

SUMMARY REPORT SOUTHERN DIVISION AMERICAN FISHERIES SOCIETY

The sixteenth annual meeting of the Southern Division of the American Fisheries Society was held in New Orleans, Louisiana, on September 24-27, 1967, in conjunction with the Southeastern Association of Game and Fish Commissioners.

Technical meetings, which included separate sessions on fish, game, law enforcement, and information and education were attended by more than 1,200 persons. The fisheries sessions were highlighted by several outstanding papers on striped bass, population dynamics, life history, management, physiology and farm ponds. An average of over 200 persons attended the fisheries sessions.

Business meetings were held on Monday and Tuesday afternoons. The Reservoir Committee announced that the Proceedings of the Reservoir Fisheries Resources Symposium will be available in early 1968. A resolution was passed supporting the stand taken by the American Fisheries Society and the Western Division on calling for the title and ownership of fish and wildlife to remain in the several states.

New officers elected for 1967-1968 were as follows:

PRESIDENT — Robert G. Martin, Washington, D. C.

PRESIDENT-ELECT — Buford L. Tatum, Oklahoma

SECRETARY-TREASURER — James Harry Barkley, Mississippi

AFS NOMINATING COMMITTEE — Felix (Jerry) Banks,
Florida

The 1968 meeting of the Southern Division will be held in Baltimore, Maryland.

THE AMERICAN ALLIGATOR — PAST, PRESENT AND FUTURE

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Of the many species of reptiles found in the United States, only two native representatives of the order Crocodylia exist today. These are the American alligator, *Alligator mississippiensis*, and the American crocodile, *Crocodylus acutus*. Both species are found only in the Southeastern States and both occur in very low numbers when compared with past populations.

Of the Crocodylia there are four forms including the alligator, crocodile, caiman and gavial. From these 21 species are recognized throughout the world (Ditmar, 1964). In addition to the American alligator the only other member of this group is *Alligator sinensis* of the Yangtze-Kiang River in China, which reaches about six feet long when fully grown.

The American alligator occurs throughout all of Louisiana and Florida and inhabits parts of Texas, Arkansas, Mississippi, Alabama, Georgia, South Carolina and North Carolina. Kellogg (1929) reported that the original range extended as far north as New Jersey. Today, however, the range extends from the North Carolina coast (Louden, 1966) southward along the South Atlantic and Gulf Coasts, inland to the mouth of the Arkansas River and westward to the 100th meridian in Texas. Many alligators have been reported far distant from their natural range, but they were probably purchased for pets and later released when they became a nuisance.

The ancestors of alligators and crocodiles had their origin during the Mesozoic Era some 190 million years ago (Romer, 1966). Since crocodylians were water dwellers and most sediments were laid down in water, numerous fossil remains have been located for members of this group. The typical crocodylian as we know them today emerged during the Jurassic; however, these forms, as well as those of the Cretaceous, had features more primitive than present day forms. They ranged in size from an *Alligatorellus*, less than one foot long, to the *Phobosuchus* with a six-foot skull and a total length from 40 to 50 feet. Romer (1966) further stated that all post-Cretaceous crocodylians belonged to the Sub-Order, Eusuchia, except for a few individuals during Eocene. Members of the family Crocodylidae were abundant and of various types during the early Tertiary. The alligator as we know it today emerged in North America during Oligocene some 30 million years ago, yet described as "slightly recent."

The alligator has made history very colorful in the swampy regions of the Southeast and practically every old-timer had among his favorite tales of the past several stories about alligators. Although these tales are mostly exaggerated, they are based on fact and demonstrate how impressive the alligator really is.

Audubon (1931) in a letter written to a friend concerning the abundance of alligators in Louisiana and elsewhere in the Southeast during his exploration in the early 19th century gives the following account:

"In Louisiana, all lagoons, bayous, creeks, ponds, lakes, and rivers, are well stocked with them, — they are found wherever there is sufficient quantity of water to hide them or to furnish them with food, and they continue thus, in great numbers, as high as the mouth of the Arkansas River, extending east to North Carolina, and as far west as I have penetrated. On the Red River (Louisiana), before it was navigated by steam-vessels, they were so extremely abundant, that, to see hundreds at a sight along the shore, or on the immense rafts of floating or stranded timber, was quite a common occurrence, the smaller on the backs of the larger, groaning and uttering their bellowing noise, like thousands of irritated bulls about to meet in fight, but all so careless of man, that unless shot at, or positively disturbed, they remained motionless, suffering boats or canoes to pass within a few yards of them, without noticing them in the least. The shores are yet trampled by them, in such a manner that their large tracks are seen as plentiful as those of sheep in a fold. It was on that river, particularly, that thousands of the largest size were killed, when the mania of having either shoes, boots, or saddlebags, made of their hides, lasted. It had become an article of trade, and many of the squatters, and strolling Indians, followed, for a time, no other business."

The reptile was apparently present in tremendous numbers, proving at first a nuisance to early settlers, but later providing a means of livelihood. For many years the alligators were killed to prevent destruction of livestock, for the sport of killing them, and to a small extent for their hides and flesh. Audubon (1931) also reported that oil for greasing machinery of steam engines and cotton mills was obtained from the fat of alligators. It wasn't until 1855 that any attempt was made to kill alligators in large numbers. At that time there was a demand in Paris for shoes, boots, and saddlebags, made from their hides. For a few years many thousands of alligators were killed, although the demand for hides fluctuated from year to year.

During the latter part of the Civil War, leather was scarce in the South and many thousands of alligators were killed for their hides. Also, some people to a limited extent used the flesh for food during this period, a practice which has continued to the present. When the Civil War was over, the alligators were given a short respite from hide hunters, but about 1870 it again became fashionable to have leather goods made of alligator skin. From then until the present time there has been a continuous market for alligator hides and several million of them have been marketed.

No one knows for sure just how many alligators were killed from 1870 to the present time, but the number would probably be somewhere

near 10,000,000. Smith (1891) stated that at least 2,500,000 alligators were killed in Florida from 1880 to 1893. McIlhenny (1935) estimated that from three to three and one-half million were harvested in Louisiana between 1880 to 1933. Tax records of the Louisiana Wild Life and Fisheries Commission show further that 314,404 alligator skins were sold in the state from 1939 to 1955.

So numerous were these reptiles that old hunters speak of having seen their eyes in the glare of a headlight shining on the bayou waters as thickly as the stars overhead. In the spring the bellow of the males was one of the most characteristic sounds of the marsh.

Early estimates by Stevenson (1904) indicate that the number of alligators in Florida and Louisiana in 1902 was less than 20 percent of what it had been 20 years before. In the early days of alligator hunting there were many reports of hunters taking 30 to 40 animals in a single night. Later their numbers were reduced until a take of 10 or 12 a night was considered a good hunt. In the late 1950's a successful night's hunt included the taking of two or three alligators.

McIlhenny (1935) believed that as man developed better equipment and better means of transportation, he was able to systematically exploit the wilderness areas. He listed the invention of the internal combustion engine as one of the primary factors leading to the extermination of alligators in many areas.

In the mid-1920's the vast marshes and swamps of the Southeast were trapped intensively for fur-bearing animals for the first time. Ditches were dug into remote areas, camps were constructed at strategic intervals, and a systematic harvest of the natural resources began. Fur-bearing animals were trapped in the winter and alligators hunted during the remainder of the year.

In the 1930's agriculture and industry began moving into the wetland areas. Large scale drainage was promoted by both public and private agencies, and with this the habitat began to gradually decline. Mineral exploration and development also began in a large way and brought great changes to the alligator's habitat.

In Louisiana mineral exploration crews covered every portion of the coastal marshes. These crews have been named by many as a key factor in the decline of alligators in the state. At least one man on every crew was an alligator hunter and would kill and skin the alligators as they found them along the way. When mineral development operations began, the wetland areas were cut up with a network of canals. These canals provided permanent access to the wilderness areas. Also, during extended droughts or severe floods alligators would move from the dense marshes and swamps to the canals and concentrate there. As a result they were slaughtered by night hunters. All of this was permitted by law.

As late as 1960 only two of the nine Southeastern states having alligators had suitable laws protecting them. However, by 1960 the alligator population reached a record low and it was obvious that something had to be done, or the animal would soon be nearing extinction. Over most of its original range the alligator was practically non-existent. Favorable numbers were found only on wildlife refuges and lands offering rigid protection.

In Louisiana, one of the alligator's havens of the past, the valuable reptile had practically been exterminated. In spite of the importance of the alligator no action was taken until 1960 to restrict the indiscriminate killing of the reptiles along the Louisiana Coast. At that time the State Legislature passed laws prohibiting the killing of alligators less than five feet long and gave to the Louisiana Wild Life and Fisheries Commission authority to establish seasons and specify areas and methods for taking the animals.

In 1963 the Commission closed the season on alligators and made it illegal to kill or molest alligators anywhere in the state. The only persons allowed to have alligators or alligator skins in their possession were licensed alligator breeders or skin buyers who could prove that the skins were from out of state.

The alligator population in Louisiana declined about 90 percent from the late 1940's to the late 1950's. If the legislative action of 1960 to restrict the killing of alligators had been taken 10 years earlier the task of rebuilding would have been much simpler. By 1960 not even a basic breeding population was present in many of the state's swamps and marsh areas.

After 1960 the Commission permitted a 60-day spring season, with the five-foot size limit in effect. This season was held with hopes that these restrictions would be adequate for rebuilding the population. Also, the industrial demand for alligator skins was very great and the Commission tried to provide enough alligators to keep the industry going, yet leave a surplus each year to gradually rebuild the population.

By 1963 it was obvious that the restricted season was not the answer, since during that time the alligator population showed no increase. Also, outlaws used the 60-day season to dispose of alligator skins taken illegally during the remainder of the year. Having no alternative, the Commission closed the season and intensified enforcement activities.

The closed season limited the supply of alligator skins to the market, and with the increased demand, price increases followed. In fact, the price increase was so great that many hunters and buyers continued operating, knowing that they were violating the law as well as harming the resource. This same condition was also found in Florida and the other alligator states.

Most violators felt that the fines charged by certain courts were so small they could continue hunting, even at the risk of being arrested by game agents. Very often the violator could pay a fine with the proceeds for less than a day's work. Not until the courts raised the fines and gave jail sentences did the full effect of the enforcement effort begin to show.

By 1967 the valuable reptile was on the list of rare and endangered native wildlife and, although the animal was protected by law over 95 percent of its natural range, the population in general was very low. In certain areas the picture has changed and the alligator is making a strong comeback and within a few years may again be an important part of the local fauna. However, in other areas the scene is very gloomy. The heavy illegal kill continues, in spite of efforts by game agents. And with the illegal kill alligator populations decrease.

Where do we go from here? That's the big question now. We know very well how to rebuild alligator populations, because we have seen it demonstrated so clearly in certain areas. We know that progress has been made in the past few years, but we must be persistent to make sure that it continues.

Additional legislation is badly needed to fill certain loopholes in existing laws. It is essential that federal laws be passed or amended to prohibit the transporting of illegally taken alligators or alligator skins from state to state. Also, state laws are needed to strengthen the position of landowners managing marshes for alligators. The landowner should benefit from future alligator seasons through special alligator tagging systems or licenses.

There is considerable interest at present in alligator farming. However, sufficient evidence is not yet available to prove that the reptiles can be raised in pens on an economically sound basis. Nevertheless, experiments now underway by the Louisiana Wild Life and Fisheries Commission show favorable results. If suitable alligator farming practices can be perfected, then a supply of skins to meet the industrial demand can be produced by these means.

One intriguing thought that occurs regarding pen-reared alligators is of the great success of the mink rancher. Louisiana is a leading wild mink producing state and each year the catch ranges from 40,000 to 80,000 wild pelts on a total of 30,000,000 acres. However, several of the larger ranchers can produce this many ranch mink alone on only a few hundred acres. While alligators may not be an exact parallel to mink, the idea remains and should be considered fully.

More information is also needed on the habits and basic requirements of alligators. Louisiana and Florida have done a great deal in alligator research over the past 10 years, yet much remains unknown. A continuation of this research work is essential with special emphasis in the future placed on determining habitat requirements and ecology of the reptile. As the wetland habitat continues to give way to agriculture and industry, more intensive management of the remaining wetlands will determine the success of the alligator's future.

Enforcement will be as important in the future as it has been in the past. Without adequate enforcement, laws and regulations are useless. Whenever the welfare of a resource is in jeopardy, most people are honest enough to abide by laws set up to protect the resource. However, a few people are not and without adequate enforcement, by the courts as well as game agents, this small segment of violators will continue to operate. Then in reality all you will have is a private hunting club for the lawless element. Therefore, in deciding what's next for the alligator the importance of a rigid, well-coordinated enforcement must be emphasized.

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COOPERATION BETWEEN CIVILIAN AND MILITARY GAME LAW ENFORCEMENT

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The subject of Cooperation Between Civilian and Military Game Law Enforcement has been chosen because it is felt that this unity is certainly needed all over the United States and because of the outstanding relations in the Quantico area. For years many of the military reservations have been big areas on the map that were restricted to most everyone and everything. It was hard to even enter some bases and certainly not to hunt or fish. These restricted areas were certainly needed and many still are. However, with the passing of Public Laws 86-799 and 85-337, many of the bases are now open to the public for hunting and fishing. These laws pertained to the cooperative management of fish and wildlife programs between military, state, and federal