Okeanos Explorer ROV Dive Summary

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| **Site Name** | S19 Submarine Site | | | | F:\OKEANOS EXPLORER\2015 CAPSTONE Planning\Web Content\Mission Intro & Plan\MonumentsOverview2(1).jpg | |
| **ROV Lead/Expedition Coordinator** | Brian Bingham  Kelley Elliott | | | |  | |
| **Science Team Leads** | Frank Parrish (Biology)  Christopher Kelley (Biology)  Hans Von Tilburg (Archaeology) | | | |  | |
| **General Area Descriptor** | Main Hawaiian Islands | | | |  | |
| **ROV Dive Name** | Cruise Season | | Leg | | | Dive Number |
|  | EX1504 | | 3 | | | DIVE07 |
| **Equipment Deployed** | ROV: | | Deep Discoverer | | | |
|  | Camera Platform: | | Seirios | | | |
| **ROV Measurements** | CTD | | Depth | | | Altitude |
|  | Scanning Sonar | | USBL Position | | | Heading |
|  | Pitch | | Roll | | | HD Camera 1 |
|  | HD Camera 2 | | Low Res Cam 1 | | | Low Res Cam 2 |
|  | Low Res Cam 3 | | Low Res Cam 4 | | | Low Res Cam 2 |
| **Equipment Malfunctions** | N/A | | | | | |
| **ROV Dive Summary**  **(From processed ROV data)** | Dive Summary: EX1504L3\_DIVE07  ^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^  In Water: 2015-09-03T19:00:12.265000  21°, 14.411' N ; 158°, 00.326' W  Out Water: 2015-09-03T22:33:55.328000  21°, 14.363' N ; 158°, 00.199' W  Off Bottom: 2015-09-03T22:11:20.718000  21°, 14.378' N ; 158°, 00.185' W  On Bottom: 2015-09-03T19:19:43.562000  21°, 14.409' N ; 158°, 00.182' W  Dive duration: 3:33:43  Bottom Time: 2:51:37  Max. depth: 402.9 m | | | | | |
| **Special Notes** |  | | | | | |
| **Scientists Involved**  ***(please provide name / location / affiliation / email)*** | Frank Parrish, EX, NOAA, Frank.Parrish@noaa.gov  Chris Kelley, EX, UH, ckelley@hawaii.edu  Hans Van Tilburg, EX, ONMS, hans.vantilburg@noaa.gov  Rachel Bassett, SC, DSCRTP, rachel.bassett@noaa.gov  Andrea Quatrini, CA, USGS, aquattrini@usgs.gov  Amy Baco-Taylor, FL, FSU, abacotaylor@fsu.edu  Asako Matsumoto, Japan, CIT, amatsu@gorgonian.jp  Chris Mah, DC, SI, mahch@si.edu  Scott France, LA, ULL, france@louisiana.edu  Brendan Roark, TX, TAMU, broark@geos.tamu.edu  Bruce Mundy, IRC ECC, PIFSC, bruce.mundy@noaa.gov  Mary Wicksten, TX, TAMU, wicksten@bio.tamu.edu  Michael Parke, IRC ECC, PIFSC, Michael.Parke@noaa.gov  John R. Smith, UH ECC, UH, jrsmith@hawaii.edu  Daniel Warren, TX, C&C Technologies, dan.warren@cctechnol.com  Jennifer McKinnon, NC, ECU, mckinnonje@ecu.edu  Melanie Damour, LA, BOEM, Melanie.Damour@boem.gov  Frank Cantelas, SS ECC, OER, frank.cantelas@noaa.gov  Kim Faulk, TX, GEMS/ACUA, Kim.Faulk@f-e-t.com | | | | | |
| **Purpose of the Dive**  This dive will visit the hull of the World War I submarine S-19 which now rests on the bottom at 414 m in the middle of a sand expanse. After service in World War I the vessel was no longer needed and was intentionally scuttled by the Navy in 1938 and now serves as a relatively new feature of hard bottom habitat (~75 yrs old) for deep corals to colonize. The hull, which is intact, provides a unique glimpse of a community of pioneer settlement in deep corals. The objectives of the dive are to (1) recover a flow meter placed on the stern of the S-19, (2) to make observations on the condition of the vessel to support information on submerged cultural resources and (3) practice deploying and recovering a mock-up of a tilt meter instrument. | | | | | | |
| **Description of the Dive:** | | | | | | |
| All of the dive objectives were completed. The flowmeter was successfully recovered from the stern section of the S-19 hull. A complete survey of the of the full deck area of the S-19 hull was conducted with attention to the deep coral community looking for any evidence of recent arrival of the parasitic gold coral to resident host population growing on the S-19 hull. The practice deployment and recovery of the mock-up tilt meter indicated there would likely be few problems with the future deployment and recovery of the actual instruments. Observations on the condition of the S-19 itself indicate the submarine is relatively intact, aside from features removed prior to disposal, and resting on its midship section. Scour craters exist beneath both the unsupported bow and stern. Deterioration, flexing, and active corrosion of the hull and weather deck is very low compared to other sunken submarines. The survey was particularly useful for understanding the salvage operations completed prior to sinking. Diesel engines, superstructure, anchor, rudder and stern dive planes, propellers and shafts, and rotating bow planes had all been removed before the sub was scuttled.  **Animals observed during the dive are listed below.**  **Cnidarians:**  Thouarella hilgendorfi  Paracalyptrophora sp  Narella sp  Anthothela sp white  Gardineria hawaiiensis?  Lepidisis sp  Corallium sp  Acanella dispar  Madrepora oculata  Bathypathes sp  Stichopathes sp white  Callogorgia gilberti  Acanthogorgia sp  Plexauridae  Stoloniferous octocoral  Actinostolidae  Hormathiidae  Hydrodendron gorgonoide  Isadella sp  Paracalyptrophora sp  tubulariid hydrozoans  **Sponges**  Regadrella sp  **Echinoderms**  Ophiuroids  Stereocidaris hawaiiensis  Antedon sp yellow  Histocidaris variabilis  Astroceramus eldridgei  Charitometridae/Thalassometridae  Gorgonicephalidae  **Arthropods**  Heterocarpus ensifer  Plesionika pacifica  Plesionika edwardsii  Gooseneck barnacles  Munida sp  **Fishes**  Polymixia sp  Chrionema chryseres  Laemonema rhodochir  Pontinus macrocephalus  Hollardia goslinei  Moridae  Chaunax umbrinus  Epigonus sp  **Other**  Lyrocteis sp | | | | | | |
| **Overall Map of ROV Dive Area** | | | | **Close-up Map of Main Dive Site** | | |
| **\\192.168.4.200\CruiseData\EX1504L3\Products\ROV\EX1504L3_DIVE07_20150903\EX1504L3_DIVE07_HYPACK_MAP_WIDE.JPG** | | | | \\192.168.4.200\CruiseData\EX1504L3\Products\ROV\EX1504L3_DIVE07_20150903\EX1504L3_DIVE07_HYPACK_MAP_ZOOM.JPG | | |
| Hypack screen grab showing bathymetry data for the dive site. | | | | Close up view of Hypack screen grab showing waypoints dropped during actual ROV dive. | | |
| **Representative Photos of the Dive** | | | | | | |
| **\\192.168.4.200\CruiseData\EX1504L3\Imagery\EX1504L3_DIVE07_20150903\EX1504L3_IMG_20150903T210930Z_ROVHD_DECK.jpg** | | | | **\\192.168.4.200\CruiseData\EX1504L3\Imagery\EX1504L3_DIVE07_20150903\EX1504L3_IMG_20150903T215139Z_PTMAN_FLOW_METER_RECOVER.jpg** | | |
| Close-up image showing the deterioration and active corrosion of the sub, which is covered with corals. | | | | ROV D2 recovers the flow meter from the stern section of the S-19. | | |
| **Please direct inquiries to:** | | NOAA Office of Ocean Exploration & Research 1315 East-West Highway (SSMC3 10th Floor)  Silver Spring, MD 20910  (301) 734-1014 | | | | |