

Jennifer Stock: You're listening to Ocean Currents, a podcast brought to you by NOAA's Cordell Bank National Marine Sanctuary. This radio program was originally broadcast on KWMR in Point Reyes Station, California. Thanks for listening!

(Music)

Jennifer Stock: And welcome to another edition of Ocean Currents. I'm your host, Jennifer Stock. On this show we talk with scientists, educators, explorers, policy makers, ocean enthusiasts, adventurers, and more, all uncovering and learning about the mysterious and vital part of our planet, the Blue Ocean.

I bring this show to you monthly on KWMR from NOAA's Cordell Bank National Marine Sanctuary, one of four National Marine Sanctuaries in California waters, all working to protect unique and biologically diverse ecosystems. Cordell Bank is located just offshore of the KWMR listening radius, off the Marin Sonoma coast, and it is a hotspot for ocean life, above and below the surface.

So I have a great program lined up for you today. We have lots of guests in the studio and online to talk about what is going on to reduce the impacts to whales from large ships. And if you can imagine driving out here in the roads of West Marin, we constantly are keeping an eye out for life, I wanted to say marine life, but it's not marine life, it's land life - deer and other animals - and occasionally we have contact with cars, and it's a sad thing. And the same thing is happening in the ocean. So we're going to talk about this today.

The entire coast of California is a migration corridor for many species of whales, and our California National Marine Sanctuaries seem to be hotspots where these whales can be found in large numbers due to the food availability. But we also happen to be right smack in the middle of a very busy shipping area. San Francisco Bay has several ports with ships coming in and out of the area, so there have been some interactions and we're going to talk about that a bunch today. So I'd like to take a quick break and when we come back, I'll introduce all of our guests and we'll be tuning into how to prevent ship strikes with whales.

(Music)

- Jennifer Stock:* Great song to start us off on the show today. Welcome back. You're tuned to Ocean Currents and my name is Jennifer Stock. We're talking about whales and large ships today and I'd like to introduce to you everyone we have here in the studio and on the phones, so I'm just going to go around and introduce everyone; let us know you're live on the air when you hear your name! So I'm going to start right here in the studio and we have John Berge, who's the Vice President with the Pacific Shipping Association, Pacific Merchant Shipping Association and also a member of the Cordell Bank Advisory Council. Welcome John to KWMR!
- John Berge:* Thank you Jennifer, it's a pleasure to be here.
- Jennifer Stock:* And Michael Carver, who's the Deputy Superintendent and Resource Protection Coordinator for the Cordell Bank National Marine Sanctuary. Michael and I work in the same office, we're very close colleagues, for full disclosure. Michael is here...
- Michael Carver:* It's fun to see you at your other office!
- Jennifer Stock:* There we go, you're 3! I figured out the problem, I was putting up the CD player John, so you should be on now. There we go!
- And Jackie Dragon, she's the Senior Campaigner with Greenpeace, also a member of the Gulf of the Farallones National Marine Sanctuary Advisory Council. Jackie, welcome!
- Jackie Dragon:* Thanks. It's great to be here Jennifer.
- Jennifer Stock:* Awesome, and then live on the air, we have John Calambokidis, a Senior Biologist and Founder of Cascadia Research, one of the world's leading authorities on whales, And John, you're live on the air.
- John Calambokidis:* Great! It's nice to be here.
- Jennifer Stock:* Thanks for joining us. And Mike Van Houten, Chief of Aids to Navigation, at District 11 Waterways Branch Vessel Traffic Service with the US Coast Guard. Welcome Mike!
- Mike Van Houten:* Thank you Jennifer, it's good to participate!

Jennifer Stock: This is great! I feel like I'm running a mini forum here on KWMR. It's wonderful to have so many guests here talking about this issue. So many people have been working on it.

So, I'd like to start with John Calambokidis on the phone line. John, if you can start us off with some background about the use of the West Coast by whales, which whales and the population estimate and the history, and what some of your research has focused on here on the West Coast.

John Calambokidis: That all sounds great. Our research is focused specifically on three of the whale species that come and feed off the US West Coast and especially in areas like Cordell Bank and the Sanctuary waters around it. And those are blue, fin, and humpback whales, and they are both large, filter feeding baleen whales. Blue whales are the largest whale and the largest animal that's ever lived. And blue, humpback and fin whales are all endangered species, primarily because they were taken to very low numbers by commercial whaling. And we tend to think of commercial whaling as something that happened a long, long time ago, but whalers operated out of San Francisco Bay as late as 1966, hunting all three of those species. So that's within the lifetime of these whale species, that they were hunted.

My own research began in 1986 when we began studying at the behest of the very newly formed at that time Farallones and Cordell Bank National Marine Sanctuaries, to try to look at what large whales were using the waters for, how many there were, and what they were doing there. And since then, we've been tracking those whales primarily by identifying individuals. So we have over 2,000 different individual humpback whales and over 2,000 individual blue whales that we know from their natural marking and from the annual surveys and what we call photo ID of those animals, we can track the trends of those animals and also where they come and go from. And it's been that research that revealed that humpback and blue whales at least, come to this area and spend more than half the year feeding off the US West Coast, and the Farallones and Cordell Bank are primary feeding grounds for these animals. We typically see them arriving in the spring to early summer and staying often through late fall. And it tends to be some of the same individuals coming back every year. Our population estimates of how they're doing are very encouraging for humpback whales. It showed them recovering at 7% per year, so just in that 25 year period when I've studied humpbacks, we've seen their population estimates increase almost fourfold, going from almost 500 to now around 2,000 humpback whales along the

US West Coast, with quite a few of them coming to the Farallones/Cordell Bank area to feed.

We've been troubled over the 20-year period by the lack of a similar increasing trend for blue whales. And that actually an element that got us very concerned and interested in the ship strike issue. And then the last, since about 2007, the last 5 years, increasingly some of my work especially some of the work looking at what the whales are doing underwater. I, every year we attach suction cups, attach to and tag the whales to look at their underwater behavior and we've been doing that to gain insights into what they're doing underwater. And the last five years we've been starting to do more and more work in the area where there is busy ship traffic to also look at what the whales are doing in the areas where they interact with ships, how they react to ships, and also to gain insight into what might be some of the more effective means to reduce the incident of ship strikes.

I should mention our blue whale population estimate is also about 2,000 whales for the whole US West Coast, but that is not showing any increase, that we were initially encouraged by that in the early 90's because that was a bigger number than we thought was there. But now we've become concerned that we've seen no upward trend in that, and there's even some indicators that the use of especially California waters by blue whales have decreased in the last 20 years, and that's where this ship strike issue has been a concern to us, and that really came to the fore in 2007 when there were a minimum of four documented ship strikes of blue whales in the Southern California Bight area, in the Fall, and that really was the wake up call for many of us, especially myself because I knew that only a small portion of the whales that die actually show up on the beach as strandings. So to have four of them wash up as strandings that were struck by ships - there could have just as easily been 10 times that, or many more than that actually being killed - and that could be one of the reasons we're not seeing recovery of blue whales from the depletion during whaling.

Just really quickly, I'd say there are a couple of other species: Fin whales that tend to occur a little more offshore, and also grey whales that mostly migrate past the San Francisco area en route between their primary feeding areas to the north and their breeding areas to the south, though occasionally we get those animals feeding in smaller numbers in a couple of key areas like the Farallon Islands or off Bodega Bay.

Jennifer Stock: Right, there was a fin whale that washed ashore in Marin county this summer and our summer monitoring crew out there with PRBO Conservation Science and the Sanctuaries actually were the first to see it from the ship instead of from land, so that was pretty interesting. Thank you so much for that overview, that paints a pretty good picture of how important this coastline this is for the whales, and the recovery for the humpbacks has been really positive since whaling ended, but definitely not so much for blues.

So I want to talk a little bit more about, let's just get right into it, and Michael Carver, as the Resource Protection person here at the Sanctuary, you've taken, the Sanctuaries have taken up a lot of concern about this with the blue whales loss in Channel Islands. I know the Channel Islands Sanctuary got very actively involved in trying to figure out how they could work on this issue, but could you give us a little bit of an overview of what's been happening with the National Marine Sanctuaries and what are you trying to do, and there's been a lot going on!

Michael Carver: Of course, well like John was saying, since that event in 2007 when there were the blue whales that came ashore down in Southern California, there was something declared which was an Unusual Mortality Event, and that was the beginning of several efforts in the Channel Islands to try to get vessels to slow down and really look at sort of the scope and scale of this issue. And thanks to our Advisory Council up at Gulf of the Farallones and Cordell Bank, we also around 2010 picked up this issue and started figuring out what we could do, cause the ship strike issue sort of spans the coast of California. And Channel Islands, just to sort of go back to them for a minute, they do a number of things; they've made modifications to their shipping lanes recently, before that they were doing aerial monitoring. They have a volunteer corps that goes out there looking at distribution and abundance of whales, where are they, trying to understand where is that overlap between ships and whales.

Jennifer Stock: Excellent! I'd like to bring Mike in real quick from the Coast Guard, and Mike, can you tell us a little bit about the shipping lanes in general? Who regulates them, oversees them, are they determined? Are the lanes reviewed ever, or once in a while?

Mike Van Houten: Okay, the Coast Guard has authority for establishing and regulating traffic lanes, what we call traffic separation streams through the Port and Waterway Safety Act. We look at facilitating the safety of navigation by establishing predictable traffic patterns and approaches to the ports along the coast. In the case of San

Francisco, there are three approaches in the traffic separation stream: from the north, from the west, and from the south. This helps balance the distribution of vessel traffic as you approach San Francisco. And we periodically evaluate that to make sure we're facilitating safety of navigation, to see if there's also been any changes in vessel patterns, or anything we can do to improve safety of navigation. In the case of San Francisco, our most recent study began in 2009, and this was primarily to look at the northern approach to San Francisco, in an area of prime fishing grounds to see if there was anything we could do to improve safety of navigation in the area of that northern traffic lane with the high level of fishing activity there. We also wanted to look at if extending the lanes outward would help to establish predictability and maintain predictability of traffic, and it would also conform to the limit of our vessel traffic service area of responsibility. We have a vessel traffic service in San Francisco that monitors vessel traffic.

So we commenced this study in 2009; it ran for about a year and a half. We received a lot of valuable input from the public, from other government agencies, environmental protection groups, fishing vessel operators and commercial mariners about the idea of trying separation schemes during this study. And as a result of that, we published a Port Study Report in June of 2011 which recommended several modifications of existing lanes, and real quick, basically for the northern lane, it would extend the northern lane about 17 miles further to the north, to limit the vessel traffic service coverage area, and it would also shift the lanes away from the Cordell Bank, which would help protect blue and humpback whales, and also we put a turn in the lane which shifts it farther away from areas of special biological significance near Point Reyes. So it should have the benefit of facilitating safety of navigation, and also to help protect the marine environment.

For the western approach, we shifted the lanes, it was a recommended shift the lanes further away from Gulf, further away from the Farallon Islands, and also extended it out another three nautical miles. And for the southern approach, we recommended extending the lanes another 8 1/2 miles to limit the VTS coverage area. Our report went to our Coast Guard headquarters office; they reviewed it, approved our recommendations, and then it went off to the International Maritime Organization in the spring of this year and was - the International Maritime Organization meets once a year, the safety of navigation committee - and they have given preliminary approval to our recommendations. They will also have another meeting in November to consider adopting the

recommendations, and if so, they will schedule an implementation date, which is likely to be sometime in 2013.

Jennifer Stock: So with the November date coming, you're saying November this year, 2012?

Mike Van Houten: Correct.

Jennifer Stock: And is there another public input process for that, or is that just an internal discussion of the recommendations?

Mike Van Houten: Well, there're two processes, this is the international approval process. The United States went to the International Maritime Organization and made their recommendation, and in addition to that, will also be conducting a rule-making process because of the traffic separation schemes that are also include in the federal regulations, and after the IMO meets in November, assuming they adopt and schedule an implementation, we'll work on a rule-making process, with a target goal of matching their implementation date next summer. So they'll once again be an opportunity for public input, and I want to also stress that we had a lot of public input during our Port Access Study as we developed our recommendations.

Jennifer Stock: Great! Thanks for giving that overview. I can hear that this is a process that is somewhat independent of the National Marine Sanctuaries efforts and it's great, great timing that it's all kind of coming together.

John Berge, you're sitting right here. Tell me, how did you first, when did you first hear about this issue, in terms of the conflict with whales and shipping?

John Berge: Well, we probably heard about it, we probably heard about it much the same way that you heard about it Jennifer, in that it makes the news and then obviously has you, as you so well put it earlier, just like driving down the road, you don't want to hit the deer or any other wildlife. No one moving a ship from point A to point B wants to run over a whale either. So we realized this is an issue an issue of concern, and we needed to get fully engaged and try to find ways to mitigate that risk as much as possible.

Jennifer Stock: That's great. And Jackie, haven't...you are one of the people that brought this to the attention of the Sanctuary Advisory Councils and you have been working on this issue for many, many years.

Tell us about your process in terms of educating all of the parties involved.

Jackie Dragon:

Yeah, absolutely. It's I think it's been about five years since I began working on this issue. And you know, for me, being able to be part of this effort with the Sanctuaries and Greenpeace is a little bit of a full circle experience because saving whales is really part of our history. In 1975, Greenpeace launched the first anti-whaling campaign in the world. And now this many years later, whales in our oceans unfortunately are under threats from all kinds of modern issues besides whaling, and that of course includes overfishing, entanglements in fishing nets, ocean noise pollution, which we were also getting at with this effort, and then ship strikes on whales. So as a conservation group and a member of the public, I was able to come and do something that was very special, that really it's a rare opportunity that the Sanctuary Advisory Councils offer, which is a multi-stakeholder opportunity that includes the public in an opportunity to come forward and say "this issue's important to us." And we thought Sanctuaries seemed like areas where whales should really be protected and be safe, and then to come and really realize that here in the Bay area, we have this unfortunate co-occurrence of three shipping lanes running right through three National Marine Sanctuaries, so it seemed very serious to us.

And I actually really have to commend the Sanctuaries and the Advisory Councils for taking this issue on and prioritizing it. To be able to be part of a group that really is kind of a model of stakeholder involvement, that brought together equal parts of the conservation community, the scientists, and the industry to put our heads together and find some solutions, and I think we did quite a good job and came away with some very ambitious recommendations.

Jennifer Stock:

Fantastic! Thank you for that overview. For those just tuning in, you're listening to Ocean Currents and my name is Jennifer Stock. We're talking about what the Sanctuaries are doing to work on reducing the impacts to whales from ship strikes in the area. Michael, can you give us a little bit of an overview of the process the Sanctuaries took? You were saying about the working group being established, this was introduced to the Sanctuary Advisory Councils, they said yes, we want to work on this, and you then got wrapped up in whales for a year.

Michael Carver:

Yeah.

Jennifer Stock: And just resurfaced again. So tell us a little bit about this process as a participant, and several of your panel people are here on the phone or in the studio, so you can bring them into it too.

Michael Carver: Sure. You know, to be honest, I was sort of humbled throughout this experience because of the caliber of people that volunteered to help on this working group, who flew in from around the United States to offer their expertise was somewhat unprecedented, and being place-based we're in a very unique situation to solve problems in a collaborative approach, which is the point of the working group. But you don't always reach consensus so... by the end we were able to put out a 40 page document with a set of recommendations that everyone was able to endorse.

So, represented on that working group was industry associations, captains, scientists from the Marine Mammal Center and an number of technical experts, all of the panelists from this program today participated, and you know, over the course of a half dozen meetings, we worked through various topics, brainstorming and then trying to work out the details and different strategies we could do to mitigate the risk of ship strikes to whales. One of the most obvious ways was decreasing co-occurrence, so as Mike Van Houten was talking about earlier, we were able to find a solution that not only ensured maritime safety with the placement of the new shipping lanes, but also ensured or safeguarded whales by decreasing the co-occurrence of where ships and whales go, particularly along the shelf-break, where we have dense aggregations of whales. Narrowing the traffic lanes, extending them beyond that shelf break, it kind of decreases that co-occurrence. Another area we focused on was something called a dynamic management area, and this is a tool that hasn't been used on the West coast yet. It's been used on the East coast, and that is to request vessels when there is a dense aggregation of whales to either slow down in that lane, or divert to another lane. And this was an attractive solution to, John, how would you couch that for industry? You were open, receptive to that solution?

John Berge: Well yes, I mean obviously we have the conundrum of these three shipping lanes and a huge amount of trade going in and out of San Francisco with whales out there, and so we tried to find the solution that would, as you put it Michael, reduce the co-occurrence situation of whales and ships in the same close proximity. At the same time, try to facilitate the fact that these ships do have to get in and out of San Francisco Bay.

Michael Carver: Exactly, sort of the brass tacks realities that we live with. And one of the other is trying to gather good data, and so one of the recommendations was to establish a voluntary sighting network, that is leveraging all those folks that are out on the water, whether out on a whale watching boat, the commercial ships that are going through the area, to report back to the Sanctuaries, where do they see the whales? Cause we can't be out there every day. We do have a robust monitoring program as you were talking about, Access with PRBO Science, They go out, they run, you know, we clock ten day cruises counting everything that's out there, but we really wanted to crowd-source, leveraging the community. So to do that, one of the things we're doing is we're collaborating with Earth and Sea, which is a local company that creates applications for smartphones and tablets. They actually created a whale alert app for Stellwagon Bank National Marine Sanctuary, and we're working on one for us on the West coast that will allow users to enter information on where they see a whale. They'll go to a database where the Sanctuary can take that information and form a dynamic management area.

Jennifer Stock: John Calambokidis, if you're still with us on the air, I hope, how do you see these recommendations in terms of the likelihood that these could help the whales? You've been working with these whales for years and really have a good sense of the dynamic nature of the ocean. So how do you feel about the recommendations?

John Calambokidis: I feel great about them. I think the first step is what Mike Van Houten referred to of changing the shipping lanes was the key first step. But it could only go so far because they could only address what we consider to be the predominant, consistent areas whales tend to use, but we struggled with how do we modify some of the kind of both speeds and routes the vessels take in a more dynamic mode given that every year where the whales are concentrated and even through the year tends to change depending on the oceanographic conditions and where that produced the best abundance of krill. Both blue, fin and humpback whales all feed on sometimes (inaudible word) fish that humpback and fin whales occasionally feed on, and that can move around a little bit. And what Mike was referring to, how to inform that kind of ongoing changing level was the big challenge. And I'm real excited about this kind of second step, which is the dynamic management area that he described, and how we can sort of modify where ships go. And one of the ways it looks like ships could modify where they go is by selectively changing the speed guidance what we'll provide them. I think we'll go into more detail shortly, but

basically there are elements of this that put either a speed guidance or a speed restriction, depending on where we move into a voluntary into a mandatory mode. On one particular lane where whales are concentrated base on the sitting reports that have come in, then vessels would either have a choice of using that lane, but using it at a slower speed, or using a different lane, and we're hoping that's the choice they would want to take and use a different lane, and that way get that separation.

So that's kind of I think the most innovative and both challenging and innovative part of the proposal that this working group came up with that now has to be implemented, which is how to maintain these, this information system and get the information we need. And have ships be able to respond and shift based on these shorter-term patterns to get that secondary benefit. And you know one part of this is really, can we get the industry and the ships themselves to become major participants in the reporting of whale sightings? Because while some of the whale watch trips and fishermen go out to certain specific areas to fish or look for whales, no other platform then ships are the ones travelling the exact areas that we're concerned about - the shipping lanes themselves - and travelling them on multiple trips per day, and at a level of effort that we could not really ever achieve with even a dedicated research effort. So getting the industry involved in that and willing to participate in that is going to require quite a few things: the training of people on ships, the willingness of ships to participate in this and maybe occasionally have someone on board to help train their staff on how to do this, how to get the reporting mechanism to work, the description of the application of the different techniques that might be used for how to report those sightings back to a central location and act on them. So a lot of that is still ahead of us to be determined. We have kind of the very skeletal outline of a plan that the working group came up to, but a lot of the details of trying to implement it still lie ahead of us.

Jennifer Stock:

Thank you John, and for those tuning in, you're listening to KWMR 90.5 Point Reyes Station and 89.9 Bolinas, and live on the web at www.kwmr.org. You're tuned to Ocean Currents and we're talking with several experts about reducing impact to whales from ships.

John Berge, I have a question for you about this. This is an enormous industry. About how many ships come in and out of San Francisco Bay and how many ports are in the Bay?

John Berge:

I didn't know there was going to be a test about this...

Jennifer Stock: About, about.

John Berge: There's probably about, say five or six major ports in the Bay area, certainly Oakland is the busiest port. You have a number of other oil terminals, you have the Port of San Francisco, which is primarily cruise ships. And in all, there's a little over 7,000 I would say deep water transits, vessels that would be under the control of the US Coast Guard and Vessel Traffic Service as they come in and out. So this doesn't include of course fishing boats and things like that. So that's about 600 a month, about 20 a day, and when you kind of parse that down, you know, it works out to be with three shipping lanes, if they would be getting equal use, that's about 6 or 7 transits per day through each of those lanes. Interestingly, there has been a shift recently for some obscure reasons which I won't go into right now, where about half the vessels were using the western lane and the remaining 50% are split between the north and south. But that gives you an idea of the number of vessels coming in and out. So yes, it is a huge endeavor.

But I would like to point out that we who have been involved with this are actually very excited about the potential for ships to be used as a tool to provide better data in terms of where the whales actually are. Quite often in the past, when there's been management strategies to try to reduce ship strikes on whales, they primarily have been based on kind of historical ideas of where the whales are at a certain period of time. So it just seems like a no brainer if we can develop better data that provides really more accurate, dynamic information about where the whales are specifically within a small graphical area, that we could probably end up with better, more productive management strategies.

Jennifer Stock: I'm curious, I can imagine that being on a container ship is, it's like a huge, huge thing, and I'm wondering... I mean I think you could probably see a blue whale blow, they're pretty huge, but a grey whale blow? They're tiny little puffs. I'm curious John or any of the others here if there's research on the sighting abilities from these container ships, in terms of, can you actually see these whales?

John Calambokidis: And I think that is quite a challenge from any platform, and right from the start I would say that we have a couple of huge problems. One, that we recognized early on, especially when we found out that blue whales especially were spending a majority of their time near the surface, much more at night than in the day. And we came to the realization that probably how they're distributed at night

might be even more important than exactly where were they during the day, given that they're spending this higher proportion of time at the surface. And all of our sighting data, of course comes from the daytime. So that's one huge hurdle we have. And then there's also periods of time when there's poor weather, there's fog, there's high wind conditions. So we do have enormous challenges with sighting of whales and knowing their distribution at the right time, even with dedicated surveys.

Now the ships have some advantages in that they represent a nice high, very stable platform height. So that's kind of in their favor, and it's often superior. I typically work in a 20 foot boat, right at the water level, and I'd love to be high up, like on the ship, and you can actually see much farther. But then they often have some critical disadvantages: They can't see the area right in front of the bow, which is often obscured by containers. They're not necessarily trained observers, although many mariners take a great interest in wildlife, so they've made themselves familiar, and they also have primary responsibilities for other duties that don't involve sighting whales, other than if it were a real sense of threat to the ship. So we do have those hurdles that exist. But I think by and large the large ships, despite their disadvantages, are probably our best and most reliable and most frequent option for getting sighting information. But this is a big issue for us with the whale sightings being problematic and in poor weather.

Jennifer Stock: Sounds like it's at least worth the effort, I mean might as well try anything at this point. Michael...

Michael Carver: Yes?

Jennifer Stock: You have a question, and I also want to ask you if you can talk a little bit about the effort on the East Coast.

Michael Carver: Of course, I'd be happy to. I just wanted to get back to what we were talking about with the application for a minute and sort of tie it into the observations from the commercial platforms. For the listeners, we were talking about an application where users on whale watching boats and fishing and what not could enter where whales are. And one of the other components of that is that the same database will be able to be emailed by someone on a commercial ship. And we've been in conversation with our sister organization in NOAA, the National Weather Service, who gets observations on weather from mariners. They actually have a very robust and long-lived program on voluntary weather observations. And so using that same interface for mariners to be able to give us

information on whales, we're very hopeful to be able to sort of capitalize on that work and merge these two sort of data streams, one from commercial, one from sort of the smaller vessels.

Jennifer Stock: Can you give the example of the East Coast? I know at Stellwagon Bank National Marine Sanctuary, outside Boston Harbor?

Michael Carver: Yeah, that's exactly right. So off of Cape Cod, Stellwagon has been working on this issue also for a number of years, and they have put in, they have a slightly different solution to this problem. They have right whales out there that were also getting struck by ships. And what they did was put in a number of listening stations, which listen for whales. Then once they're in the area, they upload that information and it is broadcast to mariners, so they know when whales are in the area. We considered this option in our working group because it's very attractive and it's all sort of automated and it doesn't require the sort of engagement of the public - it just all works. But because of the difference in the up calls - and John, I'll let you speak to this - and also because of the huge cost, it was not an option that we sort of felt was viable. John, do you mind talking a little bit about the difference between the up and down calls of right whales versus blues and humpbacks.

John Calambokidis: Yeah, you bet. And I think especially for blue whales there's been quite a bit of work on detecting their calls and certainly detecting calls of blue whales has been valuable in research. But as part of the studies where we attach tags to blue whales, we discovered that it was really just a few blue whales producing lots of these calls and it was primarily males when they were traveling who were producing these calls. So it actually didn't turn out to be a very great indicator of areas of feeding concentration. There was another type of feeding call that blue whale male and females did produce, but it still is not produced in very high numbers, so we would actually find that we'd be in an area where there would be 40 or 50 whales feeding, and you'd actually be detecting very little acoustic detection. So we just realized it was not a very good indicator of localized concentrations, especially of feeding with blue whales, unlike how it's used for right whales.

And humpbacks, you have a similar but slightly different problem, in that humpbacks are known for these long, complex songs that they produce and the males again vocalize at a very high rate, but they do so primarily during the breeding season. And they'll do it in areas like the Farallones, but primarily in spring, early spring and late fall, you know, the time periods closest to that winter breeding season. And again, just detecting humpback calls wasn't a

very good option for tracking these two particular species for where they might be concentrated, for dealing with how they might be vulnerable to ship strikes in a particular area.

Jennifer Stock: Excellent. Thanks John. So, next steps here...Sounds like there's been several potential actions put on the table, and these were just presented this past summer, 2012. So Michael, what are the next steps with evaluating the potential to act on some of these with the challenging budget times that we have, and boy, we have a whole bunch of staff at Cordell Bank, a total of four!

Michael Carver: Well, you know, first off I have to look to my right and thank John Berge, the industry and Pacific Merchant Shipping Association. They helped fund sort of to get us started with gathering data, and that you know, sometimes just comes down to funding, and between the industry and Pacific Merchant Shipping Association and in-kind services from Earth and Sea, we've been able to sort of move forward with our volunteer sighting network. And that will really help, not just us at Cordell Bank, but all the Sanctuaries along the West Coast, and really help get that data we're after. And some of the other things that we've done is we've sat down with the Coast Guard and the industry, you know, other partners, Harbor Safety Committee meeting, bringing them up to speed on some of the recommendations and talking through what implementation would look like, because while we did have a working group that had broad representation, it's a large community. So right now we're working with the other partners and the Coast Guard is a significant one in implementing these recommendations.

Jennifer Stock: Okay, and Mike, I'd like to come back to you in a second, but Jackie, you said you wanted to add something to that.

Jackie Dragon: Yeah, a couple of things on this. First, the cost as Michael puts out is really significant. I'm really excited because now we really have this train on the track. We've had whales and ship strikes really going on for a long time, but now we're really bringing together all the players to start gathering this data and coming up with some really great creative solutions. Part of the problem is that they do cost money. There's a high cost to implementing each and every one of these things. So it's exciting to have the participation from the shipping industry and the funding that they are bringing to this. Listeners, I think, I would encourage to write to the Sanctuaries to say, "we're happy that you're doing this, and we want to see more of it," because as we know, funding gets cut from the top in

Washington down every year, and if we want resources to be able to go to efforts like this, they need to hear that we care about this.

You know, this working group began actually because I was looking at ocean noise pollution, and as it turns out at this point, the oceans have grown very, very noisy. We have somewhere in the neighborhood of 100,000 ships in our global fleet that are travelling across the oceans every year, and we all depend on that commerce. So it's not going to stop any time soon, and if we're lucky enough that we're increasing the numbers in depleted whales, such as our endangered blue whales, we're only going to have more and more of this problem. And particularly in our National Marine Sanctuaries, those are areas that we need to start learning about that noise. If the ocean's just getting noisier and noisier, that creates a kind of smog for whales, where they're not able to hear. And for them, it's all about sound. It's an acoustic environment, if they're going to be able to find a mate or navigate and locate their way, it's about being able to send and receive signals.

So we actually have recommendations in this working group that are about acoustics and that include things like being able to have passive listening devices in our Sanctuaries, but right now, we don't have the political will and the juice behind it and really frankly, the dollars to be able to implement it. You have a lot of people, certainly everybody that was engaged in networking group that would love to get it going and we had, as Michael said, some of the smartest people, the experts that were bringing us the latest science, the best available data to work with, but we need to be able to have that juice to be able to carry it forward. So I'm excited that we have begun, and this is an opportunity to let people know that we're on the right track, but we need to keep it moving.

Jennifer Stock:

That's fantastic. And Mike, I wanted to bring you back up too, talking from the Coast Guard perspective. You mentioned earlier the whole port access route study that was helping to shift the lanes a bit, but also what are some of the Coast Guard's positions on some of these recommendations, and how will the Coast Guard stay engaged through these next steps with the Sanctuaries and NOAA fisheries and the whole working group process?

Mike Van Houten:

Well I want to say that, I should have mentioned earlier that NOAA was very helpful, particularly Michael and Cordell Bank, during our study, providing valuable information on whale density areas. Also John Calambokidis and everybody on the panel were very helpful with our study. Also having it through our work group

meetings, all were very interested in the issues we're working on and continue to collaborate where we can to help once again our focus on safety of navigation, but also helping to protect the marine environment.

Jennifer Stock: Fantastic. Thank you so much Mike. We have about, less than 10 minutes or so, and I wanted to just go around in terms of ways for people to stay involved and up to date on information regarding the next steps, and Jackie, you mentioned a really great point about Sanctuary Advisory Council meetings. These are a couple of times a year, four or five times a year for each Sanctuary, and they're public comment periods, and the public is always welcome to attend. And for Cordell Bank, ours are usually at PRBO Conservation Science in Petaluma, or right here in Point Reyes Station at the Red Barn Classroom at the Point Reyes National Seashore. And we have a meeting coming up I think next Thursday...

Jackie Dragon: This Thursday, well for us...

Jennifer Stock: Gulf of the Farallones has a meeting this week. Where is that?

Jackie Dragon: Absolutely, we're in Half Moon Bay. We move around the Sanctuary. And just to give a pitch for public comment. For me, in bringing this issue up north, you know I began actually when I started working on the shipping noise issue, attending the Channel Islands Sanctuary Advisory Council meetings where I learned quite a bit and they're doing great work down there, again prompted by all those deaths of blue whales. But it was that public comment period, just those three minutes in the middle of the meeting where I was able to bring this issue up to the folks at Cordell Bank and at the Gulf of the Farallones and kind of bring their attention to it. They're working on many important issues to keep our Sanctuaries safe and clean and really healthy, and also give access to all the many users that use the Sanctuaries. They, as I said, have very limited funds to be able to do all the work that they do, so it was really wonderful to be able to show up at that public comment and say this is an issue that we as public stakeholders, as conservation organizations is overdue, because you know it's not unnatural for us to be used to something like shipping traffic moving in and out of the port, but in fact, it is something that needed our attention and it's not going to change if we don't create working groups like this and bring volunteers and the public together. So I do encourage people to use that outlet and again to make sure the Sanctuary knows that it's important to them.

One other point is that our recommendations back to the Sanctuary also included education and outreach, so another piece of this besides just you know the folks that are out on the big ships or the actual mariner vessels keeping their eyes out and knowing where whales are, is the general public having a better appreciation for what we're doing and supporting it and knowing how they can interface when they're out on a boat and seeing whales and being able to bring that information back.

Jennifer Stock: Yeah, there's a great opportunity with the number of whale watch operations in San Francisco that are going out and the naturalists getting up to speed on the issue and communicating about it. And Cordell Bank, we have one little field seminar every year to get out there.

How about John Calambokidis? Do you have any last words in terms of ways to stay engaged in this issue, what you'd recommend people to do to stay up to date?

John Calambokidis: Well mostly I want to echo what Jackie said. I do think you've heard from some people with the Coast Guard and NOAA Sanctuaries and the industry that are extremely involved in this issue and have been really responsive. But by and large, really for them to be able to keep having the support within their agencies, I mean we really need to keep the pressure on. Because this is a lot that 's being asked, both of the industry, but also multiple agencies within the federal government. So you've got a lot of inertia and changes that need to be made, especially these innovative changes being proposed by the working group. So I really do think that you know, NOAA, both Sanctuaries and NOAA Fisheries that is responsible for management of marine mammals and the US Coast Guard and the shipping industry, all of us, whether we're researchers or members of the public and care bout whales, have to keep kind of pushing forward them to stay engaged in this issue and moving it forward.

Jennifer Stock: Thank you. And Mike, any final comments in terms of comment periods with the Coast Guard and the studies that you've been mentioning earlier.

Mike Van Houten: I don't have too much to add at this point Jennifer. Our Coast Guard headquarters office will be managing the implementation at this point. But we'll definitely be engaged with them and with people showing an interest in our efforts and our study preventing co-appearances of shipping and whales and also safety of navigation in the lanes. So I don't have a specific timetable at this

point, but we certainly want to stay engaged with everybody who has an interest in it.

Jennifer Stock: And I believe these will be probably, they'll be announced at Sanctuary Advisory Council meetings, so those will be available through the constituencies that are sitting at those meetings. That's great. Thank you so much for participating today, Mike.

Mike Van Houten: You're welcome.

Jennifer Stock: And John, how about you? Do you want to add anything in terms of ways to stay engaged on this issue? Information that we can keep up to date on?

John Berge: Well, it's a great question. We are obviously very engaged and committed to this, as are I think all the stakeholders are. That being said, it's quite an ambitious project ahead of us. You know, we developed this plan that was adopted this last summer, and quite often you develop a plan like that and it gets a lot of attention and a lot of coverage, and then for the next year or two, when you're actually doing some of the more boring, pedantic work of actually making those things come true, it tends to get kind of lost in the background noise. So I think it's incumbent upon all of the stakeholders - NOAA, the Sanctuaries, the conservation groups, our own industry - to make sure that the general public kind of gets a good idea of the progress we're making because, you know, shows like this are just a great example of how we can do that, but I think we just need to keep it in the forefront.

Jennifer Stock: Fantastic. Thank you John. And Michael, any last words in terms of websites and we've got those Councils plugged really well, for public participation. Get up there and stand up a little bit more.

Michael Carver: Well a plug for our wonderful website. I'm going to say if you go to <http://cordellbank.noaa.gov/protect/> there will be a section on ship strikes and you can read that and then it will take us to our national website, which has a lot of information. We put that together after the working group as our first effort to try to educate the public about the issue, what we're doing, and various management strategies at different Sanctuaries. So I really encourage you to go there, and if you don't remember that URL, you can just Google Sanctuaries and ship strikes and it will come right up.

And in addition to that, I just want to underscore to folks out there. Get out on the water. Go on a whale watch. See these animals. They're amazing.

Jennifer Stock: That's great. I know it's pretty exciting this year - we had blue whales right off the coast of Point Reyes Beach, and I have to say, one of the best days in the office was when we were told we're going to go see the whales! It was awesome. Really, really special to see them so close to shore this year. It is a phenomenal experience, and we're getting right up to grey whale season here. That will be wonderful.

Well, I want to thank everyone that is participating today, in the studio and on the phone for joining me to talk about this issue. And I definitely encourage people to stay tuned and we'll definitely let everybody know of any meetings coming up where there would be more information shared. But thanks again for everybody coming on!

Guests: (Overlapping) Definitely. Thank you, Jenny. Thank you for doing this show.

Jennifer Stock: Well thank you. We're going to take a short break and I'll be back in a little bit with just a few more announcements, so please stay with us. You're listening to Ocean Currents.

(Music)

Jennifer Stock: I hate to pull that song down cause it's so beautiful. Miss Lynne Walsh, a friend of mine wrote that song. She lives in Fairfax. I hope she performs it every once in a while. But we just had really a great overview of what's happening here in the Sanctuaries with trying to reduce the impact to whales from ships.

I do just want to give you a few announcements before we close out the show. You've heard me talk a little bit in the past, the Cordell Bank Sanctuary has been working with the Oakland Museum of California for a while now, developing a really great big exhibit that will be permanent and we have a couple of sneak peek previews this fall where you can see it. And then it will be closed until the Grand Reopening in June 2013. And the days coming up are November 11th and December 2nd. And December 2nd is a free day for the public, a free day for anybody so it's a great chance to see the exhibit with your family for free. November 11th it is for a free that day, but it's open for the exhibit. So anyway, November 11th and December 2nd. You can go to

museumca.org and there's just an incredible, I'll just give you a teaser - this huge 30 foot wall of multimedia video and photos and music and background ocean sounds - it's really, really cool, and it will immerse you in the ocean if you need it. So check that out. Museumca.org. I'll be talking a lot more about that in the future.

Also, I just wanted to let you know that Ocean Currents is the first Monday of every month. We're part of the West Marin matters series, where every Monday at one, you can tune into KWMR to learn about a topic of environmental focus, and the Ocean Currents show has a podcast. So you can either find that in iTunes or go to cordellbank.noaa.gov to get the past episodes, hear all the past Ocean Currents shows.

So take care and have a great month. Enjoy these last few days of sunny weather here in the Point Reyes area. Next month I'll be back with Dr. Bill Cochlan, who is a biological oceanographer, and we're going to talk about some fascinating phytoplankton, one of the most influential microorganisms on our planet. So we'll hear a lot more about those tiny things. We're going from the giant blue whales to the tiny plankton; it all matters.

So thanks again for tuning in and we'll be back again next month with Ocean Currents. Thanks for listening to KWMR.

(Music)

Jennifer Stock:

Thanks for listening to Ocean Currents. This show is brought to you by NOAA's Cordell Bank National Marine Sanctuary on West Marin Community Radio, KWMR. Views expressed by guests on this program may or may not be that of the National Oceanic and Atmospheric Administration and are meant to be educational in nature. To learn more about Cordell Bank National Marine Sanctuary, go to cordellbank.noaa.gov.