



Coral Restoration Nursery Media Clips 2-10-16 Shot Sheet

VIDEO

<https://vimeo.com/154642484>

- : 00-:12 Wide shot of the Anuenue Fisheries Research Center, Coral Restoration Nursery Sign.
- : 13-:22 Close up shot of Anuenue Fisheries Research Center, Coral Restoration Nursery Sign.
- : 23-:41 Coral technicians at water tanks.
- : 42-:55 Coral technical moving pipes inside of one of the tank.
- : 56-1:10 Wide shot of inside of one of the tanks
- 1:11-1:23 View of water inside of tank and corals below.
- 1:24-1:45 View of coral in water
- 1:46- 2:01 Technician placing a tube inside the rank
- 2:02- 2:16 Pipe moving along the water and tube sucking out the debris.
- 2:17-2:26 View of more corals in the water
- 2:27-2:38 Wide shot of pipe vacuuming sediment from the bottom of the tank
- 2:39-2:52 Close up of pipe vacuuming the bottom of the tank.
- 2:53-3:15 Close up of Corals
- 3:16-3:25 Another view of corals in the water
- 3:26-3:36 View of multiple coral fragments on grid tray.
- 3:37-3:48 Wide shot of corals inside of water
- 3:49-3:58 Corals suspended on a string
- 3:59-4:13 Another view of coral in water
- 4:14-4:45 Close up of corals and corals fragments growing on plate
- 4:46-4:58 Coral Technical pulling coral from tub and handing it to other technical for measurements.

Stephen Ranson, Coral Nursery Technician: "Okay, so after the corals has been quarantine outside, we bring in a coral colony just like this one in and will take a picture of it prior to cutting the coral, I'll give this to Norton.

- 4:59-5:21 Another technician taking a photo of the coral

Stephen Ranson, Coral Nursery Technician: "We cut the coral primarily because once you have a smaller size piece, growth will accelerate. So it has a smaller surface area to a volume ratio. That's why we have a bunch of fragments in here. It helps speed up the growth process. What Norton is doing right now is taking a picture of the coral prior to cutting it, so we can see

what kind of coral we are working with, we can reverse course prior to all these fragments and know what exact colony we took.”

- 5:22-5:29** Close up of technician documenting the coral
5:30-5:47 Close up of band saw being turned on and coral being cut.
5:48-6:12 Technician showing cut coral, and cutting another coral fragment

Stephen Ranson, Coral Nursery Technician *“So you’ll see that after it has been cut, it is a very nice white clean cut. You can see the tissue only penetrates in specific layer. What I’m going to try and do it cut the smallest piece that I can and try to remove all the exoskeleton that we don’t need.”*

- 6:13- 6:37** Close up of technical cutting a coral fragment

Stephen Ranson, Coral Nursery Technical: *“So hopefully will end up with a piece that is this big. It’s about a centimeter squared, and she’ll directly glue that on that plug.”*

- 6:38-6:46** Technician gluing coral fragment to a plug and shot of finished plug on grid tray.
6:47-6:51 Wide shot of grid tray with corals glued to plugs
6:52-7:14 View of multiple coral fragments inside of tank. (NAT)
7:15-7:25 Wide shot of coral fragment in tanks with fishes swimming around.
7:26-8:03 Image of coral larvae floating on screen (NAT)
8:04- 8:15 Wide shot of algae in flasks. (NAT)
8:16-8:28 Close up algae being grown in flask.
- 8:29-9:38** Shot of multiple tanks with coral fragment inside of them.

Zach Forsmen, Coral Specialist: *“Here, we’re looking at growth in response to a lot of different foods. We’re looking at live food versus commercial foods that were used for corals, the coral hobbyist industry. We are really trying to determine the best sources of nutrients for species of Hawaiian coral.”*

Dan Dennison: *“Any conclusions at all, or too early?”*

Zach Forsmen, Coral Specialist: *“Well what we found in previous experimental work is that ... tends to be autotrophic, which relies on photosynthesis. It doesn’t seem to depend that much on food at least in terms of the food that we have trident tested so far. The other corals ..., which is the rice coral, and ..., which is the lace coral seems to rely more on heterotrophy, which means that they respond well to different growth treatments. They really seem to eat and translate that into growth.”*

- 9:43- 10:56** Wide show of Dave Gulko’s being interviewed.

Dave Gulko, Aquatic Biologist: *“Well, the nursery arose from a number of years ago. We were working with our sister division of boating and recreation. They were having some issues with their corals from one of their harbors on the Big Island. We offered to help them transplant those*

corals and without getting into a lot of detail. Basically, a lot of money was spent on mitigating for a very, very small number of corals. It didn't assist the state, it didn't assist the federal government, and it didn't assist the resources, really. We looked at, and realized there are some issue here's that we needed to address. We have really good reefs that are degrading. We have corals in our harbor that provide us with the unique source of coral material, because we don't want to be moving corals from natural reefs to natural reefs because it impacts one reef and benefits another. If we have coral in the harbors that we can make use of without posing any threats to the natural resources. Those threats would be involved with pollution and invasive species. Along those lines, we also realize that in Hawaii, corals grow exceedingly slow. It's among the slowest growth rate on the planet per here in Hawaii."

10:59-11:51 Continued shot of Dave Gulko's interview.

***Dave Gulko, Aquatic Biologist:** "So what we developed is what we call a fast growth protocol where we are taking these corals in, were fragmenting them. Once we fragment them, they have a much greater surface area to volume ratio. So at a small size they are going to grow laterally. Horizontally much faster than out in the wild. We're placing these corals into a specialized tanks where we have artificial sea water, so there is no pollutants, there is no competitors, no predators. We're bumping up certain minerals in the water. We have calcium reactors to enhance their growth. We have specialized lights so we can provide them with the best possible light to maximize their growth rates, and we are feeding them. Through a series of care provided by our technicians we can increase that growth rate by one centimeter a year with these small sizes to two to three centimeters a year.*

11:56-12:21 Close-up shot of Dave Gulko's interview.

***Dave Gulko, Aquatic Biologist:** "What we are doing here is fast growing corals colonies. Hawaiian Coral colonies. We are only growing Hawaiian coral. We are experimenting with a variety of species, but were sticking primarily to the reef building coral. After having built the nursery, we realized we had actually a little bit of extra space. So we have made use of that space as a sort of ark, for helping to hold the rarest of the native Hawaiian species. The endemic species.*