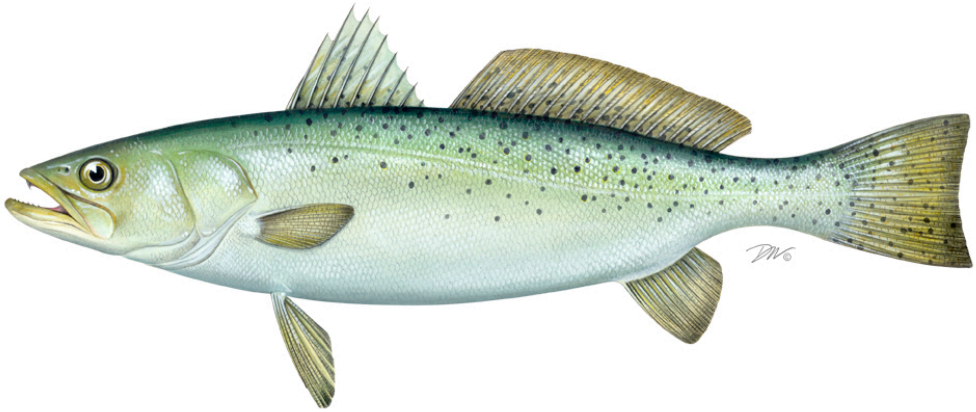
ATLANTIC STATES MARINE FISHERIES COMMISSION

REVIEW OF THE INTERSTATE FISHERY MANAGEMENT PLAN

FOR

SPOTTED SEATROUT
(Cynoscion nebulosus)

2019 FISHING YEAR



Prepared by the Plan Review Team
Approved February 2021

Sustainable and Cooperative Management of Atlantic Coastal Fisheries

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I. Status of the Fishery Management Plan

Date of FMP Approval:	Original FMP – October 1984
Amendments:	Amendment 1 – November 1991 Omnibus Amendment to Spanish Mackerel, Spot, and Spotted Seatrout -- August 2011
Management Area:	The Atlantic coast distribution of the resource from Maryland through the east coast of Florida
Active Boards/Committees:	South Atlantic State/Federal Fisheries Management Board; Spotted Seatrout Plan Review Team; South Atlantic Species Advisory Panel

The Atlantic States Marine Fisheries Commission (ASMFC) adopted the Fishery Management Plan (FMP) for spotted seatrout in 1984. The ISFMP Policy Board approved Amendment 1 to the FMP in November 1991. In August 2011, the South Atlantic State/Federal Management Board approved the Omnibus Amendment to the Spanish Mackerel, Spot, and Spotted Seatrout FMPs, bringing the Spotted Seatrout FMP under the authority of the Atlantic Coastal Fisheries Cooperative Management Act (Act, 1993) and the ASMFC Interstate Fishery Management Plan Charter (1995). The management unit is comprised of the states of Maryland through Florida.

The goal of the management plan is "to perpetuate the spotted seatrout resource in fishable abundance throughout its range and generate the greatest possible economic and social benefits from its harvest and utilization over time." Plan objectives include:

1. Attain optimum yield over time.
2. Maintain a spawning potential ratio of at least 20% to minimize the possibility of recruitment failure.
3. Promote conservation of the stocks to reduce inter-annual variation in availability and to increase yield per recruit.
4. Promote collection of economic, social, and biological data required to effectively monitor and assess management efforts relative to the overall goal.
5. Promote research that improves understanding of the biology and fisheries of spotted seatrout.
6. Promote harmonious use of the resource among various components of the fishery through coordination of management efforts among the various political entities having jurisdiction over the spotted seatrout resource.
7. Promote determination and adoption of standards of environmental quality and provide habitat protection necessary for the maximum natural protection of spotted seatrout.

The Omnibus Amendment added the following objectives to support compliance under the Act:

1. Manage the spotted seatrout fishery by restricting catch to mature individuals.
2. Manage the spotted seatrout stock to maintain sufficiently high spawning stock biomass.
3. Develop research priorities that will further refine the spotted seatrout management program to maximize the biological, social, and economic benefits derived from the population.

Management measures include a minimum size limit of 12 inches in total length (TL), with comparable mesh size regulations in directed fisheries, and data collection for stock assessments and monitoring of the fishery. All states with a declared interest in spotted seatrout (NJ-FL) have implemented, at a minimum, the recommended minimum size limit. In addition, each state has either initiated spotted seatrout data collection programs or modified other programs to collect improved catch and effort data. Table 1 provides the states' recreational and commercial regulations for spotted seatrout through 2020.

II. Status of the Stock

A coastwide stock assessment of spotted seatrout has not been conducted, given the largely non-migratory nature of the species and the lack of data on migration where it does occur. Instead, state-specific age-structured analyses of local stocks have been performed by several states. These stock assessments provide estimates of static spawning potential ratio (SPR), a measure of the effect of fishing pressure on the relative spawning power of the female stock. The FMP recommends a goal of 20% SPR. South Carolina and Georgia have adopted this goal while North Carolina and Florida have established a 30% and 35% SPR goal, respectively.

A peer-reviewed stock assessment of spotted seatrout in Virginia and North Carolina waters was completed in 2014, incorporating data from 1991-2013 (NCDMF 2014). Results suggest the age structure of this stock expanded during the last decade; however, there was a sharp decline in recruitment after 2010. Similarly, spawning stock biomass (SSB) declined after a peak in 2007. These declines may be attributed to cold stun events. In 2012, SSB exceeded the currently defined threshold, suggesting the stock is not overfished. Additionally, fishing mortality is below the threshold, suggesting the stock is not experiencing overfishing. A benchmark stock assessment for North Carolina and Virginia, incorporating data through 2019, is currently in progress as of November 2020.

The South Carolina Department of Natural Resources packaged several state-specific assessments into a report in 2001, though these were not peer reviewed. The initial assessment covering 1986-1992 indicated female SPR was just above the 20% goal in the terminal year (Zhao and Wenner 2001), leading to a minimum size limit increase and a creel limit reduction. A more recent assessment was conducted for the period 1981-2004 (de Silva, Draft 2005). Two modeling approaches were used, and both models indicated the current SSB is below the requirement to maintain 20% SPR.

Florida conducted separate stock assessments for the northern and southern populations on their Atlantic coast. Average transitional SPR estimates during 2007-2009 were 0.67 in the northern region and 0.45 in the southern region (Murphy et al. 2011), leading to some relaxation in Florida's management of the resource (Table 1). A new statewide assessment was completed in 2018 (http://www.myfwc.com/media/4500170/sst-assessment-2016.pdf) (Addis et al. 2018). This assessment includes stock synthesis models constructed for each of Florida's four management regions (NW, SW, NE, and SE). The results indicate the spotted seatrout stock in northeast Florida is above the biomass threshold but below the biomass target and overfishing is not likely occurring. They also indicate the stock in southeast Florida is above the biomass threshold but below the biomass target and overfishing is not likely occurring.

III. Status of the Fishery

Spotted seatrout are typically caught both commercially and recreationally from Delaware through the east coast of Florida. In South Carolina, spotted seatrout are declared a gamefish and can only be taken by recreational means. Landings from states north of Delaware are minimal and/or inconsistent from year to year. In 2019, landings ranged as far north as Connecticut. State catch estimates in this section include those in the management area only (NJ-FL), but coastwide totals include the entire Atlantic coast. Total recreational landings have surpassed total commercial landings every year since recreational landings were first recorded in 1981 (Figure 1). Spotted seatrout, particularly in Virginia-South Carolina, are susceptible to cold stuns that result in sporadic, large amounts of winter mortality, which can lead to sudden declines in harvest. The last cold stun occurred in 2018, prompting in-season changes to management in affected states. For this reason, 2019 harvest landings and recreational releases are compared to a 5 year average instead of 2018 numbers.

Commercial Fishery

Commercial harvest statistics were obtained from the Atlantic Coastal Cooperative Statistics Program (ACCSP) for years prior to 2019 and from state compliance reports for 2019. Atlantic coast commercial landings (1950-2019) range from 156,000 pounds to 2.3 million pounds (Figure 1). Historically, commercial landings primarily came from Virginia, North Carolina, and Florida, with Maryland, South Carolina, and Georgia accounting for a small portion. From 1950 to 1976, annual commercial landings averaged 1.3 million pounds, followed by a decline due to increased regulations and possible declines in abundance. Significant changes to regulations include the 1987 designation of spotted seatrout as a gamefish in South Carolina, and the 1995 prohibition on the use of entangling nets in Florida's coastal waters. From 2009 to 2018, commercial landings averaged approximately 313,000 pounds. In 2019, commercial landings totaled 495,977 pounds, a 77% increase from the previous 5 years (Table 2). North Carolina, Virginia, and Florida accounted for 76%, 20%, and 3% of the total commercial landings, respectively.

Recreational Fishery

Recreational harvest statistics were obtained from the Marine Recreational Information Program (MRIP) for years prior to 2019 and from state compliance reports for 2019. These landings have been updated to reflect the calibration and transition to the mail-based Fishing Effort Survey. Over the last 33 years, recreational catch of spotted seatrout (kept and released) has shown an upward trend, increasing from 4.3 million fish in 1981 to 31.0 million fish in 2018. In 2019, recreational catch totaled 24.6 million fish, a 9% increase from the previous 5 years (Figure 2). Recreational harvest has remained stable throughout the time series with an average of 3.5 million fish. Recreational harvest in 2019 was 4.5 million pounds (a 40% increase from the previous 5 year average) or 5.0 million fish (a 37% increase from the previous 5 years) (Tables 3 and 4), with North Carolina (39%), Georgia (20%), and South Carolina (16%) responsible for the largest shares in numbers of fish. Due in part to recreational size and creel limits and closed seasons, as well as the encouragement of catch and release practices, the percentage of caught fish being released has increased throughout the time series, with the previous 10-year average (2009-2018) at 83%. In 2019, the release percentage decreased from the previous 5 year average (85%) to 79%, resulting in 19.6 million released fish (Figure 2, Table 5). Rod and reel is the primary recreational gear, but some spotted seatrout are taken by recreational nets and by gigging, where these methods are permitted. Most recreational fishing is conducted from private boats and the majority of the catch is taken from nearshore waters.

IV. Status of Assessment Advice

A coastwide stock assessment of spotted seatrout has not been conducted and the Plan Review Team (PRT) does not recommend that one be completed due to the life history of the fish and the availability of data. Several states have performed age-structured analyses on local stocks, and recent assessments provide divergent trends on the status of the species. The 2005 stock assessment in South Carolina indicated an increasing population trend but a status level that is still below target spawning stock biomass levels (de Silva 2005). The 2014 North Carolina and Virginia stock assessment showed declines in recruitment since 2010. The 2018 Florida stock assessment indicated the spotted seatrout stock in northeast Florida is above the biomass threshold but below the biomass target and overfishing is not likely occurring (Addis et al. 2018). It also indicated the stock in southeast Florida is above the biomass threshold but below the biomass target and overfishing is not likely occurring. The PRT supports the continuation of state-specific assessments, yet recognizes the difficulty most states face to attain sufficient data of assessment quality and personnel who can perform the necessary modeling exercises.

The lack of biological and fisheries data for effective assessment and management of the resource was recognized in the 1984 FMP and continues to be a hindrance. Some states are increasing their collection of biological and fisheries data, which will provide insight on stock status over time.

V. Status of Research and Monitoring

In addition to commercial and recreational fishery-dependent data collected and/or compiled through the NMFS Fisheries Statistics Division, some states have implemented fishery-

independent or additional fishery-dependent monitoring programs. States currently conducting fishery dependent sampling include Delaware, Maryland, Virginia, North Carolina, South Carolina, Georgia, and Florida. Delaware, Maryland, North Carolina, South Carolina, Georgia, and Florida currently conduct fishery independent surveys for spotted seatrout or run surveys encountering spotted seatrout. Virginia, North Carolina, and South Carolina conduct aging, and in 2019 the NCDMF aging lab aged a total of 1,1,67 spotted seatrout by otoliths with a maximum age of 8 and a modal age of 1. South Carolina trammel net survey indicated increases in relative abundances of spotted seatrout in 8 of the 9 strata sampled, and an increase across the state as a whole in 2019.

VI. Status of Management Measures and Issues

Changes to State Regulations

Virginia had a minor change in July 2019 to establish daily buyer reporting for spotted seatrout purchases.

De Minimis Requests

A state qualifies for *de minimis* status if its previous three-year average combined commercial and recreational catch is less than 1% of the previous three-year average coastwide combined commercial and recreational catch. Those states that qualify for *de minimis* are not required to implement any monitoring requirements, as none are included in the plan.

The state of Delaware requests continuation of *de minimis* status, and the PRT notes they meet the requirements of *de minimis*.

VII. Implementation of FMP Compliance Requirements for 2019

The PRT notes that all states have met the compliance requirements.

VIII. Recommendations of Plan Review Team

Management and Regulatory Recommendations

- Consider approval of *de minimis* request by Delaware.
- Maintain observer coverage in states that have a commercial fishery for spotted seatrout.
- Updated stock assessment

Prioritized Research Recommendations

High Priority

- Conduct state-specific stock assessments to determine stock status relative to the plan objective of maintaining a spawning potential of at least 20%.
- Collect data on the size or age of spotted seatrout released alive by anglers and the size or age of commercial discards.
- Research release mortality and how this changes with factors such as season, habitat (e.g., depth, temperature, salinity), fish life history (e.g., size, age) and fishing methods (e.g., gear types).

- Monitor the size, age and reproductive condition of recreationally harvested fish (e.g. freezer drop off and tournament monitoring programs).
- Research into links between spawning activity, environmental conditions, trophic interactions and recruitment.
- Continue work to examine the stock structure of spotted seatrout on a regional basis (e.g., genetics, use of advanced tagging techniques).
- Research effects of winter severity on the population.
- Utilize telemetry technology to better understand life history characteristics.
- Conduct additional research on the significance of age-specific fecundity changes (i.e., environmental impacts on spawning output of population)
- Develop state-specific juvenile abundance indices.

Medium Priority

- Identify essential habitat requirements.
- Initiate collection of social and economic aspects of the spotted seatrout fishery.

IX. References

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X. Figures

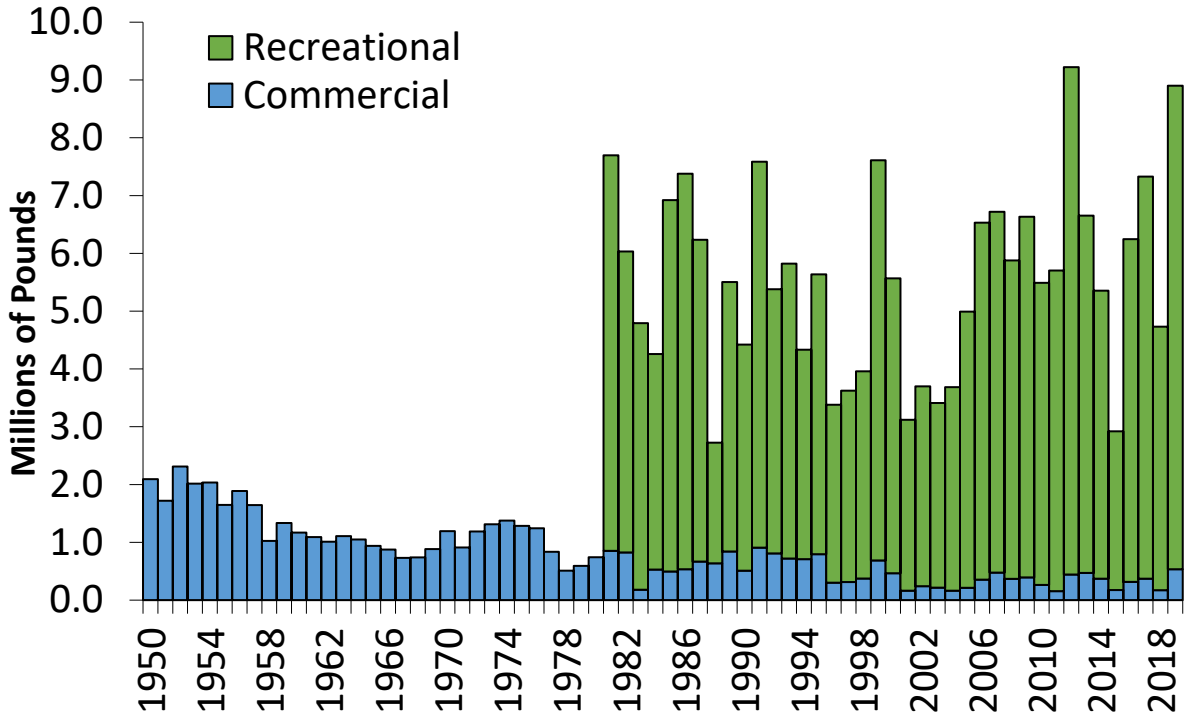

Figure 1. Coastwide commercial landings (1950-2019) and recreational landings (1981-2019), in pounds (See Tables 2 and 4 for values and sources). Recreational data not available prior to 1981.

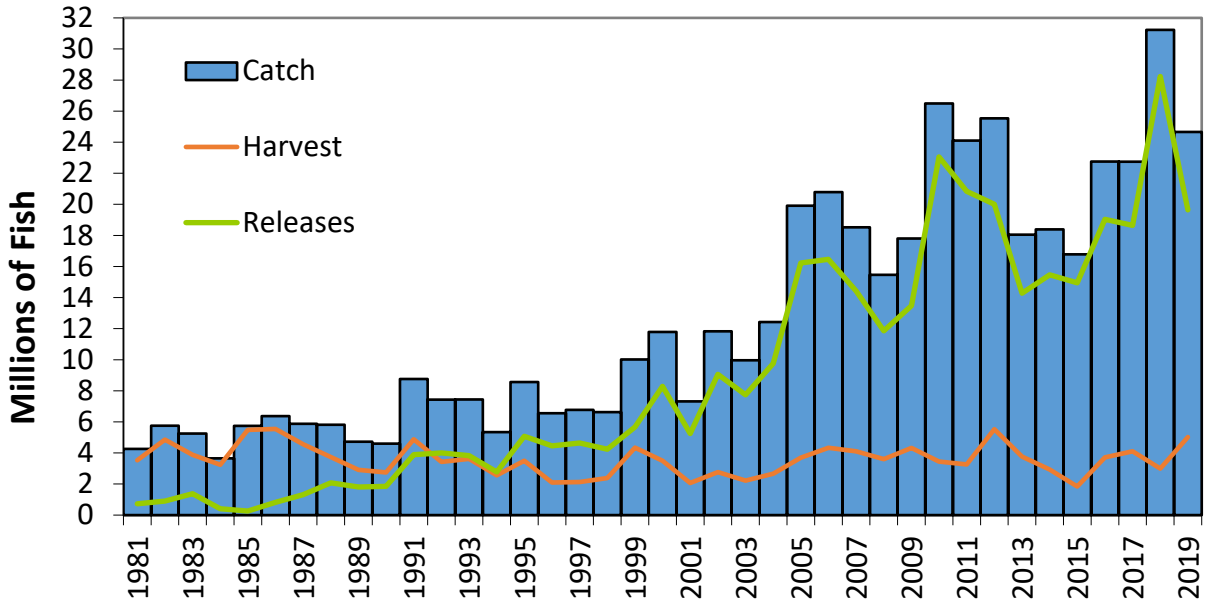

Figure 2. Coastwide recreational catch, harvest, and releases (numbers), 1981-2019 (See Tables 3 and 5 for values and sources).

XI. Tables

Table 1. Summary of state regulations for spotted seatrout in 2019.

State	Recreational	Commercial
Delaware	12" TL	12" TL
Maryland	14" TL; 4 fish	14" TL. 150 lb limit per day or trip (whichever is longer). Trawl and gill net mesh size restrictions.
PRFC	14" TL; 10 fish	14" TL
Virginia	14-24" TL; 1 fish >24" allowed; 5 fish	14" TL; pound nets/seines allowed 5% by weight less than 14". Hook & line fishermen must follow rec limits. Quota: 51,104 lbs (Sept-Aug). After 80% reached, 100 lb/vessel/day possession and bycatch limit.
North Carolina	14" TL; 4 fish	14" TL; 75 fish limit. Unlawful to possess or sell Friday 12:00am-Sunday 12:00am. Fishery closed by proclamation from January 5, 2018 – June 15, 2018
South Carolina	14" TL; 10 fish. Gig March-Nov.	Gamefish status since 1987; native caught fish may not be sold.
Georgia	14" TL; 15 fish	14" TL; 15 fish. BRD requirement for trawl; gear mesh regulations.
Florida	15-20" TL slot; 1 fish >20" allowed; northeast 6 fish; south 4 fish; hook & line/cast net only.	15-24" TL; Season varies by region; 75 fish limit or 150 fish limit with two or more licensed fishermen on board; hook & line/cast net only.

Note: A commercial fishing license is required to possess spotted seatrout for sale in all states with a fishery.

Table 2. Commercial landings (pounds) of spotted seatrout by state, 2010-2019 (Source: ACCSP for years prior to 2019 and State Compliance Reports for 2019). Totals are for the coastwide fishery and may extend beyond the management unit. "C" represents confidential data.

Year	MD	VA	NC	SC	GA	FL	Total
2010	C	20,870	200,822		C	39,374	262,326
2011	640	17,315	75,239		C	63,592	156,787
2012	C	116,767	265,016			61,676	443,747
2013	C	42,086	367,610		C	58,288	471,243
2014	C	90,051	242,245		C	37,710	370,110
2015	C	7,888	128,752			39,226	175,931
2016	C	18,483	274,583	C		23,105	316,412
2017	C	55,219	299,910			16,194	371,590
2018	C	17,526	128,922			21,893	168,230
2019	C	100,763	378,491			16,666	495,977

Table 3. Recreational harvest (A + B1; numbers of fish) of spotted seatrout using the FES effort calibration, by state, 2010-2019 (Source: MRIP). Totals are for the coastwide fishery and may extend beyond the management unit.

Year	DE	MD	VA	NC	SC	GA	FL	Total
2010	210	9,684	77,068	630,748	406,781	1,135,113	1,187,103	3,446,707
2011		11,042	644,074	723,502	193,487	762,304	931,353	3,265,762
2012		21,323	392,484	1,602,836	622,205	1,206,654	1,682,942	5,528,444
2013	5,436		153,706	1,107,957	440,751	937,046	1,122,151	3,767,047
2014	3,514	21,560	84,537	725,086	260,321	724,411	1,111,177	2,930,606
2015	39	11,619	23,062	249,260	311,106	740,932	504,137	1,840,155
2016	12	10,092	163,529	978,624	311,168	1,290,220	962,946	3,717,042
2017		24,255	172,288	1,217,834	647,679	1,060,493	977,797	4,100,346
2018	344		189,537	449,473	175,191	1,096,602	929,155	2,840,302
2019	4,644	36,314	596,428	1,937,250	813,548	1,008,284	620,337	5,016,805

Table 4. Recreational harvest (A + B1; pounds of fish) of spotted seatrout using the FES effort calibration, by state, 2010-2019 (Source: MRIP). Totals are for the coastwide fishery and may extend beyond the management unit.

Year	DE	MD	VA	NC	SC	GA	FL	Total
2010	323	19,623	137,095	1,277,174	598,963	1,310,371	1,883,653	5,226,879
2011		11,181	1,450,980	1,353,388	327,349	894,796	1,509,893	5,547,587
2012		36,380	690,821	2,720,028	1,002,364	1,231,246	3,097,576	8,778,415
2013	8,866		379,399	1,881,881	717,402	1,125,802	2,075,929	6,180,413
2014	6,295	46,870	166,182	1,451,592	382,155	825,903	2,111,818	4,984,520
2015	10	23,546	48,477	430,579	462,498	794,861	984,940	2,744,901
2016	8	20,024	341,977	1,724,492	475,749	1,740,513	1,625,597	5,928,352
2017		48,624	342,463	2,157,198	992,938	1,403,646	2,011,777	6,956,646
2018	248		226,786	658,555	414,442	1,489,609	1,701,275	4,490,667
2019	10,878	61,935	1,256,916	3,334,163	1,238,834	1,440,368	1,033,847	8,366,840

Table 5. Recreational releases (number of fish) of spotted seatrout using the FES effort calibration, by state, 2010-2019 (Source: MRIP). Totals are for the coastwide fishery and may extend beyond the management unit.

Year	DE	MD	VA	NC	SC	GA	FL	Total
2010	386	300,919	2,530,405	7,657,503	1,167,472	1,676,201	9,717,723	23,050,609
2011		21,353	3,462,963	7,420,553	743,581	1,348,499	7,839,264	20,836,213
2012	3,879	259,437	1,257,157	4,916,356	1,761,694	2,196,920	9,610,576	20,006,019
2013	8,039	22,780	738,474	4,278,671	2,190,796	1,320,699	5,722,715	14,282,174
2014	2,926	74,250	1,059,287	3,949,284	1,407,310	1,687,540	7,279,660	15,460,257
2015	604	242,150	834,028	4,824,088	1,147,982	1,763,638	6,131,007	14,943,497
2016	15,066	133,223	3,708,969	6,475,193	1,791,072	2,113,253	4,783,644	19,035,843
2017	71	107,611	3,154,997	5,147,567	1,949,554	2,436,867	5,845,559	18,642,226
2018		54,795	4,455,420	15,245,249	1,062,769	2,022,125	5,306,034	28,146,810
2019	5,905	334,805	2,865,887	7,185,562	2,476,659	2,673,432	4,098,551	19,643,063