Mike Davis shoves his hand toward me. It seizes mine and latches on, as if trying to hold a fish intent on wiggling free. His grip is hard, sandpapery, and it lasts. “Morning,” he drawls. “Let’s get us some coffee and then we can go into my office to talk.” His “office” turns out to be a chipped concrete seawall down by the docks at A.P. Bell Fish Company in Cortez, Florida.

Cortez is a hardscrabble community of commercial fishermen who ply the Gulf of Mexico for crab, grouper, tilefish, and snapper. They live on a grid of narrow streets near Sarasota Bay in frame bungalows aging decorously into the deep-green shade of overgrown sea grapes and moss-draped live oaks. Cortez has the timeless quality of a holdover that somehow escaped the attention of the region’s developers during their rush to slap up gleaming high-rises on every desirable square foot of the Sunshine State.

At a marina half a mile up the coast, yachts, sport-fishing craft, and sleek cigarette boats bob at their moorings, halyards tinkling. At the A.P. Bell Fish Company, the vessels are scuffed and stained with mildew and rust. The air is thick with the stink of fish and bottom muck. Lift trucks, top-heavy under containers of iced-down fish, rumble from dock to warehouse. Workers holler to be heard.

Like his father before him, Mike Davis is a reef fisherman. He is now forty-four years old but looks older. Since first going to sea during school breaks at the age of seven, he has been pursuing grouper and red snapper along a 120-mile swath of the Gulf of Mexico off the Florida coast. Drawing deeply on a Marlboro, he describes a hard life. Bending, hauling, and lifting on rolling boats has wrecked his back. His legs are afflicted with the stabbing pains of sciatica. Long absences at sea destroyed his seventeen-year marriage. The financial pressures of trying not to go bankrupt while catches plummeted and his income dropped by half exacerbated a drinking problem that nearly killed him. So did his job. Davis was caught in a freak storm with wind gusts over one hundred miles per hour, and a rogue wave smashed over his forty-four-foot boat, crushing the cabin where he and his crew were eating dinner, leaving them adrift all night and the next day before rescuers found them. “I thought my time had come,” he says.

A few days before our conversation on the seawall, he had returned to port after a two-week trip. The fish weren’t biting. All that he and his two crewmen had to show for fourteen days at sea was one thousand dollars split among them. “A fish is like a pregnant woman,” he says. “They eat only what they want when they want.” He exhales and looks out toward the bay. “And sometimes they can be downright miserable.”

Until a couple of years ago red snapper, a commercially valuable, iconic species synonymous with warm tropical evenings, crisp white wine, and swaying palms, hovered on the brink of extinction. A decades-long cycle of misguided efforts to manage the population resulted in one failure after the other as the population dropped to a mere 2 percent of what had historically swum in the Gulf.

But thanks to a recently introduced plan that turns the conventional wisdom of fisheries management on its head, the livelihoods of Davis and fishermen like him from Florida all the way over to Texas are becoming a lot less miserable. Called Individual Fishing Quotas (IFQs), the new regulations, which give a guaranteed allotment of fish to each participant instead of applying industry-wide quotas, went into effect for Gulf of Mexico Red Snapper (Lutjanus campechanus) in early 2007. The results were immediate and so profound that the Gulf Fishery Management Council voted earlier this year to increase the annual limit on red snapper to nearly seven million pounds from five million.

“This is the first time in a decade that I’ve felt comfortable with them raising the quota,” says Chris Dorsett, director of fish conservation and management at the Ocean Conservancy’s Austin, Texas, office. “The red snapper population’s health is improving, and overfishing has ended.”

Everybody should be encouraged about the results coming out of the Gulf. Most of the wild fish that we love to eat are in serious trouble, their populations in steady
plans give fishermen what amounts to “ownership” of a portion of the fishery. Like shareholders in a company who see the value of their holdings go up when the company prospers, the fishermen stand to benefit as the fish populations increase. In many catch-share arrangements, the participants have the right to buy, sell, or lease shares in their fishery, just like any other property. All the more reason to take good care of the resource.

Costello notes that traditional fisheries management practices fail to recognize what the ecologist Garrett Hardin called the “tragedy of the commons.” In a 1968 paper Hardin contended that when individuals who share a common resource act in their own best interest, that resource will ultimately become depleted, even if the decline helps no one in the long term. Typical regulations, such as set fishing seasons, limits on the number of days that fishermen are allowed to go to sea, restrictions on equipment, and caps on the total amount of fish that can be caught by an
entire fishery, lead to what the industry calls “derby fishing,” a Wild-West mentality where each participant scrambles to get as much of the total as he or she can, as quickly as possible. Fishermen try not only to out-compete each other but to outsmart regulators. If the government permits only so many days at sea, it makes sense to get a bigger boat to catch more fish in the allotted time.

According to Costello, who looked at fifty-year records at more than eleven thousand fisheries for mollusks, crabs, lobsters, finfish—every type of seafood—in virtually all countries and ecosystems around the world, this “race to fish” creates “a spiral of excessive harvests, and eventual collapse.” A much-cited paper published by Boris Worm of Dalhousie University in 2006 predicted that unless changes were made, all of the world’s fisheries could be decimated by 2048.

Among the eleven thousand fisheries they examined, Costello and his coauthors found a tiny fragment, only 12%, that used catch-share management. But in what the authors called “a marked reversal of previous predictions,” those that did adopt the program stopped the decline in fish populations.

Clearly, something about catch shares worked. To look at the approach more closely, the Environmental Defense Fund assembled a team of thirty specialists to examine how ten North American catch-share fisheries were faring. Their report, “Sustaining America’s Fisheries and Fishing Communities: An Evaluation of Incentive-Based Management,” added weight to Costello’s findings. Catch-share fisheries were twice as likely to stay within legal limits as non-catch-share operations. Over all, catch-share fisheries actually undershot their limits by 5 percent. Bycatch, the industry term for unwanted or illegal fish that have to be thrown overboard, usually dead, dropped by 40 percent.

Catch shares were good for fishermen, too. Revenues per boat actually increased by 80 percent. And the chance of getting hurt—a big issue in an industry where jobs are thirty-five times more dangerous than the average American job (much more dangerous than mining)—was cut by more than half.

This is all very well on paper, but convincing fishermen like Mike Davis that 1990s were the way to reverse the decline in red snapper took nearly a decade. Pam Baker, the senior policy advisor to the Environmental Defense Fund’s Gulf of Mexico Ocean Program in Austin, Texas, has been involved with attempts to rebuild the Gulf red snapper population since the late 1990s. “The old system told fishermen when to fish, how to fish, where to fish, how many fish to catch per trip, and what size of fish to catch,” she says. “IFQ-based management gets rid of all that. It says to each fisherman, ‘Here is how much fish you can catch. You have to show us that you’ve stayed within that limit. The rest is pretty much up to you.’

But the old highly regulated system was the devil everyone knew. Catch shares were held in such suspicion in government circles that in 1996 a federal moratorium was put on such programs as an amendment to the Sustainable Fisheries Act and wasn’t lifted until 2006. By that time a different mentality had settled upon the Gulf fishery. Every other management technique had been tried and found lacking. IFQs were adopted almost by default. “The red snapper population had dropped so low that fishermen and regulators began to realize that it was not a question of choosing between catch shares and some idealized notion of the past,” Baker says. “It was a choice between catch shares and nothing.” In 2004 a majority of red snapper fishermen voted to begin work on an IFQ program.

Agreeing in principle was only half the battle. “The key to success in any catch-share program is to clearly define your objectives up front,” says Costello, who has investigated more than two hundred catch-share fisheries. “There are lots of ways to design a program.” The first step is to use hard scientific facts to determine how large the total “pie” is going to be. Before 1990s, catch limits on Gulf red snapper had everything to do with wishful thinking and politics and nothing to do with science. In the mid-1990s managers knew that the maximum sustainable yield of red snappers in the Gulf was six million pounds per year. Nonetheless, year after year fishermen were legally allowed to take nine million pounds, an amount that was 50 percent higher than the sustainable yield. You don’t need a degree in resource economics to understand what that will do to a population.

Once the correct size of the red-snapper pie was determined (closer to five million pounds), it had to be divided according to an equitable formula, inevitably a contentious process. In the Gulf, the quantity of fish caught over previous seasons was the determinant, but fishermen still grumbled that it wasn’t fair. Because red snapper had been all but extirpated from the Florida Gulf Coast during the lean years, Mike Davis and other captains working out of Cortez didn’t fish for them, so he received minimal allotment. He contends that wasn’t reasonable.

Managers decided that each fisherman would have ownership rights to his quota, which could be bought, sold, traded, and leased. “One thing that happens in catch shares,” says Costello, “is that efficient fishermen tend to buy out those who are less efficient. So you can get consolidation of fleet.” To prevent a handful of large companies
or powerful fishermen from buying up all the quota, no one could control more than 6 percent of the total snapper catch. On January 1, 2007, the National Marine Fisheries Service gave the completed plan its official blessing.

Results came quickly. For the first time in two decades Gulf fishermen could catch and sell snappers year round—previously they had been limited to ten days per month. With guaranteed allotments, fishermen could pick and choose when they went out. Derby fishing became a relic of the past. They fished when market prices were high and the weather good and stayed in when the fishing was poor, the prices low, or the weather stormy. All told, they spent much less time at sea. But because landings kept pace with demand, as opposed to flooding the market during brief open periods, prices rose by 25 percent, from a little over three dollars a pound to nearly four dollars. Bycatch was reduced by 70 percent because managers were able to lower the minimum size for legal snapper. This meant that fish that were once thrown overboard as undersized (with only one in five surviving, according to the NMFS) were kept and counted toward quota. The fishermen, who were required to carefully report and monitor what they caught and often had government inspectors on board, erred on the side of caution and came in a little under their catch limit after years of regularly exceeding it by wide margins. The number of vessels chasing the limited snapper resource declined, as more serious players bought quota from dabblers, reducing pressure on the fish population and making fishing more viable for those who remained on the water.

Fishermen who primarily targeted grouper, tossing unintentionally caught red snapper back as bycatch, started to lease snapper quota from those who had extra. Being able to sell the once-wasted snappers made trips more profitable for the grouper fishermen, and the weight of the snappers was figured into the total allowable catch. Under the old system, every player was losing—regulators, fishermen, and particularly the fish. Under TACs it has been a win-win-win for all involved. Tellingly, when TACs were expanded to include Gulf of Mexico grouper and tilefish early this year, there was almost no opposition.

There is another group of unplanned-for winners—us, the fish-eating public. Costello found that “literally every catch-share fishery” he looked at resulted in a lengthening of the season and an increase in the quality of the product sold to consumers. Before, all the fish were caught in a short period. The catch had to be frozen and often shipped all over the world because local markets were glutted. Under catch shares, supply meets demand. Fish is sold fresh and locally at premium prices.

So what’s not to like? Some Gulf of Mexico fishery veterans worry that regulators are getting caught up in the exuberance, and that it is too soon to say for certain that better times lie ahead for red snapper. Jim Cowan, a professor in the Department of Oceanography and Coastal Sciences at Louisiana State University, expresses doubts about the wisdom of raising the catch limit so soon. “There were two large classes of red snapper born in 2004 and 2006,” he says. “Those fish are getting big enough to be working their way into the fishery now. So the fishermen are seeing a lot of fish. But I’ve been at this for twenty years, and I’ve seen the same thing happen four times—you get a good year, and the council caves into pressure and raises the catch limit. I worry that we are repeating the same mistakes all over again.”

But this time, at least, the powers that be listened to Cowan. After originally considering increasing the snapper limit to nine million pounds, they settled on a more conservative six million. If the new limit proves too high, there is a mechanism to roll it back. Chris Dorsett of the Ocean Conservancy, like most of those involved in the red snapper fishery, is comfortable with the new catch limits. “As a science-based organization, we tracked the decision-making process, and while there were some issues where we would have made a slightly different choice, it appears that the population is rebuilding, and there are adequate safeguards to ensure that the new level is safe,” he says.

Pam Baker of the Environmental Defense Fund concurs. “If there are more fish there, I’m glad they are going to increase the catch and that people are going to benefit,” she said. She also thinks catch-share management bodes well for the fishing industry in general. “Destroyed fish stocks, unfortunately, are common. What the TAC did here is show that if you have the management right—and that includes fishermen—and you have the right incentives, and people are accountable, you can solve the problems in a fishery and provide the sorts of benefits we would all like to see from our natural resources.”

Mike Davis is not the sort of guy who puts much stock in talk. “But there are a hell of a lot more snappers out there now, sometimes so many that you can’t even get your lines down before they fill up with fish,” he says. And he acknowledges one other important benefit of TACs: “Least I don’t have to take a chance getting myself killed.” The Gulf oil spill has added an element of uncertainty, and although it is too early to determine its long-term damage to fish populations, industry leaders say that without catch shares, the fishery’s future would be even more doubtful.