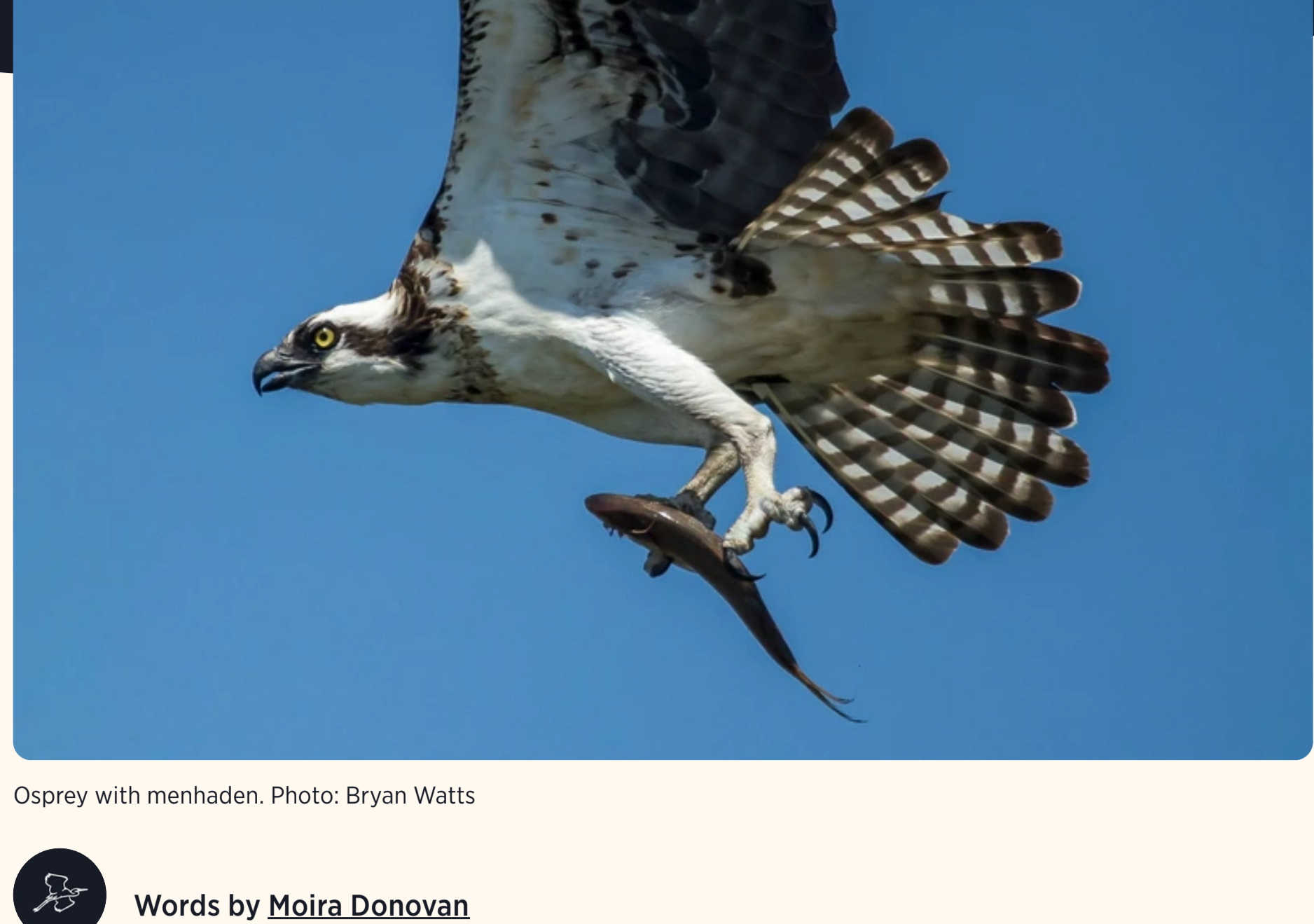


NEWS

# Researchers Sound the Alarm Over the Chesapeake Bay’s Ospreys

In the world’s largest population of the fish-eating raptors, reproductive rates have fallen below DDT-era lows. Scientists say overfishing by one company is to blame.



Osprey with menhaden. Photo: Bryan Watts



Words by **Moira Donovan**

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The 2023 Osprey research season in Mobjack Bay, a sub-estuary of the Chesapeake Bay, began as others had for decades. Cruising the brackish waters in a small motorboat, Bryan Watts, director of William & Mary’s Center for Conservation Biology in Virginia, and Michael Academia, a researcher at the center, eased up to nesting platforms, boat houses, and abandoned docks dotting the shoreline. Lifting mirrors on long poles, they held them over elevated Osprey nests and used the reflections to peer inside.

What the researchers saw in those mirrors—or, rather, what they didn’t see—was disturbing: Out of 167 nests they visited in Mobjack Bay and two nearby rivers, only 17 held live chicks. “It was a catastrophic failure,” says Watts, who has studied Ospreys in the area for decades.

The Chesapeake Bay supports the largest Osprey population in the world: 10,000 to 12,000 breeding pairs of the only raptor that dives talons-first into the water to collect a meal. William & Mary scientists have studied these birds since just before the 1972 ban on DDT, an insecticide that caused most nests to fail. After the ban, hatching rates and Osprey populations rebounded. But in recent years, productivity in some areas has declined sharply again. Last year, reproductive rates dropped to their lowest level in decades—even lower than at the height of the DDT period, Watts says.

This time, researchers say the cause is not chemicals but hunger. Chicks are starving in their nests due to a lack of prey, and in particular, the small, high-fat forage fish on which some Osprey depend: Atlantic menhaden. “There’s no question that there’s not enough menhaden to support the Osprey right now,” Watts says. In the Chesapeake, conservationists say those menhaden declines are due to overfishing by a single company, and are increasingly vocal in urging regulators to take action.



Michael Academia uses a pole-mounted mirror to check on Osprey nests in Mobjack Bay. Photo: Bryan Watts

No data exist for the number of menhaden in the Chesapeake, so scientists look to the birds as indicators of how healthy stocks are. While Ospreys eat a wide variety of fish, they need a certain amount of high-fat menhaden to

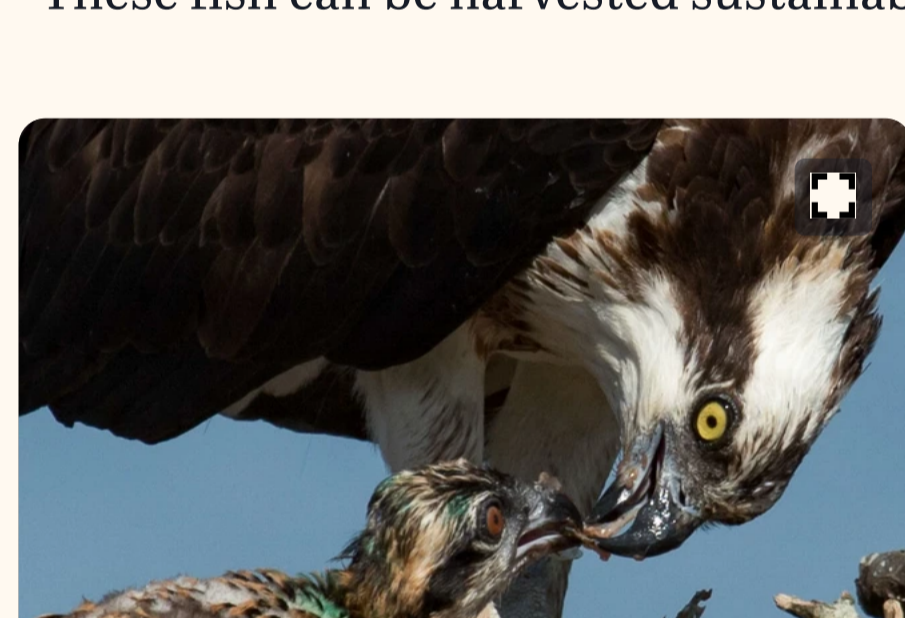
survive, Watts says. He and Academia first assessed the relationship between Ospreys and food availability in 2021, comparing outcomes for pairs that received supplemental menhaden and pairs that didn’t. Among the latter group, the number of live young was well below what would sustain the population. “Most of the nests failed within the first two weeks of hatching, the critical part when they need the food,” Academia says.

In early 2024, William & Mary researchers published a study in *Frontiers of Marine Science* linking Osprey declines since the 1980s to declines in menhaden during that time. The study suggested that menhaden stocks needed to be restored to 1980s levels to stabilize the Osprey population.

These results also brought the birds into the contentious matter of menhaden harvesting in the Chesapeake Bay. While scientists say it’s clear that Osprey aren’t getting enough menhaden, the role of commercial fishing remains a subject of fierce debate. The federal government sets the allowed harvest of menhaden, and the 16 participating states decide how to manage their quotas, with Virginia taking the lion’s share. In 2022, a federal regulator, the Atlantic States Marine Fisheries Commission, concluded there was no evidence that menhaden were being overfished along the Atlantic coast.

Critics contend, however, that current management of menhaden stocks does not set aside enough for wildlife that eat the fish. In 2023, the Southern Maryland Recreational Fishing Organization sued the Virginia Marine Resources Commission, the state regulator. The lawsuit alleged that, by approving the quota set by the Atlantic Commission, the state agency was mismanaging menhaden in the Chesapeake. The group also filed a public petition asking the state to reduce harvesting and fund a menhaden population study. Management decisions were depleting menhaden, and by extension, striped bass and other wildlife that depend on them, they said. “It’s as much about Osprey populations as any other predator species,” says David Reed, executive director of the Chesapeake Legal Alliance, which is representing the anglers. “It’s an ecosystem problem.”

Conservationists have also raised concerns. Last year, in response to Watts’ and Academia’s research, the Richmond Audubon Society asked Virginia state regulators to temporarily suspend the use of large fishing nets in the Chesapeake. Remy Moncrieffe, marine conservation policy manager with the National Audubon Society, says the situation in the Chesapeake shows a lack of regard for the importance of menhaden in supporting other species. “These fish are really important for the ecosystem, but it’s almost like we don’t have the respect and the care we need to really preserve them,” he says. And there are available options for helping stocks rebound, he adds. Louisiana, for example, in February implemented a half-mile buffer zone along its coast where menhaden can’t be commercially fished, after years of campaigning by conservationists and anglers. “These fish can be harvested sustainably,” Moncrieffe says.



An Osprey feeds its chick in the nest. Photo: Bryan Watts

In the Chesapeake, nearly all menhaden fishing is carried out by one company: Omega Protein, which, through its fishing partner Ocean Harvesters, catches roughly 244 million menhaden a year for reduction into fish meal

and fish oil. In a statement to *Audubon*, Omega Protein said that the menhaden fishery has long been attacked by those “who refuse to accept the science-based conclusions of respected government agencies and independent assessment bodies.” The company also pointed to the Marine Stewardship Council’s 2019 certification of the menhaden fishery as sustainable.

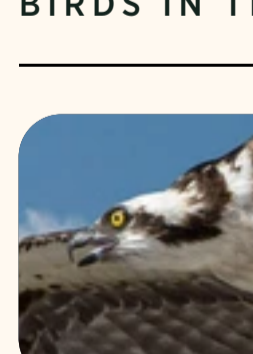
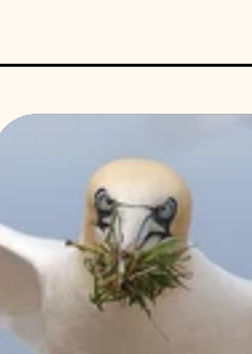
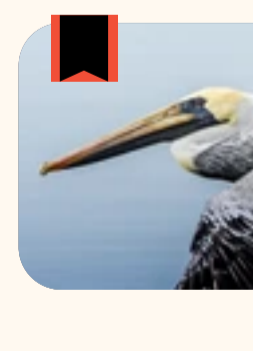
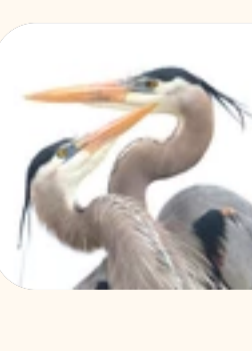
Referring to the Osprey research, the company noted that it hasn’t fished in Mobjack Bay in decades, and that regulators have already reduced menhaden harvesting in the Chesapeake Bay to less than one-third of historical levels for precautionary reasons. The company also said there are many potential explanations for nest failures in Mobjack Bay. “Directly linking the decline in Osprey populations to the availability of menhaden is not supported by any available evidence,” the statement said.

Watts and Academia disagree, and they’re once again cruising the Chesapeake to gather more data. Along with tracking reproductive success, this season they plan to monitor how much time male Ospreys spend hunting for fish, as an indicator for the abundance of menhaden. Meanwhile, legal efforts to limit the menhaden harvest continue. While Virginia’s fisheries regulator denied the anglers’ petition, their lawsuit is still moving through the courts.

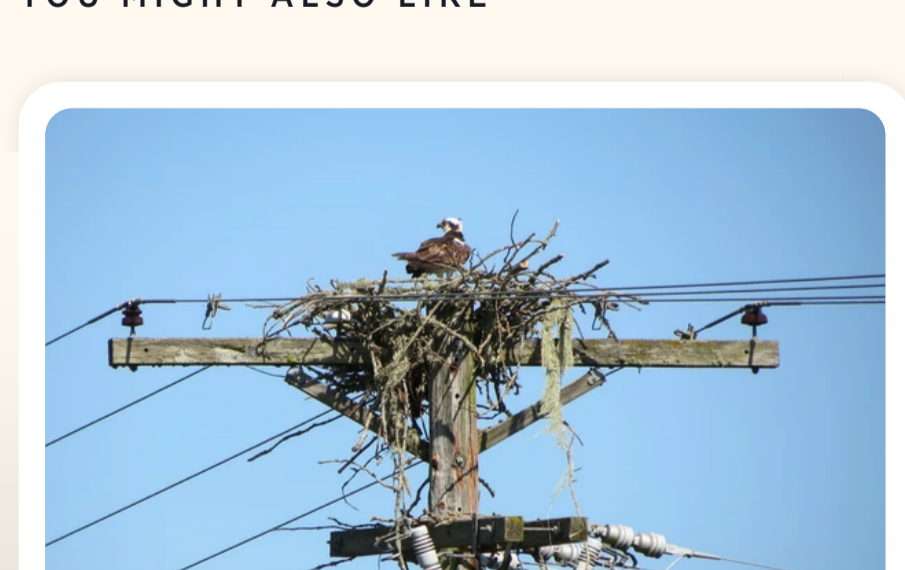
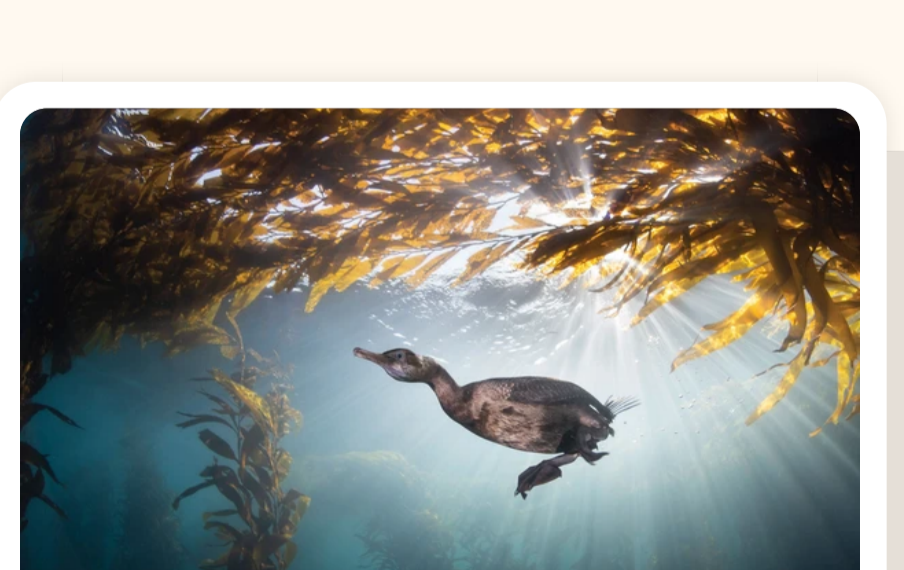
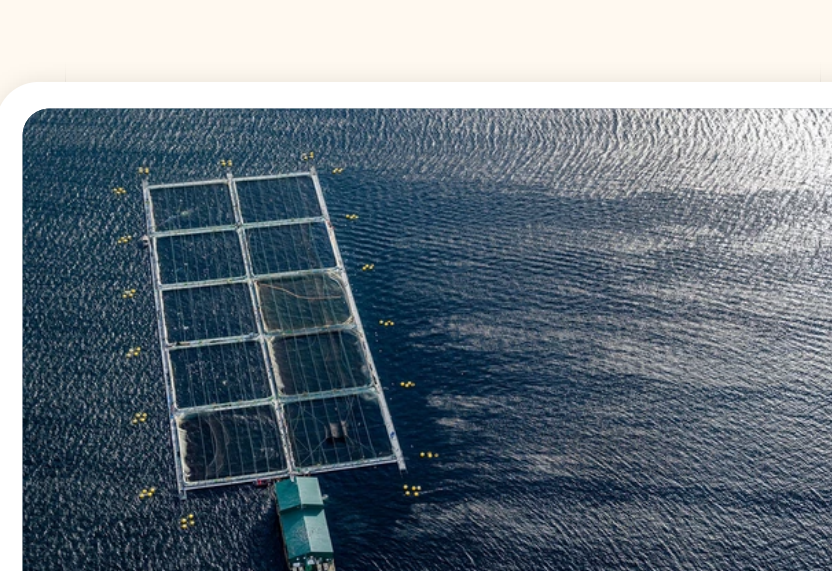
Given the size of the population, the Chesapeake Bay’s Ospreys are not in immediate jeopardy, Watts says. But the population is at risk of long-term decline, he adds, and there’s reason for concern about other species for which the Osprey serves as a sentinel, such as Northern Gannets, Brown Pelicans, and Great Blue Herons. “If Osprey are doing this poorly,” he says, “what’s going on with everything else?”

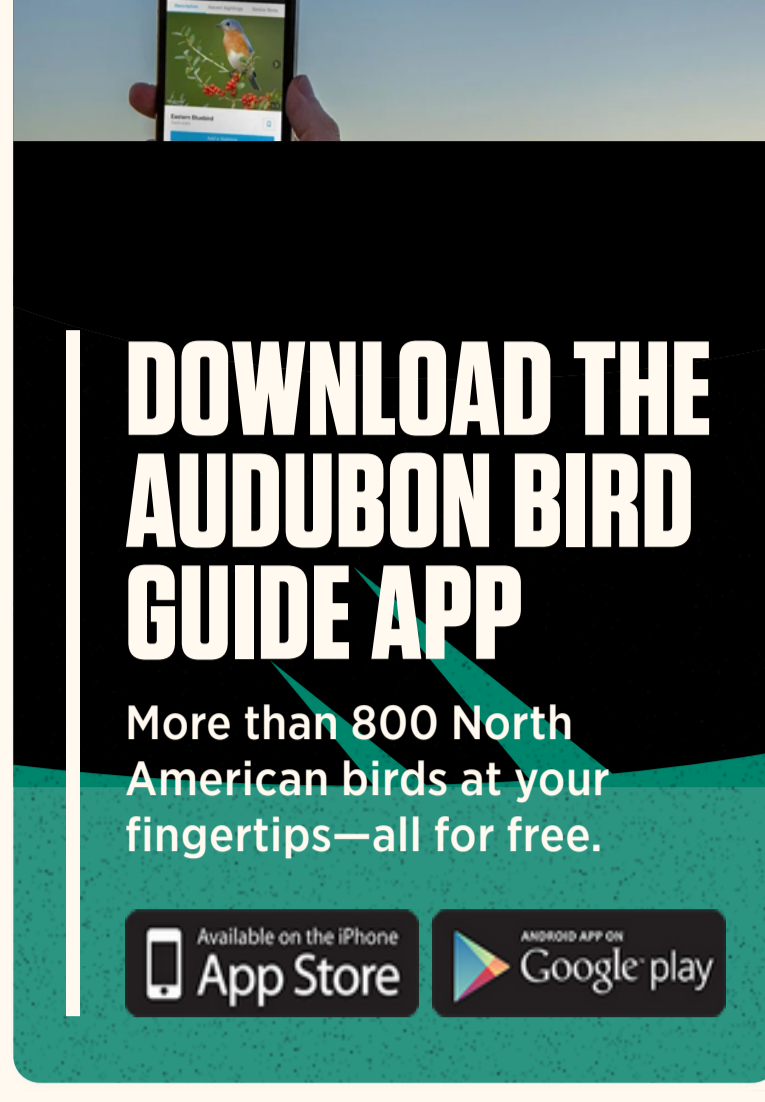
It’s too early to say how Ospreys will fare this nesting season. But it is clear that, as they have in the past, the birds are signaling that something, somewhere in the Chesapeake’s ecosystem, needs to be fixed.

BIRDS IN THIS STORY

 <p>Osprey</p> <p>OSPREYS</p>	 <p>Northern Gannet</p> <p>BOOBIES AND GANNETS</p>
 <p>Brown Pelican</p> <p>PELICANS</p>	 <p>Great Blue Heron</p> <p>HERONS, EGRETS, BITTERNS</p>

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