Farm to School Month – Week Four: Halibut Day!!

HALIBUT
Let’s learn about halibut today, specifically the pacific halibut!! In the 2017 halibut season, Alaska harvest was set at 22.62 million lbs by the National Oceanic and Atmospheric Administration Fisheries. That is a lot of delicious white fish!!

Why take a whole day to look at halibut? Well, halibut, along with black cod, and crab are high value species. Despite only accounting for 2 percent of total Alaska seafood volume, these three species account for 18-20 percent of the labor income and economic output produced by the Alaska seafood industry.

Oh, and let’s not forget that in 1996 the current world record pacific halibut was caught in Alaska near Dutch Harbor. That beast weighed 459 lbs!! Now, in 2014, a 482 lbs halibut was caught near Glacier Bay but was disqualified as the world record by the International Game Fish Associations because it was shot and then harpooned before it was brought on the boat.

The Roots of Halibut History
- Alaska Natives once fished for halibut with wooden hooks suspended below floats made from seal stomachs. Their fishing line was made from cedar bark, spruce roots, kelp, and other natural materials.
- Commercial halibut fishing probably began in 1888 when three sailing ships from New England fished off the coast of Washington.
- Homer, Alaska, claims the title of "Halibut Capital of the World" because of the large volume of both sport and commercial halibut fishing in the area.
- Sport fishing for halibut in Alaska is a very popular activity; it is a strong fighter and one of the world’s largest bony fish with an impressive yield of firm, white flesh.
- Fishing for Pacific halibut is regulated by the International Pacific Halibut Commission. Members from the United States and Canada meet yearly to review research, check the progress of the commercial fishery, and make regulations for the next fishing season. The management of halibut fishing by this commission is intended to allow a sustainable yield.

Let’s Move into the Science of Pacific Halibut
Pronunciation: hal-uh-buh t
Spanish name: hipogloso
Family: Pleuronectidae
Genus: Hippoglossus
Species: H. stenolepis

Pacific halibut, is a species of righteye flounder. They are called "righteye flounders" because most species lie on the sea bottom on their left sides, with both eyes on their right sides. This very large species of flatfish is native to the North Pacific and is fished by commercial fisheries, sport fishers, and subsistence fishers. It is found on the continental shelf of the North Pacific Ocean and Bering Sea. Fishing for the Pacific halibut is mostly concentrated in the Gulf of Alaska and the Bering Sea, off the west coast of Canada. Small halibut catches are reported in coastal Washington, Oregon, and California. Halibut are demersal, living on or near the bottom of the water and prefer water temperatures ranging from 37.4 to 46.4 degrees Fahrenheit. Pacific halibut belong to the family Pleuronectidae. They are among the largest ray-finned fishes in the world.

Pacific halibut have diamond-shaped bodies. They are more elongated than most flatfishes, the width being about one-third of the length. It has a high arch in the lateral line over the pectoral fin, and a lunate, or crescent-shaped tail, which is different from other flat fishes. Small scales are embedded in the skin. Halibut have both eyes on their dark or upper sides. The color on the dark side varies, but tends to assume the coloration of the ocean bottom. The underside is lighter, appearing more like the sky from below. This color adaptation allows halibut to avoid detection by both prey and predator.

How and Where Do Halibut Live?
Halibut begin life as larva in an upright position with an eye on each side of their head. When they are about an inch long, their left eye migrates over their snout to the right side of their head, and the color of the left side fades. Halibut feed on plankton during their first year of life. Young halibut (1 to 3 years old) feed on euphausiids (small shrimp-like crustaceans) and small fish. As halibut grow, fish make up a larger part of their diet. Larger halibut eat other fish, such as herring, sand lance, capelin, smelt, pollock, sablefish, cod, and rockfish. They also consume octopus, crabs, and clams. Female halibut grow faster and reach larger sizes than male halibut. Male halibut rarely reach a length of three feet.

Young halibut, up to 10 years of age, are highly migratory and generally migrate in a clockwise direction east and south throughout the Gulf of Alaska. Halibut in the older age classes tend to be much less migratory. Older fish often use both shallow and deep waters over their annual cycle. Pacific halibut are found on or near the continental shelf through much of the northern Pacific Ocean, from California northward to the Chukchi Sea, and from the Gulf of Anadyr, Russia southward to Hokkaido, Japan. They are typically found near the bottom over a variety of bottom types, and sometimes swim up in the water column to feed. They usually inhabit waters between 20 and 1,000 ft, but have been found at depths up to 3,600 ft.

Reasons to Eat Halibut
A 3 oz serving of halibut provides:
• Halibut is a food that contains niacin, potassium, selenium, protein, omega-3 fatty acids and vitamin B6.
• It is an excellent source of omega-3 fatty acids and protein.
• It is a good source of folic acid, vitamin B6 and vitamin B12.

What are omega-3 fatty acids?
• Omega-3 fatty acids are polyunsaturated fats that are important for normal metabolism.
• There are three types of omega-3 fatty acids involved in human metabolism and come from either plant or marine oils.
• Evidence suggests that omega-3 fatty acids modestly lower blood pressure (systolic and diastolic) in people with hypertension and in people with normal blood pressure.
• The Canadian Food Inspection Agency has recognized the importance of DHA omega-3 and permits the following claim for DHA: "DHA, an omega-3 fatty acid, supports the normal physical development of the brain, eyes and nerves primarily in children under two years of age."

Some Great Halibut Facts
• The Pacific halibut (Hippoglossus stenolepis) was called "haly-butte" in Middle English, meaning the flatfish to be eaten on holy days.
• The Pacific halibut has a flat, diamond-shaped body.
• In the North Pacific, the halibut’s only common predators are the sea lion (Eumetopias jubatus), orca whale (Orcinus orca), salmon shark (Lamna ditropis) and humans (Homo sapiens).
• Halibut are the largest of all flatfish. An adult halibut has been measured at 8 feet long, 500 pounds, and with a life span of more than 40 years!
• Halibut have small scales embedded in the skin.
• While halibut are born with an eye on each side of their head, as they grow, one eye migrates so that both eyes end up on the same side of their head (on the upper side), which enables them to see predators and prey better as the halibut lay camouflaged on the sea bottom.
• Halibut up to 10 years of age migrate often in a clockwise direction east and south throughout the Gulf of Alaska. Older halibut don't migrate as much. These older fish often use both shallow and deep waters over the annual cycle. However, they have much smaller "home ranges" than younger, more migratory fish.
• Halibut live quite a long time, but their growth rate varies depending on locations and habitat conditions. Females grow faster and live longer than males. The oldest recorded female was 42 years old and the oldest male was 27 years old.
• Halibut - juvenile and adult - do not appear to be popular items on the menus of many fishes, although juvenile halibut have been found in the stomachs of adult halibut, Pacific cod and sand sole.
• Because they are strong swimmers, halibut are able to eat a large variety of fishes. In fact, halibut will feed on almost any animal they can fit in their mouths including: sand lance, octopus, crab, salmon, hermit crabs, lamprey, sculpin, cod, pollock and flounder.

Let’s Eat...
Baked Halibut Fish Sticks and tartar sauce

Serves 4

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<th>Ingredients</th>
<th>Amount</th>
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<tbody>
<tr>
<td>Boneless halibut or cod fillets, cut into strips</td>
<td>1 pound</td>
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<tr>
<td>Vegetable oil</td>
<td>2 Tablespoons</td>
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<tr>
<td>Panko crumbs, lightly toasted</td>
<td>1 ½ cups</td>
</tr>
<tr>
<td>Salt</td>
<td>1 teaspoon</td>
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<tr>
<td>Flour, all-purpose</td>
<td>½ cup</td>
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<tr>
<td>Eggs</td>
<td>2 each</td>
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Homemade tartar sauce

<table>
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<th>Ingredients</th>
<th>Amount</th>
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<tbody>
<tr>
<td>Yogurt, plain, non-fat</td>
<td>¼ cup</td>
</tr>
<tr>
<td>Mayonnaise</td>
<td>¼ cup</td>
</tr>
<tr>
<td>Pickle Relish</td>
<td>¼ cup</td>
</tr>
<tr>
<td>Lemon, juiced</td>
<td>½ each</td>
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1. Preheat oven to 425°F.
2. Place flour, eggs, and panko crumbs in three shallow containers. Dry off fish strips with paper towels. Coat each piece in the flour, then place in the egg, and lastly coat completely with panko. Place coated fish on a baking sheet with a greased wire rack. (The wire rack is not necessary but will help the fish get crispier)
3. Bake for 6 to 8 minutes then flip fish over. Continue to bake for 6 to 8 minutes, or until fish is fully cooked and exterior is crispy.
4. For homemade tartar sauce, combine all ingredients and refrigerate until ready to serve.
5. Serve fish and sauce with steamed broccoli or green beans.

Yummy Goodness and Tasty Tips!!

- While buying fresh and whole halibuts, look for ones that are buried in ice. As for fillets, they will be found lying on top.
- For fresher varieties, check the flesh. This must be bright white without any signs of browning or gaping. Also, the fish should have clear eyes, clean red gills and moist scales.
- Alternatively, you can even smell and confirm the halibut’s freshness; it must smell of seawater. In case it exudes a strong fishy, ammonia-like smell, it is not advisable to purchase it.
- It is important to keep the halibut in cold storage. Do not keep it unrefrigerated for a long time, as these marine creatures are sensitive to temperatures.
- Remove the halibut from its packaging and rinse it thoroughly under running water. Thereafter, pat dry completely with paper towels. Place it in a shallow pan and cover it with crushed ice. Wrap the fish in cling film and store in the coolest part of the refrigerator for up to 2 days.
- Change the ice once or twice a day, immediately after you notice melting.
- You can even wrap the halibut properly and put it in the freezer where it can be kept for up to 2-4 months.
- Halibut is perfect fish for baking, broiling, poaching, frying, steaming, and smoking. The meat from the bottom is used in soups and chowders, and the top side of the fish for steaks.