Vessel Strike Avoidance Fund

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ABOUT NFWF

The National Fish and Wildlife Foundation (NFWF) works with partners to foster sustainable and impactful conservation solutions so that people and nature thrive together. Chartered by Congress in 1984, NFWF has grown to become the nation's largest conservation foundation. Since its founding, NFWF has funded more than 23,900 projects that have generated a total conservation impact of $12 billion.

Learn more at **www.nfwf.org**

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Fishing boat in Florida

OVERVIEW

The National Fish and Wildlife Foundation (NFWF), in partnership with the National Oceanic and Atmospheric Administration (NOAA), announced a new round of funding for Vessel Strike Avoidance Fund (VSAF) projects. Sixteen new technology development and implementation grants totaling nearly $8.4 million were awarded. The 16 awards announced leveraged $1.2 million in matching contributions from the grantees, providing a total conservation impact of $9.6 million.

The VSAF program supports the development and use of innovative technology solutions to provide mariners with tools to more effectively avoid collisions, or vessel strikes, with large whales and benefit the conservation of North Atlantic right whales. Vessel strikes are one of the major human-induced threats to the whales' ability to recover, as their habitat and migration routes often overlap with major ports, shipping lanes and areas of heavy recreational use along the Atlantic coastline. The VSAF aims to serve as a catalyst to advance promising technologies from development to implementation while engaging with interested mariners to ensure user uptake.

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Adapting Existing Thermal Cameras for Whale Detection and Vessel Strike Avoidance (MA, ME)
Grantee: National Offshore Wind Research and Development Consortium
Grant Amount:..... $739,800
Matching Funds:.....$50,000
Total Project Amount:..... $789,800
Integrate a commercially available, combined thermal camera and a visible light wide-angle camera into an existing vessel strike avoidance system. Project will increase whale detection capabilities, train existing AI tools to create real-time whale detection algorithms and enhance the availability of vessel strike avoidance and whale detection systems for mid-size vessels.

Analyzing Satellite-Detected Vessel Traffic's Impact on North Atlantic Right Whale Behavior (MA, ME)
Grantee: Ocean Science Analytics
Grant Amount:..... $221,100
Matching Funds:..... $0
Total Project Amount:..... $221,100
Analyze historical satellite vessel detection data to characterize the distribution, speed, type and seasonal patterns of small, non-AIS-equipped vessels under 65 feet in core North Atlantic right whale habitat across Cape Cod Bay, the Great South Channel and the Gulf of Maine. Project will inform vessel alert technology design as well as management decisions through opportunistic examination of whale behavior and movement where tagging data overlaps with small vessel proximity.

Developing a Cost-Effective, Near-Real-Time Acoustic Monitoring Network for Right Whales (MA)
Grantee: Sofar Ocean Technologies
Grant Amount:..... $677,000
Matching Funds:.....$75,000
Total Project Amount:..... $752,000
Develop a cost-effective, high-density acoustic monitoring network, PodCast, that enables near-real-time detection of North Atlantic right whales at a regional scale. Project will develop, deploy and validate a passive acoustic monitoring detection tool that enables continuous, real-time monitoring and informs vessel-strike management actions.

Developing a Longterm Callosity Tag for Tracking North Atlantic Right Whales (MA)
Grantee: Coonamessett Farm Foundation
Grant Amount:..... $756,800
Matching Funds:..... $0
Total Project Amount:..... $756,800
Develop and test a range of materials, attachment techniques and deployment options for future tagging of North Atlantic right whales with satellite telemetry devices providing near-real-time location information. Project will create a functional tag and attachment platform that transmits and collects location data for long-term deployment on the callosities of right whales.

Developing a Non-Invasive, Long-Duration Tag for Tracking of North Atlantic Right Whales (MA)
Grantee: Triton Systems
Grant Amount:..... $565,000
Matching Funds:..... $177,900
Total Project Amount:..... $742,900
Develop the components for a non-invasive, long-duration satellite tag for location tracking of North Atlantic right whales along the Atlantic coast. Project will develop a prototype tag to remain attached for a year or longer, leading to a better understanding of migratory patterns, congregations and improving the effectiveness of vessel-strike avoidance measures.

Developing a Whale-Blow Simulator to Standardize Thermal Detection Analysis (FL, MA, RI)
Grantee: CSA Ocean Sciences
Grant Amount:..... $446,200
Matching Funds:..... $0
Total Project Amount:..... $446,200
Develop, test and deploy a semi-autonomous, simulated whale-blow generator that can be used to evaluate and validate thermal camera–based whale detection systems across varying vessel operations and environmental conditions. Project will produce a tool that generates standardized, repeatable whale blow proxies that enable statistically robust performance assessment of detection systems, supporting improved mitigation of vessel strikes.

Developing a Whale-Aware and Risk Navigation System for Vessel Strike Reduction on the East Coast
Grantee: Duke University
Grant Amount:..... $750,000
Matching Funds:..... $0
Total Project Amount:..... $750,000
Evaluate an integrated vessel strike risk reduction system that combines historical whale density models, near-real-time whale distribution estimates, predictive habitat forecasts and real-time whale detections. Project will develop a unified operational platform that provides near-real-time whale risk intelligence to support safer maritime transportation and improved whale conservation outcomes.

Fine-scale Movements and Reactions of North Atlantic Right Whales to Nearby Vessel Traffic (MD)
Grantee: University of Maryland Center for Environmental Science
Grant Amount:..... $440,100
Matching Funds:..... $451,000
Total Project Amount:..... $891,100
Integrate passive acoustic monitoring data and vessel tracking information to analyze the fine-scale vocalizations, movements and behavioral reactions of North Atlantic right whales to ship traffic offshore of Maryland. Project will improve understanding of whale responses to vessel traffic, providing critical data to enhance detection technologies and reduce the risk of lethal vessel strikes.

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North Atlantic right whale

Identifying Voluntary Vessel Strike Conservation Measures for Gulf Large Whales (AL, FL, LA, MS, TX)
Grantee: California Marine Sanctuary Foundation
Grant Amount:..... $259,900
Matching Funds:.....$80,100
Total Project Amount:..... $340,000
Synthesize quantitative automatic identification system (AIS) data and spatial overlap modeling to identify optimal voluntary conservation measures to avoid vessel strike of endangered large whale species within the Gulf. Project will assess the overlap of vessel user groups with whale habitat and develop stakeholder engagement and conservation plans to voluntarily reduce vessel strike risk for multiple species.

Increasing Right Whale Detection from Satellite Imagery using Data-efficient AI Models (AZ, ME, WA)
Grantee: Arizona State University
Grant Amount:..... $502,300
Matching Funds:..... $0
Total Project Amount:..... $502,300
Develop machine learning models to detect North Atlantic right whales in very high-resolution Vantor satellite imagery using data-efficient annotation and learning methods, such as data augmentation and transfer learning. Project will test four tools to improve the accuracy and efficiency of right whale detection in collaboration with project partners.

Integrating Real-time Detection Data into Whale Alert and Expanding User Outreach (FL, OR)
Grantee: Conserve.io
Grant Amount:..... $375,000
Matching Funds:.....$90,000
Total Project Amount:..... $465,000
Advance the existing Whale Alert platform by expanding the integration of real-time detection tools, improved warning delivery to mariners, integrating international standards for marine mammal safety messaging and increasing outreach to bolster the mariner user base. Project will build upon a tool that aids spatial awareness of whale presence and informs vessel operator decision-making for vessel strike avoidance.

Leveraging Vessel Strike Data to Determine High-risk Areas for Whales along the Atlantic Coast
Grantee: New England Aquarium
Grant Amount:..... $277,300
Matching Funds:.....$55,100
Total Project Amount:..... $332,400
Analyze engineering data from vessels that have been involved in bow-carrying whale strikes to evaluate potential data trends in collaboration with large ocean-going vessel industry partners. Project will develop a database that leverages historic strike cases to inform management decisions and outline high-risk areas of the U.S. Atlantic Coast for right whale vessel interactions.

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North Atlantic right whale

Modeling North Atlantic Right Whale Movement to Reduce Strike Risk along the Atlantic Coast
Grantee: University of California - Santa Cruz
Grant Amount:..... $597,400
Matching Funds:..... $0
Total Project Amount:..... $597,400
Develop advanced spatiotemporal movement models and a vertical distribution model to quantify and reduce vessel strike risk for North Atlantic right whales along the U.S. Atlantic Coast. Project will provide improved predictive tools and risk assessments to support dynamic management decisions.

Modeling to Characterize Vessel Strike Risk and Vessel Response Capabilities in the Northeast
Grantee: Stony Brook University
Grant Amount:..... $755,000
Matching Funds:..... $219,700
Total Project Amount:..... $974,700
Develop models to characterize vessel strike risk to large whales in Mid-Atlantic waters. Project will inform management of risk through changes to vessel routing patterns, better targeting future large whale monitoring in the region and exploring of feasible vessel response to on-board infrared and thermal camera detection technology of whales.

Quantifying Detection of Right Whales using Distributed Acoustic Sensing (MA, NJ, NY, RI)
Grantee: Cornell University
Grant Amount:..... $750,000
Matching Funds:..... $0
Total Project Amount:..... $750,000
Establish a replicable framework to quantify detection probabilities of North Atlantic right whale up-calls, their primary vocalization, using Distributed Acoustic Sensing (DAS) data from existing fiber optic cable infrastructure. Project will develop AI algorithms for automated call recognition using existing datasets and inform management use of the detection tool with site-specific detection capabilities.

Using Right Whale Movement Modeling to Assess Vessel Strike Risk Across Management Approaches
Grantee: University of South Carolina
Grant Amount:..... $249,500
Matching Funds:.....$20,000
Total Project Amount:..... $269,500
Update and use a whale distribution model to evaluate existing and potential competing vessel strike risk management frameworks that are sensitive to survey effort, technology availability and vessel compliance rates. Project will develop four programming tools to facilitate the comparison of vessel strike risk for management and science use.