

Kelley Elliott Interview (07/24/2017) Transcript

01:52 {Interviewer} What is your name and what is your position?

01:54 {Kelley Elliott} OK, my name is Kelley Elliott. I work with NOAA's Office of Ocean Exploration and Research and my primary job with them is as an Expedition Manager. So that role entails working with the scientific community, working with the management community, and the crew here onboard the NOAA ship *Okeanos Explorer*, um, to plan, to coordinate, and to oversee execution of exploratory expeditions onboard the ship.

02:24 {Interviewer} What ship are you on, and where is it currently located?

02:27 {Kelley Elliott} Excellent question. So right now I am onboard the NOAA ship *Okeanos Explorer*. Uh, *Okeanos* is actually the nation's first and only federal ship with the mission to explore the ocean for the purpose of discovery, and the advancement of knowledge, um, it's a very exciting mission, uh. And right now we're conducting our ocean exploration activities here in the Johnston Atoll Unit. Um, so Johnston Atoll is located about 700 nautical miles southwest of Hawaii. And, uh the 200 nautical mile boundary surrounding Johnston Atoll, um, is owned by the United States. And that entire boundary is also a marine protected area. So it encompasses the Johnston Atoll Unit which is one of several units of the Pacific Remote Islands Marine National Monument. **03:14** Um, and together the Johnsto- or the Pacific Remote Islands Marine National Monument encompasses I think about one point three million square kilometers of ocean territory. And they are all, um, protected, and co-managed by the National Oceanic and Atmospheric Administration.

03:39 {Interviewer} What is the Pacific Remote Islands Marine National Monument?

03:42 {Kelley Elliott} Excellent. So the Pacific Remote Islands Marine National Monument, um, is composed of several different island units, and their surrounding territorial waters. And it's a marine protected area, uh, in, in the middle of the, um, Pacific Ocean. **03:58** I do want to give you more stats on that, but let's do that at the end... **04:25** So the Pacific Remote Islands Marine National Monument is comprised of five different units. Um, there is the Howland and Baker Unit, the Kingman Palmyra Unit, Jarvis Atoll, Johnston Atoll, and Wake Island Units, um, comprising the monument, so each of these island or atoll areas uh have a surrounding area that is either 50 nautical miles, or 200 nautical miles, um, wide, surrounding it. And they are all marine protected areas that are managed or co-managed by the U.S. National Oceanic and Atmospheric Administration, um, in cooperation with other federal partners including the U.S. Fish and Wildlife Service.

05:15 {Interviewer} What expedition are you currently on?

05:18 {Kelley Elliott} Um, so right now we are conducting the 2017 Laulima O Ka Moana Expedition, which is exploring deepwaters... deep monument waters around Johnston Atoll.

05:31 {Interviewer} I might just ask that again. What expedition are you currently on?

05:34 {Kelley Elliott} So right now we are on the 2017 Lo Ilima- Laulima O Ka Moana Expedition exploring deep monument waters around Johnston Atoll. I'll repeat that once more. So right now we are on the 2017 Laulima O Ka Moana Expedition exploring deep monument waters around Johnston Atoll.

06:02 {Interviewer} What is the significance of the expedition's name?

06:04 {Kelley Elliott} Excellent question, probably one of my favorite questions uh whenever we get that question from the public. So “Laulima” is the Hawaiian word for- it literally means “many hands”. Um, and it symbolizes cooperation, unity and partnership. “Moana” is the Hawaiian word for “ocean.” So together the uh, name means really cooperation and partnerships for the ocean. And it symbolizes that um, you really can’t get a lot done without working in partnership and collaboration with others. And that working together, um, we’re able to accomplish a lot more together, and we’re stronger together, versus trying to wa- work individually to better understand the ocean.

06:50 {Interviewer} Who are some of the partners who are helping to explore in this particular expedition?

06:56 {Kelley Elliott} Excellent question. So this expedition is one of several that is part of uh, a three-year effort called CAPSTONE. It stands for the “Campaign to Address Pacific Monument Science Technology and Ocean Needs.” Um, and it’s a NOAA collaboration with different parts of NOAA coming together. Including NOAA Fisheries, the National Ocean Service, Oceanic and Atmospheric Research, as well as the Office of Marine and Aviation Operations. Uh, within that includes partners such as the uh, Marine National Monument program, uh, as well as the Deep-Sea Coral Research and Technology program. So there’s a lot of different groups within NOAA that have come together to provide the ship time to explore, um, marine protected areas in the central and western Pacific and bet- and better understand the resources that reside within them. **07:41** But of course we can’t actually do the operations themselves without partnering with many other groups as well. Um, so we are partnering broadly with the academic community. We have had anywhere from eight to forty scientists participating in each individual dive. And more than 200 scientists and students and managers, uh participating and sharing their expertise to help characterize the areas that we’re exploring during the course of this three-year effort uh, and importantly is the Global Foundation for Ocean Exploration, um. This is the incredible team of engineers, and videographers, and pilots that, um, maintain, operate, and pilot the

remotely-operated vehicle, as well as uh produce some of the data products and incredible images that come off of these expeditions.

08:33 {Interviewer} What are the mission goals for this particular expedition?

08:37 {Kelley Elliott} Very good question. Um, the goals for this expedition are varied, and comprise open data management goals, education and outreach goals, as well as science and management priorities. Um. The first and most important goal is to collect data and information to address priority monument, uh, science and management needs. So the Pacific Remote Islands Marine National Monument was first established in 2009. And at that time the Johnston Atoll Unit was only protected out to fifteen nautical miles- fifty nautical miles. In 2014 it was expanded out to the 200 nautical mile boundary. Uh, so there really wasn't a lot of data and information in these deepwater areas, uh, that managers, uh were able to pull from and use to develop deepwater management plans. **09:31** Um, so our first goal is to, uh, collect data and information on deepwater habitats and to provide that information to managers to aid in the development of management plans, as well as to um, help them better understand some of the fisheries resources that are located here. Uh, importantly also is collecting data and information just to stimulate follow-on research. When very little work has been done in some locations, um, there aren't necessarily hypotheses or questions that other scientists are interested in following up on. So by collecting a foundation of information out here, we are hoping to catalyze follow-on exploration, management, and research activities. **10:11** Um, and I mentioned the expansion because we are particularly focused on, uh, collecting mapping data as well as, uh, habitat information in the newly expanded areas of the monument. Um, so that's our over-arching goal for the expedition. There's quite a few other goals as well. Um, one is collecting data and characterizing what... One of the next uh, priority goals for this expedition is characterizing and understanding vulnerable marine habitats. Uh, in particular in this monument we are hoping to document and better understand, uh, particularly high-density deep-sea coral and sponge communities. These communities are really important because they provide habitat and

protection for many other animals, uh, and therefore uh... are locations where... I'm trying to think about how best to state this. **11:09** So deep-sea coral and sponge communities are particularly important because they provide habitat and protection for many other animals, um some of these corals are also particularly long-lived. They can be as, as old as several hundreds of years, or even several thousand years old. Um and... the locations where these habitats are located, uh, have a much higher number of animals relative to other surrounding seafloor areas so it's particularly important for managers to know not only whether they exist within the monument, but what types of conditions surround their location, so they can understand where they might want to look to protect these resources in the future. **11:52**

12:18 {Kelley Elliott} Um, so another goal for this expedition is exploring, mapping, and characterizing seamounts in the Prime Crust Zone. So the Prime Crust Zone is an area of the central Pacific Ocean with seafloor crusts that are composed of rare earth metals and minerals, um, that are important for advanced technologies and might be of interest to deep-sea mining activities in the future. So these minerals are used in modern-day technologies like iPhones, and iPads. They're used in solar panels. Um, and as we start to exhaust terrestrial sources, uh the mining industry might move towards mining the deep ocean. **13:02** Um, another goal for this expedition is also better understanding the geologic history of seamounts in the central and western Pacific. If you, uh, pull up Google Earth and look at a map of the central Pacific Ocean you'll see seamounts, um, dotted all around. But the actual origin, and the age of these various seamounts group remains unknown. So we'll be collecting rocks on a lot of the seamounts that we visit to better understand the age and hopefully reveal insights into the origins of the many many hundreds of seamounts that dot the central and western Pacific. **13:38**

14:10 {Kelley Elliott} Um, so importantly our goals for this expedition also encompass education and outreach and open data goals. Um, so one of our goals is to engage and educate the public in telepresence-based exploration. Uh, so during the course of this expedition we have a number of live interactions that are lined up with museums and aquariums around the country. Um, just yesterday actually we did a live interaction with the

Exploratorium in San Francisco where we had about twenty engaged members of the public, and then another thirty that came through. Last week we did a live interaction with the Smithsonian Institution where they had about two hundred people come through, um, one of their auditoriums and ask questions live with one of the scientists located onboard the ship. **14:57** Um, and this is all just part of an effort to get the public interested and excited and more knowledgeable about some of the deep-sea environments that reside on this planet. Um, in addition to doing live interactions with different groups onshore, uh, we also have full coverage of the expedition on the website and live video feeds that are shared there. Uh, so prior to the start of our remotely operated vehicle dives here in the Johnston Atoll Unit we actually did a Facebook Live interaction online, um, where we had by now more than seven thousand people who have actually tuned in to that, uh, video, about three thousand in real time, and another four thousand since then to learn more about, um, our expedition, what we're doing out here, and hopefully following up by tuning into the live video feeds online. **15:46**

15:50 {Interviewer} What past exploration has occurred within the deepwater areas of the Johnston Atoll Unit?

15:57 {Kelley Elliott} So we are not the first folks to come out here and do deepwater exploration activities here in the Johnston Atoll Unit. Um, exploration of deepwater areas of Johnston Atoll actually first began in the 1980's. Um the first deepwater work that was conducted here was in 1983, using the Hawaii Undersea Research Laboratory's Makali'i submersible. And they conducted several dives down to three hundred and sixty six meters, that was the maximum depth of the submersible. Uh, and they were focused on understanding the fisheries resources, looking at malcro-macro-algal habitats, uh in addition to general oceanagr- oceanographic studies in support of, uh, the U.S. Army's chemical agent disposal efforts that are located out here. So Johnston Atoll was an area where um, chemical agents were stored during WWII, and there was a major effort afterwards to destroy those, um, those chemical weapons. **16:58**

17:02 {Interviewer} Have there been other explorations of the Johnston Atoll Unit (i.e. the *Falkor*)?

17:08 {Kelley Elliott} So the 1983 dives with the Makali'i submersible were the first dives that were conducted here. Um, in 1987 the deep submergence group, uh, vehicle ALVIN, um, there were ten dives that were conducted using that vehicle. Those dives were done with scientists from the U.S. Geological Survey, and they were focused on better understanding sediment transport processes on the Horizon Tablemount. Now keep in mind that in 1987 Horizon Tablemount wasn't actually part of the Johnston Atoll Unit, it was incorporated into the Atoll Unit in 2014. Um but still that's important information, uh, for monument managers. Um, additionally in terms of some of the mapping work that has been conducted here, um, there have been a number of transit lines, uh, transit mapping lines conducted by ships that are just transiting through the region but focused mapping efforts really first began, uh, with the NOAA ship *Okeanos Explorer*. **18:04** So we made our way into the Pacific in 2015 to start the three-year Campaign to Address Pacific Monument Science Technology and Ocean Needs. And our first expedition included two cruises focused on the Johnston Atoll Unit. The first one was a mapping cruise focused on collecting mapping data of the Karin, Johnston, and Horizon Tablemount seamounts. Um, and we followed that up about two months later with a dedicated remotely-operated vehicle cruise, both to do a little bit more mapping work but to conduct remotely operated vehicle dives on these seamounts as well. Um, unfortunately when we were out here in 2015 we experienced some significant weather issues so, didn't accomplish as much as we wanted. We were still able to get eleven dives done, but so now we're back again this year doing continued exploration. Um. **18:53** Importantly, uh, in January 2016 the Schmidt Ocean Institute's research vessel *Falkor* was able to spend a couple of days here in the monument, um, collecting seafloor mapping data of some new seamounts. And that's been really important for our operations here in 2017. Um, we have been leveraging that new mapping data to uh, select locations for our remotely operated vehicle dives. So that has set the stage combined with the work that we did in 2015, for, uh, the mapping data that we're using to dive on this year. **19:30**

19:32 {Interviewer} Can I have you say how the *Okeanos Explorer* came to the Johnston Atoll Unit in 2015, and now we've returned to build upon this work?

19:48 {Kelley Elliott} Um, so work by the NOAA ship *Okeanos Explorer* here in the Johnston Atoll Unit actually first began in 2015. Um, we had two cruises then focused on collecting seafloor mapping data, and doing remotely operated vehicle dives on some of the seamounts, uh and in 2017 this year we've come back to continue and to build on that effort, uh, to map new seamounts and to collect additional data about the habitats that, uh, reside on these seamounts.

20:22 {Interviewer} What have we discovered during the expedition so far?

20:24 {Kelley Elliott} Excellent question. So, so far during this expedition we have made, um, a couple of important findings that met some of our primary mission goals. Um, the first is that while we were doing a dive last week offshore of Johnston Atoll we documented for the first time a coral called *Hemicorallium*. Well this is an important coral because it's a precious coral. Precious corals are managed by NOAA Fisheries. Um, and they are commercially important fisheries because some people will harvest them, and use them to make jewelry. And prior to the work that we're doing during this cruise in 2017, um precious corals have never been documented here. So an important mission goal or objective for this expedition was to take a look at the depths which are only available offshore of Johnston Atoll and determine whether or not precious corals existed here. So we did, we dove, we looked, and we found them. We've confirmed that precious corals do indeed exist here. Uh, we've even documented that coral in even deep-deeper waters at a later point during the cruise, so that was one, uh, important expedition goal that we've checked off. **21:33** Um another one was to look for and document the presence of high-density deep-sea coral and sponge communities. When we dove here in 2015 there was one community that was documented, but it wasn't as large or extensive as the

types of communities that we have seen elsewhere in the Pacific. Um, and so far during this cruise we have documented, um, at least two additional communities since then. Uh, these communities are really important. They provide habitat and protection for uh, other animals and um... contain many other associated animals living on and within them. So Chris Kelley will tell you all about his efforts over this last three year effort in the Pacific to better understand, um, the conditions, the locations, and the types of features that these communities can be found on. **22:27**

22:29 {Interviewer} What have we seen so far that has been personally really exciting or unexpected?

22:38 {Kelley Elliott} No, I think um, the documentation of the deep-sea coral communities were really the most exciting part. Uh, during this expeti- expedition one thing that has pleasantly surprised me, and uh, we designed this and we planned for this, and I'm just really happy with how it's come off, is how many new seamounts that we expect to map, during this cruise. Um, this is a combined remotely operated vehicle and mapping cruise. We dive everyday, during these cruises, when we're able and when the, um, equipment is operating properly. Uh, and we have been able to get in most of our dives so far during this expedition and therefore most of our available mapping time has been overnight. So to be able to map all of the different seamounts that uh, it looks like were going to be able to do by the end of this cruise is really very exciting, and just an excellent and very efficient use of resources. **23:31**

23:33 {Interviewer} Fantastic.

23:36 {Kelley Elliott} So I will go back to the beginning {rustling} because I didn't highlight the shakedown. So I can give you a broad overview, um, when we talked about what expedition I was currently on I just gave you the name, rather than describing the approach. Does that sound good? OK.

23:52 So right now we are on the 2017 Laulima O Ka Moana: Exploring Deep Monument Waters Offshore of Johnston Atoll Expedition. Um, and

this is a twenty-seven day expedition that is, uh, divided into two parts. So the first part of the expedition, uh, was focused on spending four days conducting shakedown operations offshore of Oahu. Uh, the ship was actually in dry dock just prior to the start of this expedition. And during that dry dock period there were significant upgrades, and maintenance work that was done onboard the vessel **{smack}**. So this four-day shakedown period was really focused on literally turning everything on, testing it to make sure it worked, um, evaluating the upgrades, and doing additional maintenance onboard the vessel to ensure that we were ready for operation. Um, so we spent four days doing that confirmed that everything worked well, and then took off and focused the latter half of the expedition on conducting daily remotely operated vehicle dives from July 13th through the 29th, and overnight mapping operations in the Johnston Atoll Unit of the Pacific Remote Islands Marine National Monument. And the primary goal, um, during that time period was to collect uh, mapping data, and, uh, use our two-body remotely operated vehicle to explore and investigate the deep-sea habitats that reside in that monument, uh, to provide that data and information to managers so they can more effectively, uh, manage their resources and use the data to develop deep-water management plans.

25:21

25:27 {Interviewer} Can I just get your name and position again?

25:29 {Kelley Elliott} Sure. Um, so I am Kelley Elliott. I work with NOAA's Office of Ocean Exploration and Research, uh, as an expedition manager. So what that means is that I work with the ocean science and management community, the team onboard the ship, and the Office of Ocean Exploration and Research to develop and oversee execution, um, of ocean exploration expeditions with the NOAA ship *Okeanos Explorer*. Sometimes that's just one cruise, and sometimes that's as many as four cruises, so we plan those cruises in a coordinated connected way to ensure that um, the data is complementary and achieves our overall goal of better understanding and characterizing an area. **26:12**

26:19 ROOM TONE

26:58 End of File