

*Jennifer Stock:*

Many people flock to our shores out here in west Marin to view gray whales that come up and down the coast in the winter and early spring, but what most folks don't realize is that actually, right off the coast here there are over twenty six species of marine mammals that folks might have the opportunity to view if they were actually standing out on the beaches or on cliffs watching for a while and I think that's just an incredible thing if you're ever out on the beach and you're at sea and below, you most likely have seen some type of a whale and it may not be a gray whale. This time of year is so exciting for the spring in the upwelling that brings the food web up to the surface here and attracts great whales like blues and humpbacks and minkes from afar to feed. I've been hearing so far that there have been humpbacks sighted off of Chimney Rock and off at Cordell Bank National Marine Sanctuary. So, certainly the ocean is taking its course and bringing lots of food to the surface for all these species.

So, today we're going to learn more about a whale that gets twenty to thirty feet and can weigh fifty to seventy tons. I'm sitting here with John Stern, who has been studying minke whales since 1980. He has also conducted research on killer, pilot, fin, humpback, and gray whales as well as bottlenose dolphins. He has a bachelors degree and masters degree in biology and a PhD in wildlife and fishery science. He is a co-author of a book titled, Minke Whales, published by Voyager press. John is also on the board of directors with the American Cetacean Society and a collaborator in the Northeast Pacific Minke Whale Project, which we'll be hearing a lot about today among many other accolades. I'm thrilled to welcome John to our show. Welcome, John, to Ocean Currents.

*John Stern:*

Thanks, Jennifer. It's great to be here.

*Jennifer Stock:*

So, I'd love to hear, first, how did you get interested in studying whales? That's definitely a career most young folks might know about early on in life and I'm curious how you came into this aspect of research.

*John Stern:*

I first heard about whales when I was a wee lad of around seven or eight. My father had brought a book to me from New Zealand, I believe. It was from an...he was a ship's captain and he had these great adventures going to the south Pacific on luxury liners and so he brought me this book about whales and dolphins. So, I learned a lot about whales and dolphins and then I got the chance to go on his ship for an afternoon, which was humongous to an eight year old kid and so I was very impressed with my father's ship.

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A few months later when he was away I was sitting home by myself watching TV and on the news there was a report of a ship that was struck and disabled by a whale and it turned out to be my father's ship which was hit by a sperm whale, it sounded like, that disabled the rudder of this luxury liner, The Mariposa, and the ship was forced to steam about in large circles until a tug could come out from Auckland and tow it into shore. So, I was pretty impressed with whales from a young age.

*Jennifer Stock:* Excellent. So, was this on the east coast?

*John Stern:* No, it was the west coast.

*Jennifer Stock:* Oh, it was on the west coast?

*John Stern:* Yeah.

*Jennifer Stock:* And how did your father's ship fare after that?

*John Stern:* Oh, they just banged it with probably a really big hammer and it fixed it. The whale didn't fare so well, unfortunately.

*Jennifer Stock:* Oh, that's too bad. That sounds like it happens a lot, actually. There's a lot of whales that we see scars on when we're out at sea and we can imagine with the ship traffic coming in out of San Francisco that there probably are many more whales that might be struck by boats out there that we might not even know about.

*John Stern:* Yeah, that's true. A lot of times a whale will be struck by a ship and the crew will not even know that they have hit anything until they pull into port. The inertia, the mass, and the velocity of the ship is such that something as, we think as large as a whale, is actually quite puny to something the size of a ship.

*Jennifer Stock:* Right.

*John Stern:* On the east coast this is a major concern for the highly endangered northern right whale, a species of whale that is disproportionately struck by ships cruising along the east coast of the United States.

*Jennifer Stock:* Interesting. So, you have been studying minke whales and I'm thrilled to bring you on because I don't know that much about minke whales. I've been very interested in blue whales and humpbacks because they're the real common mega fauna out here that really get people excited in my work as an educator it's

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certainly those hundred foot blubbering hunks that really get people excited and so I'm really interested to learn more about minke whales today. I'm so glad you came. For the audience out there, can you talk a little bit about the group of whales that minke whales are in?

They're part of the baleen whale group, which are animals that don't have teeth, but these plates of stringy baleen for filtering food and can you talk a little bit about...just a little bit about their natural history and there's a couple different subspecies of minke whales, I understand, and are those...are these worldwide species? Are they just in one area of the oceans and can you talk a little bit about those?

*John Stern:*

Sure. Minke whales are actually quite closely related to the largest animal, the blue whale, the largest animal that ever lived, excuse me, the blue whale. They're just kind of smaller versions of them, physically speaking anyway. They get to twenty-five, maybe thirty feet long and they weigh upwards of maybe ten tons. They're not super-behemoth whales that we typically think about.

They are quite common and they are the most numerous of the baleen whales in the ocean. The estimates for the numbers are quite variable depending on who you talk to and when the population estimates are made. Minke whales come in two different species, it turns out. This is a quite recent split. It was thought that there was a single common species of minke whale, but there are actually two. There's one in the southern hemisphere called the southern minke whale and there's a species in the northern hemisphere called the common minke whale.

The main difference between the two species is that the southern minke whale is a bit larger than the common minke whale and the common minke whale has these characteristic white patches on the pectoral fins or the flippers, much like sweat bands you might see on a tennis player, for example. Also, another form of minke whale that is found only in the southern hemisphere is called the dwarf minke whale, which is actually quite similar to the common minke whale we see in the northern hemisphere. The number of southern minke whales is estimated to be, actually, kind of unknown. It was thought that there were around three-quarters of a million minke whales in the southern oceans, the southern minke whales, but these population estimates have been declining over recent years and it's thought there might be, perhaps, only a quarter of a million of those.

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In the north Pacific...on the western side of the north Pacific off Japan there are around 25,000 minke whales. Off the eastern Pacific, that is off of our coast, off the U.S. west coast there are thought to be 1,000 minke whales.

*Jennifer Stock:* Wow. That's a really small number compared to some of the other number you mentioned. What are some of the reasons you think that the Pacific stock over here on this coast is so much smaller?

*John Stern:* Well, I've done a lot of thinking about that and I've come to the conclusion that I'm not really sure. They've never been hunted commercially off of our coast. Native peoples never really took minke whales to any degree and one would think if they were somehow ecologically closely related to whales like blue whales, humpback whales, and fin whales that there would be more minke whales around given that these larger species of whales have been hunted to near extinction off of our coast, but with the decline of these larger species there doesn't seem to be an associated increase in the size of the minke whale populations.

I think, actually, that minke whales are just part of a different ecological community. They are competing with, if you will, animals like sea lions, birds, large predatory fishes perhaps, and are just part of a whole different food web, if you will, than their larger cousins.

*Jennifer Stock:* Wow. That's really interesting to think about. I never considered them to not really be a competitor with their own cousins; blue whales, humpbacks since they share a similar food resource, but it sounds like minkes have a wider diversity of food resources than just a blue whale that will eat krill. What are some of the different food resources that minke whales will go after and is it basically what's available that they're going to go for or, how does that work?

*John Stern:* Yeah, minke whales in the northern hemisphere pretty much eat whatever is locally abundant at the time. That's true in the north Pacific as well as the north Atlantic. Sometimes the fish that they take like herring are the species of fish that are commercially imported and humans can get sort of uppity about that and I think we'll talk about that later when we talk about environmental issues concerning minke whales, but minke whales will, like I said, will just eat whatever is locally abundant at any particular time.

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*Jennifer Stock:* And so, since these are a baleen whale and humpbacks and blues have this incredible behavior where they...well, they'll do it a couple different ways; some of them will gulp on the surface in these lunge feeds with their huge mouths open and some of them will bubble net and then come up from the bottom. Is there a specific strategy minkes use to feed on these schooling fish?

*John Stern:* Yeah. Minke whales use different feeding strategies depending on where they are and it turns out depending on who they are. Some of the work that my colleagues and I that we've done up in Washington state, we've found in certain areas around the San Juan Islands we see certain feeding behaviors associated with individuals that hang out in these areas. One feeding method is for a whale to dive, stay underwater for about 10-20 minutes and then it will locate a school of fish, drive it to the surface where the fish is trapped at the air-water interface, and the whale will then open its mouth really wide and come breaching out of the water engulfing the school of fish as he rises through the surface.

There's another group of whales in a different area and, you know, this is like 15 miles away from this previous area I just talked about, but the whales in this other area are quite, kind of lazy, bless their hearts. They swim around in this very random fashion, just called a random walk, in fact, it's a specialized random walk, actually, but anyway...So, they swim around in this very random fashion until diving birds such as cormorants and murrelets and large predatory fishes such as sharks and salmon locate a school of herring, encircle it, compact it, and drive it to the surface at which point gulls, from what we see at the surface, we see these gulls feeding on these fish that are driven to the surface as well and the minke whale will just...not too casually, but quite casually, swim over to where this school of herring is trapped, we'll see the birds fly up into the air, and the whale come crashing through the school of fish with his mouth open, engulfing most, if not all, of the school.

The schools that we do see are only about three feet in diameter. So, they're not super big, but these whales are quite good at kleptoparasitizing.

*Jennifer Stock:* I was just going to ask you that...if this is considered somewhat parasitic behavior? I just want to let any listeners that have tuned in know this is Ocean Currents with your host Jennifer Stock and we're talking with John Stern about minke whales and we're talking right now about some of the random feeding that minke whales do and the way you were describing it, it was kind of like the whales are on the outskirts watching everyone else to do the

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hard work of finding the prey and then they're like, "Oh, we're gonna go take it," and so it'd steal from someone like those gulls...some gulls do with pelicans....the name is escaping me right now...

*John Stern:* Oh, right yeah...

*Jennifer Stock:* You know what gull I'm talking about the...

*John Stern:* No, I don't know.

*Jennifer Stock:* I can't remember the name of it. It'll come to me in a few minutes, but, you know, I also read on your website about another example of this random feeding is somewhat like if we were blindfolded trying to find our meal at the dinner table. We know the general area where the food is. If we were blindfolded we could probably find the dining room table. Then to locate your food you would use your hands to try to find the food, but imagine your food is only the size of a jellybean. You'd probably have your hands overlap each other until you found your food resource kind of sampling along the way.

That was kind of an interesting analogy that I read up on the Nprth Pacific Minke whale website to compare how whales feed to how we might feed with those sense.

*John Stern:* Yeah. It's actually part of that whole minke whale and Albert Einstein stuff I was talking to you about earlier.

*Jennifer Stock:* A-ha! So, here it comes! Albert Einstein.

*John Stern:* Albert Einstein. Yeah, it turns out that if you follow a minke whale around and mark its location when it surfaces using some time of global positioning system, you can actually get an idea of how an animal swims about as it's searching for food and we started playing with looking at these tracks that these whales were doing and I started just plotting them on a computer screen and noticed that there was absolutely no pattern that I could discern to these movements the whales were making and I started looking at different types of movement patterns seen in nature and, you know, quite quickly I came upon something most every biologist has heard about; these random walks, which are basically movement patterns that have frequent changes in direction, almost from one step to the next.

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The searcher is changing directions in a quite random fashion and it turned out after doing some statistical analysis that, indeed, these minke whales were doing these specialized types of random walks and these specialized types of random walks have been researched quite intently by physicists and chemists and probably the most famous physicist to do research on this is Albert Einstein, who had this wonderfully dense, but thankfully short, book on Brownian motion and that's what really got me started looking at analyzing whale movement patterns and in a different kind of way.

And it turned out these specialized random walks, which are also called Levy flights for...named after some French statistician...these Levy flights turn out to be optimal search strategies for a searcher who doesn't know where his targets are and it's really kind of interesting because it turns out minke whales do these Levy flights and bacteria do these Levy flights and paramecium, these single-celled organisms do these Levy flights. Wandering albatross do Levy flights. Electrons being shared between atoms in a molecule, it turns out, do these Levy flights.

They're really fabulous movement patterns and basically, what a Levy flight is...it allows a searcher to cover an area quite densely by moving back and forth, back and forth, over and over again until you've searched an area quite completely. He may have found food or possibly not, but then what he does is he displaces...he or she I should say, displaces some significant distance away from that one little area that it covered quite heavily and then he begins these frequent direction changes, these random walks, once again and if you compare that movement pattern to any other type of movement pattern, we see that these Levy fliers can visit something on the order of 1-10,000 times as many sites as any other type of movement pattern would allow them over a significantly long period of time, but anyway, statistically, they're optimal search strategies and minke whales do them and I think that's really cool and plus I get to quote Albert Einstein, which is infinitely cool. So...

*Jennifer Stock:* Yeah, I wonder if Albert Einstein has figured out minke whales' feeding patterns.

*John Stern:* Yeah, yeah, he did. I channeled him the other day.

*Jennifer Stock:* I want to ask you about how do these minke whales adapt? In the last year we had a delayed upwelling year where the food for the top part of the food web for seabirds and whales didn't really come about until late in the summer, much later than normal and a lot of

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birds decided it wasn't good enough for breeding. We did not see many humpbacks and blues up here. How do the minke whales adapt to that type of a year in the ocean when there's less food around because they're a little bit more adaptive in their food, their prey items...do they still fair as well? What are you seeing in regards to that kind of adaptive behavior?

*John Stern:*

Their prey is quite different than that of the blue whales and humpback whales, mostly the humpback whales. Humpback whales will feed on schooling bait fish like minke whales will, but minke whales seem to be able to adapt quite well to a change in upwelling seasons. We did...we looked at our feeding data from the the 1982-83 El Nino season and there was no significant change from when there was an El Nino from between...from when there was an El Nino and then from when there wasn't an El Nino. So, it didn't seem to affect their feeding rates at all, but I think that just belies the behavioral and ecological plasticity of minke whales. They're able to...they know a localized habitat really, really well and they're able to exploit it and exploit its variation and its oceanographic seasons and variability between years.

I want to point out, when I mentioned there's about a thousand minke whales along the west coast of the U.S., what we found is that these individuals are distributed into what appears to be distinct small populations and by small I'm talking like 30 individuals and we see these 30 or so individuals in the same place throughout our field season, but we also see them from year to year to year to year. Some individuals come and go, but there's a significant proportion of the individuals in a population that we see over and over and over again. We've seen this in the San Juan Islands of Washington state. We saw this in Johnstone Strait up in British Columbia. We saw this off of Monterey Bay, south of here and I'm starting a project up in the fall based around the Point Reyes area to look and see if the same type of population patterns are seen here.

*Jennifer Stock:*

Interesting.

(Music)

*Jennifer Stock:*

You're listening to Ocean Currents with Jennifer Stock on KWMR at 90.5 FM and 89.3 in Bolinas. I'm here talking with John Stern, a minke whale researcher, and John is starting up a project where they'll be doing some research just off the coast of Point Reyes on minke whales. So, John, I want to come back to that and find out a

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little bit more about what's this project going to entail and how are we going about doing it?

*John Stern:*

Well, basically it's an extension of work that I've done in Washington state and off Monterey where we go out in a relatively small boat.

*Jennifer Stock:*

What's relatively small?

*John Stern:*

The one I'm using here is around 17 feet. It's a Boston whaler. It's a nice boat. It'd be nice to get something a bit larger, but I have access to a 17 foot boat, but the minke whales are...can swim quite rapidly and they change directions quite frequently. So, we need a boat that is kind of quick.

What we try and do is approach the whale as close as possible to take photographs of both left and right sides of the whale and much like a fingerprint we can identify individuals based on the shape of their dorsal fins, the presence and location of scars as well as any coloration markings that identify individuals and so, using this we can come up with a method to census how many whales are actually out there and we can track whales over time and then once we identify the individual we just back off and let him do what he's...or she wants to do and we just follow along at a few hundred yards, periodically marking the location where the whale surfaces using a global positioning system so we can track a whale and we see what they're doing. Whether or not they're feeding, lounging around or if they're being social, which for the most part, they don't seem to be. Although, they must at some point otherwise...

*Jennifer Stock:*

How do you actually locate your minke whales? I'm very familiar with what humpback blows look like, their, you know, big blow, and then blue whales, those smokestacks on the horizon are huge, but minke whales seem to be rather elusive. I just have not seen one because they must have a different pattern and since my eyes aren't trained for it, I'm really curious...how do you locate minkes or is it a chance happening watching for feeding events on the surface with the birds and other whales, but I'm really curious how you find your minke whales out there.

*John Stern:*

Well, they don't have a visible blow like you're used to with a humpback or a gray whale you see migrate along the coast. Basically what we look for is just a back of a whale and it doesn't...the minke whale when he surfaces doesn't show much of his back. It is perhaps about 12 - 15 feet in length and maybe about 2 feet in height. So, if there's any type of swell or wave action

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happening, it's really easy to miss whales that are close by. So, we don't have a visible blow. We just kind of look for the back. Often times when we go out we turn the motor off so we can listen for the blow and on occasion we have had the primary cue, you can't really call it a sighting cue, but the primary cue of noting the presence of a whale being the smell of its breath, which after serious consideration and a lot of thought, we finally got a handle on what minke whale breath really smells like and the best way to describe it is overcooked broccoli.

*Jennifer Stock:*

Overcooked broccoli.

*John Stern:*

It took us a while...

*Jennifer Stock:*

Do you end up walking away smelling like the breath of the minke whale, much like humpbacks, when they blow it's not just air? There's a little bit of moisture in the air there.

*John Stern:*

No, you don't really smell like the whale. I mean, if you get really close you do feel a bit funky, you know, because...

*Jennifer Stock:*

It's a weird smell.

*John Stern:*

Well, there's other junk in it as well, I guess, but yeah, minke whales...one of the other things that's really sort of interesting about minke whales is they can be very curious about slow-moving or stationary boats and oftentimes they will just come right up to a boat that is sitting there dead in the water and they often times will just swim around that boat for hours as if, you know, trying to figure out...

*Jennifer Stock:*

What's that thing in the water?

*John Stern:*

What's that thing in the water...

*Jennifer Stock:*

Interesting

*John Stern:*

...and they'll stare at people, actually.

*Jennifer Stock:*

Really? So, they might hang out on the surface a little bit and roll and look up at the surface?

*John Stern:*

Yeah, they will do that quite frequently. I mean, I've had ones follow my boat along. It's like walking a big dog.

*Jennifer Stock:*

Oh my gosh.

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- John Stern:* It's pretty bizarre and off the Great Barrier Reef where these dwarf whales seem to overwinter there is actually a swim with the minke whale program where you get in the water, they deploy these ropes off the bow and stern of this dive boat, and you hang on, you don't use scuba tanks, you just snorkel, but you hang on to the ropes and these whales, sometimes sixty at a time, will just come up and just stare at the divers and pose for pictures, almost. It's pretty amazing. I was done for a month a few years ago and it was just amazing.
- Jennifer Stock:* How long do minkes stay down? Are they deep divers like sperm whales are or are they..how long would they stay down?
- John Stern:* They're probably not really deep divers. They can stay down 20 minutes or so. We start getting nervous if they've been down for about 10 or 12 minutes. We get nervous because we're afraid we've lost them, which is quite easy to do.
- Jennifer Stock:* That's probably from my experience in just recreational wildlife watching trips when someone has said they saw a minke whale, by the time I get there it's gone. They don't...I just haven't seen them stick around too often around recreational boats, but I definitely haven't been out there as much as you are.
- John Stern:* Last summer we followed a whale around for eight hours.
- Jennifer Stock:* Walking the dog. I see how it is.
- John Stern:* Work, work, work, work, work.
- Jennifer Stock:* So, do minke whales migrate? Do we know where they breed and, I guess since there's these different stocks in the southern hemisphere and the northern hemisphere and here in the north Pacific coast here, do we have an idea of where minke whales go to breed?
- John Stern:* No.
- Jennifer Stock:* Okay.
- John Stern:* Actually the evidence for migration in minke whales is quite scant. It's only from the record of two whales that were marked in the Antarctic and then recaptured off Brazil. All migration is, other than that, is just inferred based on...you see them a lot certain

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times of the year and then you don't see them very much the other times of the year.

Off the coast here, minke whales are seen year-round. So, I'm thinking that these whales off Point Reyes are perhaps a population of year-round residents and that's going to be one of the main thrusts of this research, is going to be going out year-round looking to see if the same individuals are present year-round. One of the interesting things when I first started working off Monterey Bay was that I had heard reports of dozens and dozens and hundreds of minke whales off the coast and I got real excited about that. I had spent 5 years working in Washington state where we saw very few individuals, but this report off Monterey came from a land station where they said they would see minke whales going by this one location many times a day.

So, they assumed this was a lot of different individuals, but when I got out in a boat and actually tracked individuals and took pictures and was able to identify individuals, I found it was, you know, the same few whales over and over again swimming back and forth in front of this land station. So, it seemed like there were lots of whales, but there actually really weren't.

*Jennifer Stock:*

That's amazing. That's just amazing to think that they're hanging out there. We just can't see them, but they're there doing their thing back and forth all over the place, but unlike on land, we just can't see them that well. So, I think that's what makes researching these animals so unique and exciting at the same time.

So, all whales, all marine mammals are protected in U.S. waters under the Endangered Species Act and the Marine Mammal Protection Act, but I know minke whales are target species for some countries that hunt whales and I'm wondering if you can talk a little bit about which countries are hunting whales and for what purposes and what type of regulation exists for these species?

*John Stern:*

The regulations are based on some international agreements set up through an organization out of England called the International Whaling Commission or the IWC and the IWC was set up in 1946 to regulate commercial whaling. They didn't really do that great of a job of it because there was just wholesale slaughter of most whale species in the southern hemisphere. The minke whale was spared because of its small size. It just wasn't of interest to whalers, but now with the decline of larger species of whales like blue whales and humpbacks and fin whales in the southern oceans as well as the north Pacific and north Atlantic, more and more

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countries that are interested in whaling are turning their sights on minke whales.

The countries that are actively engaging in minke whaling are Japan, Norway, Iceland, Denmark, and Denmark only because Greenland is one of their territories. Korea is whaling minke whale, as well. You know, under the International Whaling Commission, commercial whaling has been halted since 1986. There's been a moratorium in place, but Japan has filed a permit application to allow scientific whaling to take place and this is where they kill a certain number of minke whales per year to try and find out something about the biology of these animals like what they're eating, how old they get to be, at what age they reach sexual maturity, those types of population level parameters.

*Jennifer Stock:*

But there seems that there are many other ways to study these whales. Are they truly doing research? I've heard a lot of controversy about the countries that are claiming that they're doing scientific research and I've been reading the news that Japan does more than just research with their...the minkes that they hunt.

*John Stern:*

Yeah, they, well...there's also...there's research and then there's good research and there's bad research and there's been a lot of concern about the Japanese Whale Research Program that it's not really providing useful information, useful in the context of managing a whale stock like they say they wish to do and certainly to fund their whale research program, Japan sells the minke whale byproduct, the meat and blubber, from the whales that they kill to sort of subsidize the whaling fleet and the people that work in the industry. One of the things that you gotta think about here is that a lot of countries like Japan, Norway, Iceland, Greenland, they all have a tradition of hunting whales in their coastal waters and that is what they're claiming they are doing now and to a degree, I guess, that's kind of true, but one of the big issues is that we're not really sure how many whales exactly are in these populations, nor do we know if the populations are fragmented into smaller subpopulations like we seem to be seeing off of the west coast of the United States and certain parts of the UK, off the British Isles, for example.

So, we don't really know the size of the population that is being hunted and that's a potential problem. The recent International Whaling Commission meeting that was held in St. Kitts in the West Indies was the first meeting in several decades where the pro-whaling countries held a numerical majority in terms of the vote, potential votes...

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*Jennifer Stock:* This was a meeting that just took place recently...

*John Stern:* Yeah, it was...

*Jennifer Stock:* ...just a couple of weeks ago?

*John Stern:* Yeah.

*Jennifer Stock:* I'm just going to pause for a second. You're listening to KWMR in Point Reyes Station at 90.5FM and you're listening to Ocean Currents with Jennifer Stock and we're talking with John Stern about minke whales. So, we're just talking about potential...the International Whaling Commission meeting that just took place and I'm curious with St. Kitts, are there a lot of whales? Is this a national that really has an interest in whaling? It's a very small area. How did they get on the International Whaling Commission?

*John Stern:* Yeah, they...well, they do have humpbacks that come into their waters seasonally and they will on occasion take a whale or two. One of the things that the conservation community has really sort of latched onto is that a large number of recent additions to the International Whaling Commission are countries that are either landlocked or have never whales historically or currently and it appears that they have been sort of talked into joining the International Whaling Commission by Japan. That is...I don't know if that's true or not, but that has certainly been implied for a number of different countries. So, Japan has been accused of essentially buying votes on the International Whaling Commission

Interestingly, as I mentioned, this is the first time in several decades that pro-whalers have had a voting majority, but all of the resolutions put forth by pro-whaling countries lost the vote except for one. One resolution, it's called the St. Kitts Nevis resolution, Nevis is a neighboring island of St. Kitts, but this resolution calls for the normalization of the International Whaling Commission, which is taken to mean that the International Whaling Commission has a finite amount of time to get back to its original mandate, which is the managing of killing whales and its thought that the conservation committee and the committee for humane killing methods are really going to take a backseat or actually get stuck in the trunk, metaphorically speaking, or the International Whaling Commission and Japan and Norway really want to get back to the job of managing whales and this may be the first step in the return to commercial whaling.

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*Jennifer Stock:* That is absolutely frightening to me just because I grew up in the age of protecting the whales and when the International Whaling Commission, you said in 1986, started, they allowed the moratorium to take place on killing there was somewhat of a relief, it sounds like, and I've just been surprised to hear that this is happening and there hasn't been a whole lot in the news about this and it's a huge impact that could take place if further efforts go down the road. What exactly does it mean after this first resolution is passed? What are the next steps that would have to take place and what does the rest of the commission do in regards to the decision? I'm not so sure exactly how they're processes work for making regulations

*John Stern:* Right. The International Whaling Commission has not legal teeth. It passes resolutions and passes recommendations, but, you know, if a country wants to do something it can very well go do that. Japan has threatened to leave the International Whaling Commission. Norway, in fact, began commercial whaling again a few years ago on a limited scale and not much was made about that in the press.

*Jennifer Stock:* So, there's not a whole lot of enforcement...

*John Stern:* No.

*Jennifer Stock:* ...I take it. There's no enforcement at all except I know there's organizations that are out there trying to prevent more. Take the Sea Shepherd Society and Greenpeace have been active in doing that, but there's really no legal regulation.

*John Stern:* Well, there are amendments to the...that the U.S. has that they can...they do have some type of legal recourse where they can decide not to import goods and services from countries that are doing things that the U.S. disagrees with, The Pelly Amendment is one such law that allows the president to, sort of, try and talk a country into, sort of, coming back into line with more of what the international community is in line with in terms of conservation efforts, but it's...there's a real turning point, I think, in the conservation community. There were a bunch of conservation groups represented at the IWC meeting and we had an emergency meeting after this St. Kitts resolution talking about what to do next. I mean, do we have a bunch of small, smaller entities working on the same problem or do we, sort of, get together on this common issue and I think we're looking more at presenting sort of a united front.

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The next International Whaling Commission is on U.S. soil. IT's in Anchorage, Alaska and there is an aboriginal hunt of bowhead whales that occurs by the Inuit hunters up in Point Barrow and Point Hope in Alaska and these quotas are up for renegotiation this coming year. So, it's really going to be interesting to see what the U.S. delegation does and what the Japanese delegation does in response to these quotas and what Japan and Norway may want to do in terms of increasing their quotas for minke whales as well as endangered humpback and fin whales. Both species Japan has begun taking again and that's one of the really frightening things is that Japan is now, once again turning their harpoons to species like fin and humpback whales that were really seriously depleted in the 20th Century.

*Jennifer Stock:* And they're not necessarily back up yet in their populations. So, that's pretty scary.

*John Stern:* And one of the other things that is really sort of bothersome to me is that, as an ecologist, is Japan is really making a point of saying that for the nutritional security of nations of the world, whales need to be killed because they are eating all of the fish.

*Jennifer Stock:* Oh. Interesting.

*John Stern:* They don't really present much in terms of data nor any type of model to support that contention and, in fact, there have been many studies that have been done that show that marine mammals and whales, in particular, have much less effect on fish stocks than humans. In fact, fish have more of an impact on fish stocks than whales do. So, this is gonna be sort of one of my pet, little projects that I'm working on...looking at how much the world's population of fish-eating whales may actually take in proportion to what human fisheries are like.

*Jennifer Stock:* Interesting. Does the U.S. bring any of this science to the table since there's been so much research in the U.S., particularly within NOAA, National Oceanic and Atmospheric Administration, about that? I mean, what can they bring to the table in regards to supporting evidence that, indeed, humans have more impact on populations of fish than whales do?

*John Stern:* Well, I think the U.S. can bring considerable science-base to the table. I think at the last IWC meeting everybody was kind of dumbfounded that Japan was really hitting on the fact that, or hitting on the statement that, you know, it was the whales' fault that they don't have enough tuna to eat or something like that. So,

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once again, this is a relatively new development and people in the conservation and science communities are talking about what to do next.

*Jennifer Stock:* Well, we're coming close to the end of the show, John, and I'm curious if there are any websites or any action that you would recommend that people that want to learn more about this topic or want to get involved...is there anything you can recommend people to do right now because there's been a little bit in the news about it and I'm curious. I'm sure people would like to learn more. Do you have any recommendations?

*John Stern:* Yeah. I would say there's websites for the American Cetacean Society. It's ACS Online, that's one word or whatever it is, ACSOnline dot org. There's the whale and dolphin conservation society. They have a really nice website out. I would also urge that people start looking into these issues and prepare to contact their representatives about the next International Whaling Commission meeting. I'm going to do my best to put out some type of statements through the American Cetacean Society to let people know what they can do as time gets closer to the IWC meeting.

*Jennifer Stock:* Excellent. Well, I hope you'll pass some of that information along to me...

*John Stern:* Oh, absolutely.

*Jennifer Stock:* ...so we can bring it back to the show and I hope we'll be able to bring you back once the minke whale research is up and running and hear some updates from the field from you. I want to thank you so much for coming on the show and giving us some background on this little whale that doesn't get as much credit as big blue whales do, but they're right out here and right off our coast and who knows? If you're out at the coast and you see lots of flurries of activity of activity at the surface of the water with birds attacking the water, you may have the opportunity to see a whale yourself.