A Conversation with Tora Johnson

Author of

Entanglements: The Intertwined Fates of Whales and Fishermen

Your book is about the problem of whales getting tangled in fishing gear. How serious is this problem in the Atlantic?

The problem is probably most pressing for the North Atlantic right whale. It's critically endangered, with a population of just three to four hundred, and the population is declining. Unfortunately, right whales are commonly injured or killed by fishing gear, and more than two-thirds of all right whales have scars from encounters with fishing gear. Often they swim away with rope wrapped around flippers, tails or in the mouth, sometimes injured in the struggle to break free of the gear.

Are other kinds of whales prone to entanglement?

All of the other whales in the North Atlantic collide with fishing gear, too, including humpbacks, minkes, finbacks, and a few less common species. The vast majority of humpbacks, more than 80%, have scars from colliding with fishing gear. Most whales escape with minor injuries, but some are killed, especially the smaller ones. Whale entanglement is also a problem for fishermen.

What sort of fishing gear tends to tangle whales?

Well, any kind of fishing gear can tangle a whale, but most of the gear we see on whales comes from fixed fishing gear. These are traps or nets that a fisherman sets and leaves for a day or two before retrieving it. Fishermen mark their nets and traps with buoys tethered to the gear, and they often link two or more traps or nets together with rope that floats up into the water column. A whale can get caught by the flipper or the tail when it swims by these lines. Some whales are caught by the mouth, probably when they're feeding. Rope in the mouth or wrapped around the head can be particularly deadly because it interferes with feeding and can be very hard to remove.

Aren't the whales big and powerful enough to break ropes or nets?

The larger whales can be powerful enough to wrench themselves free. But the rope they're breaking can be very strong. Just imagine the force required to part a rope with a 2,000 or 4,000 pound breaking strength. A whale in this situation, desperate to get to the surface for air, will often injure itself in the process of breaking free. They may swim away with rope wrapped tightly around their flipper, tail, or upper jaw. The rope can even cut into their flesh. These injuries can be deadly. Smaller whales, either juveniles or smaller species like minkes, sometimes can't wrench themselves free of entangling gear. They're more likely to be killed right away. If a young animal is lucky enough to swim away, its trouble may not be over; with rope wrapped around its body or encircling a limb, the whale may suffer a slow death as it grows over months or years and the rope slowly tightens.

I can see why entanglement in fishing gear endangers whales, but you say that fishermen are at risk, too. What do you mean?

There's the obvious problem for fishermen: they lose their gear or it's damaged when a whale collides with it. But more importantly, their livelihoods are in danger. Under federal law in the U.S., even one right whale killed by fishing gear could prompt the courts to shut down that fishery. In the case of the lobster fishery in New England, that would put thousands of fishermen out of work, not to mention the thousands employed in fishery-related jobs. So far the courts haven't chosen to force sweeping closures, but as long as whales are dying closures remain a possibility and the fishermen's livelihoods are at risk.

Do whales collide with fishing gear in other parts of the world?
Yes they do. The whales in the North Atlantic are probably the best studied populations in the world, so it makes sense that we would notice the problem here first. But biologists and fishermen all over the world report incidents of whales entangled in fishing gear.

In the past few years, we've heard a lot about rescue teams that untangle whales. Is that a solution that can save the whales and keep fishermen in business?
Unfortunately, whale rescue is not a panacea. Of course, with a critically endangered species like the right whale it's important to do anything we can to save individual whales. But the problem with relying on disentanglement is that it's rarely successful. Successful disentanglements like the one in January off of Charleston, SC, are the exception, not the rule. Whale scientists estimate that fewer than 10% of all entangled right whales are reported, and very few of those are successfully disentangled. Right whales are very pugnacious and difficult to disentangle. Rescue teams are more successful at disentangling humpbacks, but fewer than 5% of entangled humpbacks are reported. Disentanglement can't save the fisheries; only prevention can do that. We need to prevent entanglements or allow the whales to escape unscathed on their own. What's more, wrestling fishing gear off of whales is dangerous work. It makes great news footage, and when it's successful everyone feels like they've really done something to help the whales and the fishermen, but it would be best if no one had to take that risk.

You worked with a disentanglement team in Newfoundland while researching this book, and you tell of an incident in which an entangled whale took swipes at you with its tail during a rescue operation. That doesn't jibe with the image of whales as gentle giants. Is it unusual for whales to attack rescuers?
Whales are wild animals, and like any wild animal when they're frightened or in pain they often react violently. It's very common for whales to lash out when whale rescuers are attempting to free them from gear. Right whales are especially belligerent under those circumstances. They often attempt to hit rescuers with their tails and generally do everything they can to get away from the disentanglers. That's why they are so seldom disentangled. The whale that whacked us with its tail in Newfoundland was a humpback. They tend to be easier to work with than right whales, but they can still be dangerous. A man in New Zealand was killed in 2003 while attempting to free a humpback from fishing gear. He made the grave mistake of getting into the water with the whale, and the creature hit him with its tail.

This seems like a simple problem to solve. Can't the government just close certain areas to fishing when whales are around?
The situation surrounding whale entanglement is more complex than you might think, in part because whales don't seem to notice the boundaries of the habitats we've reserved for them. In the U.S. the National Marine Fisheries Service has established a whole bunch of special areas where fisheries are closed or restricted to prevent whales—specifically right whales—from colliding with fishing gear. However, over the past few years scientists have begun tracking right whales using special satellite tags, and to their amazement, they found the whales roaming quite a lot. Unlike most terrestrial mammals, many whales don't just migrate to one place and stay there for the season. They often come and go from their favorite feeding spots, sometimes traveling hundreds or thousands of miles before returning. So drawing a box around a clump of whales and closing fisheries in that box will protect the whales while they're in the area, but whales will be coming and going all the time, crossing the boundaries of the closed areas and heading for places where there are no protections. It makes sense to keep fishing gear out of the areas where whales tend to congregate in large numbers, but many whale scientists have started to call for better protections wherever the whales roam.

Where do the right whales go when they wander?
Some of them seem to have favorite haunts many miles apart, and they make a sort of circuit, returning to the place they started. Some tagged whales have left the Bay of Fundy and visited offshore banks before returning to the Bay of Fundy. Others have departed from a favorite feeding area southeast of Cape Cod to make a loop around the Gulf of Maine. In my book I tell the story of the right whale Churchill. In 2001 the whale rescue team at the Center for Coastal Studies in Provincetown, MA, tracked Churchill for more than three months. In spite of being mortally entangled, he traveled nearly 5,000 miles in that time. He zigzagged around the Gulf of Maine and even took a two thousand mile jaunt to the Gulf of Saint Lawrence and back before dying of his injuries. There's still a lot we don't know about how and why right whales wander, and we have evidence that other whale species wander as well.

How did you get involved in the whale entanglement issue?
I started this project in 2001 while pursuing my master's degree in human ecology at College of the Atlantic, where I have taught for the past three years. COA is known as a premier whale research institution, but my main interest was in fisheries. I come from a fishing family, and I have been a commercial fisherman myself. I had been writing about fisheries and marine environmental issues for the *Martha's Vineyard Times* and teaching environmental science at Cape Cod Community College. In that work I saw a lot of conflict, lack of trust, and failing regulations plaguing fisheries management and ocean policy in general. When I went back to school in 2001, I wanted to dig deeper. I wanted to see if I could find the sources of the conflict and understand why fisheries regulation was so often failing. The debate over whale entanglement seemed like a microcosm of these larger issues, and I had access to many of the players. Besides, it was an incredibly interesting topic that no other author was pursuing.

Have you found the answers you were seeking?
I have found some answers. I've come to realize that both the U.S. and Canada need to fundamentally alter the way they manage all marine resources. They both have Byzantine bureaucracies that tend to manage individual resources rather than ecosystems. Also, the mistakes of the past have destroyed all trust among fisheries regulators, fishermen and environmentalists. The crash of the groundfish stocks in the 1990s was a wake-up call for everyone, and both countries have made moves to recognize and correct the problems, but delving into the whale entanglement issue has shown me that both countries still have a long way to go to restore trust and integrate their management practices. And the stakes are pretty high: we're talking about the futures of fishing families, the fates of entire species, and the sustainability of important food resources.

The U.S. federal government has a plan in place to address the problem of whale entanglement in the Atlantic. Is it working?
No. In spite of a great deal of time and money spent on the problem since the mid-1990s, scientists tell us that entanglement rates in both right whales and humpbacks are rising. The right whale population is still in decline. At least six adult right whales have died since November of last year, and at least one of those was killed by fishing gear. More have died in the past few years, and we know several are swimming out there now with rope wrapped around their heads or their flippers, life-threatening entanglements. This failing federal plan has prompted renewed calls for fishery closures from environmental groups, and that further angers fishermen and undermines cooperative efforts to find solutions that can work for both whales and fishermen.

I have heard that collisions with ships are a far worse problem for right whales than entanglement in fishing gear. Is that true?
Many fishermen have criticized the federal government for dragging its feet on regulating ship traffic while imposing ever stricter regulations on fisheries. On one hand the fishermen are correct: ship strikes are a huge problem for whales—especially for right whales and finback whales—and the federal government has dragged its feet in addressing the problem. Recent studies show, however, that entanglements in fishing gear account for a far greater proportion of right whale deaths than previously thought, they are just reported less often than ship strikes.

Short of closing all of the fisheries involved, what can the government do to address the problem?
The National Marine Fisheries Service recently proposed a new plan to prevent entanglements that would phase in some important new regulations, most importantly sinking rope to link traps and nets together along the bottom. In most areas this regulation is likely to save whales without undue impact on the fishery. The plan would also phase out some ineffective regulations that have served only to anger and alienate fishermen without saving whales, namely Dynamic Area Management, aptly termed the DAM rule. These are both positive moves, but there are also some major flaws in the plan.

What are the flaws in the proposed plan?
First, the Fisheries Service has not adequately addressed the needs of Maine fishermen who fish in rocky areas and need floating rope to prevent snarls on the bottom. Requiring sinking line in these areas will be bad for both whales and fishermen, and here's why: Lobster fishermen in Downeast Maine say the rules will force them to mark each trap with its own buoy instead of linking many traps or nets in a line marked with a buoy on each end. This would *increase*—not decrease—the amount of rope in the way of whales. Also, the proposed plan would still rely too heavily on area closures, again placing those wandering whales in danger. And the plan doesn't address recreational fisheries that account for an increasing amount of fishing gear that is now entirely unregulated by the plan. You can read more about all these issues in my book, and you can see my complete comments on the plan on my website: www.entanglements.net.

How will the new rules impact fishermen financially?
For some fisheries covered by the proposed rules, the cost and the effort of changing their gear would be negligible, but for some like New England's lobster fishery the cost will be a major burden. The Fisheries Service estimates the cost to that fishery alone will be well over $10 million. Some individual fishermen will lose thousands, and some may be forced to leave the fishery. This burden will fall disproportionately on Maine lobstermen. There are a couple of environmental organizations that are raising money to help fishermen comply with the new rules. That not only helps fishermen pay for the required changes to their gear, it also gets them into compliance faster and builds trust. It's a win-win situation.

What can regular citizens do to help?
They can learn more about the problem of whale entanglement and about how U.S. ocean policy impacts people, fish and whales by reading my book and others like it. Also, it's important to push the National Marine Fisheries Service to implement real solutions immediately to save both the whale and the fisheries. We can also support groups that are helping fishermen adopt new fishing techniques to prevent whale entanglement. International Fund for Animal Welfare, based on Cape Cod, pioneered this kind of cooperative approach. You can find links to lots of resources and updates about the issue on my website at www.entanglements.net.

For more information visit http://www.entanglements.net.