

# Pioneering American experiment may hold lessons for European fisheries<sup>1</sup>

*Stakeholder collaboration improves fishery, livelihoods, and habitat*

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***Originally conceived as a one-time fisheries buy-out to reduce fishing pressure, the California Central Coast Groundfish project in the United States has evolved into a long-term fisheries “buy-in” for an environmental organisation that has invested considerable funds, time, and staff to help struggling fishermen and local communities while simultaneously improving a fishery and habitat. The project story presented here provides insights for possible engagement strategies in Europe.***

Groundfish have been successfully harvested in the waters off the west coast of the US since the early 1900s, contributing significantly to local economies. The groundfish fishery included over 90 species of flatfish, rockfish, roundfish and others and was managed under complex and overlapping institutional arrangements involving federal, state, and tribal authorities. Landings in the groundfish fishery peaked in the early 1980s, but soon thereafter fisheries managers and scientists documented large declines in the populations of several vulnerable groundfish species.

## Collapsing fishery had widespread economic, social impacts

From 1983 to 1999 the groundfish fishery experienced a 47% reduction in ex-vessel value of catches. The ensuing decline in landings and revenue through the 1990s was exacerbated by increasingly strict regulations aimed at curtailing the overfishing of vulnerable species, such as canary rockfish, which is not predicted to recover until 2063. The collapse came to a head in 2000 when the federal government declared the fishery a national disaster. During this period, the size of these vulnerable or weak stock species fell below prescribed sustainable levels. Harvest rates for vulnerable or weak stock species were subsequently limited due to a legal obligation under federal law.

The collapse of the fishery was experienced intensely in the central California coast, where the cost of conducting fishery related business was high. Many individual fishermen had invested heavily in bottom trawl gear. Also, many local ports and processors had become economically dependent on large volumes of fish delivered by trawlers. As landings declined, many of the processing and port businesses started to close, which

had social and economic impacts on local communities and fishers. While significant fishery policy reforms had been made to the groundfish fishery, these changes had not been effective in making local fishing communities environmentally and economically sustainable.

## Understanding the science

In the early 2000s studies by the National Academy of Sciences and The Nature Conservancy, global conservation organisation working in 33 countries throughout the world including the United States, identified bottom trawling as the greatest threat to benthic biodiversity and offshore marine ecology in general and in particular to the Californian Central Coast region. When federal authorities announced bottom trawling closures the organisation agreed to buy federal trawl permits and fishing vessels from fishermen who wanted to exit the fishery. Some years later when fishers and others decided to experiment with switching to non-trawl gear the organisation leased the vessels back to the fishers under certain conditions. These required fishermen to: 1) collaborate on the iterative development of a harvest plan; 2) use alternative gear that was more selective and did less damage to seafloor habitats, such as traps, pots, hook-and-line, or set longline gear; 3) harvest a defined allocation of fish following geographic restrictions (much like a quota, including by catch); 4) retain all rockfish (e.g. not discard at sea); and 5) carry on-board observers on every trip.

To oversee the implementation of the gear-switching experiment, a new community-based fishing association was created which brought together the local fishing communities, fishing industry participants, and conservation organisations. The concept behind the fishing association was to test whether a cooperatively

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managed local entity could meet harvest objectives and conservation standards while improving economic output, basically by leasing and managing The Nature Conservancy's fishing permits as well as incorporating community, conservation, and industry in its fishery decision making. This project simulated conditions that would follow implementation of an individual fishing quota system in the groundfish trawl fishery and provided guidance for fishing communities on how to take best advantage of that system to secure access to the resource.

## The fishery management transition

In 2011, after 40 years of a limited-entry and total allowable catch management system, the west coast groundfish fishery in the US transitioned from a permit structure to an individual fishing quota (IFQ) system. Under the new IFQ system, fishermen own shares of the overall allowable catch for the fishery. The individual quota shares can be bought and sold, but the share that any single fishing entity can own is capped to discourage the accumulation of fishing rights in the hands of any one enterprise. As an owner of 13 fishing permits, The Nature Conservancy was allocated approximately seven percent of the overall quota share. Because of its rights-based standing within the fishery, The Nature Conservancy is now helping initiate three types of co-management institutions in the West Coast groundfish fishery.

## Establishing co-management institutions

Co-management institutions are locally organised groups of diverse fishery stakeholders who work to advance the scientific understanding of their surrounding marine resources and develop effective solutions to local fishery problems, essentially using innovative approaches to “co-manage” the fishery. Different types of co-management institutions — including community quota funds, risk pools, and marketing cooperatives — are now under development to solidify changes in the fishery and empower local fishermen and communities to help manage the fishery.

Community quota funds (CQFs) are being established to combat the threat of the consolidation of fishing quota and fishery access in large commercial enterprises and larger ports — to the detriment of smaller ports and their fishing businesses — and create durable co-management institutions that can play a role in achieving sustainable management of the marine resources. The CQFs hold and manage quota and create incentives for local fishermen to advance both best management practices and stable local fishery landings. As The Nature Conservancy must divest itself of approximately half of its quota share by the end of 2014 in order to comply with the regulatory cap on the total amount of catch share that one entity can own or control, the CQFs are an essential part of The Nature Conservancy's long-term



Central California Coast fisherman bringing in catch. © Bridget Besaw 2008

fishery reform strategy. As part of this effort, CQF operational plans have been developed, which define their functions and responsibilities, structure, governance, budgets, and necessary financing to secure and manage quotas.

Risk pools are also being created to reduce bycatch of overfished species. Under the new IFQ system, fishery managers release only small amounts of overfished species quota in an effort to rebuild these species' stocks. To harvest more abundant groundfish stocks, fishermen must manage their incidental catch of overfished species and once they exceed quota for any species they must stop fishing, tie up their vessel and acquire more quota on the open market. Because overfished species quota is in such low supply it can be quite difficult and even unaffordable for many fishermen to obtain. The limited amounts of overfished species quota thus represent a serious challenge facing west coast groundfish fishermen. Borrowing a concept from the insurance industry, The Nature Conservancy and fishermen from central California ports pursued an innovative solution to the overfished species problem by creating a voluntary risk pool (or joint pool of the limited quota). Members of the risk pool who catch overfished species are covered by the pool's quota (made up of the combined quotas of individual fishermen and The Nature Conservancy), in return for adhering to a suite of best management practices designed with local fishermen knowledge and science to reduce the risk of encountering overfished species. The best management practices employed during the 2011 fishing season included zoned fishing areas (Fig. 1), voluntary closure areas, gear switching, having 100% observer coverage and sharing of information on the location of overfished species. Sharing of location data was made possible via a web-based application called eCatch developed by The Nature Conservancy that enables fishermen at sea to use iPads to upload their catch data to a central database and map and share that information with other fishermen in near-real time (Fig. 2). The Nature Conservancy catalyzed the risk pool by committing its substantial overfished species quota to the pool and by providing the science and technology needed to help fishermen identify high risk areas and practices and capture information to improve the performance of the pool over time. The novel concept of risk pools for overfished species has caught on across the fishery as three additional risk pools have been established along the West Coast.

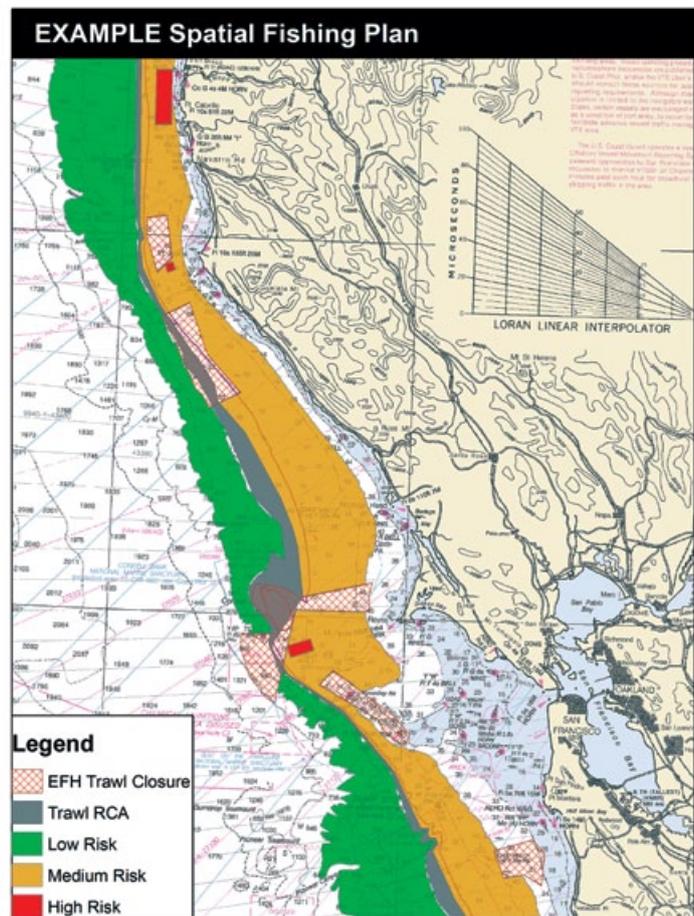


Figure 1. Example map of fishing areas along the Central Coast region of California that depicts high, medium and low risk zoned areas, as well as existing trawl closures (EFH Trawl Closure and Trawl RCA). Each zone would have specific fishing prescriptions.

## eCatch

From Logbooks

To online maps for decisions



Figure 2. eCatch interface.

Lastly, Marketing Cooperatives are being established to help fishermen succeed in the marketplace thereby ensuring the viability and durability of the fishery reforms. The Nature Conservancy's involvement with co-management institutions in the fishery has resulted in fishermen harvesting high-quality seafood using best management practices. Market success will reward fishermen and community partners with higher fish prices for their products and possibly lead to more consistent demand. Demonstrating a viable, functioning model of market rewards will reinforce the fishery reforms achieved and inspire other fishing industries and communities to undertake similar reforms.

### Promising results

This risk pool operated throughout the 2011 fishing season and thus far all of 2012. In 2011, the entire west coast fleet utilized almost 40 percent of its annual quota for overfished species, yet the members of the risk pool utilized only two percent of their quota, helping rebuild these important species' populations (Fig. 3). During this period, compared to the total fleet, members of the risk pool collectively utilized more of their target species quota for seven economically important species (Fig. 4). These results are representative of the first year of fishing under the new IFQ system and thus may not be entirely representative of future performance. Nonetheless, the 2012 performance of the risk pool appears to be on a similar positive trajectory.

### Other Conservancy fishery buy-in projects

The Nature Conservancy's California Sustainable Fisheries Initiative is helping the groundfish fishery move toward economic and environmental sustainability through innovative transactional and partnership strategies that create strong economic incentives for change in the fishery through the leveraging of trawl permits and quota share assets. The Nature Conservancy oversees and assists with the implementation of rights-based incentive agreements such as these (collectively referred to as Marine Conservation Agreements; see: [www.mca-toolkit.org](http://www.mca-toolkit.org)) in several countries and in a variety of ocean and coastal conservation interventions. Other projects in which The Nature Conservancy is actively "buying into a fishery" through agreements with fishermen include a permit banking project in Maine of the United States, a territorial user rights project in Chile, and a public-private sustainable fisheries initiative in Indonesia. The Nature Conservancy is currently working with partners to assess if and how similar strategies can be applied in other regions.

### The need and potential for fishery buy-ins throughout Europe

After 60 years of operation, The Nature Conservancy attended the World Fisheries Congress in Edinburgh in 2012, where they presented their experiences. While



Central California Coast fisherman sorting catch. © Bridget Besaw 2008

much was learned and gained from the Congress, the private buy-in approach to fisheries engagement as demonstrated by The Nature Conservancy was well received, but was largely a new concept for many attendees. Considerable interest was expressed in understanding more about how The Nature Conservancy functions and how private conservation-minded buy-ins to fisheries reform might work throughout Europe. Some important lessons in regards to fishery buy-ins that practitioners should consider as opportunities in Europe include:

- Fishery buy-ins are not a quick-fix solution to fisheries reform. On the contrary, a fishery buy-in represents a long-term commitment to fishermen, local communities, the fishing industry and regulatory agencies to work collaboratively to ensure economic and environmental sustainability can be achieved.
- There is no road map to fishery buy-ins. Each fishery and the coastal communities they support are unique. As such, general guidance regarding buy-ins

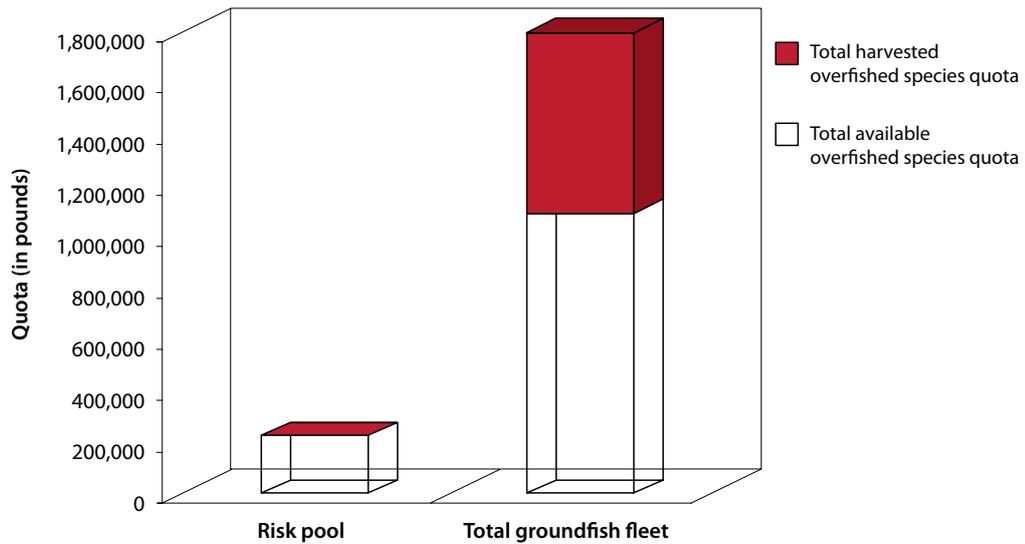


Figure 3. Total unused overfished species quota (clear bars) and harvested overfished species quota (red bars) by risk pool compared to the total west coast groundfish fleet. The risk pool harvested 2.1% of available quota, while the total fleet harvested 39.1% of available quota (less the risk pool quota).

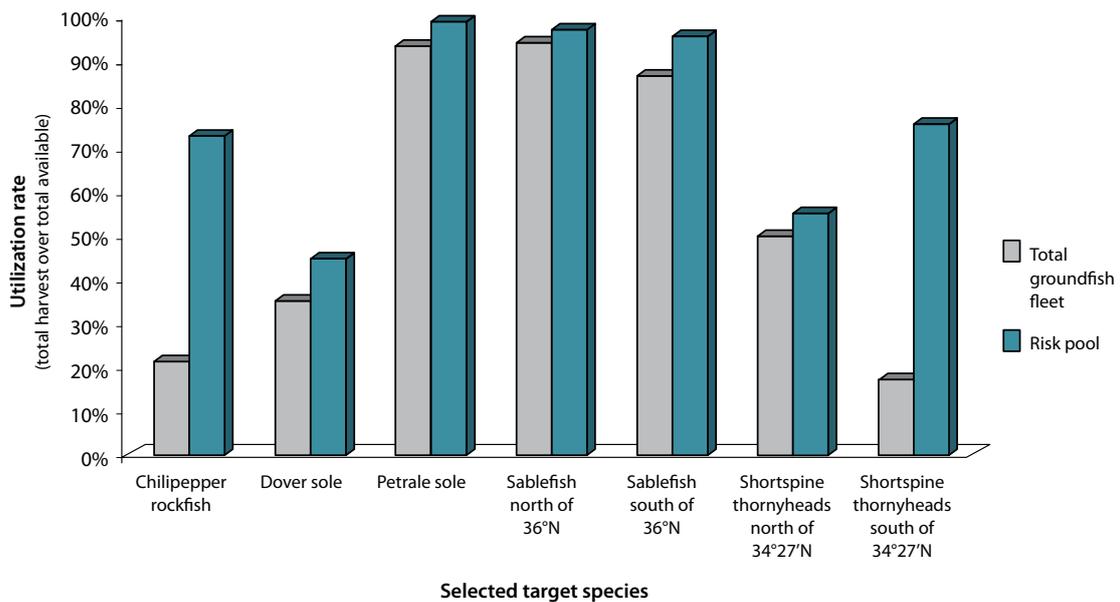


Figure 4. Selected target species (based on high economic value) quota utilization rates (shown in percentage) compared between the total groundfish fleet (grey bars) and the risk pool (blue bars).

should be considered, but each project must be designed and adapted over time based on the specifics of the fishery.

- Fishery buy-ins are not appropriate for every fishery. A universal set of enabling conditions (including the desire and ability on behalf of conservationists to engage communities over the long term) should be considered prior to launching a fishery buy-in. If most of the enabling conditions are not present or otherwise cannot be addressed, a fishery buy-in may not be appropriate.
- Fishery buy-ins are not necessarily required to employ many of the tools and methods used in this example to achieve real fishery reform. There is potential to incentivize reform without ownership status within a fishery. For example, capacity building assistance for co-management institutions need not come from a quota or permit owner, but can come in the form of scientific collaboration, technology development, or business development consulting.

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**Note from the Editor**

We thought this article worth reprinting because it operationalises a concept that that we have been thinking about since the 1995 “SPC and FFA Workshop on the Management of South Pacific Inshore Fisheries”: the possibility that non-fishing stakeholders financially buy into fishing rights allocation schemes in the same manner as fishing stakeholders.

Although informal suggestions have been made, as far as we know there is no such scheme operating in the Pacific Islands region. In the absence of formal fisheries allocation systems for conservation stakeholders to actually buy into, that is hardly surprising. Their input has continued to be along more traditional lines — encouraging the set-up of protected areas with project funding input, or making one-time payments for areas to be set aside from commercial fishing in perpetuity.

However, with the advent of the Parties to the Nauru Agreement vessel day scheme, where rights to fish for tuna are clearly defined, costed and allocated, other possibilities are opened up. Would conservation organisations be interested in buying annual vessel-day fishing opportunities in the same manner as purse-seine or longline vessels, and setting those opportunities aside, or releasing them at a subsidised price to vessels which implement stringent conservation measures? It would of course depend heavily on the accuracy of ecosystem and stock assessment science, and on the integrity of the allocation and monitoring system, but it could be worth exploring.

Pacific Island national governments may also want to think about the idea of allocating a proportion of their vessel-days to protect the interests of small-scale local (artisanal) tuna fishers. Coastal trollers and handliners would not, of course, be able to utilise purse-seine or longline vessel-days directly, but keeping a proportion of days unfished would at least ensure that less of the available tuna (and bycatch species) were caught by industrial fishing in the exclusive economic zone and, in theory, thus more available to the artisanal sector.

This article provides food for thought.

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