

COMMERCIAL FISHERIES OF INDIAN RIVER, FLORIDA.

By WILLIAM A. WILCOX.

THE FISHING CENTERS AND GROUNDS.

The points on the Indian River which serve as the headquarters of the fishermen and the centers for receiving and shipping fish are Titusville, Cocoa, Eau Gallie, Melbourne, Sebastian, Fort Pierce, Eden, Jensen, and Stuart. These places are all in Brevard County, on the line of the Jacksonville, St. Augustine and Indian River Railroad, and they are all on the western side of the river.

Titusville, the principal place on the river, is the county seat, with a resident population of 900. It was the birthplace of the Indian River fishing business, and has the advantage of two railroads for shipping products. Two firms were at this place during the first four years; in 1889 another engaged in the industry; in 1890, 1891, and 1892, when the fishing at this point was at its height, there were four firms; in the two following years the number was three, and at the end of 1895 and the beginning of 1896 only one remained.

The following table shows the monthly shipments of fresh fish from Titusville during each of the six years ending 1895:

Month.	1890.	1891.	1892.	1893.	1894.	1895.
	<i>Lbs.</i>	<i>Lbs.</i>	<i>Lbs.</i>	<i>Lbs.</i>	<i>Lbs.</i>	<i>Lbs.</i>
January.....	80,855	205,015	98,705	105,205	79,280	25,335
February.....	73,085	74,340	75,755	91,845	67,185	41,980
March.....	37,215	64,105	51,685	50,415	43,125	40,495
April.....	10,330	33,625	47,400	27,005	32,455	11,705
May.....	15,660	60,050	70,190	57,565	42,180	34,385
June.....	24,840	105,515	64,150	53,870	34,960	42,960
July.....	40,535	93,775	70,965	108,565	29,010	51,870
August.....	68,985	75,005	118,975	104,820	42,890	60,875
September.....	130,680	97,800	117,945	86,920	23,585	39,095
October.....	237,285	123,070	91,200	85,585	13,315	25,095
November.....	222,895	160,452	138,450	110,415	124,215	10,120
December.....	129,390	124,485	98,000	99,420	24,940	24,015
Total.....	1,072,355	1,217,237	1,046,480	979,630	557,090	409,710

At the beginning of the fishing industry at Titusville the catch was taken within a few miles of that place, but as business increased new grounds were continually sought farther down the river until the operations of the Titusville fishermen were finally extended beyond Sewall Point, 125 miles to the south. Between these points camps were located at the most desirable places, chief of which were Eden, Indian River Inlet, and Sewall Point. The fish taken in the vicinity of the camps were carried to the camps and there packed in fish-cars holding from 800 to 1,500 pounds of well-iced fish, which were sent to Titusville by the steamers plying regularly on the river. Before being shipped by

rail to the northern markets the fish were repacked with ice in barrels. The empty cars were filled with ice and sent back to the camps on the return trips of the steamers. The construction of a railroad along the western bank of the Indian River naturally led to a diversion of trade from Titusville, and reduced the necessity for maintaining fully equipped camps in isolated localities.

Cocoa, situated 19 miles south of Titusville, is one of the principal fishing centers on the river. Of the 300 inhabitants in 1895, 40 were engaged in the fisheries. The railroad reached this point in February, 1893, and the fishing business was established the next year. The shipments of fresh fish in 1895 amounted to nearly 500,000 pounds, most of which went to Georgia.

Commercial fishing at Eau Gallie dates from 1893, in June of which year it was brought into railroad communication with Jacksonville. In 1895 the business was represented by four firms; two of these, however, moved farther down the river and one suspended, leaving only a single firm in operation at the close of the year. The shipments from this place in 1895 were over 250,000 pounds of fresh fish. In 1893, when this was for some time the railroad terminus, it received by steamer the catch from points lower down the river and shipped by rail 255,105 pounds of fresh fish. Eau Gallie has a small oyster fishery, the product of which is used locally. The fishermen of this place fish from 3 miles above to 10 miles below the settlement, and at times also resort to Banana River from its mouth to a distance of 10 miles upstream.

Melbourne is a small settlement whose fisheries are now less extensive than those of any other place on the river. In the first part of 1896 there was only one fisherman at this place, although in 1895 there were six crews. The fish shipments in 1895, as shown by the express company's records, amounted to 27,600 pounds.

Fishing at Sebastian began in September, 1895, the first shipment of fish by rail being on September 11. Up to the close of the year 103,890 pounds of fish had been shipped. The year 1896 will doubtless witness a noticeable increase in the fishing centering at this point. Four firms were engaged in the business in the winter of 1895-96; these shipped mostly to New York, Richmond, and New Orleans. The grounds visited by the Sebastian fishermen extend for 15 or 20 miles north and south of that place. A small turtle fishery is there carried on.

Fort Pierce is now the principal fishing center on the river. From its nearness to Indian River Inlet, this part of the river is regarded by the fishermen as a very important section. Fishing camps were located in this vicinity soon after the arrival of the railroad at the northern end of the river, and for several years the catch was shipped from the camps by steamer to the nearest station. On February 1, 1894, the railroad reached this place; soon after the camps were deserted and the business of receiving and shipping fish was transferred to Fort Pierce. The quantity of fresh fish sent from this place in 1894 was 555,915 pounds. New firms entered the business in 1895, when the

shipments reached nearly a million pounds. The principal points to which the products were consigned are Jacksonville, Palatka, Sanford, and St. Augustine, in Florida; Mason, Atlanta, Altona, Savannah, and Marietta, in Georgia; Eufaula, Ala.; Charlotte, N. C.; Louisville, Ky.; Norfolk, Va.; Washington, D. C., and New York City. Three-fourths of the shipments from this place in 1895 were mullet, which were sent chiefly to cities in Georgia. Fort Pierce is the principal headquarters of the alligator hunters of the eastern part of Florida. A very large trade in alligator hides was formerly carried on there, but the business has greatly declined.

Fishing at Eden dates from December, 1894, the railroad having reached the place in February of that year. One firm was here in 1894, and during 1895 there were two firms, who shipped 210,300 pounds of fresh fish. A few turtles are taken here. The fishing-grounds extend north to Fort Pierce, a distance of 13 miles, and south to Sewall Point, a distance of 10 miles.

Jensen has never been important as a fishing center; between November, 1894, and March, 1895, one firm was engaged in the business, since which time the fisheries have been unrepresented. The aggregate shipments were 28,230 pounds in 1894 and 40,485 pounds in 1895.

Stuart is the most southern fishing station on the Indian River. One firm established headquarters here in January, 1895, and shipped 89,658 pounds of fresh fish during that year. From its favorable position with reference to Santa Lucia Inlet, Stuart may be expected to show considerable development of its fisheries within a short time. The Stuart fishermen set their nets as far north as Jensen (4 miles distant) and south to the inlet (3 miles away); they also go from 3 to 6 miles up each arm of the Santa Lucie River.

FISHERY RESOURCES OF THE REGION.

The commercial water products of Indian River comprise fishes, oysters, and turtles. Considering the nearness of this region to the West Indies, with their remarkably rich fauna, the fishing resources are not especially varied, although a number of aquatic animals now regarded as unmarketable have economic value and will doubtless be utilized as the fisheries become further developed.

Only about 16 species of food-fish are taken in noteworthy quantities and comprise the regular catch of the Indian River fishermen; 8 or 10 others are obtained in relatively small numbers. A number of other fish, with recognized food value in other localities, occur in the river, which are either not caught at all, owing to the nonadaptability of the apparatus used, or, if taken, are not considered of sufficient importance to justify shipment to distant markets.

More than half the fish taken for market consists of mullet, which is more abundant and caught in larger quantities in Florida than in any other State. Its maximum weight is 5 pounds, although the average of the fish caught is only 2 pounds. The mullet is plentiful through-

out the river, but the principal part of the catch is taken in the upper part; the low price received has deterred the fishermen of the lower river from taking as many fish as the conditions warrant, owing to the express charges. Some mullet are in the river at all seasons, but they are most abundant from September to January.

Bluefish and Spanish mackerel are ordinarily scarce at all times. Occasionally, in recent years, these fish have entered the river in considerable numbers. On January 13, 1894, a party of seine fishermen caught between Sewall Point and Eden 2,162 pounds of bluefish, which is said to have been the finest lot of bluefish ever taken in the river; none of the fish was under 8 pounds in weight, some weighed 18 pounds, and the average was 12 or 15 pounds. The average weight of the bluefish regularly taken is about 5 pounds.

The pompano is the most highly esteemed fish of Indian River. Its average weight is 2 or 2½ pounds, although some weighing 6 or 8 pounds are taken. A maximum weight of 25 pounds is assigned by the fishermen, but there is little doubt that all supposed pompano weighing more than 10 pounds belong to a different species from the true pompano. The latter is taken at all times during the year, but up to the past two years has been most plentiful in the northern part from September to November, the run continuing until spring, when the bulk of them leave the river. In the southern part of the river pompano are reported to be most abundant from December to March in recent years. After the excessively cold weather of 1894-95, they became very scarce, and up to the end of January, 1896, had not appeared in anything like the former abundance. In illustration of the recent decrease in this species, the following catch of a firm that made a specialty of pompano fishing may be given:

	Pounds.
1892.....	61,014
1893.....	122,614
1894.....	93,579
1895.....	31,353

In the opinion of some fishermen, the best days for pompano fishing on Indian River have past, owing to overfishing; others regard the recent scarcity as largely the result of natural causes.

Such fishes as sheepshead, trout, channel bass, snappers, sailor's choice, sergeant-fish, crevallé, and black drum, which are locally known as "bottom fish," are generally plentiful in all parts of the river and do not appear to have undergone any noticeable changes in abundance in recent years.

The sheepshead is perhaps the most esteemed of the "bottom fish." In the quantity of the catch it ranks next to mullet, and in value it is surpassed only by mullet and pompano. The maximum weight is about 10 pounds and the average 3 pounds. It is taken at all fishing centers on the river, but the largest catch is at Eden. At Jensen a seine took 2,300 pounds of sheepshead at one haul in 1895.

The sea trout or spotted squeteague is a prominent factor in the

catch; it ranks after the sheepshead in the amount and value of the yield. Some weighing 14 pounds are caught, but the average weight is only 2 pounds. The fishermen of Cocoa and Fort Pierce take the largest quantities.

The channel bass or red drum (locally called bass) is taken in considerable numbers and shipped to market. The range in weight is 1 to 40 pounds, the average being about 5 pounds. The principal part of the catch is obtained at Fort Pierce.

In some localities the red and the black drums, the crevallé, the sergeant-fish, and other species are either always discarded from the shipments or utilized only when it is not possible to fill out the packing barrels with the higher grades of fish. Other fish which are usually not utilized when caught are catfish, menhaden, moonfish, angel-fish, hogfish, and mutton-fish.

Sea catfish weighing 1 to 2 pounds are among the most abundant fishes of the river, but are seldom utilized; shipments aggregating 10,000 pounds of dressed fish were sent from Jensen to St. Louis in 1894, but the fish were not received with sufficient favor to warrant a continuance of the business.

The green turtle (*Chelonia mydas*) is the only product of the Indian River fisheries belonging to the turtle class. It is far from being abundant or even common, and in the past few years has undergone a noticeable decrease in numbers.

Turtles are occasionally taken in Indian River weighing nearly 200 pounds, but they now seldom attain a weight of 100 pounds, and the average weight is little more than one-third of that figure. In 1891, when this region was visited in the interest of the Fish Commission, the average weight of the turtles caught was reported to be 50 pounds. In 1895 the aggregate catch of 18,909 pounds represented 519 turtles, whose average weight was, therefore, 36 pounds. This decrease in weight of more than 25 per cent in five years is suggestive of the decrease in quantity which the available statistics and observation show to have occurred.

Turtles remain in the river more or less plentifully at all seasons, but the principal season is between November and March.

Prior to the advent of the railroad in the Indian River region alligators were comparatively numerous and their capture constituted an important business, but at present, as the result of active hunting operations during the past ten years, they are very scarce, not enough alligators being left to support an industry. The few skins which now reach the hands of the dealers on Indian River come from the interior.

Oysters of large size and good flavor exist in various parts of Indian River, and they constitute one of the principal fishery resources, but up to the present time they have received comparatively little attention. The fuller utilization of oysters is doubtless one of the chief lines along which the further development of the fisheries of this region will take place.

The oysters are found in small scattered beds, but their real abundance is not known. Some of the beds are located as follows: On the east side of the river nearly opposite Titusville; immediately south of Rockledge; one-half mile north of Fort Pierce on the east shore and at Indian River Inlet; on the west shore off St. Lucie and for a number of miles north of that point.

The oyster shells are large, thick, and of irregular shape. They usually occur in clusters, and have mussels and barnacles attached.

Crabs are abundant throughout Indian River, but are not utilized at present. Probably these and other crustaceans, such as shrimp, will receive the attention of commercial fishermen as the fishing industry becomes further developed.

FISHING APPARATUS AND METHODS.

The economic fisheries of Indian River are for mullet, pompano, turtles, and oysters. A large variety of other fish are taken, but they are obtained incidentally in fishing for mullet and pompano. The apparatus employed comprises gill nets and seines for fish, nets for turtles, and tongs for oysters. Of the gill nets, which are the principal means of capture, there are two kinds, according as they are adapted for mullet or for pompano and other species.

THE MULLET FISHERY.

In 1895 mullet fishing was carried on at every fishing center on the river except Jensen. The business is most extensive at Titusville, Cocoa, and Fort Pierce. Practically the entire catch of mullet was taken with gill nets, only a few thousand pounds additional being incidentally secured in a haul seine.

Mullet gill nets are 250 yards long and 12 to 14 feet (or 40 to 50 meshes) deep, with a 4-inch-stretch mesh. They are made of linen thread, and when new are valued at \$50 each. The web lasts only two or three months, and has to be replaced by new twine. The usefulness of the nets is prolonged by washing them in lime water to remove the adhering animal matter, which promotes decay. The nets are rigged with cork floats and lead weights.

The mullet fishermen usually go in crews of four, in two boats. When the fish are seen swimming or jumping freely at the surface, a net from one boat is united to one from the other boat, and the two boats are rowed in opposite directions around the school as the nets are thrown out. When the boats come together the nets are again united, with the boats in the inclosed space. By beating on the water with oars, etc., the mullet, and the other fish incidentally encircled, are frightened into the meshes of the nets, from which they are then removed, the catch being equally divided between the two boats. The nets may be cast several times during a night if a sufficient supply is not obtained in the first haul.

THE POMPANO FISHERY.

Fishing for pompano is carried on throughout the length of the river, but is most important at Titusville, Fort Pierce, and Eden.

Nets used for pompano and other species besides mullet have a wide range in length. They are primarily about 200 or 250 yards long, but sections of netting are often connected until, as used, they extend from 600 to 2,000 yards, many pieces 1,000 or 2,000 yards long being employed. They have a stretch mesh of $5\frac{1}{2}$ to 6 inches, and are from 15 to 35 meshes deep. They are constructed of linen twine and are worth, when rigged, about \$12.50 per 100 yards.

Fishing for pompano is done only at night, the darker the night the more favorable the conditions. In the daytime or by moonlight few pompano could be caught, as the fish see the netting and avoid it. The nets are set and left to drift for one or two hours before being visited, the fishermen, in the meantime, being on the adjacent shores, where fires are kindled for warmth or to keep the mosquitos away. The catch is removed from the nets several times during a night's fishing. Besides pompano, the principal fish taken are bluefish, sheepshead, sea trout, channel bass, mangrove snapper, and crevallé.

Owing to the peculiar shape of the pompano and the relatively large mesh in the pompano gill nets, the fish are not caught by being actually gilled. The fish push their heads through the mesh far beyond the gill-openings and are made fast by the twine getting behind the pectoral and ventral fins. Frequently, also, the mesh is caught on one of the stiff rudimentary spines in front of the dorsal fin.

THE SEINE FISHERY.

Seine fishing is unimportant, and only two seines were used in 1895. One of these, at Jensen, was 400 yards long; the other, at Stuart, was 825 yards long, 12 feet deep in the center and 6 feet in the wings, with a 4-inch mesh. The seine at Jensen was fished for only a short time in 1895, the catch consisting chiefly of pompano and sheepshead. In operating the larger seine, which was not regularly used in 1895, a small steamer (of 3.56 tons) was used to assist in drawing the seine ashore. Pompano, sheepshead, channel bass, and whiting made up the bulk of the catch.

THE TURTLE FISHERY.

The turtle fishery is comparatively unimportant. It is followed only from Sebastian, Fort Pierce, and Eden, although turtles are incidentally caught at a number of other points on the river.

The nets used in the turtle fishery are constructed on the principle of ordinary gill nets; they are made of 12-cord thread, with a 28-inch stretch mesh, and are 85 to 115 yards long and 10 meshes deep. They are worth about \$10 each. Two fishermen usually go in one boat, and 10 nets are the complement of a crew, although only 4 to 6 are in active use at one time.

The turtles are caught by being entangled in the meshes. Some of the nets are fastened to stakes that are driven on the turtle feeding-grounds, others are left to drift freely. The staked nets are visited twice a day. When the fishermen use a loose net, they take a position near by, and on seeing the net struck by a turtle pull up in their boat and secure it.

Turtle fishing begins about November 1 and continues until March 1, after which it is impracticable on account of the arrival of large saw-fish, sharks, and other fish that destroy the nets.

The total number of turtles taken for market on the Indian River in 1895 was 519, having a weight of 18,909 pounds; 51 of these, weighing 1,694 pounds, were taken in gill nets set for fish. The value of the catch was \$1,320, or about 7 cents a pound. The regular fishery was carried on by 12 men in 7 boats, using 66 nets.

In 1890, according to the report of Mr. W. deC. Ravenel, of the United States Fish Commission, the turtle catch of the Indian River was 738 turtles, weighing 36,900 pounds, valued at \$2,722; this yield, however, was obtained by 24 men, using 168 nets.

There is no doubt that turtle fishing on the Indian River is much less productive than formerly. Mr. Charles Pearke, of Sebastian, who has followed the turtle business during the past ten years, reports a great decrease of turtles as compared with earlier years. About 1886 he took 2,500 turtles with eight nets; in 1895 he secured only 60 turtles with six nets. The principal reason assigned for the decrease by Mr. Pearke is that the turtles have been frightened off by the steamboats and launches. The unusual cold of the winter of 1894-95 is also known to have seriously affected the abundance of turtles. Several hundred turtles were then found floating on the surface in a numbed or frozen condition. On being warmed most of them survived and were soon on their way to the northern markets. Since the cold spell turtles have been much scarcer than ever.

When it is desirable to retain the turtles any length of time prior to shipment, they are confined in pens and fed on vegetable matter, the articles principally used being a marine plant known as turtle grass, sweet-potato vines, and sometimes morning-glory vines and mangrove leaves.

THE OYSTER INDUSTRY.

The taking of oysters is a more extensive business than any other fishery on the river with the exception of the gill-net fishery. It is carried on by fishermen of Titusville, Cocoa, Eau Gallie, and Fort Pierce, the first-named place having the principal interests. The entire supply is taken by means of tongs from natural beds in the vicinity of the places named.

The 29 persons who in 1895 gave special attention to the oyster fishery took 6,084 bushels, which yielded \$2,115, or about 35 cents a bushel. The oysters are handled by dealers, who ship them in the shell or

opened, as desired by purchasers. When shucked the oysters seldom produce over 3 quarts of meats to a bushel. The market is limited to the near-by cities and towns of Florida and Georgia.

There seems no doubt that the conditions are very favorable for the expansion of the oyster industry. By the adoption of such measures as are now followed with great benefit in other States—the allotment of land for oyster cultivation, the spreading of oysters on prepared grounds, the planting of seed and cultch, etc.—a valuable permanent industry may here be established, while under present conditions it is only a question of time when the natural supply will become exhausted.

FISHERMEN, PRICES, SHIPMENTS, MARKETS, ETC.

The Indian River fishermen are from many parts of the country, and, with few exceptions, are white and American-born. Some had followed the fisheries of the Great Lakes, Long Island Sound, and Mississippi River before going to Florida. A number, however, were entirely without previous experience and began fishing from force of circumstances. The decline of the steamboat business on the river after the building of the railroad threw many persons out of employment, and some of these are now connected with the leading fish firms. The great damage to the fruit crop by frosts forced men of small means temporarily at least into other branches, the fisheries receiving a fair proportion, owing to the limited capital required to begin the business.

The fishermen, as a rule, contract with some fish-dealer as to prices to be paid for fish during a particular season. Sometimes the dealer furnishes a part of the fishermen's outfit, and takes his pay in fish. During 1895 the ruling prices received by the fishermen from the dealers were 1½ cents each for mullet, 2 cents a pound for bluefish, and 6 cents a pound for pompano and Spanish mackerel. All other fish, which are collectively known as "bottom fish," bring 1½ cents a pound. These prices seem very low, but it is doubtful if the dealers could pay much more and realize any profit, after meeting the heavy expenses for ice and the express charges on fish sent to the distant northern markets. Shipments often result in actual loss, owing to an overstocked market or the spoiled condition of the fish on arrival.

The average income of the fishermen on the river in 1895 was about \$200; many of them worked at the fisheries only one-third or one-half the time, being engaged in other business during the remainder of the year.

Practically the entire product of the Indian River fisheries is sold fresh. From time to time small lots of fish have been salted, but the demand is limited. In 1895, 25,000 pounds of salt mullet were prepared at Titusville, Fort Pierce, and Eden. The fish were put up in barrels holding 200 pounds each, and sold for \$5 per barrel, mostly in Charleston, S. C. The fish when thus prepared are split down the back like mackerel, and, if properly treated, are an excellent article of food.

It seems probable that before long a profitable market will be found for the surplus mullet by salting them.

While the fish trade of the river is carried on throughout the year, it is most active between October and April, when the northern markets are largely dependent on southern waters for their fish supply.

The catch is landed from the fishing-grounds early in the morning and at once packed in barrels with ice for shipment on the early express train going north. The more select fish go as far as New York, Louisville, and St. Louis, but the mullet are chiefly consigned to points in Florida and Georgia. The express rates being from \$2 to \$8 per barrel, the shipments to the northern cities usually have to be limited to the highest-priced fishes.

Ice is an important and expensive item in the fisheries of this region. Owing to the long distances to which most of the catch is shipped, it is necessary to use relatively large quantities of ice for its preservation. Ice is procured in small lots from factories at Titusville, Cocoa, and West Palmbeach at prices ranging from \$4.50 to \$6 per ton; the freight charges sometimes bring the price up to more than \$7 per ton. The total quantity of ice consumed in the fishing business of the river in 1895 was 1,226 tons, or 2,452,000 pounds, an amount nearly equal in weight to that of the fish shipped. The cost of the ice was \$8,187, an average of \$6.67 per ton.

STATISTICS OF THE FISHERIES.

In the appended tables detailed figures are given showing the extent of the commercial fisheries of the Indian River in 1895. The statistical information is based on personal interviews with fishermen and dealers and careful examination of available records. The investigation showed that the industry gave employment to 254 persons, represented an investment of \$41,512, and yielded 2,659,815 pounds of fish and other products, having a value to the fishermen of \$37,657.

Of the total number of persons directly connected with the fisheries in 1895, 172 were engaged in taking fish, 29 in oystering, 8 in catching turtles, and 41 in caring for the products pending shipment or in preparing them for market. The number of each class in each locality is shown in the following table:

Table showing the number of persons employed in the commercial fisheries of Indian River, Florida, in 1895.

Fishing centers.	General fisheries.	Oyster fishery.	Turtle fishery.	Preparing products.	Total.
Titusville.....	40	8	.....	6	54
Cocoa.....	22	9	.....	9	40
Eau Gallie.....	22	2	.....	6	30
Melbourne.....	12	.....	.....	2	14
Sebastian.....	6	.....	.....	2	10
Fort Pierce.....	26	10	2	6	50
Eden.....	26	.....	2	6	34
Jensen.....	8	.....	.....	2	10
Stuart.....	10	.....	.....	2	12
Total.....	172	20	12	41	254

The following table shows the amount invested in vessels, boats, apparatus, shore property, and cash capital at the various fishing centers. The details of the investment are given in subsequent tables. The largest investments are at Titusville and Fort Pierce, where the most men are employed and the principal business done.

Table showing the capital invested in the commercial fisheries of Indian River, Florida, in 1895.

Fishing centers.	Amount.
Titusville.....	\$10,921
Cocoa.....	5,103
Eau Gallie.....	4,047
Melbourne.....	1,140
Sebastian.....	3,530
Fort Pierce.....	8,786
Eden.....	4,390
Jensen.....	1,100
Stuart.....	2,495
Total.....	41,512

The number and value of the vessels and boats employed in the Indian River fisheries are stated in the next tabulation. Only one vessel of over 5 tons' burden is used in the fisheries of the river; this is a sloop of 8.09 net tons, having headquarters at Eden. A steamer of 3.56 tons is connected with the fisheries at Stuart. Of the 106 boats employed, 84 were in the general fisheries, 15 in the oyster fishery, and 7 in the turtle fishery. The total value of the vessels and boats was \$6,790.

Table showing the number and value of the vessels and boats employed in the commercial fisheries of Indian River, Florida, in 1895.

Fishing centers.	Vessels.		Boats.								Total value of vessels and boats.		
			Fishing.		Oystering.		Turtling.		Total.				
	No.	Value.	No.	Value.	No.	Value.	No.	Value.	No.	Value.			
Titusville.....			20	\$980	4	\$140					24	\$1,120	\$1,120
Cocoa.....			11	550	5	200					16	750	750
Eau Gallie.....			11	715	1	40					12	755	755
Melbourne.....			6	300							6	300	300
Sebastian.....			3	00			1	\$50			4	140	140
Fort Pierce.....			13	650	5	350					22	1,200	1,200
Eden.....	1	\$400	12	600			2	100			14	700	1,100
Jensen.....			4	200							4	200	200
Stuart.....	1	1,000	4	225							4	225	1,225
Total.....	2	1,400	84	4,310	15	730	7	350	100	5,300	6,790		

The value of the apparatus of capture employed in the Indian River fisheries was \$8,507; the shore and accessory property and the cash capital were valued at \$26,215. The mullet and pompano gill nets used, numbering 221, had an approximate combined length of 162,300 feet (or over 30 miles), and were valued at \$7,400. The 66 turtle nets were valued at \$660, and were 19,800 feet in length.

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The following table gives detailed figures on these items for the various fishing centers:

Table showing the quantity and value of the apparatus employed in the commercial fisheries of Indian River, Florida, in 1895.

Fishing centers.	Mullet gill nets.			Pompano gill nets.			Turtle nets.		
	No.	Length (feet).	Value.	No.	Length (feet).	Value.	No.	Length (feet).	Value.
Titusville.....	12	9,000	\$600	74	44,400	\$2,280			
Cocoa.....	11	8,250	550	6	3,600	240			
Eau Gallie.....	11	8,250	385						
Melbourne.....	6	5,400	300	1	1,500	40			
Sebastian.....	3	2,700	150	2	3,000	80	6	1,800	\$60
Fort Pierce.....	13	11,700	650	8	10,800	380	40	12,000	400
Eden.....	1	750	30	48	36,000	960	20	6,000	200
Jensen.....				12	7,200	300			
Stuart.....	1	750	35	12	9,000	420			
Total.....	58	40,800	2,700	163	115,500	4,700	66	19,800	660

Fishing centers.	Haul seines.			Oyster tongs.		Value of shore and accessory property.	Cash capital.
	No.	Length (feet).	Value.	No.	Value.		
Titusville.....				8	\$56	\$4,365	\$2,500
Cocoa.....				9	63	2,000	1,500
Eau Gallie.....				1	7	1,400	1,500
Melbourne.....						200	300
Sebastian.....						2,600	500
Fort Pierce.....				8	56	3,700	2,400
Eden.....						1,300	800
Jensen.....	1	1,350	\$100			200	300
Stuart.....	1	2,475	165			350	300
Total.....	2	3,825	265	26	182	10,115	10,100

The quantity and value of the principal products of the Indian River fisheries in 1895 are shown in condensed form in the following table. The fish comprised 2,598,318 pounds, valued at \$34,222; the weight of the 519 turtles was 18,909 pounds, valued at \$1,320; the 6,084 bushels of oysters yielded 42,588 pounds of meats, and had a market value of \$2,115:

Table showing the quantity and value of the fish and other products taken in the commercial fisheries of Indian River, Florida, in 1895.

Species.	Pounds.	Value.	Species.	Pounds.	Value.
Black drum.....	10,900	\$140	Sheepshead.....	301,141	\$4,445
Bluefish.....	33,086	703	Spanish mackerel.....	1,100	66
Channel bass or red drum..	142,400	2,115	Trout.....	200,735	2,872
Creville.....	14,700	184	Whiting.....	25,300	375
Flounders.....	9,000	130	Other fish.....	11,616	160
Mangrove snapper.....	78,900	1,137	Turtles.....	a 18,909	1,320
Mullet, fresh.....	1,585,869	11,501	Oysters (meats).....	b 42,588	2,115
Mullet, salted.....	25,000	750			
Pompano.....	149,111	9,475	Total.....	2,650,815	87,657
Sailor's choice.....	11,500	157			

a 519 in number.

b 6,084 bushels.

More detailed figures relating to the output of the fisheries are given in the next table, which shows by fishing centers and apparatus the quantity and value of each principal species. The fishing centering at Fort Pierce is seen to have yielded over \$11,700 in 1895, a sum consid-

erably larger than is credited to any other place. Titusville follows with \$6,900, after which come Eden with \$6,000 and Cocoa with \$4,800.

Table showing by fishing centers and apparatus with which taken the products of the commercial fisheries of Indian River, Florida, in 1895.

Apparatus and species.	Titusville.		Cocoa.		Eau Gallie.		Melbourne.		Sebastian.	
	Lbs.	Value.	Lbs.	Value.	Lbs.	Value.	Lbs.	Value.	Lbs.	Value.
Gill nets:										
Black drum.....			9,500	\$119						
Bluefish.....	2,256	\$45	525	11	280	\$0	400	\$8	1,200	\$24
Channel bass or red drum.....	12,100	181	8,200	102	30,000	450	3,500	52	8,300	125
Crevalle.....			14,700	184						
Flounders.....									200	3
Mangrove snapper.....			7,300	91	1,600	23	1,300	20	2,800	42
Mullet, fresh.....	285,119	2,138	330,400	2,005	157,160	1,164	4,800	72	66,090	495
Mullet, salted.....	10,000	300								
Pompano.....	38,553	2,313	9,800	490	600	30	0,100	366	1,100	66
Sailor's choice.....	3,300	50	2,000	23	600	9	400	6	1,200	18
Sheepshead.....	39,531	593	28,100	351	5,200	78	8,400	126	9,600	144
Trout.....	22,835	342	54,600	683	36,400	543	1,500	23	12,100	181
Whiting.....	3,000	45	2,400	30	2,500	38			900	14
Other fish.....	3,016	45	2,000	32			1,200	18	400	6
Turtles.....	500	35	100	7					4,500	315
Total.....	420,210	6,087	470,825	4,188	234,840	2,350	27,000	691	108,300	1,433
Tongs:										
Oysters.....	17,227	861	11,235	680	5,000	280				
Grand total.....	437,437	6,948	482,060	4,867	240,440	2,630	27,000	691	108,300	1,433

Apparatus and species.	Fort Pierce.		Eden.		Jensen.		Stuart.		Total.	
	Lbs.	Value.	Lbs.	Value.	Lbs.	Value.	Lbs.	Value.	Lbs.	Value.
Gill nets:										
Black drum.....			800	\$12					10,300	\$121
Bluefish.....	18,000	\$380	8,000	200			1,200	\$24	31,861	678
Channel bass or red drum.....	58,000	870	8,100	121	1,300	\$20	4,366	66	134,466	1,906
Crevalle.....									14,700	184
Flounders.....	8,000	120	300	5					8,500	128
Mangrove snapper.....	57,000	855	3,200	48	800	12	500	8	74,400	1,089
Mullet, fresh.....	730,000	5,475					6,800	51	1,580,869	11,460
Mullet, salted.....	5,000	150	10,000	300					25,000	750
Pompano.....	27,000	1,890	30,300	2,541	5,800	348	13,100	780	138,359	8,830
Sailor's choice.....			1,100	10	000	9			9,800	131
Sheepshead.....	29,110	436	136,100	2,041	11,300	169	8,900	125	275,041	4,063
Spanish mackerel.....			600	42			150	9	750	51
Trout.....	50,000	750	14,100	211	2,200	33	3,100	47	106,835	2,813
Whiting.....	9,000	135							17,800	292
Other fish.....			1,700	26			1,800	27	10,716	154
Turtles.....	6,107	428	8,008	463	594	42	500	30	18,909	1,320
Total.....	997,217	11,469	226,908	6,020	22,594	633	39,822	1,173	2,548,400	34,059
Haul seines:										
Black drum.....							000	0	000	0
Bluefish.....					1,225	25			1,225	25
Channel bass or red drum.....					1,200	18	0,734	101	7,034	119
Flounders.....							500	8	500	8
Mangrove snapper.....					700	11	1,800	27	2,500	38
Mullet.....							5,500	41	5,500	41
Pompano.....					4,200	252	0,552	303	10,752	645
Sailor's choice.....					5,500	8	1,200	18	1,760	26
Sheepshead.....					8,700	130	10,800	252	25,600	382
Spanish mackerel.....							850	15	350	15
Trout.....					1,900	29	2,000	30	3,900	59
Whiting.....							7,500	113	7,500	113
Other fish.....							800	12	800	12
Total.....					18,485	473	60,336	1,019	68,821	1,492
Tongs:										
Oysters.....	8,526	305							42,588	2,115
Grand total.....	1,005,743	11,774	226,908	6,020	41,079	1,100	90,158	2,192	2,659,815	37,657

The shipments of fresh fish from the Indian River fisheries in 1895 aggregated 2,573,318 pounds. The quantity of fish sent from Fort Pierce, namely, 986,110 pounds, was larger than the combined shipments from the two next important centers, Titusville and Cocoa, which contributed 409,710 pounds and 470,725 pounds, respectively. From Eau Gallie and Eden over 200,000 pounds were sent, and from Sebastian over 100,000 pounds. The difference between these figures and those given as the catch of the fishermen at the fishing centers represents the local consumption, although large quantities of fish caught by sportsmen and others are used at the hotels and private houses, of which no account is taken in these statistics. From the following table, showing the monthly fish shipments from the various points in 1895, it appears that the smallest shipments were in June, from which month to December there was a steady increase in the trade. The shrinkage in the business in February and March, which are ordinarily very good months, was due to the effects of the memorable cold snap. The fish sent from Indian River during the warmer months are chiefly from the northern part of the river, while in the colder months the largest consignments are from that section below Indian River Inlet.

Table showing the monthly shipments of fresh fish from points on Indian River, Florida, in 1895.

Fishing centers.	Jan.	Feb.	March.	April.	May.	June.	July.
	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>
Titusville	25,335	41,960	40,405	11,705	34,385	42,960	51,860
Cocoa	21,000	32,120	18,835	30,855	55,015	39,725	57,590
Eau Gallie	7,590	12,050	17,710	29,800	15,335	11,355	15,485
Melbourne				2,990	12,420	4,140	8,050
Sebastian							
Fort Pierce	93,180	60,795	59,710	67,355	64,335	41,565	48,070
Eden	21,325	14,840	34,900	11,040			
Jensen	28,520	3,685	8,280				
Stuart	9,478	10,240	9,215	6,220	14,205	350	
Total	207,308	176,290	189,205	160,105	195,755	140,095	181,055

Fishing centers.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>
Titusville	60,875	39,965	25,995	10,120	24,025	409,710
Cocoa	56,315	60,770	60,545	19,005	12,050	470,725
Eau Gallie	48,470	38,330	22,260	8,720	7,035	234,840
Melbourne						27,000
Sebastian		10,465	14,320	37,020	42,095	103,890
Fort Pierce	38,180	54,510	132,250	152,800	173,340	986,110
Eden		5,405	28,850	28,840	64,950	210,300
Jensen						40,485
Stuart			1,840	10,580	27,470	89,658
Total	203,840	209,555	292,090	267,085	350,965	2,573,318