CFRF: 10 years of fishermen-driven research

KINGSTON, RI – In 2004, the Commercial Fisheries Research Foundation (CFRF) started out with a handful of fishermen and not a lot of funding. But it also began with the premise that people in the fishing industry needed to begin doing their own research.

Partnering at first with University of Rhode Island Sea Grant's Laura Skobe and Dave Beutel, Point Judith fishermen Phil Ruhle Sr., Phil Ruhle Jr., and Jim O'Grady, along with Jon Knight, owner of Superior Trawl, worked on a net design that would reduce cod and flounder bycatch in the haddock fishery. Knowing that cod and flounder drop down while haddock swim up in the net, the group created an 8' front panel with 6" mesh on the top of the net and in the codend to allow the unwanted fish to escape.

The net became known as the "Eliminator," an award winning conservation design that excluded over 50% of the bycatch from haddock trawls.

"It gave us a taste for victory and success and what was possible for the community. We were very proud of the project," said Chris Brown, a founding member of CFRF, owner/operator of the F/V Proud Mary, and chairman of the Rhode Island Fishermen's Association and Rhode Island Fluke Conservation Cooperative.

The CFRF founders invested the catch proceeds from gear trials with their share of groundfish disaster relief funds distributed at the time into a nonprofit foundation to get it started, recalled founding member Fred Mattera, a former fisherman and president of the safety training company NESTCo.

Mattera explained there was a consensus among those involved that, by improving the science, they would be able to harvest more fish.

In addition to Mattera, Ruhle Sr., Ruhle Jr., O'Grady, Knight, and Brown, Bob Taber of Trawlworks and fisherman Steve Arnold were part of that first group of committed industry members to contribute their own funds to allow CFRF to begin research in earnest.

That vision and dedication to research paid off with a series of federal awards totaling over $6 million that CFRF has used to fund 30 projects, including 22 under its Southern New England Cooperative Research Initiative (SNECRI). CFRF research projects have informed stock assessments, reduced bycatch and discards, uncovered new natural history information about key commercial species, and pioneered new ways to keep fisheries sustainable.

"The main mission of the foundation is to identify research priorities and support collaborative fisheries research projects aimed at promoting sustainable fishing practices and informing management and business decisions important to the industry based in the Southern New England region," said Peg Parker, who has served as CFRF executive director since 2008.

CFRF operates with minimal administrative costs with only Parker, Program Administrator Anna Malek, and Business Manager Teresa Winneg on staff working with a volunteer board of directors.

Current board members include: David Spencer, owner/operator of an 85' offshore lobster vessel out of Newport, CFRF president; Fred Mattera, CFRF vice president; Rick Bellavance, president of the Rhode Island Party and Charter Boat Association; Glenn Goodwin, fishing vessel captain and co-owner of Seafreeze Ltd.; Jim Fox, owner of Sea Fresh USA; John Kennedy, vice president of commercial lending at the Washington Trust Company Bank; Greg Mataronas, commercial lobsterman and owner of Sakonnet Point Fisheries; and Jon Knight.

CFRF photo

Phil Ruhle Jr. of Point Judith, RI aboard his Sea Breeze Too, working on CFRF's drop chain conservation gear engineering project to reduce flounder bycatch in small-mesh fisheries.

"The foundation is unique in that it is directed by fishermen and members of support businesses," Parker said. "I have not seen any other examples of fisheries research foundations or programs operating that way along the East Coast. The importance of having members of the fishing industry as engaged as they are through this foundation is that they have a real voice when decisions are made about how to expend limited research funding."

Fishery dependent research

"We felt that the prioritization process in the scientific community didn't serve the needs of the fishing community," said Brown, who stepped off the board four years ago so he could participate in the research.

Brown pointed to the foundation-supported dogfish work by scientists James Sulikowski of New England University in Maine and Roger Rulifson of East Carolina University in North Carolina as an example of how that knowledge can translate into meaningful changes in stock assessments.

"We showed the industry how to win arguments with the Northeast Fisheries Science Center," Brown said. "We proved the biological assumptions were wrong."

Spiny dogfish reproductive potential, migration patterns, and the location of the biomass in the water column were far different than what scientists had been modeling, Brown said.

Up to 40% of the biomass was found midwater, not on the bottom as previously had been assumed. The researchers also found that spawning biomass was 30% to 40% higher among all dogfish life phases from embryo to pup. And, they found there was little north/south migration but rather a circular movement from onshore to offshore and back. As a result, spiny dogfish went from being considered overfished to capable of supporting a direct harvest of roughly 50 million pounds a year.

"Now Woods Hole is using our data," said Brown. "That's the blueprint for success. Don't verbally argue about stock assessments. Change the data through better science."

Brown says that getting sound research may mean the industry has to pay for it.

"Putting a tax on ourselves as an industry for research will pave the way for a more stable future for us," he said. "We can't afford to let them chisel away at the industry with shoddy research."

Where fishermen fish

CFRF provided funding for the Massachusetts Division of Marine Fisheries ventless trap survey in federal waters, which was a huge step in expanding the lobster stock assessment outward, according to Greg Mataronas, who is now in his second term on the CFRF board.

"It's nice to see some scientific research conducted out where the lobstermen are fishing," he said.

Noting that the Atlantic States Marine Fisheries Commission (ASMFC) was considering a five-year moratorium on all nearshore lobster fishing in the region back in 2009, Mataronas said it was important that the stock assessment data came from the area that was actually being fished.

Mataronas offered the CFRF's current lobster research fleet project as a prime example of how fishery dependent studies work. Twelve lobster boats from Lobster Conservation and Management Areas 2 and 3 are performing on-deck sampling of over 29,000 lobsters using cutting-edge electronic tablets and

CFRF photo

Al Eagles of Newport, RI aboard his Catherine Ann is participating in CFRF's Lobster Research Fleet Pilot Project, which is testing methods to improve the collection and management of fishery dependent data.

calipers and then transmitting the data to the CFRF, which, in turn, submits copies to ASMFC for inclusion in the stock assessment. Fishermen have access to the data through CFRF.

"It's all industry sampled and all data is sent to ASMFC," Mataronas said. "To me, that's what the industry needs."

Changing gears

Another important approach to sorting through proposals has been CFRF's use of a "proof of concept" phase in challenge grants for gear conservation engineering projects, which allows researchers and industry members to test new ideas without major expenditures. Even when the testing doesn't produce a successful final product, the process itself allows for innovations in testing, according to Knight.

"The way the foundation uses the 'proof of concept' phase of a project was a sea change in the way we did projects," he said.

A funnel inside the net intended to eliminate scup and butterfish bycatch did not yield great results but, with the proof of concept approach, study participants didn't have to commit a lot of money to find out whether the idea was worth investing in.

CFRF's ultimate gear engineering projects were the large-mesh belly panel and 12" drop chain modifications for the small-mesh squid trawl fishery. Working with Emerson Hasbrouck and others at Cornell University's Cooperative Extension Program, project participants came up with a trawl design that allows flounder to drop out while squid rise in the net. Varying the height of the drop chain eliminated flounder and other nontargeted groundfish by rising over them as the net skimmed the bottom.

The two designs were so successful during the initial testing phase that CFRF funded full gear trials. The designs not only made it through the proof of concept, full proposal, and replication stages, the foundation ultimately made vouchers available to fishermen to get the equipment on the boats.

Gear trials are still ongoing with over 40 panels and 12" drop chains installed on trawlers.

"I think the large-mesh belly panel and drop chain research was one of the most successful because we got results that we could use," Knight said.

Oceanography

CFRF recently teamed up with the Woods Hole Oceanographic Institution (WHOI) to begin a two-year study aimed at collecting temperature and salinity data in a designated study area off the coast of Rhode Island that runs across the continental shelf.

CFRF is organizing a fishing vessel research fleet whose members will collect water column data year-round in this study area during routine fishing and transiting practices.

"In addition to serving as ships of opportunity and data collectors, research fleet participants will have a chance to communicate with WHOI scientists periodically to share their at-sea observations," said Parker. "We are joining in a real partnership with some of the best oceanographers in the world to better understand the impacts of changing environmental factors on key fishery resources in our region. It is exciting work."

CFRF also is able to respond quickly to specific industry needs. For example, the first two years of the renewed directed butterfish fishery, 2013-2014, left quota behind due to fishermen's inability to separate out smaller, lower fat content butterfish.

Knight said the foundation already has received three responses to a request for proof-of-concept proposals for reducing juvenile butterfish bycatch.

Long term, Knight agreed that research resulting in better-informed stock assessments is the most valuable. He cited the lobster fleet study as an excellent example of an industry-owned database.

"There was so little being done in the lobster fishery," he said. "We'd like to do that with other commercial fisheries.

"When we look back," Knight concluded, "that's what we'll say we accomplished – that fishermen own their own databases."

Joyce Rowley

CFRF article clarification

A reader pointed out that the article "CFRF: 10 years of fishermen-driven research" (CFN October 2014) incorrectly gave the impression that the Commercial Fisheries Research Foundation (CFRF) was directly involved in the development of the "Eliminator Trawl."

So we reached out to Dave Beutel, formerly with Rhode Island Sea Grant, who was a principal researcher on the innovative trawl project, and he offered the following clarifying information.

"The CFRF was not involved with the Eliminator work. That work was a collaboration between industry and Rhode Island Sea Grant with significant support from the NOAA Fisheries Northeast Cooperative Research Program and its director John Hoey.

"The Eliminator project did have a unique connection to CFRF in that the proceeds from the sale of the catch during the first three segments of the research went into the foundation. CFRF funded the fourth leg of the research when the sale of the catch was still deposited to the foundation, and it was able to use that money to fund future research.

"The Eliminator project put the first significant research money into CFRF. Fishermen already were accustomed to working with the Rhode Island Sea Grant fisheries team for cooperative research work. The foundation was a means to make that work easier in the future."

Our thanks to Beutel for clearing up the misunderstanding.

—Editor