

Jennifer Stock:

Welcome! This is Jennifer Stock and you're listening to Ocean Currents. On this show we dive into the depths of our blue planet talking about different explorations, expeditions, science, management, incredible natural history of some of its inhabitants and what's our role as humans that depend on the ocean for so many things. This show broadcasts one Thursday a month at 5:30 to 6:30pm and is rebroadcast the following Monday and you can also catch archived shows on the Cordell Bank National Marine Sanctuary website.

Tonight, you'll hear some excerpts from the field. I had the opportunity this spring to participate on a few research cruises with Cordell Bank National Marine Sanctuary and I'm bringing to you just a few excerpts from these cruises. On the first half of the show, which was recorded May 10th, this past spring in 2007. We are on a cruise that's looking at the sea floor habitat of Cordell Bank National Marine Sanctuary, focusing on the softer sediments surrounding the Cordell Bank itself. So, more on the continental shelf to the near shore habitats.

Most of the sanctuary is actually soft sediment, believe it or not. We focus a lot on Cordell Bank itself, that's the name of the sanctuary, but most of the sanctuary is actually soft sediment habitat and it's incredibly diverse. So, you'll hear a little bit about that as we towed a camera sled just above the sea floor to document the invertebrates and fishes down there and on the second half of the show, stay tuned for that. We'll be hearing a little bit more about the seabirds and mammals and a research cruise that goes out monthly to document what types of seabirds and mammals and other marine life that might be on the surface are using the Cordell Bank Sanctuary as well. So, stay tuned and listen in for "Live from Cordell Bank."

Jennifer Stock:

...and I'm on the research vessel, Fulmar, which is the sanctuary vessel for Monterey Bay, Gulf of the Farallones, and Cordell Bank National Marine Sanctuaries, it's a 67 foot aluminum research vessel and we're in Bodega Bay, we're just starting to head out of the bay. We had a slow start getting out of Bodega Harbor with some boat difficulties, but we're all ready to go now and we're going to head on out to Cordell Bank National Marine Sanctuary shortly. It's low-tide. The mud flats are exposed here in Bodega Harbor and there's lots of shore birds feeding on these mud flats, some loons popping up on the edge in the water, diving down and

feeding, lots of cormorants, and maybe some harbor seals we'll see in a few minutes. It's pretty beautiful just getting out of the harbor.

Then we're going to head out to Cordell Bank National Marine Sanctuary today. We are going to be towing a camera sled on the bottom of the sea floor, not towing it on the sea floor, but just above the sea floor and watching video footage to characterize the habitat of the sanctuary. This is a soft-bottom habitat and we have never seen it before. So, we'll be towing a camera and observing what may be on the bottom. We've seen a couple of tapes from the last two days and it's pretty exciting to see what's going on and the types of animals that are down there.

So, we'll be recording, hearing from the scientists that are observing as we get out there. This is important work for the sanctuary to just understand what it's actually protecting. You can't really make decisions about something you don't know about and this is really important information for us to make better management decisions with. So, stand by, we'll hear from the group later of how deployment is going and how the operations are going.

So, I'm here on the R/V Fulmar and I am standing with a teacher, Di Owen, from Marin Academy and he's actually joining us as a teacher at sea on this expedition out to Cordell Bank National Marine Sanctuary. Dai, what are looking forward to on this cruise?

Dai Owen: I'm just really looking forward to getting on the ocean and seeing a little bit of the research that goes on out here, all of the monitoring. I'm excited to bring that back to the students.

Jennifer Stock: What subjects do you teach at Marin Academy in San Rafael?

Dai Owen: I teach in the science department and lately it's been mostly oceanography and AP environmental science. So, juniors and seniors.

Jennifer Stock: Do you think experiences like this actually help in the classroom? Do you think your students will benefit from having you been out here for two days?

Dai Owen: Well, that's a great question. I know that I benefit from it and I think that, yeah, it definitely rubs off on students. I think anything that teachers can do that brings them right into the real world where something is happening and they can convey that to

students...obviously, I think in an ideal world, the students actually get out and experience it themselves. I'm a big fan of experiential learning, but this is probably the next best thing.

Jennifer Stock: Excellent. Well, we're glad you're here. It's great to bring teachers out to witness the research that we're doing here in the sanctuary and getting acquainted with this environment. So, we're going to be heading out of Bodega Channel pretty soon and we're hoping to see some gray whales on the near-shore coastal environment before we head offshore. We'll see what the wind is doing outside of Bodega Head.

Dai Owen: Thanks, Jenny. It's great to be here and I really appreciate the opportunity.

Jennifer Stock: You're welcome. Glad you can have it.

So, we're heading out of Bodega Harbor now...just saw a pigeon guillemot dive down in front of us, a black bird with a bright orange beak and bright orange feet. You can hear the harbor horn notifying mariners of the entrance of the harbor, seeing some sea stars on the rocky inner tidal rocks. It is beautifully calm today. We're really excited to get out of the harbor. We've been sitting there for the last few hours hoping this boat would be good to go and we're going and the rocks out here at Bodega Head, the seal rocks are covered with cormorants.

You can see these black dots all over and this would be prime area to see gray whales. We're also looking at the mouth of Tomales Bay, another beautiful area that's really hard to witness unless you're on a boat how beautiful the slope is of the peninsula into the ocean here. Keeping our eyes posted. I just saw a whale. It was just past this channel marker here. Keep your eyes open.

Shan, what were those birds you were seeing?

Shannon Lyday: The pelagics are the ones with the white flank patch of the breeding plumage.

Jennifer Stock: Is that a pigeon guillemot over there?

Shannon Lyday: Yep. That's a pigeon guillemot.

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- Jennifer Stock:* There's lots of Brandt's cormorants flying around the surface of the water, beautiful, calm day, light swell...just saw a gray whale blow, very exciting...maybe it's been visiting Tomales Bay recently.
- Shannon Lyday:* See if it comes up again...looks like a small animal.
- Jennifer Stock:* Did it look like one?
- Shannon Lyday:* Yeah. It looked like on. I wonder if it's the same one that's been hanging around for the past two days that we've seen on the way in and out.
- Jennifer Stock:* ...just got a call from the captain. We're up here on the flying bridge and we've slowed down because a juvenile gray whale has been sighted in the vicinity. So, we're watching very patiently for a blow.
- Shannon Lyday:* I keep thinking they're pinnipeds peeping....it looks like a little...
- Jennifer Stock:* It does, you're right. We saw a couple common murres fly by and...two common murres flying, a common loon, is that what you saw, Shannon?
- Shannon Lyday:* Pacific loon.
- Jennifer Stock:* Oh, a Pacific loon tagging along. So, we missed the sighting of that gray whale, but now we're heading off a little bit further and we're starting to see some more pelagic species of birds and was that a phalarope that you just saw go by?
- Shannon Lyday:* Yep. It was a phalarope.
- Jennifer Stock:* Pink foot or what are the two phalaropes? Red-necked and red phalarope?
- Shannon Lyday:* Red-necked or red and I didn't get a good enough look to tell.
- Jennifer Stock:* This is Shannon Lyday, by the way, from the Farallones Marine Sanctuary Association with me. She leads the beach watch program and is a great seabirder. We also just saw a couple of sooty shearwaters fly by and they're just amazing to watch because they really are hugging the surface of the water and just shear the tips of the waves as they move across and they'll come from afar and then all of a sudden they're right in front of you and then they're gone. They're beautiful. We were...got a nice swell here,

but it's not too bad. We're just slowly moving over them, just starting to get a few white caps, but it's a beautiful day out here on the big, blue ocean...can't see land anymore. It's too foggy.

Shannon Lyday:thousands of miles.

Jennifer Stock: So, sooty shearwaters breed earlier in the year. Are they just starting to move up here now for feeding?

Shannon Lyday: Yeah. They breed in the Austral summer. So, in our winter. So...and then they come here to winter in our summer. So, vice-versa....Austral summer.

Jennifer Stock: They're so beautiful just moving across the waves.

Male voice: It's kind of bright out here.

Jennifer Stock: So, we saw a couple of blows up ahead. We're hoping we're going to see a couple of whales. This is the fun part before we get into the ROV work because we'll be all hovered around a monitor looking at the sea floor, missing the wildlife around us. We'll have to check in with the captain, see what he's seeing.

Shannon Lyday: Yeah, a lot of the times the albatross we've seen have been when we're eating lunch and we see one out the window, not when we're up here trying to find them on the flying bridge.

Jennifer Stock: So, you've seen a couple of albatross the last few days?

Shannon Lyday: Yep. We've seen a few black-footed albatross that have come to check out the boat.

Jennifer Stock: Wonderful. I hope we see one today....big swells here. Oh boy.

Male voice: We have to do it when we're not really (unintelligible) then we'll be ok.

Jennifer Stock: That's ok. You're being recorded right now. We missed that last stomach-racer.

(Boat noises and unintelligible speech)

Jennifer Stock: They're putting the camera sled in the water. We're on station and there's a black-footed albatross just off the stern. Oooooo. Camera

is on and the winch is going to start lowering the camera sled in a moment.

(Boat noises and unintelligible speech)

Jennifer Stock: We saw an albatross! Alright, the camera is showing lots of green-blue water. 11 meters depth...still going down. So, we're on station and the camera sled is just hovering above the bottom of Cordell Bank National Marine Sanctuary on the sea floor and you'll hear the people watching the camera...they're watching here you see lots of sea lips, some flat fish, lots of brittle stars.

(Boat noises and unintelligible speech)

Male voice: Now, if it were like this...

Jennifer Stock: If it were only like this...we have just wrapped up our tow sled diving. Earlier we had some rough conditions and the tow sled wasn't working so well bouncing along the bottom and the wind started picking up. So, we got one good long dive in and got some characterization in, but called it a day. So, we're heading back in now and we're just about, I'd say, three or four miles offshore starting to see the white cliffs, or lighter-colored cliffs of the coast and Bodega Head and Point Reyes a little bit further to the south and the skies opened up a little bit and we've got the swell behind us helping us get into shore.

So, starting to see some common murres darting along the surface here, saw some sappy's gulls, and some phalaropes. That was really beautiful to see, but we'll be going out in the next few days and continuing to try to do the tow sled technology, characterizing the sea floor.

Male voice: There was something down there. Let's go (unintelligible). Just before this transect started, there was an eel-like fish on...mud, mud. Subtle, whips, anemone in....(unintelligible). Mud, mud, subtle, burrows, whips, flat fish...anemone in right after that red thing. I don't know what that red thing was...enter...here we go. Mud, mud, subtle, burrows, whips, flat fish...enter. Subtle, burrows, whips, flat fish...Burrows, whips. Wooooooooooooeyeah

Jennifer Stock: That's a sea star.

(Boat noises and unintelligible speech)

Male voice: And we're off. Mud, mud, subtle, whips, burrows.

Male voice 2: No brittle stars, huh?

Male voice: No. Conspicuous absence of brittles.

(Boat noises and unintelligible speech)

Jennifer Stock: So, we are just about five to ten miles, somewhere in there off the coast of Point Reyes we're looking, actually, at Point Reyes lighthouse through the fog and you can see the lighthouse just below the fog layer and we have about four humpback whales between us and the horizon and they've been blowing. There's some birds congregating around...haven't...excuse me...seen too much acrobatic action. We have seen their backs come up...oh! Looks like they're moving this way...a couple blows moving to the left. We're still working on the camera sled and getting some good dives in. A lot of homogeneous habitat of soft-bottom mud with sea whips, some flat fish, and we're starting to see a lot of krill just above the bottom of the surface.

So, that's interesting. That's a pretty good sign for feeding for whales and also some of the seabirds around here. It's pretty exciting, don't know where to go. Should we watch the ROV or should we watch the whales? Either way, something really exciting to happen. I think they're feeding based on their diving.

Yeah, we actually started off at 7 this morning. We headed out offshore and we went to the middle of the Cordell Bank Sanctuary and it was just too rough, too windy. We couldn't deploy the ROV. So, we moved to some near-shore stations and it's definitely calmed down a lot coming near shore. It's still pretty rough today, but we're able to do the camera sled work. So, that works.

These whales are still sticking with us. This is so great! Well, those whales are still sitting outside there, but they seem to be moving a little bit further north at this point. Our vessel is pretty much staying put moving about maybe one knot with the camera sled. I've been saying ROV earlier, but it's actually a camera sled. It's very much like an ROV. An ROV is a remotely operated vehicle that you manipulate from the ship. The camera sled is basically a sled you can go sleighing on, but we have a camera affixed in the middle and you can move the camera up and down for visibility. So, it is remotely controlled, but not really an ROV, so to say. We call it a camera sled. Either way, it's a camera and it's bringing us

data...forgot to mention earlier that we're seeing lots of octopus. We think they're red octopus and they're fairly small, maybe the size of your fist, you hand, maybe a little bit bigger and seeing them in these big burrows, this really interesting habitat. It's kind of like going to the moon and seeing moon images for the first time with this camera sled.

We're seeing Cordell Bank's soft habitat for the first time. It's really interesting to see how it changes throughout the sanctuary. I'm going to head back down a little bit, see how they're doing. These whales seem to be moving away from us.

(Music)

Jennifer Stock:

I wanted to just mention what some of those animals were that you were hearing when they were describing what they're seeing on the camera screen and you might have heard the words sea whips, flat fish, brittle stars, lowideae ...sea whips are a type of invertebrate that live on the bottom and they just kind of look like two little fingers sticking up or one solitary one and it's an invertebrate that eats plankton or detrital material near the sea floor. It kind of looks like a whip. So, they're called sea whips.

A lot of flat fish, different types of fish that are super-flat like turbots or sole. Brittle stars are a real fragile type of sea star that stay just below the surface of the mud, very well camouflaged and hidden. Lowideae is a type of purple soft sea star that stays in the mud habitats. They also were describing some of the habitats: burrows, mounds, mud, mud, subtle and that's what they're describing on the screen that's being recorded so they can document what is on the sea floor.

So, they're observing and also documenting through a special computer set up. So, that was kind of a little bit of the annotations you would hear and it's over and over and over again, a lot of monotonous type of habitat, but very exciting. You never know what you're going to see. Every once in a while you see a little octopus of some sort. I think they're red octopus. We're not sure exactly the species, but fairly small, maybe just a bit bigger than our fist and then with their tentacles going on from there.

So, pretty exciting sea floor habitat...just documenting what's there. It's really important to know so that we can best respond in the future for future activities proposed in this area and also responding to emergencies. You've just been listening to a segment

recorded on the research vessel, Fulmar, in May, towing a camera on the sea floor habitats, also talked a little bit about some of the marine life up at the surface. Stay tuned for the second half, talking a little bit more about seabirds and mammals at the Cordell Bank Ocean Monitoring Program out in June.

(Music)