



## POSTER SESSION: FISHERIES

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### F1. Characteristics of the Paddlefish Fishery at Chetopa Dam, Kansas, 1992–2006

*Ben Neely, Susan Steffen, Sean Lynott, Jeff Koch — Kansas Department of Wildlife, Parks and Tourism*

The fishery at Chetopa Dam accounts for the majority of paddlefish (*Polyodon spathula*) angling effort and harvest in Kansas. However, characteristics of this fishery are largely unknown. We summarized data from 1992–2006 that were collected as part of a mandatory paddlefish check system for harvested fish. A total of 8892 paddlefish were harvested by 5882 anglers during the study period. Angler participation in this fishery was dominated by Kansas residents (94.5%) with little participation by anglers from neighboring states. Total number of harvested fish, mean length of harvested fish, and body condition of harvested fish differed between years although no temporal trends were detected. Harvest-per-successful-effort (HPSE) measured the number of fish harvested per hour of snagging, but only successful anglers (i.e., those that harvested at least one fish) were included in estimates. Annual differences existed in HPSE although no temporal trend was observed. These data provide historical reference for future comparisons, and will assist in promotion of this fishery to anglers. Ultimately, this information can be applied to assist with further development of this locally important paddlefish snag fishery.

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### F2. Differences in Blue Catfish Weight–Length Relationships in Three Sections of the Coosa River, Georgia

*Dalton Robinson, Michael K. Crosby — Shorter University*

To effectively manage catfish populations for recreational anglers, accurate base-level information must be obtained. The Coosa River is a favored location among anglers seeking catfish for trophy or food resource. Three sections of the Coosa River in Georgia, between the headwaters in Rome and Weiss Lake in Alabama were sampled with trot lines from April to June 2014. Here, weight-length relationships for blue catfish (*Ictalurus furcatus*) are reported for each section sampled. There is a significant difference between weight-length relationships at Site 1 near the headwaters in Rome, GA and Site 3 south of a power generation facility. Additionally, the largest fish (length and weight) caught thus far were at Site 1 and the smallest weight at Site 3. Managers could use this information to concentrate efforts to develop locations with poor weight-length relationship into fisheries with the potential for trophy catfish.

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### F3. An Assessment of Fish Communities and Habitat Use in Cypress Creek, Florida

*Brandon Simcox, Amanda Schworm — Florida Fish and Wildlife Commission*

Human development that results in increased groundwater and surface water withdrawals potentially poses a threat to the ecology of streams in Florida. The Southwest Florida Water Management District (SWFWMD) currently uses physical habitat simulation modeling (PHABSIM) to predict impacts of water withdrawal on instream fish habitat. The Florida Fish and Wildlife Commission conducted research to assess the fish assemblage, habitat use, and water quality parameters in Cypress Creek, a tributary of the Hillsborough River, FL. Cypress Creek serves as an important water supply for nearby Tampa and St. Petersburg, FL. We sampled 1,256 transects throughout Cypress Creek from January 2013 to June 2014, collecting 12,305 fish representing 36 different species. Habitat parameters, fish abundance, and community structure were compared among sites currently used in SWFWMD's PHABSIM. Habitat suitability curves were also constructed for three popular gamefish species (i.e., largemouth bass, spotted sunfish, and bluegill), as well as the most abundant species found. Water quality parameters (i.e., temperature, dissolved oxygen) did not differ between study sites. However, we did find that some physical habitat parameters (e.g., % woody material), fish abundance and community structure did differ significantly. Understanding the interactions of habitat, flow regimes, and fish communities in lotic systems is important when developing permitting thresholds for surface water withdrawals and to determine potential impacts to the system. These data are also important for SWFWMD's PHABSIM and will be essential in assisting the District in developing responsible Minimum Flows.

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#### **F4. Testing Methods to Effectively Recompress Released Fish and Minimize Predation of Reef Fishes in the Gulf of Mexico**

*Oscar Ayala, Beverly Sauls — Florida Fish and Wildlife Conservation Commission*

We designed experimental methods to test effective methods for recompressing reef fishes caught with recreational hook-and-line gear in the Gulf of Mexico. A cage with a release mechanism designed to release fish underwater at controlled depths was constructed for experimental treatments. A live video feed was affixed inside the cage which allows researchers to view fish inside the cage as they are descended and released. As fish were released from the bottom opening of the cage, the cage was held suspended in the water column so the video camera could continue to record released fish as they swam downward towards the protective reef. For fish released at mid-water depths, the cage was lowered as fish swam out of sight to attempt to record the final fate of released fish. Recorded video footage will be read by biologists to score the behavioral response for each fish as they were descended and released, and also to evaluate predation of fish after they were released from the cage. Behavioral responses and predation rates for fish released using this experimental design will be compared with two other treatment groups, 1) fish vented and released at the surface, 2) fish not vented and tethered to a commercially available device used to recompress fish.

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#### **F5. Acoustic Tagging of Mutton Snapper**

*Paul Barbera, Alejandro Acosta, Ben Binder, Danielle Morley — Florida Fish and Wildlife Conservation Commission, Fish and Wildlife Research Institute*

Fifty-five mutton snapper, *Lutjanus analis*, were internally tagged with acoustic (Vemco V16) transmitters between May 2008 and March 2011, in the Dry Tortugas, Florida Keys. Previous experience capturing mutton snapper from depths > 15 m suggested a high rate of barotrauma induced mortality. As a result, two acoustic tagging approaches were conducted: surface and underwater surgery. Twenty-seven fish were captured primarily with hook and line gear in depths of 3 to 12 meters and tagged at the surface. Twenty-eight mutton snapper were captured with fish traps at depths ranging 27–36m and were tagged underwater. Two scientists performed the tag implantation, one restraining the fish and irrigating its gills, while the other person performed the tag surgery. Fish were allowed to recover following the procedure, and then transported to the bottom by a SCUBA diver and released. Underwater surgical procedures for tagging fish were similar to that at the surface, with the exception that fish were immediately released. Underwater tagging surgery time averaged about 8 minutes, with a maximum of two fish tagged per dive. Although the study was not designed as an explicit comparison between surface and underwater tagging operations, 86% of fish tagged on the surface, and 96% of fish tagged underwater were detected during the course of our study. These observations indicate that both tagging approaches are effective in avoiding barotrauma and fish mortality. However, observations made by SCUBA divers immediately following release suggest that fish tagged underwater were less traumatized than those tagged above water.

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#### **F6. Coral Restoration Research in the Florida Keys**

*Kerry Maxwell, John Hunt — Florida Fish and Wildlife Conservation Commission, Fish and Wildlife Research Institute*

Florida is home to the third-largest coral reef tract in the world. Unfortunately, natural and manmade stressors have degraded the Florida coral reef ecosystem to the point where live coral cover has been reduced markedly across the reef. To help restore this ecosystem, we are collaborating with researchers and restoration practitioners on a regional effort to restore the severely depleted staghorn coral (*Acropora cervicornis*) population on Florida's reef tract. Staghorn coral is an important reef-accreting species and is ideal for proactive coral restoration work as it is easily propagated and is fast-growing. Using corals propagated in two in situ nurseries we have established in the middle Florida Keys, we have outplanted staghorn coral colonies in an experimental framework with the goal of guiding the development of an effective coral outplant strategy. Our first outplantings occurred during the spring of 2012. The goals at that time were to evaluate outplanting techniques and to establish sites containing multiple genotypes to enhance the genetic diversity of the spawn. Thus far, survival of these corals is approximately 80%. Ongoing projects include comparing growth and survival of single genet and multiple genet coral plots, evaluating the changes in reef community structure at high and low density coral outplant sites, and using coral outplants to create complex habitat for other reef-dwelling organisms, including the key coral reef herbivore, *Diadema antillarum*. The results of this research will guide future staghorn coral restoration activities aimed at enhancing survival and habitat function.

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## **F7. Reef Fish Sampling, PCB Analysis Results and Visual Monitoring Associated with the Oriskany Reef:**

### **A Decommissioned Former Navy Aircraft Carrier Sunk in 2006 as an Artificial Reef in the Northeastern Gulf of Mexico off Pensacola, Florida**

*Keith Mille, Florida Fish and Wildlife Conservation Commission; Jon Dodrill, Florida Fish and Wildlife Conservation Commission; Robert Turpin, Escambia County Marine Resources Division*

The Oriskany Reef, a decommissioned US Navy aircraft carrier, was deployed by the U.S. Navy in May 2006 in the Gulf of Mexico, 23.5 nm southeast of Pensacola, Florida as an economically valuable fishing and diving enhancement. As a cost-saving measure during vessel preparation, the Navy requested and received from the USEPA a risk-based polychlorinated biphenyl (PCB) bulk product waste disposal permit. Supported by extensive modeling studies, the permit authorized an estimated 722 pounds of non-liquid PCBs distributed in wiring, insulation, paint and gaskets to remain onboard the vessel when sunk as an artificial reef. In compliance with the monitoring requirements of the permit, we collected 490 legal size reef fish between December 2006, and April 2014 for skin-on lateral muscle fillet analysis. Initially the mean total PCB level across targeted species collected from the Oriskany Reef within the first two years had combined values exceeding the EPA screening value of 20 ppb. By sample round 5, collected at 2.9 years, the mean total PCB level decreased to below the EPA screening value and remained low through sample round 10, 5.9 years after sinking. The downward trends of red snapper mean total PCB levels to below screening levels and the consistently low vermilion snapper mean PCB levels presently did not result in fish consumption advisory actions. The remaining analyzed species (triggerfish, groupers, porgy) represent too few specimens sampled with too great a PCB variability among individuals of the same species to take any species specific fish consumption advisory action.

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## **F8. Catch and Release Shark Fishing: Fish Shark Smart!**

*Melissa Recks, Jessica McCawley, Justin Lerner — Florida Fish and Wildlife Conservation Commission, Division of Marine Fisheries Management*

Recreational shark fishing has recently experienced a growth in popularity throughout Florida. While sharks are still targeted from boats, a growing number of anglers now choose to fish for sharks from the beach, fishing piers and other land-based platforms. A majority of sharks caught by fishermen are released, thanks to a strong conservation ethic amongst the shark-fishing community and Florida's conservative regulations. Since most shark fishermen practice catch and release, it is very important that anglers use the proper gear and fishing techniques to maximize survival. However, given the different venues for targeting sharks and the danger inherent to shark fishing, the recommended catch and release techniques differ depending on the chosen fishing location. Thus, the goal of the project was to produce a comprehensive "best practices" guide for the catch and release shark angler. The brochure contains general guidelines for shark fishing, such as recommended handling techniques and angler safety, as well as specific catch and release recommendations for anglers fishing from both boats and land-based locations. The brochure, which was developed with input from the scientific and angling communities, also details the types of tackle and rigs to use to minimize harm and maximize shark survival. Lastly, the brochure contains information on how anglers can help researchers learn more about sharks by tagging the fish they catch. The guide provides anglers with information necessary to minimize post-release mortality so they can enjoy the excitement of fishing for sharks in a sustainable manner.

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## **F9. Assessment of Red Drum in Mississippi Coastal Waters**

*Emily Satterfield, Matt Hill, Wes Devers, Rick Burris — Mississippi Department of Marine Resources*

Red Drum, *Sciaenops ocellatus*, are highly sought after by sport fishermen in Mississippi coastal waters. They are primarily targeted as subadults in the estuaries because there is no legal fishery in offshore federal waters where adult fish live. This management action was justified in the late 80's because of the estimated escapement rate relative to the Spawning Stock Biomass (SSB) was found to be less than 2%. This was a low figure compared to the recommended 20% minimum (Gulf of Mexico Fishery Management Council 1987). Since the imposition of the moratorium, a great deal of research has been done on gene flow in this species, but recent assessments of some of the major life-history traits such as, growth rates, length-at-age composition, age at maturity, and estimated levels of escapement have not been performed. Furthermore, the older studies were not conducted for fish specific to Mississippi coastal waters. The current studies conducted in Mississippi state waters utilize gear and sample stations that are selective for juvenile fish, thus leaving a void in data for age-3 to age-5 fish. This project is intended to fill that void while analyzing life history traits of fish native to Mississippi waters. Increasing the data for the age-3 to age-5 fish is also needed to make the age-at-length key more robust. This will be necessary for future stock assessments as it makes aging fish possible without the need to sacrifice each fish and greatly reduces the time and labor required for such assessments. A more complete data set is also needed to accurately estimate a spawning stock biomass (SSB) which is vital to the establishment of effective management strategies that increase angler satisfaction while ensuring that the resource is maintained indefinitely.

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**F10. Assessing the Feasibility of Using Hatchery–Raised *Diadema antillarum* in Coral Reef Ecosystem Restoration**

*William Sharp, Gabriel Delgado — Florida Fish and Wildlife Conservation Commission*

Florida’s coral reefs have become degraded in recent decades, in part, to the mass mortality of the herbivore *Diadema antillarum*. To date, *D. antillarum* have not recovered to pre-mass mortality levels in the Florida Keys, and it is generally accepted that the return of *D. antillarum* to the Keys reef tract is one factor critical to its recovery. Advances made in rearing captive-spawned *D. antillarum* has raised the possibility that this species can be produced ex situ and established on Florida’s reefs. We are assessing the feasibility of using urchins produced in this manner to restore a functional population of this species. We evaluated the behavioral and ecological characteristics of hatchery–produced *D. antillarum* to ensure that their survival rate in the wild would be comparable to wild individuals. The initial cohort of hatchery–produced *D. antillarum* exhibited differences in sheltering behavior compared to similarly-sized wild individuals. Hatchery-reared urchins also had fewer spines compared to wild urchins. Subsequent experimentation revealed that if provided adequate shelter throughout ontogeny, hatchery–reared urchins will retain normal diurnal sheltering behavior, and that morphological differences can be mitigated by providing a rugose rearing environment to induce spine development. Additionally, hatchery–raised urchins exhibited the same avoidance behavior as wild urchins when exposed to a predator. However, our in situ and ex situ evaluation of size- and shelter-specific mortality revealed that there is no size refuge from predation for *D. antillarum*, and that ensuring adequate shelter for urchins released into the wild will be necessary to establish a functional population.

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**F11. Regionalized Management of the Spotted Seatrout Fishery in Florida**

*Mason Smith, Florida Fish and Wildlife Conservation Commission*

Florida’s geographic size and wide variety of both marine habitats and types of saltwater fishermen contribute to substantial regional differences in stakeholder goals for the state’s most popular fisheries, making it an ideal testing ground for regionalized management of marine fisheries. Florida’s spotted seatrout (*Cynoscion nebulosus*) stocks were depleted and considered overfished as recently as the late 1990s. With angler support, conservative management goals were set, and the typical suite of management tools was used to apply regionally variable regulations in an effort to rebuild the stocks. Today, the stocks are exceeding those goals. After analyzing the effects of management measures over time, it was found that regionalized management successfully increased the spawning potential ratios in each region by reducing the overall harvest, and that the different management tools affected the regions differently based on historical stakeholder use. The results from this successful management scheme suggest that marine fisheries regulations need not be one-size-fits-all and that regulations that vary regionally in accordance with the status of the various stocks and the historical and cultural needs of the fishery can be effectively used to reduce harvest while maintaining stakeholder satisfaction.

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# POSTER SESSION: WILDLIFE

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## **W1. Modeling Sea-Level Rise Impacts on sea turtles in the Florida Keys**

*Brian Beneke, Bob Glazer — Florida Fish and Wildlife Conservation Commission*

Climate change research suggests that sea level rise could have a significant impact on coastal shorelines, wetlands, habitats and species. The change in coastlines could lead to a reduction of beach habitat in the Florida Keys that is needed by sea turtles for nesting. Using Sea Level Affecting Marshes Model (SLAMM), a simulation process that predicts shoreline modifications and wetland conversions during long-term Sea Level Rise, the Florida Fish and Wildlife Conservation Commission modeled several scenarios. Results indicate a shift in the amount and location of sea turtle nesting habitat for the years 2020, 2030, 2040 and 2060. Based on these results, managers have begun to develop potential adaptation strategies to address the predicted changes in sea turtle nesting habitat. The information gained from this analysis will help those that make the decisions to create policies that may help protect existing coastlines, habitats and species.

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## **W2. Changes in Bat Activity in Response To Prescribed Fire And Canopy Reduction In Tennessee Hardwood Forests**

*Maxwell R. Cox, Emma V. Willcox — Department of Forestry, Wildlife and Fisheries, University of Tennessee, Knoxville*

In the Southeastern U.S., prescribed fire, in combination with canopy reduction, is being used to restore areas of hardwood forest to woodland and savanna. These treatments have the potential to dramatically alter habitat conditions for bats. Many bat species, including those imperiled by White Nose Syndrome (WNS), are forest dwelling, utilizing hardwood forests for foraging during critical pre/post-hibernation and maternity periods. Therefore, managing hardwood forests to provide high-quality foraging areas may be critical to the persistence of some bat populations. Unfortunately, limited knowledge on the effects prescribed fire and canopy reduction have on bats hinders the implementation of these treatments to benefit species in conservation need. We used acoustic sampling to examine the effect of 4 prescribed fire and canopy reduction treatments on bat activity and species richness. We also examined the effect of treatments on stand structure and composition, and abundance and biomass of nocturnal insects. Initial data analysis found treatments had no effect on total bat activity or species richness. However, eastern red bat (*Lasiurus borealis*) exhibited higher activity in stands subject to growing and dormant season burning in combination with high levels of canopy reduction compared to controls ( $P = 0.001$ ). In contrast, northern long-eared bat (*Myotis septentrionalis*), a species currently proposed for federal listing as endangered as a result of WNS, exhibited lower activity in all treatment stands compared to controls ( $P = 0.002$ ). We will use final study results, which incorporate vegetation, insect, and additional acoustic data, to provide management recommendations for multiple bat species.

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## **W3. How Florida Manatee Diving Behavior and Habitat Use Influence Risk of Collision with Watercraft**

*Holly H. Edwards, Florida Fish and Wildlife Conservation Commission*

Watercraft pose significant threat to the endangered Florida manatee. To assess risk of collision and factors that contribute to manatees being struck by watercraft, we applied a Bayesian formulation of Generalized Linear Mixed Models to manatee depth data ( $n=9$ ; Tampa Bay, FL, winter 2002–05) to model the probability ( $p$ ) of manatees being above a depth threshold (1.25 m) as a function of covariates (water depth category, seagrass, travel speed category, time of day, and proximity to a waterway). When manatees were above this threshold ( $<1.25$  m) they were considered to be at “higher risk” of being struck by watercraft. Overall, 78% (62–86%) of depth records were near the surface of the water (mean 1.1 m, max=16.2 m depth). Water depth and seagrass played a role in determining probability of being in the “higher risk zone.” Probability of being in the “higher risk zone” was 0.96 (CI=0.93–0.98) while in shallow water ( $<\sim 0.91$  m) and decreased as water depth increased. Probability of being in the “higher risk zone” was greater over seagrass ( $p=0.96$ , CI=0.92–0.98) than non-seagrass areas (0.73, CI =0.58–0.84). Shallower diving occurred during night and while stationary or moving slowly ( $p=0.89$ , CI=0.84–0.94), relative to when manatees were traveling fast ( $p=0.61$ , CI=0.48–0.73). Within 50 m of a known waterway  $p=0.67$  (CI=0.64–0.70) versus  $p=0.80$  (CI=0.79–0.81) when farther from it. Understanding factors that influence risk to manatees from boats is important to reducing numbers of manatees struck by boats each year.

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#### **W4. Intentional Introductions of Chameleons in Florida**

*Jake R. Edwards, Florida Fish and Wildlife Conservation Commission; Mike Rochford, University of Florida; Sara Williams, University of Florida; Dustin Smith, Zoo Miami*

In recent years, the Florida Fish and Wildlife Conservation Commission has been managing several populations of nonnative chameleons in the state. Multiple individuals of three species have been discovered in Florida and breeding populations of two different species are known to exist in three counties. These introductions are suspected to have been done intentionally in order to start a breeding population, a practice commonly known as “seeding.” People have seeded chameleons on public and private property with the goals of harvesting these animals for the commercial pet trade. Preliminary research on the diets of wild chameleons in Florida indicates that chameleons may not have significant environmental impact on natural systems. However, the issue of continuing illegal release and commercialization of wild-caught chameleons in Florida is a social concern. Examined here are three case studies of different chameleon species in Florida: the veiled chameleon (*Chamaeleo calyptratus*), Oustalet’s chameleon (*Furcifer oustaleti*), and panther chameleon (*Furcifer pardalis*). These examples illustrate the importance of early detection and rapid response to halt establishment of new populations, the efforts that must go into eradication attempts, and the complications of managing species on private property. Lessons learned from chameleons have implications on management of other introduced species and it should not be discounted that the “ranching” of chameleons or other nonnative species may already occur in other states in the Southeast.

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#### **W5. Shot Ingestion by Female Northern Pintails**

*Nathaniel R. Huck, Bart M. Ballard — Caesar Kleberg Wildlife Research Institute; Kevin Kraai, Texas Parks and Wildlife Department; Matt R. Kaminski, Ducks Unlimited; Mauro E. Castro, Texas A&M–Kingsville*

Lead poisoning through shot ingestion was historically one of the largest health issues affecting waterfowl in North America. In 1991 lead shot was banned for use in waterfowl hunting in the United States, and in 1997 in Canada. However, it is important to understand how and if lead shot remaining in the environment will continue to impact waterfowl. Our goal was to estimate lead and non-toxic shot consumption by female pintails wintering along the Texas Coast. We found shot in the gizzards of 39 (17%) of 227 female northern pintails collected along the Texas Coast. Of these, lead shot was found in 7 gizzards, steel shot was found in 24 gizzards, and other non-toxic shot was found in 20 gizzards. Some females consumed multiple shot types. Overall shot (lead and non-toxic combined) ingestion rates were similar to those found prior to the lead ban in Texas (14%) and Louisiana (17%); however, lead ingestion rates were considerably lower, suggesting that lead is becoming less available over time. All pintails that had lead shot in their gizzards were collected from coastal habitats. While it appears that lead consumption by northern pintails has decreased, monitoring lead consumption rates from different regions will provide insight into leads resilience and prevalence in different habitats and under different environmental conditions.

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#### **W6. Roost–Site Selection by Wintering Reddish Egrets**

*Lianne M. Koczur, Anastasia Krainyk, Bart M. Ballard — Caesar Kleberg Wildlife Research Institute, Department of Animal and Wildlife Sciences, Texas A&M University–Kingsville*

The Reddish Egret (*Egretta rufescens*) is North America’s rarest and least studied heron. It is currently a species of concern according to the U.S. Fish and Wildlife Service and is listed as a threatened species in Texas. The United States population is estimated at ~2,000 breeding pairs, with ~900–950 pairs occurring in Texas. The paucity of information about habitat requirements of Reddish Egrets has focused on breeding and foraging, and therefore management efforts for this species may be lacking important information on the range of habitats necessary during all portions of the annual cycle. In order to examine the roosting behavior and roost–site selection of Reddish Egrets, we attached GPS platform terminal transmitters to 22 adults that were breeding in the Laguna Madre, Texas. Transmitters were programmed to record 6 locations per day coinciding with peak foraging times (0800, 0900, 1600, 1700) and nocturnal roosting (2400, 0100). Preliminary results show that egrets exhibit site fidelity within and among–years. Using these locations we will be able to identify parameters that may affect roost site selection in Reddish Egrets. This is a current data need by the Reddish Egret Recovery Group and will contribute to current conservation efforts.

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**W7. Alabama Coastal Bird Stewardship Program**

*Katheryn Harris, American Bird Conservancy; Kacy Ray, American Bird Conservancy; Dianne Ingram, U.S. Fish and Wildlife Service; Kelly Reetz, Gulf State Park*

The American Bird Conservancy, in collaboration with Gulf State Park and the U.S. Fish and Wildlife Service provided protection, monitoring, and public outreach of solitary and colonial beach-nesting birds along Gulf State Park's (Alabama) beaches in 2014. The goals of the program are to: 1. provide baseline reproductive data for these imperiled species that can assist in successfully managing the resource, and 2. increase public awareness about beach-nesting birds to reduce human disturbance at critical nesting locations. Of the 46 miles of oceanfront beaches in Alabama about 24% are managed for conservation, including primarily undeveloped beaches, with some recreational facilities. The parks' beaches consist of some of the few remaining undeveloped or sparsely developed beaches in the state. These beaches provide critical nesting habitat for Least Terns, Black Skimmers, and Snowy Plovers. Disturbance from beach-goers can cause birds to flush leaving eggs and young exposed and vulnerable to the sun and both avian and mammalian predators. We posted nesting habitat with signs and symbolic fencing, and conducted surveys to calculate the number of breeding pairs, nest fates, and fledgling counts for the focal species. We also worked to build a volunteer network of stewards who helped to direct recreationists away from nesting areas, and provide an opportunity for the public to learn more about these birds by seeing them up close through spotting scopes and binoculars. Reproductive and outreach metrics from the entire breeding season will be reported on the poster.

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**W8. The Opportunist's Diet: Importance of Mammals to the Coyote in Florida**

*Lauren N. Watine, William M. Giuliano — The University of Florida*

Coyotes (*Canis latrans*) are a relatively recent invader of Florida implicated in the decline of numerous wildlife species, and pet and livestock depredation. Our goal was to understand coyote food use in Florida, particularly the importance of popular mammalian game species, and rare wildlife species, pets, and livestock. We examined 192 coyotes harvested or road-killed in Florida from December 2011 through April 2014, to document coyote diets, and examine diet relationships with body mass, age, condition, and sex. Coyotes had a diverse diet, consuming both plant and animal material. Important mammalian species to diets included feral hogs (*Sus scrofa*) and medium-sized mammals (e.g., opossum [*Didelphis virginiana*] and skunks [*Mephitis mephitis*, *Spilogale putorius*]). We detected limited differences in diet of mammalian items based on sex, body mass, and condition of coyotes, but a difference in overall diet between the sexes.

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**W9. Southeastern Bat Populations Feeling the Effects of White-Nose Syndrome: A Report from the Southeastern Bat Diversity Network**

*Emma V. Willcox, Department of Forestry Wildlife and Fisheries, University of Tennessee, Knoxville; Luke E. Dodd, Department of Forestry, University of Kentucky, Lexington; Katie E. Gillies, Bat Conservation International, Austin, TX; Gabrielle Graeter, North Carolina Wildlife Resources Commission; Thomas S. Risch, Department of Biological Sciences, Arkansas State University, Jonesboro, AK; Piper L. Roby, Copperhead Consulting, Paint Lick, KY*

In the U.S., cave-hibernating bats are facing a conservation crisis of unprecedented magnitude as a result of White-nose Syndrome (WNS), a disease caused by the fungus *Pseudogymnoascus destructans* (Pd). This disease causes mortality in bats by increasing the frequency of arousal from torpor, resulting in the consumption of energy reserves needed to survive the winter. Mortality also appears to result from disruption of physiological process such as water balance and gas exchange. White-nose syndrome is currently known to affect seven cave hibernating bat species. Mortality rates > 90% have been reported for some species in hibernacula in the Northeastern U.S. and the disease is currently estimated to have killed more than 5.7 million individuals nationwide. Since its discovery in a New York cave during the winter of 2006-2007, WNS has spread to 25 U.S. States. In the Southeastern U.S. this includes: Alabama, Arkansas, Georgia, Kentucky, North Carolina, South Carolina, Tennessee, and Virginia. Most recently Pd was discovered in Mississippi, although WNS has not yet manifested in the state. It was suggested that due to warmer winter temperatures, WNS might not have such a devastating effect in the Southeastern U.S. However, 2014 bat populations in some states appear to have exhibited increased mortality from the disease following an unusually cold winter. We will present WNS mortality rates by species for each state in the southeast and highlight differences in mortality across each species' range. In addition, we will discuss priorities for southeastern bat and cave conservation.

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