



UDAILY

## *A COASTAL BEAUTY*

How UD works to preserve and protect our natural landscape

---

DIANE STOPYRA

MARCH 31, 2023

---

It happens under a full moon. In May and June, thousands of bulbous-shelled horseshoe crabs—10-legged creatures that predate the dinosaur — emerge from the Delaware Bay for an orgy. The shoreline becomes a glistening spectacle of arthropod whoopee that draws in-the-know locals and visitors hoping for a glimpse of the local phenomenon.

“It’s one of those magical moments offered up by nature,” said oceanographer and UD Prof. Fabrice Veron. While he doesn’t study the animals himself, they fall under the research purview of UD’s College of Earth, Ocean and Environment, where he serves as interim dean. Typically, he and his colleagues are more comfortable talking metrics than magic. But even Delaware’s most scientific minds have to admit: When it comes to the natural environment, this small state ranks high in enchantment.

Consider the serene quiet of a sunrise over Broadkill River. The intoxicating smell of lavender fields in Milton. The mesmerizing sight of 1,000 snow geese in Bombay Hook National Wildlife Refuge. From



the north end's hilly Piedmont region to a Coastal Plain that boasts three state forests and 380 miles of shoreline, Delaware is a tide-washed canvas – osprey-dotted skies give way to dazzling wetlands and amber-hued bogs. Inland, rows of watermelon, corn and barley span more than 2,000 farms.

Even as UD's research purview extends to the far reaches of the globe, preserving this regional environment remains a top priority. Blue Hen expertise in this arena is both high-tech (developing underwater robots to address marine pollution) and high-up (using drone imagery to identify salt water encroachment on area farms). The work is often tedious and downright dirty. There's nothing glamorous about the reproductive phase of a lima bean. Stink bug studies will never be sexy. But these projects and so many more are improving quality of life for Delawareans, even those who don't know—or don't care to know—their loblollies from their laurels (native trees, for the uninitiated).



To begin with, UD's environmental efforts safeguard the economy. Research from the University's Clean Water Center has led to greater political investment in the Delaware River

Basin, a \$22 billion asset tied to 600,000 jobs and a slew of recreational opportunities, from boating to birdwatching. And Blue Hens within UD's College of Agriculture and Natural Resources support an \$8 billion agricultural industry in myriad ways—like providing sustainability training to farmers, or using state-of-the-art technology to identify avian diseases among the state's 200 million commercial chickens.

In some cases, the outcomes of UD's environmental efforts are highly visible – consider a new Offshore Wind Training Center in Lewes, set to recruit and educate an emerging wind-energy workforce. In other cases, the payoffs for everyday Delawareans are a bit more tangential, but just as real. UD's entomological research? It helps protect the hops in your favorite beer from death-by-spotted-lantern-fly. Antierosion work? It keeps the break of your go-to surf spot intact, so you can hang 10 for years to come. And even if you fail to see the magic in that aforementioned mating spectacle, you might be interested to know that UD's horseshoe crab surveys are important for anyone who's endured a hospital stay – humans rely on the animal's blue blood when testing intravenous drugs for bacterial contamination.

"HERE AT UD, PEOPLE AREN'T JUST  
SITTING AROUND DIAGNOSING PROBLEMS  
AND HOPING FOR A BETTER FUTURE.  
THEY'RE WORKING FOR IT."

- PROFESSOR A.R. SIDERS

No matter the project, Blue Hens preserving Delaware's environment — land, sea or sky — share a common motivation: a sense of responsibility to the people of the Diamond State. For Delaware Sea Grant, a program that conducts research and outreach for the benefit of coastal communities, this manifests in myriad ways, from training environmental educators to prepping for oil spills to assisting the state's fledgling oyster aquaculture industry. In the latter category, Delaware's first oyster hatchery is in development and set to alleviate a dire bivalve bottleneck.

“It’s always top of mind that much of our work is funded by taxpayer money,” says Joanna York, Delaware Sea Grant director. “It’s critically important to all of our people that we’re good stewards of those dollars. We care about these communities, and we want to have a positive impact on the people who live here.”



In a state as low-lying as Delaware, achieving a positive impact increasingly means managing the effects of climate change. From units across campus, researchers are combating ocean acidification, sea level rise, even Wilmington’s so-called heat islands, urbanized pockets whose higher temperatures are detrimental to human health. In CEMA, the Center for Environmental Monitoring and Analysis, UD experts provide real-time weather monitoring services that inform decision making and disaster preparedness at the state level.

"IT'S ALWAYS TOP OF MIND THAT MUCH OF OUR WORK IS FUNDED BY TAXPAYER MONEY. IT'S CRITICALLY IMPORTANT TO ALL OF OUR PEOPLE THAT WE'RE GOOD STEWARDS OF THOSE DOLLARS. WE CARE ABOUT THESE COMMUNITIES, AND WE WANT TO HAVE A POSITIVE IMPACT ON THE PEOPLE WHO LIVE HERE."

- JOANNA YORK  
DELAWARE SEA GRANT DIRECTOR

Bringing these efforts together under one umbrella is the Mangone Climate Change Science and Policy Hub, which facilitates collaboration between scholars and external partners in order to better engineer solutions for the people – and natural wonders – of Delaware.





“If the beaches narrowed, if the horseshoe crabs weren’t here, if the birds stopped migrating across this place, that would fundamentally change what the state is,” says

Professor A.R. Siders, co-director of the Climate Change Hub. “Sometimes, I think we take for granted that all these iconic things we love so much will always be around. But keeping them here and healthy requires a lot of stewardship.”

As to whether Siders and her eco-minded colleagues across campus are up to the task... let’s just say the Blue Hen doesn’t rely much on hope.

“That’s something you need when you’re not taking action,” she says. “Here at UD, people aren’t just sitting around diagnosing problems and hoping for a better future. They’re working for it.”