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## Giant tuna kindergarten identified in Atlantic

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Phil McKenna

Bluefin tuna born on opposite sides of the Atlantic spend their juvenile years together, before returning to natal waters in the Gulf of Mexico and the Mediterranean Sea to breed.

The findings could have implications for the management of what were once thought to be entirely distinct populations.

David Secor of the University of Maryland and colleagues looked at chemical signatures in the fish's inner ear to determine where each of the highly endangered fish came from.

Specifically, the team looked at a bone-like structure called the otolith, a calcium-carbonate deposit that is laid down after a fish hatches. These carry different concentrations of oxygen isotopes depending on whether the fish developed in cool Mediterranean waters – eastern bluefin – or warmer Gulf waters, which spawn western bluefin.

"It's a birth certificate that we can retrieve during any phase of the fish's life and determine where they spent their first year," says Secor.

### New perspective

The findings showed that nearly 60% of more than 300 yearlings found in waters off the mid-Atlantic region of the US came from the Mediterranean, with the remainder coming from the Gulf of Mexico. The study also found that the fish return to their side of the Atlantic by the time they are adult tuna.

"If you are a fisherman from Maryland going out and seeing lots of juvenile bluefin tuna, you might think the population is fine," Secor says. "But when you realise they are being subsidised from the Mediterranean, it gives you a different perspective."

It is the first single study to show that the populations mix as juveniles but then return to their natal waters to spawn, and allows for finely tuned fishery management, says Daniel Pauly of the University of British Columbia. "But the fact that the science has gotten stronger still doesn't change that fact that it isn't being used by managers."

The International Commission for the Conservation of Atlantic Tunas, which manages the two populations, still treats them as distinct, non-mixing groups.

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Bluefin tuna (Image: Wikimedia Commons)

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David Secor, University of Maryland

<http://www.cbl.umces.edu/cms108/View-user-profile.html?user=79>

Daniel Pauly, University of British Columbia

<http://www.fisheries.ubc.ca/members/dpauly/>

International Commission for the Conservation of Atlantic Tunas

<http://www.iccat.int/>

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