

Sub Research
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Radio Spot
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START OF RADIO SPOT

Ann Nelson (AN): The lower reaches of Lake Superior are again being explored this summer by biologists, geologists, and other scientists in a research submarine that allows them to see and sample fish and rocks that exist in total darkness. And for the first time, the deep waters of another Great Lake, Lake Huron, is being visited by the scientists. The Huron study took place the first four days of the expedition which started on July 17th and ends August 10th. The expedition involves scientists from several universities and federal agencies. It's sponsored by the National Oceanic and Atmospheric Administration, or NOAA, through its National Undersea Research Program. Captain Dan Schwartz of the *Seward Johnson* explains.

CUTS TO SOUND BITE

Dan Schwartz (DS): Harbor Branch Oceanographic Institute, Park Crest, Florida, the owner of this ship, two other ships and one other submarine is proud to be a part of this project here as we enter our 2nd year of operating this ship and our second year on the Great Lakes. We've come to realize the importance of this project. Just last night I learned from Dr. Cooper a startling statistic, only 40% of the population of this country lives in riparian states. The states that are adjacent to the Great Lakes. These great bodies of fresh water are a priceless heritage to us and our future generations. Not only as a source of drinking water, as a great transportation system for the industrial and agricultural products of the heartland of America and Canada to the ocean. Also as a recreational resource for fishing and boating. It's important that we study and preserve these lakes. They were the result of negligence for too long and now we have a chance to preserve them in a natural and pristine state for future generations. Harbor Branch has had an exciting year, this year with this ship and submersible. During the first two and a half months we were involved in the aftermath of the tragedy of the *Space Shuttle Challenger*. The submersible found the wreckage of the booster rockets of the *Challenger* and we spent the remaining time identifying and documenting and photographing and then recovering parts of the space shuttle so that the engineers could study what went wrong and we can get our space program back in gear. Now of course we're proud to be back here on this Great Lakes research project. And then when we leave here in the autumn we'll be going to the South Pacific on a study of marine biology, marine natural products chemistry down there. The Galapagos Islands where Charles Darwin first received his inspiration to write the *Origins of Species*. As you can see, oceanography is actually, oceanography and I should say limnology the study of our lakes, is a combination of many disciplines in sciences. We go around asking questions as old as the Earth itself. This is our challenge and also our reward. Speaking for all the crew of the *Seward Johnson*, the *Johnson Sea Link* and Harbor Branch, we're proud to be up here and be a part of this.

AN: Dr. Bill Cooper is with Michigan State University. He can summarize this for us, what the sub and research vessel have been doing so far on Lake Huron and Lake Superior, and what their hopes are for the rest of the expedition into Lake Superior.

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Bill Cooper (BC): We just finished a 7 day cruise. Set it out the first 4 days, first 3 days actually, on Lake Huron. John Metzko [spelled phonetically] from the US Fish and Wildlife Service in Ann Arbor and his fellows are looking at the suitability of habitat to be established breeding lake trout populations in Lake Huron. We found out, we used Lake Superior as our control, we know the breeding out here so we went back, we made these studies last summer, northern Lake Huron this summer. The sites they picked, the 6 phantom scarp, which is right on the border between Canada and the United States way out in the middle of Lake Huron, turned out to be very prime habitat. The water quality parameters were very good, it kind of reinforced the ideas of the biologists that that would be a prime place to start the rehabilitation of lake trout in Lake Huron, and everything we found supports their initial ideas. Then we went up off of Sheboygan and did some experiments working with sediments, working with deep water fish. We found that Lake Huron is much more turbulent than Lake Superior. It's a real challenge to the crew of the *Johnson Sea Link* and the Scientist to work in turbulent water. These yo-yos they're used to going down to the Caribbean where you can see 100 feet. We're asking them to go down there and use a robotic arm where you can barely see the end of your nose and do it with great precision and accuracy. We're on a learning curve, we're gonna have to learn to do it because a good portion of our Great Lake's problems are in Lake Michigan and Lake Huron, not Lake Superior. Lake Superior is clear, but it's also clean. Part of the reason that Lake Huron and Lake Michigan and turbulent is because of all the input agriculture industry municipalities. Yet that's where we gotta do a lot research so it's kind of challenge to all of us to learn how to work in conditions that aren't the best in terms of visibility. But things are working very well. Then we went to Batchawana Bay, we just finished two days releasing into Lake Superior looking at sea lampreys, their experiment's putting cages in the bottom of, in those kinds of experiments the bottom of the lake that we'll look at next year and pick up two years from now when the Johnson Sea Link comes back. So we come into port today, this group of scientists get off and they'll be another group of 10 scientists coming on today and tomorrow that will go out and spend the next rig in the Caribou Basin, the eastern part. They get off in early August and another group gets on for another 7-8 days. And so you'll see we'll come to Marquette both times. So when they'll be moving around the lake they'll be using Marquette as a port of call, which will put a small stress on your local pubs. But a bigger hammer than I'm sure you can.

AN: So they'll be back in Marquette, Dr. Bill Cooper Dr. William Cooper, Dr. David Long, all the scientist aboard the *Seward Johnson* who operate the *Johnson Sea Link 2*. As was the case last summer, many of this year's dives are sentimental journeys so to speak. They're aimed at learning more about the many processes that go on in and just above the sediment. It is in these regions that a great variety of substances, nutrients, metals, organic, and inorganic pollutants are assimilated and re-assimilated by the lake and its many plant and animal inhabitants. But so many other questions need to be answered about the Great Lakes. What happens when metals and other inorganic substances find their way to the bottom of the big lakes? What sorts of chemical reactions take place in the sediment, and in the fluff, and in the nephloid zones? How do pollutants get from the sediment into the food chain? And what are the processes that cause aggregations of such metals, as iron and manganese, deform the sediments. Brock, those are just some of the questions, some of the many questions that the *Johnson Sea Link 2* and its crew of

scientists on this NOAA expedition hope to discover this year. But they'll be back again next year, and they year following too as announce today by Dr. David Long. And we hope too that we'll welcome them as they have us in this study of the Great Lakes. For Public Radio 90 News, I'm Ann Nelson.

END OF RADIO SPOT