



Catalogue of United States Farm-Raised Seafood

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ASSOCIATION**

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With over 800 different species of finfish and shellfish in the U.S. market, seafood can be a very challenging commodity. Buyers are concerned about product safety, species substitution, quality, and sustainability. If these issues are important to you, U.S. farm-raised seafood is a great choice. You can be sure that U.S. farm-raised seafood was raised under the best conditions with a great deal of care. In many cases, you can actually visit the farm to see the operation and gain a better understanding of how the product was grown. Buying U.S. product also fits into the growing demand for locally raised products to satisfy both environmental and quality concerns.

The National Aquaculture Association produced this catalogue to help you learn more about U.S. farm-raised seafood. Foodservice recipes complete with nutritional analysis are available on our website www.thenaa.net.

This catalogue provides information about some commonly farmed U.S. products. The federal Food and Drug Administration (FDA) has developed a seafood regulatory encyclopedia that provides the acceptable market names for many species, pictures of both whole fish and fillets as well as other basic information.

Although there are plans to add farm-raised species, most of the fish in the encyclopedia are wild harvest products. By law, the FDA has the authority to regulate the names under which fish can be sold in interstate commerce in the United States.

<http://www.fda.gov/food/foodsafety/product-specificinformation/seafood/regulatoryfishencyclopedia/default.htm>



Finfish

Atlantic Salmon (*Salmo salar*)



Although almost all of the wild populations of these sleek silver fish were nearly lost through overfishing, environmental changes, and dam construction, aquaculture has brought them back from the brink of extinction. Today Atlantic salmon is one of the most popular fish on the American dining table. Aquaculture has increased the supply and stabilized the price. Black spots on the gill covers distinguish Atlantic salmon from their Pacific cousins.

FLAVOR PROFILE: Atlantic salmon has a milder flavor than their wild cousins. The flesh ranges from light pink to a light red. The color of the flesh depends upon the amount of astaxanthin in their feed. Astaxanthin is the pigment that gives wild salmon, shrimp, and flamingos their pink color. It is a carotenoid with anti-oxidant properties.

PRODUCTION METHODS: Atlantic salmon is most commonly raised in net pens. In the United States, net pens are carefully sited to help ensure that they do not damage the environment. Because salmon are carnivorous, fish farmers work closely with the scientific community to develop feeds that require a minimum amount of fish meal and oil and, yet, provide all the great taste and nutritional benefits that consumers demand.



PRODUCT FORMS: Atlantic salmon is available in a variety of product forms, but the most popular is the boneless fillet. Fillet portions may be pin bone in or pin bone out. That needs to be specified in the order. Steaks, whole fish, and loins are also available.

Because Atlantic salmon is an oily fish, it can be cold or hot smoked. In both methods the fish is salted or brined before smoking. Hot-smoked fish is also known as kippered salmon. Hot smoked salmon is actually cooked

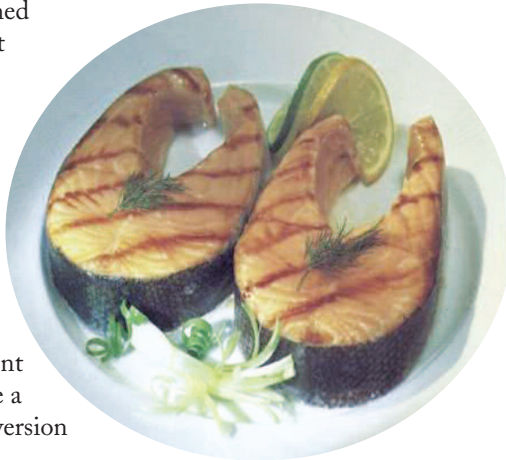
Atlantic salmon continued

to a temperature above 150° F. Because the fish is cooked, it is more difficult to slice than cold smoked salmon. Cold smoked salmon is processed at a temperature below 80° F. Instead of cooking, the fish is slowly dried in the smoke. This process produces a moist, easily sliced product that is known by a variety of names including lox, Nova, Scotch, or Irish smoked.

Salmon is also made into jerky and gravlax. Gravlax is a cured product made by marinating the salmon in salt, sugar, and dill. It is not smoked.

SERVING SUGGESTIONS:

- Grilled or poached salmon is a great addition to any menu.
- Marinate salmon in a soy sauce.
- Since many people choose salmon for its health benefits, offer two different menu items, one a lighter, smaller version of the other.
- Use Atlantic salmon trimmings to make fish cakes or croquettes.
- Salmon burgers are a great addition to a lunch menu.
- Cold smoked salmon with dill sauce, lemon, and



buttered toast is a wonderful and elegant appetizer.

- Or try loosely rolled thin slices of cold smoked Atlantic salmon seasoned with freshly ground pepper with thin avocado slices.
- Don't forget about brunch. Try smoked Atlantic salmon with scrambled eggs or in omelets.
- There's always a bagel with cream cheese and smoked salmon.

Nutrition Facts	
Serving size 6.0 (170g)	
Servings Per Container	
Amount Per Serving	
Calories 354	Cal. from Fat 205
% Daily Value*	
Total fat 23g	35%
Saturated Fat 5g	35%
Trans fats 0g	
Cholesterol 94 mg	30%
Sodium 100 mg	4%
Total Carbohydrate 0g	0%
Dietary Fiber 0g	0%
Sugars 1 g	
Protein 35g	
Vitamin A 2%	Vitamin C 10%
Calcium 2%	Iron 4%
*Percent Daily Values is based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.	
Total Fat	Calories 2,000 2,500
Sat Fat	Less than 65g 80g
Cholesterol	Less than 20g 25g
Sodium	Less than 300g 300mg
Total Carbohydrates	Less than 2400 mg 2400mg
Dietary Fiber	300g 375g
	25g 30g
Calories per gram:	
Fat 9	Carbohydrate 4 Protein 4

Black Cod/ Sablefish/ Butterfish

(*Anoplopoma fimbria*)



Black cod are not cod at all. They are a cold water fish found in the North Pacific. In California and Hawaii, black cod is known as butterfish, but it should not be confused with the butterfish that is sold on the East Coast which is a totally different species with a different taste and nutritional profile. Because of its flavor and texture, black cod is highly prized by chefs and gourmets. When prepared for sushi, it is known as gindara. Black cod is one of the most sustainable sushi choices.

Once considered Jewish peasant food or poor man's sturgeon, cold smoked sablefish (black cod) has gained a gourmet following and has gone upscale in some of the finest restaurants and fish mongers in the country.

FLAVOR PROFILE: Because of its high oil content, black cod has a moist texture with a mild, distinct flavor. It tends to have a large flake. Black cod is high in heart-healthy omega-3 fatty acids. Smoked sablefish has a sweet, nutty flavor with overtones of paprika.



PRODUCTION METHODS: Black cod begin life in a hatchery and when they reach a large enough size, they are transferred to open ocean pens for grow-out. In the United States, open ocean pens are carefully sited to avoid environmental damage.

SERVING SUGGESTIONS:

- Black cod have large curved pin bones that should be removed using needle-nose pliers.
- The high moisture content makes black cod particularly resistant to overcooking.
- Because of its fat content, black cod should not be

Finfish

Black Cod continued

substituted in traditional cod recipes.

- Black cod works well in Eastern European, Asian, and Scandinavian fish preparations.
- Because of its oil content, it combines well with yogurt, cucumbers, and beets.
- Miso-glazed black cod is a signature dish at the famous Nobu Restaurant in New York.

Nutrition Facts	
Serving size 193 g	
Amount Per Serving	
Calories 376	Cal. from Fat 266
% Daily Value*	
Total fat 30g	45%
Saturated Fat 6g	31%
Trans fat	
Cholesterol 85 mg	32%
Sodium 108 mg	5%
Total Carbohydrate 0g	0%
Dietary Fiber 0g	0%
Sugars 0 g	
Protein 26g	
Vitamin A 12%	Vitamin C 0%
Calcium 7%	Iron 14%

*Percent Daily Values is based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.

FLAVOR PROFILE: Catfish is sweet, mild flavored with the ability to retain moisture while cooking. Farmed fish is preferred over wild-caught fish because of the more consistent flavor and lack of a muddy taste. This is a truly versatile fish that can be used in a wide range of recipes.



PRODUCTION METHODS: True channel catfish are raised in clay ponds in the southern United States.

PRODUCT FORMS: Live catfish is sometimes found in ethnic markets, but the most common product form is fresh or frozen fillets. It is sold whole, headed and gutted (H&G), skin-off fillets, steaks, nuggets and strips. Because of its mild flavor and lack of bones, it is an ideal fish for young children and older adults.

Catfish (*Ictalurus punctatus*)



True U.S. farm-raised channel catfish is an ideal candidate for any meal. Some farmers are raising hybrid catfish which is a cross between channel catfish (*Ictalurus punctatus*) and blue catfish (*Ictalurus furcatus*). Its non-fishy flavor makes it a real crowd pleaser. You can stick to the tried and true fried catfish or go upscale with a really elegant preparation. The lack of small bones makes it ideal for kids and older adults. Catfish can be used in any preparation that calls for a white fleshed non-oily fish. Because catfish lack scales, they are considered non-Kosher. U.S. farm-raised catfish is considered a “Best Choice” by the Monterey Bay Aquarium. Catfish are named for the long barbels around the mouth that look like a cat’s whiskers. The fish use the barbels to locate food.



SERVING SUGGESTIONS:

- U.S. farm-raised catfish can be substituted in almost any recipe that calls for boneless chicken breast or a fish like cod.
- Almost any cooking technique works well with catfish—steaming, sautéing, blackening, poaching, braising, grilling, broiling, stir-frying or smoking.
- The versatility of catfish allows you to experiment with different ethnic herbs and seasonings.

Check the latest food trends and see how you can use catfish.

- Traditionally, corn meal coated catfish is deep fried, and served with hush puppies and coleslaw with a ketchup bottle on the side.
- Catfish can be dressed up to meet the most discerning of tastes in dishes like catfish Grenobloise.
- Catfish nuggets can be used for kebabs or appetizer portions.

Nutrition Facts	
Serving size 6.0 (63g)	
Servings Per Recipe 1	
Amount Per Serving	
Calories 117	Calories from Fat 67
% Daily Value*	
Total fat 7g	10%
Saturated Fat 2g	8%
Trans fats 0g	
Cholesterol 35 mg	10%
Sodium 249 mg	10%
Total Carbohydrate 0g	0%
Dietary Fiber 0g	0%
Sugars 1 g	
Protein 11g	
Vitamin A 0%	Vitamin C 2%
Calcium 0%	Iron 2%

*Percent Daily Values is based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.

Total Fat	Calories	2,000	2,500
Sat Fat	Less than	65g	80g
Cholesterol	Less than	20g	25g
Sodium	Less than	300g	300mg
Total Carbohydrates	Less than	2400 mg	2400mg
Dietary Fiber		300g	375g
Calories per gram:		25g	30g
Fat 9	Carbohydrate 4		Protein 4

Cobia

(*Rachycentron canadum*)



Cobia is a new-to-market fish that is rapidly making its reputation on restaurant menus in major cities. It is a warm-water fish found in salt water. U.S. farm-raised cobia is rated as a “Best Choice” on the Monterey Bay Aquarium Seafood Watch List.



PRODUCTION METHODS: Fast-growing cobia reaches market size in less than one year in tank systems in which the water is recirculated, cages or ponds. Some companies are actually raising cobia far away from the ocean in specially formulated seawater.

PRODUCT FORMS: Whole fish, fillets and loins

FLAVOR PROFILE: Flaky white meat with a firm texture, similar to Chilean sea bass and swordfish. Cobia is high in omega-3 fatty acids and low in calories.

SERVING SUGGESTIONS:

- Cobia works well with high heat cooking methods such as grilling, broiling, or sautéing.
- It is often used in sashimi and sushi preparations.

Nutrition Facts	
Amount Per Serving	
Calories 87	Calories from Fat 5.76
% Daily Value*	
Total fat 0.64g	1%
Saturated Fat 0.12g	1%
Cholesterol 40mg	13%
Sodium 135mg	6%
Total Carbohydrate 0g	0%
Dietary Fiber 0g	0%
Sugars 0g	
Protein 18.99g	
Vitamin A -	Vitamin C -
Calcium -	Iron -

*Percent Daily Values is based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.

Hybrid Striped Bass

(*Morone saxatilis X Morone chrysops*)

For over 250 years, striped bass has been a popular recreational as well as a commercial species. So it came as no surprise that with changes in habitat and increased fishing pressure, the harvest of wild striped bass became more highly regulated. Since striped bass was so popular on restaurant menus, for both conservation and gustatory reasons, it has become a popular fish for farmers to raise.



Hybrid striped bass is generally produced as a cross between wild striped bass (*Morone saxatilis*) and white bass (*Morone chrysops*). The hybrid fish are sometimes called “wipers” because of the parental cross. In some states, it is illegal to sell true striped bass because it is considered a “recreational fish.” In those states, it is legal to sell the farm-raised hybrid striped bass. For a number of years, there were strict harvest limits on true striped bass, but thanks to effective management systems, wild striped bass populations have rebounded.

Hybrid striped bass can be distinguished from true striped bass by the pattern of stripes along the sides of the fish. The stripes are broken up rather than in straight lines as in the pure striped bass. Hybrid stripers are often more deep bodied than their wild cousins. The Monterey Bay Aquarium Seafood Watch Program ranks U.S. farm-raised hybrid striped bass as a “Best Choice.” Striped bass has always been a favorite fish of Americans. During colonial times, levies on striped bass fishing actually helped to fund New England’s first school system

FLAVOR PROFILE: The meat is white and flaky with a slightly milder flavor than wild striped bass.

PRODUCTION METHODS: Hybrid striped bass are most commonly raised in ponds, cages, and tanks.

PRODUCT FORMS: Hybrid striped bass are available live, fresh and frozen. Although live fish can be kept in holding tanks, they are predatory and will eat smaller fish.

Finfish

Hybrid striped bass continued

Whole fish are ideal for stuffing. Fillets generally range between 4 and 10 ounces.

SERVING SUGGESTIONS:

- Hybrid striped bass is a very versatile fish. Chefs familiar with wild striped bass can substitute the hybrid in recipes that call for striped bass or sea bass.
- Hybrid striped bass can be broiled, baked, steamed, poached, sautéed, grilled and fried.
- Stuff a whole hybrid striped bass with a southwestern based dressing and serve with a corn and tomato relish on the side.
- Marinate whole hybrid striped bass in a ginger, mirin, soy sauce mix. Slash the sides of the fish so that the marinade can infuse the flesh of the fish, charcoal grill, and serve with stir fried summer vegetables.
- Coat the tops of hybrid striped bass fillets with a breadcrumb mixture that includes basil, onions, and tomatoes. Bake and serve with polenta cakes topped with fresh tomato relish.

Nutrition Facts	
Serving size 1 fillet	
Amount Per Serving	
Calories 154	Cal. from Fat 33
% Daily Value*	
Total fat 3.7g	6%
Saturated Fat 0.806g	4%
Polyunsaturated Fats 1.274g	
Monounsaturated Fat 1.049g	
Cholesterol 127 mg	42%
Sodium 110 mg	5%
Potassium 407 mg	
Total Carbohydrate 0g	0%
Dietary Fiber 0g	0%
Sugars	
Protein 28.19g	
Vitamin A 3%	Vitamin C 0%
Calcium 2%	Iron 7%

*Percent Daily Values is based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.
Nutrition values are based on USDA Nutrient Database SR18

FLAVOR PROFILE: The meat is firm but moist, white and flaky with a mild sweet flavor.

PRODUCTION METHODS: Red drum is most often raised in ponds. Indoor raceways are also used.

PRODUCT FORMS: Whole fish, head-on/gutted, headed and gutted, skin-on and skin-off fillets.

SERVING SUGGESTIONS:

- A standard menu item is blackened redfish a dish made popular by Chef Paul Prudhomme.
- Drum are often a preferred fish for use in chowders.



A variety of sturgeon species are raised in the United States including white sturgeon (*Acipenser transmontanus*), Siberian sturgeon (*Acipenser baerii*), beluga (*Huso huso*) and sterlets (*Acipenser ruthenus*).



Sturgeon were once abundant, but the harvesting, primarily for the production of caviar, decimated wild populations. Now both the meat and the roe are prized. Sturgeons are cartilaginous fish with plates covering the skin, which adds to their prehistoric appearance. Sturgeon are the largest freshwater fish in North America. U.S. farm-raised sturgeon is rated as a "Good Alternative" by the Monterey Bay Aquarium Seafood Watch Program. Some of the most renowned caviar suppliers in the world use sustainably produced U.S. farm-raised sturgeon roe in their products. This helps to take



harvest pressure off wild sturgeon and will allow those populations to rebound, so that recreational fishers can continue to enjoy the thrill of catching a wild sturgeon.

Red Drum (*Sciaenops ocellatus*)



Red drum (redfish) can be baked, broiled, grilled, sautéed or poached. It can be easily identified by the large black spot at the base of the tail. Drums get their name from a sound that they produce by contracting a muscle connected to their air bladder. The sound can be very loud and even heard on shore. Coastal Native Americans used the otoliths or ear bones of drum as trinkets and charms since they are hard and pearly. Red drum can be sold under the name drum or redfish.

Finfish

Sturgeon continued

FLAVOR PROFILE: U.S. farm-raised sturgeons have a mild, delicate flavor. The raw flesh is light pink but cooks up white. The flesh is firm with a texture that is similar to chicken or veal.

PRODUCTION METHODS: Sturgeon are

commonly raised in indoor or outdoor tanks. They can also be raised in cages, large pools, and ponds.



PRODUCT FORMS: Fresh, Bullets (headed & gutted, tail & fins removed), fillets, steaks, frozen bullets, fillets and steaks. Value-added products include smoked sturgeon and caviar.

The term, caviar, when used alone is reserved for the salted roe of fish of the sturgeon family. Beluga caviar has a rich, creamy flavor, and has the largest egg. It is the most expensive caviar. Beluga caviar is from the eggs of the beluga sturgeon (*Huso huso*).



Sevruga caviar is from a smaller sturgeon. It is light gray in color

with a strong flavor.

Osetra is golden caviar and has a nutty flavor.

Sterlet caviar is recognized by its small golden eggs. This caviar was once reserved for royalty but now, thanks to aquaculture, it is becoming more available.

Malossol is a term used to describe types of caviar good enough to be produced using very little salt.

SERVING

SUGGESTIONS:

- U.S. farmed sturgeon

should be cooked quickly.

- Sautéing is a preferred cooking method.
- Because of their firm textured meat, sturgeon is an ideal candidate for kebobs.
- Caviar should never be served in a metallic bowl or with metallic utensils because of oxidation. It should be served ice cold, generally in a bowl buried in ice. Utensils should be bone, plastic, glass, or, most properly, mother of pearl.

Tilapia



A number of different species are marketed under the name tilapia. The most commonly farmed species are the Nile tilapia (*Oreochromis niloticus*), the Mozambique tilapia (*Oreochromis mossambicus*) and the blue tilapia (*Oreochromis aureus*). These species are fast-growing, hearty and can live in a wide range of environments. Tilapia can vary in color from a red to black to the common gray striped pattern.

In the past, tilapia has been sold under the name St. Peter's fish because it may have been one of the fish that was harvested in the Sea of Galilee. However, the name St. Peter's fish more properly refers to John Dory (*Zeus faber*) a saltwater fish. The Food & Drug Administration does not allow the name St. Peter's fish to be used for tilapia.

PRODUCTION METHODS: Because they are such hearty fish, tilapia are the second most cultured fish in the world after carp. They are grown in ponds, tanks and recirculation systems. Since they have an herbivorous diet and produce more protein than they consume, they are viewed as one of the most sustainable farm-raised fish. Many groups including the Monterey Bay Aquarium rate tilapia grown in the United States as one of the "Best



Nutrition Facts	
Serving size 6.0 (170g)	
Servings Per Container	
Amount Per Serving	
Calories 179	Cal from Fat 62
% Daily Value*	
Total fat 7g	10%
Saturated Fat 2g	8%
Trans Fats 0g	
Cholesterol 102mg	35%
Sodium 92 mg	4%
Total Carbohydrate 0g	0%
Dietary Fiber 0g	0%
Sugars 1 g	
Protein 27g	
Vitamin A 25%	Vitamin C 0%
Calcium 2%	Iron 8%
*Percent Daily Values is based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.	
	Calories 2,000 2,500
Total Fat	Less than 65g 80g
Sat Fat	Less than 20g 25g
Cholesterol	Less than 300g 300mg
Sodium	Less than 2400 mg 2400mg
Total Carbohydrates	300g 375g
Dietary Fiber	25g 30g
Calories per gram:	
Fat 9	Carbohydrate 4 Protein 4

Finfish

Tilapia continued

Choices” for sustainability and product safety. Because tilapia are largely a product of their environment, good water quality is critical. Poor water quality can result in an off flavor. For the safest and best quality product, select U.S. grown fish



FLAVOR PROFILE:

Tilapia has a mild, slightly sweet flavor that makes it ideal for a number of foodservice options including hospitals, nursing homes and other health care facilities as well as restaurants. It’s also a great choice for the home cook. The meat is firm, tends to hold together, and is flaky when cooked.

PRODUCT FORMS:

Farm-raised tilapia can be purchased live, fresh or frozen. Individually Quick Frozen (IQF) boneless fillets are an ideal choice. Fresh and frozen fish are available whole, headed and gutted (H&G), and fillets both skin on and skin off. Value-added products include breaded, marinated, and sauced fillets.

SERVING

SUGGESTIONS:

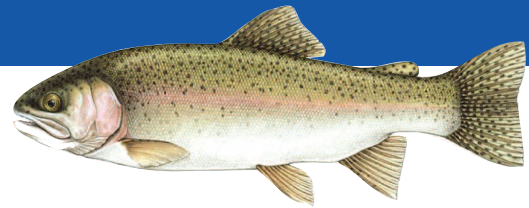
- Mild in flavor, U.S. farm-raised tilapia works well with almost any sauce.
- U.S. farm-raised tilapia’s meat will hold together so it can be used in bouillabaisse or

Nutrition Facts			
Serving size 6.0 (170g)			
Servings Per Container			
Amount Per Serving			
Calories 163	Calories from Fat 26		
% Daily Value*			
Total fat 3g	4%		
Saturated Fat 1g	4%		
Trans fats 0g			
Cholesterol 85 mg	30%		
Sodium 88 mg	4%		
Total Carbohydrate 0g	0%		
Dietary Fiber 0g	0%		
Sugars 1 g			
Protein 34g			
Vitamin A 2%	Vitamin C 10%		
Calcium 2%	Iron 4%		
*Percent Daily Values is based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.			
Total Fat	Calories	2,000	2,500
Sat Fat	Less than	65g	80g
Cholesterol	Less than	20g	25g
Sodium	Less than	300g	300mg
Total Carbohydrates	Less than	2400 mg	2400mg
Dietary Fiber		300g	375g
Calories per gram:		25g	30g
Fat 9	Carbohydrate 4		Protein 4

other fish stews and chowders.

- Try crushed nuts as a coating.
- A fried U.S. farm- raised tilapia sandwich is a good lunch offering.
- Use U.S. farm-raised tilapia in fish & chips.
- Dress it up with some interesting sauces.
- It is important that the waitstaff can explain what tilapia is, how it was raised, where it was raised, why it is sustainable, and that it is a great meal choice.

Trout



The varieties of farmed trout include rainbow trout (*Onchorhynchus mykiss*), brook trout (*Salvelinus fontinalis*), and brown trout (*Salmo trutta*). A steelhead trout is a rainbow trout that spends part of its life cycle in salt water. The Monterey Bay Aquarium Seafood Watch Program rates U.S. farm-raised trout as a “Best Choice.”

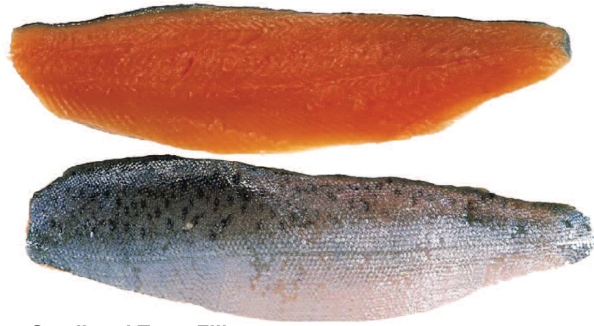
FLAVOR PROFILE: Farmed trout meat color ranges from cream to pale orange-pink and sometimes a deeper red-pink. Trout are rich and full-flavored, yet delicate.

PRODUCTION METHODS: Because wild trout live in fast-running, oxygen-rich streams, farmed trout are generally raised in raceways.



PRODUCT FORMS: Farmed trout can be purchased live, fresh or frozen year round. One of the most common product forms is head-on, dressed weighing 8-10 ounces.

Trout continued



Steelhead Trout Fillet

Packaged frozen trout fillets should be rock hard, clear of ice crystals, have no white spots indicating freezer burn, and show no signs of thawed juices. Smoked trout can be a wonderful addition to any menu.

SERVING SUGGESTIONS:

- U.S. farm-raised trout has a cachet of characteristics that evoke thoughts of fresh local food and the outdoors.
- U.S. farm-raised trout is an extremely versatile fish often featured in preparations like Florentine, meunière, amandine, Veronique, sweet and sour, curried, stuffed, trout cakes and the list goes on.
- Couple U.S. farm-raised trout with fiddlehead ferns or asparagus to bring together the tastes of the outdoors and early spring.
- Bright summer or baby vegetables paired with a lightly sautéed U.S. farm-raised trout fillet will be a star on the menu.
- Or how about a cold U.S. farm-raised trout dish accompanied by a crisp salad of spring greens or fruit.
- U.S. farm-raised smoked trout and smoked trout spreads can be a good option for catering.



Nutrition Facts	
Serving size 6.0 (170g)	
Servings Per Container	
Amount Per Serving	
Calories 240	Calories from Fat 95
% Daily Value*	
Total fat 11g	15%
Saturated Fat 2g	10%
Trans fats 0g	
Cholesterol 100 mg	35%
Sodium 87 mg	4%
Total Carbohydrate 0g	0%
Dietary Fiber 0g	0%
Sugars 1 g	
Protein 34g	
Vitamin A 10%	Vitamin C 8%
Calcium 4%	Iron 4%
*Percent Daily Values is based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.	
	Calories 2,000 2,500
Total Fat	Less than 65g 80g
Sat Fat	Less than 20g 25g
Cholesterol	Less than 300g 300mg
Sodium	Less than 2400 mg 2400mg
Total Carbohydrates	300g 375g
Dietary Fiber	25g 30g
Calories per gram:	
Fat 9	Carbohydrate 4 Protein 4

Yellow Perch

(*Perca flavescens*)



Yellow perch has always been a favorite sport fish and now aquaculture brings this popular fish to the table year-round. Because people enjoyed fishing for yellow perch so much, wild populations of this fish were decimated. Thanks to aquaculture that provides fish for stocking as well as for food, this fish has made a come-back.

PRODUCTION METHODS: Yellow perch are raised in ponds and in intensive tank culture.

FLAVOR PROFILE: Yellow perch has a sweet, mild flavor. Its firm flesh with no fishy odor makes it an ideal pan fish. Pan fish is a term used for small fish that fit nicely into a frying pan. Raw perch fillets are deep pink.

PRODUCT FORMS: Whole fish, skin-on fillets, breaded fillets, and nuggets.

SERVING SUGGESTIONS:

- This versatile fish can be deep-fried, pan fried, baked, sautéed, and grilled.
- Because the flavor is delicate and mild, it works well with lighter preparations such as a cucumber or browned butter sauce.
- Yellow perch is a favorite choice for Friday night fish fries throughout the Mid-West where it is often accompanied by French fries or potato pancakes, coleslaw, and, sometimes, baked beans.

Nutrition Facts	
Serving size 60g	
Amount Per Serving	
Calories 55	Calories from Fat 5
% Daily Value*	
Total fat 1g	1%
Saturated Fat 0g	1%
Trans fats	
Cholesterol 54 mg	18%
Sodium 37 mg	2%
Total Carbohydrate 0g	0%
Dietary Fiber 0g	0%
Sugars 1 g	
Protein 12g	
Vitamin A 0%	Vitamin C 2%
Calcium 5%	Iron 3%
*Percent Daily Values is based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.	

Shellfish

Hard Clams

(*Mercenaria mercenaria*)



When Europeans first came to New England, they found piles of clam shells all along the coast where local populations feasted on shellfish. In New England, hard clams are often called by their Algonquin name, *quahogs* (pronounced co-hogs). The newcomers were quick to follow in this culinary tradition and their traditional recipes for chowders, bouillabaisse, and cioppinos were put to good use.

PRODUCT FORMS: Hard clams are usually sold in four sizes. Littlenecks, the smallest, tenderest, and most expensive are usually steamed or served on the half-shell.



Topnecks can also be steamed or eaten raw, but are often used for baked clam appetizers. Cherrystones are larger and tougher. Chowders, the largest and toughest, hard clams, usually wind up in chowders or fritters. So we can say there is a clam for all seasons and for all reasons. U.S. farm-raised clams are usually harvested as littlenecks or topnecks.

PRODUCTION METHODS: Hard clam spat is produced in hatcheries.

The young clams are then transferred to upwellers in which plankton-rich water is pumped up and through the clams so they can feed and grow rapidly. Because water



must be pumped through the upwellers, energy costs can be significant. Some growers use mesh bags or nesting trays as a nursery system since the natural tidal flow carries plankton into the system and there is no need for additional energy costs.



Upwellers used to grow small clams



Clam screen

For final grow-out, clams are planted directly on leased bottom land where they feed on plankton and grow. Clam farmers use screens to protect the growing clams from predators such as crabs, snails, and starfish. Some farmers use a bag system that is placed directly on the sediment.



SERVING SUGGESTIONS:

- For extra eye-appeal, use littlenecks or topnecks in the shell as a garnish on pasta dishes, seafood samplers, etc.
- Serve unique pasta shapes (bellflowers) tossed with littlenecks in a garlic, olive oil sauce.
- Serve raw littlenecks on a bed of lettuce with assorted cocktail sauces.
- Serve littlenecks steamed in beer or wine as an appetizer.

Nutrition Facts

Serving size 6.0 (170g)		Servings Per Container		
Amount Per Serving				
Calories 146		Cal. from Fat 15		
		% Daily Value*		
Total fat 2g			4%	
Saturated Fat 0g			2%	
Trans fats 0g				
Cholesterol 51 mg			15%	
Sodium 1022 mg			45%	
Total Carbohydrate 6g			2%	
Dietary Fiber 0g			0%	
Sugars 1 g				
Protein 25g				
Vitamin A 10%		Vitamin C 0%		
Calcium 8%		Iron 15%		
*Percent Daily Values is based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.				
		Calories	2,000	2,500
Total Fat	Less than	65g	80g	
Sat Fat	Less than	20g	25g	
Cholesterol	Less than	300g	300mg	
Sodium	Less than	2400 mg	2400mg	
Total Carbohydrates		300g	375g	
Dietary Fiber		25g	30g	
Calories per gram:				
Fat	9	Carbohydrate	4	Protein 4

Shellfish

Hard Clams continued

- Increase your list of appetizers to include stuffed clams, clams Rockefeller, clams casino, clams Florentine, and steamed clams.
- Go ethnic and offer paellas, zarzuelas, cioppinos, bouillabaisse, and other seafood stews.
- And, of course, don't forget the pasta dishes.



often divided by netting into separate sections. This eliminates some of the crowding. Recirculating systems that clean and reuse water can be housed in greenhouses.

Recirculating Shrimp Culture

PRODUCT FORMS: Live prawns are sold in some Asian markets. Generally, whole prawns are sold in farmers' market and pond side.

SERVING SUGGESTIONS:

- If you are not planning to cook the prawns immediately, twist off the head before storing in the refrigerator or freezing.
- If you plan to freeze the prawns, twist off the head, and freeze the deveined shrimp in a plastic bag that has been filled with water. This allows the water to fill the open spaces between the shell and the meat preventing freezer burn. Squeeze out the excess water.
- When preparing frozen prawns, do not defrost completely prior to cooking.

Nutrition Facts			
Serving size 6.0 (170g)			
Servings Per Container			
Amount Per Serving		% Daily Value*	
Calories 121	Cal.from Fat 15		
Total fat 2g 4%			
Saturated Fat 0g 0%			
Trans fats 0g			
Cholesterol 214 mg			70%
Sodium 963 mg			40%
Total Carbohydrate 2g			0%
Dietary Fiber 0g 0%			
Sugars 1 g			
Protein 23g			
Vitamin A 6%	Vitamin C 0%		
Calcium 8%	Iron 2%		
*Percent Daily Values is based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.			
	Calories	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300g	300mg
Sodium	Less than	2400 mg	2400mg
Total Carbohydrates		300g	375g
Dietary Fiber		25g	30g
Calories per gram:			
Fat 9	Carbohydrate 4	Protein 4	

Manila Clams (*Venerupis philippinarum*)

It is believed that manila clams were accidentally introduced with a shipment of Pacific oysters in the 1930s. These small, fast growing clams are an ideal candidate for aquaculture. Their attractive appearance makes them particularly good for clam and pasta dishes where they can be served in the shell. Manila clams are most often raised in floating rafts.



Freshwater Prawns (*Macrobrachium rosenbergii*)

U.S. farm-raised freshwater prawns are rapidly growing in popularity. Since many producers are small, prawns are sold primarily in farmers' markets, pond side, and to local restaurants.



Prawns can be used in typical shrimp recipes.

PRODUCTION METHODS: Freshwater prawns can be grown in ponds or in recirculation systems. Because prawns are both territorial and cannibalistic, the ponds are

Shellfish

Geoduck (*Panopen abrupta*)



The geoduck (pronounced “gooey-duck”) is the world’s largest burrowing clam. The name is derived from the Nisqually Indian word “gwe-duk” which means “dig deep.” Because of the long siphon, the Chinese call it the “elephant trunk clam.” The siphon is the edible part. Geoducks are grown in the Pacific Northwest. The tough skin can be light tan to brown while the flesh is a rich cream color. Geoducks are a great delicacy in Hong Kong, mainland China and Japan and are becoming more popular in the United States. It is believed that the largest geoducks on record exceed 15 pounds. A few specimens are believed to have lived for 140 years! Geoducks are especially vulnerable to predators because the size of the siphon doesn’t allow them to close their shells.

FLAVOR PROFILE: The flavor is sweet and buttery with a crunch.

PRODUCTION METHODS:

Geoducks begin life in hatcheries. The seed are then planted in short PVC pipes on tidal flats. The PVC pipes protect the clams from



predators during their first year. Because the young clams need to escape from predators, they dig deep into the sand. For additional protection, the PVC pipes are covered with netting. After the first year, the young geoducks are removed from the protective the pipes and allowed to grow out in the sand.



PRODUCT FORMS: Live, fresh vacuum packed siphon meat, frozen vacuum packed siphon meat, and dried body meat.



SERVING SUGGESTIONS:

- Geoducks are generally cut in paper thin slices.
- They work well in fritters.
- Stir fries and hot pots are other popular preparations
- The meat can be fried, boiled or sautéed.
- Dried meat is often used in Chinese soups.
- Geoduck is often served as sashimi or sushi

Nutrition Facts

Serving size 6.0 (170g)		Servings Per Container	
Amount Per Serving		% Daily Value*	
Calories 146	Cal. from Fat 34		
Total fat 4g			6%
Saturated Fat	1g		4%
Trans fats	0g		
Cholesterol 48 mg			15%
Sodium 486 mg			20%
Total Carbohydrate 6g			2%
Dietary Fiber	0g		0%
Sugars	1 g		
Protein 20g			
Vitamin A	0%	Vitamin C	25%
Calcium	4%	Iron	35%
*Percent Daily Values is based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.			
	Calories	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300g	300mg
Sodium	Less than	2400 mg	2400mg
Total Carbohydrates		300g	375g
Dietary Fiber		25g	30g
Calories per gram:			
Fat	9	Carbohydrate	4
		Protein	4

Blue Mussels (*Mytilus edulis*)

U.S. farm-raised mussels tend to have a milder flavor than their wild cousins. The shells are thinner and the meat is larger. Because farm-raised mussels are suspended in the



Shellfish

Blue mussels continued



water column rather than growing on the bottom, cultured mussels will have less sand and grit, and are less likely to contain a pearl. Some farmers still grow mussels on the bottom, but

most are suspended. Always popular on European and Canadian menus, the blue mussel is becoming increasingly popular in the United States. Farmed mussels are inexpensive, elegant, great tasting, and add a continental touch to any menu

PRODUCTION METHODS: Stakes or ropes are suspended from wooden platforms or buoys, the mussel spat (the larval free swimming stage of some mollusks) settles, grows, and eventually, a crop of adult mussels is harvested. The growing mussels feed on the naturally occurring plankton in the water column.



FLAVOR

PROFILE: U.S. farm-raised mussels are plump and meaty with a mild, nutty flavor that adapts well to sauces.

PRODUCT FORMS: Mussels are sold fresh (whole or shucked), canned, frozen and smoked.

Nutrition Facts	
Serving size (about 1 piece)	
Amount Per Serving	
Calories 74	Cal. from Fat 8.7
% Daily Value*	
Total fat 1g	35%
Saturated Fat 0.1g	1%
Trans fats 0g	0%
Omega 3 0.15g	
Cholesterol 34mg	11%
Sodium 56 mg	2%
Total Carbohydrate 0g	0%
Dietary Fiber 0g	0%
Sugars 0 g	
Protein 12.77g	26%
Iron 78%	

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.

SERVING SUGGESTIONS:

- Mussels can be substituted in any dish that calls for clams or oysters.
- Try mussels marinière or mussels a l'escargot as an appetizer.
- Use whole mussels to add color to pasta

dishes, seafood stews, chowders, cioppinos, bouillabaisse, and paellas.

- Try a mussel soup. Billi-bi, a well-known cream-based mussel soup was invented for American millionaire William B. Leeds when he dined at Maxim's in Paris.
- Enjoy the national dish of Belgium, moules-frites, a combination of steamed mussels and shoestring potatoes.
- Steamed mussels can be served with several different sauces adding variety to your menu.

Oysters



Despite the statement, often attributed to Jonathan Swift, "He was a bold man who first ate an oyster," people have had an on-going love affair with this mollusk for centuries. The Ancient Romans were great fans of oysters and cultured them all across their empire. Five species of oysters are commonly sold in the United States.

A commonly accepted Old Wives Tale is that oysters should only be eaten in months that contain the letter "R". That excludes the summer months of May, June, July, and August, a time when oysters are sometimes spawning and can be watery and lack flavor. With new management techniques, those flavor problems have disappeared and oysters can be savored year-round. Since oysters were very popular throughout the 19th century, this prohibition was also a way to avoid transporting these delicious shellfish without the benefit of refrigeration. As with all seafood, the important thing to remember is to keep it cold.

The oyster shells or valves are different in shape. The lower shell tends to be cup shaped to hold the liquor so that the animal doesn't dry out during low tide. The deeper the cup, the more liquor and meat it can hold. When storing

Shellfish

Oysters continued



Rack and Bag Oyster Culture

oysters, it is a good practice to position the oyster so that the deeper shell is on the bottom.

FLAVOR PROFILE:

Like fine wines and coffees, U.S. farm-raised oysters have the characteristic of “terroir” which means that they vary in flavor depending upon the area in which they were raised. This accounts for the myriad of market names. Like wines, there is a list of common flavor complexities such as melon, cucumber, seaweed, mineral, iron, copper, sweet, and, of course, saltiness.

PRODUCTION METHODS:

Oysters can be produced through bottom culture, rack and bag, suspended tray, and long line. These various culture methods can impact the size, coloration, and “meatiness” of the oyster. Cultured oysters are typically more uniform and regular in shape than their wild cousins. Each production method produces oysters with different characteristics. Oysters grown in areas where they are impacted by tidal flow and allowed to dry during low tides generally have stronger shells and are sometimes preferred by shuckers.

Like clams and mussels, oysters can actually improve the environment by filtering nutrients and phytoplankton out of the water. This can improve the clarity of the water and the water’s ability to hold dissolved oxygen.

Because oysters can spawn several times before they are harvested, they can also seed natural shellfish beds. Oysters

Nutrition Facts	
Serving size 6.0 (170g)	
Servings Per Container	
Amount Per Serving	
Calories 354	Cal. from Fat 205
% Daily Value*	
Total fat 23g	35%
Saturated Fat 5g	35%
Trans fats 0g	
Cholesterol 94 mg	30%
Sodium 100 mg	4%
Total Carbohydrate 0g	0%
Dietary Fiber 0g	0%
Sugars 1 g	
Protein 35g	
Vitamin A 2%	Vitamin C 10%
Calcium 2%	Iron 4%
*Percent Daily Values is based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.	
Total Fat	Calories 2,000 2,500
Sat Fat	Less than 65g 80g
Cholesterol	Less than 20g 25g
Sodium	Less than 300g 300mg
Total Carbohydrates	Less than 2400 mg 2400mg
Dietary Fiber	300g 375g
Calories per gram:	25g 30g
Fat 9	Carbohydrate 4 Protein 4

form reefs, providing homes and hiding places for other marine creatures.

Oysters are an excellent source of important vitamins such as B1 thiamin, B2 riboflavin, B3 niacin, and A. They are also good natural sources of minerals such as iron, iodine, magnesium, zinc, and calcium.



Antique Oyster Can

Oysters are amazingly high in nutrition. Six ounces of oysters provide more than one-half the daily requirement of iron and copper, half the iodine, and one-tenth the recommended amount of protein, calcium, magnesium and phosphate. They are also an important source of zinc. At one time, oysters were touted as being the preferred food for invalids and young children because of the high nutritional content and easy digestibility.

PRODUCT FORMS: Oysters are available live, fresh shucked, flash frozen on the half-shell, frozen shucked, and in a variety of value-added products. The five species of oysters commonly found in the United States are listed below.

SERVING SUGGESTIONS:

- To add interest and fun to your menu, serve a sampler plate with oysters from different regions.
- Serve a cooked sampler plate with several different preparations such as oysters Rockefeller, Florentine, angels on horseback, and casino.
- Serve fried oysters with a dipping sauce as an appetizer.
- To help educate customers about oysters, price oysters individually and allow customers to make up their own sampler plate.
- Go beyond the usual wine pairing of Chablis and champagne and try other dry whites and sparkling wines.
- Spoon a traditional mignonette sauce (white wine, sherry vinegar, and chopped shallots) over half-shell oysters.
- For catering functions, use flavored fried oysters as a passed item. Lemon pepper and Cajun flavorings are great for this occasion.

Shellfish

Eastern Oyster

(*Crassostrea virginica*)



Eastern oysters are native to the East and Gulf Coasts of the United States. There are hundreds of named varieties. Some common varieties are Blue Point, Chesapeake Bay, James River, Cotuit, Moonstone, Cape May Salt, Island Creek, Apalachicola, and Rappahannock River.

Pacific Oyster

(*Crassostrea gigas*)

Pacific oysters are sold under a variety of names including Hama Hama, Mud River, Malispina, Skookum, Hawks Point, Samish Bay, Totten Inlet, and Willapa Bay. Pacific oysters are the most widely cultured oysters in the world. Many people describe their flavor as “creamier” than other oysters. The Pacific oyster was introduced decades ago when native stocks collapsed.



Kumamoto

(*Crassostrea sikamea*)

Kumamotos, kumos or kumamots for short, were originally from Kumamoto Bay in Japan. They were brought into the U.S. in 1945. Because of their fruity or melon-like flavor, they tend to be one of the most popular oysters. The shell length is between 2 and 3 inches. Kumamotos are sold simply under the species name.



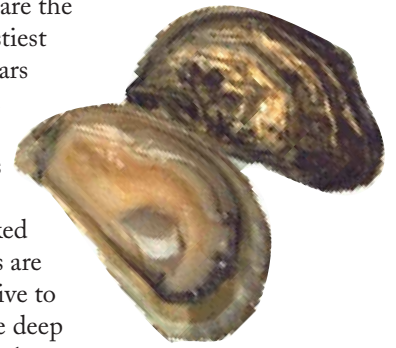
Olympia Oyster

(*Ostrea lurida*)

Olympia oysters or “ollys” are the smallest, but one of the tastiest oysters. It takes about 3 years for an “olly” to grow to the size of a fifty-cent piece.

The average shell length is between 1 ½ and 2 inches.

There are about 250 shucked oysters in a pint. Olympias are the only farmed oyster native to the Pacific Northwest. The deep shell cup tends to preserve the oyster liquor which adds to the sweet and metallic taste. Because they are unique, they are simply sold as Olympia oysters and no other designation is used.



European Flat Oyster

(*Ostrea edulis*)

European flat or plate oysters are named for the large, shallow shell. Most properly, the term, Belon oyster, is reserved for oysters harvested from the Belon River in France.

Unfortunately, because of disease and other changes in the environment, the supply of true Belon oysters has been greatly reduced and production now is almost exclusively limited to farm raised products. European flat oysters were introduced to Boothbay Harbor, Maine and other New England locations in the 1950's where they quickly established a population. European flat oysters belong to a different genus than Eastern Oysters.

FLAVOR PROFILE: European flat oysters have a much stronger flavor than other oysters. People generally either love them or hate them. A vast number of terms are used in describing the flavor: zinc, umami, tannic, iodine, copper, nutty, etc. This is a food where you have to make a personal assessment.

