SUSTAINABLE U.S. SEAFOOD:

A JOURNEY FROM SEA TO MARKET

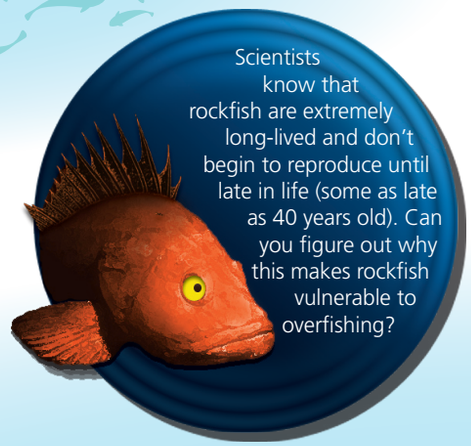
Go on a journey with NOAA Fisheries Service, in this five part series, to learn about the complex process and the people involved in getting safe and sustainable seafood to your dinner plate.

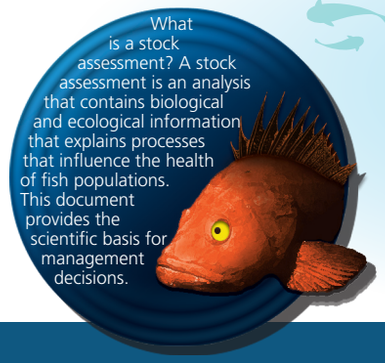
Science: What is a healthy fish population?

"Healthy" can mean a lot of things—it could mean it's good for you or it might mean it's free from pollutants. However, scientists say a fish population is healthy if it can support ongoing fishing efforts. To figure out how to do this a scientist must ask the right questions based on observations (a hypothesis) and collect information using various methods. That information then supports an answer to the question (conclusion). One of the questions a fishery scientist asks is "What factors might influence the growth or decline of a fish population?" If a scientist has never observed a fish population before, then she may think about what could influence the growth or the decline of a human population to get ideas for what type of data to collect. Can you think of something that happens every 10 years in the U.S. where a lot of population data are collected? That's right—the U.S. Census. Fishery scientists do a similar thing every year to collect data about various fish populations off the coast of Alaska and the West coast. They are called research surveys. They collect the data needed to get a population estimate and to learn about a fish's life history. In addition, they are now investigating how climate change influences fish populations. Do you have any ideas?

How many fish are in the ocean?

Counting fish in the ocean is a difficult task. The ocean is deep, dark, cold and at times dangerous. So how do scientists figure out how many fish are in the ocean? Since the ocean is huge, scientists use methods to estimate population size. The types of tools scientists use to estimate population size depend on the type of fish and where they live. For example, scientists may use large ships with big trawl nets to survey deep offshore waters. They take a number of small samples within a large area that will then represent the entire area of interest. From these samples, scientists collect a variety of data such as type of fish, number of fish, weight of fish and length of fish. With the data from these surveys, scientists can estimate the abundance, density and biomass of a given species or group of species within a specific part of the ocean.





What are fishermen catching?

Fishery observers are scientists who work aboard fishing boats or at a dock to collect important data such as how many fish were caught, the sex and age of the fish and what species were found in the catch (including bycatch). This information is used by managers to decide when to open or close a fishery to maintain the health of the population.

WALLEYE POLLOCK (ALASKA)

Scientists know a lot about walleye pollock life history! This knowledge has helped make it one of the best managed fisheries in the world.

Why are pollock important?

Walleye pollock is currently the largest fishery in the U.S by volume (1.9 billion pounds were harvested in 2010) and is valued at over $500 million. It is exported to countries like Japan and the European Union. It is the most widely consumed fish in the world. You may have eaten it if you've had fish sticks or surimi (the main ingredient in fake crab).

Where do they live?

Scientists collect pollock data using trawl gear. They used this data to map locations of where pollock are found and determined that large schools of pollock are widely distributed throughout the North Pacific Ocean, the Gulf of Alaska and the Bering Sea.

What do they eat?

By looking at stomach contents, scientists discovered that young pollock feed on krill, zooplankton and various crustaceans. Scientists also found that older pollock add juvenile pollock and other bony fish to their diet.

When do pollock reproduce?

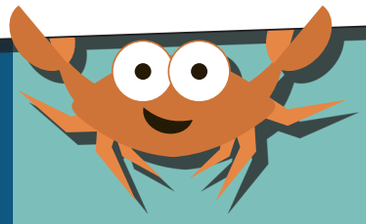
Using small mesh nets, scientists take samples from the top layer of the ocean to look for eggs and larval fish. They have learned that pollock eggs are pelagic and occur in large concentrations in locations like north of Unimak Pass, in Shelikof Strait and near the Shumagin Islands of Alaska.

How many pollock are there?

Every year scientists measure the pollock population's biomass in the Bering Sea and Aleutian Islands. The biomass has varied from a low of 4 million tons to a high of 12 million tons. (1 metric ton = 2,205 pounds) That's a lot of fish!

Healthy fish populations = Sustainable fisheries = Sustainable seafood!

In the U.S., NOAA Fisheries works towards harvesting seafood at levels that ensure healthy population growth, protects habitat and minimizes catch of bycatch species. Learn more about U.S. seafood at **FishWatch.gov**.



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