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IPSO Preliminary Report on ocean stresses and impacts

Case Study 4

A Vanishing Resource: The Tale of the Chinese Bahaba

By Dr William Cheung

As the IPSO workshop made clear, climate change represents one of the greatest challenges to overall ocean health. However, overfishing is considered (by the 2010 Census of Marine Life) to be the biggest threat to marine biodiversity. Unlike climate change, it can be directly, immediately and effectively tackled by policy change.

Scientists at the IPSO meeting agreed that overfishing is exerting an intolerable pressure on ecosystems already under attack by the effects of acidification and warming, and other largely man-made ocean problems. A recent study showed that 63% of the assessed fish stocks worldwide are over-exploited or depleted and over half of them require further reduction of fishing, in order to recover.

The ocean once had abundant and diverse marine life. However, over-exploitation, caused by increasing demand for seafood from the growing population, ever improving technology and killing power of fishing fleets driven largely by subsidies, and ineffective governance has led to large reduction in many marine populations over the last century.

This is akin to the wave of mass extinction of megafauna caused by human hunting in the terrestrial environment tens of thousands of years ago. Overfishing is now estimated to account for over 60% of the known local and global extinction of marine fishes.

The near extinction of a fish called Chinese bahaba (*Bahaba taipingensis*) is one of the many examples that highlight how overfishing threatens marine biodiversity. It has taken less than seventy years for Chinese bahaba to become critically endangered after it was first described by scientists in the 1930s. Chinese bahaba can grow over 2 m in length (exceeding 100 kg) and distributes only along the southern and eastern coast of China. The fish supports a modest, but valuable, fishery because of its swimbladder that is believed to have medicinal value.

In the past, fishers targeted the large aggregations of the fish in the mouth of major estuaries including the Yangtze River and Pearl River. The fish would produce drumming

sounds through the vibration of its muscular swimbladder – something that helped fishers to locate them. In Hong Kong where fisheries for the Chinese bahaba used to exist, approximately 50 tonnes of the fish were landed annually in the late 1930s. By 1990s, because of the rapid increase in fishing capacity, Chinese bahaba was depleted by overfishing throughout its range. Only one fish could be caught sporadically once in every few years. During the same period, the price for the fish's swimbladder increased from little more than a few US\$ per kg in the 1930s to anywhere between US\$ 20,000 – 70,000 per kg.

The Chinese bahaba has now become so rare but valuable that every time an adult fish is caught, it is reported in the news. The fish is now listed as critically endangered in the IUCN Red List of Endangered species. Population is still declining and under threat from the heavy fishing pressure in the region.

The Chinese bahaba only represents one of the marine species with this conservation status in the world. Currently, over 500 species of marine organisms are threatened by human exploitation. This is probably an underestimation because only a small proportion of marine organisms have been assessed for their conservation status. Other examples of remarkable depletion of marine species by overfishing include the blue whale, the Atlantic bluefin tuna, Nassau grouper in the Caribbean, Knifetooth Sawfish in the tropical Indian and Pacific Ocean, and Angel shark in the northeastern Atlantic Ocean.

Dr William Cheung warns that the extinction threat for many species is increasing under multiple pressures. Lessening fishing pressure is one way to help build resilience across the ocean:

“The only chance for many of these species to recover is to stop overfishing and protect them so that the populations can rebuild. This is particularly urgent in the face of threats from other global ocean challenges including pollution, climate change, habitat destruction from human development and invasive species. If action is not taken immediately, our generation will see many more species to follow the footsteps of the Chinese bahaba.”

Reference: Sadovy Y. and **W. L. Cheung** (2003). Near extinction of a highly fecund fish: the one that nearly got away. *Fish and Fisheries* 4: 86-99.

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