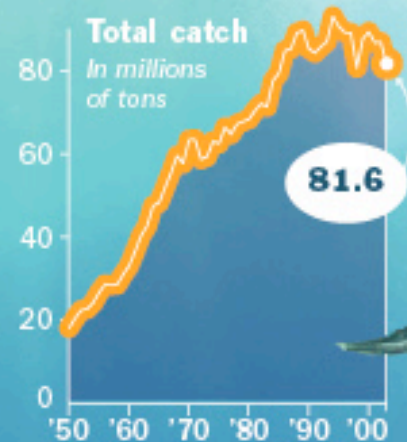
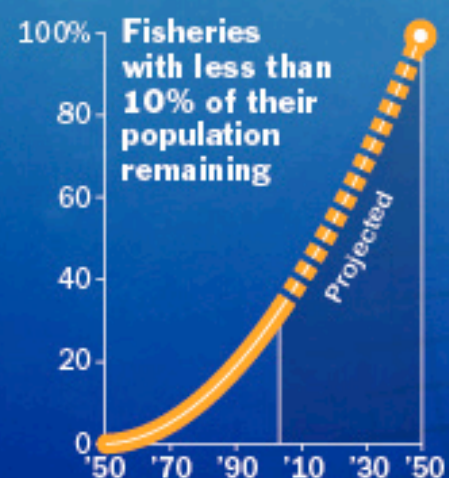


## The world is consuming more fish ...



## ... which could lead to the extinction of many species



## A look at who does the most fishing

**Total marine harvest**  
In millions of tons



### STURGEON

This ancient fish was around at the time of the dinosaurs. Its eggs (true caviar) are a gourmet delicacy, but Sturgeons of the Caspian Sea are nearing extinction

### SWORDFISH

It was overfished in the late 1990s, but public pressure led to tighter regulations, which helped the species rebound. Today most of the swordfish Americans eat is imported

### ATLANTIC COD

Its abundance attracted Europeans settlers to America, but recent overfishing has altered the ecosystem. Scientists say we are fishing the last 10% of this species

### CHILEAN SEA BASS

The trendiness of this fish, also called the Patagonian toothfish, could be its downfall. The fish is often caught illegally, especially in the remote waters of the Antarctic

### PACIFIC SALMON

Nearly 30 runs of salmon in Washington and Oregon are endangered due to construction of dams and habitat loss. However, Alaska's salmon population thrives

### GROUPE

These sedentary, long-living fish dwell in deep waters and reproduce for short periods. They're overfished in the Gulf of Mexico near Florida's west coast and in Hawaii

### RED SNAPPER

Not to be confused with "Pacific red," they are heavily fished in the Gulf of Mexico, exported by Mexico and Brazil and listed as overfished by the U.S. since 1980

### BLUEFIN TUNA

One of the world's most valuable fish, these 300-lb. giants are favored for sushi. The Atlantic population has declined almost 90% since the 1970s

### SHARKS

Almost all are in trouble in part because they mature slowly and bear few offspring. They are being hunted to extinction, often to make traditional delicacies like shark-fin soup

TIME Graphic by Ed Cabel and Lon Tweeten  
Written by Kristina Del



# TIME

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FROM THE MAGAZINE

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Sunday, Nov. 5, 2006

## Oceans of Nothing

**A study says overfishing will soon destroy the seafood supply**

By UNMESH KHER

Fishermen on the high seas have plenty of worries, not the least of which are boat-tossing storms, territorial squabbles and even pirates. Now Boris Worm, a marine biologist at Dalhousie University in Halifax, Canada, has added another. After studying, among other things, global catch data over more than 50 years, he and a team of 13 researchers in four countries have come to a stunning conclusion. By the middle of this century, fishermen will have almost nothing left to catch. "None of us regular working folk are going to be able to afford seafood," says Stephen Palumbi, a Stanford University marine biologist and co-author of the study published in *Science*. "It's going to be too rare and too expensive."

Don't tell that to your local sushi chef. Over the past three decades, the fish export trade has grown fourfold, to 30 million tons, and its value has increased ninefold, to \$71 billion. The dietary attractiveness of seafood has stoked demand. About 90% of the ocean's big predators--like cod and tuna--have been fished out of existence. Increasingly, fish and shrimp farms are filling the shortfall. Though touted as a solution to overfishing, many of them have--along with rampant coastal development, climate change and pollution--devastated the reefs, mangroves and seagrass beds where many commercially valuable fish hatch.

Steven Murawski, chief scientist at the U.S. National Marine Fisheries Service, finds Worm's headlining prediction far too pessimistic. Industry experts are even more skeptical. "There's now a global effort to reduce or eliminate fishing practices that aren't sustainable," says industry analyst Howard Johnson. "With that increased awareness, these projections just aren't realistic."

Perhaps. Still, the destructive fishing practices that have decimated tuna and cod have not declined worldwide, as Johnson suggests. Up to half the marine life caught by fishers is discarded, often dead, as bycatch, and vibrant coral forests are still being stripped bare by dragnets. Worm argues that fisheries based on ecosystems stripped of their biological diversity are especially prone to collapse. At least 29% of fished species have already collapsed, according to the study, and the trend is accelerating.

So what's a fish eater to do? "Vote with your wallet," says Michael Sutton, who runs the Monterey Bay Aquarium's Seafood Watch program in California. Since 1999, the aquarium has handed out pocket guides listing sustainably harvested seafood. The Marine Stewardship Council has partnered with corporations to similarly certify wild and farm-raised

seafood. Some 370 products in more than two dozen countries bear the British group's "Fish Forever" label of approval. Wal-Mart and Red Lobster, among others, have made commitments to sell sustainably harvested seafood.

But that's just a spit in the ocean unless consumers in Japan, India, China and Europe join the chorus for change. "If everyone in the U.S. started eating sustainable seafood," says Worldwatch Institute senior researcher Brian Halweil, "it would be wonderful, but it wouldn't address the global issues. We're at the very beginning of this."

With reporting by With reporting by Kathleen Kingsbury, Kristina Dell

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