Crocodile Specialist Group Steering Committee Meeting
Double Tree Hilton, Darwin, Australia
(15 April 2024)

North America

The following states and research entities reported back to a request for updates on their conservation, management, and research programs for the American alligator and the American crocodile:

Arkansas: Mark Barbee (Arkansas Game and Fish Commission)

Since 1984, alligator populations in Arkansas have increased and continue to be stable and in sufficient numbers to support a regulated sport hunt.

The Commission's Alligator Management Team currently administers three alligator related management programs (Alligator Farmer, Nuisance, and Harvest) in Arkansas. The Alligator Farmer Program was established in 1991 and provides for the permitted commercial captive propagation and sale of alligators. Currently, there are no permitted alligator farmers in Arkansas. In 2001, the AGFC initiated the Nuisance Alligator Program to provide improved coordination, response, and documentation of nuisance alligator complaints in Arkansas. This program is staffed by a network of regional nuisance alligator coordinators who respond to complaints from the public or enforcement agencies by removing alligators that pose a threat to the welfare of the public, pets, livestock, or property. The Alligator Harvest Program was implemented in 2007 to enable the harvest of alligators (>4 feet TL) within specific zones open to alligator hunting. Each permit authorizes the take of one alligator within a specific harvest zone on either public or private lands. Hunting opportunity is allowed in two Alligator Management Zones (AMZ 1 and AMZ 3). These two zones represent the highest and most sustainable populations. In 2020, AMZ 2 was opened up to limited private land hunting. The remaining AMZ's remain close to alligator harvesting.

2022 marked the sixteenth season for hunting in Arkansas. AGFC continues to utilize the "zone quota" for open Alligator Management Zones (AMZ). The state quota was 167 alligators across open zones. 157 CITES tags were issued to successful hunters for public and private lands. Alligator sport hunting continues to be the only legal avenue to harvest alligators in Arkansas. The harvest sex ratio was 1.3:1 (M:F) with males making up 57% of the total harvest. AMZ 1 produced the second highest harvest rate with 64 alligators ahead of AMZ 2 with 6 alligators. AMZ 3 continues to be the highest harvest zone with 87 alligators. The male mean TL was 8.0 ft and the female TL was 6.8 ft. AMZ 3 yielded a slightly higher mean TL for both male and female alligators harvested.

A complete analysis of harvest data from the 2023 season has not been finalized at this point. Preliminarily, a total of 201 CITES tags were issued to hunters for tagging harvested alligators. Hunting was still restricted to AMZ 1, AMZ 2 and AMZ 3 with all other zones remaining closed. Overall harvest rate was 100 percent for the 2023 season. The harvest sex ratio was 1.9:1 (M:F) with males making up 65% of the total harvest. The complete data analysis for 2023 will be made available and presented in the USFWS Annual Report.

The 13' 11.5 " male alligator harvested in 2020 on public waters still remains the largest harvested alligator to date.

Florida: Dwayne Carbonneau, Vincent Deem, Dan Navarro, Brooke Talley, and Allan Woodward (Florida Fish and Wildlife Conservation Commission)

American alligator *(Alligator mississippiensis)*
The overall Florida population of the American alligator has been relatively stable since 1988, when the statewide alligator harvest and ranching programs were implemented. Significant increases in the population over that period were in the 0.3-2.7-m TL size classes, as indicated by spotlight surveys conducted annually on a sample of areas throughout the state. Populations of the largest (≥2.7-m TL) alligators showed no significant change. Florida has three alligator harvest programs (nuisance, statewide public waters, and private lands), which accounted for an average harvest of 17,855 alligators per year during 2019-2022 (Table 1). In 2022, the Florida Fish and Wildlife Conservation Commission (FWC) received 16,648 complaints about alligators, which resulted in harvest of 8245 alligators (≥1.22-m TL) and translocation of 1607 juvenile alligators (≤1.22-m TL). During 2019-2022, the FWC documented an average of 10.5 unprovoked alligator bites per year that resulted in moderate to severe injury and one incident in 2019 resulted in a fatality. Because of continued low prices for wild alligator skins ($13/foot= $2.30/belly cm), the FWC has increased the stipend it pays nuisance alligator trappers to remove alligators from $30/alligator to $50/alligator.

Table 1. Harvest of wild American alligators and alligator eggs in Florida during 2019-2022.
*Note that 2022 figures are not yet final but are not expected to change substantially.

Alligator Harvest	**2019**	**2020**	**2021**	**2022***	**Average**
Statewide Hunt	8372	8216	7944	7867	8102
Private Lands	1298	1194	1865	2752	1777
Nuisance	7669	7814	8178	8245	7976
Total Wild Harvest	17,339	17,224	17,987	18,864	17,855
Public Waters Egg	38,333	41,328	51,055	60,000	47,679
Private Lands Egg	100,589	41,117	69,653	82,638	73,499
Total Eggs	**138,922**	**82,445**	**120,708**	**142,638**	**121,178**

The Florida alligator ranching program includes collections of wild eggs and hatchlings on both public waters and private lands. In 2022, 60,000 eggs were collected on public waters and 82,638 eggs were collected on private lands. In addition to eggs, a combined total of 4542 hatchings were collected from both public and private sources. Farms produced approximately 12,507 viable eggs from closed cycle production. In 2022, 92,971 eggs (all to the state of Georgia) and 19,884 hatchlings (6225 to Georgia, 8500 to Louisiana, 5159 to Texas) were transferred to farms in other states for raising. Additionally, 18,380 non-hatchling alligators were transferred to Louisiana farms. Florida farms produced 25,647 skins (avg. 35 cm belly width) for sale in 2022, which sold for a reported $6.50/cm ($41/ft) for 1st grade skins. The high frequency of eggs and live alligator exportations from Florida to other states reflects an ongoing shift of production from smaller farms to large corporate farms in those states over the past several years.

American crocodile (*Crocodylus acutus*)

The American crocodile was listed as Endangered under the Federal Endangered Species Act in 1975 but since 2007 has been federally designated as Threatened in the United States. This is because the population has experienced considerable rebounding growth as a result of the combined conservation efforts of the Florida Fish and Wildlife Conservation Commission, University of Florida, Florida Power & Light, US National Park Service, US Geological Survey, and US Fish and Wildlife Service, among others. American crocodile sightings have been documented as far north as Cocoa Beach in Brevard County on the east coast of Florida and Lake Tarpon in Pinellas County on the west coast. An increasing crocodile population (currently estimated between 1160 and 2800 non-hatchlings) paired with a commensurate increase of approximately 3 million people in the state over the last decade has led to a logical increase in human-crocodile interactions.

FWC manages these human-crocodile conflicts on a case-by-case basis, prioritizing human safety while also taking the needs of a recovering species into consideration. During 2023, FWC received ~280 calls regarding the American crocodile which consisted mainly of complaints and reported sightings. Most of the complaints were resolved by educating the public through telephone calls as well as site visits (see below for details). Occasionally, the capture of a crocodile is required for it to be relocated, translocated, or, in exceedingly rare cases, placed in captivity or euthanized. Of the ~280 calls that were received, only 9% (26 individuals) resulted in live captures and subsequent translocation or relocation. None of the crocodiles were placed into captivity. Captured animals ranged from 0.95 m to 3.4 m TL with the average individual measuring 2.3 m. Twelve crocodiles were captured and relocated to nearby sites (relocation), thereby removing the crocodile from immediate concern. Four individuals were captured and translocated farther from the capture sites and released in suitable habitat (translocation). Two individuals were caught and relocated on two separate occasions during the year, further supporting evidence that relocation/translocation is often a short-term solution to an immediate concern. Management staff assisted research staff with capturing additional crocodiles to outfit with GPS transmitters. All crocodile captures and handling events follow the guidance found in the *American Crocodile–Human Interaction Response Plan* (2020).

During 2023, staff recovered six American crocodile carcasses (3 males, 1 female, 2 undetermined sex). Their sizes ranged from 1 m to 3.5 m TL. Four of the six mortalities were caused by vehicle strikes. One individual was killed accidentally by an alligator hunter and the case is still under investigation. The final crocodile's cause of death was undetermined.

A digital dashboard for illustrating crocodile complaint locations was developed and serves as a helpful tool to internal and external partners. This dashboard, though not available to the public, helps facilitate the coordination of management goals between agencies as it pertains to both outreach and the recovery of the American crocodile.

Research Overview: In June 2023, staff published a study on crocodile translocations in the Journal of Wildlife Management (Brunell *et al*. 2023) that showed 6 out of 7 translocated crocodiles either returned (n= 4) or attempted to return (n= 2) to their original capture site. Three crocodiles translocated 45 km or less returned in under 2 weeks. One female crocodile was translocated 152 km away and was recaptured just 0.4 km from its original capture site over 2.5 years after its release. Because of concerns regarding crocodiles returning to areas of conflict, as well as health concerns for the crocodile (stress associated with capture and translocation), the study concluded that crocodile translocations have limited conservation value in Florida and may only be worth considering after all other reasonable options are exhausted. The full article is available through open access here and there is an interactive website about the study (here).

Staff concluded a social science study on residents living within the range of American crocodiles to ascertain their knowledge and interest about the species, and their opinions on management strategies. Findings showed a large awareness gap among residents living within crocodile range with 23% of respondents being unaware that there are both alligators and crocodiles in Florida. Most respondents want the crocodile population to stay the same (47%) or increase (36%), while 17% want the population to decrease. There was overall disapproval for euthanizing (88% unacceptable or highly unacceptable) or placing a crocodile in captivity (73% unacceptable or highly unacceptable) as a management action to resolve human-crocodile conflict. Most respondents agreed humans and crocodiles can safely co-exist (69%) while 11% disagreed. A manuscript on the study is currently being written to be submitted to a peer-reviewed journal in 2024.

A new tracking study on American crocodiles living in urbanized environments began in October 2022. To date, 12 GPS tags have been deployed on crocodiles (8 in Miami-Dade County, 2 in Broward County, 1 in Brevard County, 1 in Key Largo). Three tags remain to be deployed so that the total sample size will be 15 crocodiles. This study uses satellite/GPS telemetry to learn about the movements and behaviors of crocodiles in urbanized areas. Specifically, the study aims to understand how human activities affect crocodile movements, factors involved in crocodile road crossings, and habitats that are utilized by crocodiles in urban surroundings. Information gathered from this study will be used by state, federal, and local governments to improve crocodile management decisions by incorporating land management designs and practices that would promote the safe and sustainable coexistence of crocodiles and humans in South Florida.

Literature Cited: Brunell, A.M., Deem, V., Bankovich, B., Bled, F. and Mazzotti, F.J. (2023). Effects of translocation on American crocodile movements and habitat use in South Florida. The Journal of Wildlife Management e22427.

South Florida Crocodylian Research: Venetia Briggs-Gonzalez and Sergio Balaguera-Reina (CrocDocs at University of Florida)

The CrocDocs continue crocodylian research in South Florida on native American crocodiles and American alligators as indicator species providing performance measures of Everglades restoration, and on non-native Spectacled caimans as potential containment of an invasive species to South Florida.

As a target species, the health of American crocodiles is critical to assessing Everglades restoration impacts. Given the overall lack of knowledge of baseline conditions reflecting "normal" blood conditions in American crocodiles and how to link them with health assessments, the team analyzed 40 hematological and biochemical parameters and estimated reference intervals based on 436 clinically healthy wild American crocodiles caught between 2015 and 2021 in South Florida. Blood parameters of crocodiles were similar across the South Florida population, and they did not find major health impacts as a result of altered, anthropogenic habitats. They provide a reference range for blood analytes that can be used by others for future work. In terms of nesting, a total of 3452 nests have been recorded over the past 53 years. The first successful nest in southwest Florida was recorded in 2021, and in 2023 over 100 hatchlings were captured from this new nesting area highlighting the successful range expansion of the species. The team further investigated the internal nest environment of sediment nourished American crocodile nests where supplemented sand mounds provided successful nesting habitat and yielded hatchlings over a 2-year period. A thermal profile of the nests indicates that there is more to be understood of the nesting conditions that would provide optimal hatching success. However, the successful use of supplemental sand for nesting is useful information for managers working toward crocodile conservation, particularly in areas like South Florida, where nesting habitat is declining.

The CrocDocs have monitored American alligators in the Everglades system for more than 40 years and show that alligator performance measures are well below target conditions of Everglades restoration, however, consistent monitoring indicate that while alligators are not responding positively in abundance, body condition of alligators is improving in some areas. The team provides evidence between body condition and alligator health using hematological and biochemistry parameters from 120 individuals in areas across South Florida. They identified a subset of blood parameters that could be used to predict body condition of alligators in the Everglades and can be used as a measure by others. Everglades alligators in poorer body condition are likely dehydrated or have inadequate diet, and they found that the difference across areas were most likely attributed to prey availability/quality. Continued monitoring efforts provide the tools to assess responses to Everglades restoration on spatial and temporal scales.

The University of Florida has conducted a removal and monitoring program for Spectacled caiman (*Caiman crocodilus*) in South Florida with a focus on areas affected by Everglades restoration projects from 2012 to 2021. During this removal effort, 277 caimans were removed, and removal rates increased from 5/year to 47/year, however as the population became impacted by removal efforts, fewer caimans were observed. Reproductive data from necropsied individuals show successful breeding which further informed the team on removal efforts. To date, 304 caimans have been removed and new areas are being surveyed. The team also investigated the phylogenetic history of Spectacled caimans in Florida and how it relates to populations in the native range, and they found that the Florida population originates from two distinct molecular lineages from two different locations, one from trans-Andean Colombia (most likely Magdalena River *Caiman crocodilus fuscus*) and from the Upper Branco River in northern Brazil (*Caiman crocodilus crocodilus*). The findings provide evidence of multiple introduction events and raise concerns about genetic admixture in South Florida. CrocDocs continue to forge ahead with research on caimans and are currently using more genetic markers involving microsatellite markers to provide greater genetic resolution.

American alligator research at the University of North Florida (Jacksonville, FL): Adam Rosenblatt

The Rosenblatt Lab at UNF has been studying alligator ecology in human-dominated landscapes since 2018. We have surveyed the population that resides in the portion of the St. Johns River that courses through downtown Jacksonville every summer since 2018 and our initial findings were published in 2020 (Beal and Rosenblatt 2020). We have also surveyed the population that resides in stormwater retention ponds in Jacksonville for two years. Our results show that alligator distribution in Jacksonville is strongly limited by urban development both along the river and near ponds. Our plan is to continue surveying the St. Johns River population for 10 years to determine how the population is reacting to changes in river salinity.

We have also been studying how living on golf courses affects juvenile alligator diets (Rosenblatt *et al*. 2023). We conducted this work on Jekyll Island in Georgia and found that golf course alligators on the island eat a larger proportion of insects and fish than alligators on nearby islands that do not live on golf courses. We found instead that alligators living on less developed islands ate mostly crustaceans.

Lastly, we are finishing up a study on how alligator nesting patterns in Florida may have been affected by urban development between 2011 and 2021.

For more information please contact Adam Rosenblatt at adam.rosenblatt@unf.edu

Literature Cited: Beal, E. and Rosenblatt, A.E. (2020). Alligators in the big city: spatial ecology of American alligators (*Alligator mississippiensis*) at multiple scales across an urban landscape. Scientific Reports 10: 16575.
Rosenblatt, A., Greco, R., Beal, E., Colbert, J., Moore, Y., Baglin, V. and Nifong, J.C. (2023). Golf course living leads to a diet shift for American alligators. Ecology and Evolution 13: e10495.

Georgia: Kara Nitschke (Georgia Department of Natural Resources)

The Georgia Department of Natural Resources first estimated the total alligator population in 1973 at 29,954. By 1982, the population was estimated at 101,644. It is considered fully recovered with regards to population status and occupancy of traditional range. Alligators have been observed above the Fall Line (the area where the upland region and the coastal plain meet) in Georgia, but these sightings are considered the result of illegal relocations or escapes from alligator farms, except for the few alligators observed in close proximity to the Fall Line. Using 1984-2019 spotlight data, the best fit power curve trendline (r^2= 0.53) based on the 3-year average number of alligators seen per mile has increased 2.47 times since the 1982 population estimate of 101,000. This increase is assumed to be indicative of a similar increase in the population as a whole; therefore, Georgia's current alligator population estimate is 250,000. A second methodology that included habitat type, alligator density, detectability, and occupancy rates (from published literature in other states) generated a second population estimate of 240,000. The population is widely dispersed and density is variable based on both habitat quality and condition.

Georgia's alligator population is currently monitored through a spotlight index conducted across various wetland habitats below the Fall Line. To achieve a balance between a growing alligator population and the potential nuisance conflicts that can arise from an overabundant population, Georgia has set a range-wide population goal of five (5) alligators per mile as indexed through our current spotlight index. The population density goal of five was chosen because it approximates the 20-year (1990-2009) average number of alligators seen per mile during our annual spotlight counts across the state.

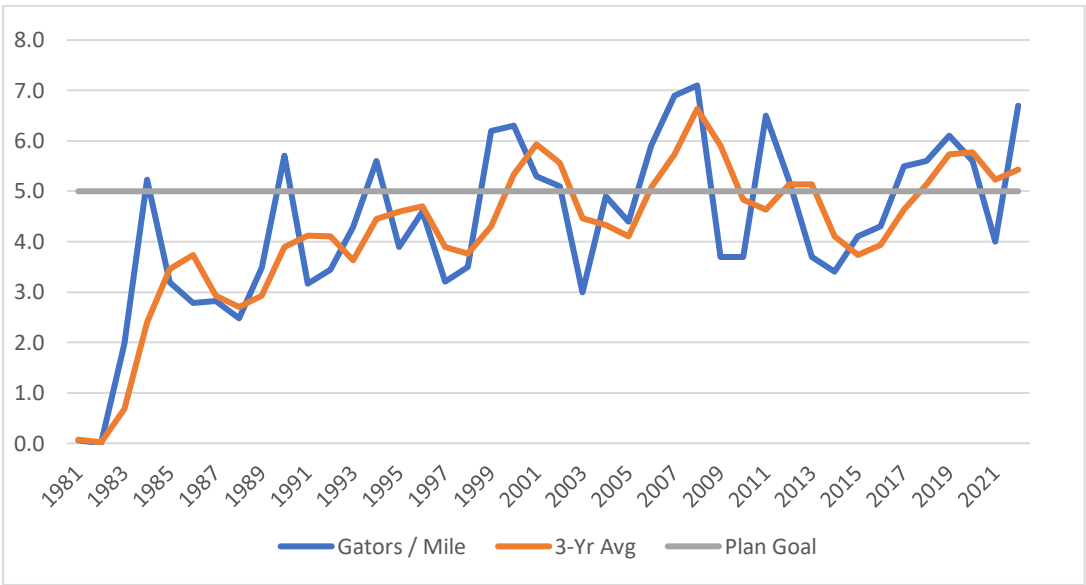

Figure 1: Georgia alligator population data, 1982-2022

Alligator nest surveys began on Rhetts Island in 1982 and have continued ever since (with a few exceptions). During the period 1982-2023, the number of nests occurring on this study area ranged from a low of 11 in 1982 to a high of 66 in 2002, with an average of 28 nests per year. Overall the trend in the number of nests appears to be stable from 1982 through 2023. However, surveys conducted post-2003 show an average of 25 nests per year and a non-significant declining trend. The number of nests will continue to be an important indicator of the alligator population status in the Altamaha River.

Plans for an alligator-hunting season in Georgia were developed in the late 1980s when regulations concerning nuisance alligators were adopted and the framework for an alligator hunting season was enacted. Public comment was supportive of the GADNR proposal to hunt alligators and the Board of Natural Resources adopted alligator hunting regulations in spring of 2003, and the season began in September of 2003. To prevent alligators from being over-harvested in any one or two areas within the state, alligator hunting zones have been established across the state. These zones are delineated where possible by watershed. Alligator harvest quotas were initially established for each zone based on nuisance alligator data, intuition about the density of alligators within each zone, and survey data. Quotas have changed since the beginning in 2003, as more counties have been included. Alligator harvest data between 2003 and 2022 are shown in Table 2.

Table 2. Overall alligator harvest in Georgia by year, 2003-2022.

Year	Avg. Length (cm)	Max Length (cm)	No. Harvested	Permits Issued
2003	97	144	72	184
2004	100	158	101	300
2005	98	162	161	500
2006	95	160	185	500
2007	100	160	192	550
2008	104	163	173	551
2009	103	161	193	700
2010	101	165	306	850
2011	102	160	219	850
2012	99	161	253	850
2013	98	167	247	850
2014	100	159	238	850
2015	102	169	326	1121
2016	101	162	248	1000
2017	104	161	194	1000
2018	103	162	278	1000
2019	104	169.75	326	1000
2020	102	164	372	1030
2021	98	150	391	1030
2022	99	142	390	1030
Totals	**100.5**	**169.75**	**4865**	**15,746**

GADNR began receiving alligator complaints in the early 1960s, but only since 1980 have personnel been required to file a detailed report on each complaint. Specific reasons for complaints vary. The most common complaint involves a concern for the safety of pets, livestock, or humans, followed by a general fear of having an alligator in an unusual place such as a swimming pool, yard, highway, parking lot, etc. Other categories of complaints, in order of importance, are as follows: 1) eating fish (eg catfish ponds), 2) an injured or dead alligator, and 3) unusually aggressive alligator. Through 2019, a total of 13,685 removal permits have been issued and 10,531 alligators not less than 4 ft have been caught since the nuisance alligator harvest program began in 1989.

The overall trend in nuisance alligator complaints and GADNR manhours per complaint is provided in Figure 2. Despite annual fluctuations, the number of complaints remained fairly stable until 2003, but have subsequently decreased with the exception of 2017-2019. This decline started at the same time alligator hunting began in 2003. As expected, most complaints occur where significant numbers of people reside in areas associated with good alligator habitat. More than 50% of the total statewide complaints through 1988 came from eight counties in the Coastal region. Chatham and Glynn Counties, home of the cities of Savannah and Brunswick, accounted for 61% of all complaints on the coast and almost a third of the statewide total.

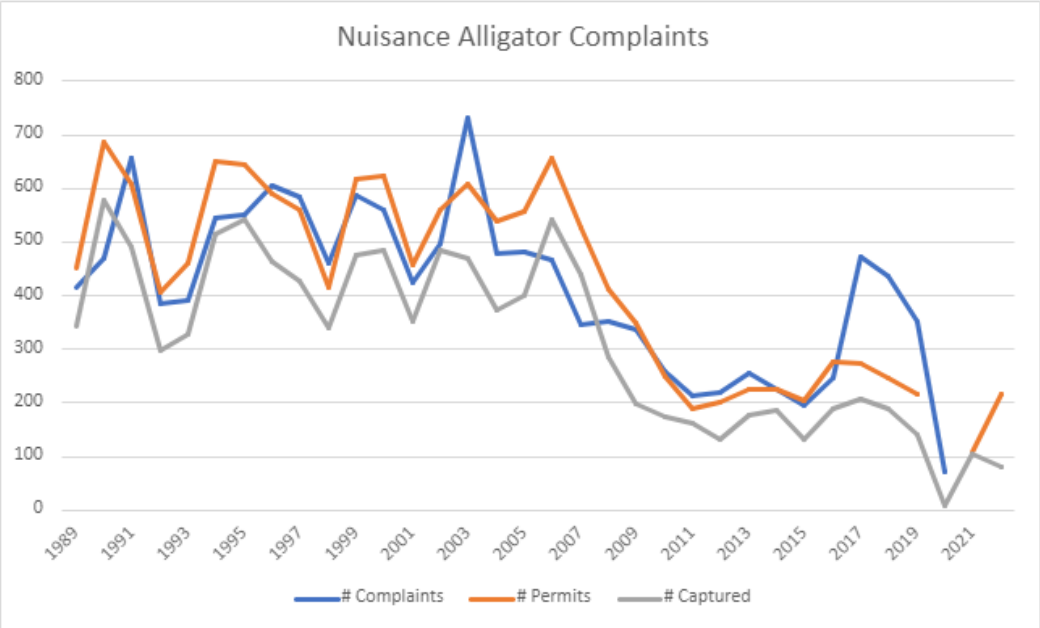

Figure 2: Nuisance alligator complaints by year

In 1989, a nuisance alligator program was initiated. Small alligators (<4 ft) that require removal are handled in one of two ways: GADNR personnel (if available) capture and remove the alligator at no charge to the landowner, or 2) the landowner can hire a licensed nuisance wildlife control operator or alligator agent-trapper to capture and remove the alligator at the expense of the landowner. These alligators are relocated to areas of suitable habitat. Larger alligators (>4 ft) that require removal are assigned to an alligator agent-trapper and are removed at no expense to the landowner. Captured alligators larger than 4 ft may be sold alive or may be slaughtered for the sale of alligator products. An extensive system of permits, meat seals, hide tags, and complaint forms are used to monitor the system. As indicated by the noticeable decline in manhours per complaint, the use of agent trappers has been very successful in improving GADNR efficiencies in handling nuisance alligator complaints.

The number of collection permits issued often exceeds the number of alligator complaints because complaints may involve multiple alligators at a site. Collection permits issued (686) and number of alligators captured (578) peaked in 1990, the second year of the program. Since 2010, the average number of permits issued each year has fallen to 232 and the average number of alligators captured each year has dropped to 172, much lower than the 1990s averages. Since 1989, nuisance trappers have averaged greater than a 75% capture rate of alligators caught per permit issued.

Alligator farms in Georgia are regulated through a permit process administered through GADNR. Some alligator farms purchase nuisance alligators that have been captured by alligator agent trappers. Egg and hatchling harvest are not currently available in Georgia. In 2022, a total of 75,577 farmed alligator hides were tagged for export, most of the stock being imported as eggs from Florida (see Florida report). To meet the statutory mandate of using the best science available to manage Georgia's wildlife resources, GADNR must acquire more scientific data before implementing such strategies.

Louisiana: Ruth M. Elsey and Jeb Linscombe (Louisiana Dept. of Wildlife and Fisheries)

In 2022, for the first time in over a decade, coastal Louisiana experienced drought conditions that lead to sub-optimal nesting conditions in some areas. Drought conditions continued into the spring and summer of 2023. Alligator egg harvests were still relatively high with 470,417 and 453,784 eggs collected in 2022 and 2023, respectively. Table 3 shows the quantities of estimated coastal nests, ranched eggs, year-end farm inventory, farm hides shipped, farm alligators released to the wild, and alligators harvested in the annual autumn season.

Table 3. Estimated coastal nests counts, ranched eggs, year-end farm inventory, farm hides shipped, farm alligators released to the wild, and alligators harvested in the annual autumn season in Louisiana.

Year	Coastal nest count	Ranched eggs	Year-end farm inventory	Farm hides shipped	Farm releases to the wild	Wild alligators harvested
2018	53,733	587,776	900,999	450,220	52,750	20,168
2019	67,935	650,878	998,152	438,577	38,543	23,828
2020	60,794	303,883	788,224	387,320	55,366	14,888
2021	64,345	462,537	701,581	338,942	35,803	14,348
2022	47,529	473,417	713,897	309,984	19,255	23,000
2023	50,699	453,784	Pending	335,736	19,255	Pending

In January 2022, there were 52 licensed farmers in Louisiana with farm inventories totaling 713,897 alligators, reflecting strong nesting and high egg ranching efforts for several years in a row. During the 2022 tag year (January - December

2022), an estimated 309,984 farm-raised alligators were harvested, with hides averaging 28.56 cm belly width. The total estimated value of these alligator hides was $US57.5 million and meat was valued at over $US6 million. In 2023, 50,699 nests were estimated on the coast-wide survey and farmers collected 453,784 eggs.

Wild alligators have been harvested in Louisiana for over 50 years (since 1972) as part of a sustained use management program. The majority of licenses are commercial licenses, although some recreational "sport" hunting licenses are also issued. In 2022, approximately 23,000 wild alligators were harvested by 3428 trappers. Harvested alligators averaged 7.73 ft TL, with an estimated value of $US5.48 million for hides and meat. Low demand for wild hides led to a reduced harvest of wild alligators in 2020-2021 (Table 3). The final 2023 harvest and shipping numbers are currently being tallied, but the 2022 figures reflect that wild alligator harvest has recovered. Although meat markets have recently created an increased demand for wild alligator harvests, low market value for wild alligator hides continues to be the number one concern for the alligator industry and management in Louisiana.

Due to recent low prices for wild alligator hides, we occasionally had trouble maintaining interest and participation of "nuisance" alligator trappers to remove problem alligators that are a safety concern. Previously, the sale of hides and meat was a mechanism of payment for the trapper's time and effort to provide this service. The LDWF established a program fund to pay a $U75 incentive payment for each nuisance alligator complaint handled by licensed nuisance alligator trappers to ensure this service is maintained for the state's citizens. In 2021, the incentive fees paid to nuisance trappers amounted to $US104,325 (1391 situations handled at $US75/situation). In April 2022, LDWF increased the nuisance hunter incentive payment from $US75 to $US100 due to gas prices and inflation in general. In 2022, the total payout was $US134,400. The payment program continues to work extremely well.

In 2011, the Department of Wildlife and Fisheries and the LSU School of Veterinary Medicine in conjunction with the Louisiana Alligator Farmers and Ranchers Association developed a document entitled "Best Management Practices for Louisiana Alligator Farming". The document details recommended practices to ensure animal welfare of captive reared alligators in Louisiana, including egg collection, hatching, rearing, release to the wild and slaughter methods. This document was again updated in January 2016 and distributed to all farmers and has been useful to educate persons interested in alligator farming or exhibiting alligators. Another updated version with changes in temperature regimes and slaughter methods, was distributed in 2023.

In October 2017, the LDWF organized an alligator session at the 71st annual conference of the Southeastern Association of Fish and Wildlife Agencies (SEAFWA) held in Louisville, Kentucky to discuss issues relevant to all management programs. The session was well attended by representatives from most southeastern states. Topics discussed included movement of live alligators between states, nuisance alligator programs, issues with marketing and hide prices, and enforcement of various aspects of these programs. Subsequently, a formal "Alligator Working Group" was established within SEAFWA and the group corresponds regularly, and meets once or twice a year to discuss common problems and solutions. In 2023, the working group met twice and has maintained exemplary representation by all range states. The AWG is currently working on several issues including the creation of "GatorWise", a comprehensive website in which all range states are represented in an effort to give the public a more uniform and cohesive understanding of alligators and how to deal with nuisance issues.

Since 1 January 2019, the LDWF began requiring veterinary certificates of health be obtained prior to our issuing export or import permits for live alligator shipments to/from licensed farmers in other states. Compliance with this new requirement has been good.

Disease monitoring for emerging infectious diseases such as *Chlamydia* and *Mycoplasma* has been conducted and amplified in 2023 and will continue in 2024. All cohorts of imported alligators are tested for both *Chlamydia* and *Mycoplasma*. Through a federally appropriated grant, Louisiana will be testing 3000 farm alligators for *Chlamydia* to better understand distribution as well as continue efforts to identify the specific strain of *Chlamydia* associated with alligators.

For the tag years 2020 and 2021, the CITES hide shipping fee was temporarily decreased from $4 per hide to $3 per hide. This fee returned to $4 per hide for 2022-year tags. The $0.25 severance tax was discontinued for all tag years in November 2021. In addition, the required percentage of alligators to be released to the wild was decreased from 10% of the quantity of eggs hatched to 5%, starting with the 2021-year egg collection permits. For 2023-year tags, the hide shipping fee was again reduced to $3, but has returned to $4 for 2024 year tags.

In March of 2023, California ruled: Under the Supremacy Clause of the United State Constitution, California Penal Code Sections 653o and 653r are hereby declared unenforceable and unconstitutional as applied to the importation, possession or sale of American alligator bodies, parts, or products thereof, and of the bodies, parts or products of saltwater crocodiles and Nile crocodiles subject to 50 C.F.R. s. 17.42. In short, this means that 653o and 653r will be permanently enjoined and it will remain legal to sell and trade alligator products in the state of California. In August of 2023, we were notified that California did NOT file an appeal and the judge's ruling was final. This was a huge win for crocodilian management globally.

The Louisiana Department of Wildlife and Fisheries has an active research program in addition to management and administration of our wild harvest, nuisance alligator control program, and commercial farming oversight. Our staff

publishes numerous abstracts and full papers annually; many in collaboration with university researchers and graduate students on a variety of topics related to alligators (physiology, ecology, food habits, nesting, etc.).

South Carolina: Morgan Hart (South Carolina Dept. of Natural Resources)

Alligator populations in South Carolina appear to be stable. Removal numbers have not changed much since the legal harvest started, and population surveys are ongoing. All harvest is recreational, and export of hides remains a small portion of hide disposition (Table 4).

Table 4. Wild alligator harvests on Public and Private Lands as well as nuisance alligator removals, in South Carolina between 2008 and 2023.

Year	Public	Private	Nuisance
2008	362	249	
2009	452	224	
2010	473	228	382
2011	472	219	426
2012	483	296	370
2013	452	377	467
2014	325	350	355
2015	333	228	294
2016	396	375	251
2017	352	374	327
2018	333	372	319
2019	336	389	336
2020	253	403	322
2021	311	450	361
2022	321	404	350
2023	Still reporting	Still reporting	Still reporting

Public Lands Hunt: The public hunting season consists of 4 hunt units in the coastal plain of South Carolina with 1,000 harvest tags available (250 in each hunt unit). In 2014, harvest tags were reduced from 1200 (300 per hunt unit) to 1000 (250 per hunt unit). Hunters are chosen in a computerized lottery drawing with a preference system to ensure all hunters that continue to apply annually will eventually be chosen. The public hunt season runs from the second Saturday in September until the second Saturday in October.

In late 2018, hunting was disallowed on the two SC Department of Natural Resources' Wildlife Management Area (WMA) properties. Prior to 2018, those properties had limited alligator hunting and were included as a separate computerized drawing with a maximum of 32 alligators taken per year.

Private Lands Hunt: In the Private Lands Program, landowners with significant amounts of alligator habitat can apply for harvest tags that are issued for use only on their specific property. Private Lands tags cannot be used on public waters. The Private Lands season runs from 1 September from one year to 31 May the following year.

Nuisance Program: The nuisance alligator program allows permitting of individuals for removal of a specific animal on their property that poses a threat to people.

*Other***:** Alligator propagation (farming) legislation was passed in 2014 and subsequent regulations were promulgated in 2015. To date, we still have not received any applications for a permit.

Annual nightlight surveys are conducted in statewide alligator habitat. Ongoing mark recapture efforts along with satellite tagging adult alligators is providing population and movement information. Clemson University also has multiple long term research studies on state properties.

Alligator Research in South Carolina: Thomas Rainwater

- Range wide survey of American alligator diet and exposure to microplastics, PFAS, and mercury (Miriam Boucher, Clemson University)
- Influence of human disturbance on frequency of raccoon predation of American alligator nests (Clarissa Tuten, Coastal Carolina University)
- Effects of natural incubation temperature on American alligator hatchling size, growth, and survival (Chris Smaga, University of Georgia)
- Nest attendance of American alligators in coastal South Carolina (Yawkey Wildlife Center)
- Faunal associates of American alligator nests in coastal South Carolina (Yawkey Wildlife Center)
- Impact of human disturbance on American alligator behaviour in human-dominated landscapes (Anje Kidd-Weaver, Clemson University)

- Size- and age-related fertility, nesting frequency, and nest site fidelity of adult female American Alligators in coastal South Carolina (Phil Wilkinson, Yawkey Wildlife Center)
- Linking American alligator nutritional subsidies, food webs, and ecosystem functions in coastal South Carolina (Clemson University STRIVE Lab)

Texas: Jonathan Warner (Texas Parks and Wildlife Department)

The following information was compiled by the TPWD Alligator Program from Department-mandated alligator hunting, farming, and nuisance control reports:

Number of Skins: Texas currently has two commercial alligator farms that produce hides for export. For 2022, Texas farms produced 15,820 hides. In 2023 (year-to-date), Texas farms produced 11,790 hides:

CITES Tag Sequence	**2022 Farmed Hides**
22000001-22002820	2820
22003001-22004400	1400
22005001-22007650	2650
22008001-22010000	2000
22015001-22017550	2550
22018001-22020000	2000
22027001-22029400	2400
	15,820

CITES Tag Sequence	**2023 Farmed Hides***
23000001-23000007	7
23001001-23001520	520
23001581-23002020	440
23002032-23002060	29
23002061-23002260	200
23002281-23002520	240
23002541-23003014	474
23003020-23003440	421
23003461-23003858	398
23003895-23004249	355
23004251-23004336	86
23004337-23004420	84
23041001-23041438	438
23041440-23041717	278
23041718-23042000	283
23040001-23040017	17
23040019-23040718	700
23040719-23041000	282
23042001-23042700	700
23042721-23043271	551
23000121-23000470	350
23005001-23006000	1000
23007001-23008000	1000
23008001-23009000	1000
23017001-23018938	1937
	11,790 (YTD)

* Please note that up to 2000 additional farmed hides are still anticipated in December 2023.

TPWD currently provides two alligator hunting seasons for its constituents; a "non-core county" spring hunt (1 April-30 June) in counties falling outside the major distribution and primary habitat of the species, and a traditional autumn "core county" season (10-30 September) in 22 southeastern counties that harbor high alligator densities in coastal marshes, rivers, and inland lakes. Texas hunters harvested 2122 wild alligators for the 2022 season (spring= 170, fall= 1952). An additional 139 nuisance alligators were harvested or relocated to permitted facilities in 2022 under the TPWD Nuisance Alligator Control Program. Texas hunters harvested 2253 wild alligators for the 2023 season (spring= 244, fall= 2009). An additional 202 nuisance alligators were harvested or relocated to permitted facilities in 2023 under the TPWD Nuisance Alligator Control Program.

Assessment of Alligator Population Status: Standardized annual aerial nest surveys and night-count data (spotlight surveys) indicate stable or increasing populations across Texas, especially in coastal marsh habitats along the upper and middle Gulf Coast, and parts of East Texas. Texas has many artificial reservoirs, and some of these larger impoundments

continue to see increases in their respective alligator populations to the extent that targeted and/or proactive nuisance control is merited in the interest of public safety.

*Wild Alligators***:** Statewide alligator harvest recommendations are derived using aerial nest counts, spotlight surveys and harvest trends. Approximately 65% of wild harvest alligator CITES tags are issued based on aerial nest survey data, with the remaining 35% based on spotlight data and harvest trends. With overall increasing alligator numbers and shifting demands on the resource (eg trophy and meat hunting favored over traditional commercial hunting for wild skins), TPWD is currently in transition to a more user-friendly online alligator permitting system. Additionally, as Texas urban areas (primarily Houston, but also San Antonio, Dallas-Fort Worth and Austin) continue to expand into alligator habitats and perceived "nuisance" complaints from the public increase, there is a continuing need for TPWD to provide high-quality alligator educational content to the public across multiple platforms. The Alligator Program is currently working with TPWD Communications on various outreach products; a major goal for 2024 is to run an alligator awareness/safety campaign on digital billboards along Interstate 10 in the heart of Houston, the fourth most populous city in the US. Discussions also continue with the SEAFWA Alligator Working Group about building a centralized website for alligator information in North America, similar to the BearWise program.

TPWD trains and licenses qualified individuals to respond to nuisance alligator complaints. All public nuisance alligator complaints are directed through TPWD Law Enforcement Dispatch, where a complaint number is generated, and the caller is provided contact information for permitted alligator trappers in their area. As evidenced by survey data, lower hunter demand, feedback from landowners, nuisance trappers and the public, and relatively low overall wild harvest numbers, the Texas wild alligator population is currently healthy and appears sustainably managed given the stability of the commercial egg collection and farming industries over the past decade.

Egg collection: Texas permits wild alligator egg collection and incubation, and the subsequent sale of hatchlings to alligator farming operations. Alligator nest stamps are issued only for privately owned lands. After airboat and/or helicopter surveys, egg collectors must provide TPWD with detailed geospatial nest distribution data to obtain nest stamps. With few exceptions, egg collectors are allowed to harvest 50% of the nests on a given property. To ensure sustainability, TPWD staff fly annual nest surveys along predetermined transects in primary habitat and conduct selected "spot check" surveys with Law Enforcement on properties where eggs have been collected. Under the current model, Texas does not require a subset of farmed alligators originating from wild eggs to be returned to the wild. Environmental and habitat conditions were optimal in late spring leading into nesting season for both 2022 and 2023, but prolonged summer droughts across much of the alligator range in Texas likely affected the wild hatch rates in coastal areas that completely dried up.

Changes in Laws and Regulations: There were no regulatory changes for alligators in either the Parks and Wildlife Code or Texas Administrative Code in 2022-2023. In March 2024, staff hope to present a proposal to the TPW Commission seeking adoption of an extended September alligator hunting season, with opening day falling on 1 September instead of 10 September.

Other information:
Existing laws and regulations regarding alligators and the alligator industry in Texas can be found here.
The alligator section of the TPWD website can be found here.
The Texas Parks and Wildlife Outdoor Annual can be found here.

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