Crocodile Specialist Group Steering Committee Meeting
Sofitel Royal Bay Hotel, Agadir, Morocco
(12 May 2026)

North America Region

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:

Alabama - Richard Tharp (Alabama Wildlife and Freshwater Fisheries)

The 2025 Alabama Alligator Program had several changes from the 2024 season per regulation changes. Additional area was added to the West Central and Eufaula Alligator Management Areas (AMAs). This regulation also resulted in a slight decrease in area available in the Southeast AMA. Available permits were increased for all AMAs. 2025 alligator hunts resulted in a total of 150, 75, 75, 30 and 50 permits issued to hunters in the Southwest, Coastal, West Central, Eufaula and Southeast AMAs, respectively. The new regulations provided the opportunity for hunters to purchase a "Bonus" permit in all the AMAs except the Eufaula AMA due to an alligator size limit restriction. Under the new regulations, a size restriction of 6 feet or less exists for the bonus alligator permit. This restriction was enacted to increase hunter opportunity and potentially reduce the number of "nuisance" alligator complaints from the public. Additionally, an extra hunt (Thursday at sundown to Sunday at sunrise) was added to the Southwest, Coastal, West Central and Eufaula AMAs. A manned check station was open for the Eufaula AMA. A regulation change allowed non-residents to register for an alligator harvest permit.

Arkansas - Amanda Bryant (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. Due to a lack of permitted alligator farmers, this program was discontinued in 2025. 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 now managed by USDA APHIS staff, who respond to nuisance alligator 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 total length) 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 opportunities were initially allowed in two Alligator Management Zones (AMZ 1 and AMZ 3). These two zones represent the highest and most sustainable alligator populations. In 2020, AMZ 2 was opened up to hunting. The remaining AMZs remain closed to alligator harvesting.

A complete analysis of harvest data from the 2025 season has not been finalized at this point. Preliminarily, a total of 205 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 100.4% for the 2025 season. The harvest sex ratio was 1.66:1 (M:F) with males making up 62% of the total harvest. The 13' 11.5" male alligator harvested in 2020 on public waters still remains the largest harvested alligator to date. The complete data analysis for 2025 will be made available and presented in the USFWS Annual Report.

In 2025, AGFC staff partnered with Miriam Boucher (Clemson University) to support her work conducting a range-wide survey of American alligator diet and exposure to microplastics, PFAS, and mercury. We were able to collect samples from 24 individuals for these analyses.

Florida - Dwayne Carbonneau, Vincent Deem, Dan Navarro, Matthew Nichols, Gabe Prichard, and Allan Woodward (Florida Fish and Wildlife Conservation Commission)

American alligator *(Alligator mississippiensis)*
Management Overview: 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

four alligator harvest programs (nuisance, statewide public waters, statewide super hunt, and private lands), which accounted for an average harvest of 19,633 alligators per year during 2023-2025 (Table 1). In 2025, the Florida Fish and Wildlife Conservation Commission (FWC) received 19,471 complaints about alligators, which resulted in harvest of 9059 alligators (≥1.22 m TL) and translocation of 1818 juvenile alligators (≤1.22 m TL). During 2023-2025, the FWC documented an average of 15 unprovoked alligator bites per year that resulted in moderate to severe injury and four incidents that resulted in fatality. Because of continued low prices for wild alligator skins ($6/foot = $1.15/belly cm), in 2023 the FWC increased the stipend it pays nuisance alligator trappers to remove alligators from $30/alligator to $50/alligator. In 2024, Florida introduced a special opportunity alligator hunt that allows a limited number of selected individuals to harvest two alligators anywhere within the state with legal access.

Table 1. Harvest of wild American alligators and alligator eggs in Florida, 2023-2025. * Note that 2025 figures are not yet final but are not expected to change substantially.

Alligator Harvest	**2023**	**2024**	**2025 ***	**Avg.**
Statewide Hunt	8,068	7,983	9,302	8,451
Super Hunt	N/A	141	161	151
Private Lands	2,393	1,743	1,724	1,953
Nuisance	9,421	8,752	9,059	9,077
Total Wild Harvest	**19,882**	**18,619**	**20,246**	**19,633**
Public Waters Egg	50,404	60,203	54,748	55,118
Private Lands Egg	82,636	121,524	120,606	108,289
Total Eggs	**133,040**	**181,727**	**175,354**	**163,373**

The Florida alligator ranching program includes collections of wild eggs and hatchlings on both public waters and private lands. In 2025, 54,748 eggs were collected on public waters, and 120,606 eggs were collected on private lands. In addition to eggs, a combined total of 4,517 hatchings were collected from both public and private sources in 2025. Farms produced approximately 2,446 viable eggs from closed cycle production. In 2025, 88,851 eggs (all to the state of Georgia) and 36,548 hatchlings (12,382 to Georgia, 17,880 to Louisiana, 6286 to Texas) were transferred to farms in other states for raising. Additionally, 14,601 non-hatchling alligators were transferred to Louisiana farms. Florida farms produced 26,022 skins (avg. 30 cm belly width) for sale in 2024, which sold for a reported $US6.25/cm ($US39/ft) for 1st grade skins. The high frequency of eggs and live alligator exports 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*)

Management Overview: 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 around 2,000 non-hatchling individuals) paired with a commensurate increase of approximately 3.5 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 2025, FWC received approximately 360 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 by members of the Crocodile Response Program. 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 ~360 calls that were recorded, approximately 4.5% resulted in live captures and subsequent translocation, relocation, or placement into captivity. Captured animals ranged from 0.26 m to 3.6 m TL with the average individual measuring 1.9 m. Eight crocodiles were captured and relocated to nearby sites (relocation), thereby removing the crocodile from the immediate situation. Seven individuals were captured and translocated farther from the capture sites and released in suitable habitat (translocation). One individual was caught on two separate occasions during the year, with the second capture resulting in being placed into permanent captivity.

All crocodile captures and handling events follow the guidance found in the *American Crocodile-Human Interaction Response Plan* (2020).

During 2025, staff from FWC, Florida Power & Light, National Park Service, and Crocodile Lake National Wildlife Refuge recovered 16 American crocodile carcasses (4 males, 5 females, and 7 of undetermined sex). Their sizes ranged from 0.27 m to 3.6 m TL. Mortalities were caused by vehicle strikes (9), poaching (1), hatching complications (2), intraspecific conflict (3), and unknown causes (1).

A digital dashboard for illustrating crocodile complaint locations 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: A social science study was published in January 2025 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%). Seventeen percent of respondents wanted 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 that humans and crocodiles can safely co-exist (69%) while 11% disagreed. The full journal article can be found at https://doi.org/10.1002/jwmg.22672.

Data collection for a tracking study on American crocodiles living in urbanized environments concluded in September 2025. In total, 15 GPS tags were deployed on crocodiles (11 in Miami-Dade County, 2 in Broward County, 1 in Brevard County, 1 in Monroe County). 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.

A new study will be published in the 59th volume of the journal *Endangered Species Research* documenting an apparent case of lead (Pb) toxicosis in an American crocodile. Although the impacts of Pb poisoning are well known for many species, there are few studies on the topic relevant to American crocodiles in Florida. When an American crocodile died during a recent capture event, we conducted a field necropsy and collected relevant samples for analysis. The crocodile displayed clinical signs of Pb toxicosis (i.e., missing teeth) and stomach contents contained 22.42 g of Pb, comprising 23 air-rifle pellets, and one weight used for angling, as well as green iguana (*Iguana iguana*) claws. Liver and scute samples contained Pb concentrations of 78.06 ppm (wet weight basis) and 0.35 ppm (wet weight basis), respectively. We suggest Pb toxicosis contributed to the death of this American crocodile, likely following consumption of a fishing weight as well as at least one green iguana (an invasive species in Florida) that had been shot with Pb pellets; this observation represents the first apparent case of mortality associated with Pb toxicosis for this threatened species, but other individuals are likely being impacted. Additional sampling and monitoring of heavy metal and other contaminant exposure has been started as a result of these findings. The full journal article is open access and can be found at https://doi.org/10.3354/esr01474.

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South Florida Crocodylian Research - Venetia Briggs-Gonzalez, Sergio Balaguera-Reina, Bryna Daykin, Frank Mazzotti (The CrocDocs at University of Florida)

The CrocDocs continue crocodylian research in South Florida on native American crocodiles (*Crocodylus acutus*) and American alligators (*Alligator mississippiensis*) as indicator species providing performance measures of Everglades restoration, and removal efforts of non-native spectacled caimans (*Caiman crocodilus*) in South Florida.

As a target species, the health of American crocodiles is critical to assessing Everglades restoration impacts. Over the past two years we have continued spotlight surveys and captures of crocodiles in Cape Sable, Flamingo, Northeastern Florida Bay, Biscayne Bay, and Turkey Point. We have continued to monitor nesting effort and success across South Florida, collaborating with several agencies (Florida Power and Light, National Park Service, Florida Department of Environmental Protection, Florida Fish and Wildlife Conservation Commission) for data collection to get the most accurate accounts of nesting activity in Florida. A total of 434 nests was documented within the last two years, with 2024 marking the highest number of total and successful nests (N= 230 nests) ever documented within a single nesting season in Florida. We observed an expansion in nesting locations, including the northwesternmost nest recorded to date (Sanibel Island) and the furthest inland nest ever recorded in Florida (Shark Valley). Cape Sable continued to be the most important location for successful crocodile nests in Florida. The team has continued to investigate microclimate variation within nests in South Florida, following the methodology used by Briggs-Gonzalez et al. (2024). Over the past two years, temperature and volumetric moisture content dataloggers were deployed in a selection of nests at Curcie Lake, Marco Airport, and Everglades National Park. Curcie Lake is an area of interest as it is the most northwestern successful nesting

location in Florida, while nesting females at Marco Airport continue to produce unviable clutches containing abnormally elongated eggs. In Everglades National Park, we are investigating the differences in nests laid within natural coastal habitats vs manmade habitats to enhance our understanding of nesting ecology and assist ongoing conservation and management efforts.

The CrocDocs have continued monitoring American alligators in the Everglades system, examining abundance and body condition along established survey routes. These performance measures have continued to fall below target conditions of Everglades restoration. Previously, we examined body condition under the assumption that there was an isometric relationship between weight and length (allometry coefficient= 3, Fulton's K). However, work done by Balaguera-Reina et al. (2024) found that this assumption is not always true across the Everglades, and that allometric parameters are better to use to define body condition. Through examination of data collected from 1999-2024 on alligators captured in the Greater Everglades, it was found that alligator allometric coefficients are highly variable throughout the Everglades, from hypo-allometric (<3.0) within our northeastern routes to hyper-allometric (>3.0) in our western, southern, and central routes (Balaguera-Reina *et al*. in review). This refinement in the methodology for assessing body condition has allowed us to better inform restoration managers on the status of alligators in the Everglades. Additionally, we have begun efforts to deploy GPS and VHF radio tags on alligators within two different locations of Water Conservation Area 3, comparing the movement of alligators in areas with extreme and mild dry downs during the dry season. Continued monitoring efforts provide the tools to assess responses to Everglades restoration on spatial and temporal scales.

We have continued our removal and monitoring program for spectacled caimans in South Florida, with a focus on areas affected by Everglades restoration projects. Over the past two years we have removed 43 caimans, with lower encounter rates observed in recent years of the project. We discovered a new population within SFWMD Water Conservation Area 3 in 2025, emphasizing the need for continual survey efforts to detect and remove new populations of caimans in South Florida. Investigation into the diet of caimans removed from Broward and Miami-Dade counties revealed evidence of ontogenetic diet changes, with hatchlings preying mostly on insects, juveniles preying frequently on malacostracans and reptiles, and adults predating gastropods and reptiles (Godrey *et al.* 2025). This study also found that adult caimans had a higher dietary diversity and evenness compared to juveniles and hatchlings, that females had a higher diversity and evenness than males, and that animals captured in the dry season (February through May) had a higher diversity and evenness than those captured in the wet season (September through November). In 2026, we deployed GPS and VHF radio tags on two male spectacled caimans captured in Everglades & Francis S. Taylor Wildlife Management Area. This marks the first deployment of radio tags on caimans in South Florida, and we aim to use the resulting data on habitat use during the wet and dry seasons to initiate targeted removal efforts. We plan to deploy additional tags on adult females to help us find caiman nests during the breeding season.

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Georgia – Kara Nitschke (Georgia Department of Natural Resources)

Policy changes

The Georgia Department of Natural Resources (DNR) alligator program has implemented a notable policy change during this reporting period. A revision of the department's conflict alligator policy has included a provision that allows issuance of alligator removal permits to private landowners. Permits are issued on a case-by-case basis, after careful investigation and determination of a substantial likelihood of injury, endangerment, or damage to property. To date, only 5 permits have been issued statewide.

Health issues

Multiple underweight adult alligators have been removed from the Okefenokee Swamp during this report period. The alligators were observed approaching people, apparently for food, and showing a lack of fear of human interaction. These alligators were euthanized and transported to Southeastern Cooperative Wildlife Disease Study (SCWDS) for full necropsies. To date, we have received results from 2 of the individuals. Both had diagnoses that included emaciation, lead exposure (and possible toxicosis) and pentastomosis (incidental). Unfortunately, the health significance of lead liver

concentrations in American alligators is poorly understood, but it is possible that the degree of exposure in both alligators could have been associated with toxicosis. Both alligators had varied damage to the heart muscle, which is often seen in birds with lead toxicosis (moreover, the lead concentrations were well over those considered toxic to birds). One of the alligators also had numerous metallic fragments of fishing equipment in the stomach, which could have been a (or the) source of lead exposure. This alligator had lead levels that were 3X higher than the other one submitted for necropsy. Other manifestations of lead toxicosis can include neurologic disease, anemia (low red blood cell count, often leading to organ pallor and weakness), and progressive weight loss.

Research initiatives
DNR is collaborating with the University of Georgia Cooperative Fish and Wildlife Unit to validate/recommended changes to current alligator survey and monitoring protocols, estimate alligator population size and structure, and identify key areas of uncertainty in our knowledge of Georgia alligator populations (e.g., age, location, movement) through value of information analysis (VoI). Such identification will help inform the allocation of research efforts to reduce uncertainty and inform optimal decisions for harvest management.

Louisiana - Jeb Linscombe, George Melancon, and Jason Waller (Louisiana Department of Wildlife and Fisheries)

Following the drought conditions that occurred in 2022 and 2023 in some areas, nesting conditions throughout coastal Louisiana have continued to improve. However, due to market demands, egg harvests were down from 453,827 in 2023 to 300,482 in 2024. The table below 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.

In January 2024, there were 55 licensed farmers in Louisiana with farm inventories totaling 623,598 alligators. Despite improving nesting conditions, egg harvests and farm inventories continued to go down for the second year in a row. During the 2024 tag year (January 2024 through December 2024), an estimated 300,935 farm-raised alligators were harvested, with hides averaging 28.82 cm belly width. The total estimated value of these alligator hides was $US56.4 million and meat was valued at over $US6.3 million. In 2024, 52,419 nests were estimated on the coast-wide survey and farmers collected 300,482 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 2024, approximately 35,905 wild alligators were harvested by 4,304 trappers. Alligators harvested averaged 7.7 feet TL, with an estimated value of $US8.45 million for hides and meat. Low demand for wild hides led to a reduced harvest of wild alligators from 2017 to 2021. However, harvest numbers started to go back up in 2022 and 2023, and the 2024 harvest total is the highest since 2016. 2025 harvest numbers are pending with only 80% of issued tags currently reported. The 2025 harvest is expected to surpass 2024. 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.

Year	Coastal Nest Counts	Eggs Collected	Year-End Farm Inventory	Farm Hides Harvested	Farm Hides Shipped	Farm Release to The Wild	Wild Alligators Harvested	Wild Alligators Shipped
2019	67,935	650,878	998,152	443,245	436,755	38,598	25,076	17,756
2020	60,794	303,883	788,224	390,717	388,349	55,366	16,636	8,732
2021	64,345	461,387	701,591	399,713	371,236	35,803	19,409	5,344
2022	47,529	473,417	713,897	320,804	308,713	19,255	26,766	14,358
2023	50,699	453,827	623,598	371,935	370,216	19,225	31,770	21,808
2024	52,419	300,482	523,776	300,943	291,890	15,994	35,905	20,125
2025	65,173	541,821	614,287	233,654	224,799	11,321	33,234	17,979

Due to 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. To help offset their costs (fuel, etc.); the LDWF established a program fund to pay an incentive payment ($US100 since 2022) for each nuisance alligator complaint handled by licensed nuisance alligator trappers to ensure this service is maintained for the state’s citizens. In 2024, the incentive fees paid to nuisance trappers amounted to $US184,200 (1,842 situations handled at $100/situation). The payment program continues to work extremely well.

In 2011, the LDWF 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 revised in January 2016 and most recently in January 2022 to update changes in temperature regimes and slaughter methods. This document was distributed to all farmers and has been a useful reference for educating persons interested in alligator farming or exhibiting alligators.

In October 2017, 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 2024 and 2025, 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" (*www.Gatorwise.org*.), 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. In 2025, LDWF rented space on 16 billboards statewide to promote GatorWise in an effort to help create realistic public perceptions about alligators and assist the public in taking appropriate action to minimize conflict.

Since 1 January 2019, 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 continues to be good.

Disease monitoring for emerging infectious diseases such as *Chlamydia* and *Mycoplasma* were conducted and amplified in 2023 and has continued through 2025. All cohorts of imported alligators are tested for infectious diseases including *Chlamydia* and *Mycoplasma*. Through a federally appropriated grant, Louisiana will continue to test both wild and farm alligators for infectious diseases through 2026. One of the primary objectives is to better understand the distribution and specific identity of the harmful strain of *Chlamydia* associated with alligators.

For the tag years 2020 and 2021, the CITES hide shipping fee was temporarily decreased from $US4 per hide to $US3 per hide. This fee returned to $US4 per hide for 2022-year tags. The $US0.25 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 $US3, but was returned to $US4 for 2024-year tags. The release to the wild rate and hide shipping fee remained at 5% and $US4 respectively during 2025 with no anticipated changes coming in 2026.

LDWF 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 collaborates with university researchers and graduate students on a variety of topics related to alligators (physiology, ecology, food habits, nesting, etc.).

North Carolina - Alicia Wassmer (North Carolina Wildlife Resources Commission)

NCWRC Annual Alligator Spotlight Surveys in North Carolina - 2025 Survey Summary (Year 5)
The objective of these surveys is to detect changes in alligator occupancy and relative abundance as indices of population trends over time (i.e., compare numbers observed over years to detect changes in trends) in the 10 Alligator Management Unit 1 counties (Columbus, Brunswick, New Hanover, Pender, Onslow, Jones, Carteret, Craven, Pamlico, and Hyde; see Map A). It is important to note that these surveys are not going to (and cannot) be used to establish population estimates at the state or county level.

Methods
For survey consistency and maximum efficiency of agency resources, these surveys are conducted by boat. Except Louisiana, this method is used (either alone or with other methods) by all other state agencies within the range of the American alligator to monitor alligator populations.

Surveys are conducted annually during the height of the breeding season (1 May-15 June). A minimum of two survey routes are conducted for each county; for logistical reasons, two routes were split in half and are conducted on separate nights. Each route is surveyed twice, resulting in a total of 44 night-time survey replicates. Each survey is conducted with a minimum of two staff per survey route (1 driver, 1 observer and recorder); if a third person is available to assist, observing and recording duties are split between two people.

Each survey is conducted using a 200,000-candlepower spotlight to detect alligator eyeshine. Surveyors record each alligator observed during the survey and estimate the size in total length (TL) of each alligator whenever possible. Each

observation is recorded in one of 7 available size categories: juvenile (<3 ft), subadult (3-6 ft), small adult (6-9 ft), large adult (>9 ft), unknown juvenile (<6 ft), unknown adult (>6 ft), or unknown.

All surveys are split into 2.5-mile transects. Time, GPS coordinates, air temperature (°F), relative humidity (%), barometric pressure (inHg), wind speed (MPH), cloud cover (>75%, 50-75%, 25-50%, or <25%), width of waterway (less than 10 m, 10-25 m, 26-50 m, 51-100 m, or over 100 m), water salinity (ppt), and water temperature (°F) are recorded at the start and stop of each transect, in addition to any time spent backtracking (in minutes) for each transect. These covariates can be considered as factors that could influence detection probability and/or occupancy in statistical analyses of the survey data. Results of these analyses can be used to improve future survey efforts and to inform future analyses of spotlight survey data.

Surveyors are unable to determine if alligators observed during different replicates of the same route are the same individuals. Therefore, total numbers of alligators observed during all replicates cannot be added together; rather, it must be assumed that, for each route, all alligators observed during the replicate with a lower total could have been observed while conducting the replicate with a higher number of observations. For this reason, only the replicate with the largest number of alligators observed was used for each survey route to determine the minimum number of alligators observed annually across all survey routes during 2021-2025 (see Table A).

Alligator Observations (2021-2025)

The total number of miles of rivers and creeks surveyed across all routes varies between survey years due to inaccessible portions of routes (most often attributed to low water levels or other obstructions) or staff shortages in certain years (e.g., 2024; Table A). The overall average numbers of alligators observed per mile of survey route (APM) decreased from 1.09 in 2021 to 0.91 in 2022 and 0.68 in 2023, then increased to 1.02 in 2024 and 1.25 in 2025. However, it is important to note that these raw numbers are inclusive of all alligator size classes and may be sensitive to annual fluctuations in alligator nesting activity at a small number of survey sites.

Pooling the three immature (<6 ft TL) and three mature (>6 ft TL) size classes into two groups (Figure 1) demonstrates that, while the numbers of mature alligators observed in all subsequent years was less than that of 2021, the comparatively large APM in 2025 (Table A) reflects higher counts of immature alligators (Figure 1). All individuals <6 ft TL are not yet reproductively mature and survival rates of juveniles are expected to be significantly low.

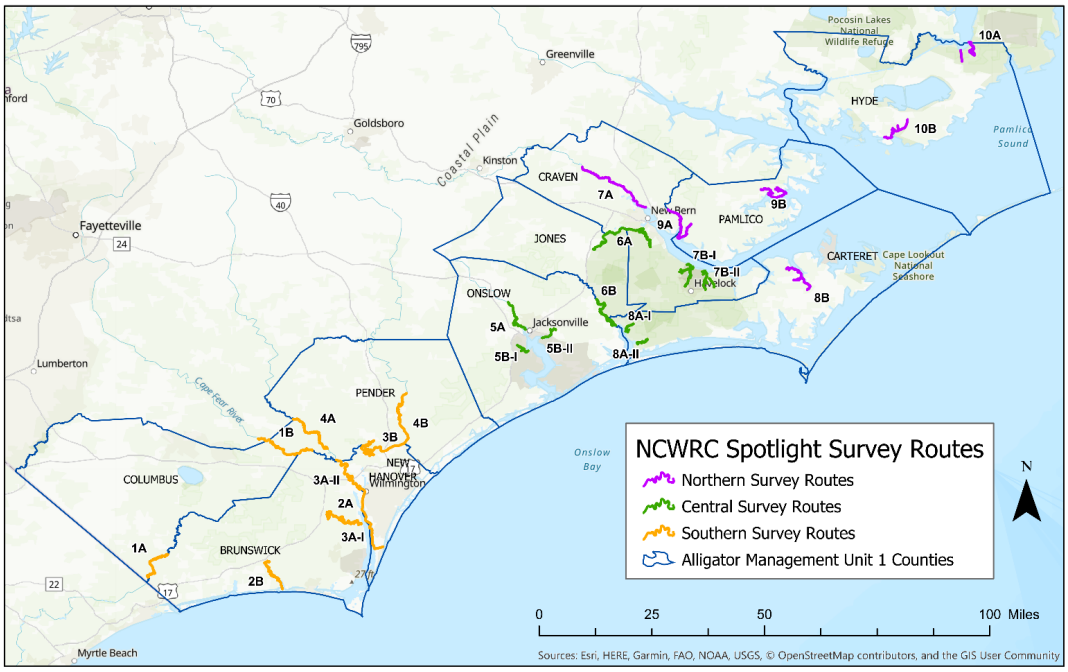
Of the total number of alligators observed across all surveys for each year, surveyors estimated that 12-16% were large enough to be reproductively mature adults. These percentages are expected to be higher than that of the total alligator populations in the state because much of the area surveyed (e.g., open waters) is generally less habitable for juveniles and better suited to adults.

Statistical Analyses (Completed and Planned)

There are many environmental factors (e.g., water and/or air temperature, water salinity) that may affect the probability that alligators will be present along a survey route on a given survey night, as well as additional factors (e.g., wind speed, boat speed) that could affect surveyors' ability to detect alligators that are present. As noted earlier, potential influences of documented environmental factors and survey conditions on numbers of alligators observed can be examined through occupancy and site-specific abundance analyses. Independent (i.e., single-season) analyses of the first 3 years of survey data (2021-2023) indicated that detection probability was significantly affected by some conditions (e.g., boat speed, salinity, water temperature) while no significant correlations were found between detection and other tested covariates (e.g., cloud cover, air temperature) (Wassmer 2025). Results of these initial analyses are being used to improve annual survey protocols and inform dynamic (i.e., multi-year) models that will be employed in future analyses to investigate trends of alligator numbers over time.

Literature Cited

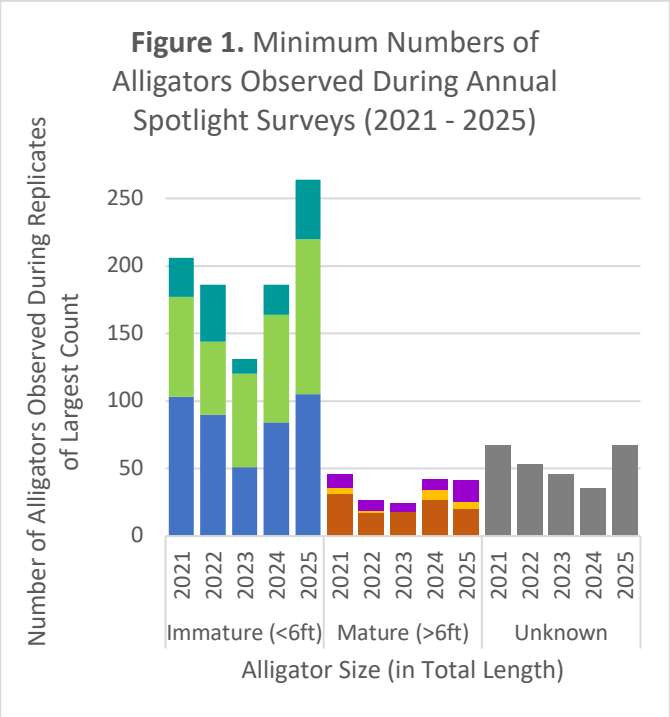
Wassmer, A. (2025). Monitoring American Alligators *(Alligator missisippiensis)* at Their Northern Range Limit: Insights from Spotlight and Mark-Recapture Studies in North Carolina. MSc thesis, North Carolina State University, USA.



Map A. Locations of annual spotlight survey routes in coastal North Carolina.

Table A. Summary of Alligators Observed During Annual Spotlight Surveys in AMU1, North Carolina (2021-2025).

Survey Route	County	Water Bodies	Route Length (mi)	Largest Number of Alligators Observed During One of Two Annual Night-Time Survey Replicates				
				2021	2022	2023	2024	2025
1A	Columbus	Waccamaw River	10	7	2	2	NA	2
1B	Columbus	Cape Fear River	15	7	2	9	9	2
2A	Brunswick	Rice Creek, Town Creek	20	29	29	21	NA	30
2B	Brunswick	Lockwoods Folly River	12.5	4	8	4	10	9
3A-I	New Hanover	Cape Fear River	15	7	8	6	3	10
3A-II	New Hanover	Cape Fear River	15	34	16	19	20	41
3B	New Hanover	NE Cape Fear River and Creeks	17.5	7	12	8	18	14
4A	Pender	Black River	15	4	2	2	2	4
4B	Pender	NE Cape Fear River	20	9	4	6	5	7
5A	Onslow	New River	10	13	18	9	19	23
5B-I & II	Onslow	Southwest and Northeast Creeks	10	50	18	22	22	54
6A	Jones	Brice's Creek, Trent River	15	5	2	1	2	2
6B	Jones	White Oak River	15	22	11	8	10	23
7A	Craven	Neuse River	17.5	5	5	2	1	3
7B-I	Craven	Slocum Creek	12.5	8	28	10	51	45
7B-II	Craven	Hancock Creek	10	59	52	42	57	73
8A-I & II	Carteret	Hadnot and Pettiford Creeks	10	2	4	2	NA	2
8B	Carteret	South River	12.5	3	4	3	2	1
9A	Pamlico	Upper Broad Creek, Goose Creek	15	2	2	1	0	2
9B	Pamlico	Bay River, Bear Creek	12.5	0	0	0	0	0
10A	Hyde	Alligator River NWR	10	39	33	23	28	20
10B	Hyde	Swanquarter NWR	10	3	6	1	4	5
Minimum Number of Alligators Observed Across All Survey Routes				319	266	201	263	372
Total Miles of Rivers and Creeks Surveyed Across All Routes				294	293	294	257	298
Overall Average Number of Alligators Observed Per Mile of Survey Route (APM)				**1.09**	**0.91**	**0.68**	**1.02**	**1.25**



Oklahoma - Bill Dinkines (Oklahoma Department of Wildlife Conservation)

The state of Oklahoma has a small population of American alligators in the far southeast corner of our state. There is no alligator hunting season in the state. Currently, we are completing two research projects to help us better understand alligator abundance and distribution. Some of the preliminary results are as follows:

- Population estimate is 99 alligators (± 15) based on 3 years of surveys and mark recapture data from our Wildlife Management Area.
- Outside of the Wildlife Management Area across 6 southeast counties, alligator surveys were conducted on 40 waterbodies. 19 Alligators were detected at 7 locations, with a density estimate of 0.09 alligators per kilometer (very low density).
- Nesting and juvenile tagging and tracking revealed predation and freeze events cause the most mortality of young alligators.
- River otters and great blue herons account for most of the juvenile predation.
- Nest failure due to predation (primarily raccoons) is also a contributing factor.
- Nest failure was also confirmed from water level inundation and fire ant predation.
- Juvenile mortality decreases when alligators reach age 2-3 and body size increases to protect from most predation.

South Carolina - Morgan Hart (South Carolina Department of Natural Resources)

Alligator populations in South Carolina still appear to be stable. Removal numbers have not changed much since the legal harvest started, and population surveys are ongoing. There is limited evidence that the number of largest males (over 10 ft) has decreased (Fig. 1), although data are still sparce. All harvest is recreational, and export of hides remains a small portion of hide disposition.

Public Lands Hunt: The public hunting season consists of 4 hunt units in the coastal plain of South Carolina with 1000 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 (Fig. 2).

In 2025, 400 limited size harvest tags (4-8 ft only) were added to the hunt to allow more resource use, while partially protecting the largest males.

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 to 31 May the following year (Fig, 2).

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 (Fig, 2).

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.

Yearly 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.

	Harvest		
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	380	424	368
2024	395	445	389

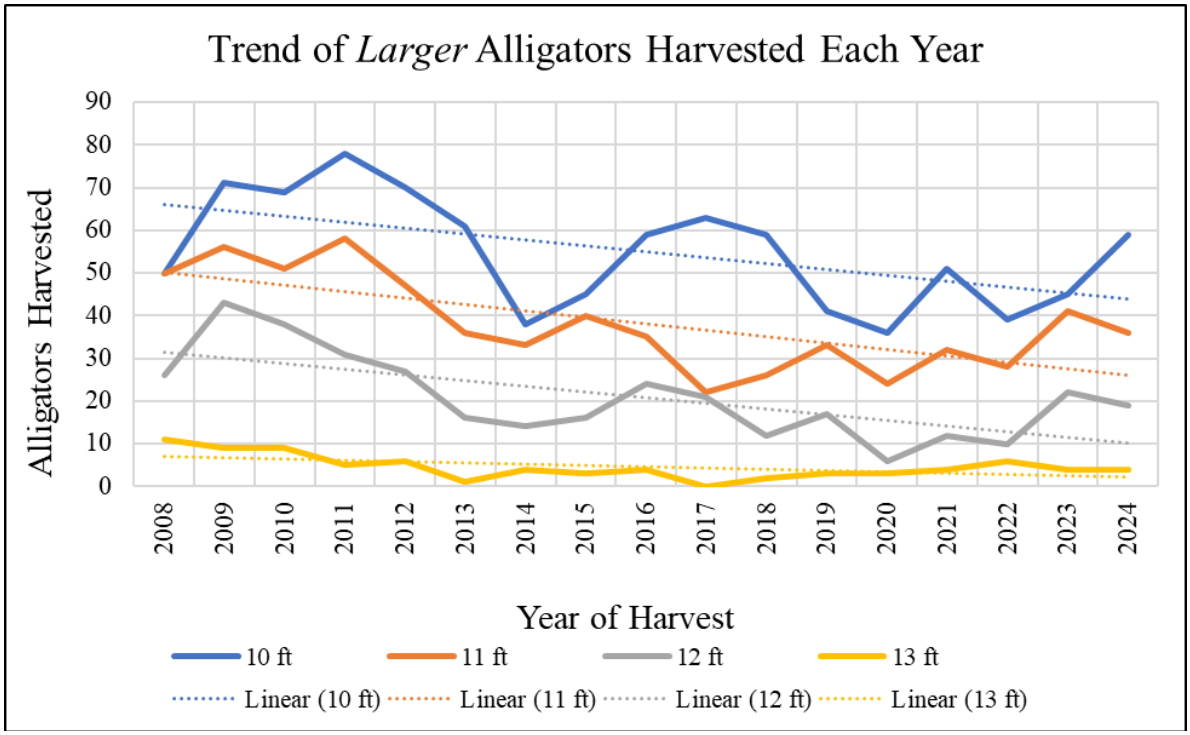


Figure 1: Yearly totals of the largest alligators (10-13 ft) harvested each year since 2008, South Carolina. Trend lines (linear) represent trajectory of harvest numbers over time.

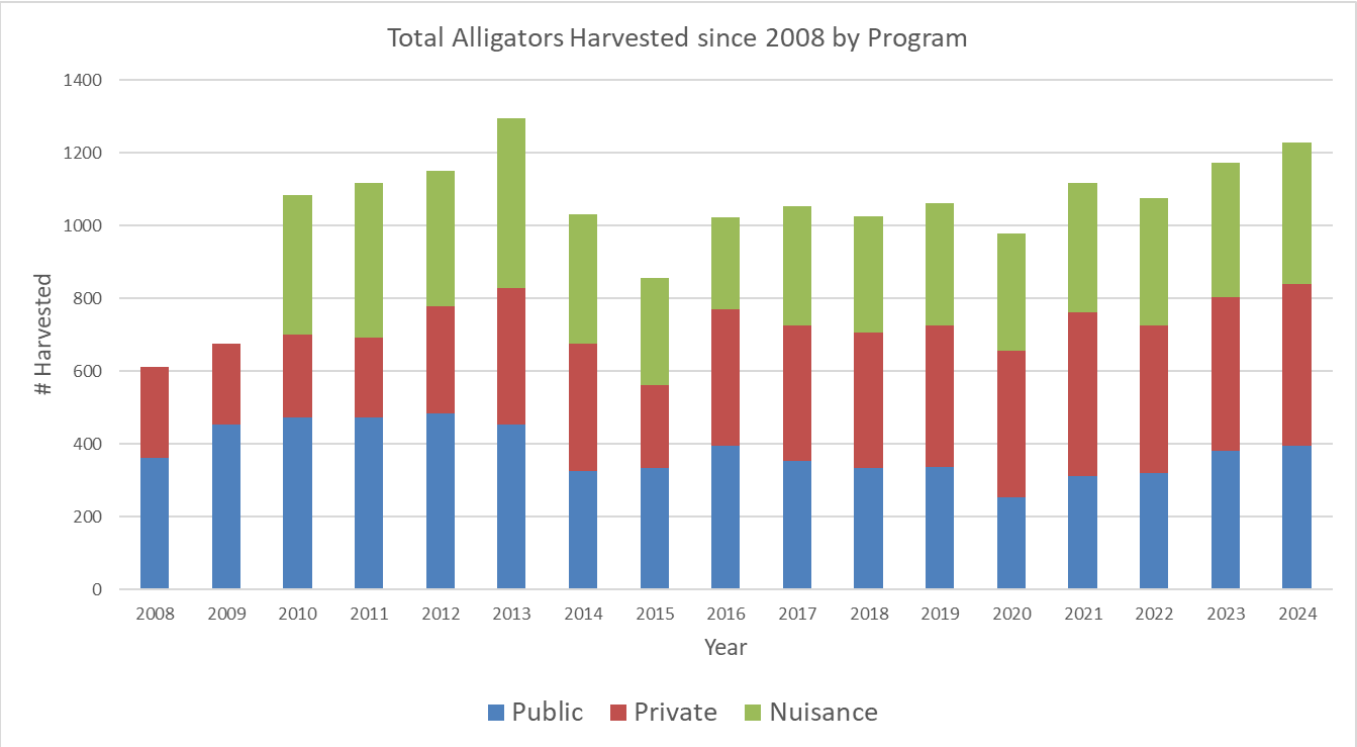


Figure 2: Yearly totals of alligators harvested each year by program since 2008, South Carolina.

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)

Texas currently has one alligator farm that propagates hides for commercial export. The farm produced 13,481 hides in 2024, and 14,200 hides in 2025. Farmed alligator stock are initially obtained from eggs collected in the wild. Texas Parks and Wildlife Department (TPWD) issues nest stamps to commercial egg collectors after geospatial nest data are provided and vetted from airboat and helicopter surveys by collectors on authorized private lands. Generally, TPWD allows egg collection from 50% of counted nests on a property. Due to this 50% cap, TPWD does not require a subset of farmed juveniles to be returned to the wild to offset collection efforts. For both 2024 and 2025, hatchling market price was $US35.00, which reflects a continued declining market trend from a high of $US90.00 per hatchling in 2017.

Texas provides two recreational alligator hunting seasons for its constituents; a “non-core county” spring hunt (1 Apr-30 Jun) for counties falling outside the major distribution and primary habitat of the species, and a traditional autumn “core county” season (10-30 Sept) for 22 southeastern counties that harbor high alligator densities in coastal marsh, rivers and inland lakes. TPWD also oversees the harvest of nuisance alligators for public safety. Texas hunters harvested 3,175 wild alligators for the 2024 season (spring= 222, autumn= 2,953). An additional 423 nuisance alligators were harvested or relocated to permitted facilities by permitted trappers in 2024 under the TPWD Nuisance Alligator Control Program. For 2025, 3,581 alligators were harvested during hunting seasons (spring= 210, autumn= 3371) and an additional 451 nuisance alligators were removed from the wild. Low market value for wild alligator hides, which is reflected in continued lower

wild harvest numbers, continues to be a primary concern for the alligator industry and the future of sound sustainable use management practices in Texas. In August 2026, the TPWD Alligator Program will propose regulation changes to lengthen the current autumn alligator hunting season (10-30 Sept) to 61 days (1 Sept-31 Oct), in addition to allowing expanded means of take and potential night hunting on private lands. If adopted by the TPW Commission after public comment, these regulations will go into effect for the 2027 autumn alligator hunting season.

Standardized annual aerial nest surveys and night-count data (spotlight surveys) indicate stable or increasing alligator populations across suitable ecoregions in Texas, especially in coastal marsh habitats along the upper and middle Gulf Coast, and portions of East and South Texas. Texas has only one natural lake, but many of the larger artificial impoundments across the state continue to see increases in their respective alligator populations to the extent that targeted management (culling) has been mandated by TPWD in a limited number of these waterbodies that exist to support diverse recreational public activities (e.g., fishing, boating, swimming). For the most notable of these efforts, in 2024 TPWD staff initiated the targeted removal of alligators greater than 6 feet in length at Lake Raven in Huntsville State Park (a heavily trafficked State Park north of Houston) after several alligator bites occurred at a designated swimming area. Fifty-two adult alligators have been removed from Lake Raven to date, but the overall efficacy of this management practice remains to be seen due to the subsequent immigration of adult alligators from other waterbodies in Walker County.

TPWD supports wildlife research in Texas and is actively collaborating with multiple universities to better understand alligator ecology and population dynamics in the state. Current collaborative projects include research on alligator reproductive ecology through analyzing bellowing patterns with autonomous recording units, efficacy of nest detection using thermal drones, microplastic ingestion, spatial ecology of nesting females at inland waterbodies, and lead (Pb) surveillance and monitoring for alligators at recreational fishing areas.

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