item (page 1).

Action Item: Cheri will send out the survey to address action item A.1.1. within the week (page 1).

Action Item: Pace will send the FERC-regulated project database to Cheri (page 2).

Action Item: Lisa will send out Donna's forwarded reports on the Chesapeake Bay to the Steering Committee (page 3).

Action Item: Proposal Review Subcommittee: we should include consideration of fishway designs that account for sea level rise in future RFPs, and project proposals for retrofitting might be coming in soon (page 4).

Action Item: Marek will provide a more extensive talk on ocean acidification at our spring 2015 meeting (page 5).

Action Item: George will establish a working group between now and spring meeting to discuss the Strategic Plan. It will include Chris, Dawn, George, Mark, and Kent (page 7).

Action Item: Julie asks you **all** that if you have any river herring or shad data to please share it with her for the NALCC/Downstream Strategies model (page 9).

Action item: Since **Rachel** was not able to make it to the meeting we have decided to postpone the discussion about the Federal Urban Waters Initiative until the spring meeting (page 10).

Action Item: Chris should go ahead and get going on the 4 moorings and spend all of the money we have on the project (page 10).

Action item: Lisa will work with **Pat, Kent,** and **Chris** to create an MOU between ASMFC, ACFHP, and the individual boathouses. It should say that they agreed to allow us to fit their moorings at no cost to them but will cost us x amount, and they agree on upkeep for x years. We will include a mutual statement of benefits for all parties (page 11).

Action Item: Pace can give Dawn a list of contacts in South Carolina working on habitat restoration (page 11).

Action Item: Callie will show Dawn where the expertise database is on the Whitewater to Bluewater website (page 11).

Action Item: **Lisa** will coordinate with **Dawn, Pace**, and **Callie** to see where we need to fill in the gaps in who we are reaching, and might send out the survey again (page 11).

Action Item: **Lisa** will work on a calendar with all of the upcoming conferences and meetings and send it out to the Steering Committee for **all** to see and take outreach materials with them (page 15).

Action Item: **Kent** will look more into what we've accomplished in terms of Strategic Plan Communications & Outreach Objective 2, Action 3 (page 15).

Action Item: **Lisa** and **Chris** will review the comments from the Implementation Plan discussion and put them in categories (done, ongoing, etc.). They will then decide on the next steps and reach out to the appropriate people. They will present an update at the spring 2015 meeting (page 16).

Action Item: **Steve** will send the survey template to Lisa that we can use to contact our partners to get an update on their projects (page 16).

Action item: **Lisa** will work with the **Project Review Subcommittee** to go through old projects and see if there are other projects we might want to recommend to FWS, as well as coordinate with **Steve** to determine how they want to deal with 1501 (page 19).

Action item: **Lisa** sent out the agenda for the workshop and the board meeting to the Steering Committee in order to get feedback before the meetings next week (page 19).

Action Item: **Glenn** will identify several people for us to stay in contact with via IFFF (page 21).

Action item: **Lisa** will update the MOU and send the signature page to Glenn (page 22).

Action item: **Lisa** will ask **Glenn** for icon to add to our partner page on our website (page 22).

Action Item: **Steve** said that he can give us the first rounds of drafts they made for their business plan, which includes initial questions they were asking to figure out their niche (page 23).

Action item: Subcommittee including **Kent, Chris, Lisa, Pat** will discuss the next steps in forming a board or writing a business plan. They will report to the Steering Committee at the spring 2015 meeting (page 23).

Action item: **Lisa** will talk to **Callie** and **Julie** about operational funding for 2016. Julie wants to put extra USFWS towards operational funding (page 24).

Action item: **Lisa** will send Caroly the list of people on the Science and Data Committee (page 24).

Action Items: **Science and Data Committee** decided to have: an early meeting (by spring) and a conference call in November or December for an update on the annual review. **Caroly** will work with **Lisa** to start scheduling these meetings (page 25).

Work Plan and Accomplishment Report Guidance and Template for the FY15 FWS NFHAP Funding Cycle

Submitted by

"Atlantic Coastal Fish Habitat Partnership"

Contact Person Name: Lisa Havel

Mailing Address: 1050 N. Highland St. Suite 200 A-N, Arlington, VA 22201

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Email Address: lhavel@asmfc.org

Date submitted by Fish Habitat Partnership (FHP): January 5, 2015

General Instructions:

1. Complete Section 1 if applying for operating support funding only.
2. Complete Sections 1, 2, and 3 if applying for both stable operational support and competitive, performance-based funds. See attachment to this template for additional guidance and definitions for selected performance criterion.
3. If you have questions about this template please contact your Regional Coordinator.
4. Email one electronic copy of the completed application by 5:00 pm local time, **January 5, 2015** to your respective Regional Coordinator and the National Coordinator (listed below).
5. **INCOMPLETE REPORTS WILL NOT BE CONSIDERED FOR FUNDING.**
6. **ANY ADDITIONAL INFORMATION RECEIVED AFTER THE SUBMISSION DEADLINE WILL NOT BE CONSIDERED.**

NFHAP Regional and National Coordinator List

FWS Region	Coordinator	Phone	E-mail	FHPs in Region
1	Dan Shively	503-231-2270	Dan_Shively@fws.gov	-Hawaii FHP -Pacific Marine and Estuarine Partnership
2	Karin Eldridge	505-248-6471	Karin_Eldridge@fws.gov	-Desert FHP
3	Brian Elkington	612-713-5168	Brian_Elkington@fws.gov	-Driftless Area Restoration Effort -Fishers and Farmers Partnership -Great Lakes Basin FHP -Midwest Glacial Lakes Partnership -Ohio River Basin FHP
4	Tripp Boltin	843-819-1229	Walter_Boltin@fws.gov	-Southeast Aquatic Resources Partnership
5	Callie McMunigal	304-536-4760	Callie_Mcmunigal@fws.gov	-Atlantic Coastal FHP -Eastern Brook Trout Joint Venture
6	Scott Roth	303-236-4219	Scott_Roth@fws.gov	-Great Plains FHP
7	David Wigglesworth	907-786-3925	David_Wigglesworth@fws.gov	-Kenai Peninsula FHP -Mat-Su Basin Salmon Habitat Partnership -Southwest Alaska Salmon Habitat Partnership
8	Lisa Heki	775-861-6300	Lisa_G_Heki@fws.gov	-California Fish Passage Forum -Western Native Trout Initiative
(Acting) Natl Coord.	Cecilia Lewis	703-358-2102	Cecilia_Lewis@fws.gov	-Reservoir Fisheries Habitat Partnership

Section I: Justification for Stable Operating Support (maximum 6 pages)

The intent of Section 1 is to ensure that FHPs receiving operating support are thriving, active organizations making concerted efforts to achieve fish habitat conservation goals and objectives established by both the FHP and National Fish Habitat Action Plan.

Narrative responses should provide an overview of all projects and activities supported by FWS funds and all other sources or in-kind contributions over the previous three federal fiscal years 2011, 2012 and 2013 (or October 1, 2010 through September 30, 2013) and anticipated projects and activities over the next three federal fiscal years 2015, 2016, and 2017 (or October 1, 2014 through September 30, 2017).

Project summaries should not be an itemized list of individual projects. Project summaries should instead focus on the associated outputs and outcomes of the habitat conservation projects implemented by the FHP *(e.g. completed ten fish passage projects resulting in X number of miles reopened, link to strategic plan, objective addressed, outcomes, socioeconomic impacts, etc.)*

Activity summaries should focus on salient operational and programmatic activities (*e.g. update strategic plan, improved capacity of FHP, monitoring and assessments, outreach events, socioeconomic impacts, etc.*). Day-to-day FHP activities (e.g. the number of meetings or teleconferences an FHP representative participated in) are not pertinent to this performance report and should not be included in this summary.

Activity Summaries

Strategic Planning

The development an ACFHP 5-year Conservation Strategic Plan (CSP, 2012-2016) and 2-year Implementation Plan (IP, 2012-2013) was made possible through numerous sources of support. These included Multistate Conservation Grant Funding, which supported coordinator time and non-Federal Steering Committee and other Partnership member travel to in-person meetings, and the in-kind support of Steering Committee and other Partners in the form of time participating in in-person and virtual meetings. Should ACFHP secure adequate operation funding, it expects to conduct a review of its CSP and evaluate and potentially develop new IP(s) and a new CSP over the next three years, 2015-2017. Major strategic planning accomplishments from 2011 - 2013 are as follows:

In October 2011, ACFHP completed the development of its 5-year CSP (2012-2016). The CSP proposes objectives and key conservation strategies to confront pervasive threats to fish habitat along the Atlantic coast. ACFHP is working to address the threats with a broad coordinated approach, and to leverage resources from many agencies, organizations, and others to conserve fish habitat. Subregional Priority Habitats are identified in the CSP as well, to attend to more localized issues and to focus the efforts of the Partnership to make a measurable difference for fish habitat. The CSP was developed by the ACFHP Steering Committee, with input from members of the ACFHP Science and Data Working Group and other partners. The ACFHP CSP is available at: http://www.atlanticfishhabitat.org/Documents/ACFHP_Strategic_Plan_HighRes.pdf.

In 2012, the Partnership completed development of an IP, which guided ACFHP's activities from 2012 to 2013, and into 2014. The IP is a subset of the 2012-2016 ACFHP Conservation Strategic Plan, designed to contain a set of objectives, strategic actions, and related tasks that can be accomplished a two-year time frame. The achievement of each task is led by an individual within the Partnership with the help of a team and additional partners. The IP was developed by the ACFHP Steering Committee and other partners. It is available at: http://www.atlanticfishhabitat.org/wp-content/uploads/2012/10/2012-2013-ACFHP-Implementation-Plan-FINAL.pdf.

Endorsed Projects

From 2011-2013 ACFHP received ten project endorsement applications, and after careful review endorsed seven, all of which address ACFHP habitats, priorities, issue areas, and/or objectives. This was made possible through a combination of Multistate Grant Funding, which supports coordinator time, and the in-kind support of ACFHP Committee members and other partners in the form of time participating in Partnership meetings. Endorsement is an opportunity to provide ACFHP support to a completed, current, or proposed project. Should ACFHP secure adequate operation funding, it plans to continue soliciting, evaluating, and endorsing projects that address an ACFHP Subregional Priority Habitat and Protection or Restoration Objective outlined in its current CSP (2012-2016) and next CSP (2017 – 2021) for the next three years (2015-2017). Major accomplishments in endorsing projects from 2011 – 2013 are as follows:

In 2009, the Steering Committee approved the Partnership's first set of restoration project endorsement materials, which included an endorsement protocol, application record, and endorsement application. Since that time, the materials have been periodically revised to reflect new NFHP and ACFHP guidance; the most recent revisions were made in February of 2012. The current endorsement materials include Project Endorsement Application Guidelines, Project Endorsement Application, Project Endorsement Protocol and Guidance (for the review committee), ACFHP Project Endorsement Record, and an endorsement logo. The ACFHP Project Endorsement Application Guidelines and ACFHP Project Endorsement Application are available at: www.atlanticfishhabitat.org/opportunities/endorsement/.

In 2011, The National Fish Habitat Board adopted a FHP project endorsement template, which used ACFHP's guidelines as a model. In 2012, the Partnership endorsed three project proposals: *South Atlantic Aquatic Connectivity Assessment and Tool*; *Alewife Outreach and Education project*; and *Grassy Flats Estuarine Habitat Restoration* project. Six new project endorsement applications were received in 2013, four of which were endorsed (*Culvert Replacement on Longbranch Creek, Dam Removal and Habitat Restoration on the Exeter/Squamscott River, North River Farms Tidal Marsh Restoration, River Herring in the West River*). For information about our endorsed projects, please visit: www.atlanticfishhabitat.org/projects/endorsedprojects/. ACFHP has begun, and over the next three years will continue, to reach out to Partners and other interested parties in concert with RFPs for large funding opportunities to encourage them to apply for ACFHP endorsement in support of their proposals.

Communication and Outreach

ACFHP has accomplished numerous communications and outreach achievements, fundamental to organizational development, and has addressed ACFHP Communication and Outreach Objectives included in its CSP (2012-2016). A combination of Multistate Grant Program funds, a USFWS agreement, and in-kind support from the ACFHP Communications and Outreach Working Group (made up of ASMFC, USFWS, and retired state participants) were used to accomplish these tasks.

Should the Partnership secure adequate operational funding, it plans to continue its work in support of the Communications and Outreach Objectives in its CSP for the upcoming three years (2015-2017), through electronic outreach avenues including website and social media, print-based materials including general and project fact sheets, and in-person outreach at meetings, conferences, and tradeshows. Over the past three years (2011-2013), ACFHP has been in consistent contact with its partners and the general public via multiple outlets, listed below.

To increase familiarity with ACFHP and solicit new partners, the ACFHP Coordinator and Steering Committee members made oral presentations or displayed/provided outreach materials at several venues including the 141st and 142nd American Fisheries Society annual meetings, seven Atlantic States Marine Fisheries Commission Interstate Fisheries Management Policy Board meetings, the 5th and 6th Restore America's Estuaries National Conference, one National Fish Habitat Board Meeting, one NOAA Library Seminar, the 13th Flatfish Biology Conference, one North Atlantic Landscape Conservation Cooperative Steering Committee Meeting, one Southeast Aquatic Resources Partnership Science and Data Committee meeting, and one Northeast Fisheries Administrators Association meeting from 2011 - 2013. Since September 30, 2013, the Partnership made oral presentations or displayed/provided outreach materials at three Atlantic States Marine Fisheries Commission Interstate Fisheries Management Policy Board meetings, the New England Salt Water Fishing Show, and the 7th Restore America's Estuaries National Conference, and will continue outreach activities through 2017.

ACFHP maintains a website (www.atlanticfishhabitat.org), which is kept up to date by the Coordinator. It includes information on what ACFHP is, what it does, its mission and vision, information and/or links to the National Fish Habitat Partnership, other Fish Habitat Partnerships, and ACFHP MOU Partner websites, information on ACFHP funded projects and endorsed projects; links to ACFHP governance documents, ACFHP science reports and other non-ACFHP habitat-related reports and manuals; ACFHP and non-ACFHP funding opportunities; and ACFHP and non-ACFHP meetings and conferences.

ACFHP also disseminates information to its general listserve though breaking news releases. Visitors to the website can sign-up for breaking news releases. In 2011, the ACFHP coordinator distributed five breaking news items regarding Partnership activities to its general mailing list, in 2012, seven breaking news items were released, and ten were released from January – September 30, 2013. For current news items visit:

www.atlanticfishhabitat.org/communications/news/. The ACFHP general fact sheet was revised in 2011 by the coordinator to remain current. The coordinator also develops fact sheets for its funded projects. Fact sheets can be found at: www.atlanticfishhabitat.org/communications/outreachmaterials/. In 2012, the Partnership completed development of two permanent displays, with guidance and input from in Communications and Outreach Working Group.

Conserving Fish Habitat from Whitewater to Bluewater

Since 2012, with funding from a Multistate Conservation Grant, ACFHP has been working with the Southeast Aquatic Resources Partnership (SARP) and the Eastern Brook Trout Joint Venture (EBTJV) towards achievement of three objectives: 1) To advance each partnership's habitat assessments by collecting, developing, and sharing fish habitat information and data; 2) To coordinate outreach activities to strengthen and expand the base of conservation delivery partners; and 3) To implement each of the individual FHP's strategic plans. ACFHP expects to continue work on this project through a NFHP Board-sponsored grant in 2015. Highlights include the following:

In February 2012, the ACFHP and SARP Coordinators, Science & Data representatives, and the NALCC habitat assessment contractor participated in a meeting with the National Gulf Assessment team to discuss its status and methodologies. Beginning in April of 2012, the SARP Communications Coordinator, ACFHP Coordinator, and the EBTJV Communications Committee chair began meeting on a bi-monthly basis via conference call to develop a joint communications strategy. In June 2012, the ACFHP Coordinator attended the EBTJV Annual meeting to participate in discussions regarding commitments under the Whitewater Bluewater Grant and NALCC 2012 Science Data Needs Program.

ACFHP, SARP, and EBTJV have also collaborated on a website (http://easternbrooktrout.org/groups/whitewater-to-bluewater), which launched in 2013, and underwent an organizational assessment of each FHP via the River Network and Water Words that Work. Whitewater to Bluewater is currently working on the creation of a fish passage barrier removal template, set to launch in early 2015. Also in 2015, the three eastern FHPs will begin working on an Aquatic Connectivity Assessment Program.

Collaborating with other Coastal Fish Habitat Partnerships

In addition to collaborating with its neighboring FHPs, ACFHP has embarked on a national cooperative initiative with nine other FHPs, which are helping to protect, restore, and enhance fish habitats in coastal marine environments. The initial accomplishments of this effort (which were produced in 2013) include a poster, a drafted letter to the Joint Ocean Commission on ways that the coastal FHPs advance national ocean policy objectives, and quarterly newsletters highlighting the activities that these FHPs are undertaking. These accomplishments have helped address ACFHP Communications and Outreach objectives and should the Partnership secure adequate operational funding, it expects to continue participating in this alliance of coastal FHPs. In 2014 the Coastal FHPs hosted a session at the 7th Restore America's Estuaries National Conference, which included a presentation from ACFHP. The coastal FHPs will build on these accomplishments in the upcoming years.

Coordination with the NFHP Board

During 2011-2013, the ACFHP coordinator participated in the majority of the 'All-FHP coordination' calls, and attended several Board meetings. During the 2011 fiscal year, the ACFHP coordinator also participated on the Board's ad-hoc Criteria Development Committee, and in 2012 the coordinator began resumed participation on the Board's reactivated Partnership Committee. In 2014, the coordinator and the Steering Committee chair also attended the FHP Workshop in National Harbor, MD.

Should the Partnership secure adequate operational funding, it expects to continue participating in coordination activities with the Board and the National Fish Habitat Partnership for the next three years (2015-2017).

Coordination with Landscape Conservation Cooperatives

Through Multistate Conservation Grant funds, the ACFHP coordinator has participated in the Landscape Conservation Cooperatives (LCCs) over the past three years. The efforts of the South Atlantic LCC (SALCC) and North Atlantic LCC (NALCC) support ACFHP Strategic Objectives and should the Partnership secure adequate operational funding, it expects to continue participating in these LCCs for the next three years (2015-2017). Highlights from 2011-2013 are as follows:

In 2011, the coordinator participated on the SALCC Interim Steering Committee and attended the majority of the initial SALCC workshops. Also that year, the NALCC coordinator attended the ACFHP Annual meeting and presented on the LCCs. In February 2011, ACFHP hosted representatives from several LCCs (North Atlantic, South Atlantic, Appalachian, and Gulf Coastal Plain and Ozarks) and FHPs (EBTJV, SARP, and the Reservoir FHP) to exchange information on their respective organizations, particularly Science and Data needs (FHPs) and roles in setting science priorities (LCCs). In June, the ACFHP Chair attended the Northeast Regional Conservation Framework Workshop (Albany II) where progress was reviewed and recommendations were made regarding conservation in the Northeast Region, including the Regional Conservation Needs (RCN) program and the Landscape Conservation Cooperatives (LCCs). In November, the ACFHP Coordinator presented at a NALCC Steering Committee meeting. In 2011, ACFHP also participated as a member of the SALCC Partnership Committee.

In 2012, ACFHP continued coordination with the North Atlantic Landscape Conservation Cooperative, working actively on the coastal subgroup of the LCC's Technical Committee to help identify its 2012 Science Need Priorities, as well as reviewing projects. The ACFHP Coordinator also participated on the South Atlantic Landscape Conservation Cooperative's (SALCC) Partnership Committee to identify SALCC 2012 Science Gaps. From 2013 – present, ACFHP has been leading the coastal component of the NALCC Aquatic Habitat Assessment, and will continue to do so into 2015 (more on this project can be found in Section 1 'Science and Data' and Section 2). Also this past year, ACFHP has been represented on the SALCC Conservation Design Team.

Coordination with Additional Regional Partnerships

Other regional partnerships in which ACFHP has been involved, include the NMFS Office of Habitat Conservation (OHC) Habitat Protection Division's Cape Fear River Initiative and the Chesapeake Bay Executive Order Sustainable Fisheries Goal Implementation Team (GIT). The efforts of these partnerships support ACFHP Strategic Objectives and should the Partnership secure adequate operational funding, it expects to continue participating in these or other regional partnerships. Highlights from 2011-2013 are as follows:

In 2011, the ACFHP Coordinator provided the NMFS OHC Habitat Protection Division with pertinent ACFHP and NFHAP documents and information, including watershed plans from ACFHP partners and pertinent ACFHP AEI results in support of their new 'rivers initiative'. In 2012, the Partnership Coordinator participated in conference calls, a face-to-face meeting, and draft document review in the development of the Cape Fear River Basin Action Plan for Migratory Fish. Additionally, as a member of the Chesapeake Bay Executive Order Sustainable Fisheries GIT the ACFHP Coordinator attended and contributed to discussions occurring at its December 2011 and June 2012 meetings. ACFHP is currently (2014) working on the Chesapeake Bay Program's Fish Habitat Strategy Team, which will continue into 2015.

Prioritizing River Herring Habitat Restoration Needs

Under a grant from National Fish and Wildlife Foundation, ACFHP is co-leading a project with The Nature Conservancy to develop river restoration priorities for river herring in the Chesapeake Bay watershed, Delaware River, Hudson River, Connecticut River, Santee-Cooper River and Gilbert-Stuart River. Key stakeholder and expert input were solicited through an in-person workshop in May 2014, and additional webinars and smaller supplemental in-person meetings are ongoing. Work under this grant began in 2013, and will continue into mid-2015. This includes attending the 2015 Southern Division American Fisheries Society Meeting this month (January 2015) in Savannah, GA to engage stakeholders on the Santee-Cooper River.

Science and Data

In 2012, ACFHP helped guide NALCC funding towards a GIS-based habitat assessment project whose results will further bolster ACFHP's science base. Based on science needs put forth by ACFHP and EBTJV in 2012, NALCC funded an aquatic habitat assessment for the North Atlantic. Through a NFHP Board sponsored multistate conservation grant, ACFHP will continue to guide the coastal component of the NALCC habitat assessment. In collaboration with the NALCC, ACFHP hopes to use this GIS-based assessment and associated decision support tools to guide their selection of future fish habitat restoration and protection projects. The first model is for winter flounder, with a second model on a diadromous species to begin in early 2015.

Additionally, ACFHP submitted the Species-Habitat Matrix for publication in 2014, and will make the data available in an on-line format during the next three years (2015-2017). ACFHP will also work to extend GIS-based habitat assessment work into the South Atlantic and South Florida subregions over the next three years. Experience gained in the development of the NALCC aquatic habitat assessment will guide ACFHP decisions about the best methods to use for the rest of this range. These activities will support the Science and Data Objectives noted in the CSP (2012-2016).

Project Summaries

National Marine Fisheries Service Project Funding

In 2012, funds were provided from NOAA to ACFHP to extend conservation mooring technology currently in place in Massachusetts, to a new location on the Atlantic coast. A conservation mooring is a system designed to avoid contact with the seafloor thereby reducing physical damage to submerged aquatic vegetation. The system uses an elastic connection, akin to a bungee cord, to connect the surface buoy with the anchoring device. This eliminates any chain sweep that physically damages or eliminates vegetation growing on the seafloor. Through a series of communications beginning in 2012 and continuing through 2013, with its state partners from Florida through New York, and New Hampshire and Rhode Island, the Partnership has decided to install the conservation moorings in three separate locations (*Conanicut Marine Services, Inc., Clark Boatyard & Marine Works, and Jamestown Boat Yard*) in Jamestown, RI. The Partnership has already completed the project cost estimates, designed the interpretive outreach sign, and completed the pre-installation monitoring. We are currently in the process of writing the Memorandum of Understanding, and will begin installation in the spring of 2015. The project will be completed in winter 2016, with a final report submitted to NOAA.

USFWS-NFHP Project Funding

The Partnership solicited and evaluated on-the-ground fish habitat conservation projects FY2011,

FY2012, and FY2013 for USFWS-NFHP funding. This was made possible through a combination of multistate grant funding, which supports Coordinator time and non-Federal committee member travel to in-person meetings, and the in-kind support of committee members in the form of time participating in Partnership in-person and virtual meetings. Projects funded support numerous objectives in the ACFHP CSP (2012-2016). Should ACFHP secure adequate operation and project funding, it will continue soliciting and evaluating on-the-ground fish habitat conservation projects for USFWS-NFHP funding 2015-2017, in support of ACFHP Priorities and Protection and Restoration Objectives. Major accomplishments in USFWS-NFHP project selection from 2011 – 2013 are as follows:

In FY11, ACFHP received eight eligible projects; in FY12, seven, and in FY13, 10. From FY2011 through FY2013, the USFWS approved the distribution of USFWS-NFHAP funding to seven (two or three projects each year) of the top ranked projects submitted to ACFHP through its application process. All of these projects focused on a priority habitat as identified in ACFHP's CSP (riverine bottom and submerged aquatic vegetation in the North Atlantic, riverine bottom and submerged aquatic vegetation in the Mid-Atlantic, marine and estuarine shellfish beds and tidal vegetation in the South Atlantic, and mangroves in South Florida). They addressed Protection Objectives 1, 4, 5, and 6 and Restoration Objectives 1, 2, 3, and 4 in the CSP. In total, the projects opened 4.3 miles of river, restored over 9800 ft of linear shoreline, and over 10.41 acres of coastal habitat. Summary information on funded projects can be found below, and more in-depth project information (including outreach and monitoring) can be found in Section 2 of this report.

In 2011, the USFWS provided funding to the top two ranked project proposals submitted to the Atlantic Coastal Fish Habitat Partnership: *Restoring Diadromous Fish Passage and Habitat to Shorey's Brook* in Maine and *Shoreline and Spartina Marsh stabilization along the Atlantic Intracoastal Waterway* in South Carolina. In 2012, using a combination of new FY2012 funds and a small amount of FY2011 unspent funds, the USFWS provided funding to the top three project proposals submitted to the Partnership: *Restoring the Mangroves of the Indian River Lagoon* in South Florida, *Atlantic Sturgeon Habitat Restoration* in the James River of Virginia, and *Eelgrass Restoration with Conservation Moorings* in Buzzards Bay of Massachusetts. In 2013, the following two projects received funding*: Expanding Marine Meadow Habitat in Peconic Estuary, NY* and *Restoring Coastal Fish Habitat Using Oysters, Mussels, and Marsh Grass at Guana Peninsula, FL.* Further information on these projects, including leverage, can be found in Section 2 of this report.

In 2013, the Partnership requested on-the-ground conservation project applications for its fifth (FY14) USWFS-NFHP funding cycle, and received 19 eligible applications - two of which received funding: *Oyster Reef and Salt Marsh Habitat Restoration, Stump Sound, NC* and *Oyster Reef Restoration in Great Bay Estuary, NH*. The *Stump Sound* Project will address Protective Objectives 4, 5, and 6, and Restoration Objectives 2, 3 and 4 in the Conservation Strategic Plan for priority South Atlantic habitats (marine and estuarine shellfish beds and tidal vegetation) by protecting 200 ft. of estuarine shoreline in the sound by restoring 0.05 acres of fringing oyster reef and 0.07 acres of tidal salt marsh. The Great Bay Estuary Project will restore two acres of oyster reef (a North Atlantic priority habitat), addressing Protection Objectives 5 and 6 and Restoration Objectives 2, 3, and 4. More information on these projects can be found at: www.atlanticfishhabitat.org/projects/fundedprojects/. In 2014, the Partnership's sixth (FY15) request resulted in 3 eligible project applications. ACFHP has decided to recommend two of these applications for funding, plus three applications from the FY2014 funding cycle that did not receive FY2014 NFHP funding. More information on these projects can be found in Section 3 of this report.

Section II: Accomplishment Report (October 1, 2010 through September 30, 2013)

The purpose of this section is to describe, in detail, the activities of the FHP over the previous three fiscal years and how stated goals and objectives were met using FWS Action Plan funds and other funding and in-kind resources.

When responding to the requirements in this Section, FHPs should complete the self-assessment checklist, with narrative evidence justifying the performance level selected for each criterion. FHPs are strongly encouraged to limit responses to a maximum of 1 page per criterion.

Reviewers will use narrative responses as the primary means for determining FHP performance levels for the criteria in this section.

1. Meet the basic FHP requirements established by the National Fish Habitat Board for strategic planning and assessments

Over the previous three fiscal years, how has the FHP met basic requirements for scientific planning and habitat assessments? (Choose one and provide explanation)

Level 2: FHP has identified and has a plan to fill data gaps necessary to refine and complete fish habitat assessments, and incorporates existing habitat assessments into its strategic plan

Narrative:
Briefly summarize your assessments, efforts to identify and fill data gaps, and how assessment results have been incorporated into strategic plans priorities and project selection process. See Attachment for further guidance on responding to this criterion. Provide a link to your strategic plan and/or assessments as appropriate.

'Identified & has a plan to fill data gaps necessary to refine & complete fish habitat assessments'

Science & Data Objectives: Included in the CSP (here) are two science and data objectives, as follows, which lay out a plan to fill data gaps necessary to refine and complete fish habitat assessments:

Objective 1: Support ongoing research related to identifying or assessing fish habitat conservation activities and the threats to fish habitats.

Objective 2: Work to achieve ACFHP Science and Data Needs and fulfill science and data responsibilities established by NFHP (Science and Data Needs document here).

ACFHP's 2012-2013 Implementation Plan (IP, here) identifies tasks for achieving Strategic Action C.2.1 and C.2 of the CSP. In 2014, ACFHP has chosen to continue to work towards achieving the tasks laid out in the IP.

NALCC/Downstream Strategies Habitat Assessment: Based on science needs put forth by both ACFHP and EBTJV in 2012, NALCC funded an aquatic habitat assessment for the North Atlantic working with Downstream Strategies, LLC. As a result of this habitat assessment (here), ACFHP hopes to use this GIS-based assessment and associated decision support tools to fill in the data gaps and better guide their selection of future fish habitat restoration and protection projects. Models for brook trout, winter flounder, and river herring are being created, and will result in predicted species distribution maps, as well as identification and quantification of threats and stressors to the species modeled. The decision support tools will provide a highly functional and user-friendly mechanism for resource managers to visualize, rank, and manipulate inputs to prioritize areas for conservation action. Experiences gained in the development of the NALCC Aquatic Habitat Assessment will guide decisions concerning the completion of habitat assessments for the rest of the ACFHP range.

'Incorporates existing habitat assessments into its strategic plan'

The Species-Habitat Matrix: The Species-Habitat Matrix was completed in 2009 and evaluates the relative importance of coastal, estuarine, and freshwater habitat types to the major life stages of over 100 fish species (summary report here). The compilation and analysis of this information was undertaken in an effort to use science to set ACFHP priorities, and the priority habitats from this study have been incorporated into the 2012 – 2016 CSP. In working towards accomplishing the CSP, ACFHP has incorporated a section for reviewers to score each project based on whether or not it supports or addresses draft regional priority fish habitats (FY11) or subregional priority fish habitats (FY12 – FY15), as noted in the ACFHP Draft Conservation Strategic Plan 2009 (FY11) or CSP (FY12 – FY15) during project proposal reviews. This report was submitted to *Science* for review in 2014.

The Assessment of Existing Coastal Habitat Information (Assessment): The Assessment, completed in 2009, is a database of documents, datasets, and information portals on Atlantic coastal habitats which were collected and analyzed for indicator, threat, and action information (here). A finalized set of Priority Threats were outlined in the 2012 – 2016 CSP, identified from the Assessment results. A table which relates the results of this project with ACFHP Priority Threats identified in this CSP can be found in Appendix C of the CSP. On-the-ground projects solicited in FY12 onward have been evaluated on how well they addressed the finalized threat and restoration objectives as determined by the Assessment.

2. **Execute projects that benefit FHP priority species or priority areas**

What percentage of all projects initiated in the past three fiscal years were focused on FHP defined priority species or priority areas? (Choose one)

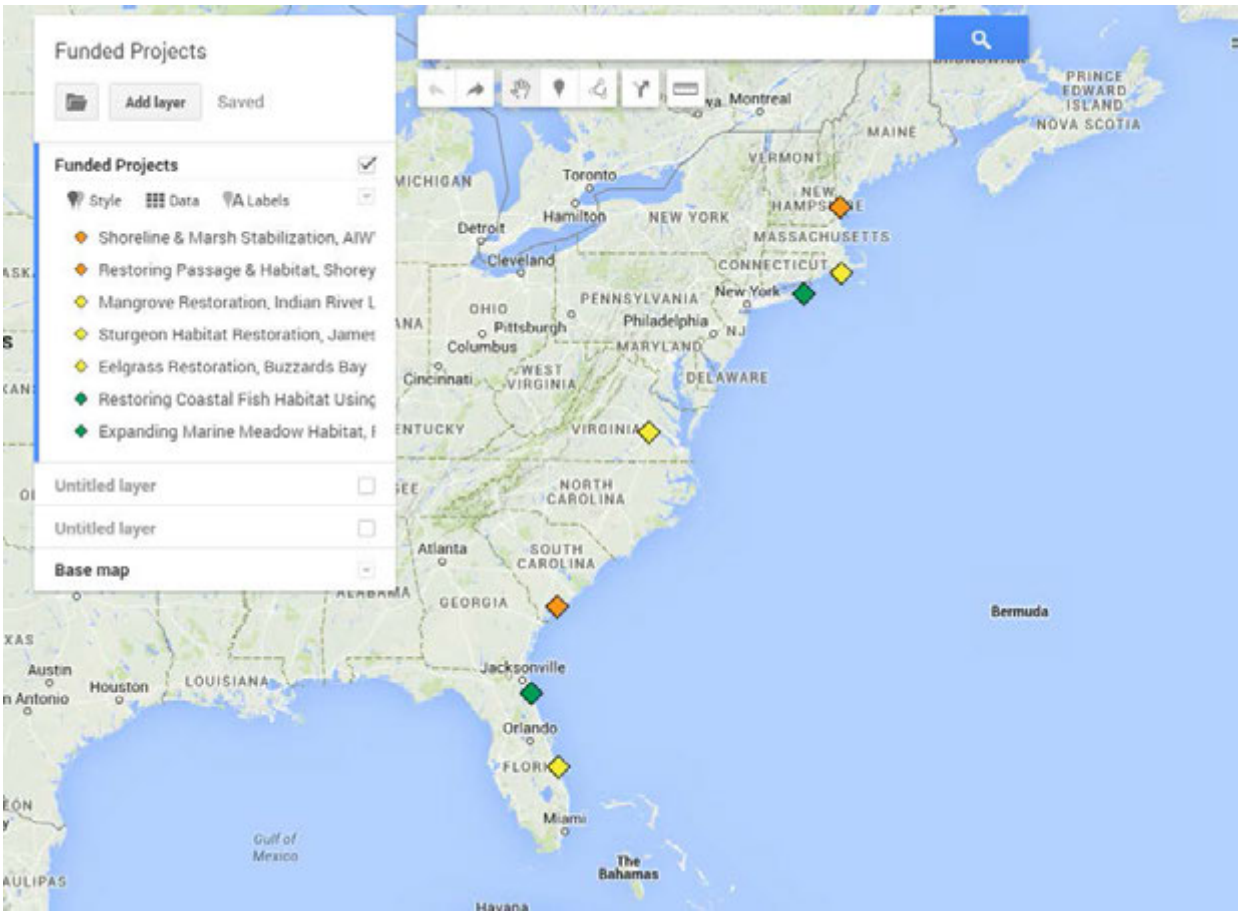
- ☐ **At least 95% (Level 3)**

Complete table adding rows as needed, attach map with project locations and priority areas identified.

Project Title	**FHP Priority Area**	**Brief project description (max. 250 characters)**
Restoring Diadromous Fish Passage and Habitat to Shorey's Brook, South Berwick, ME	North Atlantic: Riverine, Coastal Inert Substrate	Dam removal and replacement of a failing perched culvert restored connectivity to in-stream and upstream riverine and coastal inert substrata, including 800 ft of habitat for diadromous fish and opened 4.3 miles of river upstream.
Shoreline and Spartina Marsh Stabilization Along the Atlantic Intracoastal Waterway in SC	South Atlantic: Loose Fine Bottom, Tidal Vegetation	Shorelines here are subject to severe erosion from boat traffic and artificial channelization. This project stabilized shoreline by adding 0.06 acres of oyster habitat to protect 100 m of shoreline, creating 0.15 acres of adjacent tidal marsh over time.
Restoring the Mangroves of the Indian River Lagoon	South Florida: Mangrove, Submerged Aquatic Vegetation	This project removed 5 acres of invasive plants and planted over 8,500 linear ft of shoreline with species such as mangroves and *Spartina* grass to create new fish nursery habitat. Mangroves will reduce erosion and filter stormwater runoff, improving conditions for seagrass.
James River Atlantic Sturgeon Habitat Restoration	Mid-Atlantic: Riverine Bottom	A lack of clean, hard substrate is a limiting factor for many anadromous species. The project will increase the spawning grounds of Atlantic sturgeon and other anadromous fish in the James River by constructing an artificial spawning reef using 2,500 tons of broken granite.
Eelgrass Restoration with Conservation Moorings in Buzzards Bay, MA	North Atlantic and Mid-Atlantic: Submerged Aquatic Vegetation	The project replaced traditional chain moorings that scour surrounding eelgrass with elastic conservation moorings in order to minimize impacts to the seafloor, enable restoration of 29 m^2 of eelgrass & preserve habitat essential to critical life stages of trust species.
Expanding Marine Meadow Habitat in Peconic Estuary, NY	Mid-Atlantic: Submerged Aquatic Vegetation	Eelgrass and widgeon grass will be planted in this estuary where historic beds used to thrive. This project will stabilize the sediment, provide fish habitat, and improve water clarity.
Restoring Coastal Fish Habitat Using Oysters, Mussels, and Marsh Grass at Guana Peninsula, FL	South Atlantic: Marine and Estuarine Shellfish Beds, Tidal Vegetation	This project will restore and enhance fish habitat by preventing shoreline erosion and promoting shoreline accretion via the planting of mussel and oyster shells, and *Spartina* grass. This will restore over 1,000 feet of shoreline and improve water quality.

*For list of priority habitats, please see the ACFHP Draft Conservation Strategic Plan 2009 (FY11) and our

current CSP, (FY12, 13, here).



3. **Execute projects that benefit FWS priority species / trust resources**

What percentage of all projects initiated in the past three fiscal years addressed habitat issues for FWS priority or trust resources? (Choose one)

☐ **75% (Level 3)***

Complete table. Add rows for additional projects.

Project Title	Location (FWS Region)	Primary Species or Resources Benefitted	FWS Priority or Trust Resources (if neither, leave blank)
Restoring Diadromous Fish Passage and Habitat to Shorey's Brook, South Berwick, ME	5	River herring, American eel, Atlantic sturgeon, alewife	FWS Priority Species Region 5
Shoreline and Spartina Marsh Stabilization Along the Atlantic Intracoastal Waterway in SC	4	Eastern oyster, American eel, Atlantic sturgeon, shad, river herring, black sea bass, red drum, Atlantic croaker, Atlantic menhaden, scup, spotted seatrout, tautog, weakfish, bluefish, horseshoe crab, Spanish mackerel, spiny dogfish, summer flounder	FWS Priority Species Region 4
Restoring the Mangroves of the Indian River Lagoon	4	Spotted seatrout, red drum, alligator gar	FWS Priority Species Region 4
James River Atlantic Sturgeon Habitat Restoration	5	Atlantic sturgeon, American eel, Atlantic menhaden	FWS Priority Species Region 5
Eelgrass Restoration with Conservation Moorings in Buzzards Bay, MA	5	Alewife, American shad, striped bass, and multiple other species including winter flounder, American lobster, Atlantic menhaden, black sea bass, tautog	FWS Priority Species Region 5
Expanding Marine Meadow Habitat in Peconic Estuary, NY	5	Striped bass and multiple other species including tautog, winter and summer flounder, black sea bass, bluefish, menhaden, American lobster.	FWS Priority Species Region 5
Restoring Coastal Fish Habitat Using Oysters, Mussels, and Marsh Grass at Guana Peninsula, FL	4	Spotted seatrout and multiple other species including various fish, shellfish, amphibians, reptiles, birds, and mammals, including black sea bass, bluefish, Atlantic croaker, summer flounder, Atlantic menhaden, red drum, Spanish mackerel, and spot.	FWS Priority Species Region 4

* ACFHP interprets 'interjurisdictional fishes and aquatic species' (from Chapter 1, National Fish Habitat Action Plan, of the 717 FW 1, section 1.5 B) to include those species managed by the Atlantic States Marine Fisheries Commission (ASMFC).

4. **Project Completion and Success**

What percentage of projects, funded in whole or in part, with FWS NFHAP funds *in the past three fiscal years have been completed consistent with the project design?* (Choose one) *See attachment further guidance on responding to this criterion*

☐ **90% (Level 3)**

Complete table adding rows for additional projects.

Project Name	Completion Date	Project Completed according to design (Yes/No and explain response, max. 250 characters)
Restoring Diadromous Fish Passage and Habitat to Shorey's Brook, South Berwick, ME	November 2011	Yes. The design was modified during the project, and the funding was reduced to $13,587 from the original $50,000 awarded. These funds were expended and the dam was removed, the stream was restored, and post-monitored took place. Final report received.
Shoreline and Spartina Marsh Stabilization Along the Atlantic Intracoastal Waterway in SC	Summer 2012	Yes. The oyster reef exceeded the 0.05 acre target to reach 0.08 acres in size, protecting 150 m of shoreline (target was 100 m) and 0.3 acres of saltmarsh (0.15 acres target). Monitoring has taken place. Final report received.
Restoring the Mangroves of the Indian River Lagoon	Summer 2014	Yes. The invasive species have been removed and the native species have been planted, restoring 8,500 linear feet of fish nursery habitat via 15,000 mangroves and *Spartina* grass. Post-installation monitoring has taken place. Final report received.
James River Atlantic Sturgeon Habitat Restoration	July, 2013	Yes. The artificial reef was installed in the summer of 2013 and post-installation monitoring began in the fall spawning season for sturgeon.
Eelgrass Restoration with Conservation Moorings in Buzzards Bay, MA	May 2014	Yes. Moorings were installed May 2013 and eelgrass planted the following year. Eelgrass only needed to be planted at 3 of the sites since the grass grew in naturally at the other 5. Post-monitored took place immediately after installation and the following year. Final report received.
Expanding Marine Meadow Habitat in Peconic Estuary, NY	November 2014	Yes. The submerged aquatic vegetation has been planted according to the proposal and monitoring will take place into next year.
Restoring Coastal Fish Habitat Using Oysters, Mussels, and Marsh Grass at Guana Peninsula, FL	June 2014	The fiber logs were installed in summer 2014 and monitored according to the proposal. By September the logs degraded and had to be removed. If they can secure more funding, logs will be reinstalled with a different technique.

5. **Monitoring and Evaluation**
What percentage of all projects initiated in the past three fiscal years included a monitoring and evaluation plan? (Choose one)

☐ **90% (Level 3)**

Complete table adding rows for additional projects.

Project Name	Brief Monitoring & Evaluation Plan Description (max. 250 characters)
Restoring Diadromous Fish Passage and Habitat to Shorey's Brook, South Berwick, ME	'Pre-project monitoring will include fish surveys, natural resource inventories, sedimentation sampling & analysis; post-project surveys will include fish surveys, invasive species monitoring, & any other monitoring required as part of the permitting process (incl. water quality).'
Shoreline and Spartina Marsh Stabilization Along the Atlantic Intracoastal Waterway in SC	'Reefs will be sampled after yr 1 for oyster recruitment, size & abundance. Shoreline changes will be documented using GPS & digital photography (dp). Sediment composition will be analyzed pre & post construction. Marsh expansion will be documented over time with dp & reference stakes.'
Restoring the Mangroves of the Indian River Lagoon	'Pre & post installation monitoring will occur. Includes: photographic records & survey lines or test plots to understand type, size & number of plants species, plant health, distance from shoreline, animal or human usage of sites, invasive species presence, & water quality parameters.'
James River Atlantic Sturgeon Habitat Restoration	'Monitoring of the proposed site will be accomplished through the use of deployed egg mats, gill net fishing, larval net deployment and hydroacoustic tag deployment during spawning periods. Pre-monitoring also used side-scan sonar.'
Eelgrass Restoration with Conservation Moorings in Buzzards Bay, MA	'Monitoring will include pre-project scar measurements and mapping, and 1 month and annual post-project eelgrass shoot density and % cover, scar measurements and mapping.'
Expanding Marine Meadow Habitat in Peconic Estuary, NY	'Pre-monitoring includes the deployment of light & temperature loggers & physical surveys to establish site condition. Plantings will be monitored (drop cameras, snorkeling, SCUBA) weekly for the 1st month then by monthly observations (1st growing season) to allow for adaptive management.'
Restoring Coastal Fish Habitat Using Oysters, Mussels, and Marsh Grass at Guana Peninsula, FL	'Monthly monitoring (trawl) is occurring for benthic fauna, shellfish settlement, & vegetation growth in the restoration area. Post monitoring includes assessing shoreline erosion/accretion; monitoring mussel settlement, movement, & recruitment; & monitoring *Spartina* growth.'

*Quotes taken from proposals, shortened for length requirements.

6. Leveraging of FWS Project Funds

Over a three year period the FHP leveraged FWS NFHAP funding by a ratio of (Choose one). See attachment for further guidance on responding to this criterion:

☐ **At least 3:1 (Level 3)**

Complete table adding rows for additional projects.

Project Name	NFHAP Funds	Non-FWS Contributions	Total Project Costs	List of Funding Partners
Restoring Diadromous Fish Passage and Habitat to Shorey's Brook, South Berwick, ME	19,410*	319,193	343,603 (NFHP funds + non-FWS contributions + $5,000 from USFWS Gulf of Maine Program)	NOAA/Conservation Law Foundation, Coastal Conservation Association (CCA) NH, Great Bay Trout Unlimited, Piscataqua Region Estuaries Partnership (PREP), local wetland scientist, Stantec Consulting engineer, S. Berwick Strawberry Festival, Town of Eliot, Great Works Regional Land Trust, Gulf of Maine Council, American Rivers, Maine Corporate Wetlands Restoration Partnership, Maine Dept. of Transportation (DOT),
Shoreline and Spartina Marsh Stabilization Along the Atlantic Intracoastal Waterway in SC	35,148	35,655	70,802	South Carolina Department of Natural Resources (DNR), CCA
Restoring the Mangroves of the Indian River Lagoon	71,429	64,375	146,069 (NFHP + non-FWS contributions + 10,265 from USFWS)	Marine Resources Council, Inc.
James River Atlantic Sturgeon Habitat Restoration	43,200	159,560	202,760	Luck Stone, The Nature Conservancy (TNC)/NOAA, Mary Anderson Harrison, James River Association, Robins Foundation
Eelgrass Restoration with Conservation Moorings in Buzzards Bay, MA	27,387	11,612	38,999	MA Division of Marine Fisheries, Town of Falmouth, LightHawk Aerial Photography
Expanding Marine Meadow Habitat in Peconic Estuary, NY	39,149	68,587	116,739 (in proposal: they asked for $48,152 but we did not grant the full amount)	Moore Charitable Trust, Suffolk County, Town of East Hampton, Peconic Estuary Program
Restoring Coastal Fish Habitat Using Oysters, Mussels, and Marsh Grass at Guana Peninsula, FL	44,910	46,137	91,047	Friends of the Guana Tolomato Matanzas (GTM) Reserve, University of North Florida, GTM National Estuarine Research Reserve
ACFHP Operational Support 2011 - 2013	0	238,000	238,000	Multi-State Conservation Grant
Total	280,633	943,119	1,248,019	

*These values calculated by dividing amount granted by 0.7 to account for FWS overhead.

Section 3: Work Plan (1-Year Planning Horizon)

FHPs must present the suite of ranked projects proposed for FWS NFHAP funding in the current fiscal year and describe how these projects demonstrate strategic use of NFHAP funds and will achieve desired conservation outcomes. Complete table below, adding rows for additional projects.

Proposed Projects for NFHAP Funding

FWS Region	State	FONs #	Project Title	Rank	NFHAP Funds	Partner Funds++	Total Cost	NFHP Strategic Action	FWS Climate Objective
5	VA	51320-2015-071	Atlantic Coastal Fish Habitat Partnership Operations FY15, VA NFHP ACFHP	1	107,143*	65,000**	172,143	1, 3 (via projects recommending for funding)	3.2, 3.3, 3.4
5	ME	53371-2015-389	Renewing Diadromous Fish Passage, Patten Stream, Surry, ME NFHP ACFHP	2	35,715+	179,972	215,687	3	3.2, 3.3, 3.4, 3.5 (increasing connectivity promotes genetic mixing)
5	MA	53340-2013-331	Cotton Gin Mill Dam Removal and Fish Passage Project, Satucket River, East Bridgewater, MA NFHP ACFHP	3	71,429	451,308	522,737	3	3.2, 3.3, 3.4, 3.5 (increasing connectivity promotes genetic mixing)
5	CT	53340-2015-353	Pond Lily Dam Removal, West River, New Haven County, CT NFHP ACFHP	4	71,429	617,962	689,391	3	3.2, 3.3, 3.4, 3.5 (increasing connectivity promotes genetic mixing)
4	NC	42330-2013-168	Cape Fear River Fisheries Enhancement Project NFHP ACFHP	5	42,858	184,511	227,369	3	3.2 (integrity), 3.3, 3.4
5	NH	53340-2013-332	Sawyer Mill Dam Removals, Bellamy River, Dover, NH NFHP ACFHP	6	21,429	103,000	124,429	3	3.2, 3.3, 3.4, 3.5 (increasing connectivity promotes genetic mixing)

++These include all partner funds, some of which may be supplied by other FWS sources (e.g. Cape Fear

River Fisheries Enhancement Project received SARP funding in the past). These values may change when calculating leverage in future reports.
*values in this column are calculated as the amount ACFHP is recommended divided by 0.7 to account for FWS overhead of 30%.
**$50,000 from the 2015 MSCG and $15,000 from half of the $30,000 received from FWS NFHP Funds through December 31, 2015.
+Submitter requested $50,000 but ACFHP would like to split the funding with another Partnership that they also submitted a proposal to, so ACFHP is recommending $25,000 before overhead.

7. **Strategic Implementation**

Percentage of projects that include measurable goals and objectives to address:

- *FHP priority species or priority areas; and/or*
- *Habitat issues for FWS priority species or trust resources*

Choose one and complete the table and narrative response below.

☐ **95% (Level 3)**

Complete this table, adding rows for additional projects.

Project Title	Identify FWS Priority Species or Trust Resources	Identify FHP Priority Species or Area
Atlantic Coastal Fish Habitat Partnership Operations FY15, VA NFHP ACFHP	Alewife, Atlantic salmon, brook trout, American eel, American shad, Atlantic sturgeon, blueback herring, shortnose sturgeon, striped bass	Riverine bottom, submerged aquatic vegetation, tidal vegetation
Renewing Diadromous Fish Passage, Patten Stream, Surry, ME NFHP ACFHP	Blueback herring, alewife, American eel, Atlantic salmon, brook trout	Riverine bottom
Cotton Gin Mill Dam Removal and Fish Passage Project, Satucket River, East Bridgewater, MA NFHP ACFHP	Alewife, blueback herring, American eel	Riverine bottom
Pond Lily Dam Removal, West River, New Haven County, CT NFHP ACFHP	Alewife, blueback herring, American eel	Riverine bottom
Cape Fear River Fisheries Enhancement Project NFHP ACFHP	American shad, shortnose and Atlantic sturgeon, striped bass, alewife, blueback herring	Riverine bottom
Sawyer Mill Dam Removals, Bellamy River, Dover, NH NFHP ACFHP	Blueback herring, alewife, American shad, American eel	Riverine bottom

8. **Conservation Actions and Project Outcomes**

Percentage of proposed projects that specify conservation actions that will produce desired conservation outcomes and achieve project goals and objectives?

Choose one and complete the narrative response below.

☐ **100% (Level 3)**

Brief Project Summary for each prioritized project

1. *Atlantic Coastal Fish Habitat Partnership Operations FY15, VA NFHP ACFHP*

Measurable goals and objectives:

The objective of this project is to work on tasks from the ACFHP CSP: maintain and restore fish habitat connectivity, restore priority fish habitats, increase public awareness of threats, advance science and data projects, communicate and develop relationships with partners, and secure operational funding. ACFHP will compile existing information about fragmentation and barriers to fish passage, communicate information about threats to fish habitat, fund projects that restore coastal habitats, provide support and guidance to habitat assessment work, and help NFHP achieve its objectives.

Conservation actions and project outcomes:

Three in-person Atlantic Coastal Fish Habitat Partnership meetings will be held. Two steering committee meetings will be held to address specific tasks from the ACFHP CSP (one in fall 2015 and one in spring 2016). One Science and Data Working Group meeting will be held to determine priorities for new science and data projects and advance ongoing projects (to be held in either summer or fall of 2015). ACFHP will also use USFWS-NFHP funds to support projects 2 – 6 recommended in this document, which will help us meet our CSP protection and restoration objectives. The remaining USFWS-NFHP funds would go towards coordinator salary in 2015.

2. *Renewing Diadromous Fish Passage, Patten Stream, Surry, ME NFHP ACFHP*

Measurable goals and objectives:

This project will install a nature-like fishway that restores access to 20 stream miles and 1,200 alewife spawning acres in Patten Stream. Route 172 is the sole barrier between Patten Bay and the upper drainage, and is located just upstream of tidewater. As a result, Patten Stream's alewife are nearly extirpated, surviving mainly due to volunteers who carry fish over the barrier in nets to reach spawning habitat. The project will also benefit sea-run brook trout, American eel and is located in Critical Habitat for Atlantic salmon. This project will benefit riverine bottom, an ACFHP priority habitat, and meets protection and restoration objective 1 of the ACFHP CSP. The habitats involved, project readiness, and cost per unit of habitat made accessible make this project one of Maine's highest restoration priorities.

Conservation actions and project outcomes:

The final design is complete with permit approval underway. The resulting fishway design features a series of five progressively higher notched rock weirs whose specific elevations, sizes, orientation, and spacing are intended to pass alewives under the widest range of normal passage conditions, within pre-existing constraints of the site. The contractor will be selected, the fishway installed, one year pre- and two years post-installation monitoring and outreach will be carried out (at least one annual community educational event and volunteer monitoring). Funds from ACFHP will be used only to hire construction contractors. The team carrying out this project is highly experienced, consisting of representatives from Maine DMR, Maine Coastal Program, Maine IFW, and NOAA.

3. *Cotton Gin Mill Dam Removal and Fish Passage Project, Satucket River, East Bridgewater, MA NFHP ACFHP*

Measurable goals and objectives:

The Cotton Gin Mill Dam is an obsolete dam on the Satucket River in East Bridgewater MA, which hinders natural river processes and blocks fish passage. The project will remove the dam, opening up 4.4 river miles to allow river herring passage to 124 acres of spawning habitat, with potential for 528 more acres. The project team includes The Nature Conservancy, MA Division of Ecological Restoration, and the dam owner, and will restore riverine bottom, an ACFHP priority habitat. The MA State Wildlife Action Plan identifies alewife and blueback herring, and the freshwater mussels triangle floater and tidewater mucket as species of greatest conservation need (all of which will benefit from dam removal) and identifies dam removal and fish passage as priority strategies.

Conservation actions and project outcomes:

The dam will be removed by an experienced contractor, providing infrastructure protection as necessary to prevent negative project impacts. Construction work will be conducted according to designs produced by an engineer and agreed to by the project team and dam owner. NFHP funds will be used towards the construction contract. The effectiveness of this project in restoring migratory fish passage will be measured through changes in characteristics such as substrate, long profile, and flow velocity, and fish counts will be conducted for at least 5 years. For outreach, the project partners will coordinate on-site signage and press events and releases. The project team is experienced in conducting outreach to the general public, local leadership, and Congressional offices.

4. *Pond Lily Dam Removal, West River, New Haven County, CT NFHP ACFHP*

Measurable goals and objectives:

Pond Lily Dam is in a hazardous condition, and is a barrier to connectivity and water flow on the West River. This project will remove the dam to improve diadromous fish passage, increase spawning habitat, restore the river to a more natural condition and restore 2.6 river miles (76 acres). The dam will be removed by an approved and bonded licensed contractor under competitive bidding process. The project will expand riverine migratory corridor habitat and spawning grounds for alewife, blueback herring, and American eel, and increase their populations in Long Island Sound. Together with their

previous project, a total of 10.0 river miles will be restored. The project is in a Riverine Bottom ACFHP Priority Habitat.

Conservation actions and project outcomes:

Connecticut Fund for the Environment/Save the Sound (StS) will supervise a licensed engineering construction firm to remove the dam to full vertical extent and restore historic channel alignment. They will engage volunteers in installing native plantings to restore the site. NFHP will fund a portion of personnel and construction expenses. StS received funding from the NFWF and the RAE/NOAA partnership to complete the engineered design and permitting stages of the project. Standardized monitoring of the West River will take place by CT DEEP, before and after removal, and multiple outlets will be used to engage the public on the process (including at least two press releases, social media, email, and volunteer time).

5. *Cape Fear River Fisheries Enhancement Project NFHP ACFHP*

Measurable goals and objectives:

This project, implemented by State, Federal, non-profit, private organizations as well as the local community, will enhance approximately 0.5 acres of riverine bottom (an ACFHP Priority Habitat) below Lock and Dam (L&D) 2 on the Cape Fear River. These funds will support post-construction biological monitoring to ensure successful spawning. Before this project, 70% of fish populations were unable to pass thru L&D 2. Upon completion, 0.5-acres of spawning habitat and 32 miles of larval rearing habitat will be restored. This project benefits American shad, an ASFMC managed and FWS Priority species, as well as the endangered shortnose and Atlantic sturgeon. Indirectly, the restoration project will also provide potential spawning habitat for striped bass and river herring.

Conservation actions and project outcomes:

Approximately 1,150 tons of mixed native rock were placed below L&D 2 to restore 0.5-acres of anadromous fish spawning habitat. These activities helped compensate for reduced access to historical spawning habitat due to fish passage barriers. Long-term biological monitoring will be paid for by requested NFHP funds. These projects have been carried out in other systems in the past, but tend to lack funding for the amount of monitoring necessary to determine if restoration was successful. If funded, this project will provide ACFHP and NFHP valuable information on feasibility of riverine habitat improvement projects in the future. Over 60 volunteers will be involved in the project, and public engagement is planned as well.

6. Sawyer Mill Dam Removals, Bellamy River, Dover, NH NFHP ACFHP

Measurable goals and objectives:

This project aims to remove two dams (Upper and Lower Sawyers Mill Dam) on the Bellamy River in Dover in order to reconnect upstream unobstructed fish habitat in the Bellamy River to the Great Bay Estuary. These dams are the first diadromous fish

passage barriers on the Bellamy River. Removal will reconnect 11.2 miles of quality upstream habitat with large riparian buffers to the Great Bay Estuary, totaling 34% of the stream habitat in the 33.9 square mile Bellamy River watershed. This project will restore riverine bottom habitat (an ACFHP Priority Habitat) and will benefit blueback herring, alewives, sea lamprey, and American eels. The project has three strategic phases, and Sawyer Mill Associates, Inc. is seeking funding from ACFHP for phase II: final design and permitting.

Conservation actions and project outcomes:

Phase II involves completing project designs, Section 106 historical/archeological documentation requirements, and securing the necessary wetland permits from the NHDES Wetlands Bureau and U.S. Army Corps of Engineers. The outcome of this phase will be finalized bid documents, specifications, cost estimates, and completed environmental permits needed to make the project ready for on-the-ground implementation.

Supplemental Guidance for Selected Performance Criterion

1. Benchmarks for the Habitat Assessment criterion performance levels and evaluating FHP achievement of Basic FHP Requirements (Appendix 2, Section 2 , Criterion 1 in the approved methodology)

To achieve Performance Level 1 (PL1), an FHP must:

- Coordinate and compile scientific assessment(s) information on priority fish habitats within the FHP's boundaries. Note: FHPs can use an existing assessment(s) performed by others (e.g., NFHP National Habitat Assessment, universities, Recovery Teams, or LCCs) as a starting point or undertake their own assessment(s).

To achieve Performance Level 2 (PL2), FHP must:

- Meet the requirements of PL1.
- Complete FHP specific plan to fill data gaps and to refine and complete fish habitat assessment.
- Prioritize information gaps and approach to fill science and data gaps necessary to refine, complete, and update habitat condition assessments.
- Identify how habitat assessments projects will be solicited and selected within FHP priorities.
- Incorporate existing assessments of habitat conditions and threats as needed into the FHP strategic plan.

To achieve Performance Level 3 (PL3), FHP must:

- Meet the requirements of PL2.
- Information gaps in scientific information and knowledge have been filled and the FHP is proactively sharing this information in a compatible format with the National Science and Data Team for integration into the national assessment and other national needs.
- Incorporate new data on threats, including climate change, into the habitat assessment and project priorities.

2. Additional instruction for determining project completion (found in Appendix 2, Section 2, Criterion 4 of the approved methodology)

<u>On-the-Ground Aquatic Habitat Restoration and Protection Projects</u>

- A project is complete when fully constructed or implemented consistent with the project design and performance measures (i.e., number of stream miles enhanced or restored) are reported in FIS-Accomplishments.
- Basic implementation monitoring (if specified in the original project proposal) is also completed; however, longer term, 1-2 year monitoring, and evaluation (if specified in original project proposal) need not be completed to consider the project complete.

Education and Outreach Projects and Species or Habitat Assessment Projects

- A project is complete when the specified product/deliverable (i.e., a brochure, informational sign, video, assessment report, GIS database, etc.) is produced and received consistent with that which was described in the original project proposal and performance measures are reported in FIS-Accomplishments.
- If monitoring was specified (typically not for these project types), then basic implementation monitoring (if specified in the original project proposal) is also completed; however, longer term, 1-2 year monitoring, and evaluation (if specified in original project proposal) need not be completed to consider the project complete.

3. Instruction for calculating Leveraging (found in Appendix 2, Section 2, Criterion 6 of the approved methodology)

This criterion indicates the extent to which an FHP has leveraged FWS NFHAP project funds over the previous three fiscal years. The intent is to measure actions by FHPs to secure additional partner funds to supplement projects that receive NFHAP funding. Leveraging is measured as a ratio of the total FWS NFHAP project funds (this includes stable operational support, performance-based funds, and indirect NFHAP technical project support an FHP received) to the total non-FWS cash or in-kind contributions the FHP secured to supplement the NFHAP funds it received over the previous three fiscal years. (Note: Fiscal year refers to federal fiscal year, which begins October 1 and ends September 30, annually).

Leveraged funds and in-kind contributions for projects that receive NFHAP can include, but is not limited to:

- Monetary contributions for FHP coordination and staff positions
- Grants
- Private foundation funds
- Documented donations; and in-kind materials and services
- Funds where FWS funds are potentially co-mingled with other non-Service funding sources (e.g. National Fish and Wildlife Foundation)
- Non-appropriated funds managed by the FWS (e.g. Coastal Impact Assistance Program, National Coastal Wetland Conservation Grant program)

Leveraging cannot include:

- FWS appropriated funding and their associated matching funds or in kind services (e.g. Service funds and partner contributions associated with Fish Passage, Coastal and Partners programs, LCCs)
- Any funds raised by the FHP for general operations or projects where FWS NFHAP funds are not used

Approved by the National Fish Habitat Board
January 14, 2015

Evaluating Fish Habitat Partnership Performance

Introduction

The National Fish Habitat Partnership is an unprecedented effort to build and support partnerships that are strategically focused on fish habitat conservation. The National Fish Habitat Action Plan (Action Plan) guides this initiative and establishes processes for bringing partners together, challenging them to collaboratively advance strategic priorities, as well as measure and report on the outcomes of their conservation actions. The geographic scope and focus on fish habitat conservation distinguishes the National Fish Habitat Partnership from other more local fish habitat initiatives.

To uphold the high standards set by the Action Plan, the National Fish Habitat Board (Board) adopted a set of ten measures aimed at evaluating Fish Habitat Partnership performance levels for core operational functions (i.e., coordination, scientific assessment, strategic planning, data management, project administration, communications, and outreach). At its July 2012 meeting, the Board voted to begin the first "formal" performance evaluation of Fish Habitat Partnerships in January 2015, covering a 3-year period (2012-2014), and to repeat this process every 3 years thereafter.

Performance Evaluation Process

Each Fish Habitat Partnership will submit a completed performance evaluation form by March 31, 2015. A Board-appointed team will assess each partnership's responses to the ten measures and rate their level of performance using a scale of 1 (low) to 4 (high). The performance evaluation outcomes will be sent to each Fish Habitat Partnership for their review and response prior to being finalized by the team.

Performance measures 1–5 are focused on fish habitat conservation projects, which are defined as (a) approved actions taken for the conservation or management of aquatic habitat for fish and other aquatic organisms; (b) the provision of technical assistance to states, Indian tribes, or local communities to facilitate the development of strategies and priorities for aquatic habitat conservation; and, (c) the obtaining of real property interest in lands or waters, including water rights, if the obtaining of such interest is subject to terms and conditions that will ensure the real property will be administered for the long-term conservation of such lands and waters and the fish dependent thereon. Real property interest means any ownership interest in lands or a building or an object that is permanently affixed to land.

Performance Evaluation Form Instructions

Please provide a complete description of the information requested for each performance measure as the review team will rely on your responses when assessing your partnership's level of performance. The time period that is being covered by this performance evaluation is Federal Fiscal Years 2011-2013 (October 1, 2010 – September 30, 2013) for measures 1- 4 and calendar years 2012-2014 (January 1, 2012 – December 31, 2014) for measures 5-10.

Fish Habitat Performance Evaluation Form

1. For federal fiscal years 2011-2013, list the title of each of your partnership's fish habitat conservation projects that:

   a. Used National Fish Habitat Action Plan (NFHAP) funding sources (e.g., US Fish & Wildlife Service); or,
   b. Your partnership developed and were funded by non-NFHAP sources; or,
   c. Were neither funded by NFHAP sources nor developed by your partnership, but were formally endorsed by your partnership.

   For each project listed, identify the project type (a, b, or c) as well as the specific FHP and/or national conservation priority (i.e., geographic focus areas, habitat types, key stressors or impairments) the project addresses.

   The following information should be provided for each Fish Habitat Conservation Project:

   - Federal Fiscal Year the project was funded or endorsed
   - Project title
   - Project type
   - Project location
   - FHP conservation priority being addressed along with a narrative that details how it is being addressed by the project
   - National conservation strategy being addressed along with a narrative that details how it is being addressed by the project
   - Why the project was endorsed by your FHP (if applicable)

Please see Excel spreadsheet.

2. Describe the monitoring /evaluation plan being used to measure success in achieving the expected conservation outcomes* for each fish habitat conservation project listed under Performance Measure 1. (*Outcomes represent "a desired future state" while outputs are "immediate project products." Providing fish in a stream unimpeded access to spawning habitat is a conservation outcome, whereas removing a manmade barrier is a project output.)

   The following information should be provided for each Fish Habitat Conservation Project:

   - Project title
   - Expected conservation outcome
   - Description of the monitoring/evaluation plan

Please see Excel spreadsheet.

3. Describe vulnerable fish habitat being protected or the causes of and processes influencing fish habitat decline that are being addressed by each fish habitat conservation project listed under Performance Measure 1.

   The following information should be provided for each Fish Habitat Conservation Project:

   - Project title
   - Vulnerable fish habitat being protected
   - Causes of and processes influencing fish habitat decline being addressed

Please see Excel spreadsheet.

4. For the fish habitat conservation projects listed under Performance Measure 1, what is the amount of NFHAP funds (i.e., US Fish and Wildlife Service NFHAP funds) allocated in support of these projects, and what is the total amount of funding from all other sources?

   The following information should be provided for each Fish Habitat Conservation Project:

   - Project title
   - Amount of NFHAP funds supporting the project
   - Amount of other federal funds supporting the project
   - Amount of non-federal funds supporting the project
   - If pertinent, also include a description of how funding the project assisted with generating additional sources of non-NFHAP funding that is being targeted towards your partnership's priorities. For example, using NFHAP funds for a fish habitat conservation project that subsequently lead to a new funding source devoted to addressing one or more of your priorities.

Please see Excel spreadsheet.

5. Please provide a copy of the criteria your partnership currently uses to prioritize fish habitat conservation projects for funding.

Please see attached criteria (word document).

6. Describe the ways your partnership has engaged with neighboring/overlapping Fish Habitat Partnerships and/or other regional natural resource conservation entities during the past three years (2012-2014) and what these engagements produced for outcomes (e.g. reduced redundancy, enhanced message delivery or access to a larger outreach audience, greater geographic coverage).

   The following information should be included in your response:

   - Name of the Fish Habitat Partnership/regional natural resource conservation entity engaged.

   - Type of engagement activity or activities (building awareness, coordination, collaboration) that occurred with each Fish Habitat Partnership/regional natural resource conservation entity.

   - The outcome achieved by each engagement activity.

The Whitewater to Bluewater Initiative

Since 2012, with funding from a Multistate Conservation Grant, ACFHP has been working with the Southeast Aquatic Resources Partnership (SARP) and the Eastern Brook Trout Joint Venture (EBTJV) towards achievement of three objectives: 1) To advance each partnership's habitat assessments by collecting, developing, and sharing fish habitat information and data; 2) To coordinate outreach activities to strengthen and expand the base of conservation delivery partners; and 3) To implement each of the individual FHP's strategic plans. Highlights of work undertaken together include the following:

2012:

- In February 2012, the ACFHP and SARP Coordinators, Science & Data representatives, and the NALCC habitat assessment contractor participated in a meeting with the National Gulf Assessment team to discuss its status and methodologies.
- Beginning in April of 2012, the SARP Communications Coordinator, ACFHP Coordinator, and the EBTJV Communications Committee chair began meeting on a bi-monthly basis via conference call to develop a joint communications strategy.
- In June 2012, the ACFHP Coordinator attended the EBTJV Annual meeting to participate in discussions regarding commitments under the Whitewater to Bluewater Grant and NALCC 2012 Science and Data Needs Program.
- ACFHP, SARP, and EBTJV developed Terms of Reference and a Request for Proposals (RFP) for services to evaluate the structure and function of the three FHPs and make recommendations to improve their organizational capacity. It was provided to The Nature Conservancy in July 2012, which was followed by one call with a potential candidate, and additional inquires within TNC for potential candidates.

- Members of EBTJV and ACFHP, in cooperation with NFHP Board staff, developed a half day seminar for the American Fisheries Society 142nd Annual Meeting (August 19-23, 2012) entitled, "The National Fish Habitat Partnership – Building Relationships to Enhance Conservation of Aquatic Ecosystems". At least one representative from each of the three Eastern FHPs presented during the seminar, which included an overview of Whitewater to Bluewater activities. This seminar increased awareness of the Whitewater to Bluewater Initiative among attendees.
- In November 2012, the Eastern FHPs participated in a self-assessment survey in support of the NFHP sponsored FHP Excellence Workshop. The workshop itself was designed based on the results of the FHP internal assessments, nationwide.
- Each FHP held steering committee meetings and discussed Whitewater to Bluewater progress to increase awareness of progress among its members.
- Each FHP participated in a Board sponsored session at the FHP Excellence Workshop aimed at exploring approaches to tracking progress and outcomes.

2013:

- In January 2013 the ACFHP Coordinator attended the SARP Science and Data meeting to participate in discussions of SARP's future Science and Data efforts, to share information regarding Whitewater to Bluewater commitments, and to discuss potential collaboration opportunities in upcoming projects.
- Through regular phone calls between members of ACFHP, EBTJV, NALCC, and Downstream Strategies, development of a habitat assessment began. This project will serve as the northern portion of ACFHP's habitat assessment, and will also yield benefits to EBTJV's habitat assessment needs.
- The initial phone call for an SALCC funded connectivity assessment project being led jointly by SARP and TNC, was held in April. The ACFHP coordinator participated on this and successive calls. The outcome of this project will be a connectivity assessment and decision support tool for dam prioritization in the southeast. This tool will help the Eastern FHPs and communities prioritize projects geared at dam removal and passage enhancement.
- In June 2013, the three FHPs finalized a communications strategy which consists of a variety of potential communications and outreach actions that the FHPs may select from, develop into specific projects, seek funding for, and accomplish individually or jointly, in the future. Each action falls under an identified audience and communications channel.
- On October 25, 2013, coordinators and Science and Data Committee representatives from EBTJV, SARP, and ACFHP met via webinar, during which each partnership presented an overview of their science projects. The NALCC Science Coordinator also participated in the webinar. This webinar increased communication among the FHPs and outside conservation groups, and helped to identify areas of common interest.
- On December 5, 2013, a second Whitewater to Bluewater Science webinar was held during which coordinators from all three partnerships, and Science and Data representatives from two of the Partnerships discussed ACFHP and EBTJV products and identified opportunities to collaborate.

- ACFHP, SARP, and EBTJV collaborated on a new webpage describing the Whitewater to Bluewater Initiative (http://easternbrooktrout.org/groups/whitewater-to-bluewater), enhancing communication to target audiences.
- The three FHPs underwent an organizational assessment of each FHP via the River Network and Water Words that Work to identify areas of improvements within each partnership.

2014:

- Regular phone calls continued among members of ACFHP, EBTJV, NALCC, and Downstream Strategies to develop the habitat assessment. This project will serve as the northern portion of ACFHP's habitat assessment, and will also yield benefits to EBTJV's habitat assessment needs.
- The three FHPs began working on a fish passage barrier template brochure to serve as an outreach mechanism that can be easily modified by conservation groups to tailor the brochure information to specific dams and culverts to best inform their target audience.
- The EBTJV Coordinator attended two Atlantic Coastal Fish Habitat Partnership Steering Committee Meetings (4-30-14 and 10-27-14) in person to assist with facilitating coordination between the two Fish Habitat Partnerships.
- All three FHPs participated in the Fish Habitat Partnership Workshop sponsored by the National Fish Habitat Board, which was held on November 2, 2014 in National Harbor, MD. The primary focus of the workshop was to highlight the National Fish Habitat Partnership's new branding and marketing processes.
- ACFHP and SARP presented at the 7th National Summit on Coastal and Estuarine Restoration and 24th Biennial Meeting of the Coastal Society in November 2014 in National Harbor, MD in a symposium and panel discussion titled*: Advancing Estuary Restoration, Awareness, and Science through the Coastal Fish Habitat Partnerships.* This collaboration was well-attended by an audience of varying levels of familiarity with the NFHP, and helped to communicate the NFHP goals and achievements.

Overall, these activities support the three primary operational categories for each of the three FHPs: steering committee operation, scientific assessment, and communications and outreach. Through projects like the Whitewater to Bluewater website, we were able to build awareness of our activities to stakeholders, partners, and the public. By collaborating on modeling and decision support tools in the NALCC, we collaborated on mutually beneficial activities. The fish passage barrier template that was started in 2014 will improve the delivery of shared conservation action items. Finally, by collaborating with the other Eastern FHPs, we were all able to expand our geographic scale of conservation action.

Coastal FHPs Coordination

ACFHP has been actively working with the 8 other coastal FHPs to increase communication among the Partnerships, enhance message delivery, access a larger outreach audience, and expand geographic coverage. To accomplish these achievements, ACFHP has worked with the coastal

FHPs by participating on quarterly phone calls, creating a drafted letter to the Joint Ocean Commission on ways that the coastal FHPs advance national ocean policy objectives, submitting articles to the quarterly coastal FHP newsletter, and presenting a symposium at the 7th Restore America's Estuaries meeting in National Harbor, MD in November of 2014.

Coordination with Landscape Conservation Cooperatives

Through Multistate Conservation Grant funds, the ACFHP coordinator has participated in the Landscape Conservation Cooperatives (LCCs) since 2010. The efforts of the South Atlantic LCC (SALCC) and North Atlantic LCC (NALCC) support ACFHP Strategic Objectives. In 2012 and 2013, ACFHP coordinated with the North Atlantic Landscape Conservation Cooperative, working actively on the coastal subgroup of the LCC's Technical Committee to help identify its 2012 and 2013 Science Need Priorities, as well as reviewing projects. The ACFHP Coordinator also participated on the South Atlantic Landscape Conservation Cooperative's (SALCC) Partnership Committee to identify SALCC 2012 Science Gaps. In 2013, ACFHP led the coastal component of the NALCC Aquatic Habitat Assessment, and continued to do so in 2014.

Prioritizing River Herring Habitat Restoration Needs

Under a grant from National Fish and Wildlife Foundation, ACFHP co-led a project with partner, The Nature Conservancy, to develop river restoration priorities for river herring in the Chesapeake Bay watershed, Delaware River, Hudson River, Connecticut River, Santee-Cooper River and Gilbert-Stuart River. Key stakeholder and expert input were solicited through an in-person workshop, webinars, and in-person meetings. Work under this grant began in 2013, and will continue through 2014. This collaboration is helping ACFHP achieve its science and data goals, as well as helping to inform future funding recommendations.

Coordination with Additional Regional Partnerships

In 2012, the Partnership Coordinator participated in conference calls, a face-to-face meeting, and draft document review in the development of the Cape Fear River Basin Action Plan for Migratory Fish. Additionally, as a member of the Chesapeake Bay Executive Order Stainable Fisheries GIT the ACFHP Coordinator attended and contributed to discussions occurring at its June 2012 meeting. The ACFHP Coordinator also joined the Chesapeake Bay Fish Habitat Management Strategy Action Team in order to prioritize fish habitat in the Chesapeake Bay watershed. The goals of these partnerships align with ACFHP, leading to increased communication and accomplishment of shared habitat restoration goals.

7. Describe how your partnership uses resource condition assessment and/or analysis results to determine your conservation priorities and to identify the actions they require.

   The following information should be included in your response:

   - Title of the resource condition assessment(s) and/or analysis(es) used by your partnership along with the date(s) it (they) were completed.

   - A listing of the conservation priorities, and the actions they require, determined by the resource condition assessment and/or analysis results.

The guiding documents for ACFHP from 2012 – 2014 consisted of the 5-year Conservation Strategic Plan (CSP, 2012-2016, available here: http://www.atlanticfishhabitat.org/Documents/ACFHP_Strategic_Plan_HighRes.pdf) and the Implementation Plan (IP, available here: http://www.atlanticfishhabitat.org/wp-content/uploads/2012/10/2012-2013-ACFHP-Implementation-Plan-FINAL.pdf). The CSP proposes objectives and key conservation strategies to confront pervasive threats to fish habitat along the Atlantic coast. ACFHP is working to address the threats with a broad coordinated approach, and to leverage resources from many agencies, organizations, and others to conserve fish habitat. The CSP was developed by the ACFHP Steering Committee, with input from members of the ACFHP Science and Data Working Group and other partners.

In 2012, the Partnership completed development of an IP, which guided ACFHP's activities from 2012 to 2014. The IP is a subset of the 2012-2016 ACFHP CSP, designed to contain a subset of objectives, strategic actions, and related tasks that can be accomplished over a shorter time frame. The achievement of each task is led by an individual within the Partnership with the help of a team and additional partners. The IP was developed by the ACFHP Steering Committee and other partners.

Priority regions and threats were chosen with the help of two scientific assessments: The Species-Habitat Matrix and the Assessment of Existing Coastal Habitat Information.

The Species-Habitat Matrix: The Species-Habitat Matrix was completed in 2009 and evaluates the relative importance of coastal, estuarine, and freshwater habitat types to the major life stages of over 100 fish species (summary report here). In working towards accomplishing the CSP, ACFHP has incorporated a section for reviewers to score each project proposal received based on whether or not it supports or addresses subregional priority fish habitats, as noted in the CSP. ACFHP is broken down into four subregions based on differences in species and habitat distributions. From the Species-Habitat Matrix, the priority habitats in the North Atlantic (Maine to Cape Cod) include riverine bottom, submerged aquatic vegetation (meso- to polyhaline), and marine and estuarine shellfish beds. The Mid-Atlantic region (Cape Cod to Cape Hatteras) priority habitats include riverine bottom, submerged aquatic vegetation, and tidal vegetation. The South

Atlantic (Cape Hatteras to Cape Canaveral) priority habitats are marine and estuarine shellfish beds, riverine bottom, and tidal vegetation, and the South Florida (Cape Canaveral to Key West) priority habitats are coral and live/hard bottom, submerged aquatic vegetation (meso- to polyhaline), and mangrove.

The Assessment of Existing Coastal Habitat Information (Assessment): The Assessment, completed in 2009, is a database of documents, datasets, and information portals on Atlantic coastal habitats which were collected and analyzed for indicator, threat, and action information (here). A finalized set of Priority Threats were outlined in the 2012 – 2016 CSP, identified from the Assessment results. A table which relates the results of this project with ACFHP Priority Threats identified in this CSP can be found in Appendix C of the CSP. On-the-ground projects solicited in 2012 onward have been evaluated on how well they addressed the finalized threat and restoration objectives as determined by the Assessment. Priority threats, as determined from the Assessment, include (1) obstructions to fish movement/habitat connectivity, (2) dredging and coastal maintenance, (3) water quality degradation and eutrophication, (4) consumptive water withdrawal, (5) sedimentation, (6) vessel operation impacts, (7) contamination of water (ground and surface) and sediments, (8) invasive species, and (9) climate change.

The CSP contains 21 specific habitat protection and restoration action items, plus 17 actions that fall under science and data, communication and outreach, and finance. The IP contains a subset of these actions, and the habitat protection and restoration action items are listed below:

A.1.1 Coordinate with partners to synthesize existing information in order to identify and prioritize watersheds for conservation where fragmentation of, or barriers to, fish dispersal are a potentially critical threat to be addressed.

A.4.1 Identify current work being done on minimizing or reducing adverse impacts to subregional priority habitats associated with coastal development and water dependent activities and determine how ACFHP can best partner with these efforts.

A.6.1 Increase public awareness of the threats facing subregional priority habitats and the protection measures available to avoid and minimize those threats.

B.1.2 Restore tidal hydrology in priority wetland areas.

B.1.3 Identify priority areas in each subregion where priority habitats have been degraded or eliminated by past alterations to hydrology, and where conditions for restoration of habitats exist.

B.1.5 Coordinate with partners to compile fish movement/habitat restoration techniques and guidance documents to aid partners in the planning, design, implementation, and monitoring of effective fish movement improvement projects.

B.2.1 Restore subregional priority habitats in each subregion where:

(a) they have been damaged or destroyed by past declines in water quality or human activities, such as dredging, filling, development, or vessel operation; AND (b) conditions for restoration of habitats exist; AND (c) goal(s) of habitat restoration can be maintained.

ACFHP is currently working to incorporate new data tools, developed both inside and outside of ACFHP.

Tools developed outside of ACFHP that are being discussed for incorporation into strategic planning include the Northeast Aquatic Connectivity Assessment (report found here: http://static.rcngrants.org/sites/default/files/final_reports/NEAquaticConnectivity_Report.pdf), the Southeast Connectivity Assessment Program (SEACAP, http://maps.tnc.org/seacap/) and the Atlantic Coast Diadromous Fish Habitat Prioritization (currently under development by The Nature Conservancy).

Additionally, ACFHP began developing an assessment tool in 2014, which was funded by the North Atlantic Landscape Conservation Cooperative and is being developed by Downstream Strategies, LLC. ACFHP hopes to use this GIS-based assessment and associated decision support tools to fill in the data gaps and better guide their selection of future fish habitat restoration and protection projects. Models for brook trout, winter flounder, and river herring are being created, and will result in predicted species distribution maps, as well as identification and quantification of threats and stressors to the species modeled. The decision support tools will provide a highly functional and user-friendly mechanism for resource managers to visualize, rank, and manipulate inputs to prioritize areas for conservation action. Experiences gained in the development of the NALCC Aquatic Habitat Assessment will guide decisions concerning the completion of habitat assessments for the rest of the ACFHP range.

8. Describe your partnership's outreach activities aimed at: 1) sharing information about your strategic priorities (i.e., geographic focus areas, habitat types, key stressors or impairments); 2) building broader visibility among local and regional partners; 3) tailoring events to garner media coverage; and 4) strengthening relationships with policy-makers.

ACFHP has accomplished numerous communications and outreach achievements fundamental to organizational development, and has addressed ACFHP Communication and Outreach Objectives included in its CSP (2012-2016). Over the past three years (2012-2014), ACFHP has been in consistent contact with its partners and the general public via multiple outlets, listed below.

To increase familiarity with ACFHP and solicit new partners, the ACFHP Coordinator and Steering Committee members made oral presentations or displayed/provided outreach materials at several venues including the 142nd and 144th American Fisheries Society annual meetings, seven Atlantic States Marine Fisheries Commission (ASMFC) Interstate Fisheries Management Policy Board meetings (policy/regulation makers), the 6th and 7th Restore America's Estuaries National Conference, one National Fish Habitat Board Meeting, one Southeast Aquatic Resources Partnership Science and Data Committee meeting, the New England Saltwater Fishing Show, and one Northeast Fisheries Administrators Association meeting.

ACFHP maintains a website (www.atlanticfishhabitat.org), which is kept up to date by the Coordinator. It includes information on what ACFHP is, what it does, its mission and vision, information and/or links to the National Fish Habitat Partnership, other Fish Habitat Partnerships, and ACFHP MOU Partner websites, information on ACFHP funded projects and endorsed projects; links to ACFHP governance documents, ACFHP science reports and other non-ACFHP habitat-related reports and manuals; ACFHP and non-ACFHP funding opportunities; and ACFHP and non-ACFHP meetings and conferences.

ACFHP also disseminates information to its general listserve though breaking news releases. Visitors to the website can sign-up for breaking news releases. In 2012, the ACFHP coordinator distributed seven breaking news items, 15 were released in 2013, and nine were released in 2014. For current news items visit: www.atlanticfishhabitat.org/communications/news/. The ACFHP general fact sheet was revised in 2011 by the coordinator to remain current. The coordinator also develops fact sheets for its funded projects. Fact sheets can be found at: www.atlanticfishhabitat.org/communications/outreachmaterials/. In 2012, the Partnership completed development of two permanent displays, with guidance and input from in Communications and Outreach Working Group.

ACFHP works closely with the ASMFC Habitat Committee, holding sequential meetings twice a year, and presenting ACFHP updates at each meeting. The Habitat Committee informs fisheries managers about habitat issues that may impact managed stocks and provides recommendations to Fishery Management Plans on how to protect and enhance fish habitat.

In addition to the information sharing and increasing of visibility mentioned above, ACFHP has worked closely with other FHPs to expand their communication and outreach activities over a

broader scale. For more information on these efforts, please see question #6.

9. Describe the ways your partnership coordinated its aquatic resource data and regional assessment information with the NFHP Science and Data Committee during the past 3 years (2012-2014).

   The following information/documents should be included in your response:

   - The regional data sets and/or conservation outcomes you provided for integration into the NFHP National Assessment.

   - Documents your partnership produced that provide details about the effectiveness of the conservation outcomes supported by your partnership.

In February 2012, the ACFHP and SARP Coordinators, Science & Data representatives, and the NALCC habitat assessment contractor participated in a meeting with the National Gulf Assessment team to discuss its status and methodologies.

Because NFHP hasn't yet started a regional portion of the national assessment for the Atlantic Coast, there hasn't been any data exchange from 2012-2014 from ACFHP to the national assessment effort.

10. List your partnership's conservation priorities (i.e., geographic focus areas, habitat types, key stressors or impairments) and describe the progress that has been made toward achieving these priorities during the past 3 years (2012-2014).

    The following information should be included in your response:

    - Separate listings for short-term and long-term conservation priorities.
    - Target dates for achieving each conservation priority.
    - Current status of achieving each conservation priority by its target date (i.e. ahead of schedule, on schedule, behind schedule).
    - Efforts underway within the partnership that are focused on addressing each conservation priority.

ACFHP is broken down into four subregions based on differences in species and habitat distributions. From the Species-Habitat Matrix, the *priority habitats* in the North Atlantic (Maine to Cape Cod) include riverine bottom, submerged aquatic vegetation (meso- to polyhaline), and marine and estuarine shellfish beds. The Mid-Atlantic region (Cape Cod to Cape Hatteras) priority habitats include riverine bottom, submerged aquatic vegetation, and tidal vegetation. The South Atlantic (Cape Hatteras to Cape Canaveral) priority habitats are marine and estuarine shellfish beds, riverine bottom, and tidal vegetation, and the South Florida (Cape Canaveral to Key West) priority habitats are coral and live/hard bottom, submerged aquatic vegetation (meso- to polyhaline), and mangrove.

Priority threats, as determined from the Assessment, include (1) obstructions to fish movement/habitat connectivity, (2) dredging and coastal maintenance, (3) water quality degradation and eutrophication, (4) consumptive water withdrawal, (5) sedimentation, (6) vessel operation impacts, (7) contamination of water (ground and surface) and sediments, (8) invasive species, and (9) climate change.

As discussed in Question #7, ACFHP has developed a CSP and IP to carry out conservation priorities. For 2012 -2016, the Objectives and Strategic Actions are as follows, broken down into short-term, mid-term, and long-term goals:

Short-term

Protection Objective 1: Ensure adequate and effective fish movement past existing or potential barriers to maintain connectivity within Subregional Priority Habitats.

Threat: Obstructions to Fish Movement/Habitat Connectivity; Consumptive Water Withdrawal

Impacted Habitat Categories: Marine and Estuarine Shellfish Beds; Tidal Vegetation; Riverine

Bottom; Coral and Live/Hard Bottom; SAV

- ✓ **A.1.1 Strategic Action:** Coordinate with partners to synthesize existing information in order to identify and prioritize watersheds for conservation where fragmentation of, or barriers to, fish dispersal are a potentially critical threat to be addressed.

Protection Objective 2: Maintain or improve water quality and hydrology in Subregional Priority Habitats that are currently functioning, through incorporation of BMPs and/or technological controls.

Threat: Water Quality Degradation and Eutrophication; Contamination of Water (ground and surface) and Sediments

Impacted Habitat Categories: Marine and Estuarine Shellfish Beds; Coral and Live/Hard Bottom; Submerged Aquatic Vegetation; Tidal Vegetation; Riverine Bottom

- ✓ **A.2.1 Strategic Action:** Define the critical water quality variables and hydrology needed to protect Subregional Priority Habitats.
- ✓ **A.2.3 Strategic Action:** Coordinate with partners to synthesize existing information in order to identify and prioritize watersheds for water quality improvement for fish habitat.

Protection Objective 3: Define the water flows and volumes needed to sustain the structure and function of healthy aquatic ecosystems (including groundwater and surface water interactions, maintaining appropriate salinity regimes) and ameliorate consumptive water usage where detrimental to Subregional Priority Habitats.

Threat: Consumptive Water Withdrawal

Impacted Habitat Categories: Riverine Bottom; Coral and Live/Hard Bottom; Submerged Aquatic Vegetation; Marine and Estuarine Shellfish Beds; Tidal Vegetation

- ✓ **A.3.1 Strategic Action:** Identify current work being done on this objective (e.g. Southeast Aquatic Resources Partnership and Southern Instream Flow Network, instream flow work at Federal and state agencies) and determine how ACFHP can best partner with these efforts.

Protection Objective 5: Maintain or increase the resiliency of Subregional Priority Habitats to the impacts of climate change.

Threat: Climate Change

Impacted Habitat Categories: Marine and Estuarine Shellfish Beds; Coral and Live/Hard Bottom; Submerged Aquatic Vegetation; Tidal Vegetation; Riverine Bottom

- ✓ **A.5.1 Strategic Action:** Work with partners to identify techniques and guidance documents that can be helpful in maintaining the priority habitats within each subregion against the adverse effects of climate change.

Restoration Objective 1: Restore and enhance hydrological or physical connections between Subregional Priority Habitats to promote fish utilization and improve overall aquatic health.

Threat: Obstructions to Fish Movement/Habitat Connectivity; Consumptive Water Withdrawal

Impacted Habitat Categories: Marine and Estuarine Shellfish Beds; Tidal Vegetation; Riverine Bottom

- ✓ **B.1.4 Strategic Action:** Compile information to identify barriers where fragmentation of habitats or barriers to fish movement exist.

Restoration Objective 3*:* Restore water quality in areas where it has degraded or eliminated Subregional Priority Habitats.

Threat: Water Quality Degradation and Eutrophication

Impacted Habitat Categories: Marine and Estuarine Shellfish Beds; Tidal Vegetation; Riverine Bottom; Coral and Live/Hard Bottom; SAV

- ✓ **B.3.2 Strategic Action:** Support local projects that address water quality improvements that are associated with Subregional Priority Habitat improvement.

Mid-term

Protection Objective 4: Minimize or reduce adverse impacts to Subregional Priority Habitats associated with coastal development and water dependent activities (e.g. recreational boating, and marine transportation).

Threat: Vessel Operation Impacts; Dredging and Coastal Maintenance; Sedimentation

Impacted Habitat Categories: Marine and Estuarine Shellfish Beds; Coral and Live/Hard Bottom; Submerged Aquatic Vegetation; Tidal Vegetation; Riverine Bottom

- ✓ **A.4.1. Strategic Action:** Identify current work being done on this objective (e.g. guidance on dredging and low impact development) and determine how ACFHP can best partner with these efforts.

Restoration Objective 1: Restore and enhance hydrological or physical connections between Subregional Priority Habitats to promote fish utilization and improve overall aquatic health.

Threat: Obstructions to Fish Movement/Habitat Connectivity; Consumptive Water Withdrawal

Impacted Habitat Categories: Marine and Estuarine Shellfish Beds; Tidal Vegetation; Riverine Bottom

- ✓ **B.1.1 Strategic Action:** Remove dams and other physical barriers in areas identified as a priority for fish movement restoration.
- ✓ **B.1.2 Strategic Action:** Restore tidal hydrology in priority wetland areas (e.g. repairing or removing culverts or berms restricting flow or separating wetlands).
- ✓ **B.1.3 Strategic Action:** Identify priority areas in each subregion where Priority Habitats have been degraded or eliminated by past alterations to hydrology, and where conditions for restoration of habitats exist.

Restoration Objective 2: Restore Subregional Priority Habitats, such as replanting eelgrass beds or restoring oyster beds, in locations where threats have been minimized or removed (does not include dam or other barrier removal).

Threat: Dredging and Coastal Maintenance; Water Quality Degradation and Eutrophication; Sedimentation; Climate Change; Vessel Operation Impacts; Contamination of Water (ground and surface) and Sediments; Invasive Species

Impacted Habitat Categories: Marine and Estuarine Shellfish Beds; Coral and Live/Hard Bottom; Submerged Aquatic Vegetation; Tidal Vegetation; Riverine Bottom

- ✓ **B.2.1 Strategic Action:** Restore Subregional Priority Habitats in each subregion where: (a) they have been damaged or destroyed by past declines in water quality or human activities, such as dredging, filling, development, or vessel operation; AND (b) conditions for restoration of habitats exist; AND (c) goal(s) of habitat restoration can be maintained.

Restoration Objective 3*:* Restore water quality in areas where it has degraded or eliminated Subregional Priority Habitats.

Threat: Water Quality Degradation and Eutrophication

Impacted Habitat Categories: Marine and Estuarine Shellfish Beds; Tidal Vegetation; Riverine Bottom; Coral and Live/Hard Bottom; SAV

- ✓ **B.3.1 Strategic Action:** Coordinate with partners to compile a list of areas where Subregional Priority Habitats have been degraded or eliminated due to poor water quality.

Long-term

Protection Objective 1: Ensure adequate and effective fish movement past existing or potential barriers to maintain connectivity within Subregional Priority Habitats.

Threat: Obstructions to Fish Movement/Habitat Connectivity; Consumptive Water Withdrawal

Impacted Habitat Categories: Marine and Estuarine Shellfish Beds; Tidal Vegetation; Riverine Bottom; Coral and Live/Hard Bottom; SAV

- ✓ **A.1.2 Strategic Action:** Coordinate with partners to develop and disseminate a "standardized toolbox" of fish passage technologies (techniques and methodologies) and guidance to assist ACFHP partners in the development and implementation of effective fish passage protocols designed to alleviate this threat for new projects.

Protection Objective 2: Maintain or improve water quality and hydrology in Subregional Priority Habitats that are currently functioning, through incorporation of BMPs and/or technological controls.

Threat: Water Quality Degradation and Eutrophication; Contamination of Water (ground and surface) and Sediments

Impacted Habitat Categories: Marine and Estuarine Shellfish Beds; Coral and Live/Hard Bottom; Submerged Aquatic Vegetation; Tidal Vegetation; Riverine Bottom

- ✓ **A.2.2 Strategic Action:** Coordinate with partners to develop and disseminate a toolbox or guidance document of non-structural BMPs that will assist ACFHP partners in improving or protecting water quality for fish habitat.
- ✓ **A.2.4 Strategic Action:** Encourage the use of BMPs designed to improve point/non-point discharge management that addresses the impacts of inorganic and organic contaminants, including emerging contaminants of concern for Subregional Priority Habitats.

Protection Objective 5: Maintain or increase the resiliency of Subregional Priority Habitats to the impacts of climate change.

Threat: Climate Change

Impacted Habitat Categories: Marine and Estuarine Shellfish Beds; Coral and Live/Hard Bottom; Submerged Aquatic Vegetation; Tidal Vegetation; Riverine Bottom

- ✓ **A.5.2 Strategic Action:** Encourage all institutions responsible for aquatic habitat management to include impacts to fish habitat in their climate change planning and modeling efforts.

Protection Objective 6: Increase public awareness of the threats facing Subregional Priority Habitats and the protection measures available to avoid and minimize those threats.

Threat: Obstructions to Fish Movement/Habitat Connectivity; Dredging and Coastal Maintenance; Water Quality Degradation and Eutrophication; Consumptive Water Withdrawal; Sedimentation; Climate Change; Vessel Operation Impacts; Contamination of Water (ground and surface) and

Sediments; Invasive Species

Impacted Habitat Categories: Marine and Estuarine Shellfish Beds; Coral and Live/Hard Bottom; Submerged Aquatic Vegetation; Tidal Vegetation; Riverine Bottom

- ✓ **A.6.1 Strategic Action:** Develop and disseminate public outreach materials on the adverse impacts of human activities on fish and fish habitat as well as ways to avoid and minimize those impacts.

Restoration Objective 1: Restore and enhance hydrological or physical connections between Subregional Priority Habitats to promote fish utilization and improve overall aquatic health.

Threat: Obstructions to Fish Movement/Habitat Connectivity; Consumptive Water Withdrawal

Impacted Habitat Categories: Marine and Estuarine Shellfish Beds; Tidal Vegetation; Riverine Bottom

- ✓ **B.1.5 Strategic Action:** Coordinate with partners to compile fish movement/habitat restoration techniques and guidance documents to aid partners in the planning, design, implementation, and monitoring of effective fish movement improvement projects.

Restoration Objective 2: Restore Subregional Priority Habitats, such as replanting eelgrass beds or restoring oyster beds, in locations where threats have been minimized or removed (does not include dam or other barrier removal).

Threat: Dredging and Coastal Maintenance; Water Quality Degradation and Eutrophication; Sedimentation; Climate Change; Vessel Operation Impacts; Contamination of Water (ground and surface) and Sediments; Invasive Species

Impacted Habitat Categories: Marine and Estuarine Shellfish Beds; Coral and Live/Hard Bottom; Submerged Aquatic Vegetation; Tidal Vegetation; Riverine
Bottom

- ✓ **B.2.2 Strategic Action:** Prevent and attempt to control invasion of non-indigenous species, where feasible.

Restoration Objective 4: Maintain or increase the resiliency of Subregional Priority Habitats to the impacts of climate change through restoration activities.

Threat: Climate Change

Impacted Habitat Categories: Marine and Estuarine Shellfish Beds; Coral and Live/Hard Bottom; Submerged Aquatic Vegetation; Tidal Vegetation; Riverine Bottom

- ✓ **B.4.1 Strategic Action:** Encourage all ACFHP-supported restoration projects address projected climate change impacts to Subregional Priority Habitats during project planning and implementation.

From this list of actions, a selection were chosen to be included in the IP and completed by 2014:

A.1.1 Coordinate with partners to synthesize existing information in order to identify and prioritize watersheds for conservation where fragmentation of, or barriers to, fish dispersal are a potentially critical threat to be addressed.
Tasks:

1. Consult with appropriate ASMFC entities (diadromous species management entity; Fish Passage Working Group; Technical Committees for each diadromous species) to determine whether there are existing priority lists for restoration, subregionally.
   Status: Accomplished
2. Compile existing lists of priority barriers for the ACFHP region.
   Status: On track – barrier list compiled.
3. Determine what watershed scale we would like to address.
   Status: Accomplished

A.4.1 Identify current work being done on minimizing or reducing adverse impacts to subregional priority habitats associated with coastal development and water dependent activities and determine how ACFHP can best partner with these efforts.
Task:

1. Communicate impacts to audiences that can make a difference; e.g. for recreational boating scouring impacts, communicate with Recreational Boating and Fishing Foundation to disseminate our guidance; also communicate with boat licensing offices within state agencies.
   Status: Accomplished but can be ongoing. ACFHP disseminated outreach materials at the New England Saltwater Fishing Show, gave a presentation to the Jamestown Harbor Commission (Rhode Island), and is funded with a NOAA grant to install conservation moorings (as a follow-up project to Line 7 of Questions 1 – 4).

A.6.1 Increase public awareness of the threats facing subregional priority habitats and the protection measures available to avoid and minimize those threats.
Task:

1. Compile pertinent existing outreach materials from state, federal, and other groups, and distribute this information to boating courses, the ACFHP website, or through federal networks.
   Status: Accomplished/ongoing—this is currently being carried via the Whitewater to Bluewater Fish Passage Barrier Factsheet (referenced in Question #6), the NOAA-funded conservation mooring installation project (referenced in Questions 1-4), our on-the-ground project factsheets (here: http://www.atlanticfishhabitat.org/communications/outreachmaterials/), and our website (atlanticfishhabiat.org).

B.1.2 Restore tidal hydrology in priority wetland areas.
Task:

1. Fund on-the-ground projects through USFWS-NFHAP funding
   Status: Accomplished/ongoing

B.1.3 Identify priority areas in each subregion where priority habitats have been degraded or eliminated by past alterations to hydrology, and where conditions for restoration of habitats exist.
Task:

1. Determine where partners are already working to remove barriers, and identify priorities and gaps.
   Status: On-track: a survey has been distributed and the results will be presented next month (4/21/15) at the ACFHP Steering Committee meeting.

B.1.5 Coordinate with partners to compile fish movement/habitat restoration techniques and guidance documents to aid partners in the planning, design, implementation, and monitoring of effective fish movement improvement projects.
Task:

1. Compile existing technical guidance, identify gaps and ways to address the gaps, and then update the current information.
   Status: Accomplished in part, through ASMFC's Guide to Upstream Fish Passage Technology for Diadromous Species; behind schedule on identifying and addressing gaps.

B.2.1 Restore subregional priority habitats in each subregion where:
(a) they have been damaged or destroyed by past declines in water quality or human activities, such as dredging, filling, development, or vessel operation; AND (b) conditions for restoration of habitats exist; AND (c) goal(s) of habitat restoration can be maintained.
Tasks:

1. Establish funding mechanisms and/or ideas for funding mechanisms to carry out on-the-ground work. Seek additional funding for ACFHP via NOAA grants, etc.
   Status: Accomplished/ongoing. Between 2012 and 2014 we have secured NOAA, National Fish and Wildlife Foundation, and Mid-Atlantic Fishery Management Council funding for both on the ground restoration projects and focused restoration planning.
2. Compile a list of projects by survey of the committee and/or partners on which subregional priority habitats and specific restoration sites they are focusing on.
   Status: On-track: a survey has been distributed and the results will be presented next month (4/21/15) at the ACFHP Steering Committee meeting.
3. Develop assessment criteria in order to prioritize habitat restoration.
   Status: Accomplished.

Atlantic Coastal Fish Habitat Partnership

Recognized by the National Fish Habitat Board: October 2008

Average Score	Compiled Comments
4	**Measure 1**
	While 50% of the projects really addressed symptoms or were baseline information projects, they did address NFHP or FHP strategies.
4	**Measure 2**
	Nearly all of the projects had monitoring and evaluation plans but I have concerns over the short duration of available data on both sides of the project.
4	**Measure 3**
	While it is hard to not say the FHP is addressing key habitats, I have concerns that a fair number of the projects are addressing symptoms and not the process.
4	**Measure 4**
	Easily made this criteria.
	Exceeded 200% of NFHAP for those projects funded. Note that many projects were simply endorsed by ACFHP and not provided funds.
4	**Measure 5**
	All criteria could be found in document.
	I don't see req for budget to be linked to clear deliverables
4	**Measure 6**
	All criteria could be found in document.
	I don’t see that collaborations increased the geographic scale of a conservation action
4	**Measure 7**
	All criteria could be found in document with d. in progess at this time.
3	**Measure 8**
	I certainly could find information on #1, #2 and maybe #3 but not #4.
	I don't see events for media or rel with policy makers
1	**Measure 9**
	There has not been any direct exchanges of data and information but no barriers have been put in the way either.
1	**Measure 10**
	While there are fairly clear priorities documented in the report, there were few indications of progress or timeframes for progress.
	they selected a subset for tracking
	Huge problem, small resources

AVERAGE MEASURE SCORES ACROSS FHPS	
Measure 1	4
Measure 2	3
Measure 3	4
Measure 4	4
Measure 5	3
Measure 6	4
Measure 7	3
Measure 8	3
Measure 9	2
Measure 10	3

Increasing coastal resiliency through the restoration and enhancement of intertidal and subtidal habitats in Lake Worth Lagoon, FL.

Submitted by:
Southeast Aquatic Resources Partnership and Atlantic Coastal Fish Habitat Partnership in cooperation with Palm Beach County Department of Environmental Resources Management and Florida Fish and Wildlife Conservation Commission

Location:

We propose to create oyster and saltmarsh habitats while stabilizing shorelines of an urban estuary at four sites in Lake Worth Lagoon Florida, Palm Beach County, Town of Palm Beach: Congressional District: FL-22.

Brief Project Description/Executive Summary:

The Lake Worth Lagoon (Lagoon) is an estuary that has suffered the extensive loss of estuarine habitats and degraded water quality due to human development activities over the past century. Approximately 87% of the lagoon's shoreline is developed with seawalls associated with private residences and businesses. Waterfront property owners commonly use hardened shoreline methods (i.e. seawalls and bulkheads) in effort to protect their land from sea level rise, erosion and hurricanes. Despite their best intentions, these hardened shoreline cause greater erosion and a reduced resiliency to these pressures. Palm Beach County created an Initiative for Lagoon to restore lost shoreline features and increase coastal resiliency by using estuarine habitat restoration techniques. This proposal highlights four projects outlined in the Lagoon Management Plan that will boost coastal resiliency by increasing the amount of estuarine and wetland habitats including mangrove, saltmarsh and oyster reefs and indirectly benefits adjacent seagrass communities. Seagrasses, saltmarsh and oyster reefs have been highlighted as priority habitats in Florida's State Wildlife Action Plan indicating the need for imminent conservation actions to slow habitat degradation as well as reduce vulnerability to risks associated with sea level rise and coastal storm events.

Project Performance Measures and Outcomes:

Historically, Palm Beach County's estuaries had significant mangrove, seagrass, and tidal marsh habitat, which were lost due to development of the shorelines and adjacent uplands. The proposed restoration efforts will replace areas that currently offer little to no habitat value with productive shallow water estuarine habitat providing foraging and developmental habitat for over 89 species of birds, including the endangered Piping plover and Wood stork, the endangered West Indian manatee and Green sea turtle and threatened Loggerhead sea turtle, as well as 195 fish species, including the endangered Atlantic sturgeon and smalltooth sawfish. Other important recreational and commercial fish species will also benefit from the restoration of estuarine habitat including snook, red drum, mangrove snapper and gag grouper. Subsequent water quality improvements are also expected to benefit the federally threatened Johnson's seagrass. In addition, the shoreline habitats created will benefit a myriad of estuarine species including juvenile fish, invertebrates, oysters, and wading and migratory birds.

Specific outcomes include 1) the creation of 1.5 acres of nationally decreasing estuarine intertidal and forested wetlands through the restoration of mangrove and tidal marsh habitats and 4300 lf of shoreline will be stabilized, 2) water quality improvements by reduced erosion and sediment re-suspension in the water column, thereby reducing turbidity and increasing light availability to seagrasses and other submerged aquatic vegetation in the area. Once established, oysters are expected to provide further long-term water quality improvements, and 3) Increased coastal resiliency with the stabilization of sediment and increased wave attenuation created by oyster,

mangrove, and salt marsh habitat.

Project Time Line (top table): The proposed duration of the project is 36 months with major construction of three of the four sites anticipated to begin within 6 months of grant execution.

Permits (bottom table): Three of the four sites have either been secured or applied for to date and receipt is anticipated prior to grant execution.

	Year 1				Year 2				Year 3			
SITE 1-3 (PARKS)	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Grant execution	X											
Contract development	X											
Permit receipt	(N/A) Anticipate receipt prior to grant execution											
Mobilize equipment		X										
Place sand/rock		X	X	X								
As-built survey			X	X								
Demobilize equipment				X								
Plant vegetation					X							
Monitoring	X				X		X		X		X	
SITE 4 (FPL)												
Grant execution	X											
Finalize design plans	X											
Contract development		X	X									
Permit receipt				X								
Mobilize equipment					X							
Place sand/rock					X	X	X	X				
As-built survey						X		X				
Demobilize equipment								X				
Plant vegetation									X			
Monitoring	X								X		X	

Site #.Name	Permitting Agency	Permittee	Permit #	Permit Type	Status
1.Bryant Park	Florida Department of Environmental Protection (FDEP)	Palm Beach County (PBC)	50-0312260-001	Environmental Resource Permit	Secured
1.Bryant Park	U.S. Army Corps of Engineers (USACE)	PBC	SAJ-2010-01017(NW-LCK)	Nationwide Permit Number 27	Renew
2.Osprey Park	FDEP	PBC	N/A	Environmental Resource Permit	Pending
2.Osprey Park	USACE	PBC	N/A	Nationwide Permit Number 27	Pending
3.Currie Park	FDEP	PBC	N/A	Environmental Resource Permit	Pending
3.Currie Park	USACE	PBC	N/A	Nationwide Permit Number 27	Pending
4.Florida Power and Light	FDEP	PBC	N/A	Environmental Resource Permit	Not applied for
4.Florida Power and Light	USACE	PBC	N/A	Nationwide Permit Number 27	Not applied for

Land Owners:

Site 1: Bryant Park: Owner: City of Lake Worth, Contact: Pam Triolo Mayor for City of Lake Worth, 7 North Dixie Hwy, Lake Worth, FL 33460.

Site 2 and 3: Currie and Osprey Parks: Owner: Upland is owned by City of West Palm Beach, Contact: Jeri Muoio Mayor of City of West Palm Beach, 401 Clematis St. West Palm Beach, FL 33401. Waterward of seawall is State of Florida Submerged Lands.

Site 4: Florida Power and Light: Owner: Upland is owned by Florida Power and Light. Contact: Sarah Marmion, FPL Manatee Lagoon Manager, 300 Broadway, Riviera Beach, FL 33404. Waterward area of existing seawall is State of Florida Submerged Lands. Letter of support attached.

Funding summary:

Federal Request: **$582,416**

Non-federal match: $916,217 (combination of FIND, DEP and Palm Beach County ERM)

Total Project Cost: **$1,498,633**

PROPOSAL TO THE COASTAL ECOSYSTEM RESILIENCY GRANTS PROGRAM
NOAA-NMFS-HCPO-2015-2004410

Title: Increasing coastal resiliency through the restoration and enhancement of intertidal and subtidal habitats in Lake Worth Lagoon, FL

PROJECT SUMMARY

The Lake Worth Lagoon (Lagoon) is an estuary that has suffered the extensive loss of intertidal and subtidal habitats and degraded water quality due to human development activities over the past century. Approximately 87% of the lagoon's shoreline is developed with bulkheads associated with private residences and businesses (PBC ERM 2010). Restoration of estuarine habitat functions by integrating natural vegetation and oyster settlement materials along shorelines is largely required seaward of these seawall features in this urban estuary. Projects employing this hybrid living shoreline design have proven successful in rehabilitating estuarine wetland functions in the Lake Worth Lagoon system. The proposed suite of projects will restore and enhance intertidal and subtidal habitats that will 1) help to re-establish natural hydrologic coastal processes, 2) create lost estuarine habitat for fish and wildlife, 3) reduce erosional processes common along seawalls, 4) increase the resiliency of adjacent coastal communities to storm events, and 5) reduce costs of seawall maintenance and replacement as bulkheads fail, particularly under extreme weather events. Species expected to benefit from this project include multiple Endangered Species Act (ESA) listed species, including the threatened Johnson's seagrass (*Halophila johnsonii)*, the endangered West Indian Manatee *(Trichechus manatus)* endangered Green Sea Turtle (*Chelonia mydas)*, threatened Loggerhead Sea Turtle (*Caretta caretta)*, and threatened Wood Stork (*Mycteria Americana*); National Marine Fisheries Service Species of Concern (SC) the Mangrove Rivulus (*Rivulus marmoratus*); and Florida Imperiled Species, the American Oystercatcher (*Haematopus palliates),* Least tern (*Sterna antillarum),* Little blue heron (*Egretta caerulea)*, Black skimmer (*Rynchops niger)*, among others. Over 195 species of fish and 89 species of birds are expected to benefit from the creation of critical spawning, foraging and development habitat. Other benefits from project activities include downstream water-quality improvements, improved wildlife-oriented recreational opportunities, increased protection of shorelines and nearby infrastructure from wave energy and storm events. These projects are a partnership between Southeast Aquatic Resources Partnership (SARP), Atlantic Coastal Fish Habitat Partnership (ACFHP), Florida Fish and Wildlife Commission (FWC), Palm Beach County Environmental Resources Management (PBC ERM), Florida Department of Environmental Protection (FDEP), The City of West Palm Beach (WPB), Florida Inland Navigation District (FIND), and the Lake Worth Lagoon Initiative (LWLI).

The overall goal of the proposed project is to restore and enhance intertidal and subtidal habitats in front of established bulkheads in an urban estuary where removal is improbable, and to raise public awareness about the ecological and economic importance of the Lagoon's natural resources and alternative methods to abate shoreline erosion. This project will use a combination of methods to create hybrid living shorelines that will stabilize 4382 linear feet (lf) of shoreline and create nearly 1 acre of marsh habitat that will help to improve water quality and increase community resiliency. The proposed restoration methods addresses NOAA's Strategic Plan by contributing to the three goals: 1) healthy oceans through the recovery of healthy marine and coastal species, creating healthy habitats that sustain resilient and thriving marine resources and communities, and sustainable fisheries and safe seafood for healthy populations and vibrant communities, 2) resilient coastal communities and economies through increasing community

adaptation to the impacts of hazards and climate change and the improvement of water quality to support coastal ecosystem services, and 3) weather-ready nation through minimizing economic loss from property damage. Estuaries are composed of many different habitat types (seagrass, saltmarsh, and oyster reefs) that each provide a number of resources, benefits and services including opportunities for tourism, fisheries support and recreational activities, as well as a nursery habitat for numerous of species, refuge and foraging habitat for many shore and water birds, and filtration of sediments, nutrients, and other pollutants in the water column (Levin *et al.* 2001; EPA 2012) originating from adjacent land.

Ultimately, this project will help to raise public awareness about the ecological and economic importance of the Lagoon's natural resources by providing residents and visitors exposure to alternative methods to abate shoreline erosion. These projects will serve as a catalyst for prevention of continued development of seawalls and possible removal of bulkheads from existing armored shorelines, thereby further increasing coastal resiliency.

IMPORTANCE AND APPLICABILITY

Shoreline armoring and habitat loss

The interface of land and sea is among the most dynamic natural environments on earth that vary over space and time (Koch *et al.* 2009). This variance of physical and ecologic attributes creates a high diversity of ecosystem services that attracts people and industry (Klein *et al*. 2001). Human development has historically centered on coastal systems (Dugan *et al*. 2011), but recent years have shown intense coastal development (Defeo *et al.* 2009) with approximately 50% of Americans living in coastal areas including estuaries (EPA 2012); a 40% increase from 1970-2010 (NOAA 2014), resulting in a rate of loss at 80,000 acres per year (Dahl and Stedman 2013). The nation's sustainable fisheries and protected species, our clean water supply and the stability of shorelines become increasingly threatened by such development.

As infrastructure commonly associated with urbanization increases, the emphasis to protect investments from coastal erosion becomes of greater importance (Dugan *et al.* 2011). The most common response to threats on infrastructure from erosion, flooding and shoreline retreat is the installation of shoreline armoring structures (i.e. bulkheads and seawalls) (Ray-Culp 2007; Dugan *et al*. 2011). However, the effects of bulkheads are ironically the opposite of protection demonstrated by increased local erosion, loss of terrestrial sediment supply, changes to sediment transport and the complete loss of the intertidal habitat (Ray-Culp 2007; Defeo 2009; Shipman *et al.* 2010). Bulkheads directly alter coastal processes by modifying the flow of water, wave regime, sediment dynamics, and depositional processes (Dugan *et al.* 2011) and abruptly disconnect the upland and wetland habitats. Bulkheads eliminate the varying water depths, wave attenuation and diverse habitat types associated with natural, gradually sloping beaches, seagrass meadows and salt marshes.

Coastal hydrologists have documented the adverse effects of shoreline armoring on the open-ocean coasts for decades. The practice has become less common, shifting toward beach re-nourishment. However, bulkheads are still commonly used to protect private land along our bays and estuaries. Installation of bulkheads remains a comfortable practice for many landowners that associate bulkheads with protection, thus making removal improbable leaving coastal resiliency and protection a formidable issue to address. U.S. estuaries are quickly becoming urban 'bath-tubs' as the gradual sloping intertidal and subtidal shorelines—some of the most productive habitats found in nature (Odum 1971)—are being converted into right angles with limited habitat functions (Douglass and Pickel 1999; Ray-Culp 2007).

Economic effects of shoreline armoring

The long-term economic impact of shoreline armoring is greater than the short-term protection. Proper maintenance of structures is required to ensure continued shoreline protection, but is often very costly (Douglass and Pickel 1999) resulting in many unmaintained structures, increased risk to storm events, or an expensive burden being transferred to the public. Increased scouring and erosion on bulkheads often result in failure during storm events leading to greater losses of adjacent infrastructure and land (Douglas and Pickel 1999; Griggs 1999). Thieler and Young (1991) documented the greatest destruction and economic loss to be associated with areas adjacent to bulkheads following Hurricane Hugo. Beaches adjacent to bulkheads have also been found to suffer greater property damage during hurricane conditions on the Florida panhandle coast (Walton and Sensabaugh 1979).

Despite the known risks associate with bulkheads, the rate of installation has not slowed along our bays and estuaries and still outpaces that of softer approaches (i.e. living shorelines). Hybrid living shoreline stabilization methods are becoming more popular with private landowners that want to protect their land and adjacent infrastructure from coastal threats. Although these hybrid methods (i.e. native rock revetment and native vegetation placed seaward of the existing bulkhead) do not provide the full array nor areal extent of benefits from soft living shorelines (shallow sloped shorelines integrating upland to weland native plant species and oyster reefs offshore), they do provide shoreline stabilization and greater habitat value than that previously existing along barren bulkheads. Revetment methods will protect the shoreline against erosion and wave action while creating intertidal and subtidal habitats and re-establish natural hydrologic processes (US Army 1995). It is important to employ methods that both address the increased pressure of erosional properties and loss of critical habitat in our estuaries while also building public and private support and work to shift the continuum towards softer shorelines.

BACKGROUND AND NEED

Overview of the Lake Worth Lagoon

The Lake Worth Lagoon (Lagoon) estuary in Palm Beach County (PBC) runs approximately 20 miles parallel to the southeast coastline of Florida (Figure 1). A barrier island separates the Lagoon from the Atlantic Ocean to which it is connected by two man-made inlets, separated by a distance of approximately 15.6 miles. The Lagoon has an average width of one-half mile. Water depths range from less than one foot to dredged areas over 35 feet deep, with an average depth of six feet. Historically, this body of water was a freshwater lake isolated from the ocean and bordered by wetlands on its western boundary, from which it received drainage. Stabilized inlets now punctuate the Lagoon along its length creating permanent estuarine conditions in the system.

Figure 1: Location of Lake Worth Lagoon

The quality of life and the economy of coastal communities in Florida are intrinsically related to marine and coastal resources. More than seventy percent of all commercial and recreational fish species depend on coastal estuaries at some stage of their life cycle (Harris *et al.* 1983). Over 195 fish species, many of them such as the snook (*Centropomus undecimalis*), red drum (*Sciaenops ocellatus*), and gray snapper (*Lutjanus griseus*) are important to both recreational and commercial fisheries (PBC ERM 2008a). The Lake Worth and South Lake

Worth inlets provide important spawning habitat for common adult common snook (Lowerre-Barbiere 2003; Taylor 1998), allowing the species to complete its life cycle almost entirely within the Lagoon system. Studies conducted by PBC ERM (2009a) between 2005 and 2009 have revealed that areas of the Lagoon with high amounts of seagrass and algae are used as developmental habitat by sea turtles. During the study, 525 sea turtle sightings, predominately sub-adult green turtles (*Chelonia mydas)*, occurred. The West Indian Manatee *(Trichechus manatus)* can also be found in the Lagoon year-round utilizing the seagrass beds as feeding areas. In 2009(b), PBC ERM documented 489 individual manatees during the winter months, 63 during the spring months, and 70 during warmer months. Current resources in the Lagoon, documented by a 2007 aerial mapping effort, include 1,688 acres of seagrass beds, 283 acres of mangrove habitat, and 4.2 acres of natural oyster reefs (PBC ERM 2008b). Additionally, 89 bird species have been identified in the Lagoon (PBC ERM 2008a). Lagoon organisms are dependent on the productivity, shelter, and food provided by seagrass, mangrove, and oyster reef habitats of the Lagoon and the restoration and conservation of these habitat types is critical to the survival of all Lagoon species.

Issues affecting the Lake Worth Lagoon (Lagoon)

One of the most significant impacts to the Lagoon is the loss of intertidal and subtidal estuarine habitat as a result of extensive dredging and filling of wetlands along the shoreline;,; channel dredging;, and the construction of seawalls, canals, bridges, causeways, docks, marinas, a port, and power plant. These anthropogenic disturbances and altered hydrology over the past 100 years have significantly impacted and reshaped the Lagoon. Most of the shoreline receives moderate to high levels of wave energy from natural coastal processes coupled with impacts from heavy boat traffic. Because of these erosional threats, over 80% of the shoreline has been armored in an attempt to slow erosion and increase protection of private land. The result is significant intertidal and sub-tidal habitat loss with an estimated 87% loss (~2,000 acres) in mangrove wetland between 1940 and 1975 as a result of shoreline development (Harris et al., 1983). Today, 81% of the Lagoon has been armored with vertical bulkheads (PBC ERM 2010). The entire Lagoon is classified as Class III waters and is mainly affected by nonpoint sources of pollution. While economically and ecologically valuable communities of natural resources continue persist, they are in need of restoration and conservation.

Lake Worth Lagoon habitats

The primary habitat types in the Lagoon include seagrass, mangrove, tidal marsh, and oyster reef. Seagrasses, tidal marsh and oyster reefs have been highlighted as priority habitats in Florida's State Wildlife Action Plan (Action Plan), indicating the need for imminent conservation actions to slow habitat degradation as well as reduce vulnerability to risks associated with sea level rise and coastal storm events (FWC 2012).

Seagrass communities are highly productive, faunally rich, and ecologically important systems. They provide food, substrate, and shelter for thousands of species of flora and fauna, and also help stabilize sediments, oxygenate the water, and maintain water clarity. Losses of seagrasses have been documented worldwide and have been correlated with eutrophication, sedimentation, and coastal development (Orth *et al.* 2006). Seagrass is declining in Florida primarily due to reduced water quality from anthropogenic nutrient and sediment loading (USDOI 1991; FWC 2012), causing the Lagoon to have experienced a 40% decline in seagrass over the past 70 years (PBCERM 2008a; PBCERM 2009b; PBCERM 2012). Of the six seagrass species found in the Lagoon, *Halophila johnsonii,* has some of the largest coverage area and is

the only marine plant designated as a federally threatened species. Several designated critical habitat areas for this species are found in the Lagoon (RECOVER 2010; NMFS 2002).

Mangroves are an important source of primary production, and they provide nursery habitat for fish and wildlife, sequester carbon, and stabilize shorelines. Based on fisheries alone, the annual value of mangrove wetlands in the Indian River Lagoon is approximately $2,200-$3,800/acre (USFWS 1999) (adjusted for 3% annual inflation). In 2007, approximately 299 acres of mangroves (representing approximately 4% of the total estuarine habitat) were identified in the Lagoon (PBC ERM 2008b). Mangrove wetlands are considered a declining habitat both nationally and statewide due to pressures from coastal development (USDOI 1991; FWC 2012). The Lagoon has suffered an estimated 87% loss in mangrove wetlands between 1940 and 1975 (Harris *et al.* 1983).

Acting as ecosystem engineers, oysters provide nursery grounds, refugia, and foraging areas for a wide variety of fish, birds and invertebrates (Coen *et al*. 1999a; Beck *et al*. 2011). As individual oysters filter 4 to 34 liters of water per hour, oyster reefs also have an essential role in maintaining water quality and clarity (Coen *et al*. 1999b). Newell et al (2005) reported that one million oysters in the Chesapeake Bay can remove approximately 753 kg of nitrogen and 272 kg of phosphorous from the water column, on average, per year. In 2007, 4.2 acres of natural oyster reef were identified in the Lagoon contributing over 2259 kg of nitrogen and 816 kg of phosphorous removed per year (PBC ERM 2008b). Oyster reefs are one of the most imperiled estuarine habitats in the world (Beck *et al.* 2001) with losses in Florida primarily due to altered hydrologic regime (FWC 2012). In the Lagoon, there has been a 50-89% loss from historic levels of oysters and recent monitoring events indicate that this loss may be due to a lack of suitable substrate for attachment (Beck *et al.* 2009; PBC ERM 2008a).

Fish and Wildlife in the Lake Worth Lagoon

A wide variety of species use the existing natural communities of the Lagoon. Over 195 fish species have been identified, including commercially and recreationally valuable common snook (*C. undecimalis*), red drum (*S. ocellatus*), gray snapper (*L. griseus*), and American eel (*Anguilla rostrata*) (PBC ERM 2008a). An estimated 94% of commercially and recreationally important marine fish species in South Florida are dependent upon estuarine habitats during some stage of their life (Chambers 1991; Harris *et al*. 1983).

Several bird sanctuaries and rookeries are located in the Lagoon. A Lagoon-wide bird count conducted by PBCERM in 2004-2005 revealed that at least 89 species utilize the Lagoon, including several threatened/endangered species and many Species of Special Concern (PBC ERM 2008a; FWC 2011). During 2010-2011 post-construction surveys of the Ibis Isle Restoration Project, a PBC ERM estuarine restoration project, 45 bird species were observed, including three endangered/threatened species and eight Species of Special Concern. Previous restoration projects have provided habitat for multiple state listed species indicated by numerous successful fledglings and the first Least Tern nests (PBC personal communication).
The Lagoon also provides major warm water refuge, foraging habitat, and travel corridors for federally endangered West Indian Manatees (*T. manatus)*. Manatees are observed year-round, with a significantly higher number observed during the winter season. Between February 2009 and March 2011, a total of 4,008 manatees were counted in the Lagoon during bi-monthly annual surveys, with up to 800 individuals counted at one time (PBC ERM 2011a; FPL 2011). Manatees feed primarily on seagrass, but they have also been observed foraging on smooth cordgrass at Snook Islands Natural Area and Ibis Isle.

Areas within the Lagoon that support high amounts of seagrass and algae are frequently used as developmental habitat by juvenile sea turtles. Federally endangered green sea turtles (*C. mydas*) were observed 790 times, and federally threatened loggerhead sea turtles (*Caretta caretta*) were documented 9 times within the Lagoon from 2005-2011 (PBC ERM 2011b; PBC ERM 2011c). Preliminary results indicate that the dietary composition of green sea turtles in the Lagoon is predominately (97%) seagrass (PBC ERM 2011b).

Of the 1036 species that have been identified as having the greatest conservation need in Florida, over 200 are regularly found in, or are dependent on, one or more of the habitat types proposed by these projects (FWC 2012) as well as a number of at-risk species. The restoration and conservation of mangrove, seagrass, oyster reef, tidal marsh, and tidal flat habitats in the Lagoon are critical to the survival of these species.

Management of the Lake Worth Lagoon

Recent restoration projects have proven very successful and indicate great potential for restoration of much of the Lagoon's lost habitats. In 1987, the Lagoon was included in the Surface Water Improvement and Management Plan (SWIM) Act as a water body of regional or statewide significance and designated as one of four water bodies in South Florida having priority restoration needs (Chapter 373.453, Florida Statutes). In response, the Florida Department of Environmental Protection and PBC ERM formed the Lake Worth Lagoon Ecosystem Management Area and Team, and in conjunction with the South Florida Water Management District and other government agencies, municipalities, businesses and industries, non-profit-groups, and concerned citizens, developed the Lake Worth Lagoon Management Plan (LWLMP)[1] in 1998. Following SWIM guidelines, the LWLMP created a prioritized list of projects and action plans to meet specific goals for habitat restoration and water and sediment quality improvements. The LWLMP was updated in 2008 with a 5-year goal of managing sediments and restoring 141 acres of estuarine habitat and an overall goal to restore functional estuarine habitats of the Lagoon. In 2009, this multi-agency group officially launched the Lake Worth Lagoon Initiative (LWLI) to coordinate activities to protect and enhance the Lagoon. The LWLI stakeholders collaborate and provide support for increasing awareness of the Lagoon, carrying out action plans and projects outlined in the LWLMP, and seek state and federal funding for high priority projects. During the last 20 years, the PBC ERM has performed a variety of successful restoration and enhancement projects throughout the County by forming relationships with over 30 partners, including local municipalities, State and Federal agencies, schools and universities, and non-profit organizations. To date, these efforts have resulted in the restoration and enhancement of approximately 184 acres of coastal and marine habitat (e.g. Peanut Island Environmental Enhancement and Snook Islands Natural Area)[2].

OVERALL GOALS AND OBJECTIVES

The primary goal of the four proposed habitat restoration and enhancement projects is to create additional intertidal mangrove and saltmarsh habitat within high-energy areas of the County while stabilizing shorelines along existing bulkheads, thus increasing resiliency and protection of adjacent infrastructure and providing habitat and foraging areas for hundreds of marine species.

[1] Lake Worth Lagoon Management Plan: http://www.co.palm-beach.fl.us/erm/lakes/estuarine/lake-worth-lagoon/
[2] PBC ERM restoration projects: http://www.co.palm-beach.fl.us/erm/lakes/estuarine/projects.htm

1. Increase seagrass, mangrove, oyster, and intertidal marsh habitat: Historically, the Lagoon had significant mangrove, seagrass, and tidal marsh habitat which were lost due to development of the Lagoon's shoreline and adjacent uplands. This restoration project will restore these important estuarine habitats.

2. Increase fish and wildlife utilization: The project will create important habitat for over 195 fish species and 89 bird species that have been identified in the Lagoon (PBC ERM 2008a). This includes the restoration of Essential Fish Habitat as designated by NOAA for trust fish species (gag grouper, gray snapper, red drum, coastal sharks, and spiny lobster). The intertidal habitat will create a foraging area for wading and shorebirds, potentially including the endangered West Indian Manatee *(Trichechus manatus)* endangered Green Sea Turtle (*Chelonia mydas)*, threatened Loggerhead Sea Turtle (*Caretta caretta)*, threatened Piping Plover (*Charadrius melodus*) and threatened Wood Stork (*Mycteria Americana*) and the American Oystercatcher (*Haematopus palliates),* Least tern (*Sterna antillarum),* Little blue heron (*Egretta caerulea)*, Black skimmer (*Rynchops niger)*, among others. The restoration project will provide fish and wildlife habitat in an area that is currently devoid of habitat as a result of erosion.

3. Improve water quality and light availability by reducing turbidity: Reducing erosion and turbidity associated with wave reflection from bulkheads will reduce turbidity and thus increase light availability for adjacent habitats including seagrass populations.

4. Increase public outreach and education regarding the ecological importance of Lagoon estuarine habitats: All four of these project occur in publically accessible areas of Lake Worth Lagoon and have been designed with the intent of restoring a highly urbanized area of the Lagoon that is frequented by locals and visitors. The future Manatee Education Center, adjacent to the Florida Power and Light site, will feature free admission and provide opportunities to observe and learn about Lake Worth Lagoon, manatees and their associated habitats. Kiosks and educational signage will be incorporated within the Manatee Center and other locations where appropriate. These projects will act as a "living classroom" that will showcase the various estuarine habitats of the lagoon.

PROJECT LOCATIONS AND SPECIFIC OBJECTIVES

Bryant Park (Phase II)

A City of Lake Worth park located at 1 7th Ave North (Parcel No. 384344150000050) Lake Worth (Section 2, Township 44 South, Range 43 East), in Palm Beach County (26°36' 45.77"N, 80°2'52.97"W). This park is located just south of previous Snook Islands restoration project. The entire area is armored with a bulkhead and features a walking trail immediately adjacent providing high public access and visibility to restoration projects. The Bryant Park Habitat Restoration Project includes:

- New wetland habitat (0.37 acres) for planting mangroves and/or saltmarsh vegetation (*Spartina alterniflora*).
    - Wetland planters adjacent to 2000 lf of shoreline
    - Rock components for stabilization and intertidal reef habitat
    - A total of 4467 cubic yards (yds^3) of sand fill material and 6400 tons of rock will be utilized to create shoreline planters and raise the profile to wetland elevation that will facilitate successful establishment of vegetation and intertidal habitat.

Osprey Park

A City of West Palm Beach park located at the intersection of Flagler Drive and 50th Street (26°45'23.1"N, 80°03'03.1"W). The existing sand beach experiences erosion to wave, wide, and tidal currents, and the bulkhead sustained long-term damage until the City began repairs in 2015. The Osprey Park Habitat Restoration Project includes:

- New wetland habitat (0.10 acres) for planting mangroves and/or saltmarsh vegetation (*S. alterniflora)*:
    - Wetland planter adjacent to 125 lf of shoreline
    - Rock components for stabilization and intertidal reef habitat
    - A total of 100 yds^3 of sand fill material and 250 tons of rock will be utilized to create the shoreline planters to raise the profile to wetland elevation that will facilitate successful establishment of vegetation and intertidal habitat creation.

Currie Park

A City of West Palm Beach park located at the intersection of Flagler Drive and 23rd Street (26°44'02.5"N, 80°02'56.9"W). The park is completely armored with a seawall, fishing pier, and boat ramp amenities. The Currie Commons & Park Habitat Restoration Project includes:

- New wetland habitat (0.32 acres) for planting mangroves and/or saltmarsh vegetation plants (*S. alterniflora)*:
    - Wetland planters (of varying size), with rock in between (1700 lf of shoreline) for stabilization and intertidal reef habitat
    - A total of 550 yds^3 of sand fill material and 3380 tons of rock will be placed along the eroded shoreline to raise the profile to wetland elevation that will facilitate successful establishment of vegetation and intertidal habitat creation.

Florida Power and Light

The Riviera Beach Next Generation Clean Energy Center located at 300 Broadway, Riviera Beach, FL 33404 (26°45'48.3"N, 80°03'01.4"W). Florida Power and Light is currently constructing an innovative manatee education center for the public adjacent to its clean energy center that will feature an accessible venue. The location of the center nearby to an inlet provides exceptional water clarity for viewing manatees that have come to use the site as a thermal refuge during cold winter months. The Florida Power and Light habitat restoration project includes:

- Removal of exotic plants
- At least 1000 tons of artificial reef placed surrounding the observation platform.
- New wetland habitat (0.12 acres) for planting mangroves and/or saltmarsh vegetation *(S. alterniflora)*.
    - Wetland planters (~125' lf planters) with rock in between (557 lf of shoreline) for stabilization and intertidal reef habitat.
    - A total of 800 yds^3 of sand fill material and 1100 tons of rock will be placed along the eroded shoreline to raise the profile to wetland elevation that will facilitate successful establishment of vegetation and intertidal habitat creation.

EXPECTED RESULTS AND BENEFITS

The habitat restoration projects, in partnership with private homeowners and local municipalities, will provide substantial benefits to the Lagoon including improve water quality

and attaining and maintaining biological integrity of the estuarine ecosystem, which supports a variety of fisheries and wildlife. The proposed project will aide in the long-term restoration and conservation of coastal wetland ecosystems, and included the following:

- Partnerships: private homeowners and local municipalities will be encouraged to replace bulkheads and seawalls with a softer shoreline using living plant material (emergent and submerged aquatic vegetation [SAV]), oyster shells, earthen material or a combination of natural structures with offshore breakwaters to protect the shoreline against erosion.
- Intertidal and Subtidal Habitat Restoration: 4382 lf of nationally-decreasing estuarine intertidal emergent wetlands will be restored by the re-creation of natural mangrove marsh habitat and oyster reef habitat to the estuarine system.
- Water Quality Benefits: Stabilizing sediment surrounding bulkheads will prevent erosion and re-suspension of the sediments in the water column, thus reducing turbidity and increasing light availability to seagrasses and other SAV in the area.
- Fish and Essential Fish Habitat: Over the 3-year project time period, the restoration project(s) will improve and create over 4000 lf of important essential fish habitat with the restoration of intertidal mangrove/saltmarsh and oyster habitats as well as indirect benefits to adjacent seagrass communities. Numerous recreationally and commercially important fish will benefit from these living shoreline restoration projects.
- Birds: The restoration project will provide important habitat for both coastal-dependent and migratory birds.
- Public outreach and Education: These restoration projects will create public awareness about the natural resources within the Palm Beach County estuaries and the Lagoon.

PROJECT APPROACH

Construction Methods

These projects will create a combined 4382 lf of subtidal and intertidal habitats in four hydrologically connected sites in Lake Worth Lagoon. All sites will employ similar methods to restore and enhance intertidal and subtidal habitats in front of existing bulkheads that provide little to no habitat value. Elevations will be raised to wetland levels using approximately a total of 5917 cubic yards of sand, which will be stabilized using approximately 11,130 tons of armor/bedding stone and filter fabric. Once installed, the rock will attenuate waves, reduce the effects of boat wakes, prevent scouring and protect seagrass beds in the project area while serving as a substratum for the recruitment and colonization of oysters, sponges, and algae. In total, approximately 39204 feet^2 of *S. alterniflora* will be planted. The enhanced marsh and rock habitat will recruit a variety of wildlife including juvenile fishes, invertebrates, oysters, wading birds, and provide habitat value to manatees and juvenile Green and Loggerhead sea turtles.

Implementation of Project

The planning and design phase of the project is complete for three of the four sites and nearly complete for the Florida Power and Light site. The status of permits for each site is summarized in Table 1. We anticipate all four sites to be complete within the 36 month proposed project timeline (Table 2). All sites with the exception of Florida Power and Light can have construction commence within 12 months and mobilization beginning in June 2016. Completion of construction of Bryant Park, Currie Park and Osprey Park projects is anticipated within six months. When possible, the projects will be installed from land, but barge methods

may be necessary. The contractors will create the following according to site-specific requirements: 1) rock revetment at the foot of the bulkhead, 2) mangrove planters and rock revetment in front of the mangrove planters, and 3) mangrove/saltmarsh habitat in designated areas. The contractors are required to comply with all permits and conditions of the contract documents. PBC ERM will monitor the project during construction to ensure permit compliance.

Table 1: Site name, required permits and agency, and status.

Site #.Name	Permitting Agency	Permittee	Permit #	Permit Type	Status
1.Bryant Park	Florida Department of Environmental Protection (FDEP)	Palm Beach County (PBC)	50-0312260-001	Environmental Resource Permit	Secured
1.Bryant Park	U.S. Army Corps of Engineers (USACE)	PBC	SAJ-2010-01017(NW-LCK)	Nationwide Permit Number 27	Renew
2.Osprey Park	FDEP	PBC	N/A	Environmental Resource Permit	Pending
2.Osprey Park	USACE	PBC	N/A	Nationwide Permit Number 27	Pending
3.Currie Park	FDEP	PBC	N/A	Environmental Resource Permit	Pending
3.Currie Park	USACE	PBC	N/A	Nationwide Permit Number 27	Pending
4.Florida Power and Light	FDEP	PBC	N/A	Environmental Resource Permit	Not applied for
4.Florida Power and Light	USACE	PBC	N/A	Nationwide Permit Number 27	Not applied for

Maintenance

The project is expected to recruit oysters, seagrass, fishes, and invertebrates within six months of project completion as have been documented in previous restoration projects. Full succession of the area, including an increase in vegetative and oyster cover, fish and wildlife utilization, and improvement in water quality, is anticipated within five years of project completion. Within the first year, the project may require minimal maintenance in the form of replacing dead vegetation and/or removal of exotic vegetation or debris; however, no structural maintenance will be required. This project is designed to be diverse and self-sustaining in perpetuity.

Table 2. Tentative timeline for completion of major project elements and pre and post monitoring per quarter/year (Q1=January-March, Q2=April-June, Q3=July-September, Q4=October-December).

	2016				2017				2018			
SITE 1-3 (PARKS)	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Grant execution	X											
Contract development	X											
Permit receipt	(N/A) Anticipate receipt prior to grant execution											
Mobilize equipment		X										
Place sand/rock		X	X	X								
As-built survey			X	X								
Demobilize equipment				X								
Plant vegetation					X							
Monitoring	X				X		X		X		X	
SITE 4 (FPL)												
Grant execution	X											
Finalize design plans	X											
Contract development		X	X									
Permit receipt				X								
Mobilize equipment					X							
Place sand/rock					X	X	X	X				
As-built survey						X		X				
Demobilize equipment								X				
Plant vegetation									X			
Monitoring	X								X		X	

Monitoring

The four restoration projects are designed to stabilize 4382 lf of armored shoreline creating oyster reef habitat and 0.9 acres of mangrove/saltmarsh in the Lagoon. To measure water quality

and habitat benefits, the monitoring program described below is proposed that follows the universal restoration goal-based metrics detailed in the "Oyster Habitat Restoration Monitoring and Assessment Handbook" (Baggett *et al.* 2014). Among these metrics, we will measure (1) reef areal dimension, (2) reef height, (3) oyster density (4) water quality (i.e. temperature, salinity, and dissolved oxygen, (5) changes in salt marsh habitat, and (6) changes in SAV.

Reef area will be measured at low tide by making continuous measurements using a handheld GPS unit while walking the perimeter of each distinct patch reef. The data will then be entered into ArcGIS to determine reef area in m^2. Measurements will be taking pre-restoration, within three months of construction and then continue annually for a minimum of two years. There are no success criteria for this metric.

Reef height will be measured using traditional survey equipment to take data points every 1 m along the reef crest during low tide. These measurements will be taken at the same frequency as reef area. A short-term goal will be neutral or positive change from the original reef height.

Live oyster density (number of live oysters per m^2) will be recorded by the number of adult oysters for our purposes. A stratified sampling design will be employed with three strata (base, mid-height, and crest). A minimum of five randomly placed 0.25 m^2 quadrats (size may change) along each strata and each reef structure. At a minimum, sampling will be performed annually at the end of the oyster-growing season (late summer or early fall). We hope for some oyster recruitment on the breakwater structures as demonstrated by previous restoration projects with similar methods and location.

Environmental variables, including water temperature, salinity, dissolved oxygen, pH, and turbidity will be measured near the restoration sites. While there are no success criteria for these environmental variables, they provide data to help explain the performance of the restored reef.

Changes in adjacent salt marsh will be measured by installing permanent transects along the length of the restored reef using a base stake. The linear distance from the base stake will be measured with a tape measure to determine shoreline loss/gain. Measurements will be taken pre-restoration, within three months post-restoration and annually for at least two years with the goal of continuing monitoring 5-10 years post-construction. Photo stations will be used to monitor the growth and recruitment of coastal vegetation (*S. alterniflora* and mangroves). Density and percent cover of marsh plants will be measured along the same transects by counting the number of live stems and species present within a 1 m^2 quadrat. At a minimum, measurements will be performed annually. We expect to see a trend of increasing mean plant density and mean percent cover with the long-term goal of having greater density and coverage.

Changes in seagrass communities will be monitored by PBC ERM staff along 9 permanent 100' transects throughout the Lagoon using the Braun-Blanquet classification system of seagrass density by species and substrate composition as well as bed edge delineation. Surveys are completed in the annually and aerial surveys every five years, and will continue beyond the scope of this project.

Increased fish and wildlife utilization will be documented by recording the presence of fishes and waterbirds. Annual bird surveys will be conducted by PBC ERM staff via direct counts timed to coincide with the nearest daytime low tide and peak activity (early morning or evening). Surveys will include relative abundance by species (noting Species of Special Concern and threatened/endangered species), differentiation of juvenile and adult birds, and an assessment of bird behavior (feeding, nesting, etc.). Because the restored area is currently of low habitat value, the presence/absence of juvenile and transient fish species using appropriate methods (i.e. life nets, drop samples, throw traps or similar gear) will be collected and compared to pre-restoration

conditions to assess habitat utilization. A short-term goal is to see an increase in the number of fish species and juveniles using the restored habitat.

Annual Monitoring Reports

Data will be collected annually for at least two years and compared to the baseline conditions and previous monitoring events. The report will include: (1) written narrative summarizing observations including: extent, percent cover, percent live, and percent recruitment for oysters; extent, percent cover, percent survival and recruitment for emergent vegetation; percent coverage, species density for seagrass; bird species and behavior; and incidental wildlife observations; (2) excel spreadsheets, maps, and photographs documenting conditions; (3) discussion of overall trends or changes; (4) description of any problems encountered and their resolution; and (5) recommendations for future monitoring. Summaries of monitoring reports will be included in grant progress reports and final reports and are posted on PBC website.

PROJECT BUDGET

The four restoration projects will cost a total of $1,398,110 to complete in all its various stages. Significant funding to complete this project is being applied from multiple state sources including $325,817 from PBC ERM, $300,000 from FDEP, and $290,400 requested from FIND that are not part of the NOAA federal project request. The federal project request is $582,416 for a period of three years. This amount is matched with $625,817 in confirmed state matching funds including $325,817 cash from PBC ERM, and $300,000 cash from FDEP. An additional $290,400 has been requested from FIND that will also be applied as match if approved. With this amount and the efforts of PBC ERM, FWC, SARP and ACFHP, the goals and objectives of the Habitat Restoration and Enhancement project will be fulfilled. The costs directly associated with implementation of the restoration activities are included as project costs in Table 3.

Table 3: Project budget summary with major project elements, estimated costs and funding sources.

Project Elements	Quantity	Price	Unit	DEP match	PBC budget (match)	FIND request (unconfirmed match)	NOAA/NMFS Federal Request	Total Project Cost
Purchase / Transport / Install Rock (1'-3')	11,130	$80.00	Ton	$300,000	$257,452	$290,400	$42,548	**$890,400**
Excavate / Transport / Place Sand	8,567	$25.00	yd^3		$62,500		$151,675	**$214,175**
Vegetation	12,000	$1.15	4" plant		$5,865		$7,935	**$13,800**
Artificial Reef	1,000	$100.00	Ton				$100,000	**$100,000**
Survey	750	$107.01	Hrs				$80,258	**$80,258**
Monitoring	1600	$50	Hrs				100,000	**$100,000**
Sub-Total				**$300,000**	**$325,817**	**$290,400**	**$482,416**	**$1,398,633**
Southeast Aquatic Resources Partnership Grant and Outreach support		$50,000					$50,000	$50,000
Atlantic Coastal Fish Habitat Partnership indirect administrative costs		$50,000					$50,000	$50,000
Total Project Costs							**$582,416**	**$1,498,633**

RELATIONSHIPS TO HABITAT MANAGEMENT AND RECOVERY PLANS

The Lagoon is provided special consideration and protection under state and local management plans. Most pertinent is the LWLMP created as a collaborative effort between PBC ERM, FDEP, SFWMD, other government agencies, municipalities, businesses, industries, non-profit-groups, and concerned citizens. The goal of the LWLMP is "*…to restore, conserve, and manage the Lake Worth Lagoon ecosystem to a level of quality to obtain measurable and significant improvements to the Lagoon's water and sediment quality; to provide habitat for*

native plants, fish, and wildlife, and aesthetic, recreational, and economic benefits for the residents and visitors of PBC; and to encourage, develop, and promote a partnership of public and private interests to manage the Lagoon". The plan identifies specific restoration goals and objectives in three programs: water and sediment quality, natural habitats, and interagency management of natural resources (PBC ERM 2008a) and Action Plans outlining intentions to restore, create and protect saltmarsh habitats, manage sediments, expand oyster habitat, all of which are addressed by the four proposed restoration projects.

Florida's State Wildlife Action Plan is the plan for conserving all of the state's wildlife and vital natural areas for future generations. The Action Plan assessed 45 habitat types throughout Florida and identified nine marine habitats in the highest threat category including oyster reef, SAV and mangrove swamp. The Action Plan designates the status of seagrass and mangroves as poor and declining statewide including the Lake Worth Lagoon. Recommended actions for conserving these threatened habitats will be taken by creating important estuarine habitats and building partnerships to increase effectiveness of conservation actions.
The restored habitats and indirect benefits resulting from these projects will address various objectives in federal and state species recovery plans. These include improving water quality in important turtle and foraging habitat for the endangered Green sea turtle (Objective 122&126: NMFS 1991) and management of feeding and migratory habitats for the threatened Loggerhead sea turtle (Objective 4: NMFS 2009) as well as enhancement of conditions appropriate for vegetative growth and reproduction of natural populations of the threatened Johnson's seagrass (Action 5.06: NMFS 2002). The restored habitats will provide additional roosting and nesting areas for wood stork populations (H2: USFWS 1999). Many of the traditional wood stork rookeries have been abandoned in the Everglades system due to changes in hydroperiods. Wood storks continue to relocate complete colonies to new rookery sites near more dependable foraging areas. The goals of the State approved PBC Manatee Protection Plan (MPP) include protecting manatee habitat, promoting boating safety, and increasing public awareness of the need to protect manatees and their habitat. Though not directly funded by this project, the Manatee Education Center in combination with the proposed Florida Power and Light site will promote re-establishment of native SAV and increase public education and outreach of manatees and their associated habitats (Objective 3.3.8, 4.2, (H)2.2: FWS 1999, 2001; PBC MPP).
The US Fish and Wildlife Service (USFWS) South Florida Ecosystem Multi-Species Recovery Plan recommends preserving any available buffer habitat along this system to maintain water quality as well as for food and cover for migratory and resident species. Goals within the plan encourage the preservation of any available land left along these important waterways for sustainable wildlife populations. The project sites are also located within the Atlantic Coastal Flyway and will contribute important areas for migrating waterbirds.

The proposed projects will contribute to regional overarching objectives outlined in multiple management plans including SARP's Habitat Plan[3] and ACFHP's Conservation Strategic Plan[4] by building effective partnerships to create and restore critical estuarine habitats while addressing sea level rise by incorporating projections into project design and community resiliency through shoreline stabilization. The Regional watershed program, which affects the Lagoon, is the Comprehensive Everglades Restoration Plan (CERP) that provides a framework and guide to restore, protect and preserve the water resources of over an 18,000 mi^2 area in

[3] SARP's Southeast Aquatic Habitat Plan: http://southeastaquatics.net/about/our-work/conservation-planning/sahp
[4] ACFHP's Conservation Strategic Plan: http://www.atlanticfishhabitat.org/Documents/ACFHP_Strategic_Plan_HighRes.pdf

central and southern Florida, including the Everglades. More specifically the North Palm Beach Component (NPBC) of CERP includes major projects that will capture and store ecologically harmful excess freshwater flows, thereby significantly reducing discharges detrimental to the health of the Lagoon. The long-term benefits of the CERP project will ultimately improve water-quality in the Lagoon thereby enhancing the benefits of the restoration projects.

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ACFHP Science and Data Meeting

September 21-22, 2015

The Hotel at Arundel Preserve, Hanover, MD

In attendance: Caroly Shumway (Chair, Merrimack River Watershed Council), Marek Topolski (Vice-Chair, MD), David O'Brien (NOAA), Julie Devers (USFWS), Alek Modjeski (American Littoral Society), Jeff Beal (FL), Moe Nelson (NOAA), Lisa Moss (USFWS), Alan Weaver (VA), Fritz Boettner (Downstream Strategies), Albert Spells (USFWS), Pat Campfield (ASMFC), Mary Andrews (NOAA), Lisa Havel (ACFHP)

September 21, 2015

9:00 am

Caroly asked everyone to describe what he or she would like from ACFHP in terms of science and data:

Dave O'Brien: Dave is the Marine Habitat Resource Specialist in Gloucester Point, VA. He said that ideally, bay-wide, consistent fisheries data would be ideal. There are different survey methodologies across states, which makes comparisons difficult. While Dave works on a parcel scale, the restoration center works on a watershed scale. The better the resolution, the more flexibility you would have with what you're trying to accomplish.

Julie Devers: Julie is a fishery biologist in the Maryland Fishery Resource Office and serves ACFHP by helping in the process to get the FHP funding on the ground. ACFHP can best serve The Service by creating tools to allow us (ACFHP) to best prioritize the work. Until now we've been opportunistic about funding opportunities, so using a more scientific approach would be better. In the office, areas for refuge acquisition is based on Atlantic Coast Joint Venture maps, which are for birds, but there aren't any tools in their toolbox to determine acquisition areas for fish. They just have to assume that where there are birds there's going to be fish as well. If we can get our priority species into maps, we can share them with those that are working on refuges. However, the habitat maps aren't prioritized.

Captain Alek (Al) Modjeski: Capt. Al is the Habitat Restoration Director of American Littoral Society. Recently he has worked to build oyster reefs and restoring horseshoe crab beaches. The Service granted them $2 million to create a bypass culvert and he has been studying that since 2005. They also have a HUD grant right now and aren't sure about where they should apply it.

Jeff Beal: Jeff is a biologist in the Marine and Estuarine Subsection of the Florida Fish and Wildlife Conservation Commission. He would like to see more ecosystems modeling in order to better understand habitat, water quality, and fisheries (game and prey). He is working with the University of Florida to do grand-scale work. Particularly, the movement of mangroves and salt marsh due to climate change are a high priority.

Moe Nelson: Moe works at the NOAA Center for Coastal Monitoring and Assessment. He was in charge of ACFHP's Assessment of Existing Information. Moe said that there are a lot of opportunities for FHPs, especially the coastal Partnerships, to work with NOAA more in the future. There are many efforts in place similar goals in both organizations. For example, NOAA's Habitat Blueprint (on the east coast: Penobscot and Choptank Rivers) might be where ACFHP and NOAA can work together. It can be a two-way relationship. NOAA can do as much for the Partnerships and vice versa.

Pat Campfield: Pat is the Science Director at ASMFC and is on the ACFHP Steering Committee. He is here to observe and provide guidance from Steering Committee. There have been solid scientific products developed by the Science and Data Committee over the last few years, and it looks like we're ready to develop new tools. One of the biggest points of intersection with ASMFC is with anadromous species and fish passage. We should be using scientific tools to help us focus restoration efforts. The winter flounder and river herring habitat assessment work was good. Eventually ASMFC and ACFHP want to work across species and not just focus on individual species.

Alan Weaver: Alan works for the Virginia Department of Game and Inland Fisheries in Richmond. He spends a lot of time in the field working on fish passage and shad and river herring restoration, and is fascinated by all the tools becoming available. When he first started working, the approach was to get fish to their spawning habitat and if there were not enough fish then you restock. However the fish numbers are still terrible. Habitat doesn't really seem to be the limiting factor with herring and shad. With all of the habitat they've opened in the state, the numbers are still low. Is the problem then on the ocean side? He would like ACFHP to help his agency accomplish its mission, and still wants to champion restoration if at all possible.

Fritz Boettner: Fritz is the GIS Program Principal, so the question for him is not what ACFHP can do for me but what I can do for ACFHP. Downstream Strategies has been developing assessment models for select species based on the needs of FHPs across the US. They have been working with the NALCC and ACFHP modeling winter flounder in Narragansett Bay and Long Island Sound and have been integrating a lot of those results into their decision support tool. The overarching question is what are the stressors and how much is that stress affecting the fish? They are also looking at natural habitat qualities to see where fish are and where they should be. With the decision support too you can set criteria based on what your specific need might be: there are both maps and futuring tools. It is a way of analyzing habitat conditions and assigning priorities, which encompasses a lot of things we've been discussing this morning. The coastal assessment hasn't been as easy as the inland work. Part of the reason he's here today is to go over the things they've done.

Albert Spells: Albert is a Coordinator out of the Virginia Fishery Office in Chelsea. He has the same concerns as Alan. Albert is working on providing people access to fish and is working on restoration for fish species. ACFHP can help him prioritize habitats for fish passage projects. Most work has been opportunistic in his offices, but they wonder: where is the habitat that we should be looking at? They have a big concern for aquatic invasive species. Where should they be concentrating their small amount of resources and foster local partnerships?

Lisa Moss: Lisa is a biologist for USFWS in the same offices as Albert. Aquatic invasive species are a big deal in VA. When we talk about aquatic invasives, ACFHP could serve as a way to focus our efforts. We want to build resiliency for native communities instead of trying to eradicate these species in the future, but how can we be more effective? From a leadership perspective, strategic visions come from the top down, so ACFHP's work is also important as a way to inform VA on how to step into the future instead of being told how to do it. By working with ACFHP, we can help shape the vision.

Marek asked if they are worried about milfoil or also predator/prey invasives? They're focused on freshwater species only, both trophic interactions and habitat. Should we include invasive species as a habitat type? Like hydrilla? Should ACFHP be mapping that at finer scale than places like SeaGrant made? Lisa said that would definitely be helpful. SARP and TNC have been wondering how to incorporate invasives. Should it be an additional GIS layer? Attempts to incorporate this would be helpful since people don't really know what to do about the invasives. The negative impacts aren't necessarily the easiest to see at first.

Marek Topolski: Marek is a natural resources biologist at the Maryland Department of Natural Resources. He said that maps are great and helpful but how can they be used? How does it become a useful management tool? How can all of these products be used from a day-to-day management perspective? How does it support a manager's decision? How does it go from NOAA to local planners making decisions? Is there a way ACFHP can help make or direct tools so managers can make decisions? We can take these resources and make them useful to managers.

Caroly Shumway: Caroly was the co-science lead for TNC's NAM ERA and is currently the director of the Merrimack River Watershed Council and the Chair for the ACFHP Science and Data Committee. The challenge for us at ACFHP is that we're a big region. We're different from the Midwestern FHPs. They're smaller and tend to be focused on one species. We have a ton of species and we're largely dominated at the state level in the Partnership. We're dominated by state agencies compared to e.g. the Pacific Coast. Since we met as a group in 2011 there has been an explosion of data on the Internet. As scientists, we love to make maps. ACFHP should look at what's already out there and use it to advance ACFHP's needs. Who are our users? They are smaller conservation groups trying to get funding from ACFHP. Potentially the public is a user. Also, ACFHP is a user. The majority of us want us to have tools to help us prioritize. But what does that mean? It's not enough to prioritize habitats. We also have to prioritize threats. There may be some areas in our region that are so far degraded that it's not worth it for ACFHP to prioritize there. However, there are political ramifications if we don't prioritize a state or area. Marek said that Maryland is dealing with that issue now and they're shelving some areas that are too far-gone. Caroly also asked the question: what scale are we working on to prioritize? We will spend all of our time trying to get consistent data across states, or should we just focus on subregions? For example, at the HUC12 level, you ignore impervious surface percent above a certain percent for restoration. Studies show that you should protect under 5% impervious surface, restore under 7%, and ignore above 7%. The HUC 12 level might be helpful for us for all of the users.

Mary Andrews: Mary is an environmental engineer at NOAA's Restoration Center. She is presenting on tools created for the Chesapeake Bay later, and is here to support Dave. She wants to make sure that ACFHP is aware of what NOAA has produced so far.

Lisa Havel introduced herself as the Coordinator for ACFHP and said that she thinks the main goal for ACFHP Science and Data should be to develop ways for the Partnership to prioritize their work, and then share these tools with anyone else interested.

Lisa H. then put ACFHP science and data into context (presentation titled: ACFHP Responsibilities 2015).

Marek gives update on Matrix (presentation titled: Matrix Status Update).

Alan asked if the matrix applied to the whole run for diadromous fishes. Caroly said that it's based on life stage. For shad, spawning adults have a unique situation compared to a normal adult fish, so spawning life stage was considered as separate to adult. As the fish moves up the river, where does the system become important? Adult habitat and spawning habitat are separate. The open water river component is important to get through, but open water wasn't considered a habitat in matrix because then everything becomes important. Therefore they removed open water, but Caroly can't recall the definition used for open water right now.

Julie said: if the matrix manuscript doesn't get accepted to BioScience, would AFS Fisheries magazine be appropriate? Marek said that they're moving down the list of journals.

Putting the matrix online

The matrix does not capture threats to habitats.

This conversation is only about lists, not mapping anything yet.

We would provide options to search the whole region or by subregions. You can also search by habitat, life stage, and species.

References listed would be those that were used to inform the SH Matrix.

The authors think we should include all of the rankings on the website: Very High (VH), High (H), Moderate (M), and Low (L). Caroly isn't sure the M and L were as well vetted but Marek thinks it was. If a species looked questionable, it was brought up for more discussion. E.g. alewife results were odd but mostly focused the review on the H and VH.

Julie said that on the example website it looks like you can suggest a new reference. Will there be a comment section? Updating the references might change some of the designations. There should be a protocol set up to review the designations. This could mean that annually you review all of the comments to make matrix version 2, 3, 4, etc.

Everyone agreed that we should be able to search by the whole ACFHP region and by subregion. Moe said some viewers might be more interested in species or geography so we might want it to be a bifurcated choice. Marek doesn't like being restricted on how to choose the drop down menu. You should also be able to search by multiple species, multiple habitats, etc. Dave said that since we don't know how end users are going to use the tool, we should try to not limit the tool. We should keep it as flexible as possible. Access database can handle the modifications: the viewer can download all of the data and then modify it. Jeff says it's a discussion between Excel and Access: you can download to excel or download to access. If it's a csv, then you can easily open the data in SAS or R. The hard part is getting the data, not modifying it.

Drop-downs will be for species, habitat, region, and life stage. There will be a way to view it on the website and then download the data in excel or access. Lisa M. asked if there's any way to pilot this scenario or different scenarios? We could do a beta test to see how people are using the data. NOAA just did that with their restoration tool. Caroly asked how we would use it. Albert said he would use it in a more species-driven query, then see what the habitat use is. Whether he would prefer a website or excel file, he's unsure, so it needs a beta test. Fritz said that we need to define the user. Some want data dumps, some want an easy website. We also need to figure out the end output. Once we have users and outputs we can get together to see how it's going to function. There needs to be a process up front that goes back and forth. We could work through 3 or 4 sprints before we get the end product. Who do we envision would be the users? Marek would, Al would. Al is more of a summary user, not into data dumps. Habitat to species would be more important. State managers, non-profits, prospective ACFHP grantees could all be users. Currently, ACHFP scores projects based on trust or priority managed species.

We should include a section on the website describing how to use this tool and why you should use it. Marek's role at DNR is to take the information and run the manipulations to create an end product that the assistant director would want. Therefore this website should be designed to satisfy the data-heavy users and the managers. Julie proposed that we save a lot of that discussion for the subcommittee and developers.

From where would the funding come? Pat looked at a few numbers and we need numbers from George (at TNC, who offered to help up with the website). If it's a few thousand dollars we could do it. We don't have to send out an RFP and we can get going as soon as we have funding/developer. We could reach out to a few groups that have done this and get cost estimates based on what we want to do. Dave said we should include the histograms for the regions as well.

Subgroup to move this forward: Marek, Lisa Moss, Caroly, Julie, Lisa Havel.

Time Frame: Next 3 months.

Action item: Lisa H. will follow up with George again for price.

Mary said that pretty much anything is possible in terms of putting the Matrix online. However, when you start talking about more sophisticated queries and multiple meetings, it gets expensive. To stay within $7000 it would have to be very simple. If it is a living document, we might want to add in costs to have someone keep track of new information.

Species Habitat Maps

We had a discussion about creating map of species and habitats. If we were just focusing on the Matrix, what would a map look like? Caroly doesn't think that we can map the 25 habitat types, but could probably map the habitat categories. Al asked what the detail is that we're trying to map. It would be regional for the categories and the types would be more local. Marek said that data availability will be type-specific and area-specific. There is probably a fair amount of data for riverine-specific types. Marek said that some areas have specific types well mapped. For some data we have great info, for some we don't. If there is data, do we want to leave it out to keep the maps consistent? Julie said that she's been on a lot of websites where there's a gray area with no data available. Caroly said that we're so limited in people and money, maybe we should start with mapping categories. We can get permission and put up the best available habitat maps for each category. Moe said that's a lot easier than hosting a mapping function. Another option is instead of just putting maps up on the website, we grab all those layers and put it into one mapping tool. Julie said: why don't we ask the NALCC to build this? Marek doesn't see a problem where we would have a link in the website and it redirects you to another website. Al used NJGEOWEB for all kinds of regulatory purposed. For riverine bottom, if the bottom is mapped, it is usually mainstem tributaries, not all tributaries. Mary had to get lower order streams mapped by TNC because it was at a coarse resolution. Riverine needs to be broken out by habitat type otherwise its not helpful.

Should we ask the NALCC for maps? Is it worthwhile to ask them to produce maps with the different categories for the North Atlantic? Julie said maybe we could have a platform for Maine to Florida and then put in maps of all habitats from best data sets.

Downstream Strategies Decision Support Tool Presentation, Fritz Boettner

Fritz gave a presentation on the Fish Habitat Decision Support Tool: http://www.fishhabitattool.org/

They worked mainly on inland fisheries, and then collaborated with ACFHP to try and incorporate some estuarine habitats. They are in the process of adding diadromous fish data from Erik Martin at TNC into the tool. The coastal assessment product was a trial, and in many regards it was an anti-proof of concept. There were many shortcomings compared to the interior models. The decision support tool

includes visualization, ranking, and futuring components. The catchment scale is HUC14. Fritz then showed the visualization tool to the group.

Chesapeake Bay Habitat Prioritization Tool, Mary Andrews

Mary works for the Restoration Center and Dave works for Habitat Conservation Division. They work to prioritize sites within bays and determine the areas they should protect from development and activities. Mary works a lot in fish passage but has been working for some time on living shoreline projects. This prioritization tool was built for NOAA but others wanted it to be available to various user groups. Bathymetry, fetch, land use, etc. were incorporated into the tool. Some of the data is new and some of the data was pulled from other sources. They wanted to involve a couple of different workgroups to prioritize the benthic habitat types, but ended up integrating everyone into a single workgroup. A lot of datasets have been incorporated into one tool. With the tool they are able to determine if there are sites amenable to a living shoreline. Project milestones include: (1) data inventory, (2) base map, (3) prioritization criteria and analysis methods for each habitat type, (4) conduct analysis and review with workgroups, (5) propose and review secondary prioritization based on overlapping priorities for multiple habitat types.

They found that the tool has some utility but not as much data as they would like, which is probably what ACFHP will run into as well.

Mary put the fish passage tool up on the screen and walked us through it: http://maps.tnc.org/chesapeakehabitat/.

This tool allows you to see all different habitat types in one place, and the tool is currently publically available (see link above). This tool also tries to prioritize wetland restoration sites. Like the fish passage tool (http://maps.tnc.org/EROF_ChesapeakeFPP/), you can customize the rankings. The cells are 250 m x 250 m grid. The habitat tool also has fish passage rankings, so if you want to look at tidal restoration and fish blockages, you can do that. The Downstream Strategies tool has a download button, but this tool does not. This is because a lot of the datasets that go into this tool are updated regularly, and those maintaining the datasets don't want potentially out of date data downloadable and tagged. The fish passage portion cost $125,000 the habitat tool cost $200,000. Obtaining the datasets and creating new datasets were most expensive parts. NOAA developed % mud cover for the entire Chesapeake Bay for this tool. The fish passage and the habitat tool each took 2 years to develop (the fish passage tool included a lot of back and forth with the work group. The habitat tool didn't have as much vetting). The tool includes some impervious surface data and some tidal wetlands but no other land-based information.

Pacific Marine and Estuarine Fish Habitat Partnership Nursery Assessment Presentation, Lisa DeBruyckere (presentation titled: PMEP Presentation)

Lisa said that the west coast partnerships have a lot of things in common with ACFHP, as well as mutual interests. Currently, the PMEP are working on three assessments to better inform strategic restoration within their partnership. The data is housed with Pacific States Marine Fisheries Commission. In the analysis they used the NFHP stressor score of 0 – 1, with a higher value indicating a more stressed estuary. It is a generalized additive mixed model with factors such as salinity, day of year, etc. and offset by net size.

Moe asked if poor condition as indicated in the NFHP assessment and fish abundance were related for all species or just the two presented in this presentation. Lisa said that only 2 graphs are shown now because the rest of the graphs won't be ready until their next meeting.

Caroly asked a few questions:

In reviewing data for these 2 days, she saw that NOAA prioritized habitat on the west coast. From an FHP perspective, why did PMEP not use the NOAA prioritization?

Lisa said that they're looking at the west coast over a variety of different scales, but they are working with NOAA and they helped contribute to their analysis. The PMEP gets more at individual fish species, their abundance, and their use of estuaries. However, they plan to continue to work with NOAA.

Pat asked: who are the audiences/end users for the different assessments? Lisa sees the end users as watershed councils, state agencies, federal agencies, and communities in addition to the PMEP. She hopes that the funding agencies like NOAA will use this as well so there is a general level of consensus of highest level of priority habitats.

Caroly asked: how did you narrow the analysis down to 15 focal species? Lisa said that they considered 115 species at the start, and everyone in the room of 75 people had their favorite. They wanted geographic representation from north to south. Culturally, recreationally, and commercially important species, nearshore forage fish, and representative fish that are important to food webs were all included.

Caroly asked: What is the makeup of PMEP partnership? Lisa said that the Pacific Coast Joint Venture, Land Trust, Watershed council groups are all really important in addition to state and federal agencies. They do not have members, only a steering committee, but 110 people have been a part of the process until now.

We thanked Lisa for the presentation.

Conversation about the Chesapeake Bay Habitat Prioritization Tool resumed.

The tool also allows the user to set the criteria either in ascending or descending order.

Julie asked: Are all of the data sets included static, or do they get updated when the data is updated?

Dave answered: They are static. There needs to be continuous funding to keep updating the data. Ideally, what you want is a living tool that keeps up with the data.

Fritz asked: Who is the end user? He wants us to make sure that we're not doing this backwards: develop a tool then try to figure out how to use it. Mary said that some directives were given to her but you cannot be all things to everyone. This can be used for prioritizing habitat types and areas for restoration but we had to keep going back to that train of thought. It was supposed to be an internal tool and then it morphed into more.

Julie said that it is important to note that these 2 NOAA tools cost $325,000 and 4 years to make and it's static. We need to keep this in mind.

David recommended that you ask end users what they need and then build the tool.

Alan said that you need to remember this is not a hit list of dams and restoration practitioners will still be opportunistic if opportunities present themselves. However this tool does help for back up.

Julie wanted to put things into prospective. Maureen Gallagher (NFHP coordinator region 3) had a vision that was influential on NFHP, and it was one of the reasons that NFHP decided the FHPs need to develop a habitat assessment in order to get funding. That was one of the original reasons ACFHP said we needed a habitat assessment to the NALCC and we funded Downstream Strategies. However, we found that it is more difficult for the coast to conduct assessments compared to inland FHPs. We have these tools but how we apply them to the coast is a decision we have to make. We're at a juncture where we have to decide if we're going to use the tools that are already out there, and have each applicants use every tool to identify their area is a priority or make one big tool.

Moe asked if NOAA provides links/access instructions to the data on the layers. They do.

Caroly thought that Julie is right. We can develop scoring and priorities that don't require a tool but we should try to use the tools that are already available.

We then went back to the discussion on the Downstream Strategies Decision Support Tool

Caroly asks how hard it would be to scale up to the whole ACFHP region for brook trout. Fritz would have to rerun the model for the entire ACHFP region, but it could be done.

Alan asked how the weighting works since they don't have to add up to 100? What are you doing when you set the weight? Fritz said these are numbers relative to each other. It is only comparing the variables you picked for the ranking tool.

Julie asked: is there a default for protection areas and restoration areas for the whole model? Fritz said that they set them for each report, but they did not set them on the website. Each FHP could set the priorities to meet their needs so that when people apply for funding they would know how their project ranks in the tool.

As far as the diadromous data from TNC (Erik Martin) is concerned, it is broken up into subregions, we think by genetic population subsets.

You cannot run the query in the tool over two regions at the same time for the TNC data.

Overview of Habitat Needs

Caroly asked if we have enough information at our disposal right now to consider diadromous fish covered.

Alan said that for presence/absence data we have enough information as of now but some places get sampled better than others. This shouldn't hold anything back if we're moving ahead but sampling isn't consistent. ASMFC has annual compliance reports but there is no mechanism to give that info to TNC or other entities for use. We can make threat maps based on our priorities, and we don't have to put them all on one map. For diadromous fishes there are gaps in the data concerning eels.

Update on the Assessment of Existing Information, Moe Nelson

When populating the Assessment, threats were more daunting than indicators because they were more difficult to pull from the text.

Caroly thought that Moe's slide on Threats and Actions can move ACFHP forward considerably. We could separate South Atlantic from South Florida, and look back into climate change because there have been a lot more recommended actions since 2011 concerning climate change. Moe wanted us to keep in mind that the threats listed are the most frequently cited in the literature, not necessarily the most important; however they are likely related. One option is to take the 5 actions highlighted and move forward with these. Julie said that the ACFHP threats in the Conservation Strategic Plan came from this table.

Al asked if dredging was defined because dredging and getting rid of material is a different issue than dumping the dredge (one in estuary and one offshore).

Area designation = MPAs, NERRs, etc.

At the time of the Assessment, the LCCs were just getting started, coastal spatial planning was getting starting, and so a lot has improved since then.

This Assessment does not include peer-reviewed literature, only gray literature. Gray literature came from: Google, website browsing, every bay program, etc.

Bibliographic info could be like the Matrix tool. It is used in Sequel server.

The question was posed: should we update the bibliographic assessment? Caroly doesn't think so. It would be too much to take on and it changes too quickly.

Dave asked if Moe thinks the threats will change, with the exception of climate change becoming more important across all areas. Moe said it's a lot of effort to update the threats and it might not tell us much more than we already know. Caroly thinks that we could do selective updates, such as focusing on climate change and the LCCs, or just not updating the bibliography could be worth it. A lot of the information sources have not changed much (e.g. eutrophication). Fixing every link in the bibliography could be tough.

Julie said: one of the reasons this was carried out was for the original Conservation Strategic Plan to identify what has been done and where the gaps are located, and to identify priority areas. Before we embark on another update, we should ask the SC if they need it. Why would we update the Assessment, to update the Conservation Strategic Plan?

Moe could easily separate South Florida from the South Atlantic. He could also add climate change pretty easily. Maybe should take out the links in the output since they don't work.

Pat thinks the outcome won't change much. The big take-homes won't change a lot. Splitting out South Florida won't change much (only 2 areas: Indian River Lagoon and Biscayne Bay are studied). South Florida is probably represented according to Moe. It didn't seem to be a priority area for the partnership at the time. NOAA considers Biscayne Bay a focus area for their Habitat Blueprint.

How do we do carry out the updates?

Caroly said the ocean council data portal pull from other sources so would it be double counting?

Action item: Moe can update the Assessment. He can reference key new information sources like ocean council data portals, updated EPA assessments and other reports, and the landscape conservation tools.

He will break out South Florida from the South Atlantic. He will add climate change information. Last, he will remove links to the bibliographic data and remove the spatial tool.

Subcommittee to help Moe: Dave has a colleague in the regional office (Mike Johnson) that is up to date on climate change. Jon Hare at Northeast Fisheries Science Center might be able to help. Mike has put together a white paper on climate change and how it relates to fisheries.

Species Habitat Matrix Mapping Discussion, continued

We should provide links to maps that are already available. We should also ask NALCC and SALCC for maps for habitat categories. We could model our maps after the NALCC's website and have the separate habitat categories across our subregions. If there's more specific data those can be available as well.

Dave asked if stressors other than climate change happen at a shorter time scale. Caroly said impervious surface is probably one of the major threats. Marek said you can get impervious surface at a broad, coarse resolution but getting it at a smaller level is more challenging because it is collected via remote sensing. In MD they use a proxy to determine impervious surface. Appalachian LCC made a prioritization tool that allows you to zoom into 0% canopy. You have to overlay it with a wetland layer, agriculture, etc. to see what exactly it is, but you can determine what's impervious surface.

ACFHP could internally score and prioritize at a catchment/estuarine level. Julie said this is what EBTJV did initially. Eventually they said they wanted a model.

Caroly said that we agree on scoring, we can score the existing maps and use that as step 1. Since Fritz already has the layer available, why not add the land use categories that people can see across the ACFHP region? Fritz could easily map catchment level impervious surface data.

To be discussed tomorrow: do we want separate heat maps for each stressor or make one large map of stressors similar to the NFHP map?

Day 2

9:00 am

Mark Anderson, Director of Science for Eastern Region of TNC, gave a presentation on TNC's NW Atlantic Ecoregional Assessment (NAM ERA): Data, Analysis and Results

The NAM ERA consisted of an offshore assessment and a coastal part. He talked about the offshore section. TNC developed maps of species distributions, set goals for habitats, analyzed information on uses and threats, and set priorities for marine conservation. They integrated information at the regional and national level to inform decision and strategies. This region spans from the Gulf of Maine to Pamlico Sound, and from the continental shelf and canyons at the shelf-slope break to tide mark in rivers.

Phase I: collect baseline datasets of species and habitats and oceanographic processes.

Phase II: analyze the data to look at important places for conservation or management.

This was conducted by a team of 35 conservationists and scientists mostly within TNC. They were divided into technical teams and focused on one type of habitat, gathered sources, and were advised by 3 external scientist.

Themes: coastlines and estuaries, benthic habitats, ocean

For the benthic classification they used individual datasets of bathymetry, sediments, and topographic forms. The integrated datasets consist of ecological marine units (EMUs). You can search the map and find different features based on depth, sediment, etc.

They attempted to relate the species composition of benthic habitats to where they're most typically found.

They also included pelagic habitats based on ocean processes: temperature at different depths, Chl a, and zooplankton.

The NAM ERA includes individual species data and weighted persistence maps (data is 10" squares over 40 years based on NMFS trawls).

Large pelagic fish datasets came from fishing reports so they are not unbiased data sets.

Moe asked if the datasets are downloadable as shown in the maps. The 10" squares are available as datasets and they list the species in those squares, or you can download the maps.

Marek asked about the source of the commercial data for the pelagic species. Mark thinks it's from the vessel reports from NMFS (Caroly confirmed).

Marek also asked how their sediment mapping compares to the TNC sediment mapping. This is TNC so it's the same. Years ago TNC conducted sediment mapping along the shore, and that's the sediment map shown there. Marek wondered if the habitat mapping is used as a predictor for where the fish would be. Does the benthic mapping show where there's probably hard bottom, and can that be used as a predictor to study where hard bottom is and then look at the species there. If we want to study black sea bass, and want to find the hard bottom, can we use these maps to find the hard bottoms? Can it be used back and forth predictively? Can the sediment mapping be used to find species?

Mark said the answer to some of the questions is yes.

Caroly filled Mark in on the background behind Marek's questions: ACFHP developed the Species-Habitat Matrix, and Jake and Mari-Beth were involved. They identified leading habitats for 138 species of fish across all life stages from ME to FL. One of the goals over these 2 days is figure out how to get this information to conservation practitioners and state managers. Marek said black sea bass is managed as regional stocks but summer flounder is managed by localized stocks. As a manager, how can he take these projects and make the ASMFC models more targeted? Overall, Marek is wondering how this species/habitat back and forth can be used in a better model to better manage a species.

Mark said: there are maps of hard bottom in the sediment dataset. They just got a grant from the Moore Foundation to incorporate the video work into a better hardbottom map by December.

Caroly asked if they're doing the same thing for the southern region. They just finished the South Atlantic Bight. They have great hard bottom models and it's been released in Phase I on the website under 'South Atlantic Bight.'

Mark said that in order to get a better model for black sea bass you need to look at depth preference. They have a persistence map for black sea bass and you can look at the substrate depths and topographic forms to help you get a black sea bass model.

Caroly said that ACFHP, in addition to covering a huge region, goes into freshwater too. Does the NAM ERA have freshwater riverine bottom mapping to some degree? They do not have benthic mapping for river bottoms. They have gradient mapping and it is pretty refined. It can tell you the gradients, and to some extent the benthic habitat corresponds to the river gradients.

For the coastal shorelines, the first thing TNC did was delineate the whole coast into shoreline units. Area between black bars are one coastal unit. This provides 30 m resolution (from NWI mapping): seagrass, emergent marsh, forested, rocky shore, scrub shrub, unconsolidated shore/mud flats, unconsolidated sand and gravel.

Marek asked how far up the tributaries they went. Mark said that they go to where the NWI mapping stops. This includes some brackish water but they tend to stop at freshwater (close to head of tide but he is not sure it's consistent throughout).

They then characterized shoreline units by components (river systems, embayments, lagoons, etc.). Those units were then calculated for a lot of features (8). Total seagrass, total saltmarsh, estuarine fish support score, presence of spawning salmon and sturgeon, seabirds and water fowl, sea turtles, conditions + 1 more (missed from slide).

The sum of proportional contribution was used for estuary fish: index of number of estuary species found within this shoreline unit and the strength of their association with seagrass and tidal marsh. This information is part of the Phase II report.

The estuarine section is a regression relationship between weighted persistence score correlated with the amount of seagrass and tidal marsh. For a lot of the species there was a very strong correlation between the weighted persistence score and amount of seagrass and tidal marsh. That provided a way to rank areas that seemed to have a high contribution to estuarine fish. Delaware and Chesapeake Bays do not pop up as high contribution because they're too far from the coast.

Moe asked if they did anything with state survey data. They did not. They could not. They hired a consultant to make the state surveys consistent, however they had to end the contract. They mapped Long Island Sound based on the state survey as a separate project. Nathan Frohling from TNC Connecticut did that.

Dave asked if TNC used any of the data from the states in Chesapeake Bay since there's a lot of data there. Since this was completed, Mark Briar has carried that out in Chesapeake Bay. We can contact him. DE Bay was mapped under Bob Allen. These people are all at TNC.

Action item: Caroly will send Mark an email to get the data from him from Phase II.

Marek, while looking at the site, asked how he can download the data? Caroly said Melissa can help out with that in the next presentation.

To access the maps and data, visit:

Conservationgateway.org > spatial data > download basic maps or data directly

Caroly asked if they're planning on doing any freshwater work. TNC completed a freshwater classification for stream systems in the Northeast and the Appalachians. Gradient, size, temperature, and alkalinity were analyzed (led by Arlene Olivero). Caroly asked if the stream assessment is under the freshwater section? Yes. Did thy incorporate climate change for the freshwater section? No, but they just received a grant to look at the coastal zone and add resilience to compliment the coastal resilience.

Challenges of Putting Maps and Data on the Web, Melissa Clark, TNC

One of the challenges of being a small part of a big organization is fitting into the global structure. TNC did not have a good way of distributing science information on the internet when NAM ERA was released 5 years ago. This project was the first scientific information to be included on the international website. The TNC website is geared more towards philanthropy and less towards distributing scientific information. In the last 2-3 years they've been working on the science gateway website. If you know what you're looking for on the site it's easy to find, you still need to have an idea of what you're looking for.

NAM ERA was the first TNC Eastern Division web mapping. Initially, Melissa started building it and then put $8-10K towards hire a contractor. The goal was to present the information clearly and have it load clearly. TNC wanted to make sure everything displayed really quickly. The tool included options to separate the themes or present them combined, and you do not have to know GIS to use it. The data was from so many sources and TNC wanted to provide credit to all of the sources, so they put the meta-data and credits right up front when you access the maps.

Over the last 2 years the Eastern Division has made access to data a priority. They provide a written report and GIS data for all of the work they do as long as it's distributable. They also have a webmap viewer for almost all projects so people don't have to download information. When you click on the terrestrial habitat map you get the information for all the habitat types as well as pdfs with more information.

It costs around $6,000/year for maintenance for all tools.

TNC is interested in running more analytics on the number of people accessing the site. They can't track downloads but can track visits and length of time on the site. People spend 30-45 s/site on average but they spend 3-3.5 minutes on the conservation gateway site.

It was asked if they run beta-testing for the maps. They don't spend a lot of money on beta testing but have friends and colleagues test it out.

'What are the biggest challenges' was asked of Mary. Mary said that the biggest challenge is presenting information in a way that's really fast and provides people access to the information (30 m grid cells). It is also important to present the information in a way that makes sense for their audience, so it has been a challenge to try and find out who their audience is. Who was the audience for NAM ERA? For the habitat map and resiliency tool, they're trying to reach scientists that might not be GIS experts. They are also planning on developing lesson plans for students.

Julie asked for some background on the NAM ERA. TNC started the NAM ERA in 2009 and the tool went online around 2011.

Phase I was value-free and just contained maps of what's out there. It also included habitat complexity maps.

Review of Yesterday's Discussion (presentation titled: Recap of Day 1)

Lisa M. suggested that we add beta testing as a task under the SH Matrix website. Lisa H. added it to the presentation.

Al asked if there is any mapping of macroalgae. We don't know if there are maps available; sometimes it is difficult to separate algae from SAV. Unless you're on the west coast no one's mapping macroalgae. We can brainstorm after the break to list maps for each categories.

Caroly wanted us to consider adding impervious surface to Downstream Strategies' Decision Support Tool. Alan said that since impervious surface is an estimated value, has anyone done any truthing for it? Marek said that it should be accurate down to 1 m for the next round of data coming out, and people are 'not exactly kind of' truthing. Julie said that over smaller areas there are accurate data (including half of Narragansett Bay). In MD a lot of impervious surface is based on NLCD. Stream survey people will delineate a catchment and hand draw where all of the impervious surface is located. A lot of data is underestimated, and it's mapped on a 5 year schedule, so there's a lag. MD uses tax data for trends in impervious surface. They also looks at a correction factor.

On our chart of species type (diadromous, estuarine, coastal), we should change diadromous fish to anadromous fish since we are including eels for some of it (Side note from Lisa H. while reviewing the notes: diadromous encompasses eels since it include anadromous and catadromous species, so we might want to leave it as diadromous). As far as presence/absence data is concerned, eels are getting above the dams, but removing the dams improves passage for them. This is because there's less predation without barriers and the smaller ones are able to get through too. Therefore it's hard to do presence/absence data for eels because they're there but dam removals improve their numbers.

Discussion on Matrix-Associated Maps

Marine and estuarine shellfish beds: NROC (Northeast Regional Ocean Council) has shellfish beds mapped for the northern coast. NROC is broken down by clam, mussel, oyster, and scallops. The Marine Cadastre has shellfish data for the whole coast. There is shellfish mapping in New Jersey according to Al. We can probably cobble together regional data for shellfish. NE Florida will have shellfish maps in the next 6 months according to Jeff. Ourfloridareefs.org has coral reef maps. Julie looked at the MARCO (Mid-Atlantic Regional Ocean Council) site and it looks like it would be more difficult to cut off the map to fit our boundaries than to just use the boundaries they have. NOAA probably has coral reef maps. SAV maps can be obtained from: NE Ocean Data Portal, NALCC, etc. Coastal Inert sediment we can get from TNC.

Action item: Lisa H. will email George to find out how easy it would be to get habitat mapping on the website.

Subcommittee to compile maps: Jeff, Marek, Lisa H., Alan can be a liaison for GIS people in his department.

Action item: Lisa H. will find out if Eric Hilton wants to join the science and data working group.

Caroly asked Patrick about the logistics for putting the Matrix online. Would it be handled by the ACFHP website on the ASMFC server? Pat said it depends on the scope of the work we're talking about and how complicated it may be. If it's more on the simple side we can fold it into the existing website. If it is more complicated we need to find an alternative place to host the website. Julie said the Appalachian LCC has offered for us to host data in the past, and that might be worth looking into.

Caroly asked if we should get second opinions about putting the Matrix online or just go ahead with George's contact at TNC. Pat and Caroly think it's okay to go forward with the TNC contact.

Lisa M. asked if we can combine all of these maps into one map. Caroly thought that's a difficult task. Jeff wanted to know how we can make the next overlay (species and life stage), and integrate it into the habitat maps. TNC mapped a weighted persistence over 40 years: how do we move to different life stages? This can be ACFHP's next project.

Caroly then shared the NFHP Estuary Stressors Map on the screen (in slideshow)

The stressors map includes 4 stressors: land use, changes in river flow (connectivity data), chemical contamination, and eutrophication (based on NOAA's eutrophication index).

Caroly walked the group through the different stressors. She asked if we want to use this paper (Greene et al. 2014) to consider the estuary threats.

The main question is: how can we figure out how to process fish habitat protection and restoration?

Dave said we want to make the habitats that we've been talking about the last day available for ACFHP.

Caroly said for ACFHP to move forward we need a better understanding of threats.

Julie said we need to get to a point that consists of a list of action items for ACFHP to use and move forward identifying their priorities for protection and restoration. These are the things we're working on, have done, or other people have done. We need one or a bunch of maps or tools that are going to help ACFHP make decisions about where priorities are. We're all grappling with how to get there today.

Lisa M. said one approach for identifying priorities is to look at the habitats that are most impacted by the threats identified (or moderately impacted).

Caroly brought up Moe's table again (available in the Assessment of Existing Information Report). She asked if there is a political problem with saying that we're not going to restore certain parts of the state. There probably isn't a whole state where we would want to avoid restoration. Marek would change the phrasing to saying that we want to make sure that the outcome and the project align. For example, if we have a project that's focused on improving water quality and would reduce N and P loading in an area, it does not mean fish will come back. So if you say you're doing a project that will bring fish back, you can't say that improving water quality will work because it's never been shown to work in an urban setting. If the project is working to remediate the hydrology and the carbon movement, then that has the potential to improve the fish habitat and would be worth consideration in an urban area.

Walk through of Each Cell is Assessment of Existing Information Table (presentation titled: Threat and Actions and Next Steps)

Offline (not today) we can crosswalk it with the latest threats from NFHP. For each cell we should decide a.) do we agree that these are the main threats for the subregion? and b.) we look at the actions we have and see if we have maps that would help us inform those actions. For example: fish passage. We have TNC maps that would inform this threat.

Some notes during the discussion of each threat and subregion:

EFHs are delineated. Do we know when they were done? NAMFC made a designation in 97-98 and all FMCs have updated them since then.

For area designation (NA Coastal), we should strike area designation from the action list.

Army Corp should have dredging maps (shipping channels), and they should be available on Marine Cadastre.

Indian River Lagoon has SAV maps.

Action item: Caroly will ask the steering committee about whether we can take any actions regarding dredging.

Threats summary (bold indicates #1 priority for one of the 9 sections):

Dams and passage

Water quality/quantity (imp. Surfaces, withdrawal)

Dredging

Climate change

Contaminants (EPA Coastal Condition Report, NFHP, Mussel Watch, Superfund sites)

Fishing gear on bottom habitat (derelict and active) & boating issues

Invasive Species

Actions summary: **Improve fish passage**

Protect and Restore Wetlands

Protect and Restore Riparian Buffers

Conserve and Restore riverine bottom: we would like NALCC to map this. There are maps of the James River (upland: VIMS, USGS)

Monitor and assess estuaries

Monitor and assess coastal/marine

blue: ACFHP should be encouraging this but it's not a fish restoration/protection action

Protect and restore SAV

Restore hydrological function (e.g. watershed lands/water quality/improve land use practice)

Protect and restore shellfish beds

Control invasive species

Fishery regulation

Area Designation

Dredging regulation

italicized: ACFHP may consider restoration/protection actions based on threats that we can't address on an individual basis

NEXT STEPS:

- Compile the maps: Caroly/Moe/Lisa H.
- Update AEI: Moe Sept-Dec 2015
- Put SH Matrix online: 3 months Sept-Dec 2015
- ID subgroups for separate priorities
- Subgroups develop priority scoring method or agree to use existing prioritizations (different for each priority)
- Price the cost of adding riverine habitat types to TNC's existing stream classification prior to end of January.
- Reconvene 2 day workshop February 2016.
- Consider the use of focal species (migratory we have; coastal consider/review TNC priorities; estuarine focal – we need ACFHP subgroup). Check out NOAA's Gulf of Mexico modeling coastal/estuarine modeling.
- Vet priorities through ACFHP Steering Committee
- Review the ACFHP science and data meeting (February 2016) at in-person spring 2016 ACFHP Steering Committee meeting
- Desired output:

    Priority maps: wetland habitats, sav habitats, etc.

RECOMMENDATIONS

- Science and Data Committee recommends funding for ACFHP GIS person and analysis (person or time)
- Revisit discrepancy between matrix priority habitats and ACFHP priorities during steering committee meetings

ACTION ITEMS

Action item: Lisa H. will follow up with George again for price.

Action item: Moe can update the Assessment. He can reference key new information sources like ocean council data portals, updated EPA assessments and other reports, and the landscape conservation tools. He will break out South Florida from the South Atlantic. He will add climate change information. Last, he will remove links to the bibliographic data and remove the spatial tool.

Action item: Caroly will send Mark an email to get the data from him from Phase II.

Action item: Lisa H. will email George to find out how easy it would be to get habitat mapping on the website.

Action item: Lisa H. will find out if Eric Hilton wants to join the science and data working group.

Action item: Caroly will ask the steering committee about whether we can take any actions regarding dredging.

Action item: Lisa H. will check with Pat on when 2016 meeting can occur (when does funding occur)

Action item: Lisa H. will send out Doodle poll about 2016 meeting

Action item: Caroly will bring up chair terms to the steering committee: 2 years which you can renew. Steering Committee chair is up for renewal Spring 2016.

Action item: Lisa H. will solicit advice from ACFHP partners on who should be on science and data committee.

HABITAT RESEARCH NEEDS IN THE MID-ATLANTIC

Proposal to the Mid-Atlantic Fishery Management Council

Submitted By:
The Atlantic Coast Fish Habitat Partnership

August 20, 2015

Authors:
Lisa Havel
Marek Topolski
Erik Zlokovitz
Mark Rousseau
Lou Chiarella

Executive Summary

The Atlantic Coastal Fish Habitat Partnership (ACFHP) is a coast wide collaborative effort developed under the auspices of the National Fish Habitat Action Plan. ACFHP's mission is to

> "Accelerate the conservation, protection, restoration, and enhancement of habitat for native Atlantic coastal, estuarine-dependent, and diadromous fishes through partnerships between federal, tribal, state, local, and other entities."

ACFHP's vision is for

> "Healthy, thriving habitats of sufficient quantity and quality to support all life stages of Atlantic coastal, estuarine-dependent, and diadromous fishes."

Fish habitat resource managers, scientists, and communications professionals from 33 different state, federal, tribal, and non-governmental agencies comprise the Atlantic Coastal Fish Habitat Partnership (Appendix 1, http://www.atlanticfishhabitat.org/aboutus/partners/). The Partners have established a commitment to work together for the benefit of aquatic resources (http://www.atlanticfishhabitat.org/wp-content/uploads/2012/10/ACFHP-MOU-2015-with-signatures.pdf).

The Atlantic Coastal Fish Habitat Partnership engages in project areas stretching from Maine to the Florida Keys, and from the headwaters of coastally draining rivers to the edge of the western Atlantic continental shelf (Figure 1). Primary focus is on fish habitats in estuarine environments. Goals, objectives, action strategies, and priorities have been developed to direct efforts towards fish habitat conservation along the Atlantic coast. Three approaches are used to accomplish the mission and vision. 1) Secure, leverage, and distribute resources for on-the-ground fish habitat conservation projects. 2) Coordinate the implementation of fish habitat conservation projects on a coast-wide, regional, and local scale. 3) Develop coast-wide scientific products to serve as decision support tools for our partners and other entities working to conserve aquatic habitat.

Figure 1. Atlantic Coastal Fish Habitat Partnership Boundary and Sub-Regions

Qualifications

Statement of Qualifications

ACFHP has experience working with both the National Oceanic and Atmospheric Administration (NOAA) and U.S. Fish and Wildlife Service (USFWS) over the past five years to manage grants for on-the-ground projects.

The Atlantic Coastal Fish Habitat Partnership (ACFHP) has implemented a selection process for National Fish Habitat Action Plan (NFHAP) Funding since being recognized as a Fish Habitat Partnership by the National Fish Habitat Partnership (NFHP) board in September of

2009. ACFHP has released requests for funding applications each year from FY10 to FY15, in total helping to fund 15 projects to date. From FY10 – FY14, an average of $70,000 per year has been allocated to ACFHP for on the ground fish habitat protection or restoration projects, and over $225,000 were allocated in FY15. Funding is allocated to partners through USFWS Financial Assistance cooperative or grant agreements. The ACFHP coordinator communicates with USFWS personnel and recipients of the project funding throughout each project's implementation to track its progress. At the conclusion of each project, completion reports are incorporated into outreach materials distributed by ACFHP. A time table for ACFHP's project solicitation and review process is shown in Table 1.

ACFHP completed an in-depth process to develop review criteria for assessing project applications. The criteria ensure objective assessment of each project's ability to address Habitat Protection Objectives and Habitat Restoration Objectives for Priority Habitats for each of four sub-regions (north Atlantic, mid-Atlantic, south Atlantic, and south Florida) detailed in the ACFHP Conservation Strategic Plan (http://www.atlanticfishhabitat.org/Documents/ACFHP_Strategic_Plan_HighRes.pdf). The review criteria for the FY2016 funding cycle are available on our website: http://www.atlanticfishhabitat.org/opportunities/fy2016-atlantic-coastal-fish-habitat-partnership-application-cycle/.

A deliberative internal review process has been established, involving six members independently scoring each application. Once scored, reviewers submit evaluation sheets for each application to the ACFHP coordinator. Each project is ranked by mean score; minimum score, maximum score, and comments are compiled. The members and ACFHP Coordinator then come to a consensus on ranking and funding recommendations via conference call.

The ACFHP Steering Committee receives the Review Subcommittee's funding recommendations, and a final funding list is agreed upon and submitted to USFWS. Successful applicants are notified of funding awards and the amount they will receive. Applicants who are not selected for funding are contacted and provided with feedback from the Review Subcommittee.

Table 1. ACFHP application review schedule from initial solicitation through funding agreement with applicant.

Time Frame	Process Step
Mid-summer	ACFHP sends out project application request via breakings news in newsletter, posts it to website, and posts to Facebook page. ACFHP partners are asked to distribute the application request widely.
Mid – late summer	ACFHP (previously FWS) answers questions from applicants.
Early fall	Deadline for project application submissions.
Early fall	ACFHP distributed project applications and review criteria to subcommittee with a deadline for reviewing proposals.

Mid-fall	ACFHP hosts conference call with subcommittee to discuss project application rankings after subcommittee reviews have been submitted to ACFHP.
Mid-fall	Rankings are presented to ACFHP steering committee at fall meeting. After discussion, steering committee approves rankings or tasks subcommittee with further assessment (might have to bring assessment back to steering committee for another vote).
Winter	ACFHP submits final rankings to USFWS in annual FWS report.
Spring	USFWS informs ACFHP of the projects that were funded, and informs the applicants of their grant awards. USFWS creates grants agreements with the applicants.

Through the USFWS-NFHP process; grantees submit quarterly, biannual, or annual (depending on the contract) performance and financial reports to the USFWS project officer. Reports submitted to the USFWS project officer are forwarded to the ACFHP Coordinator for review and inclusion in outreach materials. Outreach materials include, but are not limited to, updates via Facebook and the ACFHP mailing list, electronic and hard copy summary reports, presentations at meetings and conferences, and incorporation into newsletters such as the Atlantic States Marine Fisheries Commission Habitat Hotline and the Coastal Fish Habitat Partnership quarterly newsletter.

ACFHP updates both USFWS and NFHAP on the progress of each project annually. Required annual project reviews are used to inform USFWS on ACFHP's fiscal year accomplishments, submit on the ground project selections to be funded in the upcoming fiscal year, and to determine the amount of funding that should be allocated to each of those projects (including operational funding for ACFHP). Annual reports also update USFWS on ACFHP actions such as science and data development, communications and outreach, collaborations with other fish habitat partnerships and partners, and projects funded outside of the USFWS-NFHAP framework.

ACFHP has also coordinated with NOAA on two separate occasions to administer Atlantic Coastal Act funding to local entities. In FY12, ACFHP assisted in the technology transfer of conservation moorings from an ACFHP-funded project in Buzzard Bay, Massachusetts (http://www.atlanticfishhabitat.org/wp-content/uploads/2012/10/ACFHP-project-factsheet-FY12-MA-v2-updated.pdf) to Jamestown, Rhode Island. Conservation moorings use a bungee system to reduce the scouring effects of traditional chain and block-anchor mooring systems on seagrass beds, benefitting fish habitat. The moorings were so successful in Buzzard Bay, ACFHP was tasked with expanding their use into other sites along the Atlantic coast. For this grant, ACFHP worked to identify the project locations, seek assistance from site managers, create the memorandum of understand between ACFHP and the private boat yards, administer the funding, and develop outreach materials to showcase the moorings (via social media, news

articles, and an informational kiosk). We also worked closely with the boat yard owners and private technology companies to accomplish this project.

In FY15, ACFHP received NOAA Atlantic Coastal Act funds to support a fish passage project in Patten Stream, Surry, Maine. The project will install a nature-like fish passageway to restore access to 20 stream miles and 1,200 alewife spawning acres. ACFHP was responsible for identifying the project, administering the funding, and developing outreach materials.

Staffing Plan and Qualifications

Dr. Lisa Havel – Atlantic Coastal Fish Habitat Partnership

*Lisa is the Coordinator for the Atlantic Coastal Fish Habitat Partnership, the Atlantic States Marine Fisheries Commission (ASMFC) Habitat Committee, and its Artificial Reefs Subcommittee. She has eight years of experience researching the recruitment of Atlantic species to settlement habitats, with her dissertation work focusing on the settlement of red drum (*Sciaenops ocellatus*) to seagrass beds. Since starting as Coordinator in September 2014, Lisa has successfully led a National Fish and Wildlife Foundation-funded grant on river herring habitat restoration needs, and is the lead coordinator for a North Atlantic Landscape Conservation Cooperative grant to model coastal species distribution in the Mid- and North Atlantic. She helped coordinate the FY15 USFWS-NFHP grant cycle, and is currently leading the FY16 application process. Additionally, Lisa has been a reviewer for the ASMFC River Herring Conservation Plan Technical Merit Evaluation, the National Marine Fisheries Service (NMFS) Southeast Regional Office Marine Fisheries Initiative, and the NMFS Greater Atlantic Region Saltonstall-Kennedy Grant Program.*

Marek Topolski – Maryland Department of Natural Resources, Fisheries Service

Marek has been involved with ACFHP since its inception and is currently vice-chair of the Science and Data Workgroup. He was involved in the development of ACFHP's RFP evaluation tool and has evaluated RFPs for all five funding cycles. He also reviewed RFPs for the 2012 funding cycle of the Chesapeake & Coastal Bays Trust Fund program. Marek has seven years of experience in geospatial analyses of impacts to anadromous fish spawning habitat and incorporation of habitat management needs in Chesapeake Bay fishery management plans that align with and expand upon MAFMC and ASMFC fishery management plan habitat management recommendations including those for black sea bass and summer flounder. While in graduate school at Auburn University, Marek participated in research on the effects of small-scale, three dimensional, habitat variability on species composition and age structure of fishes including red snapper (focal species), Blenniidae sp.*, and black sea bass off shore of Mobile Bay, Alabama.*

Erik Zlokovitz – Maryland Department of Natural Resources, Fisheries Service

Erik has eight years of experience with artificial reefs, including holding positions as coordinator for the Maryland Artificial Reef Initiative and chair of the ASMFC Artificial Reef Committee.

Mark Rousseau – Massachusetts Division of Marine Fisheries

Mark has over 15 years of experience as a fisheries biologist and analyst with the Massachusetts Division of Marine Fisheries, and six years of experience on the ACFHP

Steering Committee. Mark has experience creating ranking criteria for project proposals, submitting permit applications for artificial reefs, and has developed a data collection and monitoring program for the Massachusetts Artificial Reef Program.

Lou Chiarella – National Marine Fisheries Service, Greater Atlantic Regional Fisheries Office

Lou has 25 years of experience managing and overseeing the administration of marine habitat protection programs, and has obtained over $800,000 for various research and management projects, leveraging over $5,000,000 in total project costs.

References

For a complete list of public and private clients, please see Appendix 2. Services for all of these clients are described in the Statement of Qualifications.

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Proposed Approach & Scope of Work

ACFHP will develop a request for projects that will inform managers "… on blue water fish habitat issues, with an emphasis on the use of natural and/or artificial reefs and their ability to maintain/enhance fish habitat productivity." Many species rely on offshore structural habitat for at least part of their life cycle, including scup and black sea bass, managed by both the MAFMC and ASMFC. While some of this structure is natural, there are over 130 artificial reefs off the Mid-Atlantic coast.

Artificial reefs have the capacity to replace some of the natural habitat degraded by anthropogenic activities such as bottom trawling, and artificial reef programs are in place in many Mid-Atlantic states. Although it is known that these structured habitats increase fish abundance and species richness in the area of placement, many questions remain regarding how the structured habitat functions with respect to providing shelter, food, movement, reproduction or its influence on overall fish productivity. The level of productivity vs. site attraction is also an artificial reef topic of debate. Optimal material, placement, height, and complexity are also not well understood.

For fishery managers this raises the question as to what specific substrates are essential to maintain healthy fishable populations along the Mid-Atlantic coast. Current management assumes a constant natural mortality (M), which is problematic considering the likelihood that habitat availability plays an important role in survival. Variable M translates into increased variability of fishing mortality which could have either positive or negative impacts to regional harvest targets and thresholds.

Understanding habitat utilization by species of interest for ACFHP and the MAFMC will significantly improve the understanding of life history, stock dynamics, and habitat requirements, thereby improving model accuracy. Better understanding of these structured habitats will also allow for more effective management recommendations to benefit not only the fisheries and industries, but non-fishing activities such as dredging, mining operation, and energy development as well.

ACFHP members have the breadth of scientific and administrative experience to ensure that quality project(s) on habitat research are solicited and chosen which will add to the knowledge base necessary for effective fishery management. ACFHP has established a framework to successfully manage a variety of projects (see Table 2 for proposed timetable). ACFHP also has a history of working with the MAFMC. Most recently, Jessica Coakley, Habitat Activities and Initiatives Lead at the MAFMC, attended and presented at the ACFHP Steering Committee Spring Meeting April 20-22, 2015 in Ft. Lauderdale, Florida. The MAFMC is invited to continue engagement with ACFHP on this grant, serving as a member on the subcommittee to ensure goals and products are meeting the expectations of the MAFMC.

Table 2. Proposed application review schedule.

Time Frame	Process Step
early November 2015	ACFHP subcommittee finalizes RFP to address specific habitat research questions on reef habitat identified by the Council.
early November 2015	ACFHP sends out RFP via breakings news in newsletter, posts it to website and Facebook page, and via ASMFC social media: Facebook, twitter, press release. ACFHP and ASMFC supporters are asked to distribute the application request widely.

early November - late December 2015	ACFHP answers questions from applicants.
late December 2015	Deadline for project application submissions.
early January 2016	ACFHP distributed project applications and review criteria to subcommittee with a deadline for reviewing proposals.
mid - late January 2016	ACFHP hosts conference call with subcommittee to discuss project application rankings after subcommittee reviews have been submitted to ACFHP.
late January 2016	Rankings are presented to ACFHP steering committee via conference call and webinar. After discussion, steering committee approves rankings or tasks subcommittee with further assessment.
late January - early February 2016	ACFHP works with grantee to finalize the scope of work.
mid-February 2016	ACFHP provides a written update to the MAFMC regarding the selected project.
late February 2016 - October 2017 (end date determined by the MAFMC)	ACFHP oversees implementation of work plan.
late February 2016 - October 2017 (end date determined by the MAFMC)	ACFHP provides public outreach on project and results.
October 2016	ACFHP provides a written report to the MAFMC, including results to date.
October 2017	ACFHP and project manager provide a final report and presentation to the MAFMC.

Proposed Fee Structure (Budget & Rate Sheet)

If funded, ACFHP will ask the MAFMC to direct funding to the NFHP Fund, a 501(c)3 entity. The NFHP Fund will manage the funds for a 10% overhead cost ($25,000). ACFHP will manage the project, starting with developing a request for habitat research proposals. ACFHP is not

requesting funding for project management; instead, in-kind match ($4,765) in the form of committee members' time will be used for proposal solicitation, evaluation and recommendation, as well as contract and report management. The remaining funds from the grant ($225,000) will go directly to the project(s) chosen to meet the goals of the MAFMC and ACFHP.

Item	MAFMC Funds	Partner Match	Total Costs
Contractor* Project Implementation and Monitoring	$225,000	TBD	$225,000
NFHP Fund** Grant Management	$25,000	$0	$25,000
ACFHP Project Management	$0	$4,765***	$4,765
	TOTAL PROJECT COST		**$254,765**

** Contractor amount represents funds to be provided to successful grant recipient via the ACFHP Request for Proposals; grant recipient matching funds to be determined.*

***Overhead = 10% of total grant for grant management.*

****In-kind services of ACFHP and AR committee members to develop ACFHP Request for Proposals, and review proposals and develop recommendations to MAFMC.*

Appendix 1: Atlantic Coastal Fish Habitat Partnership Members

Albemarle-Pamlico National Estuary Partnership
American Littoral Society
American Rivers
Atlantic States Marine Fisheries Commission
Chesapeake Bay Foundation
Connecticut Department of Environmental Protection
Delaware Department of Natural Resources and Environmental Control
Environmental Defense Fund
Florida Fish and Wildlife Conservation Commission
Georgia Department of Natural Resources
Houlton Band of Maliseet Indians
International Federation of Fly Fishers
Maine Department of Marine Resources
Maryland Department of Natural Resources
Massachusetts Division of Marine Fisheries
Merrimack River Watershed Council
National Oceanic and Atmospheric Administration
New Hampshire Fish and Game Department
New Jersey Division of Fish and Wildlife
New York Department of Environmental Conservation
North Carolina Coastal Federation
North Carolina Department of Environment and Natural Resources
Oyster Recovery Partnership
Partnership for the Delaware Estuary
Pennsylvania Fish and Boat Commission
Rhode Island Division of Fish and Wildlife
South Carolina Department of Natural Resources
The Nature Conservancy
United States Fish and Wildlife Service
United States Geological Survey
Wells National Estuarine Research Reserve
Vermont Fish and Wildlife Department
Virginia Marine Resources Commission

Appendix 2: Atlantic Coastal Fish Habitat Partnership Client List

Year	Project	Contact	Funding Agency
FY2010	Alewife Brook/Scoy Pond and Staudinger's Pond Alewife Access and Habitat Enhancement	Laura Stephenson, Peconic Estuary Program Coordinator	USFWS-NFHP
FY2010	Goose Creek Dam Eel Passage Restoration Project	Bill Post, South Carolina Department of Natural Resources	USFWS-NFHP
FY2011	Restoring Diadromous Fish Passage and Habitat to Shoreys Brook	Darrell DeTour, Stewardship Coordinator	USFWS-NFHP
FY2011	Shoreline and Spartina Marsh Stabilization Along the Atlantic Intracoastal Waterway in South Carolina	Nancy Hadley, South Carolina Department of Natural Resources	USFWS-NFHP
FY2012	Restoring the Mangroves of the Indian River Lagoon	Beth McMillen, Marine Resources Council of East Florida	USFWS-NFHP
FY2012	James River Atlantic Sturgeon Habitat Restoration	Charles A. Frederickson, Jr., Lower James Riverkeeper	USFWS-NFHP
FY2012	Eelgrass Restoration with Conservation Moorings in Salem Sound and Buzzards Bay	Tay Evans, Massachusetts Division of Marine Fisheries	USFWS-NFHP
FY2013	Expanding Marine Meadows in the Peconic Estuary	Kimberly Barbour, Cornell Cooperative Extension of Suffolk County	USFWS-NFHP
FY2013	Restoring Coastal Fish Habitat through use of Oysters, Mussels, and Marsh Grass at Guana Peninsula	Matt Kimball, Guana Tolomato Matanzas National Estuarine Research Reserve	USFWS-NFHP
FY2014	Oyster Reef and Salt Marsh Restoration in Stump Sound	Ted Wilgis, North Carolina Coastal Federation	USFWS-NFHP/NOAA Coastal Act
FY2014	Oyster Reef Restoration, Great Bay Estuary	Ray Konisky, The Nature Conservancy	USFWS-NFHP
FY2014	Eelgrass Restoration with Conservation Moorings in Jamestown, Rhode Island	Christopher Powell, retired	NOAA Coastal Act
FY2015	Renewing Diadromous Fish Passage, Patten Stream	Thomas Welgoss, Town of Surry	USFWS-NFHP/NOAA Coastal Act
FY2015	Cotton Gin Mill Dam Removal and Fish Passage Project, Satucket River	Cathy Bozek, The Nature Conservancy	USFWS-NFHP
FY2015	Cape Fear River Fisheries Enhancement Project	Dawn York, Cape Fear River Watch	USFWS-NFHP

Aligning ACFHP Efforts with Restoration Practitioners

Background

The Atlantic Coastal Fish Habitat Partnership (ACFHP) is an assembly of 33 different state, federal, tribal, non-governmental, and conservation groups interested in the conservation of habitat for Atlantic coast diadromous, estuarine dependent, and coastal fish species. It was recognized as a partnership under the auspices of the National Fish Habitat Action Plan in 2009. Numerous human-derived threats are impacting Atlantic coastal drainages, and ACFHP is working to address these threats with a broad coordinated approach, leveraging resources from many agencies, organizations, and others to make a difference for fish habitat along the Atlantic coast.

In order to achieve these goals, ACFHP developed a five-year Conservation Strategic Plan (http://www.atlanticfishhabitat.org/Documents/ACFHP_Strategic_Plan_HighRes.pdf) in 2012 that proposes key conservation strategies to confront pervasive threats to fish habitat along the Atlantic coast.

In addition to the overarching strategic planning document, ACFHP undertook a process of implementation planning (http://www.atlanticfishhabitat.org/wp-content/uploads/2012/10/2012-2013-ACFHP-Implementation-Plan-FINAL.pdfin order to identify specific tasks that the partnership could complete in order to achieve the strategic objectives and actions identified in the plan.

Individuals and/or groups were assigned to specific implementation tasks outline in the plan. This document will present the results of one of the tasks:
Restoration Objective 2: Restore subregional priority habitats, such as replanting eelgrass beds or restoring oyster beds, in locations where threats have been minimized or removed (does not include dam or other barrier removal).

B.2.1 Strategic Action: Restore subregional priority habitats in each subregion where:
(a) they have been damaged or destroyed by past declines in water quality or human activities, such as dredging, filling, development, or vessel operation; (b) conditions for restoration of habitats exist; AND
(c) goal(s) of habitat restoration can be maintained.

The following short term implementation actions identified to assist in achieving the restoration goals were:

(1) Compile list of restoration partners/practitioners (e.g. NEPs, state management plans, NGO's, ACFHP MOU signatories, etc.)

(2) Survey them regarding the focus and priorities in their planning area (e.g., priority habitats, priority threats, and priority implementation actions).

This information would assist strategic planning so as to steer the partnership toward gaps in habitat types in need of restoration, geographic areas in need of restoration and, significant threats not being addressed and partner goals. Overall, this information will lead to a better understanding of priorities and ways to focus our efforts on a regional or coastal scale.

Method

To compile the list of restoration practitioners, each ACFHP Steering Committee member and each member of the Atlantic States Marine Fisheries Commission Habitat Committee recommended appropriate restoration practitioner contacts in their state. In total, thirteen states and 261 restoration practitioners were contacted to participate in the survey. The survey was sent by the ACFHP Coordinator in September of 2014 and again in October of 2014.

The survey contained the following questions:

(1) Which habitats are you currently working to restore? Please check the THREE habitats on which you currently dedicate the majority of your time. (marine and estuarine shellfish beds, coral and live/hard bottom, macroalagae, submerged aquatic vegetation (SAV), tidal vegetation, unvegetated coastal bottom, riverine bottom).

(2) Which habitats do you anticipate working to restore over the next five years? Please check the THREE habitats on which you anticipate dedicating the majority of your time. (marine and estuarine shellfish beds, coral and live/hard bottom, macroalagae, submerged aquatic vegetation, tidal vegetation, unvegetated coastal bottom, riverine bottom).

(3) Which habitats above do you anticipate working to restore over the next five years? (very unlikely, unlikely, undecided, likely, very likely). Please rank each of the choices below with a range between very unlikely to very likely.

(4) Which local, state, regional, or federal restoration strategy or goal are you *primarily* currently seeking to achieve for each habitat listed above? (restore or enhance # acres by this date, remove or replace # of barriers by this date, # miles reconnected through fish passage by this date, current restoration work is not guided by a local, state, regional, or federal goal or strategy or other.

(5) Which statement below best describes progress towards the strategy or goal are you *primarily* currently seeking to achieve for each habitat listed above? (unlikely to achieve goal or strategy, likely to achieve a percentage of the goal or strategy, currently behind, but likely to achieve the goal or strategy, on target to achieve to achieve the goal or strategy or will likely exceed goal or strategy.

(6) Which of the following threats to each of the habitats you checked above, are you currently working to address? Please check all that apply. (obstructions to fish Movement/habitat connectivity, dredging and coastal maintenance, water quality degradation and eutrophication, consumptive water withdrawal, sedimentation, vessel operation Impacts, contamination of water (ground and surface) and sediments, invasive species, climate change and not currently working to address a threat) and other.

(7) In your opinion, are there particular habitats in need of restoration, or threats in need of correction, which are currently under addressed? Please explain.

(8) How can a Fish Habitat Partnership help achieve your habitat restoration objectives? Please rank on a scale of 1-5. (1 = strongly disagree, 2= disagree, 3= no opinion, 4= agree, 5= strongly agree). funding your restoration projects, endorsing your restoration projects, identifying funding sources, and assistance with developing proposals for your restoration projects, assistance with identifying partners for your restoration projects, providing technical expertise

for your restoration projects, providing communications and outreach expertise for your restorations projects, maintain a database of restoration practitioners and areas of restoration focus in your region and along the Atlantic coast, maintain a database of habitat restoration manuals, reports, and other publications and develop science-based decision support tools to help prioritize habitat restoration activities. Please list any other activities that a fish habitat partnership can do to help achieve your habitat restoration objectives.

Results

The survey yielded 81 responses (30% response rate). Of the 81 responders, 53 provided contact information, allowing ACFHP to determine the regional distribution of information (North Atlantic, 17; Mid-Atlantic, 26; South Atlantic, 4; and Florida, 6). Not all questions were answered by all 81 responders. In order of survey questions 1—8, the response count was: 76, 79, 69, 61, 58, 61, 42, 57, and 15, respectively (the latter two are in reference to question 8, which had two parts).

According to question 1, the majority of restoration practitioners are currently working to restore tidal vegetation, riverine bottom, shellfish beds, and submerged aquatic vegetation (see Fig 1). The habitat foci by region are as follows (see Table 1):

North Atlantic
riverine bottom
SAV
tidal vegetation

Mid-Atlantic
riverine bottom
tidal vegetation
SAV
shellfish beds

South Atlantic
shellfish beds
tidal vegetation

Florida
tidal vegetation
shellfish beds
riverine bottom
SAV

Results from questions 2 and 3 (see Fig 3) indicate a similar longer range overall habitat focus on tidal vegetation riverine bottom, shellfish beds, and SAV, five years from now.

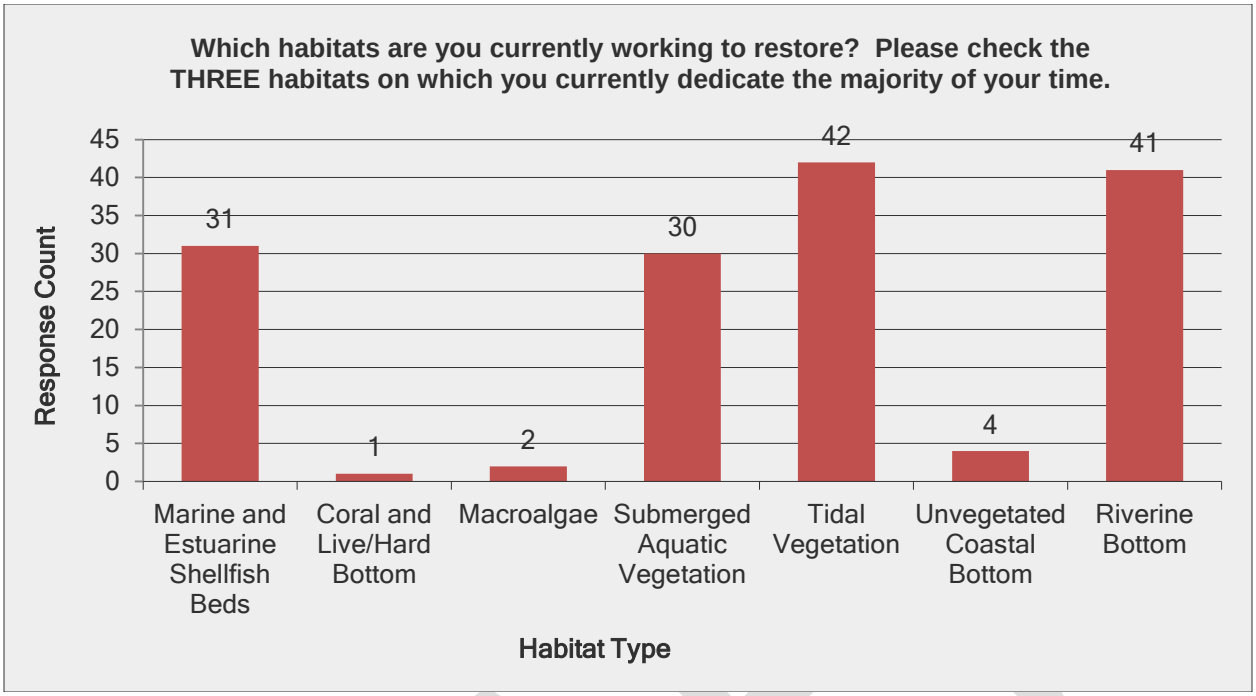

Fig 1. Current habitat type focus by ACFHP practitioners

Table 1. Habitat Focus by Region

	Marine and Estuarine Shellfish Beds	Macroalgae	Submerged Aquatic vegetation	Tidal Vegetation	Unvegetated Coastal Bottom	Riverine Bottom
North Atlantic	2	1	7	7	1	11
Mid-Atlantic	10		11	14	2	19
South Atlantic	4			2		
Florida	3		3	4	1	3

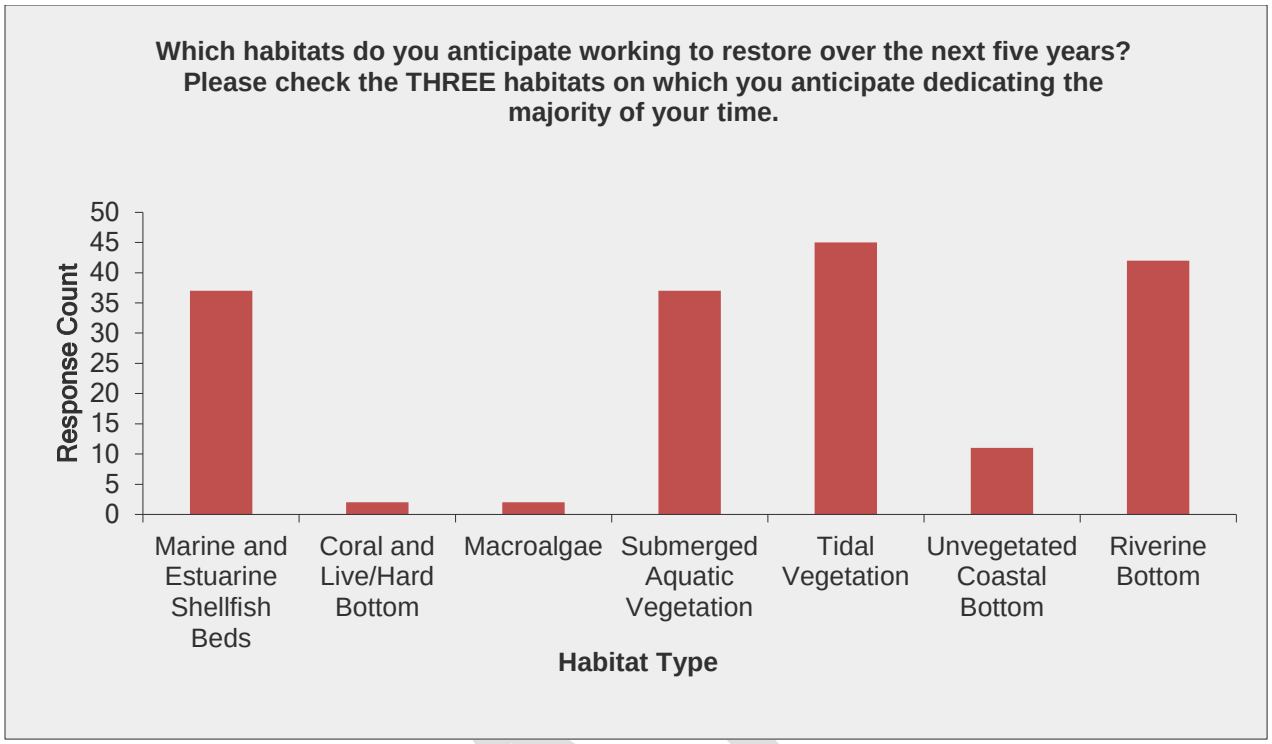

Fig 2. Habitat type focus over the next 5 years by ACFHP practioners.

For question 4, the majority of the responses for SAV and tidal restoration were addressed by the goals of restoring a number of acres by a particular date (Fig 3). Riverine bottom restoration goals overwhelmingly consisted of the number of barriers removed and river miles opened. Each habitat type also had a number of responses that revealed practitioners actions were not governed by a strategy or goal. This could be due to a not for profit practitioner not being governed by above type restoration strategy or that the strategy that governs restoration does not address that habitat type.

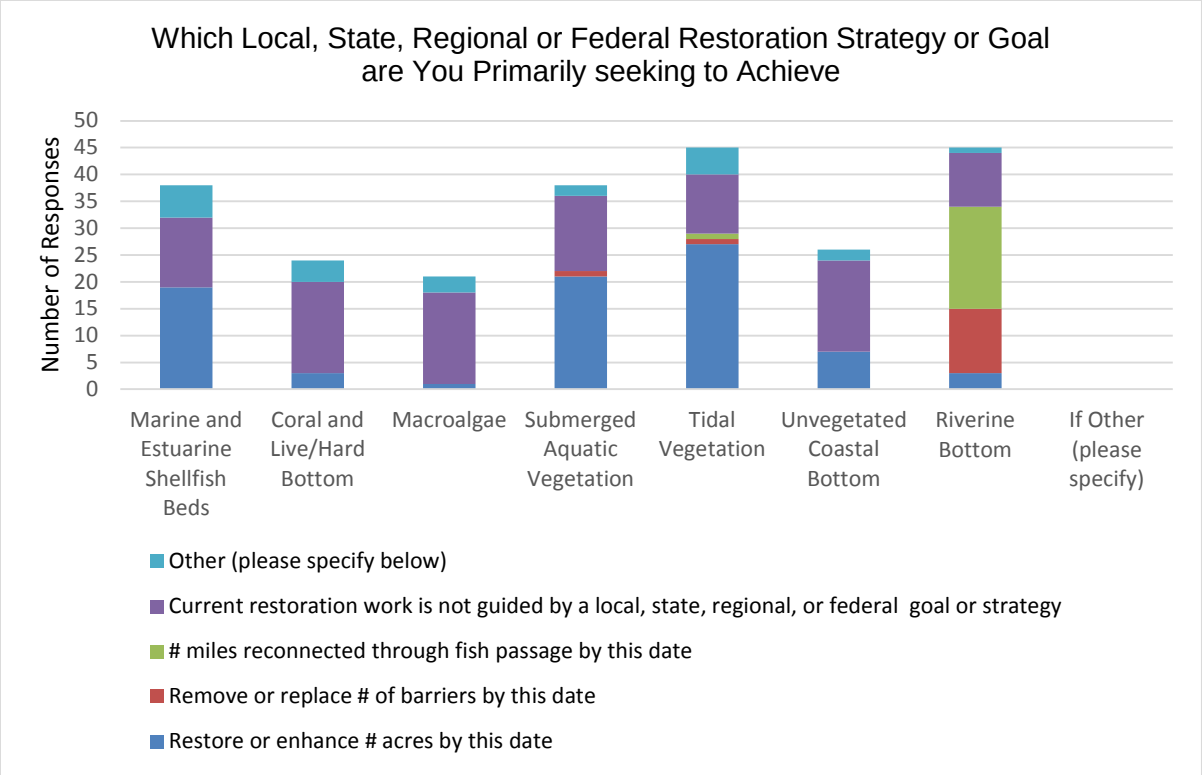

Fig 3. The restoration strategy each ACFHP practitioner is seeking to achieve.

For question 5, practitioners were achieving at least part of their goal in tidal vegetation and river bottom habitats (Fig 4). Specifically, results included: behind but will achieve goal; likely to achieve a percentage of goal and on target to achieve their goal. For SAV and shellfish bed habitats, less than half of responders anticipate achieving a percentage of their goal. Each habitat type had 7 - 22 out of 58 total responses suggesting that they had no current goal or strategy.

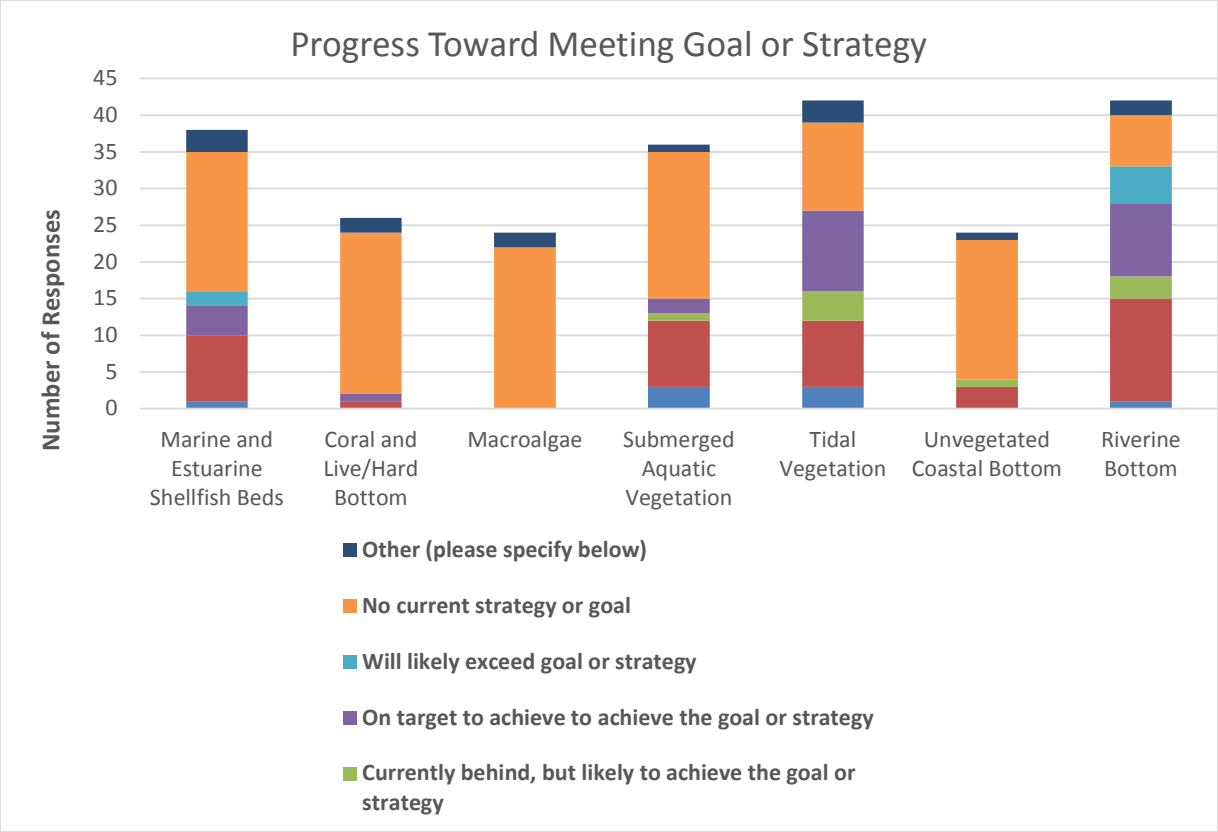

Fig 4. Progress of the ACFHP practioner toward meeting their goal or strategy

For question 6, he top threats to all habitats are: obstructions to fish movement, habitat connectivity, dredging and coastal maintenance and water quality degradation eutrophication. Threats by habitat type are shown in Figure 5. Top threats to shellfish beds currently being addressed are water quality degradation, sedimentation, dredging and water contamination; for SAV they are: water quality degradation and dredging; for tidal vegetation the top threats are dredging, invasive species, climate change and water quality; and for riverine bottom the biggest threat currently being addressed is obstructions to fish movement.

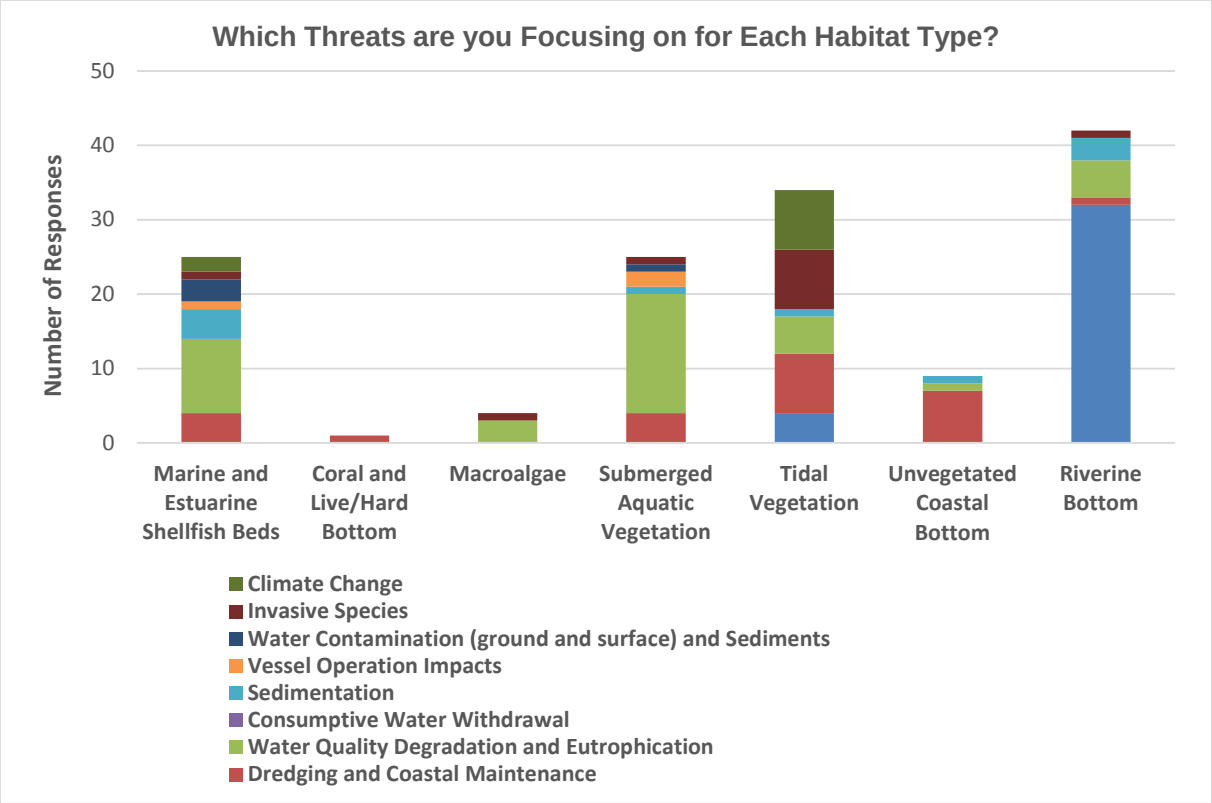

Fig 5. The threats on which ACFHP practitioners are currently focused.

Responses to question 7 were limited, totaling only 42. The top three threats not currently being addressed were: fish passage, water quality, and sea level rise. The top three habitats not being addressed were: buffers, salt marshes, and shellfish beds. The question was worded such that responses could not be broken down by region. The question asked, “in your region or on a coast wide basis,” instead of breaking the question into two parts: one by region and one on a coast-wide scale.

While the average responses for question 8 were not very different, endorsing and funding projects were the most important ways ACFHP could help practitioners, followed by identification of funding sources and assistance in developing proposals (Fig 6). Generally, practitioners liked ACFHP’s assistance with providing potential partners, communications and outreach materials, and databases with technical materials, manuals, reports, and publications. Maintaining a database of practitioners in their area, providing technical expertise, and developing science-based decision tools were the least favored types of assistance that ACFHP could provide.

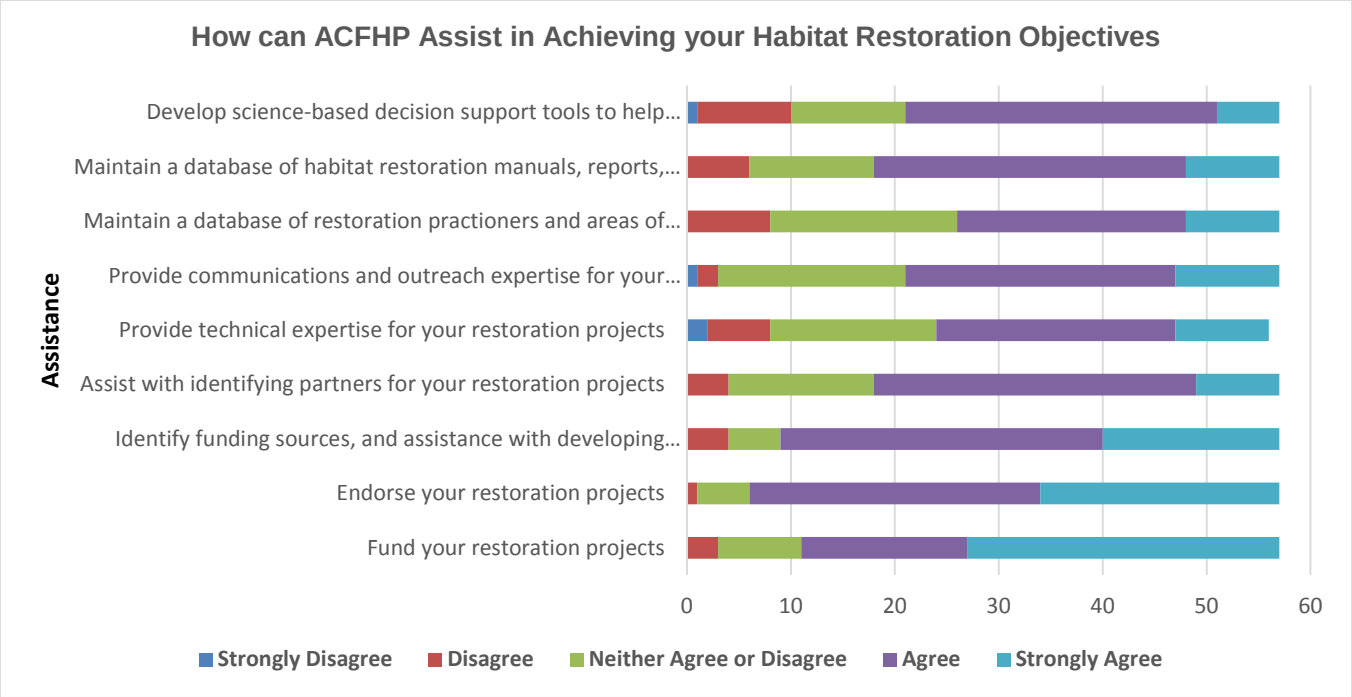

Fig 6. Importance of various types of assistance to ACFHP restoration practitioners.

Discussion:

We don't do a very good job of writing survey questions.

Is there regional data generated to help us prioritize focal habitat types? Buffers?

What are we doing about macroalgae and unvegetated coastal bottom, these are not common focal areas for restoration efforts. What about corals?

Is the data about practitioners meeting their goals in this survey going to help ACFHP focus their efforts?

It appears that practitioners are interested in specific types of assistance. Do we de-emphasize or not do the other types?

Is ACFHP doing anything to address the focal threats of high priority (from this survey)?

Atlantic Coastal Fish Habitat Partnership

Conservation Strategic Plan

2012-2016

For More Information

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Front cover photograph of alewifes is courtesy of Jake Kritzer, Environmental Defense Fund.
Back cover photograph of a flounder in submerged aquatic vegetation is courtesy of
Chris Pickerell, Cornell Cooperative Extension.

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Atlantic Coastal Fish Habitat Partnership

Conservation Strategic Plan 2012-2016

Executive Summary

The Atlantic Coastal Fish Habitat Partnership (ACFHP) is an assembly of groups interested in the conservation of habitat for Atlantic coast diadromous, estuarine-dependent, and coastal fish species. It was formed in 2006 under the auspices of the National Fish Habitat Action Plan. Numerous human-derived threats are impacting Atlantic coastal drainages. ACFHP will work to address these threats with a broad coordinated approach, and to leverage resources from many agencies, organizations, and others to make a difference for fish habitat along the Atlantic coast.

The ACFHP Conservation Strategic Plan proposes key conservation strategies to confront pervasive threats to fish habitat along the Atlantic coast. While ACFHP is taking a collaborative coast-wide approach to addressing fish habitat needs, we realize that sub-regional prioritization may be needed to attend to more localized issues. Therefore, sub-regional Priority Habitats are identified in the Plan as well. These prioritizations were designed to focus the efforts of the Partnership in areas where ACFHP, together with our partners, can make a measurable difference for fish habitat.

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Photo of tautog by Paul Caruso, MA DMF

Introduction

Healthy waterways and robust fish populations are vital to the well-being of our society. They provide clean water and sustainable fisheries. They also are vital for less tangible reasons, as anyone who has fished wild waters or canoed a tranquil stream can attest. Unfortunately, in many waters around the country, fish and the habitats on which they depend are in decline…A tremendous amount of work has been undertaken to protect, restore and enhance these aquatic habitats…Although significant gains have been made, they have not kept pace with impacts resulting from population growth and land-use changes…Given the diverse array of federal, state, tribal, local, and private jurisdictions, the need has never been greater for increased action and improved coordination of fisheries conservation measures across boundaries and jurisdictions. (AFWA, 2006)

Developed by a coalition of anglers, conservationists, scientists, state and federal agencies, and industry leaders, and established in 2006, the National Fish Habitat Action Plan (NFHAP) seeks to protect, restore and enhance the nation's fish and aquatic communities through partnerships that foster fish habitat conservation and improve the quality of life for the American people (AFWA, 2006). NFHAP is currently composed of 17 Fish Habitat Partnerships, including the Atlantic Coastal Fish Habitat Partnership (ACFHP), and four 'candidate' Partnerships, across the United States.

From 2007-2009, the average annual value of all US marine fisheries landings was $4 billion dollars (NMFS, 2010) and in 2006, saltwater anglers spent $31 billion dollars (NMFS, 2008) however, the sustainability of these fisheries is at risk due to aquatic habitat damage and loss (NMFS, 2009). Many recreationally and commercially caught species use Atlantic coastal habitats for some portion of their life history.

Human use of aquatic habitats can potentially impact those habitats (NMFS, 2009) and 53% of our nation's total population currently lives in coastal counties (Woods & Poole and NOAA, 2010). ACFHP's boundary includes two of the five fastest growing coastal counties in the nation, from 1970-2011: Flagler and Osceola counties, located on the east coast of Florida (Woods & Poole and NOAA, 2010).

The issues that ACFHP will address are broad-based, and tackling them is important for the conservation of Atlantic coastal habitats. This Partnership is designed to bring diverse groups together to identify the causes of habitat declines, implement strategic corrective action, and measure and communicate progress. The end result will benefit not only a great number of species, from diadromous to marine, but a large population of human users as well.

History

In 2006, the Atlantic States Marine Fisheries Commission (ASMFC) was approached by the U.S. Fish and Wildlife Service (USFWS) to consider initiating a partnership under NFHAP. At that time, the existing NFHAP partners were primarily focused on freshwater habitats. ASMFC, with its existing infrastructure and administrative processes, seemed to be a logical organization to catalyze a partnership focused on coastal fish habitat. ASMFC agreed and subsequently charged its Habitat Committee with developing a coastal fish habitat partnership.

The Habitat Committee's charge led to a series of conference calls in the summer of 2006 between the Habitat Committee and NFHAP staff. In the fall, two letters indicating the ASMFC's interest and involvement with the partnership development process, and outlining efforts to date, were submitted to the NFHAP Board. In 2007, the NFHAP Board granted ACFHP 'candidate partnership' status.

Also in the fall of 2006, letters were sent to potential partners identified by the Habitat Committee, informing them of the partnership development and requesting their involvement.

Mission

To accelerate the conservation, protection, restoration, and enhancement of habitat for native Atlantic coastal, estuarine-dependent, and diadromous fishes through partnerships between federal, tribal, state, local, and other entities.

In the winter of 2007, a series of informational sessions were held along the Atlantic coast, with the aim of gathering potential ACFHP partners and disseminating information on NFHAP and ACFHP activities to date. These 'Listening Sessions' were held in Florida, South Carolina, Virginia, New Jersey, and New Hampshire.

In May 2007, a coast-wide workshop was held in Baltimore, Maryland, to engage stakeholders and partners in developing and implementing ACFHP, including establishing its focus and administrative structure , as well as discussing strategies for addressing next steps. Approximately 80 participants attended, including representatives from state, federal, and non-governmental organizations. Among the many outcomes, preliminary target species and habitats were determined, and the major committees of the Partnership were created: the Interim Steering Committee, the Science & Data Working Group, and the Communications Working Group.

Vision

Healthy, thriving habitats of sufficient quantity and quality to support all life stages of Atlantic coastal, estuarine-dependent, and diadromous fishes

In 2008, the ACFHP Charter and Bylaws were approved by the Interim Steering Committee and an ACFHP Coordinator was hired to assume coordination of the Partnership's activities. In March 2009, the ACFHP Memorandum of Understanding (MOU) took effect, formalizing the Partnership. In October 2009, ACFHP was approved by the National Fish Habitat Board as an official Fish Habitat Partnership under NFHAP.

As of September 2011, ACFHP has supported four on-the-ground fish habitat conservation projects, one in Maine, one in New York and two in South Carolina.

Governance and Organization

The ACFHP MOU (available on the ACFHP web page at: www.atlanticfishhabitat.org/2008-ACFHP-MOU.pdf) is made up of 30 signatories including 16 states responsible for managing Atlantic coastal river drainage systems (see sidebar to the right for a complete list of ACFHP Partners). The Partnership hopes to bring in additional organizations committed to conserving fish habitat along the Atlantic coast in the future.

The Steering Committee is the decision-making body of ACFHP and has oversight responsibility for all ACFHP activities. It is self-directed, volunteer, and has no authority beyond that of its individual members. Each partner organization is allowed one voting member on the Steering Committee, with a cap of 25 voting members.

Working groups are organized by the Steering Committee, and members are appointed by Steering Committee members or they are volunteers. Working group chairs are not required to be current Steering Committee members. This is to facilitate as much involvement from the Partnership as possible and to share leadership opportunities. Established working groups include the Science and Data Working Group and the Communications Working Group. The Steering Committee also creates ad-hoc working groups and subcommittees in order to address issues identified by the Partnership as they arise.

The ACFHP Charter and By-Laws define the overall function, organization, and membership of the Steering Committee and working groups. This document includes guidance for meeting management and a decision structure (available on the ACFHP web page at: www.atlanticfishhabitat.org/ACFHP-Charter-and-Bylaws.pdf).

Partners

Albemarle-Pamlico National Estuary Program

American Littoral Society

American Rivers

Atlantic States Marine Fisheries Commission

Chesapeake Bay Foundation

Connecticut Dept of Energy & Environmental Protection

Delaware Dept of Natural Resources & Environmental Control

Environmental Defense Fund

Florida Fish & Wildlife Conservation Commission

Georgia Dept of Natural Resources

Houlton Band of Maliseet Indians

Maine Dept of Marine Resources

Maryland Dept of Natural Resources

Massachusetts Division of Marine Fisheries

National Oceanic and Atmospheric Administration

New Hampshire Fish & Game Dept

New Jersey Division of Fish & Wildlife

New York State Dept of Environmental Conservation

North Carolina Dept of Environment & Natural Resources

Oyster Recovery Partnership

Partnership for the Delaware Estuary

Pennsylvania Fish & Boat Commission

Rhode Island Division of Fish & Wildlife

South Carolina Dept of Natural Resources

The Nature Conservancy

United States Fish and Wildlife Service

United States Geological Survey

Vermont Fish and Wildlife Department

Virginia Marine Resources Commission

Wells National Estuarine Research Reserve

Science and Data

The Partnership has completed two science projects to date: A Species-Habitat Matrix (ACFHP, 2009) and Assessment of Existing Information on Atlantic Coastal Habitats (hereinafter referred to as 'the Assessment') (Nelson et al., 2010). These projects were completed to inform or verify the development of conservation objectives and priorities. The Partnership expects to further develop, analyze, or refine the outcomes of these projects primarily through the efforts of its Science and Data Working Group, as defined in Section C of this report.

The Species-Habitat Matrix is an assessment of the relative importance of specific estuarine and freshwater habitat types in terms of their value to the major life stages of over 100 fish species. The development, review, and analysis of the Species-Habitat Matrix was spearheaded by members of the ACFHP Science and Data Working Group, however it involved contributions from over 50 people, coast-wide to which scientists from state, federal, non-governmental, and academic entities contributed. It represents a coast-wide cooperative effort. The Species-Habitat Matrix Project Summary Report is available on the ACFHP web page at: www.atlanticfishhabitat.org/Species Habitat Matrix Summary Report.pdf

The Assessment was conducted through a contract supervised by NOAA's National Ocean Service. It is a database of over 500 documents, datasets, and information portals on Atlantic coastal fish species and habitats which were collected and analyzed for indicator, threat, and action information. A web-based queryable database allowing resource managers access to this information is available at http://www8.nos.noaa.gov/bhv/spatbibindex.html. Results are summarized in a final report available at http://ccma.nos.noaa.gov/publications/nccostechmemo103.pdf

Communications and Outreach

The Partnership has developed fact sheets, posters, and a website (www.atlanticfishhabitat.org) in order to engage its partners and the broader fish habitat conservation community. The Partnership plans to continue its communications and outreach program, primarily through its Communications and Outreach Working Group, as defined in Section D of this report.

Finances

In 2007, the Partnership received $10,000, through a cooperative agreement with USFWS, for use towards communications related activities and materials. In 2008, the Partnership was awarded a grant under the Multistate Conservation Grant Program which has provided funding for its development and operations. In FY10 $70,000 in USFWS-NFHAP funding was directed towards ACFHP on-the-ground projects. And in FY11, $74,603 was directed towards ACFHP on-the-ground projects. The Partnership plans to continue its financial capabilities primarily through its Finance Subcommittee, as defined in Section E of this report.

Geographic Profile

Partnership Boundary

Geographic Range
Maine to the Florida Keys

Inland Extent
Headwaters of coastal rivers

Marine Extent
Offshore to the edge of the continental shelf

Subregion Boundaries

ACFHP utilizes subregional boundaries for the purposes of habitat prioritization. Subregions represent ecologically distinct units and were derived from Marine Ecoregions of the World (as established by the World Wildlife Fund and The Nature Conservancy). These include the Gulf of Maine, Virginian, Carolinian, and Floridian ecoregions which correspond to ACFHP subregions North Atlantic, Mid-Atlantic, South Atlantic, and South Florida, respectively. While these subregions are unique to ACFHP, the Partnership will work collaboratively with the appropriate partners to ensure optimal success.

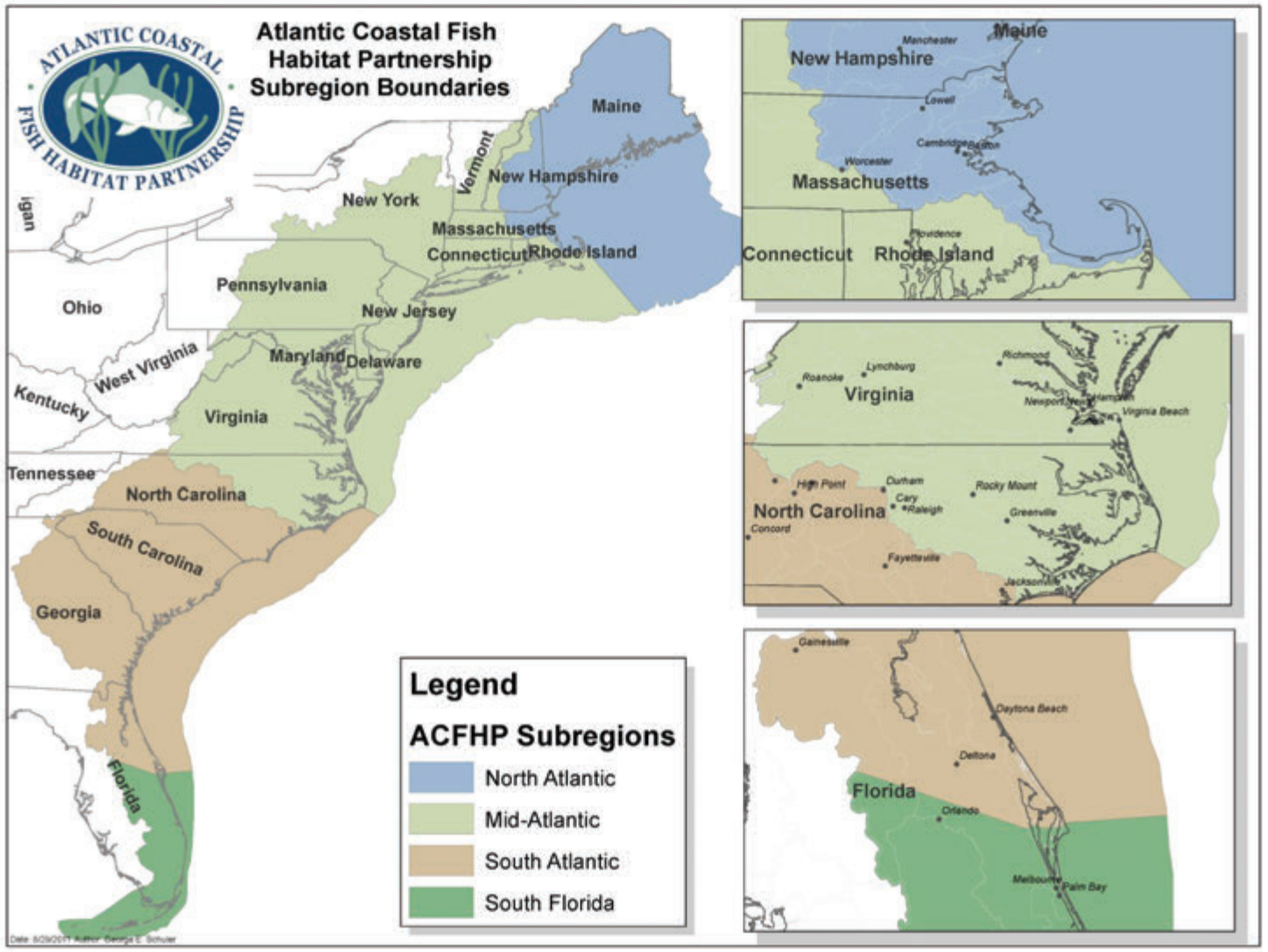

Figure 1. Atlantic Coastal Fish Habitat Partnership and Subregion Boundaries

Effort Profile

With its mission statement in mind, ACFHP plans to work throughout the region outlined in Figure 1. However, ACFHP will place less emphasis on upstream headwaters and offshore marine ecosystems and more on coastal/estuarine environments.

ACFHP will seek to ensure contiguous watershed coverage with adjacent fish habitat partnerships while seeking to minimize overlap. As ACFHP develops on-the-ground projects, it will work with these partnerships to identify where cooperation should occur and to identify new avenues for collaboration. This will ensure that ACFHP is not working in competition, but in concert with existing partnerships towards fish habitat conservation. Figure 2 demonstrates the relative effort that will be dedicated to Atlantic coastal areas on a continuum from white water to blue water.

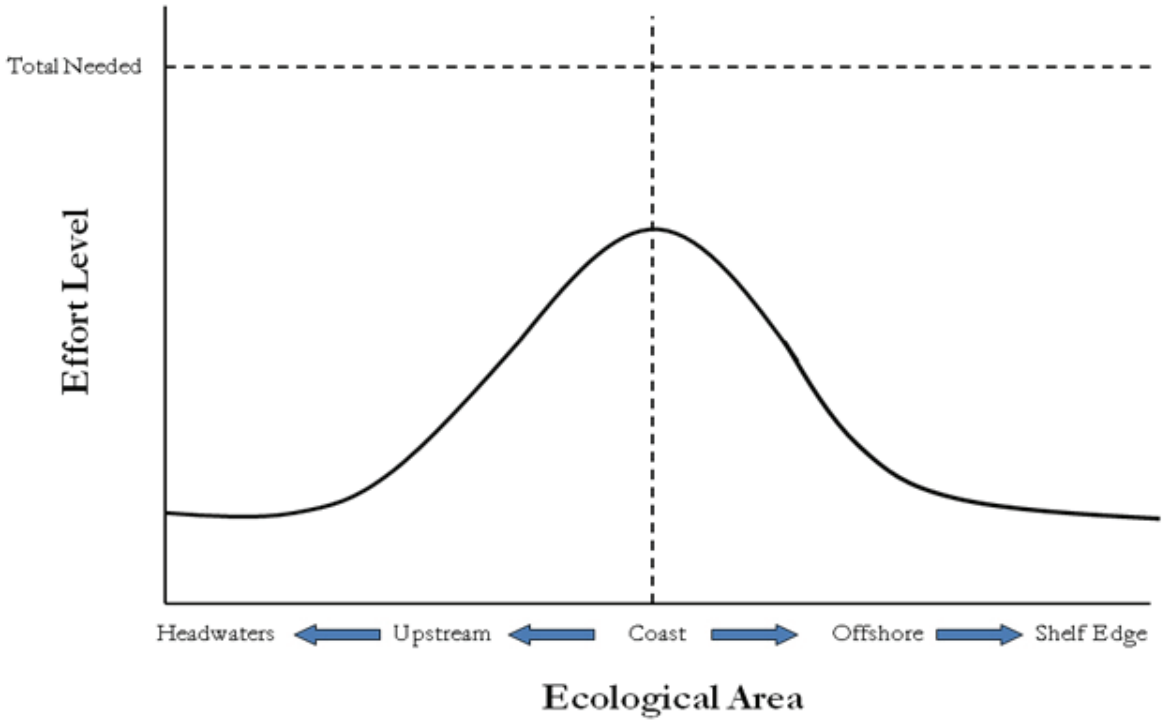

Figure 2. ACFHP Relative Effort Level in Relation to Distance from the Coast

Purpose

The ACFHP Conservation Strategic Plan is a broad coast-wide strategy for determining and addressing the threats affecting habitats important for all life stages of Atlantic coast diadromous, estuarine-dependent, and coastal species. The Plan is designed to address actions that the Partnership can take to improve the condition of Atlantic coast fish habitat over the next five years, with re-examination after three years of implementation.

The Plan was developed by the ACFHP Steering Committee and others and was reviewed by members of the ACFHP Science and Data Working Group. It will be provided to the Partnership-At-Large with a request for comment that will be considered during the development of future ACFHP Conservation Strategic Plans.

Implementation Plans will include steps towards achieving action items identified in this Conservation Strategic Plan and will be developed every one to two years.

Subregional action plans, with specific, time-bound, quantifiable action items will be considered in the future. Suggestions will be solicited from the ACFHP Science and Data Working Group and other regional experts.

Aerial photo of coral reef on Sand Key, FL by Craig Quirolo, Reef Relief/Marine Photobank

Habitats

The full list of ACFHP Habitats (Table 1) is based on the list determined by members of the ACFHP Science Data Working Group for consideration in the ACFHP Species-Habitat Matrix. This list should not be considered a comprehensive index of all habitats along the Atlantic coast; however, these habitats were determined to best represent the range of habitats supporting Atlantic coastal, estuarine-dependent, and diadromous fishes at a coast-wide level.

Table 1 illustrates the 25 habitat types nested within seven habitat categories (see *Appendix A. Habitat Characterizations* for more detailed descriptions). Table 1 has a hierarchical design where the habitat **types** are listed under a particular habitat **category**. The habitat types are examples of particular habitat characterizations that fall within a broader habitat category.

Table 1. ACFHP Habitats by Category and Type

Habitat Category	Habitat Type
Marine and Estuarine Shellfish Beds	Oyster aggregations/reef
	Scallop beds
	Hard clam beds
	Shell accumulations
Coral and Live/Hard Bottom	Coral reefs
	Patch reef, soft corals, or anemones
	Live rock
Macroalgae	*Fucus* spp., *Laminaria* spp., *Ulva lactuca*
Submerged Aquatic Vegetation	Tidal fresh & oligohaline plant species
	Mesohaline & polyhaline plant species
Tidal Vegetation	Estuarine emergent marsh
	Tidal freshwater marsh
	Mangrove
Unvegetated Coastal Bottom	Loose fine bottom
	Loose coarse bottom
	Firm hard bottom
	Structured sand habitat
Riverine Bottom	Higher gradient headwater tributaries
	Lower gradient tributaries
	Higher gradient large mainstem river
	Lower gradient large mainstem river
	Low order coastal streams
	Non-tidal freshwater mussel beds
	Coastal headwater pond
	Non-tidal freshwater marsh

Subregional Priority Habitats

ACFHP has selected three priority habitats within each subregion using the results of the Species-Habitat Matrix as a guide, and professional judgment to factor in other considerations (such as habitat rarity or high potential for conservation). The matrix was used as a tool in developing the list of Subregional Priority Habitats, but it was not the sole factor in selecting Subregional Priority Habitats. In some cases, ACFHP specifically selected other habitats because although a habitat that ranked high in the Matrix results may be important and used by many species, it may not necessarily be threatened or in need of protection. Summary results of the Species-Habitat Matrix can be found in *Appendix B*.

ACFHP will support efforts to accelerate the conservation, protection, restoration, and enhancement of all habitats listed in Table 1. The Subregional Priority Habitats will not be the only habitats to which ACFHP will target its strategic actions. However, given limited resources, projects addressing the Priority Habitats appropriate for the given subregion will receive heightened consideration during the next five years (2012-2016).

ACFHP Priority Habitats by Subregion

North Atlantic
- Riverine Bottom
- Submerged Aquatic Vegetation (meso- to polyhaline)
- Marine and Estuarine Shellfish Beds

Mid-Atlantic
- Riverine Bottom
- Submerged Aquatic Vegetation
- Tidal Vegetation

South Atlantic
- Marine and Estuarine Shellfish Beds
- Riverine Bottom
- Tidal Vegetation

South Florida
- Coral and live/hardbottom
- Submerged Aquatic Vegetation (meso- to polyhaline)
- Mangrove

In some instances a habitat **category** was identified as a Subregional Priority Habitat, whereas in other cases a specific habitat **type**, falling within a habitat category, was selected as a Subregional Priority Habitat. The three priority habitats selected for each subregion are not ranked or prioritized within the subregion.

Priority Threats

Habitat degradation and persistent declines in Atlantic slope coastal drainage systems, which provide critical habitats for diadromous, estuarine-dependent, and coastal fish species, must be reversed. **Threats that impact important spawning and nursery habitats are of particular concern.** The Partnership has identified Priority Threats that are currently impacting habitats along the Atlantic coast. ACFHP Priority Threats are verified by the results of the Assessment. A table which relates the results of this project with ACFHP Priority Threats identified in this Plan can be found in *Appendix C*. The Assessment Technical Memorandum NOS NCCOS 103 is available at the following location: http://ccma.nos.noaa.gov/publications/nccostechmemo103.pdf.

List of Priority Threats Impacting ACFHP Habitats at a Coast-wide Scale:

- **Obstructions to Fish Movement/Habitat Connectivity**
  - **Includes:** Dams; hydropower facilities; road crossings and culverts; thermal barriers; reduced stream flow and low flow areas caused by diversions, withdrawals, legacy effects, and reduced base flow; jetties and breakwater; tidal turbines; and beaver dams or debris jams.
  - **Importance:** This threat is a concern in estuaries as well as riverine and tidal systems, as hydrokinetic energy generation is further explored. Dams, culverts, sedimentation and other impediments to fish movement can impact and limit the survivability of fish populations and lead to local extinctions in rivers, streams, and estuaries along the Atlantic coast. Obstructions to fish movement can adversely affect populations of diadromous species as well as important estuarine fish populations and life history stages.

Goose Creek Dam, SC by Prescott Brownell, National Marine Fisheries Service

- **Dredging and Coastal Maintenance**
  - **Includes:** Dredging; blasting; port expansion and maintenance; dredge spoil disposal; and beach maintenance (including beach fill, mining of sand, bulldozing, sand bypass, sand bags, and shoreline stabilization).
  - **Importance:** Human activities around marinas, ports, and residential docks can have major impacts on fish habitat. The direct impacts of this threat are the removal, degradation, or smothering of habitat. Indirect impacts involve the blockage of sunlight or are linked with other threats noted in this section. This threat is serious and persistent given its on-going and reoccurring nature. Once

habitat is allowed to re-establish in impacted areas, it is impacted again. The areas of greatest impact are nursery and spawning areas; protection of these areas is vitally important to ensure sustainability of critical life stages of many species.

- **Water Quality Degradation and Eutrophication**
  - **Includes:** Surface water and groundwater quality and quantity; point/non-point source pollution; nutrient loading; atmospheric deposition; and dissolved oxygen concerns.
  - **Importance:** This threat can occur in all aquatic habitats. Water quality decline and eutrophication are among the most common causes of aquatic habitat degradation. For example, nutrients promoting excessive algal blooms, such as nitrogen and phosphorus, can decrease oxygen levels in the water column and cause die off of fish and other marine species. This threat is one of the most pervasive and difficult to target and reverse. Often this threat must be addressed in order for habitat restoration to be successful over the long-term.

- **Consumptive Water Withdrawal**
  - **Includes:** Withdrawals for industrial, agricultural, residential, and recreational uses, such as irrigation, desalinization, and energy generation; flow concerns; and freshwater withdrawal in the salt front.
  - **Importance:** Consumptive water withdrawal can lead to inadequate abundance of water quantity or flow for fish and their habitats, degraded water quality, and alter the location of the interface and salt water wedges. This is a particularly challenging threat to address because of the inherent difficulties of balancing conflicting water needs of fish and humans from a particular water body. Impacts to habitat can result from groundwater as well as surface water removals. These competing needs must be considered when decisions are made on consumptive water withdrawals.

Photo of dredge sediment dumping, Boynton Beach, FL by Steve Spring, Palm Beach County Reef Rescue/Marine Photobank

- **Sedimentation**
  - **Includes:** Suspended and deposited solids; construction of impervious surfaces in the watershed (e.g. parking lots, roads, buildings); point and non-point source runoff; and development of shorelines and riparian areas.
  - **Importance:** Sedimentation is a particularly important threat to consider when dealing with riverine or estuarine habitats. Watersheds with a high percentage of impervious surfaces and erosion often have sedimentation impacts on aquatic habitats. Sediment runoff can smother fish eggs, impact physiological and behavioral responses in fish, vegetation, shellfish beds, submerged aquatic vegetation (SAV), dislodge plants, decrease light penetration, and increase susceptibility to disease.

- **Vessel Operation Impacts**
  - **Includes:** Recreational and commercial vessel operation; prop washing; anchoring; grounding; and discharge.
  - **Importance:** Vessel impacts are most prevalent in shallow water estuarine and marine habitats. Vessel operation can lead to propeller scarring, shoreline erosion due to wakes and grounding, and shading from boats and associated docks.

- **Contamination of Water (ground and surface) and Sediments**
  - **Includes:** Heavy metal accumulation; acid precipitation; pesticides and herbicides; petrochemical spills; and pharmaceuticals.
  - **Importance:** Contamination can degrade the health of both habitats and species, especially for elements that easily bioaccumulate in tissues and sediments. Identifying the sources of and avenues to address contamination issues can be particularly challenging. An emerging concern involves the prevalence of pharmaceuticals in water supplies that affect humans and fish alike. Contamination is a major concern because it can cause lethal and sub-lethal effects, disease, locomotor impairment, abnormal mating and other behaviors, incomplete or abnormal development, inadequate nutrient balance, susceptibility to parasites, and other problems.

- **Invasive Species**
  - **Includes:** Introduction of invasive species, including plants, invertebrates, and vertebrates, and lack of invasive species eradication.
  - **Importance:** Demonstrated many times over, invasive species can have a major impact on fish and their habitats. Native habitat types may be outcompeted, smothered, or displaced by invasive plants (such as common reed *Phragmites australis* or water lettuce *Pistia stratiotes*) and animals (such as zebra mussel *Dreissena polymorpha,* mitten crab *Eriocheir sinensis*, and pink barnacle *Tetraclita rubescens*). The best way to address this threat is to try to prevent introductions through public education and encouraging the use of best management practices (BMPs) (e.g. in vessel transport). Once an invasive species is introduced, it is difficult or impossible to eradicate.

- **Climate Change**
  - **Includes:** Sea level rise; ocean acidification; increased water temperatures; increased storm frequency and severity; habitat expansion, contraction, and fragmentation due to climate change; species geographic shifts, and eutrophication.
  - **Importance:** The full impacts and timeline of impacts are still being debated. However, climate change is likely to influence all habitats and species along the Atlantic coast in some way. Climate change has the potential to strongly influence how we plan and execute habitat protection and restoration projects. The ways in which climate change influences projects will likely evolve over time as we learn more about how the atmosphere and oceans are changing.

- **Other Threats**
  - Other threats to Atlantic coast fish habitat were identified. However, those threats were determined not to be as high of a priority for ACFHP, or were of a nature that could not be effectively addressed by ACFHP. Those threats included: 1) **fishing gear impacts** (including hydraulic clamming, bottom-tending gears, and recreational and commercial fishing impacts on habitat); 2) **energy development** (including tidal, wave, wind, and hydropower); 3) **aquaculture** (including pathogen transfer, entanglement, nutrient issues, and genetic sustainability); 4) **inadequate implementation of existing regulatory systems** (including permitting, zoning, land-use planning, sewage treatment, floodplain management, and fishery management); and 5) **physical impacts to fish** (including entrainment, impingement, propeller strikes, prop wash, turbines).

All of these threats can be cumulative, which can possibly cause irreversible changes to the ecosystem.

Photo of invasive lionfish: Chip Baumberger/Marine Photobank

Goals

ACFHP goals are modeled after the goals outlined in the National Plan, which highlight the protection, prevention, restoration, and enhancement of fish habitat.

Goal 1: Protect and maintain intact and healthy aquatic systems for native Atlantic coastal, estuarine-dependent, and diadromous fishes.

Goal 2: Prevent further degradation of fish habitats that have been adversely affected.

Goal 3: Restore the quality and quantity of aquatic habitats to improve the overall health of fish and other aquatic organisms (especially those habitats that play an important role in critical life history stages of fish species, e.g. nursery and spawning areas).

Goal 4: Restore aquatic habitats to aid in recovery of threatened or endangered species (state and federal).

Goal 5: Enhance the quality and quantity of aquatic habitats that support a broad natural diversity of fish and other aquatic species.

Objectives and Strategic Actions

To achieve its goals ACFHP has developed a series of objectives encompassing protection, restoration, science and data, communications and outreach, and financial needs and activities. Strategic actions were identified to achieve those objectives. The Partnership has considered the human drivers (indirect and direct) and the key opportunities to address Priority Threats. It has also assessed the constraints it must work within as well as its operational needs in developing the objectives and strategies in this Plan. The strategic actions are intended to guide the Partnership's activities towards achieving an overarching objective of protecting and restoring aquatic habitat, on a coast-wide scale. They focus on activities that ACFHP can reasonably work toward achieving over the next five years.

The **protection objectives** are proactive initiatives that highlight the need to address priority threats that are adversely impacting aquatic habitats along the Atlantic coast before the habitats are in need of restoration. The **restoration objectives** highlight the need to restore aquatic habitats along the Atlantic coast that have already been impacted by various human activities.

While each strategic action has a specified time frame to achieve that strategic action, many of the strategic actions (or portions of) should be considered ongoing. Once said actions have been accomplished, ACFHP will continue to carry out these actions according to the life of the Plan (five years), with an opportunity for review after three years. At the conclusion of three and again at five years, these strategic actions will be considered by ACFHP for continuation into the future, or for their conclusion.

Section A: Habitat Protection Objectives

Protection Objective 1: Ensure adequate and effective fish movement past existing or potential barriers to maintain connectivity within Subregional Priority Habitats.

Threat: Obstructions to Fish Movement/Habitat Connectivity; Consumptive Water Withdrawal

Impacted Habitat Categories: Marine and Estuarine Shellfish Beds; Tidal Vegetation; Riverine Bottom; Coral and Live/Hard Bottom; SAV

- ✓ **A.1.1 Strategic Action:** Coordinate with partners to synthesize existing information in order to identify and prioritize watersheds for conservation where fragmentation of, or barriers to, fish dispersal are a potentially critical threat to be addressed. *Short-term*
- ✓ **A.1.2 Strategic Action:** Coordinate with partners to develop and disseminate a "standardized toolbox" of fish passage technologies (techniques and methodologies) and guidance to assist ACFHP partners in the development and implementation of effective fish passage protocols designed to alleviate this threat for new projects. *Long-term*

Protection Objective 2: Maintain or improve water quality and hydrology in Subregional Priority Habitats that are currently functioning, through incorporation of BMPs and/or technological controls.

Threat: Water Quality Degradation and Eutrophication; Contamination of Water (ground and surface) and Sediments

Impacted Habitat Categories: Marine and Estuarine Shellfish Beds; Coral and Live/Hard Bottom; Submerged Aquatic Vegetation; Tidal Vegetation; Riverine Bottom

- ✓ **A.2.1 Strategic Action:** Define the critical water quality variables and hydrology needed to protect Subregional Priority Habitats. *Short-term*
- ✓ **A.2.2 Strategic Action:** Coordinate with partners to develop and disseminate a toolbox or guidance document of non-structural BMPs that will assist ACFHP partners in improving or protecting water quality for fish habitat. *Long-term*
- ✓ **A.2.3 Strategic Action:** Coordinate with partners to synthesize existing information in order to identify and prioritize watersheds for water quality improvement for fish habitat. *Short-term*
- ✓ **A.2.4 Strategic Action:** Encourage the use of BMPs designed to improve point/non-point discharge management that addresses the impacts of inorganic and organic contaminants, including emerging contaminants of concern for Subregional Priority Habitats. *Long-term*

Protection Objective 3: Define the water flows and volumes needed to sustain the structure and function of healthy aquatic ecosystems (including groundwater and surface water interactions, maintaining appropriate salinity regimes) and ameliorate consumptive water usage where detrimental to Subregional Priority Habitats.

Threat: Consumptive Water Withdrawal

Impacted Habitat Categories: Riverine Bottom; Coral and Live/Hard Bottom; Submerged Aquatic Vegetation; Marine and Estuarine Shellfish Beds; Tidal Vegetation

- ✓ **A.3.1 Strategic Action:** Identify current work being done on this objective (e.g. Southeast Aquatic Resources Partnership and Southern Instream Flow Network, instream flow work at Federal and state agencies) and determine how ACFHP can best partner with these efforts. *Short-term*

Protection Objective 4: Minimize or reduce adverse impacts to Subregional Priority Habitats associated with coastal development and water dependent activities (e.g. recreational boating, and marine transportation).

Threat: Vessel Operation Impacts; Dredging and Coastal Maintenance; Sedimentation

Impacted Habitat Categories: Marine and Estuarine Shellfish Beds; Coral and Live/Hard Bottom; Submerged Aquatic Vegetation; Tidal Vegetation; Riverine Bottom

- ✓ **A.4.1. Strategic Action:** Identify current work being doneon this objective (e.g. guidance on dredgingand low impact development) and determine how ACFHP can best partner with these efforts. *Mid-term*

Protection Objective 5: Maintain or increase the resiliency of Subregional Priority Habitats to the impacts of climate change.

Threat: Climate Change

Impacted Habitat Categories: Marine and Estuarine Shellfish Beds; Coral and Live/Hard Bottom; Submerged Aquatic Vegetation; Tidal Vegetation; Riverine Bottom

- ✓ **A.5.1 Strategic Action:** Work with partners to identify techniques and guidance documents that can be helpful in maintaining the priority habitats within each subregion against the adverse affects of climate change. *Short-term*
- ✓ **A.5.2 Strategic Action:** Encourage all institutions responsible for aquatic habitat management to include impacts to fish habitat in their climate change planning and modeling efforts. *Long-term*

Protection Objective 6: Increase public awareness of the threats facing Subregional Priority Habitats and the protection measures available to avoid and minimize those threats.

Threat: Obstructions to Fish Movement/Habitat Connectivity; Dredging and Coastal Maintenance; Water Quality Degradation and Eutrophication; Consumptive Water Withdrawal; Sedimentation; Climate Change; Vessel Operation Impacts; Contamination of Water (ground and surface) and Sediments; Invasive Species

Impacted Habitat Categories: Marine and Estuarine Shellfish Beds; Coral and Live/Hard Bottom; Submerged Aquatic Vegetation; Tidal Vegetation; Riverine Bottom

- ✓ A.6.1 Strategic Action: Develop and disseminate public outreach materials on the adverse impacts of human activities on fish and fish habitat as well as ways to avoid and minimize those impacts. *Long-term*

Section B: Habitat Restoration Objectives

Restoration Objective 1: Restore and enhance hydrological or physical connections between Subregional Priority Habitats to promote fish utilization and improve overall aquatic health.

Threat: Obstructions to Fish Movement/Habitat Connectivity; Consumptive Water Withdrawal

Impacted Habitat Categories: Marine and Estuarine Shellfish Beds; Tidal Vegetation; Riverine Bottom

- ✓ B.1.1 Strategic Action: Remove dams and other physical barriers in areas identified as a priority for fish movement restoration. *Mid-term*
- ✓ B.1.2 Strategic Action: Restore tidal hydrology in priority wetland areas (e.g. repairing or removing culverts or berms restricting flow or separating wetlands). *Mid-term*
- ✓ B.1.3 Strategic Action: Identify priority areas in each subregion where Priority Habitats have been degraded or eliminated by past alterations to hydrology, and where conditions for restoration of habitats exist. *Mid-term*
- ✓ B.1.4 Strategic Action: Compile information to identify barriers where fragmentation of habitats or barriers to fish movement exist. *Short-term*

Photo of culvert on Shoreys Brook, ME by Great Works Regional Land Trust

- ✓ B.1.5 Strategic Action: Coordinate with partners to compile fish movement/habitat restoration techniques and guidance documents to aid partners in the planning, design, implementation, and monitoring of effective fish movement improvement projects. *Long-term*

Photo of oyster sill fringe marsh, NC, by North Carolina Coastal Federation

Restoration Objective 2: Restore Subregional Priority Habitats, such as replanting eelgrass beds or restoring oyster beds, in locations where threats have been minimized or removed (does not include dam or other barrier removal).

Threat: Dredging and Coastal Maintenance; Water Quality Degradation and Eutrophication; Sedimentation; Climate Change; Vessel Operation Impacts; Contamination of Water (ground and surface) and Sediments; Invasive Species

Impacted Habitat Categories: Marine and Estuarine Shellfish Beds; Coral and Live/Hard Bottom; Submerged Aquatic Vegetation; Tidal Vegetation; Riverine Bottom

- ✓ **B.2.1 Strategic Action:** Restore Subregional Priority Habitats in each subregion where: (a) they have been damaged or destroyed by past declines in water quality or human activities, such as dredging, filling, development, or vessel operation; AND (b) conditions for restoration of habitats exist; AND (c) goal(s) of habitat restoration can be maintained. *Mid-term*
- ✓ **B.2.2 Strategic Action:** Prevent and attempt to control invasion of non-indigenous species, where feasible. *Long-term*

Restoration Objective 3: Restore water quality in areas where it has degraded or eliminated Subregional Priority Habitats.

Threat: Water Quality Degradation and Eutrophication

Impacted Habitat Categories: Marine and Estuarine Shellfish Beds; Tidal Vegetation; Riverine Bottom; Coral and Live/Hard Bottom; SAV

- ✓ **B.3.1 Strategic Action:** Coordinate with partners to compile a list of areas where Subregional Priority Habitats have been degraded or eliminated due to poor water quality. *Mid-term*
- ✓ **B.3.2 Strategic Action:** Support local projects that address water quality improvements that are associated with Subregional Priority Habitat improvement. *Short-term*

Restoration Objective 4: Maintain or increase the resiliency of Subregional Priority Habitats to the impacts of climate change through restoration activities.

Threat: Climate Change

Impacted Habitat Categories: Marine and Estuarine Shellfish Beds; Coral and Live/Hard Bottom; Submerged Aquatic Vegetation; Tidal Vegetation; Riverine Bottom

- ✓ **B.4.1 Strategic Action:** Encourage all ACFHP-supported restoration projects address projected climate change impacts to Subregional Priority Habitats during project planning and implementation. *Long-term*

Section C: Science and Data Objectives

Science and Data Objective 1: Support ongoing research related to identifying or assessing fish habitat conservation activities and the threats to fish habitats.

- ✓ **C.1.1 Strategic Action:** Support the funding or endorsement of applied science/research projects aimed at (1) monitoring and reducing the impacts of Priority Threats on ACFHP habitats, (2) evaluating the effectiveness of fish habitat conservation techniques or methodologies, and (3) answering management questions. *Long-term*
- ✓ **C.1.2 Strategic Action:** Support research dedicated to identifying additional causes of habitat loss and the resulting effects on ACFHP species. *Long-term*

Science and Data Objective 2: Work to achieve ACFHP Science and Data Needs (ACFHP, 2011) and fulfill science and data responsibilities established by NFHAP.

- ✓ **C.2.1 Strategic Action:** Develop additional products and conduct continuing analysis of the Species-habitat Matrix. *Short-term*
- ✓ **C.2.2 Strategic Action:** Continue to synthesize, update, and fill in information gaps in the Assessment, and identify new applications. *Mid-term*
- ✓ **C.2.3 Strategic Action:** Beginning with the results of the Assessment and the work conducted by the National Fish Habitat Science and Data Committee, refine data and associated GIS layers to produce maps and other products that can be used to inform the goals and objectives laid out in this plan and to develop time-bound, spatially-explicit, and quantitative conservation objectives in future Plans or revisions to the Strategic Conservation Plan. *Short-term*
- ✓ **C.2.4 Strategic Action:** Develop Fish Habitat Occupancy Models[1] and the information needed to support them. *Mid-term*
- ✓ **C.2.5 Strategic Action:** Develop project tracking and evaluation capabilities for the purpose of capturing, assessing, and reporting conservation results to stakeholders. *Long-term*

Photo of scientists collecting data on a coral reef, Key Largo, FL by (c) Wolcott Henry 2005/Marine Photobank

[1] "Occupancy models that identify and delineate current habitats of priority fish species and can project habitat occupancy needs in the future are a useful tool for targeting conservation actions. Such models utilize scenarios of climate change, land use alteration, fish harvest, and other potential impacts to identify habitat types of greatest importance for conservation planning." (ACFHP, 2011)

Section D: Communications and Outreach Objectives

Communications and Outreach Objective 1: Develop or maintain physical or virtual information or avenues for communicating information to partners and the broader conservation community.

- ✓ **D.1.1 Strategic Action:** Maintain a website that meets the needs of partners and the broader conservation community. *Short-term*
- ✓ **D.1.2 Strategic Action:** Develop/use outreach materials (e.g. display, fact sheets) that meet the needs of partners and the broader conservation community. *Short-term*
- ✓ **D.1.3 Strategic Action:** Attend events such as conferences or meetings to promote ACFHP's mission and activities and encourage new partners to join. *Short-term*

Communications and Outreach Objective 2: Develop or maintain relationships with partners and the broader conservation community.

- ✓ **D.2.1 Strategic Action:** Develop a protocol for identifying and bringing in new partners. *Short-term*
- ✓ **D.2.2 Strategic Action:** Cooperate and exchange lessons learned with other landscape or regional partnerships and the National Fish Habitat Board. *Mid-term*
- ✓ **D.2.3 Strategic Action:** Promote the missions of ACFHP and NFHAP by participating in NFHAP's legislative strategy to further the objectives of all fish habitat partnerships and coordinate such activities with the legislative staff in each partner organization. *Long-term*

Section E: Finance Objectives

Finance Objective 1: Develop a mechanism and infrastructure within ACFHP for managing finances.

- ✓ **E.1.1 Strategic Action:** Establish a financial infrastructure to receive and disburse grant funds, operational funds, and other finances. *Short-term*

Finance Objective 2: Leverage conservation dollars.

- ✓ **E.2.1 Strategic Action:** Secure operational funding. *Short-term*
- ✓ **E.2.2 Strategic Action:** Secure project funding opportunities. *Short-term*
- ✓ **E.2.3 Strategic Action:** Identify private partners who can assist in providing matching funds to support operational and on-the-ground project activities. *Short-term*

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Appendix A.

Habitat Characterizations

Note that the habitat category into which a habitat type falls is underlined.

Marine and Estuarine Shellfish Beds

Oyster aggregations/reef

Structures formed by the Eastern oyster (*Crassostrea virginica)* that provide the dominant structural component of the benthos, and whose accumulated mass provides significant vertical relief (> 0.5 m).

Scallop beds

Areas of dense aggregations of scallops on the ocean floor. Common Atlantic coast species include: (1) the large Atlantic sea scallop (*Placopecten magellanicus*), which ranges from Newfoundland to North Carolina; (2) the medium-sized Atlantic calico scallop (*Argopecten gibbus*), which is found in waters south of Delaware; and (3) the bay scallop (*Argopecten irradians)*, which occurs from Cape Cod to Florida, as well as in the Gulf of Mexico.

Hard clam beds

Dense aggregations of the hard clam (*Mercenaria mercenaria)* found in the subtidal regions of bays and estuaries to approximately 15 m in depth. Clams are generally found in mud flats and firm bottom areas consisting of sand or shell fragments.

Shell accumulations

Shells of dead mollusks sometimes accumulate in sufficient quantities to provide important habitat. Accumulations of Eastern oyster shells are a common feature in the intertidal zone of many southern estuaries.

Coral and Live/Hard Bottom

Coral reefs

Reef-building corals are of the order Scleractinia, in the class Anthozoa, of the phylum Cnidaria. Coral accumulations are restricted to warmer water regions, where the average monthly temperature exceeds 18°C (64°F) throughout the year. Through symbiosis with unicellular algae, reef-building corals are the source of primary production in reef communities.

Photo of elkhorn coral forest, Miami, FL, by B. Bischof/Marine Photobank

Patch reef, soft corals, or anemones

A patch reef is an isolated, often circular, coral reef usually found within a lagoon or embayment.

Soft corals are species of the anthozoan order Alcyonacea, of the subclass Octocorallia. In contrast to the hard or stony corals, most soft corals do not possess a massive external skeleton (e.g. sea pens and sea fans). Anemones are cnidarians of the class Anthozoa that possess a flexible cylindrical body and a central mouth surrounded by tentacles found in soft sediments.

Live rock

Calcareous rock that is removed from the vicinity of a coral reef with some of the life forms still living on it. These may include bacteria, coralline algae, sponges, worms, crustaceans, and other invertebrates.

Macroalgae

Large marine multi-cellular macroscopic algae (seaweeds). There are three types of macroalgae: green, brown, and red. Examples of macroalgae species found along the Atlantic coast include:

Chlorophyta (green algae)

Ulva lactuca, sea lettuce

Phaeophyta (brown algae)

Fucus vesiculosus, bladderwrack; *Laminaria* spp.; *Sargassum* spp.

Rhodophyta (red algae)

Chondrus crispus, Irish moss

Submerged Aquatic Vegetation (SAV)

SAV refers to rooted, vascular plants that live below the water surface in large meadows or small patches in coastal and estuarine waters. SAV can be further classified by the range of salinity of the waters in which they are found.

Tidal fresh and oligohaline plant species

Generally found in areas where salinity ranges from 0.5 to 5.0 ppt. Examples include:
Vallisneria americana, wild celery
Ceratophyllum demersum, coontail

Mesohaline and polyhaline plant species

Generally found in areas where salinity ranges from 5 ppt up to 30 ppt. Examples include:
Zostera marina, eelgrass
Ruppia maritime, widgeon grass

Tidal Vegetation

Estuarine emergent marsh

Salt marsh is an environment in the coastal intertidal zone between land and brackish water. The low marsh zone floods twice daily, while the high marsh floods only during storms and unusually high tides. Smooth cordgrass (*Spartina alterniflora*) dominates the regularly flooded low marsh along much of the Atlantic coast. In addition, salt meadow cordgrass (*Spartina patens*), saltgrass (*Distichlis spicata*), and needle rush (*Juncus* sp.) species comprise much of the vegetative community of the mid to upper salt marsh and brackish marsh.

Tidal freshwater marsh

Tidal freshwater marsh occurs where the average annual salinity is below 0.5 ppt. It is found along free-flowing coastal rivers, and is influenced twice daily by the incoming tides. Tidal freshwater marsh can be located just upstream of the salt front, where the river essentially backs up as it meets resistance from high tides. Tidal freshwater marsh is characterized by salt intolerant plant species. These include: giant cordgrass (*Spartina cynosuroides*), sawgrass (*Cladium jamaicense*), cattails (*Typha* sp.), arrow arum (*Peltandra virginica*), pickerelweed (*Pontedaria cordata*), blue flag (*Iris virginica*), and soft stem bulrush (*Scirpus validus*).

Mangrove

The mangrove ecological community includes four tree species collectively called mangroves. This swamp system occurs along intertidal and supratidal shorelines in southern Florida. The four species found in Florida mangrove swamps are:

Rhizophora mangle, red mangrove
Avicennia germinans, black mangrove
Laguncularia racemosa, white mangrove
Conocarpus erectus, buttonwood

Unvegetated Coastal Bottom

Loose fine bottom

Submerged underwater bottom habitat in estuaries and oceans where the dominant sediment type is mud, silt, or sand.

Loose coarse bottom

Submerged underwater bottom habitat in estuaries and oceans where the dominant sediment type ranges from gravel to cobble.

Firm hard bottom

Submerged underwater bottom habitat in estuaries and oceans where embedded rock or boulders are the dominate sediment types.

Structured sand habitat

Linear, narrow sand features that develop where a stream or ocean current promotes deposition of sand.

Riverine Bottom

Higher gradient headwater tributaries

Streams in which the dominant substrate is comprised of gravel and cobble. The stream slope is greater than 2%. This characterization includes 1st to 3rd order streams[2].

Lower gradient tributaries

Streams in which the dominant substrate is comprised of sand, gravel, and small cobble. The stream slope is between 0.51% and 2.0%. This characterization includes 1st to 3rd order streams.

[2] "Stream order is a simple and common classification system for river and stream size. The Strahler stream ordering system uses a technique where "first" order streams are the smallest streams. Two first order streams combine to form second order streams, two second order streams combine to form a third order stream, and so on." (NBII, 2008)

Higher gradient large mainstem river

Rivers in which the dominant substrate is sand, gravel, and cobble. The stream slope is between 0.51% and 2%. This characterization includes 4th order rivers and above.

Lower gradient large mainstem river

Rivers in which the dominant substrate is fine sediments (silt, mud, sand). The stream slope is between 0.51% and 2%. This characterization includes 4th order rivers and above.

Low order coastal streams

Generally low gradient 0% to 0.05% in slope. This characterization includes 1st to 3rd order streams located along the coast.

Non-tidal freshwater mussel beds

Freshwater mussel beds, located above tidal influence.

Coastal headwater pond

A pond connected to coastal streams and rivers, generally located near the headwaters.

Non-tidal freshwater marsh

A marsh that occurs in the non-tidal section along a river. The main feature of a freshwater marsh is its openness, with only low-growing or "emergent" plants. It may include grasses, rushes, reeds, typhas, sedges, and other herbaceous plants (possibly with low-growing woody plants) in a context of shallow water.

Photo of alewifes by Jake Kritzer, Environmental Defense Fund

Appendix B.

Summary Results of the Species-Habitat Matrix by Subregion

The Species-Habitat Matrix is a tool to evaluate the relative importance of different coastal, estuarine, and freshwater habitats in terms of their value to selected fish and invertebrate species. In the tables below, "Habitat Type with Highest Overall Score" represents the sum of scores across all fish species and life stages within a habitat type. "Habitat Type with Highest Nursery Score" represents the sum of scores for the juvenile/young-of-year life stage across all fish species within a habitat type. Note that the habitat category in which a habitat type falls is shown in brackets. Raw analysis scores are shown in parentheses. To read the Species-Habitat Matrix Report Summary Report please visit the ACFHP web page at: www.atlanticfishhabitat.org/Species Habitat Matrix Summary Report.pdf.

Please note that the names of some habitat categories and types in Table 1 and Appendix A are modified versions of the names used in the Species-Habitat Matrix, however their descriptions are the same (with the exception of a clarifying footnote that was added in Appendix A of this Plan).

North Atlantic	Highest Score	2nd Highest Score	3rd Highest Score	4th Highest Score	5th Highest Score
Habitat Type with Highest Overall Score [Habitat Category]	Loose Fine Bottom (154.5) [Coastal Inert Substrate]	Loose Coarse Bottom (123) [Coastal Inert Substrate]	Structured Sand (108.5) [Coastal Inert Substrate]	Firm Hard Bottom and Mesohaline-Polyhaline (105) [Coastal Inert Substrate and SAV]	
Habitat Type with Highest Nursery (juv/yoy) Score [Habitat Category]	Loose Fine Bottom (52) [Coastal Inert Substrate]	Meso-Polyhaline spp. (48.5) [SAV]	Loose Coarse Bottom (38.5), Structured Sand (38), and Firm Hard Bottom (37.5) [Coastal Inert Substrate]		

Mid-Atlantic	Highest Score	2nd Highest Score	3rd Highest Score	4th Highest Score	5th Highest Score
Habitat Type with Highest Overall Score [Habitat Category]	Loose Fine Bottom (260) [Coastal Inert Substrate]	Mesohaline-Polyhaline spp. (175.5) [SAV]	Lower Gradient Large Mainstem River (147) [Riverine]	Loose Coarse Bottom (134.5) [Coastal Inert Substrate]	Structured Sand Habitat (124.5) [Coastal Inert Substrate]
Habitat Type with Highest Nursery (juv/yoy) Score [Habitat Category]	Loose Fine Bottom (93.5) [Coastal Inert Substrate]	Mesohaline-Polyhaline spp. (70.5) [SAV]	Lower Gradient Large Mainstem River (53) [Riverine]	Loose Coarse Bottom (50.5) [Coastal Inert Substrate]	Structured Sand Habitat (49) [Coastal Inert Substrate]

South Atlantic	Highest Score	2nd Highest Score	3rd Highest Score	4th Highest Score	5th Highest Score
Habitat Type with Highest Overall Score [Habitat Category]	Saltwater/ Brackish Marsh (353.5) [Tidal Vegetation]	Loose Fine Bottom (295.5) [Coastal Inert Substrate]	Mesohaline-Polyhaline spp. (151.5) [SAV]	Lower Gradient Large Mainstem River (126) [Riverine]	Tidal FW Marsh (125.5) [Tidal Vegetation]
Habitat Type with Highest Nursery (juv/yoy) Score [Habitat Category]	Saltwater/ Brackish Marsh (154.5) [Tidal Vegetation]	Loose Fine Bottom (109.5) [Coastal Inert Substrate]	Meso-Polyhaline spp. (79) [SAV]	Oyster Reef (55.5) [Marine & Estuarine Shellfish Beds]	Lower Gradient Large Mainstem River (53) [Riverine]

South Florida	Highest Score	2nd Highest Score	3rd Highest Score	4th Highest Score	5th Highest Score
Habitat Type with Highest Overall Score [Habitat Category]	Patch Reef, Soft Coral or Anemones Amidst Soft Sediment (322) [Other Sessile Fauna]	Primary Coral Reef Architecture (312.5) [Other Sessile Fauna]	Live Rock (303) [Other Sessile Fauna]	Firm Hard Bottom (241.5) [Coastal Inert Substrate]	Loose Fine Bottom (185.5) [Coastal Inert Substrate]
Habitat Type with Highest Nursery (juv/yoy) Score [Habitat Category]	Mesohaline-Polyhaline (139) [SAV]	Patch Reef, Soft Coral or Anemones Amidst Soft Sediment (110) [Other Sessile Fauna]	Live Rock (108.5) [Other Sessile Fauna]	Primary Coral Reef Architecture (97.5) [Other Sessile Fauna]	Mangrove (92) [Tidal Vegetation]

Appendix C.

The Assessment is a database of 527 documents, datasets, and information portals on Atlantic coastal habitats which were collected and analyzed for indicator, threat, and action information[3]. The full report, *Assessment of Existing Information on Atlantic Coastal Fish Habitats: Development of a web-based spatial bibliography, assessment query tools, and data summaries* (NOAA Technical Memorandum NOS NCCOS 103) can be found at http://ccma.nos.noaa.gov/publications/nccostechmemo103.pdf.

In the table below, the information presented in the Number of Instances column and the Assessment Classified Threat Column are pulled from **Table 9. Classification of Threats as Recorded in the Assessment**, from the NOAA Technical Memorandum. Table 9 from this report groups the number of threats (instances) reported (n=1260) into threat categories. The ACFHP Priority Threat column illustrates the category(ies) (as discussed in the *Identification of Critical Threats* section of this Plan) that an Assessment Classified Threat could fall into. Other threat categories displayed in Table 9 of the NOAA Technical Memo that do not fall into an ACFHP Priority Threat category are not included here.

Assessment Classified Threat	Number of Instances	ACFHP Priority Threat
Water Quality	225	Water Quality Degradation and Eutrophication; Climate Change; Consumptive Water Withdrawal
Dams and Passage	106	Obstructions to Fish Movement/Habitat Connectivity
Climate Change	97	Climate Change
Dredging Issues	89	Dredging and Coastal Maintenance
Contaminants	84	Contamination of Water (ground and surface) and Sediments
Impervious Surfaces	64	Sedimentation

[3] "**Indicator** – any measurement or assessment of a relevant parameter"; "**Threat** - anything adversely affecting quality of fish habitat"; "**Action** – any conservation action recommended or already occurring." (Nelson et al., 2010)

Invasive Species	54	Invasive Species
Water Withdrawals	25	Consumptive Water Withdrawal
Boating issues	15	Vessel Operation Impacts; Water Quality Degradation and Eutrophication
Temperature	8	Obstructions to Fish Movement/Habitat Connectivity
Other - Stormwater Issues	22	Sedimentation; Water Quality Degradation and Eutrophication
Other - Agricultural Runoff	20	Sedimentation; Water Quality Degradation and Eutrophication
Other - Agricultural Practices	17	Consumptive Water Withdrawal
Other - Tidal Restriction	17	Obstructions to Fish Movement/Habitat Connectivity; Consumptive Water Withdrawal
Other - Riparian Buffers	14	Sedimentation
Other - Sedimentation	14	Sedimentation
Other - Shoreline Erosion	10	Sedimentation; Vessel Operation Impacts
Other - Sewage and Septic Issues	9	Water Quality Degradation and Eutrophication; Contamination of Water (ground and surface) and Sediments
Other - Marine Infrastructure	5	Dredging and Coastal Maintenance
Other - Storm Events	3	Climate Change
Other - Shoreline Hardening	1	Dredging and Coastal Maintenance; Sedimentation

NATIONAL
FISH HABITAT
ACTION PLAN

Atlantic Coastal Fish Habitat Partnership
2012-2013 Implementation Plan

The Atlantic Coastal Fish Habitat Partnership (ACFHP) 2012-2013 Implementation Plan is a subset of the 2012-2016 ACFHP Conservation Strategic Plan. It contains a set of objectives and strategic actions and related tasks that can be accomplished over the course of a two year period. The achievement of each task is lead by an individual within the Partnership with the help of a team and additional partners.

Section A: Habitat Protection Objectives

Protection Objective 1: Ensure adequate and effective fish movement past existing or potential barriers to maintain connectivity within Subregional Priority Habitats.

A.1.1 Strategic Action: Coordinate with partners to synthesize existing information in order to identify and prioritize watersheds for conservation where fragmentation of, or barriers to, fish dispersal are a potentially critical threat to be addressed.

Tasks:

- Consult with appropriate ASMFC entities (i.e., diadromous species management entity; Fish Passage Working Group; TCs for each diadromous species) to determine whether there are existing priority lists for restoration, subregionally.
- Compile existing lists (i.e., American Rivers in NC through the Aquatic Connectivity Team, is presently compiling a list of priority barriers). In NH, get Restoration Partners priority list; compile FERC filed diadromous fish restoration plans for watersheds in which they have been prepared; TNC NE Connectivity Project; state diadromous restoration plans.
- Determine what scale of watershed (e.g. HUC 8, HUC 12) ACFHP wishes to address. Begin by developing a spreadsheet that lists priorities and identifies their HUCs. Compile a list of land trusts.

Protection Objective 4: Minimize or reduce adverse impacts to Subregional Priority Habitats associated with coastal development and water dependent activities (e.g. recreational boating, and marine transportation).

A.4.1. Strategic Action: Identify current work being done on this objective (e.g. guidance on dredging and low impact development) and determine how ACFHP can best partner with these efforts.

Task:

- Communicate impacts to audiences that can make a difference (e.g., for recreational boating scouring impacts, communicate with Recreational Boating and Fishing Foundation to disseminate our guidance; also state boat annual licensing offices within DNRs or other state agencies).

Protection Objective 6: Increase public awareness of the threats facing sub-regional priority habitats and the protection measures available to avoid and minimize those threats.

A.6.1 Strategic Action: Develop and disseminate public outreach materials on the adverse impacts of human activities on fish and fish habitat as well as ways to avoid and minimize those impacts.

Task:

- Compile pertinent existing outreach materials from state, federal, and other groups, and distribute this information at boating courses, ACFHP website, glossy card with ACFHP logo, or through existing federal networks.

Section B: Habitat Restoration Objectives

Restoration Objective 1: Restore and enhance hydrological or physical connections between Subregional Priority Habitats to promote fish utilization and improve overall aquatic health.

B.1.2 Strategic Action: Restore tidal hydrology in priority wetland areas (e.g. repairing or removing culverts or berms restricting flow or separating wetlands).

Task:

- Fund on-the ground projects through USFWS-NFHP funding

B.1.3 Strategic Action: Identify priority areas in each subregion where Priority Habitats have been degraded or eliminated by past alterations to hydrology, and where conditions for restoration of habitats exist.

Task:

- Determine where partners are already working to remove barriers, to identify priorities and gaps.

B.1.5 Strategic Action: Coordinate with partners to compile fish movement/habitat restoration techniques and guidance documents to aid partners in the planning, design, implementation, and monitoring of effective fish movement improvement projects.

Tasks:

- Compile existing technical guidance, identify gaps and means to address, then update current information

Restoration Objective 2: Restore Subregional Priority Habitats, such as replanting eelgrass beds or restoring oyster beds, in locations where threats have been minimized or removed (does not include dam or other barrier removal).

B.2.1 Strategic Action: Restore Subregional Priority Habitats in each subregion where:
(a) they have been damaged or destroyed by past declines in water quality or human activities, such as dredging, filling, development, or vessel operation; AND (b) conditions for restoration of habitats exist; AND (c) goal(s) of habitat restoration can be maintained.

Tasks:

- Establish funding mechanisms and or ideas for funding mechanisms to do on the ground work. Seek additional funding for ACFHP (e.g. NOAA grants, FWS-NFHAP etc.) and figure out what administrative components are needed.
- Compile list of restoration partners/practitioners (e.g. NEPs, state management plans, ACFHP MOU signatories , etc.) and survey them regarding the focus and priorities in their planning area (e.g., priority habitats, priority threats, and priority implementation actions) in order to assist in steering appropriate restoration practitioners to ACFHP priority actions.

Section C: Science and Data Objectiv*es*

Science and Data Objective 2: Work to achieve ACFHP Science and Data Needs (ACFHP, 2011) and fulfill science and data responsibilities established by NFHAP.

C.2.1 Strategic Action: Develop additional products and conduct continuing analysis of the Species-Habitat Matrix.

Tasks:

- Identify number of publications and specific journals to submit manuscript for the existing matrix
- Prepare outline
- Prepare publication(s); submit for review to all coauthors
- Peer-review

C.2.3 Strategic Action: Beginning with the results of the Assessment and the work conducted by the National Fish Habitat Science and Data Committee, refine data and associated GIS layers to produce maps and other products that can be used to inform the goals and objectives laid out in this plan and to develop time-bound, spatially-explicit, and quantitative conservation objectives in future Plans or revisions to the Strategic Conservation Plan.

Tasks:

- Check with Moe Nelson (NOS) to see if working on this strategic action fits under his work plan
- Review habitat assessments that have been done for the FHPs in Region 3 and 6 and determine if ACFHP would like a similar product.
- If steering committee and science and data committee are interested, determine if the organization that worked on the habitat assessments in Region 3 (Downstream Strategies) is available and how much they would charge or other contractor.
- Subcommittee conference call to take ideas from the National Assessment and Midwest FHP's assessments and make a work plan to make them useful at a regional scale and for coastal habitats. Work plan would include action items and a timeline.
- ID funding sources

Section D: Communications and Outreach Objectives

Communications and Outreach Objective 1: Develop or maintain physical or virtual information or avenues for communicating information to partners and the broader conservation community.

D.1.1 Strategic Action: Maintain a website that meets the needs of partners and the broader conservation community.

Tasks:

- Update the Funding, Conference, Other Events, Funded Projects, Endorsed Projects, and Outreach pages
- Send out periodic Breaking News items and maintain archives

D.1.3 Strategic Action: Attend events such as conferences or meetings to promote ACFHP's mission and activities and encourage new partners to join.

Tasks:

- Present at American Fisheries Society Annual Meeting and/or Restore America's Estuaries Conference

Communications and Outreach Objective 2: Develop or maintain relationships with partners and the broader conservation community.

D.2.2 Strategic Action: Cooperate and exchange lessons learned with other landscape or regional partnerships and the National Fish Habitat Board.

Tasks:

- Develop individual FHP and joint messaging strategies that would identify key target audiences and generate core messages for members of the partnerships to communicate clearly and consistently with those audiences.

D.2.3 Strategic Action: Promote the missions of ACFHP and NFHAP by participating in NFHAP's legislative strategy to further the objectives of all fish habitat partnerships and coordinate such activities with the legislative staff in each partner organization.

Tasks:

- Identify staff working with congressional staff
- Meet with state staff who work with their delegation
- Review guides and identify Federal Representatives or Senators, particularly those that are on resources appropriation committees.

Section E: Finance Objectives

Finance Objective 2: Secure operational funding for ACFHP.

E.2.2 Strategic Action: Secure project funding opportunities.

Tasks:

- Solicit, rank, and submit a list of priority projects to FWS for FY13 NFHP funding.

- Apply for NOAA Community Based Restoration funding
- Endorse applicable projects for NFWF/NOAA protection funding

E.2.3 Strategic Action: Identify private partners who can assist in providing matching funds to support operational and on-the-ground project activities.

Tasks:

- Identify a list of potential foundations to contact (organized by state and region).
- Identify a short list of foundations, who are particularly applicable, and schedule a phone call or meeting

ACFHP Implementation Plan Status to April 2015

Ft. Lauderdale, FL – April 20th – 22nd, 2015

The Process -in 2012

- Conservation Strategic Plan has:
  - 16 Objectives
  - 37 Strategic Actions
  - 79 Tasks
- We winnowed this for the Implementation Plan to:
  - 9 Objectives
  - 14 Strategic Actions
  - 29 Tasks

What we are going to do today

- Review the process and our commitments
- Review the current status of each Task
- Agree on the current status of each Task
- Decide on future actions:

  Continue with no changes or additional Tasks added

  Continue Tasks selected & add new non-selected Tasks

  Selectively add additional Objectives, Strategic Actions and Tasks

  Winnow a new set of Objectives, Strategic Actions and Tasks

Task Status Color Code

This Power Point has color coding to categorize each selected Task.

- Item(s) Selected - Red
- Completed tasks – Blue
- Ongoing tasks– no endpoint - Purple
- Ongoing tasks – with endpoint, not complete – Orange
- To Do or Action needed tasks– no activity yet - Green

Habitat Protection Objectives:

OBJECTIVES Selected:

1. Ensure adequate and effective fish movement past existing or potential barriers to maintain connectivity within Sub-regional Priority Habitats.

4. Minimize or reduce adverse impacts to Sub-regional Priority Habitats associated with coastal development and water dependent activities (e.g. recreational boating, and marine transportation).

6. Increase public awareness of the threats facing sub-regional priority habitats and the protection measures available to avoid and minimize those threats.

Habitat Protection Objectives:

OBJECTIVES Not Selected:

2. Maintain or improve water quality and hydrology in Sub-regional Priority Habitats that are currently functioning, through incorporation of BMPs and/or technological controls.

3. Define the water flows and volumes needed to sustain the structure and function of healthy aquatic ecosystems (including groundwater and surface water interactions, maintaining appropriate salinity regimes) and ameliorate consumptive water usage where detrimental to Sub-regional Priority Habitats.

5. Maintain or increase the resiliency of Sub-regional Priority Habitats to the impacts of climate change.

Protection Objective 1: Ensure adequate and effective fish movement past existing or potential barriers to maintain connectivity within Sub-regional Priority Habitats.

STRATEGIC ACTION Selected:

1. Coordinate with partners to synthesize existing information in order to identify and prioritize watersheds for conservation where fragmentation of, or barriers to, fish dispersal are a potentially critical threat to be addressed.

STRATEGIC ACTION Not Selected:

1. Coordinate with partners to develop and disseminate a “standardized toolbox” of fish passage technologies (techniques and methodologies) and guidance to assist ACFHP partners in the development and implementation of effective fish passage protocols designed to alleviate this threat for new projects.

Protection Objective 1: Ensure adequate and effective fish movement past existing or potential barriers to maintain connectivity within Sub-regional Priority Habitats.

Strategic Actions 1: Coordinate with partners to synthesize existing information in order to identify and prioritize watersheds for conservation where fragmentation of, or barriers to, fish dispersal are a potentially critical threat to be addressed.

TASKS Selected:

1. Consult with appropriate ASMFC entities (diadromous species management entity; Fish Passage Working Group; TCs for each diadromous species) to determine whether there are existing priority lists for restoration, subregionally.

3. Compile existing lists, i.e, American Rivers in NC through the Aquatic Connectivity Team, is presently compiling a list of priority barriers. In NH, get Restoration Partners priority list; compile FERC filed diadromous fish restoration plans for watersheds in which they have been prepared; TNC NE Connectivity Project; TU and TNC's anadromous fish habitat prioritization tool

7. Determine (Science and Data Committee task) what scale of watershed (HUC 8?, HUC 12?) ACFHP wishes to address.

Protection Objective 1: Ensure adequate and effective fish movement past existing or potential barriers to maintain connectivity within Sub-regional Priority Habitats.

Strategic Actions 1: Coordinate with partners to synthesize existing information in order to identify and prioritize watersheds for conservation where fragmentation of, or barriers to, fish dispersal are a potentially critical threat to be addressed.

TASKS: Not Selected

2. Coordinate with existing National Estuary Programs and partnerships (APNEP-NC, PREP-NH; DEBEP?; IRNEP-FL, Narragansett Bay NERR

4. Contact each Regional Alliance (i.e., SAA, MAR) to determine whether they have developed priority watershed lists.

5. Work with partners to make the lists, i.e., during ASMFC Shad and River Herring Habitat Plan development (Amendment 3; plans due 2014, so defer this action; we think that ACFHP makes this recommendation to ASMFC-HC, who in turn will make it to ASMFC SRHTC for implementation, with information developed to come back to ASMFC-HC and back to ACFHP) encourage development of priority lists.

6. Look in state Wildlife Action Plans to see if there are priority lists, and/or information which can contribute to the development of such lists.

Protection Objective 4: Minimize or reduce adverse impacts to Sub-regional Priority Habitats associated with coastal development and water dependent activities (e.g. recreational boating, and marine transportation).

Strategic Action 1: Identify current work being done on this objective (e.g. guidance on dredging and low impact development) and determine how ACFHP can best partner with these efforts.

TASK Selected:

2. Communicate impacts to audiences that can make a difference; e.g., for recreational boating scouring impacts, communicate with Recreational Boating and Fishing Foundation to disseminate our guidance; also state boat annual licensing offices within DNRs or other state agencies.

TASK Not Selected:

1. State and federal representatives on SC and SDWG contact local zoning commissions (or other local govt entities), tell story of maintaining habitat for fish from broad Atlantic coast or sub-region perspectives, include $$ values of intact habitats.

Protection Objective 6: Increase public awareness of he threats facing Sub-regional Priority Habitats and the protection measures available to avoid and minimize those threats.

Strategic Action: Develop and disseminate public outreach materials on the adverse impacts of human activities on fish and fish habitat as well as ways to avoid and minimize those impacts.

TASK Selected:

- Compile pertinent existing outreach materials from state, federal, and other groups, and distribute this information at boating courses, ACFHP website, glossy card with ACFHP logo, or through existing federal networks.

Habitat Restoration Objectives

Objectives Selected:

1. Restore and enhance hydrological or physical connections between Sub-regional Priority Habitats to promote fish utilization and improve overall aquatic health.

2. Restore Sub-regional Priority Habitats, such as replanting eelgrass beds or restoring oyster beds, in locations where threats have been minimized or removed (does not include dam or other barrier removal).

Objectives Not Selected:

3. Restore water quality in areas where it has degraded or eliminated Subregional Priority Habitats.

4. Maintain or increase the resiliency of Subregional Priority Habitats to the impacts of climate change through restoration activities.

Restoration Objective 1: Restore and enhance hydrological or physical connections between Sub-regional Priority Habitats to promote fish utilization and improve overall aquatic health.

STRATEGIC ACTIONS Selected:

2. Restore tidal hydrology in priority wetland areas (e.g. repairing or removing culverts or berms restricting flow or separating wetlands).

3. Identify priority areas in each sub-region where Priority Habitats have been degraded or eliminated by past alterations to hydrology, and where conditions for restoration of habitats exist.

5. Coordinate with partners to compile fish movement/habitat restoration techniques and guidance documents to aid partners in the planning, design, implementation, and monitoring of effective fish movement improvement projects.

Restoration Objective 1: Restore and enhance hydrological or physical connections between Sub-regional Priority Habitats to promote fish utilization and improve overall aquatic health.

STRATEGIC ACTIONS Not Selected:

1. Remove dams and other physical barriers in areas identified as a priority for fish movement restoration.

4. Compile information to identify barriers where fragmentation of habitats or barriers to fish movement exist.

Restoration Objective 1: Restore and enhance hydrological or physical connections between Subregional Priority Habitats to promote fish utilization and improve overall aquatic health.

Strategic Action 2: Restore tidal hydrology in priority wetland areas (e.g. repairing or removing culverts or berms restricting flow or separating wetlands).

TASK Selected:

2. Fund on-the ground projects through USFWS-NFHAP funding

Task Not Selected:

1. Consult with NERRS regarding salt marsh restoration projects (culverts, berms, water control structures, etc.); instream flow models.

Restoration Objective 1: Restore and enhance hydrological or physical connections between Subregional Priority Habitats to promote fish utilization and improve overall aquatic health.

Strategic Action 3: Identify priority areas in each subregion where Priority Habitats have been degraded or eliminated by past alterations to hydrology, and where conditions for restoration of habitats exist.

TASKS Selected:

1. Determine where partners are already working to remove barriers, to identify priorities and gaps.

TASK Not Selected:

2. Solicit proposals for barrier removal in identified priority watersheds.

Restoration Objective 1: Restore and enhance hydrological or physical connections between Subregional Priority Habitats to promote fish utilization and improve overall aquatic health.

Strategic Action 5: Coordinate with partners to compile fish movement/habitat restoration techniques and guidance documents to aid partners in the planning, design, implementation, and monitoring of effective fish movement improvement projects.

TASKS:

- Compile existing technical guidance, identify gaps and means to address, then update current information

Restoration Objective 2: Restore Subregional Priority Habitats, such as replanting eelgrass beds or restoring oyster beds, in locations where threats have been minimized or removed (does not include dam or other barrier removal).

STRATEGIC ACTION Selected:

1. Restore Subregional Priority Habitats in each subregion where:
   (a) they have been damaged or destroyed by past declines in water quality or human activities, such as dredging, filling, development, or vessel operation; AND
   (b) conditions for restoration of habitats exist; AND
   (c) goal(s) of habitat restoration can be maintained.

STRATEGIC ACTION Not Selected:

2. Prevent and attempt to control invasion of non-indigenous species, where feasible.

Restoration Objective 2: Restore Subregional Priority Habitats, such as replanting eelgrass beds or restoring oyster beds, in locations where threats have been minimized or removed (does not include dam or other barrier removal).

Strategic Action 1: Restore Sub-regional Priority Habitats in each sub-region where: (a) they have been damaged or destroyed by past declines in water quality or human activities, such as dredging, filling, development, or vessel operation; AND (b) conditions for restoration of habitats exist; AND (c) goal(s) of habitat restoration can be maintained.

TASKS Selected:

1. Establish funding mechanisms and or ideas for funding mechanisms to do on the ground work. Seek additional funding for ACFHP, eg. NOAA grants, FWS-NFHAP etc. (figure out what admin components are needed).

2. Compile list of projects by survey of the committee and or partners (NEP state management plans and etc) on what sub-regional priority habitats they are focusing and specifics on restoration sites.

Restoration Objective 2: Restore Subregional Priority Habitats, such as replanting eelgrass beds or restoring oyster beds, in locations where threats have been minimized or removed (does not include dam or other barrier removal).

Strategic Action 1: Restore Sub-regional Priority Habitats in each sub-region where: (a) they have been damaged or destroyed by past declines in water quality or human activities, such as dredging, filling, development, or vessel operation; AND (b) conditions for restoration of habitats exist; AND (c) goal(s) of habitat restoration can be maintained.

TASKS Not Selected:

4. Prioritized list based on ability of project to be sustainable

5. Steer restoration practitioners to sub-regional priority habitats via compiled list of sub-regional priority habitat restoration projects.

6. Gap analysis. What needs to be done and is not getting done for sub-regional priority habitats

Science & Data Objectives

OBJECTIVE Selected:

2. Work to achieve ACFHP Science and Data Needs (ACFHP, 2011) and fulfill science and data responsibilities established by NFHAP.

OBJECTIVE Not Selected:

1. Maintain or increase the resiliency of Sub-regional Priority Habitats to the impacts of climate change through restoration activities.

Science and Data Objective 2: Work to achieve ACFHP Science and Data Needs (ACFHP, 2011) and fulfill science and data responsibilities established by NFHAP.

STRATEGIC ACTIONS Selected:

1. Develop additional products and conduct continuing analysis of the Species-habitat Matrix.

2. Continue to synthesize, update, and fill in information gaps in the Assessment, and identify new applications.

3. Beginning with the results of the Assessment and the work conducted by the National Fish Habitat Science and Data Committee, refine data and associated GIS layers to produce maps and other products that can be used to inform the goals and objectives laid out in this plan and to develop time-bound, spatially-explicit, and quantitative conservation objectives in future Plans or revisions to the Strategic Conservation Plan.

Science and Data Objective 2: Work to achieve ACFHP Science and Data Needs (ACFHP, 2011) and fulfill science and data responsibilities established by NFHAP.

STRATEGIC ACTIONS Not Selected:

4. Develop Fish Habitat Occupancy Models and the information needed to support them.

5. Develop project tracking and evaluation capabilities for the purpose of capturing, assessing, and reporting conservation results to stakeholders.

Science and Data Objective 2: Work to achieve ACFHP Science and Data Needs (ACFHP, 2011) and fulfill science and data responsibilities established by NFHAP.

Strategic Action 1: Develop additional products and conduct continuing analysis of the Species-habitat Matrix.

TASKS Selected:

1. Identify number of publications and specific journals to submit manuscript for the existing matrix

2. Prepare outline

3. Prepare publication(s); submit for review to all coauthors

4. Peer-review

Science and Data Objective 2: Work to achieve ACFHP Science and Data Needs (ACFHP, 2011) and fulfill science and data responsibilities established by NFHAP.

Strategic Action 2: Continue to synthesize, update, and fill in information gaps in the Assessment, and identify new applications.

TASKS Selected:

1. Check with Caroly to see if fits under her work plan
2. Subcommittee conference call and in-person meeting to ID work plan
3. ID funding sources if needed

Science and Data Objective 2: Work to achieve ACFHP Science and Data Needs (ACFHP, 2011) and fulfill science and data responsibilities established by NFHAP.

Strategic Action 3: Beginning with the results of the Assessment and the work conducted by the National Fish Habitat Science and Data Committee, refine data and associated GIS layers to produce maps and other products that can be used to inform the goals and objectives laid out in this plan and to develop time-bound, spatially-explicit, and quantitative conservation objectives in future Plans or revisions to the Strategic Conservation Plan.

TASKS Selected:

1. Check with Moe to see if fits under his work plan

2. Review habitat assessments that have been done for the FHPs in Region 3 and 6 and determine if ACFHP would like a similar product.

3. If steering committee and science and data committee are interested, determine if the organization that worked on the habitat assessments in Region 3(I think it was Downstream Strategies) is available and how much they would charge.

4. Subcommittee conference call to take ideas from the National Assessment and Midwest FHP's assessments and make a work plan to make them useful at a regional scale and for coastal habitats. Workplan would include action items and a timeline.

5. ID funding sources

Science and Data Objective 2: Work to achieve ACFHP Science and Data Needs (ACFHP, 2011) and fulfill science and data responsibilities established by NFHAP.

Strategic Action 3: Beginning with the results of the Assessment and the work conducted by the National Fish Habitat Science and Data Committee, refine data and associated GIS layers to produce maps and other products that can be used to inform the goals and objectives laid out in this plan and to develop time-bound, spatially-explicit, and quantitative conservation objectives in future Plans or revisions to the Strategic Conservation Plan.

TASK Not Selected:

6. Give contractor guidance on the incorporation of existing maps and/or data layers and/or geodatabases (species occurrence, impervious surface, ag. use, wetlands inventory, SAV). Determine how a coastal assessment would differ from inland assessments.

Communication & Outreach Objectives

OBJECTIVES Selected:

1. Develop or maintain physical or virtual information or avenues for communicating information to partners and the broader conservation community.

2. Develop or maintain relationships with partners and the broader conservation community.

Communications and Outreach Objective 1: Develop or maintain physical or virtual information or avenues for communicating information to partners and the broader conservation community.

STRATEGIC ACTIONS Selected:

1. Maintain a website that meets the needs of partners and the broader conservation community.

3. Attend events such as conferences or meetings to promote ACFHP's mission and activities and encourage new partners to join.

STRATEGIC ACTION Not Selected:

2. Develop/use outreach materials (e.g. display, fact sheets) that meet the needs of partners and the broader conservation community.

Communications and Outreach Objective 1: Develop or maintain physical or virtual information or avenues for communicating information to partners and the broader conservation community.

Strategic Action 1: Maintain a website that meets the needs of partners and the broader conservation community.

TASKS Selected:

1. Update the Funding, Conference, Other Events, Funded Projects, Endorsed Projects, and Outreach pages

2. Send out periodic Breaking News items and maintain archives

TASK Not Selected:

3. Add a “Whitewater to Bluewater” page, or link to one

Communications and Outreach Objective 1:
Develop or maintain physical or virtual information or avenues for communicating information to partners and the broader conservation community.

Strategic Action 3: Attend events such as conferences or meetings to promote ACFHP's mission and activities and encourage new partners to join.

TASKS Selected:

1. Present at American Fisheries Society Annual Meeting and/or Restore America's Estuaries Conference

Communications and Outreach Objective 2: Develop or maintain relationships with partners and the broader conservation community.

STRATEGIC ACTIONS Selected:

2. Cooperate and exchange lessons learned with other landscape or regional partnerships and the National Fish Habitat Board.

3. Promote the missions of ACFHP and NFHAP by participating in NFHAP's legislative strategy to further the objectives of all fish habitat partnerships and coordinate such activities with the legislative staff in each partner organization.

STRATEGIC ACTION Not Selected:

1. Develop a protocol for identifying and bringing in new partners.

Communications and Outreach Objective 2: Develop or maintain relationships with partners and the broader conservation community.

Strategic Action 2: Cooperate and exchange lessons learned with other landscape or regional partnerships and the National Fish Habitat Board.

TASK Selected:

2. Develop individual FHP and joint messaging strategies that would identify key target audiences and generate core messages for members of the partnerships to communicate clearly and consistently with those audiences.

TASK Not Selected:

1. Hold joint FHP Communications and Outreach meetings quarterly via conference call and/or WebEx to provide regular, focused coordination of overall communications and outreach efforts.

Communications and Outreach Objective 2: Develop or maintain relationships with partners and the broader conservation community.

Strategic Action 3: Promote the missions of ACFHP and NFHAP by participating in NFHAP's legislative strategy to further the objectives of all fish habitat partnerships and coordinate such activities with the legislative staff in each partner organization.

TASKS:

- None

TASKS NOT SELECTED

- Identify staff working with congressional staff
- Meet with state staff who work with their delegation
- Review guides and identify Federal Representatives or Senators, particularly those that are on resources appropriation committees.

Finance Objectives

OBJECTIVE Selected:

2. Secure ACFHP operational funding.

Objective Not Selected:

1. Develop a mechanism and infrastructure within ACFHP for managing finances.

Finance Objective 2: Secure operational funding for ACFHP.

STRATEGIC ACTIONS Selected:

2. Secure project funding opportunities.

3. Identify private partners who can assist in providing matching funds to support operational and on-the-ground project activities.

STRATEGIC ACTION Not Selected:

1. Leverage conservation dollars.

Finance Objective 2: Secure ACFHP operational funding.

Strategic Action 2: Secure project funding opportunities.

TASKS Selected:

2. Solicit, rank, and submit a list of priority projects to FWS for FY13 NFHP funding.

3. Apply for NOAA Community Based Restoration funding

THEN……..

1. Endorse applicable projects for NFWF/NOAA protection funding

Finance Objective 2: Secure ACFHP operational funding.

Strategic Action 3: Identify private partners who can assist in providing matching funds to support operational and on-the-ground project activities.

TASK Selected:

Identify a short list of foundations and schedule a phone call or meeting

Summary Status of the 29 Tasks Selected

- Completed tasks – Blue - 9
- Ongoing tasks– no endpoint - Purple – 9
- Ongoing tasks – with endpoint, not complete – Orange - 9
- To Do or Action needed tasks– no activity yet - Green - 2 (one is impossible – NOAA funding changed)

Tasks we discussed adding 1/2

Protection Objective 5. Maintain or increase the resiliency of Sub-regional Priority Habitats to the impacts of climate change.

Protection Objective 1. Strategic Action 1. Task 6. Look in state Wildlife Action Plans to see if there are priority lists, and/or information which can contribute to the development of such lists.

Restoration Objective 4. Maintain or increase the resiliency of Subregional Priority Habitats to the impacts of climate change through restoration activities.

Restoration Objective 1. Strategic Action 3. Task 2. Solicit proposals for barrier removal in identified priority watersheds.

Restoration Objective 1. Strategic Action 1. Remove dams and other physical barriers in areas identified as a priority for fish movement restoration.

Restoration Objective 2. Strategic Action 1. Task 5. Steer restoration practitioners to sub-regional priority habitats via compiled list of sub-regional priority habitat restoration projects.

Science and Data Objective 1. Maintain or increase the resiliency of Sub-regional Priority Habitats to the impacts of climate change through restoration activities.

Tasks we discussed adding 2/2

Science and Data Objective 2. Strategic Action 3. Task 6. Give contractor guidance on the incorporation of existing maps and/or data layers and/or geodatabases (species occurrence, impervious surface, ag. use, wetlands inventory, SAV). Determine how a coastal assessment would differ from inland assessments.

Communication and Outreach Objective 1. Strategic Action 2. Develop/use outreach materials (e.g. display, fact sheets) that meet the needs of partners and the broader conservation community.

Communication and Outreach Objective 1. Strategic Action 1. Task 3. Add a "Whitewater to Bluewater" page, or link to one

Communication and Outreach Objective 2. Strategic Action 1. Develop a protocol for identifying and bringing in new partners.

Communication and Outreach Objective 2. Strategic Action 2. Task 1. Hold joint FHP Communications and Outreach meetings quarterly via conference call and/or WebEx to provide regular, focused coordination of overall communications and outreach efforts.

Finance Objective 1. Develop a mechanism and infrastructure within ACFHP for managing finances.

Finance Objective 2. Strategic Action 1. Leverage conservation dollars.

Finance Objective 2. Strategic Action 2. Task 1. Endorse applicable projects for NFWF/NOAA protection funding

National Fish Habitat Action Plan
Hall of the States
444 North Capitol Street, NW,
Suite725, Washington, DC 20001
Tel: 202/624-7890 ♦ F: 202/624-7891

Web www.fishhabitat.org

October 19, 2009

Atlantic Coastal Fish Habitat Partnership
c/o Emily Greene, Coordinator
Atlantic States Marine Fisheries Commission
1444 Eye Street NW, 6th Floor
Washington, DC 20005

Dear Ms. Greene:

Congratulations! The National Fish Habitat Board (Board) approved the Atlantic Coastal Fish Habitat Partnership's (ACFHP) application to become a fully recognized Fish Habitat Partnership under the National Fish Habitat Action Plan at its October 2009 meeting.

The ACFHP represents the first collaborative Atlantic coast-wide approach to addressing fish habitat conservation needs. Its early products – the Species-Habitat Matrix and the Assessment of Existing Information – are innovative efforts to ground the ACFHP in science and ensure that ACFHP is complementary to existing conservation action. Through the involvement of 16 States and many other government and NGO partners, the ACFHP is poised to advance the conservation of Atlantic Coast fish habitats in tangible ways.

The Board's recognition of ACFHP as a Fish Habitat Partnership marks the beginning of a new long-term relationship. Our work together has just begun. In that spirit, the Board provides the following observations and recommendations regarding your role as a Fish Habitat Partnership.

The ACFHP should continue to coordinate with the Science and Data Committee to ensure that your habitat assessments are compatible with the National Fish Habitat Assessment and that your data system is compatible with the National Data System that is in development.

The ACFHP should initiate and maintain communication as appropriate with other recognized and candidate Fish Habitat Partnerships whose interests and focus areas may overlap those of ACFHP. At a minimum, this includes the Southeast Aquatic Resources Partnership, the Eastern Brook Trout Joint Venture, and the Reservoir Fisheries Habitat Partnership.

The ACFHP should consult with other coastal Fish Habitat Partnerships and the Science & Data Committee to develop a process for using inland habitat condition scores in the assessment of coastal waters. This is a difficult problem that will be faced by all coastal Fish Habitat Partnerships.

We look forward to working in partnership with you to protect, restore, and enhance the nation's fish and aquatic communities and improve the quality of life for the American people. For its part, the Board will be your advocate to bring new financial and technical resources to achieve the goals of the Action Plan. Together, we can make a difference.

Sincerely,

Kelly Hepler, Chairman
National Fish Habitat Board

On-The-Ground Projects

Spotlight on Renewing Diadromous Fish Passage in Patten Stream

The Upper Patten Stream Watershed, located in Surry, Maine, historically supported a thriving commercial alewife fishery and was frequented by many diadromous fish species. While many factors have led to the decline of these populations, the physical barrier of the Route 172 road crossing has had a significant influence on fish movement in the area. Route 172 is the sole barrier between Patten Bay and the upper drainage and is located just upstream of tidewater. The crossing is only slightly undersized, but covers a channel in the bedrock that was historically used for migrations. As a result, Patten Stream's alewife are nearly extirpated, surviving mainly due to volunteers who carry fish over the barriers in nets so they may reach spawning habitat.

The Route 172 barrier on Patten Stream (facing upstream), with temporary fish ladder in place.

This project will restore access to 20 stream miles and 1,200 alewife spawning acres in Patten Stream through the installation of a nature-like rock weir fishway. The spacing, orientation, elevations, and overall configuration of the rock weirs are designed to adequately dissipate energy associated with higher flows that maybe become more common with shifting climatic conditions. Primary and secondary notches are provided to facilitate passage under a range of flows, and the modular design of the weirs facilitates cost-effective adjustments in notch elevation if warranted.

Species such as blueback herring, American eel, sea run brook trout, and endangered Atlantic salmon will also benefit from this project, able to use the fishway to move up and downstream freely.

The U.S. Fish and Wildlife Service has provided the Atlantic Coastal Fish Habitat Partnership with conservation dollars to fund numerous components of the project, including supplies for construction materials, labor, and onsite engineering. Community events, school trips, and a volunteer alewife monitoring program are all planned during the course of this project as well.

Project text provided by the Town of Surry.

For more information on the Partnership visit us at: www.atlanticfishhabitat.org

Project Partners

Town of Surry

Blue Hill Heritage Trust

Maine Department of Transportation

Maine Coastal Program

Maine Department of Naturay Resources

National Oceanic and Atmospheric Administration

Gulf of Maine Council

US Fish and Wildlife Service

Atlantic Coastal Fish Habitat Partnership

On-The-Ground Projects

Spotlight on Cape Fear River Fisheries Enhancement Project

Project Partners

Cape Fear River Watch

National Atmospheric and Oceanic Administration

Southeast Aquatic Resources Partnership

Martin Marietta Aggregates

Dial Cordy and Associates

US Fish and Wildlife Service

Atlantic Coastal Fish Habitat Partnership

The Cape Fear River was one of the most productive rivers for sturgeon and American shad in North Carolina at the beginning of the 20th century, but current commercial landings are 87% lower than historic estimates. Population declines and reduced access to spawning habitat have been caused by three lock and dam structures located between Wilmington and Fayetteville. Lock and Dam 1 has a completed rock arch ramp, allowing volitional fish passage to Lock and Dam 2.

However, 70% of fish are unable to pass the Lock and Dam 2 barrier, and until fish passage is improved, habitat restoration downstream of the dam remains the priority. Clean, hardbottom habitats with interstitial spaces are preferred spawning habitat for many riverine and diadromous fish species. Unfortunately, much of this preferred habitat in the Cape Fear river is inaccessible and is buried under sediment from numerous natural and anthropogenic sources.

Lock and Dam 2. Native rock substrate was placed approximately 800 feet downstream.

This project restored 0.5 acres of preferential spawning habitat for American shad and sturgeon downstream of Lock and Dam 2, facilitating 32 miles of larval rearing habitat between Lock and Dams 1 and 2.To compensate for reduced access to historical spawning habitat due to fish passage barriers, 1,000 tons of mixed native rock were placed in the river, and monitored for spawning success for two years. Thirty volunteers directly assisted in the restoration efforts by handling the beginning and final substrate placements, which will directly benefit American shad and Atlantic and shortnose sturgeon, and indirectly provide potential spawning habitat for striped bass and river herring.

The U.S. Fish and Wildlife Service provided the Atlantic Coastal Fish Habitat Partnership with conservation dollars to fund the third season of biological monitoring as well as a side-scan sonar survey to ensure the habitat is stable. Both efforts are essential for ensuring the success of the enhancement project.

Project text and photos provided by Cape Fear River Watch. Lock and Dam 2 photo taken by Mike Wicker, USFWS.

For more information on the Partnership visit us at: www.atlanticfishhabitat.org

On-The-Ground Projects

Spotlight on Cotton Gin Mill Dam Removal and Fish Passage Project

Project Partners

The Nature Conservancy

Massachusetts Division of Ecological Restoration

US Fish and Wildlife Service

Atlantic Coastal Fish Habitat Partnership

The Cotton Gin Mill Dam in East Bridgewater, Massachusetts was built in the mid-1800's, and since then has blocked flow of the Satucket River. The dam has hindered natural river processes, such as sediment transport and temperature regulation. It also acts as a barrier to passage for diadromous fishes including river herring (*Alosa pseudoharengus, A. aestivalis*) and American eel (*Anguilla rostrata*).

The Nature Conservancy will work with partners to remove the dam, allowing fish access to 124 acres of spawning habitat, with potential for 528 more acres. It will also restore 4.4 river miles upstream. The dam currently blocks passage from Narragansett Bay to the river upstream and Robbins pond, both of which provide suitable nursery habitat for river herring.

Cotton Gin Mill Dam, looking upstream.

The effectiveness of this project in restoring migratory fish passage will be measured in the short term through changes in the length of connected river network and in characteristics of physical habitat. Fish counts will be conducted for at least five years following removal, and the project team is collaborating with the Massachusetts Division of Marine Fisheries to conduct fish monitoring at other dam removal sites in the watershed.

Removing the Cotton Gin Mill Dam, restoring river processes in the Satucket River, and restoring riparian habitat will improve system health and resilience to stresses such as increased temperature and more intense storm events due to climate change. Increased habitat available to migratory fish will minimize the chance that stochastic events will wipe out all spawning or juvenile survival in a given year.

The U.S. Fish and Wildlife Service provided the Atlantic Coastal Fish Habitat Partnership with conservation dollars to fund a portion of the dam removal.

Project text and photo provided by The Nature Conservancy. Photos by Cathy Bozek.

For more information on the Partnership visit us at: www.atlanticfishhabitat.org

APPLICATION INSTRUCTIONS
for the
FY2016 Atlantic Coastal Fish Habitat Partnership Application Cycle

The Atlantic Coastal Fish Habitat Partnership (ACFHP) is requesting project applications to restore and conserve habitat necessary to support coastal, estuarine dependent, and diadromous fish species. Federal funding available under the National Fish Habitat Partnership (NFHP) through the U.S. Fish and Wildlife Service (Service) will be used to support the top ranked proposals. The maximum award for an individual project is $50,000. All proposed projects must be developed in coordination with the nearest Service Sponsoring Office (listed by state in Appendix D). In addition to submitting all application materials to the e-mail address below, a draft application must be submitted to the Service Sponsoring Office by August 28, 2016 to be eligible for funding and ensure that your project meets the ACFHP funding criteria.

Guidelines for the use of NFHP funds by the Service can be found at http://www.fws.gov/policy/717fw1.html. All applicants are encouraged to review this guidance. These funds can only be used for on-the-ground habitat conservation and restoration projects and associated design and monitoring activities. **They may not be used for acquisition in fee, easement or for projects required as part of a regulatory action. At this time, ACFHP is not soliciting applications for research projects or feasibility, engineering and design projects that do not include on-the-ground habitat restoration.** Projects must have a 1:1 contribution from other sources. All projects are expected to have received all necessary permits and be completed within 2 years of receipt of funding.

Applications will be reviewed and ranked by ACFHP based on their potential to help the partnership meet its protection and restoration objectives described in its Conservation Strategic Plan. This year, ACFHP will be testing the incorporation of decision support tools into our evaluation. You are encouraged to submit information on your project ranking in one of the following tools, if applicable:

Southeast Aquatic Connectivity Assessment Program (SEACAP): http://maps.tnc.org/seacap/

Chesapeake Bay Habitat Tool: http://maps.tnc.org/chesapeakehabitat/

Northeast Aquatic Connectivity Project: please contact Erik Martin, The Nature Conservancy at emartin@tnc.org for access

Chesapeake Fish Passage Prioritization: http://maps.tnc.org/EROF_ChesapeakeFPP/

There is no score associated with the use of a decision support tool or your project's ranking in the tool this year; we are only interested in gathering information on the value of incorporating these tools for the future. You will not be penalized in any way by withholding or submitting information from the decision support tools.

The following is required to apply:

1. **Application Form** -A blank application in word format is available on the ACFHP website at: www.atlanticfishhabitat.org/acfhpfunding/. The following pages of this document provide guidance for completing the application.

2. **Photographs and Photograph Release Form** –Release forms are available on the ACFHP website at: www.atlanticfishhabitat.org/acfhpfunding/. Forms can be signed and scanned or mailed separately.

3. **Coordination with the Sponsoring U.S. Fish and Wildlife Service Office -** Applicants are required to develop their projects in coordination with the nearest Service Sponsoring Office (Appendix D). This coordination must take place by **August 28, 2015**. Service Sponsoring Offices must enter the project in the Service's database for funding consideration. Additionally, they can provide technical assistance to applicants during project development, the application process, and during project implementation and monitoring. They will also provide feedback on how well your project meets the goals of NFHP and ACFHP.

The following is suggested but not required:

4. **Copies of any permit letters received to date from authorizing agencies**

5. **Letter of Support** – Obtain a letter of support from the appropriate state natural resource agency or other pertinent supporters of your project. This letter can be from an ACFHP state contact. Contact information for ACFHP members can be found at: www.atlanticfishhabitat.org/aboutus/partners/.

Applications must be received by Tuesday, September 21, 2015 at midnight. Applications in electronic format (MS Word format only) should be e-mailed to the ACFHP coordinator, Lisa Havel at **lhavel@asmfc.org**

Incomplete applications will not be considered.

Applicants will be notified of their projects' ranking and funding status as that information becomes available. The amount of funding and time of availability is unknown at this time. All projects that receive Service NFHP funding are required to provide annual progress reports to the Service and project completion forms, with post project photos, to ACFHP.

For questions, please contact:

Lisa Havel, Atlantic Coastal Fish Habitat Partnership
1050 N. Highland Dr. Suite 200 A – N
Arlington, VA 22201
Phone: (703) 842-0743
Email: LHavel@asmfc.org

APPLICATION GUIDANCE

This document is provided to assist applicants in preparing a complete application. It provides instructions and guidance for each of the items on the application form. Applicants should work with the nearest U.S. Fish and Wildlife Service Sponsoring Office on the development of the project and application. A blank application form can be found on the ACFHP website.

Cover Page:

The cover page should contain the required information in the sequence and format specified below and in the following page. Do not attach a transmittal letter, executive summary or any additional documentation that is not requested.

A. Project Title
   The title must be 100 characters or less and contain the initials NFHP as well as the type of project, body of water, city, and state (ex. SAV Restoration, Peconic Estuary, Suffolk County, NY NFHP).

B. Project Location (State, County, City, Congressional District)
   To find congressional districts, please visit:
   www.nationalatlas.gov/printable/congress.html

C. ACFHP Subregion
   Please refer to the map of ACFHP Subregions in Appendix A.

D. Applicant Information
   i. Name of Organization
      This organization will be named as the grantee.
   ii. Executive Director
      Alternatively, the person that should receive all contractual information for signature.
   iii. Address of Organization
   iv. Phone
   v. Fax
   vi. E-mail
   vii. Congressional district of applicant
      Please use web address above to find district.
   viii. DUNS Number and TIN

E. Project Contact
   i. Lead Project Officer and Title (if different from above)
   ii. Alternate contacts (if appropriate)
   iii. Address (if different from above)
   iv. Phone (if different from above)
   v. Fax (if different from above)
   vi. Email (if different from above)

F. U.S. Fish and Wildlife Service Coordination Information
   i. Date coordination began and Service involvement

All applicants must coordinate with the Service Sponsoring Office in their area by August 28, 2015. Please see Appendix D to determine the appropriate Service contact. Please check the box below to indicate the level of Service involvement in your project

__ process grant/coop agreement __ assist with permit applications
__ assist with project design __ provide heavy equipment operators
__ provide engineer plans __ pre- and post- project monitoring

ii. FONS Database Project Number (obtained from Service contact)
iii. Service Sponsoring Office
iv. Name of Service contact
v. Address
vi. Phone
vii. Email

G. Funding Information
   i. Funding being sought for: __ Construction, __Design, __Planning, __Monitoring, __Outreach
   ii. Funding amount requested
   Funding amount requested from NFHP, through this application.
   iii. Total cost of the project
   iv. Total Federal Matching
   Total amount of federal dollars used as match for the ACFHP/NFHP funds you are applying for. Please include in-kind and cash match from all federal sources.
   v. Total Non-Federal Matching
   Total amount of non-federal dollars used as match for the ACFHP/NFHP funds you are applying for. Please include in-kind and cash match from all non-federal sources.

I. Project Eligibility (please answer 'yes' or 'no' to the following):

If you answer 'yes' to any of these questions, the project is ineligible for funding.

A. Are the actions proposed mandated by a regulatory program, court order or decree?

B. Will any amount of the requested funds be applied to previous expenditures?

C. Will the requested funds be used for realty costs associated with the project?

D. Will the requested funds be used for operation or maintenance of facilities?

E. Is the project primarily a research study?

F. Will the requested funds be used for incentive payments (Annual payments to encourage participation (e.g. some NRCS Farm Bill programs))?

II. Project Description and Scope of Work:

Please adhere to the character limits. Your Service Contact will enter this narrative section into a database that cannot accept more characters than the number listed.

A. Project description (max characters: 500)
   Provide a short summary that conveys an understanding of what the project involves and will accomplish. Please describe the following: location, need for the project, purpose, goals, objectives, who will do the work and who owns the land.

B. Importance of the project to the resource (max characters: 350)
   - Describe the location of the project including the habitat type and condition, watershed (if applicable) and surrounding area.
   - State the fish species that will benefit from the proposed action.
   - Describe the benefit to the resource.

C. Problem and specific cause of the problem (max characters: 350)
   Describe the current threat to the habitat resource.

D. The objective of the project with reference to the problem (max characters: 350)

E. Proposed methods (max characters: 350)
   Describe the specific on-the-ground activities to be undertaken to achieve the project objectives and specifically address what portion of the project will be paid for by requested NFHP funds.

F. Additional Information (no character limits)
   a. Technical Design
      Briefly describe the technical design and scientific justification for why this design will achieve the objectives listed above. Describe the current stage of project design, who completed or will complete the project design, and how the design will be implemented. If available, please attach an electronic copy of the project design (attachment should not exceed 3 pages).
   b. Permits
      For projects that require permits and consultations, applicant should list all necessary permits, the timeline for completing permits, the status of the permits, and include documentation of permits already secured for the project.
   c. Pre- and post-project monitoring
      Describe all planned pre- and post- project monitoring and evaluation activities, including quantifiable success criteria (e.g., acres restored, stream miles opened, number of fish passing blockage, documented spawning of target species) used to determine if the proposed objectives were achieved. Monitoring required by permits should be included in this description. Describe how the monitoring plan will achieve scientifically sound results with respect to sampling design and statistical analysis.
   d. Outreach
      Describe outreach that will be conducted related to this project. This should include communication with congressional offices, local communities and their leadership (press releases, ribbon cutting ceremonies, etc.), schools, on-site signs, and communication about the project to the natural resource and scientific community.

III. Landscape Description of the Project:

A. Provide **one** map of the project area
   The map should be in the following format:
   - Color (preferred) or black and white (acceptable)
   - Large-scale detail (e.g., 1 inch = 1 mile, or greater), clearly showing the scope and location of the project
   - Should include scale bar, north arrow, counties or other appropriate political boundaries, etc.

B. Provide the GPS coordinates for the project using UTM NAD 83
If the project involves passage barriers, please include the coordinates and name for each barrier. If it is a habitat project, please include coordinates of a representative location within the center of the project boundary. If the project includes multiple sites, please include coordinates for each site.

C. Provide one digital picture of the project area
Each photo should be in JPG format and be accompanied by:
- A short, descriptive caption
- Photographer's name and organization
- Signed photograph release form

D. If applicable, describe how this project will reduce the impacts of climate change on fish or aquatic wildlife habitat
Aquatic wildlife includes: macroinvertebrates, amphibians, and reptiles

IV. Evaluation Questions:

If there is more than one project site and sites are located in more than one region, answer only for the region in which the majority of the project sites reside.

A. Does the project support or address an ACFHP Subregional Priority Habitat?
Definitions can be found in Appendix B.

North Atlantic
- Riverine Bottom
- Marine and Estuarine Shellfish Beds
- Submerged Aquatic Vegetation (meso- to polyhaline)

Mid-Atlantic
- Riverine Bottom
- Submerged Aquatic Vegetation
- Tidal Vegetation

South Atlantic
- Marine and Estuarine Shellfish Beds
- Riverine Bottom
- Tidal Vegetation

South Florida
- Coral and live / hardbottom
- Submerged Aquatic Vegetation (meso- to polyhaline)
- Mangrove

B. Does the project support or address an ACFHP fish habitat but not one that is a Priority for the Subregion in which this project resides?
Definitions for ACFHP habitats can be found in Appendix B.

C. Does the project address one or more of the ACFHP Habitat Protection or Restoration Objectives?
Please specify the Habitat Protection Objective(s) and/or Habitat Restoration Objective(s) addressed by the project and briefly describe how it (they) will be addressed. These Objectives can be found in Appendix C.

D. Is the project located in a priority area identified in an approved state or federal management plan?

For example, a State Wildlife Action Plan, state or federal recovery plan, or National Estuary Program Comprehensive Conservation and Management Plan. Please provide a website address or copy of the most recent version of the plan (cover page and relevant sections will suffice).

E. How will the project address a root cause and contribute to a long-term, self-sustaining solution to the problem(s) described above?
If it is a living shoreline, you must demonstrate with citation of your state's definition of a living shoreline how the project will benefit fish species.
In addition, please address how long the proposed project will last before maintenance is required.

F. Does the project address the habitat needs of trust species?
Trust species include species managed under a Federal Fishery Management Plan or by the Atlantic States Marine Fisheries Commission, tribal trust fish resources, fish species within Fish and Wildlife Service lands, anadromous and catadromous fishes, other interjurisdictional fishes or aquatic species, endangered, threatened, candidate, or proposed species federally listed under the Endangered Species Act.

G. Are there direct social or economic benefits of the project? If so, please describe those benefits.
Social and economic benefits include providing new opportunities for recreational fishing, improving fishing and boating access, or markedly increasing commercial fishing harvest.

H. What is the project's rank in a decision support tool? This response will not be scored, but will inform the project evaluators on how to incorporate these tools in future requests for projects. If you do not use a tool, please say 'N/A,' if you do, please include the following information: tool used, rank or tier, whether or not you adjusted any criteria within the tool, and if so, what you changed. If you use a tool that incorporates areas outside of the ACFHP boundaries (e.g. SEACAP), please limit the region being assessed to the states that are located within the ACFHP region (please see Appendix A for map of ACFHP boundaries).

V. **Qualifications** (not to exceed 1 page total)**:**

Include a brief abstract of relevant qualifications for the project lead and most important team members.

VI. **Budget Table** (the budget table below is an example, please add/change line items as needed)**:**

Item	**Total Cost**	**NFHP Requested Funds**	**Partner Funding**
Coordination			
Travel	$1,500		$1,500
Project Coordinator Salary to Monitor Contracts	$3,000		$3,000
Outreach/Education	$1,000		$1,000
Contracted Services			

Heavy Equipment Rental and Operation	$15,000	$5,000	$10,000
Contractual Labor	$30,000	$17,000	$13,000
Design and Permitting	$1,000		$1,000
Monitoring			
Pre- and post- project physical and biological monitoring	$5,000	$5,000	
Total Costs	$56,500	$27,000	$29,500

NOTE: This is not a Federal Grant program and therefore does not exclude non-federal match used here from being matched to other Federal Grant sources to leverage funds for the project. Indicate if partnering contributions are in-kind or new cash. NFHP requests should illustrate how the dollars will be spent and by what organization. Overhead such as utilities, office space, and salary to prepare applications and develop partnerships will not be funded with NFHP funds and should not be a line item or built into the project. Activities that directly relate to completion of the project, such as travel and salary to do design work let and/or monitor contracts, are allowable expenses with NFHP funds but should not constitute more than 10% of the funding request.

VII. Partners (the partner table below is an example, please add/change line items as needed (e.g. Maryland DNR instead of State Agency))**:**

Please name all project donors/partners indicating their contributions using the table below. Be sure to list all project donors by name rather than in general terms (e.g. Maryland DNR instead of State Agency)

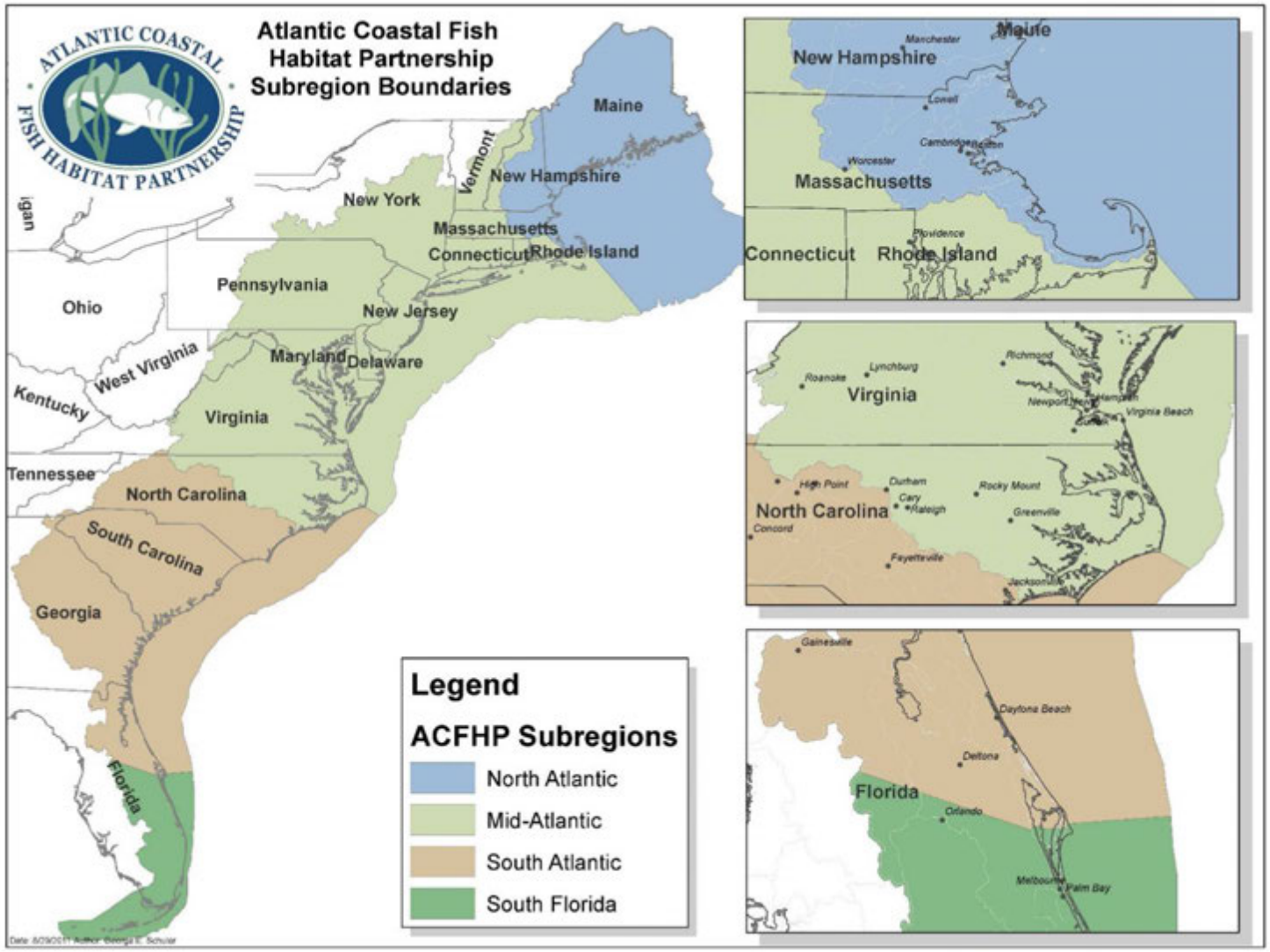
Project Partner	**Amount**	**Cash/In-Kind**	**Federal or Non-Federal**	**Pending/Received**
State Agency	$10,000	Cash	Non-Federal	received
XYZ Foundation	$1,500	In-Kind	Non-Federal	pending
Federal Agency	$15,000	Cash	Federal	received
Watershed Association	$3,000	In-kind	Non-Federal	pending
Total	$29,500			

VIII. Timeline of Project Activities (the table below is an example, please add/change line items as needed)**:**

Provide a summarized list of all project activities, not only activities for which NFHP funds are being requested, using the format below.

Project Activity	**Anticipated Dates of Implementation**
Project design	January 15-March 30, 20xx
Permitting process	February 25-June 1, 20xx
Pre-project monitoring	5 events, March 15-May15, 20xx
Construction	July 1-July 15, 20xx
ACFHP/Service Annual Report	January 15, 20xx
Post-project monitoring	1 year, beginning January 20xx

Appendix A. Atlantic Coastal Fish Habitat Partnership Sub Regional Boundaries: North Atlantic, Mid-Atlantic, South Atlantic, and South Florida



Appendix B: ACFHP Habitat Characterizations

Note that the habitat category into which a habitat type falls is underlined.

Marine and Estuarine Shellfish Beds

Oyster aggregations/reef

Structures formed by the Eastern oyster (*Crassostrea virginica)* that provide the dominant structural component of the benthos, and whose accumulated mass provides significant vertical relief (> 0.5 m).

Scallop beds

Areas of dense aggregations of scallops on the ocean floor. Common Atlantic coast species include: (1) the large Atlantic sea scallop (*Placopecten magellanicus*), which ranges from Newfoundland to North Carolina; (2) the medium-sized Atlantic calico scallop (*Argopecten gibbus*), which is found in waters south of Delaware; and (3) the bay scallop (*Argopecten irradians),* which occurs from Cape Cod to Florida, as well as in the Gulf of Mexico.

Hard clam beds

Dense aggregations of the hard clam (*Mercenaria mercenaria)* found in the subtidal regions of bays and estuaries to approximately 15 m in depth. Clams are generally found in mud flats and firm bottom areas consisting of sand or shell fragments.

Shell accumulations

Shells of dead mollusks sometimes accumulate in sufficient quantities to provide important habitat. Accumulations of Eastern oyster shells are a common feature in the intertidal zone of many southern estuaries.

Coral and Live/Hard Bottom

Coral reefs

Reef-building corals are of the order Scleractinia, in the class Anthozoa, of the phylum Cnidaria. Coral accumulations are restricted to warmer water regions, where the average monthly temperature exceeds 18°C (64°F) throughout the year. Through symbiosis with unicellular algae, reef-building corals are the source of primary production in reef communities.

Patch reef, soft corals, or anemones

A patch reef is an isolated, often circular, coral reef usually found within a lagoon or embayment. Soft corals are species of the anthozoan order Alcyonacea, of the subclass Octocorallia. In contrast to the hard or stony corals, most soft corals do not possess a massive external skeleton (e.g. sea pens and sea fans). Anemones are cnidarians of the class Anthozoa, that possesses a flexible cylindrical body and a central mouth surrounded by tentacles found in soft sediments.

Live rock

Calcareous rock that is removed from the vicinity of a coral reef with some of the life forms still living on it. These may include bacteria, coralline algae, sponges, worms, crustaceans, and other invertebrates.

Macroalgae

Large marine multi-cellular macroscopic algae (seaweeds). There are three types of macroalgae: green, brown, and red. Examples of macroalgae species found along the Atlantic coast include:

Chlorophyta (green algae)

Ulva lactuca, sea lettuce

Phaeophyta (brown algae)

Fucus vesiculosus, bladderwrack; *Laminaria* spp.; *Sargassum* spp.

Rhodophyta (red algae)

Chondrus crispus, Irish moss

Submerged Aquatic Vegetation (SAV)

SAV refers to rooted, vascular plants that live below the water surface in large meadows or small patches in coastal and estuarine waters. SAV can be further classified by the range of salinity of the waters in which they are found.

Tidal fresh and oligohaline plant species

Generally found in areas where salinity ranges from 0.5 to 5.0 ppt. Examples include:

Vallisneria americana, wild celery

Ceratophyllum demersum, coontail

Mesohaline and polyhaline plant species

Generally found in areas where salinity ranges from 5.0 ppt up to 30 ppt. Examples include:

Zostera marina, eelgrass

Ruppia maritime, widgeon grass

Tidal Vegetation

Estuarine emergent marsh

Salt marsh is an environment in the coastal intertidal zone between land and brackish water. The low marsh zone floods twice daily, while the high marsh floods only during storms and unusually high tides. Smooth cordgrass (*Spartina alterniflora*) dominates the regularly flooded low marsh along much of the Atlantic coast. In addition, salt meadow cordgrass (*Spartina patens*), saltgrass (*Distichlis spicata*), and needle rush (*Juncus* sp.) species comprise much of the vegetative community of the mid to upper saltmarsh and brackish marsh.

Tidal freshwater marsh

Tidal freshwater marsh occurs where the average annual salinity is below 0.5 ppt. It is found along free-flowing coastal rivers, and is influenced twice daily by the incoming tides. Tidal freshwater marsh can be located just upstream of the salt front, where the river essentially backs up as it meets resistance from high tides. Tidal freshwater marsh is characterized by salt intolerant plant species. These include: giant cordgrass (*Spartina cynosuroides*), sawgrass (*Cladium jamaicense*), cattails (*Typha* sp.), arrow arum (*Peltandra virginica*), pickerelweed (*Pontedaria cordata*), blue flag (*Iris virginica*), and softstem bulrush (*Scirpus validus*).

Mangrove

The mangrove ecological community includes four tree species collectively called mangroves. This swamp system occurs along intertidal and supratidal shorelines in southern Florida. The four species found in Florida mangrove swamps are:

Rhizophora mangle, red mangrove

Avicennia germinans, black mangrove

Laguncularia racemosa, white mangrove

Conocarpus erectus, buttonwood

Unvegetated Coastal Bottom

Loose fine bottom

Submerged underwater bottom habitat in estuaries and oceans where the dominate sediment type is mud, silt, or sand.

Loose coarse bottom

Submerged underwater bottom habitat in estuaries and oceans where the dominant sediment type ranges from gravel to cobble.

Firm hard bottom

Submerged underwater bottom habitat in estuaries and oceans where embedded rock or boulders are the dominate sediment types.

Structured sand habitat

Linear, narrow sand features that develop where a stream or ocean current promotes deposition of sand.

Riverine Bottom

Higher gradient headwater tributaries

Streams in which the dominant substrate is comprised of gravel and cobble. The stream slope is greater than 2%. This characterization includes 1st to 3rd order streams[1].

Moderate gradient tributaries

Streams in which the dominant substrate is comprised of sand, gravel, and small cobble. The stream slope is between 0.51% and 2.0%. This characterization includes 1st to 3rd order streams.

Moderate gradient large mainstem river coarser substrate

Rivers in which the dominant substrate is sand, gravel, and cobble. The stream slope is between 0.51% and 2%. This characterization includes 4th order rivers and above.

Moderate gradient large mainstem river finer substrate

Rivers in which the dominant substrate is fine sediments (silt, mud, sand). The stream slope is between 0.51% and 2%. This characterization includes 4th order rivers and above.

Low gradient coastal streams

Generally low gradient 0% to 0.05% in slope. This characterization includes 1st to 3rd order streams located along the coast.

Non-tidal freshwater mussel beds

Freshwater mussel beds, located above tidal influence.

Coastal headwater pond

A pond connected to coastal streams and rivers, generally located near the headwaters.

Non-tidal freshwater marsh

A marsh that occurs in the non-tidal section along a river. The main feature of a freshwater marsh is its openness, with only low-growing or "emergent" plants. It may include grasses, rushes, reeds, typhas, sedges, and other herbaceous plants (possibly with low-growing woody plants) in a context of shallow water.

[1] "*Stream order is a simple and common classification system for river and stream size. The Strahler stream ordering system uses a technique where "first" order streams are the smallest streams. Two first order streams combine to form second order streams, two second order streams combine to form a third order stream, and so on.*" Source: http://www.nbii.gov/portal/server.pt/community/rivers/1345/classification/7174

Appendix C. ACFHP Habitat Protection and Restoration Objectives

Habitat Protection Objectives:

Protection Objective 1: Ensure adequate and effective fish movement past existing or potential barriers to maintain connectivity within Subregional Priority Habitats.

Protection Objective 2: Maintain or improve water quality and hydrology in Subregional Priority Habitats that are currently functioning, through incorporation of BMPs and/or technological controls.

Protection Objective 3: Define the water flows and volumes needed to sustain the structure and function of healthy aquatic ecosystems (including groundwater and surface water interactions, maintaining appropriate salinity regimes) and ameliorate consumptive water usage where detrimental to Subregional Priority Habitats.

Protection Objective 4: Minimize or reduce adverse impacts to Subregional Priority Habitats associated with coastal development and water dependent activities (e.g. recreational boating, and marine transportation).

Protection Objective 5: Maintain or increase the resiliency of Subregional Priority Habitats to the impacts of climate change.

Protection Objective 6: Increase public awareness of the threats facing Subregional Priority Habitats and the protection measures available to avoid and minimize those threats.

Habitat Restoration Objectives:

Restoration Objective 1: Restore and enhance hydrological or physical connections between Subregional Priority Habitats to promote fish utilization and improve overall aquatic health.

Restoration Objective 2: Restore Subregional Priority Habitats, such as replanting eelgrass beds or restoring oyster beds, in locations where threats have been minimized or removed (does not include dam or other barrier removal).

Restoration Objective 3: Restore water quality in areas where it has degraded or eliminated Subregional Priority Habitats.

Restoration Objective 4: Maintain or increase the resiliency of Subregional Priority Habitats to the impacts of climate change through restoration activities.

Appendix D. U.S. Fish and Wildlife Service Sponsoring Offices

State	USFWS Contact
Connecticut	Phil Herzig Central New England Fishery Resources Office 103 East Plumtree Road Sunderland, MA 01375 (413) 548-8002 x130 Phillip_Herzig@fws.gov or Ken Sprankle Connecticut River Coordinator, 103 East Plumtree Road, Sunderland, MA 01375 (413) 548-9138 Ken_Sprankle@fws.gov
Delaware	Sheila Eyler Mid-Atlantic Fish and Wildlife Coordination Office 177 Admiral Cochrane Dr. Annapolis, MD 21401 (O) 410-573-4554 (C) 717-387-2117 Sheila_Eyler@fws.gov
Florida	John Galvez U.S. Fish & Wildlife Service Peninsular Florida Fish and Wildlife Conservation Office 1339 20th Street Vero Beach, FL 32960 (772) 469-4314 John_Galvez@fws.gov or Walter (Tripp) Boltin Wadmalaw Island Fish and Wildlife Conservation Office P.O. Box 69 Wadmalaw Island, SC 29487 (843) 819-1229 Walter_Boltin@fws.gov
Georgia	Walter (Tripp) Boltin Wadmalaw Island Fish and Wildlife Conservation Office P.O. Box 69 Wadmalaw Island, SC 29487 (843) 819-1229 Walter_Boltin@fws.gov

State	USFWS Contact
Maine	Scott Craig Maine Fishery Resources Office 306 Hatchery Rd. East Orland, ME 04431 (207) 469 6701 x226 Scott_Craig @fws.gov
Massachusetts	Phillip Herzig Central New England Fishery Resources Office 103 East Plumtree Road Sunderland, MA 01375 (413) 548-8002 x130 Phillip_Herzig@fws.gov
New Hampshire	Mike Bailey Central New England Fishery Resources Office 151 Broad St. Nashua, NH 03063 (603) 595-0957 Michael_Bailey@fws.gov
New Jersey	Thomas Kehler Northeast Fishery Center P.O. Box 75 Lamar, PA 16848-4247 (570) 726-4247 x117 Thomas_Kehler@fws.gov
New York Adirondack Region	Martha Naley Central New England Fishery Resources Office 103 East Plumtree Road Sunderland, MA 01375 (413) 548-8002 x123 Martha_Naley@fws.gov or Chris Smith Lake Champlain Fishery Resources Office 11 Lincoln Street Essex Junction, VT 05452 802 872-0629 x20 Chris_E_Smith@fws.gov
North Carolina	Walter (Tripp) Boltin Wadmalaw Island Fish and Wildlife Conservation Office P.O. Box 69 Wadmalaw Island, SC 29487 (843) 819-1229 Walter_Boltin@fws.gov

State	USFWS Contact
Pennsylvania	Thomas Kehler Northeast Fishery Center P.O. Box 75 Lamar, PA 16848-4247 (570) 726-4247 x117 Thomas_Kehler@fws.gov
Rhode Island	Phillip Herzig Central New England Fishery Resources Office 103 East Plumtree Road Sunderland, MA 01375 (413) 548-8002 x130 Phillip_Herzig@fws.gov
South Carolina	Walter (Tripp) Boltin Wadmalaw Island Fish and Wildlife Conservation Office P.O. Box 69 Wadmalaw Island, SC 29487 (843) 819-1229 Walter_Boltin@fws.gov
Vermont	Chris Smith Lake Champlain Fish & Wildlife Resources Office 11 Lincoln Street Essex Junction, VT 05452 (802) 872-0629 x 20 Chris_E_Smith@fws.gov
Virginia	Albert Spells Virginia Fisheries Coordination Office 11110 Kimages Road Charles City, VA 23030 (804) 829-5627 Albert_Spells@fws.gov
West Virginia	Callie McMunigal Appalachian Partnership Coordination Office 400 East Main Street White Sulphur Springs, WV 24986 (304) 536-4760