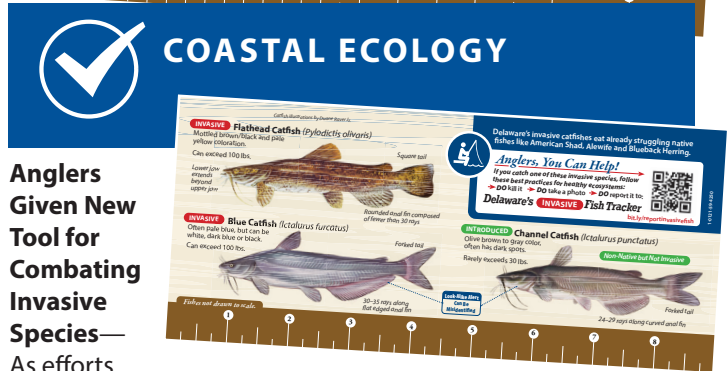


Rise to the Challenge MEANINGFUL IMPACTS

While Delaware Sea Grant (DESG) invested a great deal of time and resources in responding to the COVID-19 pandemic through 2020, the program also continued a number of initiatives unrelated to creating virtual content or supporting local economies suffering from lockdowns. Using Sea Grant's powerful approach combining research, extension and education efforts, DESG helped protect and improve healthy coastal ecosystems, engage the public with the environment, strengthen communities and support sustainable seafood.



Research Shows Impact of Dam Removal—Ed Hale, DESG's aquaculture and fisheries specialist, led seine net surveys of Wilmington's Brandywine Creek, engaged by a coalition of groups supporting the removal of the waterway's 11 dams up to the Pennsylvania border. The first dam was removed in fall of 2019, and Hale's research sought to document whether the newly opened section of the river was hosting American Shad (*Alosa sapidissima*), an anadromous fish with historic and culinary importance. The surveys documented hundreds of juvenile shad where there had previously been none, providing scientific evidence of the efficacy of removing the dam. Brandywine Shad 2020, the non-profit organization leading efforts to remove or provide bypasses for the dams, has plans to advance three miles upriver past five more dams in its next phase. "We're opening up available habitat. We're seeing juvenile progeny," Hale said. "We are essentially documenting what could result in population rebuilding or recovery." Learn more at deseagrant.org/news-all/2020/10/2/studying-the-impact-of-dam-removal



Anglers Given New Tool for Combating Invasive Species—

As efforts in Wilmington seek to restore native fish, a collaboration between DESG and the Delaware Department of Natural Resources and Environmental Control (DNREC) enlisted the state's recreational anglers in the fight against non-native invasive fishes. Kate Fleming, DESG's coastal ecology specialist, worked with DNREC to create a water-resistant card showing three invasive fishes problematic in the region, along with common misidentifications. In addition to helping anglers recognize when they have caught an invasive species, the cards provide information on what to do, including how to report the catch to DNREC. Learn more and see the card at deseagrant.org/invasive-species



COMMUNICATIONS & RESEARCH

DESG Aids Response to Oil Spill—On October 19, oil began washing up on Broadkill Beach, prompting a response that would stretch over weeks and involve multiple local, state, and federal agencies as well as local non-profit organizations and DESG. DNREC crews handled cleanup for the spill, which eventually stretched 87 miles and required the removal of 85 tons of oiled debris despite being estimated at only 215 gallons of refined high-aromatic heating or diesel fuel oil. The DESG role was to educate the public about oil spills in general and this incident in particular, amplify urgent communications from DNREC and others at the time, and fund and facilitate research to learn more about where the oil might be accumulating and the impacts it could have. Learn more at deseagrant.org/oil-spill



The group photos on this page were taken prior to the COVID-19 pandemic.



GREEN INFRASTRUCTURE

Conducting Research on New Applications for Living Shorelines—University of Delaware researchers in coastal engineering and landscape architecture are installing a living shoreline on Pea Patch Island to study how the low-cost green infrastructure technique could work in an environment exposed to wakes from large ships. The DESG-funded research project examines how the water of the Delaware River affects the shoreline, and how the shoreline dissipates the energy of the waves. The project also includes a public education component, which is designing and testing methods to enhance the public’s environmental literacy about the value of living shorelines. In addition to developing data that will assist in future living shoreline installations, the project is aiming to forge ongoing relationships with stakeholders undertaking living shoreline installations, create a user-friendly site assessment tool, and improve public perception of living shorelines. Learn more at deseagrant.org/research-resilient-communities



RESILIENT COMMUNITIES & ECONOMIES

Understanding Delaware Bay Birding, Sea Level Rise and Urbanization

—Supported by DESG, researchers from Delaware State University are quantifying the importance of near-shore habitats to spring and fall transient songbirds thereby applying a conservation value to these systems. The project will identify unprotected habitats to assess the current and future threats posed by climate change and urbanization. The Delaware Bayshore draws bird-watchers from around the world during both spring and fall migration, and thus any changes to birding sites might result in negative impacts to local economies.

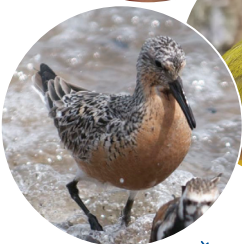
Results of this study will lay the groundwork for better understanding the potential economic effects of sea level rise and other climate change impacts on birding and the communities that benefit from the associated tourism. Learn more at deseagrant.org/research-resilient-communities



American Redstart



Hooded Warbler



Red Knot



The Red Knot photo (left) and the birdwatching group (above) are by George Parsons E.I. DuPont Professor from UD | CEOE School of Marine Science and Policy.

American Redstart and Hooded Warbler photographs taken by Aya Pickett graduate student from Delaware State University.