



FISHY BUSINESS

**DO YOU KNOW WHAT YOU
ARE REALLY EATING?**



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Protecting the
World's Oceans

■ What is Seafood Fraud?

Seafood fraud covers a range of dishonest activities that cheat consumers and harm our oceans. It includes species substitution, where one type of seafood is labeled and sold as another species, often one that is more expensive or desirable. Seafood fraud also includes practices such as short-weighting, when a package claims to contain more fish than it actually does, and over treatment, when the amount of brining or ice in packaged seafood is increased in order to boost the weight and cost. It is fraud when a previously-frozen fish is labeled as fresh, a farmed fish is labeled as wild or the package lists an inaccurate catch date or location. It is also fraud when seafood is shipped between countries, often in an indirect route, solely in order to avoid tariffs.

Seafood fraud cheats consumers by forcing them to pay for a species they are not actually getting, and can put individuals at danger from contaminants, toxins or allergens. It robs hard-earned profits from honest fishermen and businesses through unfair competition. Fraud hampers conservation efforts by disguising illegally caught fish, which can come from vessels violating international conventions formed to prevent overfishing, deter destructive fishing practices and safeguard areas and animals in need of protection. It also obstructs citizen-driven conservation efforts by making overexploited species seem widely available.

Most seafood eaten in the United States (84 percent) is imported, yet only two percent is currently inspected—less than 0.001 percent specifically for seafood fraud (NOAA 2011, GAO 2009). To stop seafood fraud, the U.S. must implement a full-scale traceability system to track all seafood from boat to plate. Consumers have the right to know more about the seafood they eat.

■ Why Worry About Seafood Fraud?

It hurts our health: human health and seafood fraud

In some cases, seafood fraud can directly threaten human health. Swapping one fish species for another that may be riddled with contaminants, toxins or allergens can make people sick (GAO 2009). In recent health scares from eggs and other foods, voluntary recalls were used to limit the damage; yet this can be impossible for seafood because the origin of fish is often

obscured by the time it reaches our plates.

The government actively promotes the health benefits of dining on fish twice a week and global consumption is on the rise (USDA 2011, FAO 2010). However, seafood can also be a high risk food when not safely handled or sourced. Finfish outranked all other commodity food groups in the total number of 2007 outbreaks caused by a single food (CDC 2010). Seafood containing natural toxins may show no sign of spoilage, and “frequently looks, smells and tastes normal” (CDC 2005).

In addition, globalization of our food supply brings a much wider variety of seafood to U.S. tables than in the past. When seafood is mislabeled, a broader array of potential contaminants, pathogens and allergens may be covered up. In one situation, a Chicago woman suffered chest pain, weakness, and tingling around her mouth. The monkfish she thought she purchased was found to be toxic pufferfish that can only be eaten when specially prepared. The frozen fish was imported through California, processed in China, labeled in Korea, and caught in an unknown location (Cohen et al. 2009).

It hurts our wallets: economic incentives for seafood fraud

Seafood fraud can mislead consumers to pay inflated prices for a fish they did not order. Recent studies have found that seafood may be mislabeled as often as 25 to 70 percent of the time for fish like red snapper, wild salmon, and Atlantic cod, disguising species that are less desirable, cheaper or more readily available (Miller and Mariani 2010, Buck 2007, Jacquet and Pauly 2008).

Global competition between seafood products that formerly were sold in isolated local markets has increased the pressure to lower prices and provide consistent products year-round. As seafood consumption increases in Asia, particularly in China, global demand is likely to increase seafood prices in the U.S. (Liu 2011). These factors are powerful incentives to substitute lower-priced fish and unknown species, particularly in the off season. One study found that fraud involving sale of farmed salmon in place of wild salmon was most common during the off season, when wild salmon are less widely available (Consumer Reports 2006).

Seafood fraud can happen at each step of the supply chain. Mislabeled fish found in restaurants may have been mislabeled by the restaurant, but the restaurant might rely on the distributors, who may change the label and the price to increase profits. In one case, 45,000 pounds of inexpensive oreo dory were imported from New Zealand and sold in Ohio as orange roughy, yielding illegal profits of \$150,000 before being detained by U.S. government officials. Orange roughy sells for four dollars more per pound than oreo dory (Foulke 1993, Jacquet and Pauly 2008).

Packaging or processing can also create opportunities for mislabeling. Investigations in 17 states across the U.S. found more than 21,000 packages where up to 40 percent of the seafood product's weight was ice, leading consumers to be overcharged as much as nine dollars per package (National Conference on Weights and Measures 2010).

It hurts our oceans: conservation risks of seafood fraud

Seafood fraud creates unfair competition for honest fishermen and businesses, resulting in the loss of hard earned profits. In addition, it prevents consumers from making eco-friendly choices. Because mislabeling maintains the appearance of a steady supply of popular fish species despite severe overfishing, the general public may be unaware that the species is in serious trouble.

By disguising illegally caught fish, seafood fraud undermines conservation efforts to reduce overfishing and protect ocean wildlife like sea turtles and dolphins. Illegal fishing weakens conservation measures by catching juvenile fish or more fish than the allowed quota, failing to comply with protective measures for endangered species, fishing during closed spawning seasons, in protected areas, or without a permit. Fraud creates a market for illegal fishing by making it easier to sell illegally caught, unsustainable seafood products.

Illegal fishing worldwide is estimated to be about one fifth of reported catches, reaching up to 37 percent in the hardest hit regions such as off the coast of West Africa (Agnew et al.

Examples of Commonly Mislabeled Seafood

You Purchased	You Received
Red Snapper	Slender Pinjalo, Channel Catfish, Rockfish, Tilapia, Nile Perch, Mahi Mahi, Mullet Snapper, Malabar Blood Snapper, Atlantic Cod
Mahi Mahi	Yellowtail
Grouper	Channel Catfish, Hake, Tilapia, Alaska Pollock, Nile Perch
Wild Salmon	Farmed Salmon
Swordfish	Mako Shark
Bluefin Tuna	Bigeye Tuna, Yellowfin Tuna
White Tuna	Escolar
White Snapper	White Hake
Atlantic Cod	Alaska Pollock, Norwegian Pollock, Whiting, Saithe, Escolar
Chilean Sea Bass	White Bass, Striped Bass
Shark Meat	Nile Perch
Red Drum	Black Drum
Halibut	Sea Bass, Deep-water Cape Hake
Haddock	Saithe
Anchovies	Icefish
Orange Roughy	Oreo Dory, John Dory
Red Mullet	Spotted Goatfish
Monkfish	Pufferfish

Jacquet and Pauly 2008, Lowenstein et al. 2009, Wong and Hanner 2008, Miller and Mariani 2010, CBC News.

2009). The U.S. is one of the largest markets in the world for selling both legitimate and illegally caught seafood, along with the European Union, Japan and China (Liu 2011). The U.S. may also be an easy target for dumping illegal, poor quality or unpopular seafood because import controls are few and far between. For example, one notorious smuggler bribed 18 South African fisheries officers and disguised two metric tons of illegally caught Patagonian toothfish (also known as Chilean sea bass) under a thin layer of spiny lobster (Hauck and Kruse 2006, NET 2004).

FISH IN DISGUISE

With the skin, head and tail removed, many species look the same. Can you tell the difference?

A.

ATLANTIC COD?



B.

GROUPER?



C.

SWORDFISH?



D.

RED SNAPPER?



A. Atlantic cod: Right (other is escolar) B. Grouper: Right (other is mako shark) D. Red snapper: Left (other is rockfish)

Fillet photos: NOAA

■ Why Species Substitution Matters

Some species share very similar names – yet purchasing them can have strikingly different consequences.

Pacific cod vs. Atlantic cod

These species may share similar names, but they are remarkably different. Pacific cod is a bottom fish found off the Pacific coasts of Alaska, Russia and Japan. The U.S. fishery is well-managed and uses trawl and bottom longline gears to catch Pacific cod within a set catch limit. The Russian and Japanese fisheries are not well-managed, bring in excessive bycatch (unintended catch of non-target fish and marine wildlife) and operate without basic information about the fishery or meaningful catch limits. Seafood Watch has given an “avoid” rating to Pacific cod imported from Asia due to poor or unknown population status and ineffective management (Monterey Bay Aquarium Seafood Watch 2011).

Atlantic cod is a species found on both sides of the north Atlantic. Similar to Pacific cod, Atlantic cod is also a bottom fish, but its fate is much different. For decades Atlantic cod has been decimated by overfishing and weak management on both sides of the Atlantic. For example, the historic Georges Bank cod population is currently at just 12 percent of sustainable levels and has made little progress toward rebuilding the population (NEFSC 2008).

Consumers seeking to eat well-managed, abundant species may choose Pacific cod, which is commonly recommended as a “best choice” by conservation-oriented seafood guides. These same guides list Atlantic cod as a species to avoid due to sustainability issues. Unfortunately, consumers trying to make eco-friendly decisions may be sabotaged by the substitution of Atlantic cod for Pacific, or poorly managed Russian or Japanese-caught cod for the well-managed U.S. catch.

Grouper vs. Asian catfish

The name “grouper” refers to several species of large bass-like fish that come from the reefs of the southeastern U.S. and Gulf of Mexico. Many grouper species have been overfished; however, strict management is gradually helping revive populations. Red grouper and black grouper, both U.S.-caught in the Gulf of Mexico, are multiplying and on the road to recovery (Mazurek 2011). With strict catch limits, fishermen get premium prices for their limited

catch while supporting the recovery of grouper populations.

Catfish include many related species, most of which are grown in land-based aquaculture. U.S. catfish is grown in several southeastern states and does not require feed made of wild fish the way salmon does. Basa and swai are species from the Mekong River in Vietnam which are similar to catfish – in fact, they are commonly referred to as Asian catfish. They are farmed in mass quantities throughout southeast Asia, with unknown environmental effects and questionable oversight and regulation (Monterey Bay Aquarium Seafood Watch 2011).

Due to their white, firm flesh and low price, it is common practice for basa and swai to be substituted for premium grouper or other species. Substituting these species for wild grouper cheats the consumer in several ways: consumers seeking to eat locally produced food are not looking for imports, and those keeping kosher do not eat catfish. Aquaculture of imported seafood may also contain residues of antibiotics or pesticides that are not approved for use in the U.S.

Atlantic salmon vs. Pacific salmon

Atlantic salmon is a rare species and is listed under the Endangered Species Act in parts of its U.S. range. Massive aquaculture operations have been built in both the Atlantic and Pacific oceans, now the only commercial source for these fish. Industrial salmon farming has several serious effects on marine ecosystems, including the depletion of other fish stocks used for feed, disease spread by fish farms and the effect of escaped fish on the remaining populations of wild Atlantic salmon that struggle to recover (Mazurek 2004).



Photo: © 2011 Koninklijke DSM N.V.

In contrast, many of the rivers of the Pacific continue to support healthy annual Pacific salmon migrations with local fisheries catching these fish as they return from the ocean. These wild fish are among the best managed seafood choices and command premium prices in the market.

It is common for farmed Atlantic salmon to be substituted for more desirable wild-caught Pacific salmon, particularly in the off season. Salmon farmers can tailor their feed to give their farmed fish the distinctive pink and deep orange colors of wild salmon, based on a pre-determined color palette similar to a paint chip. Mislabeling disguises the falsely-labeled fish and reduces the value of well-managed wild fisheries. It also cheats the consumers who pay inflated prices for lower-value fish.



■ Recommendations: How to Stop Seafood Fraud

Seafood fraud is a serious problem. Consumers have a right to know where their food comes from, and responsible fishermen and businesses deserve their fair profits. The U.S. government must increase the frequency and scope of inspections to verify seafood's safety and origin at each step along the way and keep illegal fish off the market.

Track and Trace Seafood

Fish and seafood information needs to be tracked through every step of the process, from the water to our plates. Each seafood meal should be entirely traceable through distribution and processing back to its original capture or aquaculture facility.

Prevent Mislabeling and Provide Information to Consumers

Mislabeling is rampant throughout the U.S. and contributes to fraudulent practices, increased health risks, conservation impacts and illegal fishing. Mislabeling must be prevented at all steps in the distribution chain. Consumers need to be assured that the fish they are buying is safe, legal and accurately labeled.

Ensure Safety of Seafood

Seafood is a high risk food and must be handled safely with increased accountability to prevent illness. Bacterial contamination and natural toxins are particularly risky in the context of seafood fraud. A traceability system would allow for recall of contaminated or unsafe seafood.

Keep Illegal Fish Out of the U.S. Market

Illegal fishing not only hurts honest fishermen, but can increase risks to consumers. If a fishing boat is not abiding by domestic or international fishing laws, it is likely to be violating other requirements, including health and safety regulations.

Coordinate Federal Agencies

A wide range of federal agencies share responsibility for policing seafood fraud and inspecting the seafood supply, yet instead of adding capacity, this fragmented system currently leads to confusion and inefficiency. Coordination is needed to effectively protect consumers and unite the U.S. government against seafood fraud.

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