

Tag-A-Giant Foundation

TAG



OUR MISSION

The Tag-A-Giant Foundation (TGF) is committed to reversing the decline of northern bluefin tuna populations by supporting the scientific research necessary to develop innovative and effective policy and conservation initiatives. We will engage scientists, policy makers, fishermen and citizens to chart the course towards rebuilding and maintaining sustainable populations of northern bluefin tuna in the Atlantic and Pacific oceans.

OUR VISION

An abundant future for northern bluefin tuna in the Atlantic and Pacific oceans. A guaranteed role for bluefin as a top predator in ocean ecosystems. Robust recreational and commercial fisheries for bluefin tuna that thrive in both oceans.



Tag-A-Giant

Bluefin tuna. They're big – the world's largest bony fish weighing as much as 1,500 pounds. They're fast – crossing entire ocean basins in 30 days. And they're in demand – in 2001, one 444-pound fish sold for nearly \$175,000 at Tokyo's famed fish auction.

Humans have long been captivated by the bluefin's mystique. Images of bluefin adorn artworks and coins over 2,500 years old. Legendary anglers like Zane Grey and Ernest Hemingway stalked giant bluefin in the early 1900s. Scientists have long reveled in the bluefin's unique biology; they are warm-bodied like us. And now, countless fishermen pursue the dwindling population to experience the thrill of the fight on rod and reel or to make a living from the bluefin tuna's high market value. Often the pursuit is in vain, and the hooks and nets come up empty.



Fisheries management for Atlantic bluefin began over 40 years ago as the species was already showing the effects of intense fishing pressure. Yet bluefin populations are still declining. The gravity of the situation is undeniable; without an intense effort to reverse the overfishing, bluefin populations will face an irreversible loss of biological diversity. That's where the Tag-A-Giant Foundation comes in.

We support the world's leading bluefin tuna scientists, economists and policy advisors in their quest to answer the questions that are critical to making management decisions that will put bluefin tuna on the road to recovery. How many genetically distinct populations exist in the North Atlantic and Mediterranean Sea? What are their migratory patterns? When and where do bluefin tuna spawn? How can we prevent further population declines? What is the status of Pacific bluefin tuna?

Science

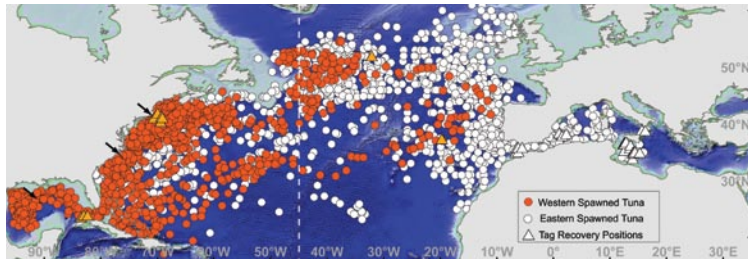
A major focus of the Tag-A-Giant Foundation is to support the science that ensures the future of bluefin tunas. Electronic tagging has been extremely important for identifying bluefin tuna movement patterns, behavior and environmental preferences.

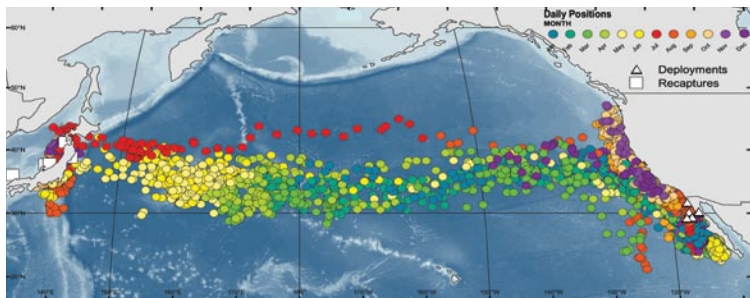
Atlantic

The Tag-A-Giant scientific team has deployed close to 1,000 electronic tags on Atlantic bluefin tuna (*Thunnus thynnus*) over the last decade. Information gleaned from these tags has revealed extensive insights into the lives of these ocean giants who once passed secretly below the ocean's surface. Key findings include:

- Support for two distinct populations of bluefin tuna in the North Atlantic, one that spawns in the Gulf of Mexico and another that spawns in the Mediterranean Sea.
- Mixing of the two populations on foraging grounds at productive oceanic hotspots, such as the offshore waters of the Carolinas, the Gulf of Maine, Scotian Shelf and the Flemish Cap.
- Identification of spawning locations and behaviors in the Gulf of Mexico, characterized by cyclonic eddies and unique diving patterns, respectively.
- Direct evidence that the Gulf of Mexico population breeds at an older mean age than currently is used in assessments.

Electronic tags implanted in bluefin tuna tagged offshore of North Carolina have revealed position data (circles) that show two populations of bluefin tuna, one that breeds in the Gulf of Mexico (orange) and another that breeds in the Mediterranean Sea (white).





Positions of 143 juvenile Pacific bluefin tuna tracked with archival tags color-coded by month, illustrating residency along the West Coast of North America and the trans-Pacific crossings.

Pacific

Fueled by the success in the Atlantic, TGF researchers initiated electronic tagging of Pacific bluefin tuna (*Thunnus orientalis*) in 2002. To date, over 400 electronic tags have been deployed in the eastern Pacific, and over 50% of the archival tags have been recovered. Key findings include:

- Juvenile bluefin tagged off the North American coast are residential, suggesting they feed for up to three years in the productive California Current.
- The corridor for east to west Trans-Pacific migrations has been identified.
- Juvenile bluefin can cross the North Pacific three times in 600 days – a journey of 20,000 nm.

Physiology, Husbandry and Genomic Research

To get a more complete picture of bluefin biology and behavior, the TGF team conducts several non-tagging investigations. Ongoing initiatives include genetic studies, physiology experiments on captive Pacific bluefin, and mathematical modeling of bluefin habitat preferences and fisheries interactions. TGF scientists have maintained bluefin in captivity for over 7 years and are developing molecular tools for sustainable management of captive populations.

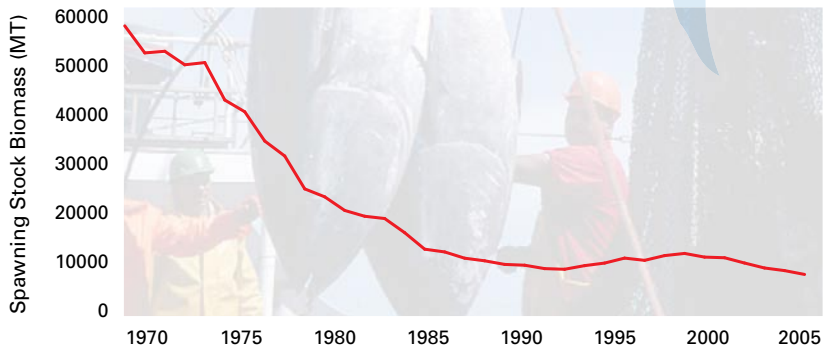


Policy

The high demand for the bluefin tuna's ruby red flesh on world markets has led to overfishing that is driving down the populations of these giants. A change solution is required to ensure this tuna's future. TGF scientists are engaging the scientific, management, policy and fisheries community to work together to forge a sustainable future for bluefin tunas.

In the Atlantic, the bluefin management plan recognizes two populations, a western stock and an eastern stock separated by the 45° meridian. Overfishing in the West in the 1960s-1970s led to a steep decline of the breeding population of bluefin tuna in the Gulf of Mexico, and a quota was adopted in the early 1980s to ensure a recovery. During the next two decades, while American and Canadian fishers observed strict fishing quotas for bluefin, overfishing continued in the Central Atlantic and Mediterranean Sea that further eroded the western Atlantic population and reduced the biomass of the eastern population. Today we face an extremely challenging situation in the North Atlantic. The fish that was sustainable in ancient trap fisheries for millennia and commercially fished for the first time in the West in the 1950s faces commercial extinction if the overall take of bluefin tuna in the North Atlantic and Mediterranean Sea is not reduced in the next decade.

The Decline of West Atlantic Bluefin



Overfishing has led to a near collapse of the bluefin population in the Atlantic over the last 50 years.



Scientists from TGF partner with bluefin tuna ranchers in Mexico to conduct electronic tagging, health, physiology and metabolic studies on bluefin in captivity.

The situation in the Pacific Ocean is quite different since Pacific bluefin tuna have only recently been subject to any management regime. A new commission has begun to look at the state of the bluefin tuna stocks, and our Pacific tagging data are important for developing a better understanding of the distribution, abundance and mortality of bluefin in the eastern Pacific. As quotas limit fishing on Southern and Atlantic bluefin tuna populations, the world will increasingly turn to the Pacific to meet the demand for bluefin tuna. Getting ahead of the curve will promote sustainable fisheries and has the potential to prevent the severe overfishing experienced in the other bluefin tuna species.

The intense demand for bluefin globally has led to an enormous increase in the ranching of wild bluefin. TGF is taking a scientific approach to promoting a sustainable future for captive bluefin by studying the health of captive populations, reproductive physiology and early life history of bluefin and by developing molecular tools that promote understanding of these populations. Our work on captive populations of tunas is essential for improving the science of maintaining captive bluefin collections and enhances global knowledge in this growing area.

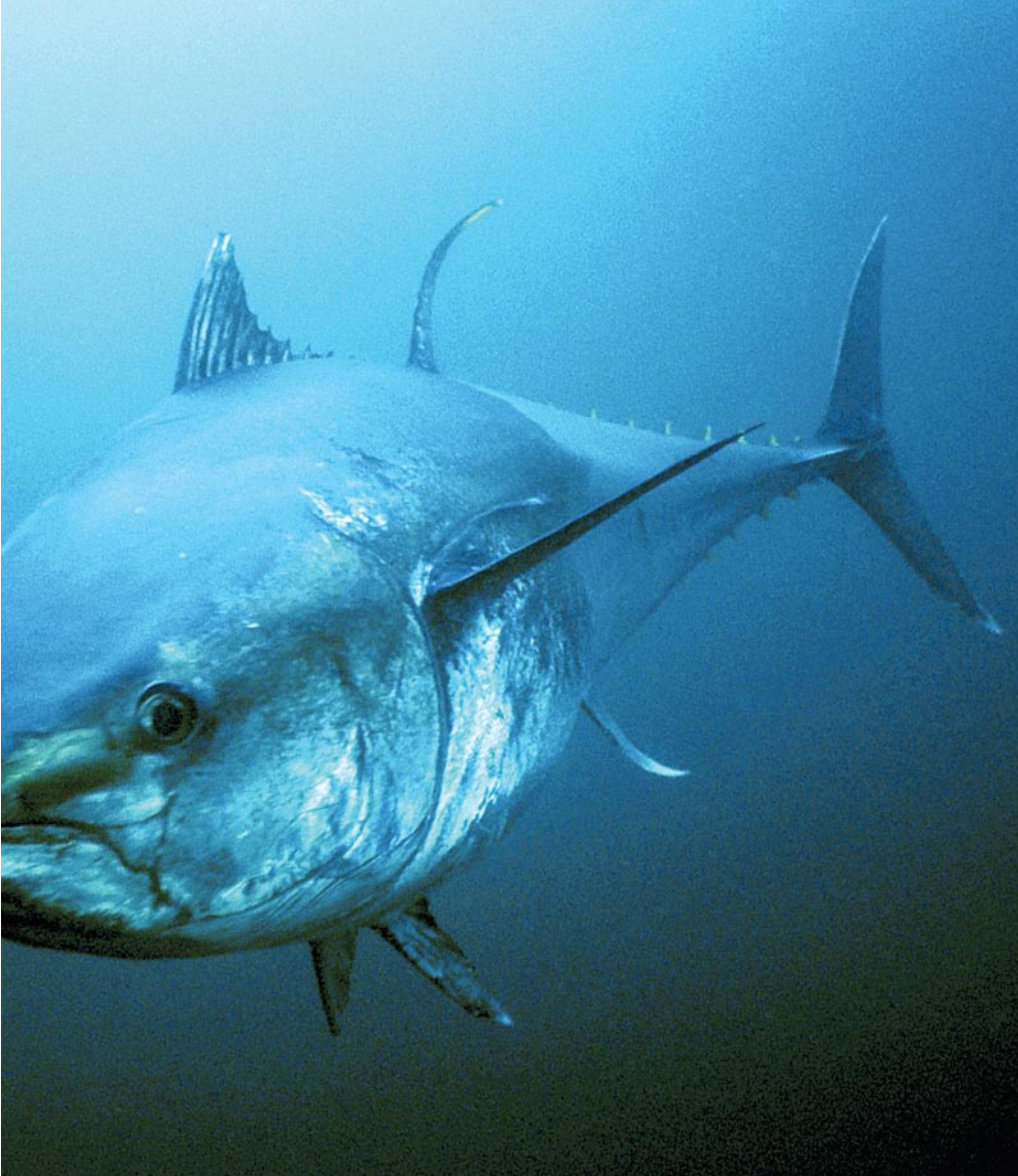
Conservation

Few fish species command respect and instill awe in observers. Bluefin tuna are an exception. They are spectacular fish with majestic beauty, flashing iridescent blue and yellow as they swim through the water. They undertake remarkable trans-oceanic migrations and reach immense size. Anglers who have had the privilege to fight a bluefin on rod and reel will likely treasure the memorable event for a lifetime.

Bluefin tuna are threatened by overfishing. They are caught using huge nets, lines, and harpoons, and located with planes and helicopters. Giants are captured everywhere they swim. There is growing awareness of the need to close breeding areas to fishing to ensure that bluefin tuna can spawn. The capacity to achieve sustainable recruitment lies in large part in the protection of spawning bluefin tuna. New research by TGF scientists demonstrates that bluefin spend two months at most in the hot waters of the Gulf of Mexico and Mediterranean Sea for spawning. Learning exactly where and when they spawn is a key to place-based management solutions that will protect these giants for future generations.

Thankfully prudent management, if immediately enacted (*e.g.*, striped bass), can allow fishing to continue while preventing bluefin tuna from going the way of the Atlantic cod. TGF science is designed to reveal the structure of that prudent management. Bluefin have plied the oceans for 500,000 years; we don't want to lose them on our watch.





Conservation

Join Us!

Donate Now & Support a Future for Bluefin Tuna

- \$5,000 supports genetic research on bluefin tuna
- \$3,500 purchases a pop-up satellite archival tag
- \$1,500 purchases an archival tag
- \$1,000 supports a day of tagging aboard a charter boat

Sign up now (\$100 minimum) to join TGF and stay informed on Bluefin Tuna science & policy.

Donations can be made online at www.tagagiant.org or by returning the enclosed response card. For more information, contact us at:

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Learn more:
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