This presentation provides an update on four state-Threatened beach nesting birds: least tern, black skimmer, snowy plover, and American oystercatcher. It includes biological background, conservation status, and information on how the Florida Fish and Wildlife Conservation Commission (FWC) and partners are managing and monitoring the species. These species face a multitude of threats to their survival as Florida’s coastal environments are complex systems critical to both humans and wildlife. To further clarify the protections provided to these species and to minimize the impacts to their populations, staff are planning broad stakeholder engagement on the draft Species Conservation Measures and Permitting Guidelines this summer, which will be presented to the Commission for approval later this year.

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Unless otherwise noted, images throughout the presentation are by FWC.

Photo: Least tern and chick
Florida has many shorebirds and seabirds, often found along our coastal waters and habitats. Four are designated by the FWC as state-Threatened on Florida’s Endangered and Threatened Species List and are included in the Imperiled Species Management Plan and Chapter 68A-27 Florida Administrative Code. They include two shorebirds (birds that feed along the shoreline) – the American oystercatcher and snowy plover, and two seabirds (birds that feed at sea) – the black skimmer and the least tern. Collectively, these birds are referred to as “imperiled beach-nesting birds”.

As part of the Imperiled Species Management Plan, the FWC finalized a Species Action Plan for these four imperiled beach-nesting birds in 2013. The Species Action Plan contains more details than the brief summaries provided in this presentation and is a recommended resource for additional information. It can be found here: https://myfwc.com/media/2128/imperiled-beach-nesting-birds-species-action-plan-final-draft.pdf
Imperiled beach-nesting birds need habitat to shelter, breed, feed, and raise their young. They primarily use sandy beaches, inlets, and estuary habitats across Florida. Least terns and black skimmers are also found inland, particularly around freshwater lakes and manmade bodies of water. Foraging for food mainly occurs along sandy shorelines and tidal areas. The two fish eaters (least tern and black skimmer) will also search for food in nearby shallow waters including areas of fresh water. The wrack line is an important habitat at various life stages as it provides critical foraging and sheltering areas for chicks.

The breeding season for these birds is generally March through August, and breeding occurs on sparsely vegetated beaches, spoil islands, oyster/shell rakes (especially for the American oystercatcher), and gravel rooftops (American oystercatcher, black skimmer, and least tern). Gravel rooftops are especially important for least terns as recent data shows that 55% of the Florida population relies on them for nesting. Black skimmer and least tern are colonial, which means they nest in large groups or colonies, which can be anywhere from a few nests up to hundreds. Snowy plover and American oystercatcher are solitary nesters, which as the name implies, are more secretive with hidden and hard to find nests. Beach-nesting birds lay a clutch of eggs in a shallow “scrape” in the sand, shells, or within a vegetation clump. Nests have also been documented on bare land associated with airports and mines, parking lots, agricultural fields, restoration sites, constructions sites, causeways, dredge spoil islands, and rooftops. This behavior is thought to be in response to the alteration and reduced availability of their natural habitat. When hatched, chicks remain with their parents and are dependent upon them for food, shelter, and protection.

*Photos from top bottom and left to right: Least tern eggs, roof top with nesting least terns, marsh with American oystercatchers, snowy plover chick.*
Conservation Status

- National decline, in the last 50 years
  - Shorebirds - 37% decrease
  - Waterbirds - 22% decrease
- Florida’s coastal resources are very important to shorebird & seabird conservation
  - 1,350 miles of coastline

Across taxa, there have been sharp declines of North American bird populations since 1970, with 2.9 billion fewer breeding birds today than there were 50 years ago. This is the equivalent of 1 in 4 birds disappearing since 1970. Shorebirds and waterbirds specifically have experienced significant declines of 37% and 22% respectively.

Many shorebirds and seabirds migrate, and they use similar paths or “flyways” through the landscape. The Atlantic Flyway funnels birds through Florida and results in a large diversity of bird life in our state. With over 1,350 miles of coastline habitat (an equivalent length to nearly the entirety of the remaining eastern seaboard), Florida is an essential part of the overall landscape for coastal bird species that are here to rest, feed, breed, and raise their young.

Because of this, regulations protecting shorebirds and seabirds in Florida are critical. The conservation of shorebirds and seabirds is complex and variable across their range. The Migratory Bird Treaty Act is an important federal bird protection law that conserves our nations shared bird species. The law has treaties signed with Canada, Mexico, Japan, and Russia, and is intended to ensure the sustainability of populations of all protected migratory bird species.

Florida law provides protections for species that are state-listed as Threatened in the state.

_Globe photo courtesy of the National Fish and Wildlife Foundation_
\textsuperscript{1} Rosenberg et al., Science 366, 120–124 (2019)
Past population trends of the four state-Threatened species. Comparisons are limited to statewide surveys with similar survey designs and effort, so the timing of and duration between survey periods varies by species. At the time of listing, the American oystercatcher had declined by 56%, the black skimmer had local declines of more than 90%, and the once-common snowy plover had fewer than 250 pairs. Least terns were modeled to have a 100% probability of extinction over 100 years.

Florida has a world class shorebird conservation program with robust monitoring, providing the latest data for abundance estimates for the four species of imperiled beach-nesting birds. There are approximately 7200 pairs of least terns, 3000 pairs of black skimmer, 250 pairs of snowy plover, and 235 pairs of American oystercatcher in our state. At these levels and with known declines, all 4 species meet the criteria for state listing. The target population numbers shown were identified in the Species Action Plan for these four imperiled beach-nesting birds.

The four species use of habitats and regions of the state vary, although all are dependent on coastal habitats. For example, approximately 83% of the state’s snowy plover population occurs in the northwest region, and approximately 77% of the state’s black skimmer population occurs in the southwest region of Florida. In comparison to the rest of the North American population, approximately one-third (33%) of the least tern population resides in Florida, along with about 80% of the eastern deme (interbreeding group) of snowy plover.

For more information on monitoring reports visit: https://flshorebirdalliance.org/resources/reports/

<table>
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<th>Species</th>
<th>Approx. # of pairs in 2019</th>
<th>Target # of pairs</th>
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<td>Black Skimmer</td>
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<td>Snowy Plover</td>
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<tr>
<td>American Oystercatcher</td>
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Beach-nesting birds face numerous challenges when attempting to nest and raise chicks on Florida’s beaches, including habitat loss, incompatible management, disturbance, and predators.

Loss and alteration of habitat from coastal development and incompatible beach management has reduced the number of suitable breeding sites and forced beach-nesting birds into fewer locations, some of which may not have suitable nesting conditions or enough food to raise chicks. As previously mentioned, some beach-nesting birds have shifted to nesting on gravel rooftops in response to the loss of suitable beach habitat. However, gravel rooftops are being converted to materials not suitable for nesting due to modernized building practices.

Beach-nesting birds are also threatened by native and non-native predators, which have increased presence on Florida’s coast due to human activities. Trash left behind by people attracts predators to beaches to scavenge for food scraps, and direct feeding of wildlife, especially gulls, is common on recreational beaches. Predators not only consume eggs and chicks; they also can cause abandonment of entire breeding colonies. When predators are present, beach-nesting birds spend time and energy on defending nests and chicks, leaving eggs and chicks vulnerable to other threats.

Cumulatively, these challenges reduce nesting, hatching, and fledging success, and can cause abandonment of nest sites, which reduce survival for beach-nesting birds and further drives imperilment for state-Threatened beach-nesting birds.

*Photos from top left, clockwise: snowy plover chick, tractors with construction on beach, a crow with egg, coastal development*
Conservation Threats

- Disturbance during nesting, resting and foraging

Within the sites that remain, beach-nesting birds are threatened by a wide range of human activities. These can include beach recreation; dogs; construction projects in or near breeding sites; operation of vehicles (human-controlled or remote-controlled) on land, in the water, or in the air; special events such as concerts, sporting events and fireworks; mechanical beach-cleaning; and coastal engineering projects. Direct mortality of eggs and chicks occurs from trampling by pedestrians, predation by dogs, or crushing by vehicles. In response to disturbance, breeding adults flush from nests or become separated from chicks, leaving eggs and young exposed. Egg temperatures can increase to lethal levels in as little as 2 minutes, when exposed to direct sunlight.

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*Photos from top, clockwise: egg compared to sandal, beachgoers disturbing a group of shorebirds, dog chasing bird.*
Even well-intentioned beachgoers may have a hard time recognizing that shorebirds are present and nesting. This is an image showing a posted least tern colony illustrating how camouflaged nests can be.

*Photo: posted least tern colony; inset – eggs in scrape*
American oystercatcher nest on high wash, on shell covered beaches, and these nests can also be very difficult to see.

*Photos: beach with American oystercatcher nest; top inset – American oystercatcher, bottom inset – eggs in scrape.*
A posted area provides protection to this colony of black skimmers, however as the chicks grow, they may move outside of the posted colony, as this chick hiding outside of the posted area.

*Photos: posted black skimmer colony; inset – black skimmer chick in depression on beach.*
In 2009, a longstanding shorebird conservation partnership between the FWC, Audubon, and other stakeholders was formalized as the Florida Shorebird Alliance (FSA). The FSA helps to address some of the threats, particularly those related to disturbance and identification and marking of nesting sites. The FSA is a statewide network of 12 local partnerships that coordinate on-the-ground protection of shorebirds and seabirds across the state. The alliance strives for comprehensive monitoring, posting, and stewarding activities to conserve beach-nesting birds. The FSA regularly involves greater than 270 partners from federal, state, and local government; universities; NGOs; private organizations; and private citizens. In addition to posting and stewarding activities, members of the FSA attend training, follow standardized monitoring protocols, and enter data into the Florida Shorebird Database.

Within the FWC, the Shorebird program was expanded in 2017, with the aid of funding from the National Fish and Wildlife Foundation from the Gulf Environmental Benefit Fund (in response to the Deepwater Horizon oil spill). The Shorebird program has dedicated staff and clearly defined programmatic goals, actions, and strategies, that are outlined in Florida’s Imperiled Beach-nesting Bird Plan. The Plan set a conservation target of increasing imperiled beach-nesting bird populations by 10% by 2029.

*Photos, left to right: FSA logo, FSA partnership regions, NFWF logo, Audubon logo*
Ongoing Management & Monitoring

- Reducing disturbance
  - Posting sites
  - Stewarding important areas
- Protecting nests
- Enhancing habitat
- Addressing information needs
  - Surveys & monitoring
  - Florida Shorebird Database
- Improving regulatory coordination

The FWC has been actively engaged in shorebird conservation for more than three decades. Given the multitude of threats, hands-on management is necessary to ensure the long-term survival of Florida imperiled beach-nesting birds. Through the Florida Shorebird Alliance and the FWC Shorebird program, the five strategies outlined on the above slide are instrumental in conserving shorebird populations.

In conjunction with other activities, reducing disturbance allows birds to increase and improve their success and survival. This is achieved primarily by posting important areas with rope and signs, and by involving bird stewards. Site-specific strategies for integrated nest protection are implemented where it is determined that predators are among the primary causes of nest failure. Expansion of education and outreach efforts also garner critical public support that will ensure that management can be successfully carried out. Managing, restoring, and enhancing habitat is essential to maintain and grow populations. Designating and improving Critical Wildlife Areas is an example of identifying key habitats for beach-nesting birds.

Collecting, compiling, and analyzing information like population size and reproductive success, is essential to identify site-specific threats, understand how these species are responding to conservation investments, and to measure progress against outcomes, and adaptively manage.

To ensure the long-term viability of beach-nesting bird populations, conservation laws and policies, should work to ameliorate the adverse effects of incompatible management activities and build consensus for strategies that balance beach-nesting bird conservation needs with objectives of stakeholders.

*Photos from top bottom and left to right: Person using a spotting scope, a colony of black skimmers protected by posting, a group of FWC staff and volunteers with*
shorebird signs in front of a law enforcement boat
Measuring Progress

- With management, most species are seeing increases in breeding pairs
- Still well below target population numbers

Targeted conservation efforts are having a positive impact on most of the state-Threatened shorebirds and seabirds. Posting, stewarding, and managing disturbance help increase the number of chicks that successfully fledge and over time, this increases the number of breeding pairs. However, the number of breeding pairs is still significantly less than what is needed to meet target population numbers.

*Chart: from Restoring Florida’s Shorebirds and Seabirds (2019) – report for NFWF grant. Trends of minimum population counts for four focal species. The minimum number of nesting pairs represents the highest number of pairs observed statewide by species during a selected 10-day survey period annually. The time-period used in most of the cases coincides with peak nesting, statewide, for each year. The minimum number of pairs is derived from true counts and is not corrected for imperfect detection or asynchronous nesting. Minimum number of pairs is not a population estimate but we consider it to be a reliable indicator of population trends.*
Conservation Measures and Permitting Guidelines (Guidelines) are incorporated into rule and developed to streamline technical assistance and information on permitting. In 2016, staff was directed by the Commission to develop Guidelines for all species included in Florida’s Imperiled Species Management Plan. Guidelines summarize species biology and habitat needs and provide guidance on survey methodology and voluntary conservation practices. Guidelines identify what constitutes take for state-Threatened species, outline activities not expected to cause take, methods for avoiding take, and in some cases, authorize take for certain activities, such as emergency actions for human safety. Guidelines also provide options for achieving conservation benefit through minimization and mitigation in circumstances where take cannot be avoided for state-Threatened species.

50 of 59 species currently included in the Imperiled Species Management Plan have Commission-approved Guidelines. The imperiled beach-nesting birds Guidelines are the most complex set to date due to the multifaceted dynamics of our coasts.

*Photos top to bottom: Tractor on the beach, roadway with sign indicating shorebird nesting*
The focus of the Guidelines will be related to the three essential behaviors for imperiled beach-nesting bird survival: breeding sites, critical brood-rearing sites, and critical roosting sites.

Breeding sites can be both active and recent. Active sites are where one or more active nests are present. Recent breeding sites are where one or more active nests have been present in any of the preceding five breeding seasons. Critical brood-rearing sites are limited to snowy plovers and are the areas where it is known that chicks travel with their parents to forage. Critical roosting sites are limited to American oystercatchers and are mainly in Cedar Key where the birds require high tide roosts for their survival.

*Photos top to bottom: Snowy plover and chick, colony of American oystercatcher*
Because of the number and diversity of stakeholders in the coastal environment, staff began early engagement and concept development of the Guidelines in 2020. Key stakeholders involved thus far have included: Audubon Florida, the Florida Department of Environmental Protection, county government environmental staff, the U.S. Fish and Wildlife Service, other state and federal agencies, beach-cleaning business owners, and the Florida Shore and Beach Preservation Association. Targeted stakeholder engagement is continuing, and feedback is being incorporated into draft Guidelines. Broad public workshops will begin in July 2021 and a public comment period will be advertised in the Florida Administrative Register and through GovDelivery. Staff plan to bring a draft set of Guidelines back to the Commission for approval later this year.

Photo: Snowy plover and chick
Staff Recommendation

Direct staff to continue engaging with stakeholders and return with draft Species Conservation Measures and Permitting Guidelines in late 2021.

Staff is seeking input and direction from the Commission on engaging with stakeholders and returning with draft Species Conservation Measures and Permitting Guidelines in late 2021.

*Photos left to right: least tern chick, a family of black skimmer, snowy plover chick*