NO. 176, (SEPT-DEC 2024)

Wild Oceans
For the future of fishing

The Horizon

FOR THE FUTURE OF FISHING

Global Success: Highlights and Key Takeaways from the 7th International Billfish Symposium

Co-hosted by the IGFA and Wild Oceans at Hubbs-SeaWorld Research Institute

Recap article and photos compliments of the IGFA team.

Following a highly productive week of presentations, poster sessions, and panel discussions, the IGFA and *Wild Oceans* would like to thank the attendees, Symposium Steering Committee, and our host, Hubbs-SeaWorld Research Institute, for making the 7th International Billfish Symposium a rousing success. We are pleased to share that we had over 100 participants from nine countries in attendance, representing every continent except Antarctica. This international attendance represents the truly global nature of studying and managing billfish and showcases the devotion that our community of anglers, scientists, and managers have for these incredible species.

We would also like to thank all the sponsors that have helped make the symposium come to fruition, especially this year's Grand sponsors, the MidAtlantic Tournament/South Jersey Marina and NOAA Fisheries. Additional sponsors include Costa Sunglasses, Wildlife Computers, Yamaha Rightwaters, YETI, Center for Sportfishing Policy, Lotek, and the Presidential Challenge Charitable Foundation, Inc.

The symposium ran from October 8-10, 2024, and featured 44 oral presentations, 25 posters, and three expert panel sessions broadly focused on billfish movement and habitat use, biology and fisheries data, and human dimensions. We are excited to share an overview of the symposium and highlight the next steps that were identified toward improved billfish conservation and management.

Dr. Barbara Block opened the Symposium with insights on billfish migrations, setting the stage for discussions on advancing conservation and management in a changing ecosystem.

The symposium kicked off with a Keynote presentation by Dr. Barbara Block, from Stanford University, who delivered "The Migrations & Biology of Billfishes: Reflections on the Past, Present and Future." Dr. Block's experience and insights gained from studying the physiology of migrations, thermogenesis, cardiac biology, energetics, reproduction, and genomics of pelagic fish set the tone for the symposium that showcased not just how far we have come in our understanding of these incredible animals, but also how much work remains to improve their management and conservation in the face of a rapidly changing ecosystem.

Following the keynote presentation, fourteen oral presentations focused on the movement and habitat use of billfish, much of which was revealed through the use of electronic tagging technologies and in partnership with the recreational angling community. After the oral presentations, a panel

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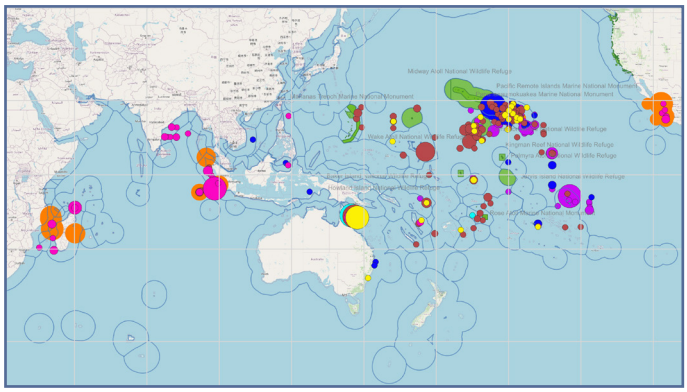

Day 2 spotlighted billfish biology, stock assessments, and management needs, with discussions on bycatch classification, life history data, and efforts to collect tissue samples from tagged fish for complementary genetic analysis.

Day 3 of the symposium featured insights into billfish science from larval studies to the human side of management. Presentations covered local ecological knowledge, offshore wind impacts, contributions of women in Kenya, and citizen science. The day concluded with a panel on harnessing recreational angler input to advance billfish conservation and research.

discussion entitled "The Good, The Bad, and The Next Step" for satellite tagging efforts was held and the day concluded with a poster session featuring 25 posters.

Key takeaways from Day 1 include the need to expand cross-ocean tagging efforts to better identify billfish movements (e.g., between the Pacific and Indian oceans). Additionally, the need to improve technology for billfish tracking was highlighted along with the need for collaboration among the billfish tagging community.

Day two focused broadly on the biology and life histories of billfish, largely pertaining to fisheries stock assessments and management applications. Fifteen oral presentations spanned billfish feeding ecology, fishery catch rates, age and growth, genetic techniques to elucidate stock structure, and modeling approaches to reduce fishery bycatch. Following the talks, the day concluded with a panel discussion entitled "Current State of Management/Science" for billfish highlighting current and future science and fishery data needs to improve our management of billfish.

Key takeaways from Day 2 include the need to accurately characterize billfish species as targeted in fisheries, opposed to their usual designation as 'bycatch' or 'non-target' species, the need for improved life history information for all billfish species, efforts to collect tissue samples from tagged fish for complementary genetic analysis.

The final day of the symposium completed the Biology/Fisheries session from Day 2 and concluded with presentations ranging from larval billfish studies to human dimensions of billfish science and management. The final fifteen talks of the symposium spanned diverse topics including interviewing anglers to estimate catch composition, local ecological knowledge of fishers, offshore wind development and recreational fishing effort, the contributions of women in billfish fisheries in Kenya, and citizen science applications. Many of these presentations were the result of partnerships with the recreational fishing community. The symposium concluded with a panel discussion entitled "Recreational Angling Community Input" highlighting avenues to further leverage the power of the recreational angling community to progress science and management of billfish.

Key takeaways from Day 3 include the need to better-share data across institutions for collaborations and research cross-pollination, better engage the recreational fishing community in citizen science (e.g., anglers collecting fin clips from tagged fish) and having scientists attend major tournaments for outreach purposes.

Conclusions and Next Steps

It is clear that the global angling, research, and management community is invested in the future of billfish conservation. As we move into the next phase of billfish research and management, the science presented during the 7th International Billfish Symposium will be used to advance research programs and ask new conservation questions for the future of billfish. The IGFA and *Wild Oceans* will ensure the science presented is made available to the greater community by facilitating publication of articles for oral presentations in a Proceedings issue of "ICES Journal of Marine Science", one of the most prestigious marine science journals globally. We look forward to working collaboratively with the science and recreational angling communities to advance scientific and conservation efforts for billfish.

Ocean View

A Banner Year for Billfish

By Rob Kramer

The year 2024 will mark yet another significant milestone in the chronicles of *Wild Oceans* accomplishments. With a changing climate and increasing threats from commercial fishing fleets, billfish need all the help they can get. And in 2024, it is help they got through several *Wild Oceans*' initiatives. Some of these were months in the making, while others requiring dogged perseverance over a decade.

As reported in our cover story, the 7th International Billfish Symposium was a tremendous success, representing the largest gathering of billfish scientists ever assembled. The symposium provided a critical platform for global sharing that is hard to recreate given the spatial distances between the various research and management communities. While scientific papers may be published online, physically interacting with one another allows information to be better shared across generations, relationships to form, and new excitement to brew which keeps the torch burning for the scientists and anglers who care deeply for billfish. The symposium also provided the perfect venue for us to showcase our research as part of the *Kona Project*. *Kona Project* scientists Dr. Mike Musyl, Dr. Yanli Jai, and Ms. Andrea Schmidt all presented findings from their work in Hawaii relating to patterns of larval abundance, nursery habitat, and routes of larval dispersal and connectivity. Billfish life history was a key discussion point amongst conference attendees and the work of the *Kona Project* was well-received.

Additionally, while conducting research as part of Phase 1 of the *Kona Project*, we discovered over 1800 yet to be examined larval billfish specimens in the wet archives of NOAA's Pacific Island Fisheries Science Center (PIFSC). Seizing the opportunity in 2024, we contracted a researcher at PIFSC to analyze this treasure-trove of samples that were collected on research cruises from 1997-2018. The dataset being produced from this analysis attaches in-situ oceanographic data (temperature, salinity, dissolved oxygen, chlorophyll, etc.) for all of the samples as well as habitat information (inside/outside surface slicks, winds, sea surface height, eddy productivity, moon phase, etc.) spanning the entire 20-year period. The results of this work could provide ground-breaking information for stock assessments and other research efforts for decades to come and will be shared with billfish scientists around the world.

Finally, having been in an overfished condition in the Western and Central North Pacific since the mid-1990s, striped marlin also had some good news in 2024. As she reports in her article "*The Buck Stops: U.S. Looks Beyond Scapegoats to Secure Striped Marlin Conservation*" on page 4, *Wild Oceans* Pacific Program Director Theresa Labriola shares how through years of engagement she has finally achieved a major victory with the Western & Central Pacific Fisheries Commission (WCPFC) agreeing to adopt the first ever ocean-wide catch limits on stripes.

All of this good news for billfish is only made possible through the generosity of our many wonderful supporters. On page 5 in our *Wild Oceans Honor Roll* section, we pay tribute to those individuals, businesses and foundations that have enabled us to do the work we have been able to do for the last 50 years. We could not make the kind of progress we are making without your loyal support, and from all of us at *Wild Oceans*, THANK YOU for all you have helped us to accomplish in 2024!

For the Future of Fishing

Wild Oceans is a 501(c)(3) non-profit organization dedicated to keeping the oceans wild to preserve fishing opportunities for the future.

Our Goals:

- Preventing overfishing and restoring depleted fish populations to healthy levels
- Promoting sustainable use policies that balance commercial, recreational and ecological values
- Modifying or eliminating wasteful fishing practices
- Improving our understanding of fish and their role in the marine environment
- Preserving fish habitat and water quality

The Buck Stops

U.S. Looks Beyond Scapegoats to Secure Striped Marlin Conservation

By Theresa Labriola

The Western and Central Pacific Fisheries Commission (WCPFC), the international body responsible for ensuring the long-term conservation and sustainable use of highly migratory fish stocks in the western and central Pacific, met in Suva, Fiji in December for their annual meeting. At the meeting, the United States spearheaded the adoption of the first ever international catch limits for the steadily declining stock of north and central Pacific striped marlin. Their tenacity and willingness to make conservation the number one priority has finally put striped marlin on a path to recovery.

Tuna management usually captures the majority of the WCPFC's attention. That figures since the Pacific Ocean accounts for more than 70 percent of the world's commercially landed tuna and the Pacific tuna catch is worth more than $22 billion annually. However, WCPFC's duty encompasses not only the sustainable management of various tuna species, including skipjack, yellowfin, bigeye, albacore and bluefin, but also other highly migratory species and their marine ecosystems. This year, the meeting focused on often overlooked conservation issues such as seabirds, sharks, and marlins, pushing the delegates to consider the impact of tuna fishing on the long-term sustainability of other species. As we have done for years at this forum, *Wild Oceans* once again strongly advocated for adoption of a conservation measure to limit the ocean-wide catch of striped marlin. We met stiff resistance from parties seeking to delay, trying to discount the science, and placing blame on others in order to avoid accountability, but ultimately conservation prevailed.

It's easy to pin marine conservation problems on foreign scapegoats. But, in doing so, we erode any effort to genuinely confront the problem. This seemed the predictable playbook for nations fishing striped marlin. By faulting Japan's historic drift gillnet fishery for the decline of Pacific striped marlin or attributing the languishment of the stock at historically low levels to China's emerging high-seas fishing, we can deflect blame. Asserting that fault lies elsewhere or ignoring the best science has hindered conservation for decades. These excuses have kept delegates from focusing on efficiently solving the problem of unlimited fishing pressure on striped marlin.

The United States broke this cycle with a proposal that requires international cooperation. The newly adopted striped marlin conservation and management measure sets annual catch limits (including discards) for the five nations with significant striped marlin catch, including Japan, Taiwan, Korea, U.S. and China. The measure reduces the U.S. catch from the recent and historically high levels to 228.4 metric tons (mt) per year. However, it also allows the roll-over of 150 mt of unused quota from other countries to the U.S. If everyone cooperates and holds catch near current levels the U.S. quota increases to 378.4 mt. At the same time, ocean-wide fishing mortality is reduced and the stock rebuilds. However, if the international cooperation experiment fails, and nations exceed quotas, the stock will continue to slide.

This new striped marlin management measure became operative at the beginning of 2025. The WCPFC will review the measure in 2027, after completion of a new stock assessment. In the intervening years, U.S. fishermen have an opportunity to demonstrate techniques to avoid striped marlin through gear modifications or fishing location. The fleet has already adopted circle hooks but could continue promising research to eliminate or lower the hooks that most frequently catch marlins. For our part, we will continue to ask for inclusion of these boat-side measures in all future negotiations.

NOAA Fisheries Develops Roadmap for Building Climate Resilient Fisheries

By Theresa Labriola

This year, NOAA Fisheries updated their Ecosystem-Based Fisheries Management (EBFM) Policy and published a new Road Map that creates links between the EBFM Policy and climate-ready fisheries, and focuses on improving the integration of science and management.

Wild Oceans has strongly supported the agency's work to advance our understanding of ecosystem processes. The initial draft Road Map included many well thought-out and important Action Items that can help fundamentally change the way we manage by providing manag-

ers and stakeholders with a better understanding of the impact of the ecosystem on fisheries, the impact of fisheries on other fisheries, and the impact of fisheries on the ecosystem. However, the initial draft had a disconnect between providing managers with the ingredients of EBMF and a recipe to successfully manage fisheries from an ecosystem perspective. *Wild Oceans* and our allies felt that the draft Road Map needed to better connect NOAA science to management to achieve EBFM and build climate-ready fisheries. These needs were the motivation for our submission of a public comment and to organize with like-minded partners.

History demonstrates that EBFM is an iterative process and that NOAA Fisheries and the councils can and must act now to integrate foundational EBFM principles, such as protecting forage fish, into management and "plan for, absorb, recover from, and more successfully adapt to adverse events." The draft Road Map overlooked near-term opportunities to operationalize EBFM and make climate-ready management decisions. For example, science products will be more useful if they translate ecosystem information into decision criteria that can inform councils of when and under what conditions intervention might enhance progress towards EBFM.

Our public comments surrounded the idea that the 2024 Road Map should provide stronger direction for prioritizing scientific understanding and protection for critical forage fish species, which are actively collapsing along the Atlantic Coast. Conserving forage species at the ecosystem level requires a change in some of our most basic fishery management concepts. Preventing ecosystem overfishing, which jeopardizes the integrity of marine communities, means moving away from the goal of maximizing yields and toward ecologically sustainable yields. To do that, we must be more forthright about how we are impacting the food web and then overtly consider these impacts within our conservation and management strategies.

We commend NOAA Fisheries' decision to think big in the Road Map and recognize that EBFM management challenges cross ocean basins and that addressing challenges at varying spatial scales and with partners across multiple jurisdictions can support ecosystem resilience. We urged NOAA Fisheries to consider how to tailor tools to address the complex management of highly migratory species and their habitats domestically and internationally.

When the final version of the Road Map was released, we were excited to see that NOAA had provided significantly more guidance for how it would engage with management partners, fishermen, and Indigenous People in efforts to advance EBFM. This included the addition of an entirely new Goal in the Road Map. Furthermore, the final version of the Road Map included provisions for developing and expanding approaches to research the implications of essential fish habitats and forage fish in climate-dynamic fisheries management.

We look forward to collaborating with NOAA Fisheries as we engage in a new way of thinking and managing that considers ecosystem level impacts and action and secures the resilience of our marine habitats and fisheries.

To see our full comment letter on NOAA's EBFM Road Map, visit **https://wildoceans.org/comment-letters/**.

Wild Oceans

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HONOR ROLL 2024

Wild Oceans Honor Roll

Wild Oceans extends a debt of gratitude to the foundations, companies, groups, and individuals who support our work. We could not do what we do for the past 50 years without people like you. THANK YOU!

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Large Marine Fish Conservation

Wild Oceans often plays the role of watchdog, scouring the fishery management arena for rogue ideas that defy our commitment to marine fish conservation. In September, the Pacific Fishery Management Council received a proposal to increase the incidental HMS catch limit for small mesh drift gillnets (a California state managed fishing gear that targets white Sea bass and yellowtail). Ostensibly, this proposal sought to reduce the potential discard of Pacific bluefin tuna, however, increasing an incidental limit can easily result in an increase in use of this highly indiscriminate gear. Our Pacific Program Director Theresa Labriola flagged the issue, met with Council members, and provided public comment to ensure adequate analysis of the need and the consequence was conducted before the Council approved the idea. In November, the Highly Migratory Species Management Team (HMSMT) provided the Council with a report finding no evidence of bluefin tuna catch reaching the 10 per day limit and no evidence of discards. The HMSMT and Council concluded there was no need to increase the incidental catch limit. This victory helps limit the use of indiscriminate small mesh gillnets in California.

From October 6th-12th, several members of the *Wild Oceans* team traveled to San Diego, CA for the 7th International Billfish Symposium. *Wild Oceans* was well represented by Board members Tim Choate, Bill Boyce, Will Tomlinson and Co-Chair Stephanie Choate, as well as President Rob Kramer, Theresa, and Atlantic Coast Program Coordinator Zane Ruzicka. Rob kicked off the symposium presentations by delivering a welcome address. During the symposium, Rob and Theresa both served as expert panelists on the Recreational Angling Community Input panel and the Current State of Management/Science panel, respectively. After each presentation and during panel discussions, Zane ran question and answer sessions. Additionally, scientists Dr. Mike Musyl, Dr. Yanli Jia, and Ms. Andrea Schmidt all presented at the symposium, reporting on their discovery and methods as a part of Wild Oceans' ongoing Kona Project. This successful symposium further highlighted *Wild Oceans*' role as an international leader in billfish science and conservation.

Theresa is a member of the Permanent Advisory Committee (PAC) to the U.S. Delegation to the Western and Central Pacific Fisheries Commission (WCPFC) which held a virtual meeting October 21-23. Theresa worked to gather support from all PAC members for amending the rebuilding plan for the overfished stock of North Pacific striped marlin. She also supported recommendations that the U.S. continue to prioritize development of a precautionary and comprehensive long-term harvest strategy in 2025. Harvest strategies are pre-agreed frameworks for making fisheries management decisions, such as setting catch limits. The prescriptive rules shift the perspective from short-term bargaining and reactive decision-making to long-term design and vision for the fish.

The Western and Central Pacific Fisheries Commission (WCPFC) met November 28-December 3 and Theresa participated remotely as a member of the U.S. Delegation. She provided substantive comments to the US on the development of the striped marlin rebuilding plan that WCPFC adopted (See article on page 4). The WCPFC will reevaluate the measure in 2027 with the new stock assessment.

Ecosystems and Forage Fish

Theresa is the co-chair of the Pacific Council's Ecosystem Advisory Subpanel (EAS). The EAS met on September 4th to provide their advice to the Council on pending ecosystem issues including the development of risk tables. Theresa encouraged the EAS to support: 1) the development of risk tables for Sacramento River and Klamath River Chinook salmon in the fall of 2024 to evaluate whether the risk table pathway compliments salmon management, 2) the continued development of pathways to include climate and ecosystem information in the harvest setting for coastal pelagic species, and 3) exploring how climate and ecosystem information can predict the occurrence, distribution, and interaction with bycatch and how this information can help achieve the goals of the Council's Inflation Reduction Act Projects. The Council agreed to explore the use of risk tables during the 2027-2028 groundfish harvest specifications setting process and consider how to use risk tables to adjust harvest specifications in-between stock assessments. The Council also endorsed developing comparable methodologies for select salmon stocks.

Theresa attended the Pacific Council Ecosystem Workgroup meeting, September 9-11, and the Scientific and Statistical Committee Meeting, September 17-19 participating in the discussion of whether and how the Council should continue their work to incorporate climate and ecosystem information in harvest setting. Theresa pro-

vided support for the Council's current work to develop risk tables, but noted this merely scratches the surface of how we can include ecosystem and climate information in decision-making and use the information to build climate resilient fisheries. In addition to the current effort, she supported efforts toward diversifying the pathways for information to enter the fishery management processes—not just for harvest setting and not just for data rich stocks.

On October 16 and 17, Theresa joined 41 individuals representing management, science, industry, tribal, and conservation interests, as well as Council members, to participate in the Climate-Resilient Fisheries Management: Risks and Rewards Workshop hosted by The Nature Conservancy. The workshop's goal was to provide an opportunity for managers, scientists, and stakeholders to support the Council's Fishery Ecosystem Plan (FEP) Initiative 4 and the Council's utilization of ecosystem-based fisheries management (EBFM) to inform and enable better decisions that recognize the interconnectedness of ecosystem components as essential to maintaining resilient and productive ecosystems.

As a newly appointed member to the Mid-Atlantic Fishery Management Council's Ecosystem and Ocean Planning Advisory Panel (EOP), Rob attended a joint meeting of the EOP and the Council's Ecosystem and Ocean Planning Committee on November 4-5. The two groups met to review and provide comments on the completed draft of the Council's Ecosystem Approach to Fisheries Management (EAFM) risk assessment report.

From November 4th-5th, Zane traveled to Arlington, Virginia to attend the ASMFC's Atlantic Menhaden Stock Assessment Subcommittee's Single Species and Ecological Reference Point Methods Workshop. Zane attended as a part of the *Wild Oceans'* ongoing participation in Atlantic Menhaden coalitions. In September, Dr. Jerry Ault and Dr. Jiangang Luo presented their paper titled "Investigation of Atlantic menhaden mortality rates", which concluded that the estimated natural mortality rate (M) currently used in the menhaden stock assessment is significantly overestimated because it is based on a paper by Dr. Emily Liljestrand et al. that relied on flawed data inputs. M is a key factor in estimating coastwide stock size and catch limits for the fishery. Among other problems, this has likely resulted in overfishing of the Atlantic menhaden resource. The main task for the SAS was to determine how to resolve the differing data conclusions in the two papers and, as necessary, recommend a new M in line with the best available science. Given that the SAS set a decision deadline for March 2025, yet Dr. Ault and Dr. Luo's work to understand the data sets, errors, and impacts to the estimated M took months, with Roger's help Zane provided public comments urging the SAS to include Drs. Ault and Luo in the SAS's Natural Mortality Working Group meetings as resources for helping to resolve the data questions and re-estimate M.

On November 22nd and December 17th, Rob, Roger, and Zane attended the first two Working Group meetings, in which Drs. Ault and Luo were active participants. While no conclusions were reached, the Working Group appeared to recognize potentially critical mistakes that could have led to the flawed data inputs in the Liljestrand paper, including certain assumptions about the tag recovery rates and fishing effort in the underlying tagging study the paper relied on. The Working Group is scheduled to meet again on January 16 and its work will likely continue through February. If the Working Group concludes that the magnitude of the M error is close to that suggested by Drs. Ault and Luo, and it could be ever greater, it would mean the ASMFC has been managing the stock well below the target threshold, overfishing has been occurring, and that the spawning stock could be only one-half of the current estimate. Given the East Coast Forage Fish Crisis (link), it is critical for the ecosystem and currently struggling dependent species like striped bass and osprey that the menhaden resource is protected and managed sustainably. *Wild Oceans* will be there with our partners helping make sure the ASMFC gets its menhaden science right.


Photo courtesy: Adrian Gray

On December 2nd, former *Wild Oceans* Executive Director Pam Lyons Gromen chaired a meeting of the Atlantic States Marine Fisheries Commission (ASMFC) Shad and River Herring Advisory Panel (AP), a continuation of her role with that AP. In this meeting, the AP members developed consensus recommendations in response to the 2024 River Herring Benchmark Stock Assessment that found bycatch mortality to be a significant contributor to the depleted status of river herring runs coastwide. The AP spent considerable time discussing Amendment 10 to the New England Council's Atlantic Herring Fishing Management plan, a developing action that is looking to reduce incidental catch of river herring and shad by high-volume Atlantic herring vessels through incidental catch caps, time/area closures, and measures to improve the accuracy and precision of river herring and shad incidental catch estimates. The AP recommended that the ASMFC support this work as Amendment 10 develops. Amendment 10 alternatives are expected to be reviewed by the New England Council this summer. The AP plans to meet at that time to develop specific recommendations for the Commission. Pam's continued work on river herring underscores the importance of river herring and the deep connection *Wild Oceans* and its team has with this species.

In late 2024, NOAA fisheries awarded $20 million to support multiple regional fishery management council projects to tackle the impacts of climate changes. The Pacific Council received funds for three projects. Theresa attended the kickoff webinars for the three projects on December 11, 13 and 17 and shared ideas for project structure and connection to the Council's current ecosystem work. The three projects are: 1) Innovating the implementation of council actions to respond to a dynamic ocean environment, 2) Considering the effects of council management actions on human well-being in vulnerable fishing communities impacted by a changing marine ecosystem, and 3) Developing climate-ready fishing methods that mitigate bycatch of non-target, associated species in a changing ecosystem. Projects 1 and 3 overlap with *Wild Oceans* priorities to identify management practices that build resilience to the impacts of climate change and to identify and promote the use of innovative fishing methods to minimize bycatch and bycatch mortality.

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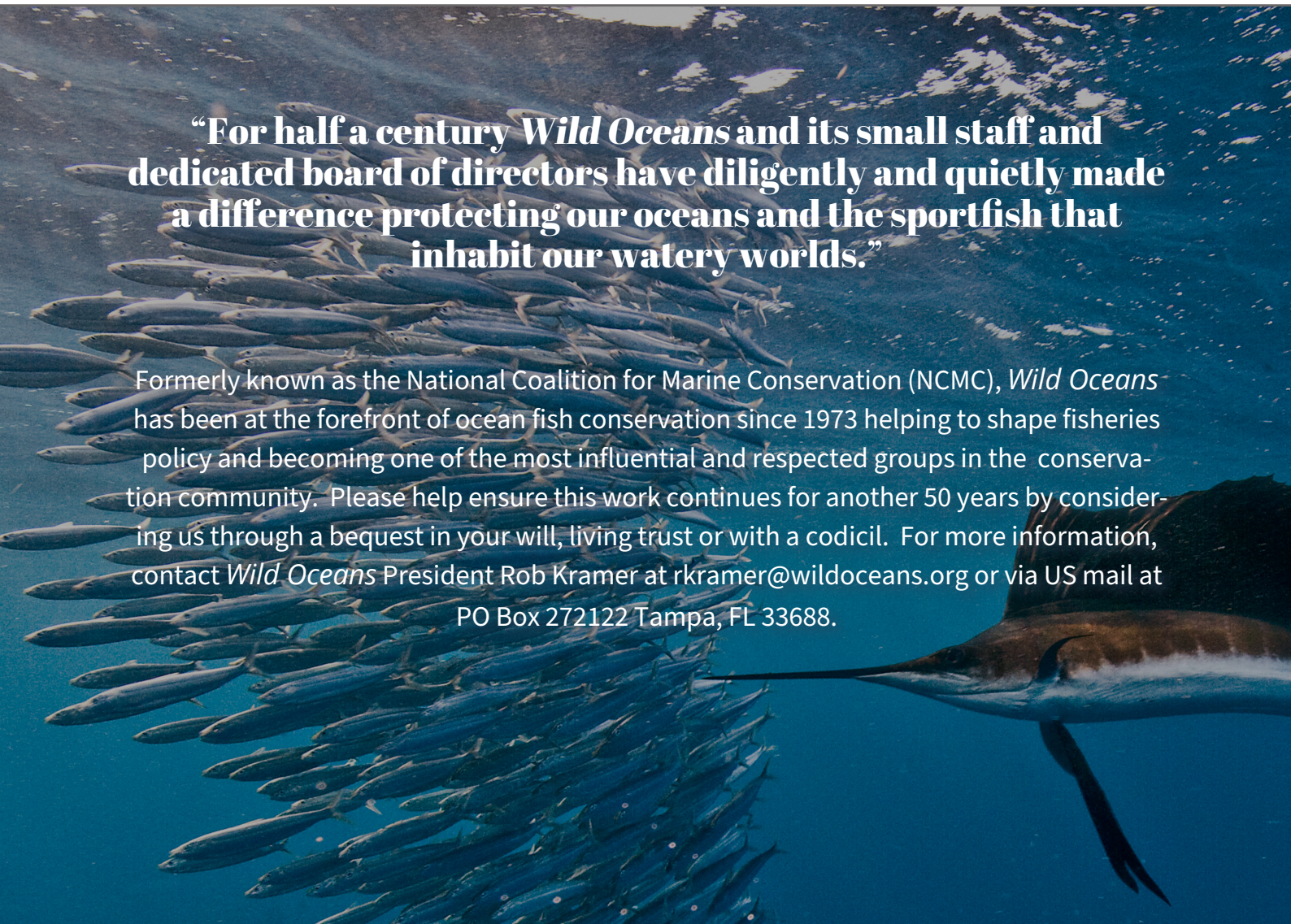

"For half a century *Wild Oceans* and its small staff and dedicated board of directors have diligently and quietly made a difference protecting our oceans and the sportfish that inhabit our watery worlds."

Formerly known as the National Coalition for Marine Conservation (NCMC), *Wild Oceans* has been at the forefront of ocean fish conservation since 1973 helping to shape fisheries policy and becoming one of the most influential and respected groups in the conservation community. Please help ensure this work continues for another 50 years by considering us through a bequest in your will, living trust or with a codicil. For more information, contact *Wild Oceans* President Rob Kramer at rkramer@wildoceans.org or via US mail at PO Box 272122 Tampa, FL 33688.