MSU-Led Project Aims to Transform Fisheries Data Collection Across the Gulf of Mexico

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A new $2 million research project led by Mississippi State University is seeking to tackle one of recreational fisheries management's most persistent challenges: accurately measuring the fish anglers catch and release.

The initiative, known as **disCARD**, introduces an innovative reporting system designed to provide fisheries managers with real-time data on discarded fish across the Gulf of Mexico, helping to improve stock assessments and support more informed management decisions.

Funded by NOAA Fisheries and the Gulf States Marine Fisheries Commission, the two-year project is being led by the Mississippi State University Extension Service and the Mississippi-Alabama Sea Grant Consortium. Researchers hope the programme will address a longstanding data gap that has made it difficult to fully understand recreational fishing pressure on key Gulf species.

At the heart of the project is a hybrid paper-and-digital reporting tool that combines traditional catch cards with modern data processing technology. Anglers receive a compact paper card before fishing, record details of any fish they release during their trip, then submit the information by sending a photograph of the completed card via text message.

Once submitted, machine imaging and optical character recognition software automatically convert the information into structured datasets, which are then shared with Gulf state agencies and NOAA Fisheries.

The project focuses on species that play an important role in Gulf fisheries management, including red snapper, greater amberjack, gray triggerfish, cobia and gag grouper.

For project leaders, the initiative represents a large-scale, multi-state collaboration involving government agencies, academic institutions and private-sector partners. The programme is being deployed across all five Gulf states, requiring coordinated stakeholder engagement, standardised data collection processes and integrated technology systems.

“Recreational anglers are important stakeholders who care deeply about fisheries,” said Carly Standbridge, a graduate student in wildlife, fisheries and aquaculture at Mississippi State University and a member of the research team. “Our hope is that this project will be an avenue for them to join with scientists and fisheries managers to contribute their firsthand experiences on the water toward fisheries science and management efforts across the Gulf.”

One of the project’s key innovations is its focus on collecting data at the point of activity rather than relying solely on post-trip surveys. Traditional fisheries monitoring methods often depend on anglers recalling catches after a trip has ended, creating opportunities for incomplete or inaccurate reporting.

By encouraging participants to record information immediately after releasing fish, the disCARD project aims to reduce recall bias and improve data quality.

“Understanding how many fish of each species are released, along with the reasons for release, can support stock assessments and, in turn, future management decisions,” Standbridge said.

The project’s design also reflects a strong emphasis on user adoption and stakeholder participation. Rather than requiring anglers to download a dedicated mobile application, the system relies on widely available smartphone technology and a simple three-step process: record the fish, photograph the card and send the image by text message.

This streamlined approach is intended to minimise barriers to participation while maintaining the quality and consistency of data collection.

From a project management perspective, the initiative demonstrates how digital transformation can be applied within environmental and scientific programmes without creating unnecessary complexity for end users. The combination of analogue data capture and automated digital processing allows researchers to modernise reporting workflows while retaining familiar practices for participants.

The project is also collecting information beyond simple catch numbers. Researchers are particularly interested in understanding why fish are released, whether due to size restrictions, seasonal regulations or angler preference.

This information is increasingly important as fisheries management regulations evolve. Protective measures often result in higher release rates, making discard data a critical component of understanding overall fishing impacts and population health.

Over the next two years, researchers will gather data across multiple fishing seasons to identify trends and variations in recreational discard patterns.

“The project is funded for two years, allowing us to collect data across multiple fishing seasons and capture annual and seasonal variation in recreational discards,” Standbridge explained.

The initiative brings together a broad network of partners, including the Texas Parks and Wildlife Department, Louisiana Department of Wildlife and Fisheries, Mississippi Department of Marine Resources, Alabama Department of Conservation and Natural Resources, Florida Fish and Wildlife Conservation Commission and data technology company Bluefin Data.

For project professionals, the disCARD programme offers an example of how cross-sector collaboration, user-centred design and technology integration can be combined to address complex data collection challenges at scale.

Beyond its immediate research objectives, the project also seeks to strengthen relationships between anglers, fisheries managers and scientists by creating a shared platform for participation and decision-making.

“The disCARD combines the efforts of recreational anglers, fisheries managers and scientists into a unified initiative to improve our understanding of discarded fishes and redefine how we collect information on recreational discards,” said Standbridge. “Through this collaboration, we can build lasting partnerships that contribute to better science.”

If successful, the project could provide a model for future fisheries monitoring programmes, demonstrating how innovative project delivery and stakeholder engagement can improve both the quality of environmental data and the effectiveness of resource management decisions.