



NATIONAL
WILDLIFE
REFUGE SYSTEM

Module 2a

Basic Needs

Basic Needs

All coastal birds have **three** major common needs

Habitat

For breeding, migrating, and wintering

Food Sources

Areas to feed themselves and chicks

Threat Mitigation

Safe areas from predators, climate change, vehicles, and people



PHOTO: JAMES WELIVER/USFWS
COMMON TERN CHICK IN VEGETATION AT MONOMOY NATIONAL WILDLIFE REFUGE

Habitat

What is a habitat?

Habitat consists of everything an organism needs to survive such as **food, water, shelter, and space.**

For coastal birds, their habitats include areas such as sandy beach, salt marsh, mud flats, open water, and more.

Not all species use the same areas for resting, nesting, and foraging.



PHOTO: DELAWARE BAY SUNSET
BOB MICAL



Habitat continued

- Birds need space to **rest, nest,** and **forage** at all times of the year, wherever they are.
- These areas often coincide with some of our most popular **vacation spots.**
- Unfortunately for birds, they **need** these spaces not for fun, but to **survive.**
- They **cannot** go anywhere else.



PHOTO: SANDPIPERS ON GRAVEL BEACH
RAY HENNESSY



Resting

Habitats that are
safe and quiet



PHOTO: LONG-BILLED DOWITCHERS ROOSTING
NIGEL



PHOTO: BLACK SKIMMERS ROOSTING
RAY HENNESSY



PHOTO: SANDERLINGS ROOSTING
BILL BUCHANAN/USFWS

Nesting

Habitats with good substrates,
materials, and undisturbed
spaces to raise young

PHOTO: BLACK SKIMMER WITH CHICK
MATTHEW PAULSON



PHOTO: LEAST TERN WITH CHICKS
HENNESSY



PHOTO: BLACK SKIMMERS NESTING
DORIS RAFAEL

Foraging

Habitats that are teeming
with food for birds

PHOTO: BLACK-BELLIED PLOVER FORAGING
ANDY MORFFEY



PHOTO: RED KNOT FORAGING
BRAD WINN



PHOTO: SANDPIPERS (VARIOUS) FORAGING
CRAIG WATSON/USFWS

Food Sources

All animals choose their habitat based on where they can find food!



PHOTO: SPOTTED SANDPIPER FORAGING
MARK YOKOYAMA

Each bird has a body that's built for specific types of foods.



Terns dive into the water while skimmers skim the surface for fish.

Oystercatchers snatch mollusks and other invertebrates and pull their meat out.



Plovers eat small bugs, worms, and other arthropods near the sand surface.



Sandpipers probe moist sand for hidden food items.



Threat Mitigation



Coastal birds are very good at choosing **habitats** with fewer people, fewer predators, and less flooding.

BUT, these areas are shrinking and becoming **few and far between**.

As a result, coastal birds are forced to nest and rest in areas that make them more **vulnerable** to threats.

Part of our job is to help mitigate these threats... but **what are these threats?**

Threats to Coastal Birds

- These **four major threats** highlight the precarious situations of coastal birds in our region.
- Their populations have been **declining** in recent years due to these threats.
- In some states, the places where coastal birds nest **now** are the **only places** they have left.

Disturbance

Human Development

Predators

Sea-level Rise

Threats: Disturbance

Human activities on beaches and in other coastal areas can impede the natural activities of coastal birds; especially humans with pets.

Foraging: Birds will stop eating to run or fly away. These birds expend energy to flee and must spend extra time to make up for the lost energy.

Nesting: Birds may abandon their eggs which are very energy-intensive to produce.

Chicks: Chicks are vulnerable before they learn to fly and may get stepped on by people, chased and eaten by pets, or run over by off-road vehicles.

Sleeping Birds: Birds do not get enough rest and can die during migration from exhaustion.



PHOTO: MICHAEL DIXON/USFWS
CHINCOTEAGUE NATIONAL WILDLIFE REFUGE

Threats: Development

Human development threatens coastal bird survival by destroying habitat or impeding access to foraging.

Buildings replace habitat and prevent adults from taking their chicks from the beach to the bayside to forage.

Roads and parking replace habitat and create areas where adults and chicks are vulnerable to being crushed by foot traffic and vehicles.

Shoreline stabilization through jetties and bulkheads hinder the natural coastal processes that replenish sand to barrier islands, causing them to shrink.



PHOTO: AERIAL IMAGE OF DEVELOPMENT DISPLACING MARSH HABITAT
LIA MCLAUGHLIN/USFWS
EDWIN B. FORSYTHE NATIONAL WILDLIFE REFUGE

Threats: Predators



PHOTO: RED FOX ON BEACH
BILL THOMPSON

Human-adjacent predators such as coyotes, foxes, raccoons, skunks, and opossums are predators that have benefitted from human development and their populations have skyrocketed.

These predators have spread to beach habitats where they did not live previously and have become well-adapted to hunting coastal birds, chicks, and eggs.

Off-leash pets and feral domestic animals are also major predators of coastal birds.



Threats: Sea-Level Rise

Sea-level rise is difficult to manage for, so the importance of controlling other factors is heightened.



Barrier islands and other coastal habitats are typically well-adapted to survive flooding and storm events.

These events are becoming more destructive, widespread, and frequent as sea levels increase.

Coastal habitats are increasingly unable to bounce back between events and this leads to progressive habitat loss.

Flooding during the breeding season wipes away nests and chicks.

How we can help:

- Many of these issues are **too large** for any one person to handle.
- Everyone can contribute in small ways to make a **big impact together**.

Respect signs and stay out of closed areas!

Give birds **space** to be themselves while you're sharing the shore!

Clean up and pack out trash!

Advocate for the protection of natural areas!