Beluga Caviar: The Endangered Delicacy

Abstract
Due to the high demand of the eggs of the Beluga Sturgeon for human consumption, the species, Huso huso, is nearing extinction in wild populations. The purpose of this paper is to discuss the various reasons for the sharp decline in Beluga Sturgeon populations in the last two decades. Some reasons are biological, such as the extremely long lifespan of the fish in comparison to many other varieties. Other reasons are that of overfishing and poaching. While much effort is made to save the sturgeon, the efforts are generally futile.

Introduction
Caviar is a precious delicacy produced by curing the eggs of certain species of fish. While many different species of fish are sought for their delectable eggs, the term “caviar” is reserved for fish who belong to the order of Acipenseriformes. While there are three types of caviar, the most valuable is that of the Beluga Sturgeon, Huso Huso. Beluga caviar is ideally very dark in color and tastes “like the sea” with a battery aftertaste.” (Cattaci, 2004) Beluga caviar is priced at $7,000-$8,000 per kilogram and the oldest of Belugas (about 100 years old) begin to produce an extremely rare white caviar that is sold for $24,000 per kilogram. (Cattaci, 2004) Huso Huso has been found in the Black, Caspian, Azov, and Adriatic Seas of Eastern Europe. Unfortunately, the wild Beluga population has dwindled as a result of human predation for their valuable eggs.

Reasons for Population Decline
H. Huso should not be seen as an animal unfit to live because of its inability to reproduce at a rate that keeps the species going. The root causes of H. Huso population decline are actually brought on by humans. Beginning in the 1960s, many of the rivers that serve as spawning grounds for the anadromous H. Huso were beginning to be dammed off for agricultural, municipal, and energy purposes. (Gesner, 2010) This causes a large problem for the anadromous Beluga Sturgeon attempting to migrate upstream to spawn. Some dams contain elevators to carry the fish to beyond the dam and access their upstream to spawn. Some dams contain elevators to carry the fish to beyond the dam and access their breeding grounds. After the Beluga lays the eggs, they become fertilized in the water and the resulting larvae drift for about a week back toward the sea with the river current. As they pass through the same dam the parents had to pass, the are often destroyed by the turbines in the hydroelectric dam. (Chakrabarty, 2003) To quantify the impact of dams of sturgeon population, look at the decrease of H. Huso in the heavily damned Volga River, to that of the un-dammed Ural River, both of which empty into the Caspian Sea. In 1994, about 7,000 Belugas were caught in the Volga River, decreasing to 2,800 by the year 2002. The Ural River, on the other hand, only saw a decrease from 3,900 catches to 2,500 during the same time period. (Caviar Emptor, 2005) Because of a huge demand for the rare eggs of a rare fish, the Beluga Sturgeon has also fallen victim to overfishing. (Fabricant, 2004) In addition to commercial fishing, many individuals in small villages in Kazakhstan are dependent on fishing for income, and a large beluga can produce upward $30,000 of caviar. (Caviar Mafia, 2008)

Preservation of the Beluga Sturgeon
Much effort has been made by both the United States and the international community to preserve the wild population of H. Huso. In September 2005, Beluga caviar was banned from import into the United States, while still allowing “personal amounts” of up to 1 kg of caviar (as long as it is properly labeled), it takes 10 years to mature, and most sturgeon in the wild do not reach sexual maturity, and then only spawns once. (Dean, 2005) Shortly afterward, in 2006, the United Nations banned the export of Beluga Caviar only to lift it after one year – less than a complete spawning cycle of H. Huso. (Barringer, 2007) The main efforts have been geared at policy change and enforcement, however, the policies are largely ineffective. Because local industries depend on the sturgeon for food and money, local authorities do not enforce bans on their capture. Furthermore, in Kazakhstan, the authorities in charge of protecting the fish often use their power to exploit its resources. (Discovery, 2011)

Image Citations


Bibliography
Breydon Beshore

Berkely Boschert
Biology 113

Biological Limitation
There are several biological limitations of H. Huso that prevent it from repopulating to a level that would change it’s “Critically Endangered” status by the IUCN Red List of Endangered Species. H. Huso has a lifespan of over 100 years and because it can reach sizes of up to six meters, has no known predators – besides humans. (Choe, 2012) Because it has such a long lifespan, H. Huso takes 10-18 years to reach sexual maturity, and then only spawns once every three to four years after that. (Gesner, 2010) As if it were not difficult enough for the sturgeon to repopulate, it has been observed that Beluga Sturgeon may be affected by the Allee Effect. (FAO, 2011 | Gesner, 2010) The Allee Effect proposes that some species thrive better when around others of its kind. (Stephens, 1999) If a species does more poorly when not in congregations, its lack of population density will only further contribute to its lack of population density.

This is a picture of a fish that I drew while I procrastinated making this project. It is a beluga sturgeon and this project is about a big fish.

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