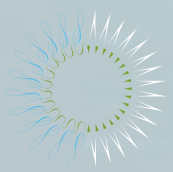
# The Story of Pacific Bluefin Tuna

THE PEW ENVIRONMENT GROUP

*For too long international fisheries managers have ignored Pacific bluefin and now the population is severely depleted – at less than 4 percent of its historical high.*



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COVER PHOTOGRAPH: Pacific bluefin tuna, *Thunnus orientalis*, Mexico, Pacific (Seapics.com)

## Introduction

The story of Pacific bluefin tuna is a tale of extremes. They are pursued by fishermen at every turn but largely ignored by fisheries authorities. They migrate across the world's largest ocean, but spawn in only three distinct areas. In parts of the world, they are caught one at a time by local artisanal fishermen; but in others, entire schools are scooped up by industrial purse seine nets. The Pacific bluefin is pursued at every stage of its life, from when it is a few kilogram (3 pound) juvenile to when it's fully grown at more than 450 kilograms (1,000 pounds). A single fish commonly sells for tens of thousands of US dollars and the first fish auctioned in 2013 fetched more than 1.7 million dollars– but comparably little money goes toward research or conservation. **Pacific bluefin have supported fishermen and coastal communities for thousands of years, but governments and managers have neglected this amazing fish. Now the population, at less than 4 percent of its historical size, is in grave danger.**

While these fish weren't even recognized as a distinct species until 1999, what little we do know about Pacific bluefin is awe-inspiring. Like their Atlantic cousins, Pacific bluefin play a very important role in their marine ecosystem as top predators, weighing up to 450 kg (1,000 pounds) and growing up to three meters (10 feet) in length. Compared to other fish species, bluefin mature slowly, which makes their populations especially vulnerable to overfishing. In the Pacific, scientists think that bluefin start reproducing between the ages of three and five years, though recent research suggests that some fish may reach maturity much later. Born in only three spawning grounds off the coast of Japan – in the East China Sea, the Sea of Japan and in the Pacific waters off Shikoku – many young Pacific bluefin begin a cross-oceanic migration when they are just one or two years old. While weighing only 2– 4.5 kg (five to 10 pounds), these juvenile fish make the 10,000 kilometer (6,000-mile) journey to the Baja California coast in search of food in the productive waters of the eastern Pacific. After two to four years foraging off the Mexican coast, they return home to the same western Pacific waters where they were born. Once they reach adulthood, they stay in the western Pacific for the rest of their lives, with some fish venturing further afield to southern waters off Australia and New Zealand.

Fishermen have targeted bluefin in the Pacific for thousands of years, chasing a fish prized for its high-quality, deep-red meat. Historical records indicate that coastal communities in both Japan and western Canada were landing bluefin as early as 3000 BC. In Japan, small-scale fishermen took bluefin primarily by harpoon and hook and line before the use of traps and driftnets began to spread throughout the region in the late-nineteenth century. At the same time, recreational fishermen off the coast of California's Catalina Island were targeting bluefin larger than 100 kg (220 pounds). In Mexico, the first commercial fisheries, mainly composed of purse seiners, started around 1914 and greatly expanded in the late-1950s, before declining in the 1980s and early-1990s. Also in the mid-20th century, the Japanese purse seine and longline fleets were expanding, catching bluefin on the spawning grounds and throughout the western Pacific.

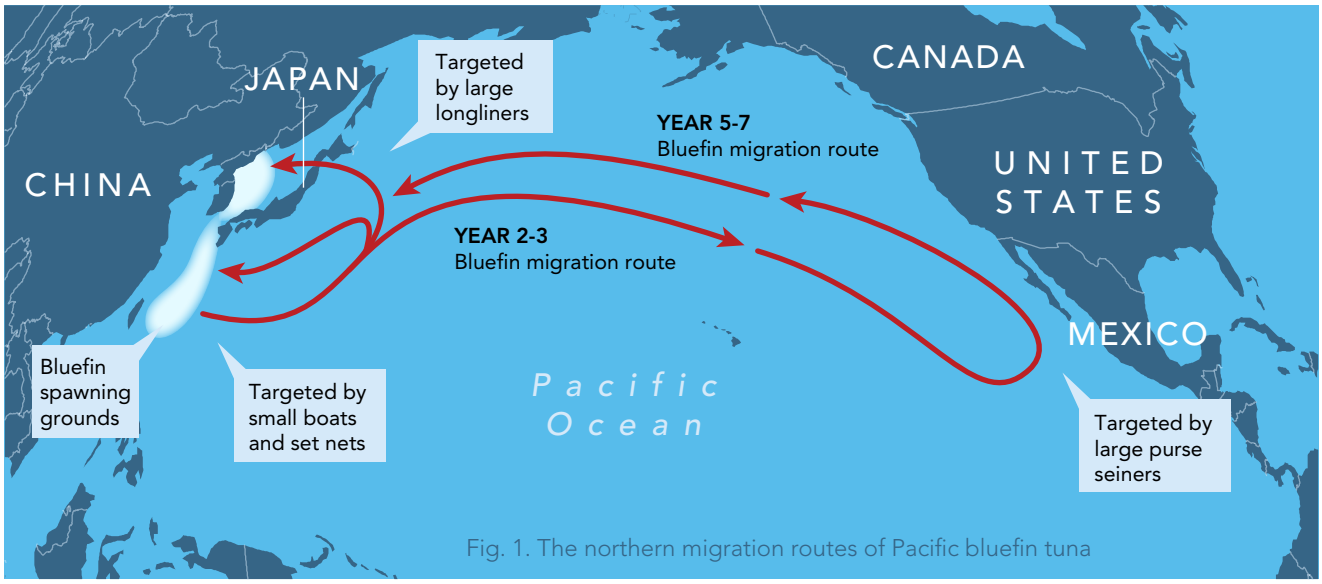


Fig. 1. The northern migration routes of Pacific bluefin tuna

## The Rise of Ranching

The most recent chapter of the Pacific bluefin story began in the mid-1990s, when increasing demand for sashimi-grade tuna in Japan led to the development of floating tuna ranches off the coast of Mexico. Similar to the ranches in Australia and the Mediterranean, bluefin are captured, fed, fattened, and eventually killed and sent to market. This process allows ranchers to increase the fat content of the fish, producing highly desirable and pricey bluefin for the marketplace. The majority of the bluefin captured and penned in the eastern Pacific are smaller than 100 centimeters (40 inches) - these are juveniles that are three to five years old and have not yet had the chance to reproduce.

The fate of the eastern Pacific fishery is strongly linked to what occurs in the waters of the western Pacific. Since these operations rely on young bluefin migrating across the Pacific, the size and success of the Mexican ranching industry is heavily dependent on the numbers of juvenile tuna that survive the fishing on the western Pacific nursery grounds and complete their journey. At one time in the early 2000's, 12 companies were permitted to run ranching operations. Now, there are only two active Pacific bluefin ranching permits in Mexico – both are owned by large, foreign companies.

## Japan's Dominance

Japan currently catches close to 90 percent of the bluefin taken in the western Pacific, with South Korea and Chinese Taipei accounting for much of the remaining 10 percent. Japanese purse seiners target small, juvenile fish as well as adult fish on the spawning grounds, while artisanal fishermen throughout the region tend to land small fish, using a mix of handlines, trolling and set nets. Japanese and Chinese Taipei longliners catch larger fish, especially on their spawning grounds.

The big fish caught by rod and reel fishermen have made headlines in recent years, as the first Pacific bluefin auctioned in Japan each January sells for an astronomical price (a staggering $1.76 million dollars in 2013). Seen as a way to gain publicity and free advertising for the business that purchases it, the first fish is sold for thousands of dollars per kilogram, well above normal prices. While there is much international interest in the auction price of this first Pacific bluefin, little attention is paid to the lack of regulation of both fishing and ranching, or to the bluefin's severely depleted population.

## The Lack of Management

The bluefin population in the Pacific is managed by two international organizations: the Western and Central Pacific Fisheries Commission

Feeding time at a Pacific bluefin tuna ranch, Baja California, Mexico. (Mark Conlin / SeaPics.com)

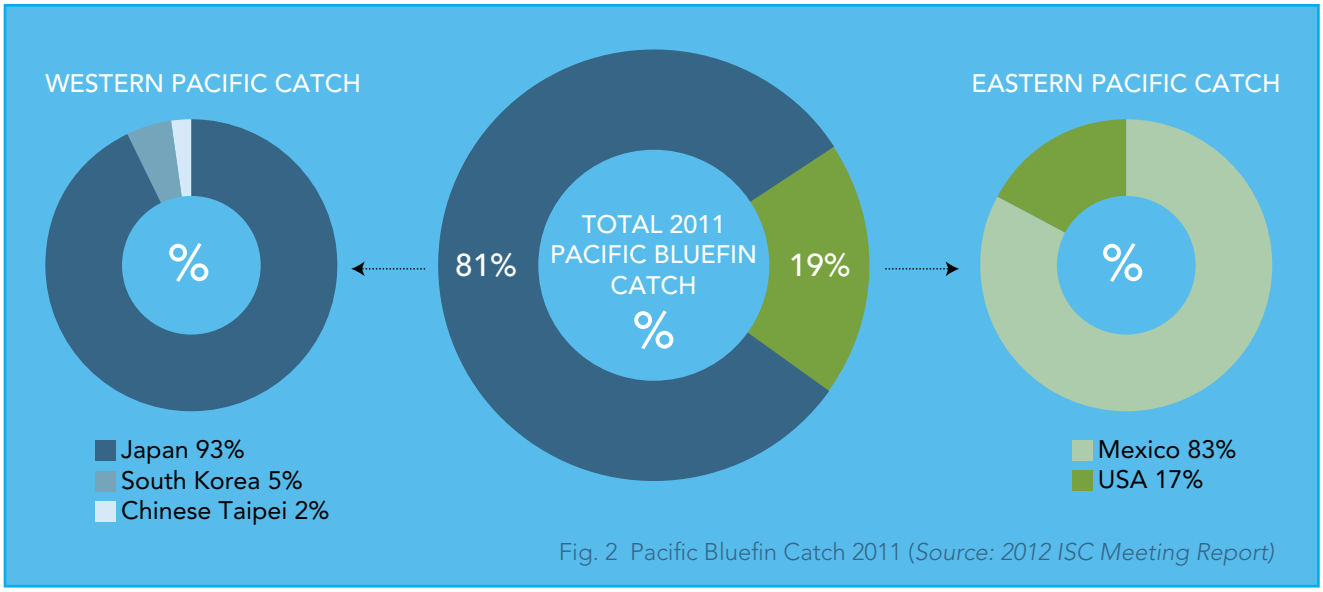


Fig. 2 Pacific Bluefin Catch 2011 (*Source: 2012 ISC Meeting Report*)

(WCPFC) in the western Pacific and the Inter-American Tropical Tuna Commission (IATTC) in the eastern Pacific. Made up of representatives from the member governments that fish for tuna in the Pacific, these two bodies are responsible for managing the fisheries and reviewing scientific assessments of the species that they oversee. In the case of Pacific bluefin, however, this management and monitoring has been inadequate and has failed to protect the population from serious decline. **Instead of working to manage this Pacific-wide fishery effectively, the WCPFC and IATTC have largely failed to responsibly manage the Pacific bluefin fishery.**

Until recently, neither the WCPFC nor the IATTC had established catch limits – or any other effective controls on the catch of Pacific bluefin. Countries fishing in the Pacific could set their own domestic regulations, but there were no overarching restrictions even though limits have existed for decades for Atlantic and southern bluefin. In 2012, for the first time, the IATTC restricted catches for the 2012–2013 fishing seasons in the eastern Pacific to 10,000 metric tons (mt), with a maximum of 5,600 mt for the 2012 season. Just months after the regulation was put in place, the IATTC announced that the 2012 quota had already been exceeded by 1,000 mt and the fishery was closed. While the IATTC took a critical first step in setting hard limits on the amount of Pacific bluefin that could be removed from the ocean, the limit was not science-based and its enforcement measures were not sufficient to prevent the fishermen from exceeding the quota.

**In the western Pacific, where bluefin are managed by the WCPFC, species-specific catch limits have never been adopted.** Management of the Pacific bluefin fishery involves members self-regulating their levels of "fishing effort," a term that is left to each member government to define individually. This has led to ineffective regulations that have failed to stop overfishing, especially of juvenile bluefin that have yet to reproduce. In fact, more than 90 percent of the Pacific bluefin caught in this area have not reached spawning age. By allowing such high numbers of these immature fish to be taken, the WCPFC is threatening the future of the population by significantly reducing its ability to recover and grow. Although current management measures were intended to prevent increases in catch, fishing mortality has actually increased by up to 41 percent over the last decade.

## Science Calls for Action

Stock assessments for the species are conducted by the International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean (ISC), a small intergovernmental group of scientists that provides advice to both the WCPFC and the IATTC on Pacific bluefin. In the most recent full assessment, released in early 2013, the ISC found that the Pacific bluefin population had declined by over 96 percent from its historic levels, the population was heavily overfished, and overfishing was occurring. Catch rates of the youngest bluefin, those under two years of

age, were of particular concern, with evidence that the fishery caught nearly all of the one year old fish. The ISC noted that without further limits on catch, the population would not recover and the current amount of fishing, especially on juvenile fish, was too high and could not be considered sustainable.

## A Path to Recovery

**For too long, international fisheries managers have ignored Pacific bluefin. While WCPFC and IATTC have recently begun to implement basic management measures, the population is now at less than 4 percent of historic levels and the stock has steadily declined since 1995. Given the alarming results of the latest stock assessment, it is vital that immediate action is taken to halt the decline of this iconic species and to begin rebuilding of the population.**

More than 90% of the bluefin caught in the western Pacific are juveniles, and fishing continues in the spawning grounds of this heavily overfished tuna species. Catch of juvenile Pacific bluefin must be reduced through strict minimum size limits, bluefin require protection on their spawning grounds, and the overall catch needs to be limited across the Pacific. Additionally, scientific knowledge needs to be increased so that future stock assessments can provide a clearer picture of the health of the Pacific bluefin population.

## Conclusion

To reverse the decline of the bluefin population, Pew believes that the most responsible course of action is to immediately suspend the fishery until the WCPFC and the IATTC:

- Set catch limits that are based on the best available science
- Close the directed fishery on the spawning grounds
- Implement an effective monitoring program and enforcement process
- Ensure management measures are complementary and applied consistently on both sides of the Pacific
- Collect better data on the level of artisanal catch in Japan, South Korea and beyond
- Increase the transparency of the stock assessment process
- Increase scientific understanding and incorporate this new science into the stock assessment, especially regarding:
  - Maturation age
  - Triggers for bluefin migration from the northwestern Pacific to the eastern and southern Pacific
  - Percentage of juvenile bluefin that migrate to the eastern Pacific
  - Natural mortality
  - Number of young produced by each spawning adult.


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