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A **Chef's Guide** to Sourcing Sustainable Seafood

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Chefs Collaborative works with chefs and the greater food community to celebrate local foods and foster a more sustainable food supply. The Collaborative inspires action by translating information about our food into tools for making sustainable purchasing decisions. Through these actions, our members embrace seasonality, preserve diversity and traditional practices, and support local economies.

The Chefs Collaborative Seafood Solutions program, started in 2000, gives chefs the tools they need to make knowledgeable and sustainable seafood purchasing decisions for their restaurants. This booklet was produced with financial support from the David and Lucile Packard Foundation.

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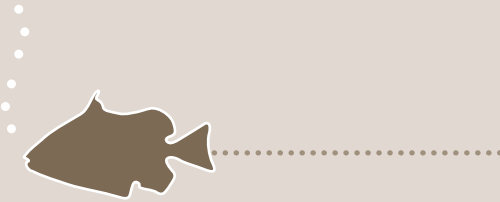


As chefs, we spend a tremendous amount of time in our restaurants, absorbed and enriched by our daily lives in food. As members of Chefs Collaborative, we add value to that time by buying ingredients from responsible, trusted, and sustainable sources.

Through our purchasing decisions and our behavior, chefs can affect critical change in our food system: we can help to preserve biodiversity and artisanal methods of food production, and we can lend support to local fishing and farming communities. With 70% of seafood purchases in this country made in the food service industry, we need the latest information before we make purchases with consequences that reach far beyond our tables.

Since we originally published the Seafood Solutions Guide in 2000, public awareness of the impacts of our food choices on the world around us has grown dramatically. More people are considering the ethics of how they eat, yet consumer demand for seafood shows no sign of slowing down. Chefs must balance an understanding of marine conservation with the business demands of running a restaurant—while responding to a shifting culinary landscape.

Seafood Solutions is designed to guide chefs through their seafood purchasing decisions. We offer ideas for simple, effective culinary solutions to the current ecological challenges we face. We hope you'll refer to this guide in your daily work.

Bruce Sherman
Chef-Owner, North Pond Restaurant, Chicago, Illinois
Chefs Collaborative Board Member
June 2008

INSIDE:

Understanding sustainable seafood: How chefs can make responsible purchasing decisions

As chefs navigate the seafood world to meet rising consumer demand, they're faced with constantly changing information. A purveyor says one thing, a seafood guide another, a news report something else. What—and what not—to offer on nightly menus changes with these new discoveries and the findings made public each day. In light of dwindling fish populations and rising global demand, chefs must make tough decisions daily.

Sustainable seafood refers to fish and shellfish caught or farmed with consideration for the long-term viability of individual marine species, fishing communities, and the oceans' ecological balance as a whole. Sustainable seafood comes from well-managed fisheries or aquaculture operations where measures are taken to maintain a strong, diverse marine ecosystem and a healthy population of the species in question. And beyond the health of the fish and their surroundings, sustainable seafood must be managed in such a way that it meets present-day needs without compromising the needs of future generations, as articulated by the United Nations.

Take Ten Steps toward Serving Sustainable Seafood

1. **Know your sources:** When it comes to tracing the origins and catch methods of your seafood, a solid chef-purveyor relationship will allow the chef to define standards and ask for the type of fish they want. "If enough chefs do this," says Sheila Bowman, outreach manager for the Seafood Watch program at the Monterey Bay Aquarium, "there won't be a market for anything but sustainable seafood."

2. **Ask lots of questions:** If your current supplier is not familiar with sustainability issues, start here: ***Where is the fish from? Is it farm-raised or wild? How was it farmed or caught?*** For more in-depth questions, see pages 8-11.

3. **Think locally and seasonally:** "The seasons have a much greater influence on seafood than on terrestrial animals," writes Monterey Fish Market owner Paul Johnson in his book *Fish Forever*. Considering seafood's seasonal availability (sometimes determined by fishing regulations) when planning menus will help prioritize choices and improve the quality of the fish you're serving. If you live on a coast, buying locally will bring both fresher fish and fewer food miles.

Chefs Collaborative Board member Bruce Sherman at Chefs in Raingear, Lummi Island, Washington

4 **Buy low on the food chain:** Large predators like bluefin tuna and swordfish are critical to maintain the balance of the food chain, yet many of these species are at risk of commercial extinction from overfishing. Bluefin tuna populations, for example, have declined by 90% since the 1970's. Predator species also have higher levels of mercury than most other seafood, and the tracking, capture, processing, and shipping of these larger fish require intensive energy use. For a more balanced marine ecosystem, less risk of contamination, and a smaller carbon footprint, choose species lower on the food chain, like sardines, anchovies, and shellfish.

5 **Be flexible and creative:** "The backbone of sustainability is flexibility," says Barton Seaver, executive chef at Hook restaurant in Washington, D.C. A fluid approach to developing menus allows chefs to adapt to changes in availability of certain species, while experimenting with lesser-known species will increase the ability to make well-chosen substitutions.

6 **Support small-scale fisheries:** Like small-scale farmers and food artisans, small-scale fishers—those using hook-and-line, harpoon, reef-nets, and other low-impact methods—are under pressure from policies that often favor industrial-scale methods. Chefs can be an important source of revenue and support for sustainable fishers and their ways of life, by buying their products and highlighting their stories on menus or restaurant websites.

7 **Educate and engage your customers:** Chefs have a unique opportunity to influence public opinion about food choices. Besides posting menus online, make websites a destination by adding materials and resources for further information. Some chefs slip seafood guides in with guest checks, others hold educational dinners featuring sustainable seafood menus and guest speakers.

8 **Diversify demand:** Tuna, salmon, and shrimp are the three most widely consumed seafood species in the U.S. But finding sustainable sources for these species isn't enough, say conservationists. Cooking with lesser known species, like wreckfish, wahoo, or mackerel, can ease pressure on more popular species while expanding the public's palate and the chef's range.

9 **Continue your education:** Keep up-to-date by researching information from our conservation partners like the **Blue Ocean Institute** (www.blueocean.org), **Environmental Defense Fund** (www.edf.org/seafood), **Monterey Bay Aquarium** (www.mbayaq.org), the **Seafood Choices Alliance** (www.seafoodchoices.org), and aquariums around the country. See pages 14-15 for further resources.

10 **Add your voice to public campaigns:** Chefs' influence can reach beyond their restaurants. In May 2007, over 200 chefs sent a signed letter to Congress, urging legislation that would protect salmon habitat in the Columbia River basin. The letter highlighted the connections between chefs, food producers, consumers, the environment, and the regional economy. It demonstrated how the chef's unique perspective can be an effective tool in conservation advocacy.

Looking at the Seafood Industry

According to the Food and Agriculture Organization of the United Nations, over the past 10 to 15 years, 75% of the world's fish species have been fully *exploited*, overexploited or depleted. And since the FAO began monitoring global fish stocks in 1974, the populations of underexploited stocks have been in consistent decline, as well.

We have reached the limits of what we can harvest from wild stocks. How has this happened?

As commercial fishing has become a high-tech, high-stakes industry, species are being quickly removed from the ocean. In addition, global warming is raising water temperatures and contributing to the collapse of marine ecosystems.

An increasing awareness of the issues affecting the oceans and their inhabitants can help chefs prioritize their seafood purchasing decisions. The more you know, the more responsible choices you'll be able to make.

Chefs Collaborative members learn about reef net fishing at Chefs in Raingear

Plenty of fish in the sea?

From the shore, changes in the ocean are hard to detect. But for those who make their livings catching or preparing seafood, numerous signs point to trouble in the world's fisheries.

- Coastal towns and communities with once-thriving fishing operations now struggle to maintain a fraction of their business. From fishermen selling their boats, to declining business on the docks, the evidence is everywhere.
- Fish markets sell little-known species to replace those no longer abundant enough to be commercially viable.
- When purchasing seafood, chefs may notice that certain species have become prohibitively expensive; some are younger and smaller than those traditionally sold in the past, and others aren't available at all.

Exploitation of the oceans: fishing practices that threaten fish populations and habitats

OVERFISHING: Occurs when species are caught at a rate faster than they can reproduce or be restored through fisheries management. Overfishing has increased significantly as advances in tracking equipment and fishing gear technology have allowed wild fish yields to increase far beyond manageable levels.

Recovery is possible only through limiting fishing of the at-risk species, and even then, species replenish at differing rates—based upon both the age at which the fish reproduce, and the degree to which the stock is endangered.

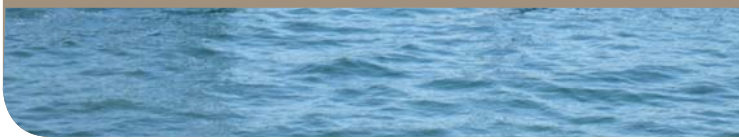
BYCATCH: Refers to species unintentionally caught in fishing gear or unwanted because they're too small or otherwise not marketable. About one-quarter of the global fish catch is bycatch. The use of non-selective fishing methods, using gear types like trawl nets, purse seines, or longlines, is estimated to produce 27 million tons of bycatch annually.

Who's watching over the ocean?

In 1976, the Fishery Conservation and Management Act (known as the Magnuson-Stevens Act) created eight regional fisheries management councils to develop management plans for their fisheries. The Act was first passed to limit fishing by foreign vessels in U.S. waters, and while it subsidized the growth of the U.S. fishing fleet, it didn't address overfishing and other resource conservation issues.

Magnuson-Stevens has since been reauthorized twice, each time with increased conservation measures, including mandates on annual catch limits and accountability measures to reduce bycatch and end overfishing. The U.S. now has stronger fisheries management—although small-scale domestic fishermen continue to struggle as the seafood market expands globally.

Tighter restrictions mean domestic fishermen are limited in how often they can fish and how much fish they can land. Many are making up for those losses by participating in cooperative fisheries research with state and local research organizations.



GET CLOSER TO THE SOURCE

At Lumière and Persephone, Boston-area chef Michael Leviton tries to work only with New England fisheries. "Why import fish when there's so much good fish right here," he says—naming bluefish and mackerel among his favorite local species. Removing a few links in the supply chain and purchasing from regional sources, says Leviton, makes it easier to know which boat the fish came off of, how long the boat had been out, and how and where the fish were caught. Chefs can talk to fishermen through their purveyors, says Leviton. "Part of me thinks that if I choose to buy locally, I have a better chance of having fishermen respond to some pressure to do the right thing."

Connecting Land and Sea

- Shoreline **development** places pressure on fragile coastal ecosystems. Unregulated, it can result in coastal erosion and the destruction of wetlands like marshes and estuaries where some fish spawn.
- Land-based **pollution** is a major threat to marine ecology. Nutrients and byproducts from agriculture, industry, and development wash into the ocean, altering aquatic ecosystems. For example, mercury from coal-burning power plants winds up in the water, accumulating in species that may then find their way onto our dinner plates.
- **Dams** and water diversions built to generate electricity have reduced large areas of spawning habitat for salmon and other migratory species. By altering the activity of rivers and estuaries, dams also increase coastal erosion and decrease fishery productivity.
- **Carbon emissions** from activities on land—like automobiles, industrial agriculture, and coal-fired power plants—contribute to rising ocean temperatures and threatened ecosystems like coral reefs.

INTENSIVE INDUSTRIAL AGRICULTURE

According to the National Centers for Coastal Ocean Science, nutrient over-enrichment via water run-off from the land is one of the major stresses to coastal ecosystems. When excess levels of nutrients like nitrogen and phosphorus are released from fertilizers and animal wastes, they stimulate massive algae blooms downstream, which use up all available oxygen in the water, and make it impossible for marine species to survive.

The effects of these algae blooms are called Dead Zones and can be found all over the world, including in the Chesapeake Bay and the Gulf of Mexico. The Gulf Dead Zone is fueled by nutrient run-off from the entire Mississippi River watershed, which encompasses 41% of the continental United States, including 31 states and two Canadian provinces. Scientists and fishermen are concerned that the growth of the Gulf Dead Zone will soon result in the potential collapse of the seafood economy there.

Clearing forests to develop the coast

Mangrove forests prevent shoreline erosion. They function as essential nursery grounds for tropical species, buffer zones for wind and waves, and natural waste-treatment centers. Mangroves grow in the inter-tidal zones of protected tropical shores, islands, and estuaries. Urban expansion, tourism and shrimp aquaculture all contribute to the clearing of these important plants and their associated ecosystems. Less than half of the world's original mangroves remain. Their deforestation has been linked to declines in fisheries production, soil erosion, the salinization of coastal soils, and the disruption of traditional foodways.

It's not just activity in the water that affects the health of marine environments.

THERE'S SOMETHING ABOUT SHRIMP

A look at America's most popular seafood illustrates how actions on the land affect the ocean. In the United States, nutrient pollution threatens the Southern U.S. shrimp industry. Overseas, shrimp-intensive farms are threatening important ecosystems by replacing mangrove forests in coastal areas.

In the past few decades, fish farming has been increasing in intensity and scale around the globe, and shrimp farming is among the fastest growing sectors of aquaculture overall. 90% of the U.S. shrimp supply is imported from Asia and South America, according to the Southern Shrimp Alliance, who point out that in 2006, the U.S. imported 1.3 billion pounds of shrimp—more than any other seafood. Most of it is industrially produced and therefore potentially tainted with antibiotics, pesticides, and other disinfectants used to prevent disease in dense shrimp pens. The Food and Drug Administration inspects less than 1% of seafood imports entering the country, so much of the product winding up on our tables is of questionable quality and origin.

Because of the high volume of cheaper imports on the market, prices paid to domestic shrimpers have dropped by 45% since 2000, even as costs to consumers have not dropped accordingly. To counter low prices and high operating costs, the domestic industry is positioning wild-caught American shrimp as a premium product and trying new market strategies, including selling directly to restaurants.

Restaurants can be key markets for fresh, sustainably caught wild or farm-raised shrimp, especially when chefs can pass some of the cost on to their customers, marketing the story behind the product. Tim O'Shea of CleanFish, a seafood distributor, says "if the story is good and the taste is fabulous, people will start to connect the dots and understand what they're paying for."

A RANGE OF SHRIMP CHOICES

Although the Southeast Atlantic and the Gulf of Mexico lay claim to the largest and most productive wild domestic shrimp fisheries in the country, chefs have a range of choices when it comes to these popular crustaceans. Fishermen in the Gulf of Maine catch their cold-water **Maine pink shrimp** from December to February and sell these sweet, tiny shrimp fresh to restaurants. In the summer and fall along the West Coast, **trap-caught spot prawns** (with little to no bycatch) are harvested—and considered among the most ecologically sound wild-caught shrimp on the market. In addition, **U.S. farmed shrimp** is raised under much stricter protocols than inexpensive imports, and is an accepted eco-friendly choice.

Fish on Farms

Farm-raised product accounts for nearly half of worldwide seafood consumption. And with 2000% growth in the sector since 1970 and more natural fish populations bordering on extinction, aquaculture can provide a delicious and responsible alternative while simultaneously allowing wild stocks time to rebound. But regulations in the industry vary by country, with associated ecological consequences for the oceans and waterways.

START BY ASKING THESE QUESTIONS...

Was it raised in an open water system?

Open aquaculture systems hold fish in structures like **net pens** or **sea cages**. Placed in coastal areas and inland waterways, these systems rely on the natural exchange of water between the enclosure and the surrounding environment to flush out fish waste, excess feed, and the chemicals (such as antibiotics and parasiticides) sometimes used to combat poor fish health in crowded pens.

Ecologists think untreated waste may disrupt ocean ecosystems; that parasitic organisms and diseases may be transmitted from farms into the wild; and that farmed fish have the potential to escape and reproduce—genetically altering wild populations or competing with them for food and habitat.

By contrast, farm-raised mollusks like oysters, clams, scallops, and mussels are "filter-feeders" that actually clean the water they're raised in.

Was it raised in a land-based tank?

Used, for example, to rear trout, and sometimes Arctic char, and Chilean turbot, land-based tanks are also known as **closed (or semi-closed) systems**, which generally aren't connected to outside waters. There is virtually no risk of farmed fish escaping from these systems, but there can be a higher energy cost associated with maintaining truly closed system operations. Additionally, the processing and disposal of wastewater must be considered.

Mix it up

Thoughtfully chosen farm-raised fish can diversify your menu and reduce pressure on wild fish populations and habitats.

Peter Hoffman of Savoy and Back Forty restaurants in New York City recommends serving smaller portions of wild fish paired with a farm-raised partner, like halibut with farm-raised scallops or hook-and-line caught cod with clams. Featuring biodiversity on the plate also makes for a more dynamic dish.

Never heard of barramundi? Unsure of the source of your salmon? Considering your restaurant's carbon footprint?

Get to the bottom of HOW and WHERE your farmed fish was raised.

AND THESE...

Is it carnivorous or mostly vegetarian?

In many aquaculture systems, the amount of wild-caught fish used to create fishmeal (to feed the farmed species) outweighs the amount of farmed fish produced, resulting in a net loss of protein from the sea. Removing wild fish from the ocean leaves less food for species higher up the food chain. And shipping large quantities of wild fish across the world to satisfy aquaculture operations is a practice that just doesn't seem responsible when considering the environmental costs.

Is the fish raised with antibiotics?

Increasing the density of fish raised in any given system can mean greater profits for producers, but increased density can also affect fish health. As on overcrowded cattle or hog farms, antibiotics may be needed to treat fish disease caused by stress and close quarters. Recent studies have linked antibiotic use in aquaculture to the development of antibiotic-resistant strains of bacteria in people.

Chef Greg Higgins with salmon, at Higgins Restaurant and Bar in Portland, Oregon

Spotlight on aquaculture
with Rob Garrison, aquaculture specialist, Baltimore, Maryland

CHEFS COLLABORATIVE: *In what instances can aquaculture truly be considered sustainable?*

ROB GARRISON: Bivalves are probably the most sustainable example. They filter water, cleaning it, with very little input from us—it benefits everyone. Everyone wants to keep water clean. In pond systems, the oldest method of aquaculture, they're looking closely at innovative ways to treat waste. Also in terms of energy use, I think solar energy and wind power will be some of the broader issues for the future.

CC: *What are some of the other concerns associated with the industry?*

RG: There is concern about using wild feed for aquaculture, and some efforts are underway to certify that certain populations of wild fish harvested to feed farmed fish are sustainable.

CC: *Where do you see other areas of improvement for the future?*

RG: More efforts to develop certification systems in aquaculture. Right now the World Wildlife Fund and others are working on a program to develop standards for sustainable aquaculture addressing pollution, discharge, habitat destruction, and ensuring that farm-raised species do not damage wild populations.

Fish in the Wild

ASK THESE QUESTIONS...

1. Are the populations healthy?

Although the populations of many popular species are declining due to overfishing and habitat destruction, you can still source popular seafood (like Alaskan salmon and Pacific black cod) from some fisheries. Robust populations indicate that the resources are being well-managed.

2. Where was the fish captured?

Ask if the fishery where your seafood came from is known for responsible practices, and if the stocks are well-managed or depleted. Fishery management differs from location to location—many species, like cod, sole, and halibut, are considered "healthy" in the Pacific fisheries but overfished in the Atlantic. Ask about the water quality where the fish was caught, considering high levels of pollution or bacterial growth.

3. How was it caught?

Non-selective fishing methods like trawl nets and long-lines capture and kill non-targeted species. Bycatch can include sea turtles, whales, seabirds, dolphins, and other creatures that are too small, young or otherwise not commercially viable.

Hydraulic dredges sometimes used for mollusks can seriously degrade ocean floor habitats (like corals and sponges), as can bottom-scraping trawl gear used to catch shrimp, flounder, monkfish, and other bottom-dwelling species. However, as U.S. fisheries management has evolved, many types of fishing gear are being altered to reduce bycatch and minimize damage to the ocean floor.

Hook and line, harpoons, traps and pots have low bycatch and do less damage to the ocean floor than other catch methods. Low bycatch fisheries include rod-and-reel caught yellowfin tuna, pole-caught albacore tuna, pot-caught spot prawns, reef-net caught salmon, and non-dredged mollusks.

4. Does the species of fish reproduce quickly, or is it slow to reach maturity?

Species that grow quickly and spawn frequently, such as mahi-mahi, wahoo, anchovies, and oysters are usually better choices for frequent consumption than those that take years to reach reproductive age. Protective management is crucial to the survival of species that reproduce late in life, like sharks, Patagonian toothfish (Chilean seabass), and orange roughy.

Tip off your servers

Whether you choose to serve harpooned swordfish or a lesser-known species like sablefish, educated servers play an important role in conveying information to customers. If a guest refers to a seafood watch list while looking at the menu, or if that night's special includes lesser-known species, an educated staff member who can answer tough questions and sell obscure items is an asset to any restaurant. Take some time at your pre-meal meeting to brief servers on the back stories of your menu items.

Concerned about the decline of bluefin tuna populations? Or the high levels of mercury in certain fish? Thought you couldn't serve swordfish? Wonder where that halibut is from?

Find out HOW and WHERE your wild fish was caught.

AND THESE...

Does the fish have any health risks associated with mercury or PCB's?

The contaminants found in seafood (metals, industrial chemicals, pesticides, and dangerous microbes) are odorless, tasteless and virtually undetectable to the naked eye. Contaminant levels vary among different types of fish depending on the species' location, size, age and diet. The FDA recommends that pregnant or nursing women, as well as young children, avoid fish with high levels of mercury, such as **swordfish, shark, king mackerel, and tilefish.**

How far did the fish travel to reach its final destination?

Typically, more energy is used to catch or farm most fish than to transport it. Industrial longlining, bottom trawling, and salmon farming are all energy intensive. So if you're concerned about energy use, knowing how far your seafood has traveled only addresses part of the issue—but it's a start. This question addresses fuel consumption and carbon impact, as well.

Spotlight on sustainable catch methods with Riley Starks

Lummi Island Wild, Bellingham, WA

Starks is a member of Lummi Island Wild, a reef-net fishing cooperative off the coast of Northern Washington. He is also the host of Chefs in Raingear, an experiential learning program that brings chefs aboard the reef net rigs to learn about this type of fishing.

CHEFS COLLABORATIVE: *Tell us about the type of fishing you do.*

RILEY STARKS: It's very sustainable. Our gears are anchored, we don't use much in the way of fossil fuels, we don't chase the fish, we just stay in one spot and wait for the fish to come to us.

CC: *What should chefs be aware of regarding how their fish is caught?*

RS: Harvest is an important part of the management of fish stocks. A lot of our fisheries are just based on getting the cheapest product out to the public, and the quality suffers.

CC: *What are the difficulties in getting your product out to chefs and consumers?*

RS: Everyone's problem is distribution. The hardest thing when you are a fisherman is to get your fish to the consumer. There are [groups of chefs] that get together and buy their fish in larger lots directly from us, and that makes it more reliable.

CC: *Is there anything else that chefs can look for to source a sustainable product?*

RS: A couple of things: finding an underutilized species like pink salmon. Also I would advise that chefs look beyond the eco-label. It's a great starting point, but for small fisheries like ours that would easily qualify, it's cost prohibitive.

Know Your Purveyor

A responsible seafood vendor educates chefs about lesser-known sustainable choices and supports the sustainability standards a chef sets forth. "Define your standards and set your expectations," advises Jesse Cool, owner of CoolEatz Restaurant and Catering in Palo Alto, California. Cool works closely with her seafood supplier. "He knows exactly how picky we are," she says. When chefs develop strong standards and strong relationships, they can continue to build the market for sustainable seafood.

PURVEYORS CAN HELP CHEFS NAVIGATE:

1. **Fishery openings and closings:** Wild fisheries open and close at different times of year depending on many factors. These include the varied seasons certain species run, conditions in the water and atmosphere, and when catch quotas for different fish have been met. Working with a purveyor who stays abreast of these developments makes short-term and long-term menu planning easier, and makes menus more flexible and responsive to the constantly changing conditions of the seas.
2. **Localized markets:** With the help of a good purveyor, says the South Carolina Aquarium's Megan Westmeyer, chefs can buy from "localized" markets. "Often a local market cannot absorb the influx when a fishing boat lands," she says. "The extra product is sold to purveyors and distributors in other parts of the country, sometimes for less of a price than the local market pays."
3. **Eco-labels:** Whether labeled organic, salmon-safe, or fair trade, certifying foods that adhere to a set of production standards has become increasingly common. Seafood is no exception. But since different certifications can mean different things, work with your supplier to make sense of the different labels on the market.

A look at eco-labels

The Marine Stewardship Council (MSC) is an independent non-profit organization that has established the most globally-recognized sustainability standard for wild fish. The MSC certification program meets the United Nations Food and Agriculture Organization's eco-labeling guidelines, defining a 'sustainable' fishery as one that:

- Maintains and/or re-establishes healthy populations of targeted species
- Maintains the integrity of ecosystems
- Develops and maintains effective fisheries management systems which take into account biological, technological, economic, social, environmental and commercial factors
- Complies with relevant local, national, and international laws

Other certification programs include eco-labels for aquaculture. The Global Aquaculture Alliance (GAA) is one trade association with an eco-label for farm-raised seafood, while the Oregon-based Food Alliance will soon begin issuing eco-labels for shellfish sustainably raised on the West Coast. In Europe, U.K.-based Friends of the Sea certifies both aquaculture farms and wild fisheries.

While several private European certifiers offer an organic seal for farmed seafood like salmon, cod, shrimp, and tilapia, organic aquaculture standards here in the United States are still in development. Though the European standards offer some advantages over conventional aquaculture production, organic certification for aquaculture shouldn't act as a proxy for true sustainability. Work with your purveyor to get the answers to your questions.

Know Your Purveyor

A great relationship with your fish vendor is an asset to any sustainably-minded chef.

Whether you need help finding a replacement for a certain species, or if you suspect you're not getting what you ordered, a trusted seafood vendor is an excellent resource.

Fish fraud

Is this wild salmon really wild? Is my grouper actually basa? Am I buying red snapper or tilapia? Chefs must increasingly ask themselves and their purveyors these questions. In April 2005, perhaps the most well-known case of fish mislabeling, the *New York Times* showed that fish sold as wild salmon by high-end New York City markets was mostly farm-raised, selling for as much as $29 a pound.

High value species are the most common candidates for substitution: low prices can be one giveaway. Don't be afraid to press your suppliers to demonstrate that the fish you're ordering is genuine. A good purveyor will be familiar with this issue and should be comfortable addressing your concerns.

–Tim Fitzgerald, Environmental Defense Fund

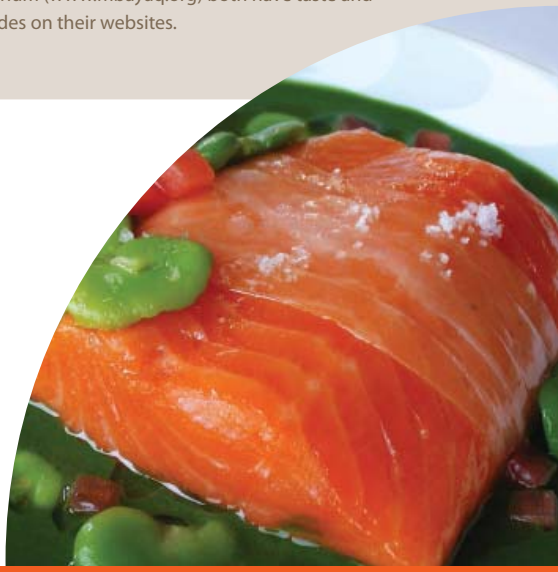
Seafood substitutions: making a more sustainable menu

If you think you need to pull a certain species from your menu, ask your purveyor to recommend a sustainable substitution with a similar flavor profile. Some examples:

- Black sea bass is a good substitute for red snapper.
- Try U.S. farm-raised catfish in place of orange roughy.
- Use croaker in place of monkfish.
- Hook-caught haddock can replace overfished Atlantic cod.
- Mahi-mahi can stand in for meaty warm-water fish like grouper.
- For more ideas, Environmental Defense Fund (www.edf.org/seafood) and Monterey Bay Aquarium (www.mbayaq.org) both have taste and texture substitution guides on their websites.

SELL THE SOLUTION

To build a flexible, adaptable, and sustainable menu, work with your vendors to get the stories behind the seafood. Work with your servers to keep them up to speed on the species you're serving. And work with your customers to build the demand for under-utilized species. "If a guest requests something you don't serve, you don't want to tell them no," says chef Barton Seaver at Hook restaurant in Washington, D.C. "Instead, sell the solution by exposing them to lesser-known species and marketing the stories behind those species. Get people excited, not disappointed."



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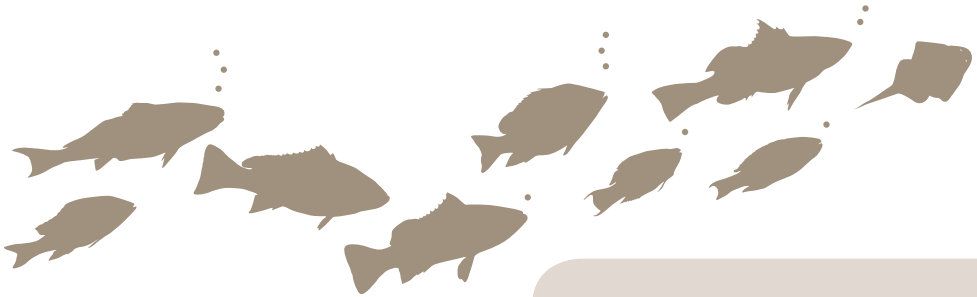

Looking at the lists

The seafood lists generated by a number of conservation organizations and aquariums are one way for concerned consumers to track the eco-friendliness of their seafood choices. **Monterey Bay Aquarium** (Seafood Watch), the **Blue Ocean Institute** (Guide to Ocean-Friendly Seafood), and **Environmental Defense Fund** all produce cards that rank species' overall health and sustainability. These seafood lists are a great tool for educating customers and staff, and for keeping up with general seafood recommendations. It's a good place for chefs to start, but the lists should act only as a springboard to communications among chefs, local fishermen, conservationists, and purveyors.

FURTHER RESOURCES

Chefs Collaborative works with partners across the country to translate up-to-date science and conservation information into tools for making sustainable purchasing decisions. Visit the websites of any of the following aquariums and conservation organizations to find more in-depth information about marine conservation and sustainable seafood:

Blue Ocean Institute: www.blueocean.org

Cape Cod Commercial Hook Fishermen's Association: www.ccchfa.org

Ecotrust: www.ecotrust.org

Environmental Defense Fund: www.edf.org/seafood

FishBase: www.fishbase.org

Food and Agriculture Organization of the United Nations: www.fao.org/fishery

Food and Water Watch: www.foodandwaterwatch.org

Marine Conservation Society: www.mcsuk.org

Monterey Bay Aquarium: www.mbayaq.org

National Marine Fisheries Service: www.nmfs.noaa.gov

New England Aquarium: www.neaq.org

Ocean Conservancy: www.oceanconservancy.org

Oceana: www.oceana.org

The Pew Charitable Trusts: www.pewtrusts.org

Save our Wild Salmon: www.wildsalmon.org

Seafood Choices Alliance: www.seafoodchoices.org

Seaweb: www.seaweb.org

Shedd Aquarium: www.sheddaquarium.org

South Carolina Aquarium: www.scaquarium.org

White Boot Brigade: www.whitebootbrigade.org

World Wildlife Fund: www.worldwildlife.org

Worldwatch Institute: www.worldwatch.org

Riley Starks grills pink salmon at the Renewing America's Food Traditions Picnic, Seattle, Washington

GLOSSARY OF TERMS

Aquaculture: commonly termed "fish farming," refers to the commercial growing of marine or freshwater animals and aquatic plants.

Bycatch: species taken incidentally in a fishery where other species are the target. Bycatch species may be of lesser value than the target species and are often discarded. However, with so many fish species in decline, many species once thought of as "trash fish," like monkfish and skate, have developed into full-fledged fisheries of their own. Some of these are now at risk of being overfished.

Bycatch reduction device (BRD): Called "birds," these modifications to fishing gear help to reduce the catch or kill of bycatch species during fishing operations.

Dead zone: A marine area where life has been suffocated by the enormous algae blooms caused by agricultural and development-related run-off.

Dredging: The process of excavating the ocean floor by dragging heavy chain-mesh scoops behind fishing boats. This high-impact process is used when fishing for scallops and/or oysters.

Driftnet: A gillnet suspended by floats so that it fishes the top few meters of the water column. A high-bycatch fishing method.

Dropline: A fishing line with one or more hooks, held vertically in the water column with weights and generally used on the continental shelf and slope. Several droplines may be operated by a fishing vessel, running on either manual or mechanical reels. A high-bycatch method known for incidental capture of seabirds.

Fishery: The occupation, industry, or season of catching fish or other sea animals.

Gill nets: Stationary nets used for catching fish by entangling them in the netting. Gill nets can be weighted to hang at any level in the water column, and are often anchored to sit on the ocean floor. A high-bycatch method.

Harpooning: An artisanal fishing method of spearing fish with a large harpoon. Typically used on large predator species. A method with little to no bycatch.

Hook-and-line: A method of catching fish with sharp hooks attached to lines made of monofilament or other materials. A low-bycatch, low-impact fishing method.

Line fishing: A general term used for a range of fishing methods that employ fishing lines in one form or another.

Longline: A fishing gear in which short lines carrying hooks are attached to a longer main line at regular intervals. Longlines can range anywhere from a mile long to over 50 miles long. A high bycatch method known for incidental capture of seabirds and sea turtles.

Non-target species: Species that are unintentionally caught by a fishery or not routinely assessed for fisheries management.

Pole-and-line fishing (poling): Also called pole-and-live-bait fishing, poling attracts schools of fish to the surface of the water with bait fixed to the end of a fishing pole. Fishers use a short, fixed pole and lure, and work close to the vessel. A low-bycatch method.

Purse seines: Large nets that surround fish and are then closed on the bottom, preventing fish from diving to escape. Often used to catch Alaskan salmon.

Reef nets: A type of fishing gear developed by Pacific Coast Native Americans, still used off the coast of Washington State. See page 11 for a further description of how reef nets work. A low-impact and low-bycatch fishing method.

Suspended systems: A method of cultivating mussels that involves growing the mollusks on ropes or mesh suspended from floats in the water.

Traps and pots: Among the oldest known fishing methods, traps and pots are passive fishing gear that "trap" certain species when they enter. Lobsters and spot prawns are among the species caught with pots and traps.

Trawl: A large wide-mouthed net dragged by a boat along the ocean floor or through the water. A high-impact and high-bycatch fishing method.

Trolling: A fishing method in which lines with baits or lures are dragged by a vessel at a slow speed. A lower-impact fishing method.

Turtle excluder device (TED): A modification to shrimp trawl nets that allow sea turtles to escape.

Thank you to the David and Lucile Packard Foundation for their generous support of this project.

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Special thanks: Amy Bodiker, Stone Barns Center for Food and Agriculture; Mike Boots, Seafood Choices Alliance; Sheila Bowman, Monterey Bay Aquarium; Tim Fitzgerald, Environmental Defense Fund; Nick Hall, Blue Ocean Institute; Peter Hoffman, Savoy and Back Forty restaurants; Michael Leviton, Lumiere and Persephone restaurants; Joe McGarry, Bon Appetit Management Company; Bruce Sherman, North Pond Restaurant; Julie Sherman, J Sherman Studio LLC; Riley Starks, Lummi Island Wild; Megan Westmeyer, South Carolina Aquarium; Kristen Widican, MS, RD.

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In New York...

...chef Peter Hoffman serves house-smoked Spanish mackerel with marinated beets, horseradish, and dill.
www.savoynyc.com

In Boston...

...chef Michael Leviton serves grilled local squid with chick peas, parsley, preserved lemon and black olives.
www.achilles-project.com

In Birmingham...

...chef Frank Stitt serves triggerfish with chanterelles, apple-smoked bacon, yellow squash, and okra.
www.highlandsbarandgrill.com

In San Francisco...

...chef Michael Tusk serves halibut carpaccio with bacon avocado and green zebra tomatoes.
www.quincerestaurant.com

In Chicago...

...chef Bruce Sherman serves grilled sablefish with braised pork belly, Jerusalem artichokes, and pomegranate syrup.
www.northpondrestaurant.com

In Seattle...

...chef Christine Keff serves blackened Hawaiian opah with a risotto cake and baby bok choy.
www.flyingfishseattle.com