

Jane De Lay: – as a deckhand on the seventy-four-foot fishing vessel, the *Sea Hawk*, and it have F/V, fishing vessel, *Seahawk*. She's only really a two-person, maybe one person. My captain fishes alone all of the time. He's out fishing right now. He took the boat out this morning early because it's going to blow this afternoon. So, the weather will be good probably by one o'clock, two o'clock so he's out already going. Usually, two people is the maximum on the boat that we ever can really handle because it's just too small for us to move around and actually work here. We fish salmon right now when the season is open. Dungeness crab, albacore, when the warm water current brings albacore probably within hundred miles. The boat is really too small to go out beyond the hundred miles safely. We do a live rockfish fishery. We've also been contracted when the Humboldt squid come in through the National Fishery Service to provide Humboldt squid to them so that they can provide it for free to the classrooms for dissection and anything in between, which is a lot of fun. As a crew, I'm not responsible for keeping the boat in order, but I'm responsible for doing anything that the captain asks me. Most of the time during salmon, I have my own side of the boat. It's the port side of the boat.

Female Speaker: Which side is the port side?

JD: That's right, starboard is the right. The captain handles the starboard side. I handle all the gear on the port side of the boat for salmon fishing. We have about three lines on both sides of the boat with about twelve meters on each line. It's all totally in line fishing and it's barbless hook for the salmon. So, they come off very easily if we don't bring it tight. Dungeness crab, I usually steer and pull the boat for the captain. He runs the heavy gear with the big pot. So, have you seen the liveliest catch or deadliest catch?

Multiple Speakers: Yes.

JD: So, you know the big pots that are used?

Multiple Speakers: Yes.

JD: Arms around and they're about three feet or two feet s they're not as big as those great, big king crab traps. But the concept is the same where you have to go and reach. You have to catch that buoy in the water, which means I have to bring the boat close enough to that buoy. The captain reaches out with the pole and puts it in the buoy or the pulley or the block, we call it a block, and he brings that pot up from the bottom of the ocean. I hold the boat so that we don't get tangled in that rope. Albacore, we both use the lines. We both run the lines with the albacore. The live trap, the live fishing for the rockfish, I also hold the boat on that. Then I clean and do all the bait. We use bait for live fish and for Dungeness crab. Chelsea, yes? I don't want to take away any of your questions so raise your hand anytime you have questions. Justin mentioned that we're called fishermen instead of fisherwomen or fisherpersons or fishers. The women a couple of years ago decided that a policeman is a policeman. Remember, you're too young to remember when we had policewomen and we had waitresses and we had stewardesses and we had firewomen. Then they changed, I don't know, some kind of quality little bit and everybody became a server or a policeman or firemen, whether or not you are a man or a woman. So, the fishermen are the same thing. We're all fishermen. That means we work in the fishing industry, but it doesn't denote what sex you are, male or female.

FS: But I thought they still use actor and actress?

JD: They sometimes do, actor and actress. So, I'm hearing actor more often than I hear actress. That was really nice observation.

MS: What kind of fish would you find in the Canyon?

JD: The question is, what kind of fish would you find in the Canyon? Boy, that's a good question. That's a great question for our marine scientists. We have poster back there with the different types of fish that are down at the bottom. So, the Canyon, by the way, is larger than the Grand Canyon. So, it's a very specially adapted habitat. So, the fish have to be able to live under tremendous pressure. They have to live with absolutely no light whatsoever. Freezing cold temperatures unless you're near a seabed which releases heat and probably a very scarce food. So, they feed one filter feeders or real scavengers. You've got a really good poster back there, a creature that we fish for along the edge of the Canyon. We use this Canyon a lot because feed comes up through the upwelling process. You get a lot of nutrients that come up, sea of krill and small fish and a lot of bait fish. So, this is along the edge of the Canyon. This is a great place to catch salmon because it's full of nutrients. We know they are feeling out there. Along the edge, we like to catch the spot prawn, guys, go way, way deep down and they set their traps on the edge of the canyon. So, Monterey Bay spot prawns and we also set our traps. Dungeness crab requires a sandy bottom habitat so we tried to find a rocky ledge and a sandy bottom next to it. We tried to set our traps along the edge of the rocky ledge where it's still sandy because we know the crabs are walking, walking, walking, walking. They'll pick that ledge and then we'll go into the rocks. Hopefully, they'll go into our traps. We use our depth finder. It will tell us what the bottom of the ocean. Kind of relatively, it would tell us if it's semi bottom or rocks. It shows us a jagged line when it's rocks. It shows smooth when it is sandy bottom. It shows little dots in the water when there's bait in the water column. So, a Dungeness crab can withstand tremendous pressure and can be found really deep. Also, when we go to catch Humboldt squid, we'd go to the very edge of the canyon and we dropped the mine about twelve hundred feet down. It's deep. Notice that I used feet there for you, normally, we work in fathoms. One fathom is how many feet? Do you guys know? Six feet. So, we're always doing that calculation between feet and fathoms. Everything on the boat is very precarious. But when I went out on the sanctuary boat because we went on a tour to recover fishing gear that was lost on the bottom of the ocean, in the Bay, it was a really great project, really neat. The sanctuary boat work in meters. So, Mike and I, my captain is Mike. His name is Mike. The sanctuary saying, "About how many meters?" We're transferring to feet and then in the fathoms and then back and forth so that we could accurately tell them what it was. So, how many feet in a meter?

MS: Three.

JD: Is it three? No, that's a yard.

FS: It is like a little less than, if not quite, three to four.

JD: This is good since you're in science. It's really good to know that on the boat, we're

constantly doing math because we're converting pounds into dollars, right? Because how much is a pound of fish worth and how many pounds do we have onboard? We're constantly converting feet into fathoms and fathoms back into feet. We're constantly calculating how deep we are. We're looking at what the water temperature is, what the air temperature is. We're looking at which way the current is flowing. We're looking at wind direction and speed. We're looking at how fast we're going against how fast the fish might be swimming in the case of salmon or albacore. We're looking at a lot, where the birds are feeding, where the clouds are, how high the birds are flying, where the whales are. What's going on, on the ocean surface constantly, constantly, constantly? That's enough about me. I'm waiting for questions. So, you guys have prepared a bunch of questions?

FS: We will put them on the screen.

FS: Have you caught any illegal fish?

JD: No. I think that's a really interesting question because there's a lot of media attention about who are the bad fishermen, those kinds of stuff. Yet, we work really hard as conservationists to make certain that we don't catch fish that we're not supposed to catch and to make certain that we don't take more than we're supposed to take and to really put into law good regulations. Many of the laws that govern fishermen and health put into place reported into environmental community and the regulatory community to put into place. So, we're careful not to catch illegal fish because we realize that that's the problem. I don't like poachers. I'll tell you one thing, if I see somebody taking an illegal fish or selling illegal fish, I'm the first one to call the feds because that's poaching and it's against the law and it's wrong. The rules are there so that we can all play fairly and we all get to play and my children gets to play and your children grow up and get to be fishermen, too, and we'll all have wild stock, wild fish, both for the habitat, the biodiversity, and for consumption. Poaching is not cool. Illegal fish, though, that's interesting because we know what constitutes illegal. Right now, during the commercial salmon season, illegal fish is twenty-seven inches long. It can be any weight. It could be skinny. It could be fat. We've got the sticker on the boat. So, the first thing we do when we bring that fish up, and we don't bring it up, if we think it's too small, we call those shakers. We measured against and it must be from the tip of the tail to the nose, a solid twenty-seven inches. You can't push down on it and spread it out and make it longer. So, you just can't do it. It must be a Chinook salmon. With king salmon, it can't be a silver or a coho. In California, we can only catch the Chinook or king salmon. If you go to the store, this is the king, this is the coho, see the difference in the angle? What was it? See that it is a little bit broader through here and see the difference in the shape of the mouth. I'm sure there are more differences, too. This is the coho. In the State of California, it's illegal for us to catch the coho. Not in Alaska, they catch the coho. So, when you go to the restaurant and they say, "We've got wild caught salmon from Alaska," it's probably coho salmon. If you come into the restaurant and the server says, they're advertising, "We've got fresh caught Monterey Bay salmon. It'll be the Chinook salmon." So, anything else would be an illegal fish. When we're fishing for live rockfish, we're allowed to so many pounds on each individual. There are lots of the hundreds of different types of rockfish. Some rockfish, we can't touch. Some rockfish, we can only get so many pounds off. All of them have size restrictions. We get so many pounds of the sea chunk, for example. Then we can't catch anymore until the next month or until the [inaudible].

FS: I do not even eat seafood, so.

JD: I'm sorry. We still have calamari or fish sticks or anything. I'm so sorry. Dungeness crab, also? During the Dungeness crab, and that's okay if you don't eat. Dungeness crab is managed all primarily by size, sex, and season. A commercial boat and we sort those crabs one by one. So, the crab must be six and three quarters inches for the show. I have a picture of the crab. You can't include the legs; it has to be the shell. It can only be males and normally, it would be when the season is open from about mid-November to June. So, then lots of regulations are in place. The other thing is do we accidentally bring the fish onboard that we shouldn't that is bycatch, accidental bycatch? The gear is moving more and more targeted so that we can target where the salmon are in terms of where they are in the water column and how fast they're swimming. We can target the rockfish where they are in the water column. Do you understand what water column is?

FS: Yes.

JD: What is it?

FS: Water column?

JD: Yes.

FS: [inaudible]

JD: I think you're getting there. The water column comes from the top of the sea surface. It is at the bottom of the sea floor. We call that the water column. If you just made one column from the sea floor to the surface, there'd be different temperatures, there'd be different levels of light, there'd be different habitats all the way down. Some fish live only on the bottom, in the rocks. Some fish live about midway in the kelp forest, but they're middle water. They never go all the way down. They never come all the way to the surface. Some fish are right along the surface. Some fish are up and down. So, we really are careful in that water column because we can gauge the temperature and we can get what's happening in that water column, too. A lot of science goes into fishing, but we try to be really targeted in our gear. If we do bring on any accidental bycatch, some of it, we can keep, because it's dead and we don't want to waste it. We can't sell it. Some of it, we immediately throw overboard because we've worked really hard to keep the species alive. My daughter says she makes me throw back a lot of fish. So, I always say, this one's for Anna and she goes fishing with me. She comes on the boat when I take the boat. Next, Cameron?

MS: Have you ever seen a shark?

JD: I've seen dark sharks and I've seen blue sharks. I think my captain saw a great white, but he's not sure. Because he said he was sitting down, he was anchored down off a big surf, just kind of taking it easy and he saw a fin come out of the water. He thought first it was a dolphin and then the fin kind of stayed in the water and got bigger then he thought maybe it was an orca.

But it didn't [inaudible] like the orcas do. Then it came straight at him and got bigger and started to get a little nervous. Then it went down. So, he thinks it was a great white, but he's not certain. Sharks would be scary when you're all alone. Have you heard Joe's line, "We need a bigger boat?"

Multiple Speakers: Yes.

JD: I think that's what he was thinking at the moment. Just the way he described the experience of the fin coming up and watching it get closer and not behaved like a marine mammal would behave. Blue sharks are totally cool. Then you can see the dorsal fin and you can see the tail fin. What are they called? Dorsal and tail? The (cuttle?) fin and the tail? But they're really common in the fall. So, when you see them, it's fun to watch. People go whale watching when you go out fishing on a boat, if you get to be out in your kayak, keep an eye out because they'll come up on the surface and you'll see both fins and they really are blue. They're really, really pretty. Dark sharks like to catch the line. You know when you've got a dark shark because it starts spinning. Have you had any kind of shark experience?

FS: Yes, my best friend, he caught a dark shark and it spins around it. [inaudible]

JD: We try to get those off right away because it tangles your lines and we don't want to hurt the species. We want to get them off in one place. One of our gears, we customized gear and we brought it up when we were crab fishing, and there was a little shark in it. We're really careful with the crab pots because we tie the hatch shelf with a piece of cotton. It lasts about two weeks at most. So, if we lose our pot, if the line gets cut for any reason, and the pot goes to the floor, that cotton will deteriorate within about two weeks so the hatch opens. So, anything that goes in that pot can get out of the pot. It doesn't continue fishing and trapping. So, we cut one of our pots that we had lost, it got tangled in another one. When we brought it up, there was a little shark. They got in on the layup and was there and just kind of hung out because it was common. He was beautiful, but [inaudible]. We put that back right away, but it's pretty to look at. Can I tell another story? When we were spot pawning, an octopi get on those pots because it's really, really deep in the Canyon. The octopus come up and Johnny's one of the guys that is a spot pawner and his deckhand, his name is Billy, and he said the octopus was bigger than he was and it was covering up the line at him and reaching out and he couldn't get it. It was crawling on him and he couldn't get it off. I thought I would have peed my pants because it feels so scary.

FS: So, how did he get it off?

JD: He just [inaudible] calm down. They had to pull it off, but talk about being really scary. Because they fish at night so you just got the light and you're out in the middle of cardinal bases and you are out. They have to take this down. Anyway, he was scared. It was kind of a fun story. We get all kinds of stories.

FS: Can you call up Jackson and [inaudible]?

FS: I know like on forty-first where a lot of people surf. I do not want to surf down there sometimes, but I see little sharks. It's really, really shallow down there. So, I do not know what

kind of sharks those are. They are really kind of like [inaudible]. Are they white and gray or are they [inaudible]?

JD: They're leopard sharks. That's only you can see them. Usually, you see them up here.

FS: Because they are in estuary, right? That is where the estuary is?

JD: This is a good topic. We were just talking about fish that go freshwater and spawn. Do you know spawn? Spawn is you know how babies [inaudible]. Then they come back into saltwater to live. So, salmon is one of those species. Maybe later Jane will talk about that. So, you guys are talking about what happened to resource issues and what happens if the species goes away and how that affects the diversity. Anyway, one of the big reasons that's important for salmon is the salmon go into freshwater to spawn and then come back out in the saltwater. Sharks, a lot of sharks do that, too. So, leopard sharks are one of those ones where they go up into the estuary up in Elkhorn slope and live there for a while have their babies and then they come back out and they live in saltwater. So, usually you see leopard sharks a lot in the kelp forests down in Carmel. I've never seen them at Stanford. So, that's really cool. That's probably what they are.

FS: They just swarmed just below the (capital eclipse?).

JD: They're so pre-historic and they've adapted. You've learned about adaptation?

FS: A little bit.

JD: A little bit. Oh, my gosh. Anyway, those are one of the most remarkable creatures because they keep adapting. So, that's neat that they're in sand instead of kelp. So, we have until 3:40, right? So, we've got to take it up because there are lots of great questions. So, I'm going to keep my answer shorter. So, next is Mitchell.

MS: What is the biggest salmon you've caught?

JD: Thirty-five pounds. He was big and heavy and he almost killed me because they're on a leader. The leader is thirty-five pounds anyway and you've got to bring him in. So, this is a leader and the hoochie is on the end. This is all I have. I've got to bring the fish in and not lose it because it's a barbless hook. So, if I don't keep the tension on it, they'll get off very easily or sea lion will get him. So, I brought him in, brought him in, and the thirty-five-pound fish can take me right off the boat really easily. He just about did and we used the net on him. We got the net underneath him, the captain did, and then we both [inaudible] under the boat. Next, Cameron?

MS: What are fishing memories have you had?

JD: Such a great question. Lots of memories. I love whales. I just love whales. So, the first time I went out crabbing was in Halfmoon Bay. That's where we normally go crabbing. We have waited and waited and waited. So, it was mid-December before we went. As we're going out, there were whales, whales, whales everywhere. It was early, early morning and the light

was pretty and it was just perfect to be on the ocean and calm. The captain brought the first pot up and it was full of crab and he turned around and smiled, and he says, "We're fishing." That was the start of my first season. I still have that memory of the whales with this. One of the whales just stayed with us all day. I think it was a [inaudible] because it wasn't as big as the whale back. But it was just really light and stayed with us. Thank you for asking. Should we stop for questions? Are you the next question or we need to get through the last? Is it Mitchell again?

MS: How hard is it to catch some salmon?

JD: You've got to be smarter than the salmon and that's not always the case. They're really incredibly smart creatures. Did you have a follow up on that?

MS: How can you tell if the crab was a girl or a boy?

JD: So, they're two different questions and both really good. So, really quickly, how do we tell the if the crab was a boy or a girl? On the bottom, on the belly of the crab, you turn them over and the shape of the belly is either a triangle, that means it's a boy or it's a semi-circle, that means a female. Usually, the semi-circle is full of eggs and it's drop out and they hang on to those eggs and they release them in the water. Also, the females are so much smaller and they have shorter back legs. But we hand sort every single crab that comes onboard. We turn it over and make sure and we toss it back if it's a female or too small. The other one, how hard is it to catch some salmon? It's not easy. That's why it's fishing because otherwise everybody would be doing it. Yesterday, you might have caught one. A couple of the other boats, probably about six. Lots of things can happen when you're on the boat. But basically, you have to be in the right place at the right time, which means right temperature, right feed, the right depth, right speed, the right season, and you have to have the right gear. So, you have to be either using a hoochie because that's what the salmon want to eat at the moment or you're using a flasher, which will attract them. Hoochie is this little guy or we're using a spoon. These spoons are all in different shapes, see the different colors. You see the color of the hoochie, they come in all different colors. Sometimes the fish are eating the green ones. Sometimes even the green and white striped ones. You just never know. So, you put a little assortment on your fish. I see the questions, just a moment. You put a little bit of all of it on your gear, trying to figure out what the fish are biting on. The minute you get a bite, you look at what the gear is. You quickly pull out your gear and put this on and get it down to the right depth so that there are other fish down there they're going to catch them and you watch the other guys. If the other guys are catching fish and you aren't, you pay attention to what they're using and you change your gear.

MS: I like fishing a long time ago and it smells really weird and it is like gooey. You can buy it in fishing stores.

JD: No, I've never used that.

MS: Is it sparkling [inaudible]?

JD: I've never used it and I've never done it. That's the type of information I need. Thank you

very much.

MS: You never use [inaudible] when you catch fish?

JD: No.

FS: [inaudible]

JD: No. It's a type of gear?

MS: It is a hook that has like those kinds that have the [inaudible] that come off.

JD: Not for salmon. Absolutely not for salmon. We can't catch them for rockfish.

MS: It has this little guard on it, and you just throw it out and you reel it back in and like spins around so it looks like a fish.

JD: But I'll look for that and we'll make sure it's legal for me to answer salmon. It's called a rooster tail?

MS: Yes.

JD: Thank you.

MS: When I was like five, me and my dad went on work and we were fishing because he really likes fishing. I think he is using one or two hooks or something and he threw it out and caught two fish on the same hook.

JD: Two little sardines or mackerel?

MS: Yes, or something.

JD: How fun? In that teeny tiny little hook?

MS: Yes.

JD: I used to take my nephew down to fish off in the water. That's a good memory, isn't it? Thank you for sharing.

MS: My grandparents live in Oregon and they are like big fisher. So, whenever we go up there, we always try to go in like October because it is salmon season up there. So, we go fishing. Last year, my dad got a thirty-eight-pound salmon.

JD: Thirty-eight, that's bigger than I've ever caught.

MS: Then my grandparents sees it. He was telling a story and the biggest fish he caught was

fifty-pound salmon.

JD: A fifty-pound salmon?

MS: Yes.

JD: Oh, my god. Do you have picture?

MS: Yes. He is like trying to hold it by herself and she like cannot.

JD: So, that goal is set up. I got to get a fifty pounder. Thank you. Keep fishing. One of the things I say to young people is to consider your career to fishing. That was Lucas' question.

FS: That's next class.

JD: I'm sorry. I would definitely say keep fishing. Because it's not just fishing and capturing the species and then enjoying it or selling it, it's a never, never wasted. I always say a little prayer to the fish or to the species for taking care of my family, taking care of me, and helping to take care of others because it feeds us. It's one of the most fulfilling, most honest work that you can do. We're losing our fishing fleet because of a lot of things, mainly because we're losing our infrastructure because it's becoming very expensive. But the average age of the commercial fishing fleet is seventy years old.

FS: By fleet, you're talking about the boat?

JD: We're talking about the fleet of boats so the captains and owners of the commercial boat. So, we need young people to enter and we need them in California and Alaska. Everybody's a fisherman and it is really exciting. But we're losing our commercial fleet and that'd be really sad. Well, there's a question from Cameron. Do we have time? What was your question?

MS: Do you like ever fly fish?

JD: No, but I want to learn how.

MS: I went fishing a week before. It really hurt.

JD: I'll bet it did hurt. I'm sorry that happened.

MS: He caught like a lot of fish.

JD: But did you [inaudible]?

MS: No.

JD: You let him go?

MS: Yes, because they were a fish that we were not allowed to eat.

JD: So, catch and release?

MS: Yes.

JD: Isn't it a beautiful, the whole motion? My captain goes this way, figure eight.

MS: Yes.

JD: But I get tangled up so I'm still learning. It is just the one time. I really just don't get it. I'm so sorry that happened. So, I get Cameron.

MS: How do you like your job?

JD: You had a lot of questions. I love my job, just like I was just sharing with you. If I could fish and be fishing all the time, there are good days and bad days. There are days when you're absolutely, totally, disgustingly dirty and tired, and you haven't caught anything because everything that could go wrong went wrong or it was just lousy weather. But it's still probably the most exciting, best job that I've ever, ever done. It's different every day. It's different every moment, moment to moment. You're constantly thinking. You're constantly observing. You're constantly learning about the ocean because she's an amazing, amazing place. There's nothing like being on an ocean all day long. There's nothing like working with fish and seeing the animals. There's nothing like being out on the water. Then coming in and dealing with the product and dealing with the people who want to buy the fish, I love selling the fish. I like meeting the buyers. I like it when people come to the boat. You know what? I'll go for days and never get in the car. I won't have my phone because we're out of cell phone service. All we are is out on the water with the ocean and the animals and nature. It's really nice. George?

MS: How many rockfish are in the bay?

JD: I don't know.

FS: There are hundreds of different species of rockfish.

JD: I didn't read that book.

FS: So, rockfish are one of the most diverse fish, that there is in Monterey Bay because there are so many species. They all live in different habitats. Some just live in kelp forest. Some just live in the Canyon. That was one of the best fish to live in the Canyon. A lot of rockfish lives there. Some of them there are tons and tons and tons and you can go out and catch a lot of them either recreationally like you guys or commercially like Jane. Some of them are more protected because rockfish are neat because they can live. They are doing more studies where they can live over fifty years. Some of them live over hundred years old. So, they did not know that so you are catching too many of them and then science learned how long they live in so now they're trying to protect those really long living fish. So, some of them like Jane said, you're not allowed

to catch at all.

JD: Right. Maybe [inaudible] that we can't catch.

FS: A little bit.

JD: They don't even teach me [inaudible]. I like the rockfish fishing because we're fishing in ten fathoms. So, how much is ten fathoms?

MS: Sixty feet.

JD: Very good. Sixty feet. You had it, sixty feet. We have a small little trap, it's about two feet by two feet, soft, it's coated on the wire and it's a little scary trap. You go in and we fish in the kelp forest usually in the rocks very, very close to shore. We put the new squid or mackerel for the bait and we set the trap down for about twenty minutes. We bring it up and it's full of different species of rockfish. It's like presents from the ocean and they're different colors and they're different designs and they're different shapes and they're different sizes. We only keep what's legal and what we're fishing for. The rest go back into the water untouched because [inaudible]. You get to see a different fish every time. It's really, really cool. We bring up really slowly too because rockfish have swim bladders. Do you know what swim bladder is?

MS: Yes.

JD: What is it?

MS: It's in the side and then it lets them go up and down.

JD: Right. It's how they're control, they fill up with air, and let the air go, and that's how they go up and down. Have you done scuba diving yet? You know that we have to wear that vest and you pump it up and that lets you go up and down in the water column. You either go up or you go down, but it keeps you from crashing into the bottom or crashing into rocks. Why would you want to not crash into the bottom besides if it hurt yourself?

MS: Because you'll hurt them.

JD: That's right. There's a lot of little critters in those rocks and a lot in the bottom. So, you don't want to touch anything when you're diving. The bladder or the swim vest helps you go up and down and the swim bladders of the fish do the same.

FS: My speech teacher said never stand in front because you distract the audience. You have like one minute, one minute left.

MS: Why are they called rockfish?

JD: Why are they called rockfish? I'm thinking because their main habitat is in the rocks. It's in the rocky habitat. There is a question back here. Do you have a question back there? No.

[end of transcript]