

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

(Music)

*Jennifer Stock:* Welcome to another edition of Ocean Currents. I'm your host, Jennifer Stock. On this show, we talk with scientists, educators, fishermen, explorers, policymakers, ocean enthusiasts, authors, filmmakers, and more—all uncovering and learning about the mysterious and vital part of your planet--the blue ocean.

I bring this show to you monthly from NOAA's Cordell Bank National Marine Sanctuary, one of four national marine sanctuaries in California, all working to protect unique and biologically diverse ecosystems. Just off shore of the KWMR listening area on the West Marin Coast are the greater Farallones and Cordell Bank National Marine Sanctuaries, which together protect 4,581 square miles of rocky shorelines, sandy seafloors, rocky banks, deep sea canyons, and maritime artifacts.

So often we hear of the declining ecosystems and failing management schemes in the news but have no fear! Today, we have a success story to talk about. If you live along the coast or around San Francisco Bay and glance out in the water, you're very likely to see a small dorsal fin quickly surface and disappear. It could be very likely be a harbor porpoise. Harbor porpoise have historically been in our region for centuries, but in the 1950's and 60's, it appeared to disappear. In the early 2000's, they started to appear again, and with careful study, we are learning more about this species in this region than ever before thanks to my guests today.

To capture this story, filmmakers Jim Sugar and editor Jessica Sison created a film, "Return of the Harbor Porpoise," which is showing at the San Francisco Ocean Film Festival this Saturday and has won the 2018 Citizen Science Award.

I am thrilled to welcome Bill Keener, a biologist with the Golden Gate Cetacean Society and filmmaker Jim Sugar and editor Jessica Sison to KWMR. Welcome everybody to Ocean Currents!

*Jessica Sison:* Thank you!

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- Bill Keener:* Thanks for having us!
- Jim Sugar:* Happy to be here.
- Jennifer Stock:* This is wonderful. I have been wanting to talk about this story for a while because I've heard about the "Return of the Harbor Porpoise," and Bill, I've seen you talk about this at some of the research symposiums. When I heard about the film, it kind of all came together at a great time to talk about this since the film is going to be showing on Saturday.
- I really want to start with the natural history because these little porpoises are so cute. They are cetaceans, so they are in the whale and dolphin family. I believe they may hold the record for the smallest cetacean. Bill, is that accurate?
- Bill Keener:* Well, the porpoises are the smallest cetaceans. There's the harbor porpoise along our coast and then there is the vaquita, which is the very endangered species in the Sea of Cortez in Baja California. They are the two smallest. They're only about maybe five feet long and 150 pounds, so they're pretty small.
- Jennifer Stock:* What is the typical range for harbor porpoise, in terms of where in the Pacific?
- Bill Keener:* In the Pacific, we're more or less getting down towards their southern edge. They like cold water, so they will go as far down as Morro Bay. Then they go far north up to Alaska and across all the way down into Japan. They love the cold coastal waters of the north Pacific.
- Jennifer Stock:* Nice. They are typically hugging the coastline. That is my understanding. How far off the coast can someone see a harbor porpoise?
- Bill Keener:* They're generally just the first few miles, but you can see them out along the shelves. People have seen them off the Farallones before. Certainly, I've seen them out at Cordell Bank, out on the bank. They get out a little ways, but they are not deep ocean animals. They don't go out beyond the shelf.
- Jennifer Stock:* Do you think they go out that far because of the tidal influence of San Francisco Bay?

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*Bill Keener:* No, I think they are just looking for food. Yeah, it's all about the food and anywhere where there's a good place where there are small schooling fish because that's what they eat. They'll eat squid as well but mainly small schooling fish like anchovy or herring—those kinds of fish.

*Jennifer Stock:* That's a similar diet, I believe, to some dolphin species as well. Can you explain the difference to listeners between a dolphin and a porpoise because they are similar but a little different?

*Bill Keener:* Yeah, they are a little different. You know what's funny is in the old days, meaning when I started looking at these animals in the 1970's, there was actually not much of distinction. That is scientists would call them porpoises or dolphins, sort of alternatively. Then, what happened is that they started distinguishing between the two, and the reason why there was confusion in the beginning because the word "dolphin" is just the Greek word for the animal whereas "porpoise" is the Latin word. So, it's "porcus piscis" or "pig fish." The word sort of got confused for a while, but now, scientists have separated them.

Dolphins are the warm and temperate water animals that go way out into the ocean and many of them are further south whereas porpoises are about half a dozen species of cold water, near shore animals. There are anatomical differences. They've been separated by some millions of years of evolution. They have different teeth, a different skeleton. A little bit smaller brained in the porpoises than in the larger-brained dolphins.

*Jennifer Stock:* Do porpoises echolocate?

*Bill Keener:* Yes, all toothed cetaceans, meaning the sperm whale plus all the dolphins and all the porpoises all echolocate. They live a very acoustic life underwater. They're sending out little signals above human hearing that is really high frequency. It bounces off their prey or when they are communicating. They listen to the echoes coming off like bats do. It's the same kind of thing.

*Jennifer Stock:* I have a little sound file of a harbor porpoise that I understand was sped up so we can hear it because their frequency is so fast, we wouldn't be able to hear...

*Bill Keener:* It was slowed down so that we can hear.

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- Jennifer Stock:* Right, the blue whales we have to speed up. The harbor porpoises, we have to slow down. There's a big difference there in their morphology. Okay, let's take a listen to this!
- (Porpoise noises)
- Jennifer Stock:* So lots of little clicks in there. Did you hear that? The little clicks in the background with a lot extra, extra noise in there. There are some other fish and shrimp and stuff moving around. Those high-pitched signals are how they find their prey. Can they also stun their prey with echolocation?
- Bill Keener:* Well, they don't think that porpoises can. There is some theory that the big giant fifty-foot sperm whales can do that, and they sort of have a focused soundwave that can be so strong that it can actually stun prey. It is enough to make them slow down for a second, so the whale can catch up with them. With porpoises, that's probably not going on. We can see them feeding locally from the Golden Gate Bridge, and I have certainly never seen that kind of action. I've seen them trying to go up to the fish and try to grab it just like you would expect to see them do, but I don't really see anything in the way of doing any kind of acoustic stunning.
- Jennifer Stock:* That's amazing how they do that with their brains. I wish we could do that! Laser beam! (laughs)
- Bill Keener:* Seeing underwater would be great!
- Jennifer Stock:* That's cool. Tell us a little bit about the history in the terms that they were here historically, and then they disappeared for a while...
- Bill Keener:* When talking about San Francisco Bay, which is really where we're studying them, and the reason we are studying them there is because we have one of the most amazing platforms in the world, which is the Golden Gate Bridge. When I started studying marine mammals, back in the 1970's, there were no cetaceans in San Francisco Bay regularly. There were no dolphins, no porpoises, no whales. Now, that has all changed in the last ten years or so.
- The first animal we noticed was the harbor porpoise. In 2008, after not seeing porpoises, we actually looked for porpoises. We did studies. One of the first things that I did in the 1980's was when the Gulf of the Farallones National Marine Sanctuary was being set-up, they wanted to have a baseline survey of what animals are in the sanctuary area. We would go out on boats for a three-year

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period to do transects and figure out what species are there, and one of the things we studied was harbor porpoises. We started looking in San Francisco Bay, and we would go out into the Gulf of the Farallones. We encountered, over three-years, exactly zero in San Francisco Bay. So, we were looking for them.

But that all changed around 2008. John Stern, who recently passed away, one of your close associates, friend, and a Phd and professor of biology at San Francisco State, was doing Minke whale research off the coast here. He came back one day really excited. He called me up and said, "Hey, I saw some harbor porpoises up in San Francisco Bay. There was a mother and a calf." I thought, "No, it's not likely." I ran down the next day to look from Cavallo Point, and sure enough, there were harbor porpoises going by. I was stunned. It happened in our lifetime that we got to see cetaceans in the bay. We started looking, and they were here every day, and they have suddenly rediscovered San Francisco Bay.

Now, we know that they were here historically because when you look at the Indian middens that the Native Americans had left, that they had built thousands of years along the shores like at Emeryville, there's small numbers of harbor porpoise bones in there. So, we know that they were in the bay. We also know from a professor at Berkeley in the 30's. He would go fishing at Richmond, and he would record every time he saw harbor porpoises. And they were frequent, he would record almost every time he went fishing.

We know that they were in the bay until the 30's, and we think one of the real things that happened to make them abandon the bay was World War II, when they put up submarines all across the bay from San Francisco to Sausalito. That would have prevented them from moving in and out of the bay.

Then, after that, in the 50's and 60's, it was a real time of pollution in the bay. I remember as a kid in the 50's, driving over the bay bridge, and it would stink like sewage because there was unchecked sewage and industrial pollution running into the bay. That's all changed. After the Clean Water Act and all the grass-roots efforts by folks like Save the Bay and others, it has really made a huge positive change for San Francisco Bay. As a result of cleaning up, we've got our cetaceans back.

*Jennifer Stock:*

That's such an incredible story that we can see in a lifetime with the changes that can happen when we clean things up a lot in terms

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of changing how we discharge into the water and preventing and slowing down pollution and eliminating those impacts. Now, I would assume they would also need prey to attract them to this area. Were prey also potentially not around at the time when they were facing these other threats?

*Bill Keener:*

That's one of the hypotheses that we think if it happened in the past is that the fish numbers were knocked down by the pollution. Having a cleaner bay starts the food chain from the bottom, and you come up to the fish and the small schooling fish like herring, anchovy, Jacksmelt, and others are prevalent in the bay now. That definitely makes the difference. I think it's really all about the food for the porpoises.

*Jennifer Stock:*

That's wonderful. For folks tuning in, this is Ocean Currents here, and I have three guests in the studio: Bill Keener from Golden Gate Cetacean Research, filmmakers Jim Sugar and Jessica Sison, who we will move into in a little bit to hear about this film that really covers this beautiful story of resilience and recovery in San Francisco Bay and have a big marine mammal return. It really gives us a piece of the puzzle of how we've cleaned up the bay and how when we have mammals return like this, it's pretty exciting.

Is there any association with the return of river otters that we have seen? We have seen some great new sightings and areas where river otters started to appear again. Is there any association at all with maybe the prey situation?

*Bill Keener:*

You know, I think it is part of the same basic thing that the bay is getting cleaner, and you're having animals that can move into areas and the otters are feeding on fish too. The river otter ecology folks do a fantastic job of finding these new areas where they're moving out from northern areas of the bay and now are moving throughout. Yeah, I think that having that opportunity for these animals to have, in particular, this case, fish, makes the difference for porpoises, dolphins, and humpback whales now and as well as the river otter.

*Jennifer Stock:*

Yeah, I want to talk about that in a little bit. Reading up a little bit prior, reading in the *Field Guide to the Marine Mammals of the Pacific Coast*, very little is known about their life history. Your work is really instrumental right now in helping to understand what they are all about. Like you have said, you have a great platform off the Golden Gate Bridge. Can you just talk a little bit about how your work is focusing on understanding the harbor porpoise?

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*Bill Keener:* Right, harbor porpoises, because they're common along coasts in Europe, here, and the east coast of the United States, they have certainly been studied in terms of if they've been stranded, killed, or trapped in a fishing net or something like that and drowned. You can study basic biology, but you don't get an idea of what they're like in real life. It's really important to understand what animals are like in the wild.

When we would go out in boats to the Gulf of the Farallones in the 80's, we tried to look at their life history, what they were doing in their social structure, and stuff but couldn't do it. When you approach in a boat, they change their behavior, and they run away from you. But from the Golden Gate Bridge, you can look down and see them every day coming underneath the bridge. You get to see the mothers with the calves. You get to see them trying to mate. You can see them chasing after fish. For the first time, we have a real window into their natural behavior.

*Jennifer Stock:* That's great! Just the whole idea of the bridge serving as a research platform is wonderful. You don't have to pay for it!

*Bill Keener:* You don't have to pay for it, but it's one of the foggiest, windiest places in the world. (laughs)

*Jennifer Stock:* Yeah.

*Bill Keener:* So, there's many days where we can't see anything down below in the foggy summer months, but most of the year, it's fantastic. You get to know the patrols from the Golden Gate Bridge, and they are really friendly and great people out there. It really is an interesting environment because you always have people, tourists, coming by. So I've learned how to say "porpoise" in ten different languages because they are always asking, "What are those? Are they sharks?" (laughs) And I have to explain, "No, they are not. They are mammals down there."

*Jennifer Stock:* That's exciting! What are some of the other things you have seen in the water? Focus on the water! (laughs) I could imagine that there are many things to see on the bridge, but any other natural history sightings that are really unique?

*Bill Keener:* Yeah, every day, you can see Harbor seals. You get to see California sea lions. On a rare occasion, you might get to see a steller sea lion, maybe a couple times a year. Pretty rarely, elephant seals will go under the bridge. The interesting thing is that you get to see sea lions feeding, and I have seen steller sea lions bring up

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five-foot long rays. I've seen thresher sharks being tossed around by California sea lions. You get to see some stuff! In addition, there's all the bird life.

*Jennifer Stock:* Yeah.

*Bill Keener:* Because you have got all the gulls, the cormorants, the grebes that are going crazy because they love all that feeding activity because they get the scraps. The first thing I do when I walk on the bridge, I look for the birds because they know what's happening. They know where the porpoises are.

*Jennifer Stock:* Absolutely! Actually, some of the video footage that I've seen is mostly birds that I've seen that are feeding, and the harbor porpoises are going crazy as well.

*Bill Keener:* Exactly.

*Jessica Stock:* Wonderful! The Golden Gate Bridge is a wildlife viewing platform. Where are some other points in the bay where people might be able to see the harbor porpoises? I have seen them at a couple beaches on the oceanside.

*Bill Keener:* Right.

*Jennifer Stock:* How would you describe seeing one in terms of the difference between that and a dolphin, if you are looking on the water?

*Bill Keener:* Sure, along the Marin Coast certainly, Drakes Beach, Limantour, the water gets pretty calm. Sometimes, you can see porpoises come up, but you can also see bottlenose dolphins. You do have to distinguish between the two. The harbor porpoises are pretty small, and they've got a very short one to two second surface roll, as we call it. As the back comes up, you see a triangular dorsal fin. It's dark and it goes away. It's just very short. Dolphins will be up at the surface for three seconds, but they have a much taller swept back curved dorsal fin. That is really what you should look for.

*Jennifer Stock:* It almost looks like a surfboard fin, upside down on a dolphin.

*Bill Keener:* Exactly. In the bay, the places to watch beside the Golden Gate Bridge, and if you do go to the Golden Gate Bridge, you want to go at high tide. That's the best time. Just look on your tide table and figure out a good time to go for you. The other place is Cavallo Point and Fort Point in San Francisco. Anywhere around

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the Gate area is really good, but I like going to Cavallo Point as well as the Golden Gate Bridge.

*Jennifer Stock:* That's nice. You get the high view up on the bridge and then the low view.

*Bill Keener:* Exactly.

*Jennifer Stock:* That's great! Let's talk a little bit about how this story came to be in mind for producing a film. I would love to hear from Jim and Jessica. How did you guys hear about the Harbor Porpoises and creating a film?

*Jim Sugar:* I'm very good friends with another photographer named Flip Nicklin, and I've known Flip for a very long time. He and I worked together at National Geographic for a really long time. We met (laughs) at Joe's Taco Lounge in the valley.

*Jennifer Stock:* Good joint!

*Jim Sugar:* Yeah! We bumped into each other at Joe's, and he had John Stern there with him. After chatting for a few minutes with Flip and finding out what he was doing, and he had just finished a magnificent book on whales. In an instant, it came to me that there was a movie about harbor porpoises. I asked John and Flip on the spot if they would be willing to collaborate with me on a film on harbor porpoises. It would be the working title which became the real title was "The Return of Harbor Porpoises to San Francisco Bay."

We just decided on the spot at Joe's Taco Lounge that there was a movie there. It had a beginning and a middle and an end. Most importantly, as far as I was concerned, was that it was a good news story about the environment. Instead of hearing all these terrible stories about things that were going on with the environment, we had a great news story. John was the guy who had discovered that harbor porpoises had come back into the bay.

Like some of the other movies projects I have worked on, there wasn't even a deciding point. It just happened. We realized we had enough material for a film, and we began work on it. Flip and Jonathan introduced me to Bill Keener. Bill and I live really close to each other, and the thing just fell together in a big hurry. And a lot of times you do documentary films, it's not like you even have to make a decision. The film finds you. And that's what happened here. The film found us.

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We went to work on it that weekend. Bill explained to me where you go, what you do, and almost immediately, the whole thing just came together. It wasn't like we had to find some kind of research paper or anything like that. John had done the work. To Flip's amazement, these harbor porpoises had come back into the bay.

One of the things, just to add to something Bill just said, the story of "Harbor Porpoises of San Francisco Bay" is a great story of the law of unintended consequences. For these three terrific women who would form the Save the Bay Foundation in the 1960's, their intention was to clean up the water. I think nobody expected at that point that the predators would come back. What these women were trying to do was clean up the water and make the place a better place to live and ultimately to go swimming. What we ended up doing was through the law of unintended consequences was to make a movie.

By cleaning up the water, it changed the balance of nature in the bay and that was a good news story. And it was never anything that was intended. It just happened. But by doing one thing, cleaning the water, something else happens. Predators come back. Well, what are the predators? The cetaceans came back. Harbor porpoises, dolphins, sharks, and whales. Since Bill and I have finished shooting, there has now been an influx of humpback whales in the bay, and nobody thought that that was going to happen. What Bill and I are discussing right now, we haven't made a decision, but now that we have this first film done-- do we want to make a longer film? Do we want to do another one? If we do, we want to add whales because everybody loves whales.

*Jennifer Stock:* Yeah, the whales are very captivating. (laughs)

*Jim Sugar:* Whales are fabulous! So, in every way it's just a good news story.

*Jennifer Stock:* How did you bring Jessica into the film? Jessica Sison is the editor of the film, and she's here with us in the studio. Jessica, how did you meet these folks?

*Jessica Sison:* We have a mutual friend, Kim Komenich, who is a Pulitzer prize winning photographer. I was working on his documentary about the people power revolution in the Philippines in 1986, which ousted the Marcos dictatorship. We met at the book release party for that documentary, and Jim was telling me about his film. I thought, "That's really fascinating." You know, I am a San

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Francisco native, and that's a part of San Francisco Bay area history that I have never heard of.

As a kid, I went to Ocean Beach, and it was not a big deal. And to think that twenty years earlier was just horrible. You couldn't go to Fishermans' Wharf. You'd smell the bay. You couldn't go to the bay bridge, and it you'd smell the bay. I couldn't imagine what life would've been like at the time, so to hear about this, I really wanted to be involved.

And like he said, it was a good news story. It wasn't another story about "the bay is dying" or "things are horrible." Horrible things are happening. It's a story about people who made a difference, and something happened. Maybe it took fifty years for the predators to come back, but it happened. For me it is saying that there is hope if you make the effort to clean up. Good things will happen.

*Jennifer Stock:*

Wonderful! You've just made me think about how important it is for film to tell these stories because they communicate what the scientists know from their observations, which is in the scientist community. To bring it out so everyone else can learn is so wonderful. Thank you for doing that! I think we need to get this into the curriculum for our students to hear this story, especially in the Bay Area, that people can get involved and make a difference and it shows up in the ecosystem.

*Jim Sugar:*

One of the things about this film was that, and I had this happen to me before, the film was meant to be. The film becomes a living creature, it's alive. The film is alive. Just like how the harbor porpoises are alive. The film is alive. All you have to do is listen. You put your ear to the ground, and you listen. And the film is alive, and it tells you where it wants to go. You do it. It's not like you must make some great big gigantic decision. All you have to do is listen. That's what happened with this film.

Jessica is really, really good at translating this. I'm so proud of her. She's so fantastic. She understands what it is, and she's made many films. In this case, we would listen, and we would get together and we would talk about it. It would tell us what it wanted. It would tell us where we were. It would know what was next. Jessica on several occasions would give me a shot list, and she'd say, "Okay, we've got these three things. Now, here's what's missing." She was listening, and she'd say, "Here's what you need to do. Go out to the bridge and shoot these pictures because you are missing that." I didn't know that, but she knew it.

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- Jennifer Stock:* That's great.
- Jim Sugar:* She would give me an assignment; she'd give me a new shot list and I would go out and do it. Then, we would put that together and that was how the film got to be made.
- Jessica Sison:* Yeah, I would like to...
- Jennifer Stock:* One second, I just wanted to let folks know this is KWMR Point Reyes Station and you're listening to Ocean Currents. We are talking right now about the film "The Return of the Harbor Porpoise." Is the name of the film "The Return of the Harbor Porpoise to San Francisco Bay"? I have been saying the wrong title! "The Return of the Harbor Porpoise to San Francisco Bay." I have filmmakers Jim Sugar and Jessica Sison here and biologist Bill Keener. We're talking all about this wonderful success story for conservation right here in San Francisco Bay. Go ahead, Jessica.
- Jessica Sison:* I just wanted to continue what Jim was saying about getting the missing shots. One thing I always saw from him was just the excitement, that feeling that anybody can go to Golden Gate Bridge, look down, and see harbor porpoises. He kept talking about that and going through all the footage, there was none of that. There were scientists talking about it, and scientists and photographers who knew what they were doing when looking for harbor porpoises. One of the things I told them was I want to see shots of tourists, anybody, young or old, approach them on the bridge, and tell them to look down at what you can see and capture that excitement. I wanted them to capture the excitement of these tourists that have no idea. They're just thinking, "Oh, how pretty! Look at this beautiful bay and bridge and buildings and sailboats." Then for Bill and Jim to say, "Look down there, look at what you are missing!" That was one of the things I told them to capture.
- Jennifer Stock:* That's lovely. Bill was that happening already on your own when you're out there. People wondering "What are you doing?" and asking questions?
- Bill Keener:* Yeah, people come from literally all over the world to go on the Golden Gate Bridge, and they're always trying to see what's happening. They're always looking down, and they're seeing porpoises under there. They ask about it. That's why I've learned porpoises in a bunch of languages and can talk to them about it. It's really great. Of course, a lot of people are not foreign tourists,

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and they're from all over the United States. They don't get to be near an ocean if they are like from the Midwest. They're pretty thrilled to be able to see big mammals underneath the Golden Gate Bridge.

*Jennifer Stock:* Yeah, that part of the story is very important with human connection and people appreciating what's happening right below the waves. That's great!

*Jim Sugar:* Can I say one other detail?

*Jennifer Stock:* Sure!

*Jim Sugar:* One of the things that became important was this place called the Viewpoint, which is at the northeast corner of the bridge and there's a parking lot right there, just past the North Tower. If you've got comfortable shoes, and Jonathan became a big proponent of this, you can walk out towards the North Tower over the bridge. If you have an iPhone, like I've got here, and you download the tide chart, you can time your visit to the tides. Go on a day when the wind is low because you don't want to be there on a windy day since you can't see them when they get covered too much by the waves. You're there on basically a clear calm day, and you can park your car right there in that little parking area. It's about a 5 to 10-minute walk, and you go down to the North Tower of the bridge. There's a cutout area on the bridge, and you stand next to that tower in the lee of the wind because the wind is almost always coming from the west.

Then, you look down and you can see the tidelines, making the motion here on radio. You can see the tidelines, and the fish and harbor porpoises in those tidelines. If you pay attention to what the conditions are and then you go out onto the bridge at that time, your chance of you seeing a harbor porpoise is fantastic. The joke we've made is that it's like going on safari in the Serengeti. It is as good as going to see elephants or tigers or lions. But here we are looking at harbor porpoises, and it's free. This is a free trip, and all you've got to do is look down. Bill was fantastic with this, he would point harbor porpoises to me so I would know what to look for and once I knew what it was and what to look for, they were there. And it happened over and over again.

*Jennifer Stock:* Jim, your background is as a photographer. You worked with National Geographic for many years, and you're dabbling in film now. When we talked last week, you said you always wanted to win an award, and now you are an award-winning filmmaker! And

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you are now! Congratulations! As of over the weekend! (laughs)  
The film, “The Return of the Harbor Porpoise to San Francisco Bay” won the Citizen Science Award for the San Francisco International Ocean Film Festival, which is coming next Saturday. It will start Thursday, but the film is showing on Saturday. Can you tell us a little bit about the day and the session that your film will be showing at?

*Jim Sugar:*

The session is Saturday morning March the 10<sup>th</sup>, and it starts at 10 am. I think there are five or six films in that session. Our film will be, I believe the last one that day. It will probably be around 11:30 or 12 o’ clock. I don’t know the exact time. We’ve already been informed that this year, and I know that it is a fantastic film festival.

I went to it last year with my wife Jan on Saturday, and we had such a great time that we went back again on Sunday. I’m thrilled to be showing a film there this year. They’re going to bring all the filmmakers up on stage at the end to talk about the film. It’s a great thing because a filmmaker or photographer can give you an inside into what the problems were, what they were trying to do, and what they were looking for. To be able to see the film on a giant screen, big silver screen, and you know the Oscars were last night... to be able to see the film on a giant screen and then have the filmmaker come up out of the audience to talk about this thing to give you more insight than the Academy Awards last night. I think it is a real treat. We will talk about the film afterwards. David Maguire, who was the director of an organization called Shark Stewards, he’s already told us in no uncertain terms to be prepared to go up there and talk about how we made the film, which we will be glad to do. Bill and Jessica and I will be there next Saturday, and it’s a kick. It’s just a real treat.

*Jennifer Stock:*

That’s great! Jessica, is this the first film you’ve done that is a local story, San Francisco?

*Jessica Sison:*

No, I’ve worked with other filmmakers. One filmmaker is Elizabeth Sher, and we did a film about three years ago. It won the Audience Award at the Mill Valley Film Festival. It was about this local woman who was pioneering lesbian civil rights attorney from the Bay Area. She was in Alameda County. So that’s one example.

Then, I did another environmental themed documentary with her. She’s the director. I was her long-time editor. She did a film called “The Rejuvenation of Big Daddy’s” where a woman turned this

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abandoned old run-down former auto repair building and lot into a community garden in Emeryville. So, those are two examples.

Then, there is another one, the one that I am proudest of that's also international and Bay Area. I made a documentary about my grandmother called "My Mother Said" and in her language it was called "Kuna Ni Nanang." It was my 100<sup>th</sup> birthday gift to her.

*Jennifer Stock:* Oh, lovely!

*Jessica Sison:* I just basically asked her about her life, and she just told me stories that I had never heard about. She talked about just what it was like moving to the United States. She left her country and also her mother, not realizing that this would be the last time she would ever see her. She came here to the United States because I was born, and my mother needed help. That's the film that I'm the proudest of, and it's been to a few film festivals including Tribeca and Slamdance. For me, I love making films and working with filmmakers who are local to work on local stories but also international stories that would affect us or at least touch us as well.

*Jennifer Stock:* This is so wonderful to hear about the diversity of your work. Do you look at the bay differently now after you've gotten an intimate look at it with the Harbor Porpoise film?

*Jessica Sison:* I do. Actually, I'm relieved. Just hearing about the way it used to be where the three women from Save the Bay... apparently, one motivation for them was just they would walk out the door of their houses in the East Bay and smell the bay. And their houses were not waterfront. They were far enough away. They could see the bay but were not living right there. I'm just so grateful that it's not that way anymore, and I'm grateful for their work. It makes me look at the seals at Pier 39... I look at them a little bit differently now and look at the bridge differently. It's not just this beautiful thing bridging Marin and San Francisco. Anybody can study cetaceans and other predators coming in and out of the bay.

*Jennifer Stock:* Do you tell your friends to go look for Harbor Porpoise now?

*Jessica Sison:* I do! I remember to tell them, "Oh, I worked on this film and you know if you are ever up there and you take your relatives who are visiting, when it's high tide and when it's a clear day and it's not windy, go ahead and have a look if you are willing to make the hike out there."

*Jennifer Stock:* Lovely! Bill, you were mentioning about the humpback whales. They've started to come back into the bay, and it seems like it is tidally influenced as well. Tell us a little bit about what's going on and what you are seeing.

*Bill Keener:* Yeah, I mean that was a real surprise to us because that's not really a return. We're not sure they were really ever there before in big numbers. When we think about humpbacks in the bay, we can think of going back into the 80s, Humphrey the Humpback, the lost whale that went all the way up to Rio Vista. And then more recently, in 2007, there was Delta and Dawn, this humpback whale mother and calf, that went all the way up to Sacramento. We had an experience of wrong way whales or lost whales in the bay. Until very recently, then all of a sudden, things changed in 2016, two summers ago.

Multiple whales started coming into San Francisco Bay to feed on anchovy there, and I was just doing my regular porpoise work on the bridge looking down. Five humpback whales came right underneath me and started feeding. I was just absolutely stunned. This went on, we'd see this repeated behavior. They'd come into the bay over months, and that whole scene repeated in 2017 from April until September. Humpback whales were coming into the bay on basically an almost daily basis.

This is pretty amazing, but again, it's all about the food. Anchovies we're really concentrating in these dense shoals near the bridge and all the way out towards Alcatraz. So, the humpback whales have figured that out, and they've now got San Francisco Bay on their dining list. Now, when we think about humpback whales, when I started studying whales back in the 70s, there were maybe 2000 humpback whales in the whole North Pacific. Now there's 24,000 which is what they think is the latest figure. So that's 10 times more whales. That's what happens when you stop hunting them.

As a result, we've got a lot more whales. There's a lot more animals --a bigger population. They're looking for more places to find food, and that's probably a piece of the story here. There's a lot more of them, they're curious, they've got big brains, and once they figure out a feeding area, they absolutely remember it. We've taken photos, fluke shots, of some of these humpback whales, and some of the ones from 2016 are the identical ones coming back in 2017.

*Jennifer Stock:* Wonderful! It seems like your point of view on the bridge is pretty critical to tracking this when you're out there studying because

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they are right smack in the middle of those shipping lanes, which is a real big issue right now with these endangered species that are in our area because of all the great food. Also, unfortunately, the traffic is there as well that some of them are getting hit, so I think you're a really important data source for contributing to that study.

*Bill Keener:*

Yeah, I think you're exactly right, Jennifer. I mean, this is the narrowest spot where ships and humpbacks come into near contact, so the bridge spans the gate, which is exactly one mile wide. That's pretty narrow because when you're considering shipping lanes around the oceans, you're talking about miles, but you're talking about one mile maximum here. The ships have really very little room to maneuver, and the humpbacks are right out there. Now we've never seen one, fortunately that's been a close call or been hit by a ship yet, but it's something we would definitely want to keep an eye on.

I was talking to Noah recently about the fact that this area is the spot to try to study this problem. So our idea or plan is to try to get a theodolite, which is a surveying instrument, up on maybe one of the hills like the Hawk Hill area in the Marin Headlands, to be able to look down and track single humpbacks as they maneuver around ships when they come. We can see exactly how close they're getting.

The other thing that we did this last summer, I collaborated with a group called Cascadia Research Collective, and they actually did some section cup tagging of whales to see how far down they're going and see how they maneuver. There's a couple things we can do.

*Jennifer Stock:*

Wonderful! Well, I want to thank you all for the work that you're doing to help all these animals help educate others about them. Before we wrap it up, to finish our show, I just want to give each of you the opportunity to share a website for people to learn more about each of your work and your organization, so Bill let's start with you.

*Bill Keener:*

Yeah sure I would love it if folks could give reports about any cetaceans they're seeing. It's always of interest to us, and you can go to [www.ggcetacean.org](http://www.ggcetacean.org), and there's a report form on the website.

*Jennifer Stock:*

That's right. Another citizen science opportunity if you see a harbor porpoise or a whale, you can report it and really have that

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information count for science so good reference on that. How about you, Jim?

*Jim Sugar:* My film, which is on my website, is linked to vimeo.com.

*Jennifer Stock:* Wonderful!

*Jim Sugar:* You can either go to my website, which is [www.jimsugar.com](http://www.jimsugar.com), and there is a section on there that says “movies.” The film is at the very top. The film is nine minutes and thirty-seven seconds long. If you go to vimeo.com, which is a fantastic website a lot like YouTube, but it has more professional films. You do a search on “Jimmy Sugar.” It’ll come up.

*Jennifer Stock:* That’s great. And your other films as well would be there as well. Wonderful! I’m looking forward to seeing your other swimming film. How about you, Jessica?

*Jessica Sison:* If you’d like to see the film about my grandmother, it’s on the screenings page of nanangmovie.com, and I’m also on LinkedIn under Jessica Sison.

*Jennifer Stock:* Well, thank you all so much, and good luck at the screening this weekend. I hope you have a lovely turnout to celebrate this harbor porpoise. Then after the film, I understand you can walk to the end of the pier and look for harbor porpoise!

*Jim Sugar:* Oh, I’m going to say real quickly. I’m going to bring a pair of binoculars with me.

*Jennifer Stock:* (laughs)

*Jim Sugar:* Because I can. And if you walk out of the Cal Theater and you make two left turns, and you face the Golden Gate Bridge. If it’s not a windy day, the chance of seeing Harbor Porpoises is very high, and I’ll have a big old pair of binoculars for somebody who wants to have a look at them,

*Jennifer Stock:* Fantastic! “Harbor Porpoises in San Francisco Bay!” Thank you all for joining us today.

(Music)

*Jennifer Stock:* We still have lots to share with our remaining few minutes here on Ocean Currents, and number one is about the San Francisco Ocean Film Festival coming up this week starting Thursday going

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through Sunday March 8 through the 11<sup>th</sup>. You can go to [oceanfilmfest.org](http://oceanfilmfest.org) to get all the information of what films are playing when.

As our guests were saying earlier, it's such an amazing event. If you love the ocean, this is the place to get inspired and reconnected to all the people really working to help protect the ocean, conserve it, and work together with our fellow communities.

Just a couple themes that I wanted to pull out. Thursday is International Women's Day, and they're having two special films. The first one at four is called "She is the Ocean," and at seven o'clock, for the opening party is "Kim Swims" about a woman who swam from Golden Gate to the Farallon Islands. Incredible films for International Women's Day!

Then Friday, there are some European films, and Friday evening, there is the surfing program. On Saturday, there are some more conservation films, the popular shark film session at one o'clock, and more films continuing through Sunday, including the student film competition, which is one of my favorites. The students get to come up on stage and talk about their films as well, and it's free. The student film competition is free.

Each day, there are different panel discussions with different themes and each of those are all listed on the website. For those of you in the Bay Area listening, I really hope you'll check it out at [oceanfilmfest.org](http://oceanfilmfest.org) for all the information about this annual event. We just absolutely love the San Francisco Ocean Film Festival. And again, "The Return of the Harbor Porpoise to San Francisco Bay" will be on Saturday at 10 am.

Ocean Currents is the first Monday of every month at a new time, I'm still getting used to this, at 11am to 12pm, and you can hear past episodes through our podcast available at [cordellbank.noaa.gov](http://cordellbank.noaa.gov) as well as on iTunes. Ocean Currents has a Twitter feed you can follow at Ocean KWMR to get information about this program, and some of the links that we heard about today, I will be sharing there as well so people can connect to those different resources that we heard today.

I love hearing from listeners, so if you have ideas for topics, questions, comments, please email me at [cordellbank@noaa.gov](mailto:cordellbank@noaa.gov) or tweet at Ocean KWMR. Thanks so much for listening! Enjoy the

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ocean, bay, or whatever body of water you can get into safely. This has been Ocean Currents here on community radio for West Marin KWMR.

(Music)

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