The California Groundfish Project is a groundbreaking and longstanding engagement between The Nature Conservancy (the Conservancy) and local fishermen and their communities dating back to 2003 that demonstrates a more proactive and locally-driven approach towards fisheries management. Fisheries management is a complex responsibility requiring a balance between protecting marine resources and sustaining the real needs of fishermen, fishing businesses, and communities – and it shouldn't just be the job of government alone, but rather a more collaborative effort on the part of everyone engaged in the health of our oceans. The Conservancy has worked with community leaders and fishermen in California to use innovative technologies and adaptive management techniques to help revitalize a fishery that collapsed over a decade and a half ago. Stocks for several species have rebounded, while other species will take several more decades to recover. At the same time, communities in California have acquired local ownership of fishing rights, providing new opportunities for long-term stewardship. By working together, community leaders, fishermen, and the Conservancy have found common ground in this effort to achieve healthy ocean ecosystems, productive fisheries, and resilient fishing communities.

The U.S. West Coast Groundfish Fishery

The West Coast Groundfish fishery off North America is home to over 90 species of finfish in one of the most ecologically productive regions of the world. For decades, fishermen in California port communities have participated in the West Coast-wide federally-managed groundfish fishery, landing species like Petrale sole, Sablefish, rockfishes, sanddabs, and Dover sole. The fishery historically supported year-round fishing opportunities and served as an economic backbone for many port communities, contributing to local economies. In the late 1990s, the fishery collapsed due to over-capitalization of the fishing fleet and overfishing of some fish populations. This collapse combined with the subsequent regulations aimed at rebuilding stocks led to a drastic decline in local fishery landings and resulted in lost revenue and a decline in jobs.

After the collapse of this fishery, The Conservancy got involved to address threats to a healthy and productive ocean by conducting a private buyout of 13 trawl fishing permits and several vessels in 2006. In exchange, fishermen collaborated in the development of a set of no-trawling zones through the federal Essential Fish Habitat (EFH) process that amounted to 3.8 million acres of habitat protection in California’s central coast. Since the trawl buyout, the Conservancy has continued to work with community leaders, fishermen, and other partners to advance conservation practices in the groundfish fishery, conduct collaborative research, manage the problem of bycatch of overfished species, and prevent the loss of community access to the fishery.

During the period from 2008-2011, the Conservancy redeployed the fishing permits it acquired in the buyout to help rebuild the collapsed fishery and establish a partnership with local fishermen to promote the use of new technologies and tools to reduce bycatch and protect important ocean habitat. Fishermen tested the use of alternative non-trawl gears, established spatial fishing agreements, and created a fishermen-led community-based
fishing association in Morro Bay. In partnership with the Conservancy, fishermen designed and implemented approaches to share catch information on overfished species with each other and scientists, conducted studies to assess the impacts of trawling, and used resulting data to better understand local abundance and spatial distribution of key groundfish stocks.

In 2011, federal fisheries managers implemented a new type of management structure for groundfish trawl fisheries, known as the Individual Fishing Quota (IFQ) or catch share system, to reduce bycatch of overfished species and improve individual accountability. Under the IFQ, science-based catch limits are divided into transferable quota shares that individual fishermen can catch annually, allowing fishermen to plan their harvest activities across the entire year. Based on the catch history of the trawl permits purchased in the buyout, the Conservancy became the second largest single owner of groundfish quota on the West Coast, owning approximately 8% of the coast-wide quota share. The new IFQ system required 100% monitoring and accountability, which can serve as a foundation to eliminate overharvesting and rebuild struggling fish populations. However, these high accountability standards have also created new costs and operational challenges, making it particularly difficult for fishermen to participate in this fishery and potentially impacting the durability and long-term success of the management system.

**California Groundfish Collective**

With the goal of enhancing the productivity of this fishery while ensuring healthy ocean ecosystems, the Conservancy leveraged its ownership stake in this fishery to work directly with fishermen to demonstrate the value of voluntary cooperative management in solving both economic and resource challenges under the IFQ system. The IFQ fishery transferred higher monitoring costs to fishing businesses to meet accountability requirements, but also presented the problem of limited quota availability for certain overfished species. Only small amounts of quota for overfished species are available to fishermen on an annual basis to allow the stocks to rebuild. This in turn constrains harvest opportunities for more abundant species and limits the overall productivity of the fishery because many of these stocks are caught together and overfished species can be difficult to avoid. If a fisherman catches more of a given species than the quota he has been allocated, then his fishing is shut down until he can find more quota. If too many overfished species are caught, the entire fishery can be closed by federal regulators.
As an owner of significant quota share of overfished species, the Conservancy is partnering with fishing communities in central and northern California to create a voluntary mutual insurance pool of quota – known as a risk pool. The risk pool, called the California Groundfish Collective is an annual contractual agreement that addresses the overfished species problem by creating a reserve of quota. The objective is to ensure fishermen have access to overfished species quota while reducing the risk of catching these species and protecting sensitive habitat. California Groundfish Collective members collect and share catch data that inform risk-based spatial fishing plans. Fishermen share information about where, when and what type of fish are caught using an application called eCatch, which is an electronic logbook and online mapping system developed by the Conservancy to meet the need for real-time data collection to inform adaptive management. The Collective uses eCatch to adaptively manage its risk-based fishing plans and ensure compliance with the terms of the risk pool. If a fisherman incidentally catches overfished species, the collective quota holdings are used to cover their quota requirements as long as they operated in accordance with the agreed upon terms and practices of the risk pool.

The Collective has demonstrated that adaptive and cooperative management can result in reduced bycatch of overfished species and increased catch of healthy target species compared to the rest of the IFQ fleet. As one indicator of success, the Monterey Bay Aquarium’s Seafood Watch External Assessment Program recently rated seafood caught from the Collective with its highest sustainability ranking of “Green/Best Choice”.

These types of sweeping changes in business practices and harvest methods made by the Collective are only durable if fishing businesses are thriving and fishermen benefit from their stewardship efforts. The Collective is continuing to work to improve the sustainability of fish harvesting methods and is seeking to gain access to new markets for their high-quality seafood products.
Preserving Community Access to Local and Healthy Fisheries

Coastal fishing communities with secure access to fisheries resources are better able to promote stewardship and support stable businesses that sustain important economic activity. These communities and their fishing businesses depend on the health of marine resources as well as dedicated and stable access to those resources. Maintaining and securing fishing permits or quota in communities can create mechanisms for incentivizing sustainable or conservation-focused practices, such as sharing information to avoid bycatch or protecting sensitive habitats. Securing local access can also preserve fishing infrastructure, help keep a diverse fleet active, provide opportunities for future generations to participate in the fishery, and promote economic stability. Facilitating community ownership of fishing quotas and permits ensures that long term benefits – stemming from a productive and resilient marine ecosystem – are prioritized and accrue to the community rather than just to individuals.

To mitigate the potential loss of community fishing rights and promote stability, the Conservancy is working with communities along the coast of California to help develop community quota funds (also referred to as a permit banks, quota banks, or community fishery trusts). A community quota fund is a legal entity that can acquire, hold, and manage fishing permits and quota for public benefit in a community or region. Quota funds acquire fishing rights and lease those rights to local fishermen to supplement existing access and provide incentives for more sustainable fishing techniques while ensuring opportunities for future generations to participate in the fishery. These types of organizations can help keep fishing communities economically viable and provide a voice for the community as a stakeholder in the fishery, allowing them to constructively and effectively engage in fishery science and management processes.

The Conservancy has worked with the communities of Fort Bragg, Half Moon Bay, Monterey, and Morro Bay to help them build nonprofit quota funds that create local forums for fishermen, scientists, and business leaders to determine the best use of fishing rights. From 2014-2016, the Conservancy divested a significant portion of its fishing quota to these community quota funds to anchor fishing rights in California’s small ports and help build capacity for local stewardship. Already these organizations have made exciting progress and have become a model of this approach for other fishing communities.
Effective management of dynamic ocean ecosystems and the fish populations they support requires the use of timely and high-quality information. This is particularly true in order to be able to respond quickly to climate-driven changes in the ocean. Government resources are limited and not always available to meet the monitoring, management, and enforcement challenges in fisheries. Over the last decade, the Conservancy has sought to bridge the gap by investing in innovative science and technology and working directly with fishermen, local communities, academia, and management agencies to conduct innovative scientific research, test new approaches, and design tools and applications to improve decision-making and fill data needs to sustain both fish populations and fishing businesses. Some examples include:

**Electronic Monitoring:** In the groundfish fishery, fishermen are accountable for every pound of fish caught – and this has traditionally been achieved by deploying at-sea human observers on every vessel to act as third party verifiers, monitors and reporters of fishing activity. However, requiring human observers on every fishing trip is difficult logistically and very expensive, with little opportunity to reduce costs over time. To tackle this issue, the Conservancy and the Collective partnered to implement the use of Electronic Monitoring technology (EM) that uses video and sensor data in lieu of human observers on board fishing vessels. The project leverages available technology and has influenced the development of EM regulations to ensure monitoring achieves full accountability requirements in a more cost effective manner. EM is a potential solution to increase accountability in other fisheries around the world and support a traceable supply chain of sustainable seafood. The Conservancy is investing strategically in California and globally to shape business opportunities and drive innovation in fisheries that have thus far lacked significant technological advancements to improve the collection and use of catch information.

**Collaborative Research:** The Conservancy has conducted research with fishermen and other partners to understand the distribution and abundance of overfished rockfish species using cost-effective visual tools such as remotely operated vehicles (ROVs) and stereo video drop cameras. The Conservancy has used Exempted Fishing Permits (EFPs) to implement the use of EM to improve catch accountability and to conduct fishing surveys inside closed areas to learn more about the distribution of rockfish in unassessed areas. The Conservancy is investing strategically in California and globally to shape business opportunities and drive innovation in fisheries that have thus far lacked significant technological advancements to improve the collection and use of catch information.
eCatch is a tool developed by the Conservancy that provides a simple way for fishermen to collect, map and share their fishing information. In the past, this information was captured on paper logbooks and mailed into fisheries managers, often taking weeks or even months to enter into databases and inform decision making. eCatch represents a step forward by capturing this information in near-real time and using that information to not only support cooperative management measures of the California Groundfish Collective but also to create a way for fishermen to credibly use their own information to help with seafood sustainability certifications and assessment processes.

For more information on eCatch, visit: https://www.ecatch.org/
Or contact: support@ecatch.org
Policy

By working with governments, providing necessary tools, and demonstrating success on the water, the Conservancy can influence governments to adopt reforms at state and national levels. The Conservancy believes that fishermen and fishing communities are the best advocates and the most effective agents of change. The EM project is only one example of the Conservancy working directly with fishermen to influence fisheries policy and management on the West Coast and nationally. The Conservancy has also worked collaboratively with partners to influence policies protecting large areas of EFH off of the coast of California, while addressing the economic impact of area closures to fishermen. The Conservancy continues to work with fishery partners to inform and influence the spatial management of EFH and the trawl Rockfish Conservation Area, a set of coast-wide depth-based fishery closures established in 2002. Together with the Collective, other fishermen, academic institutions, and management agencies, the Conservancy developed a geodatabase of overfished species occurrence data from over 30 different sources that is being used by fisheries managers to help plan regulatory changes that could increase fishing opportunities while also protecting critical habitat areas.

Today, community leaders that are part of the Collective and the community quota funds have become increasingly engaged in advocating for positive change at the regional and national levels. Fishery stakeholders bring an influential and proactive voice to the policy arena. These partnerships have shown that investing in new models that enhance the roles and responsibilities of fishery stakeholders and community organizations can advance policy reform. Leveraging contributions from the private sector and fishery stakeholders can lead to more cost effective data collection solutions, improved decision making abilities, and better management of our marine resources.

A Legacy of Healthy Oceans and Communities in California

The Conservancy’s engagement in the groundfish fishery has driven positive change that can be seen in ports along California’s coast. The Conservancy is now adapting and scaling the lessons learned and approaches developed locally to other fisheries and key geographies around the world to expand the reach of this reform initiative.

The partnerships established through this project among fishermen, community leaders, managers, and NGOs has broken ground on how collaborative relationships can develop innovative and adaptive solutions to support economically viable and productive fisheries, healthy ocean ecosystems, and resilient fishing communities.

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