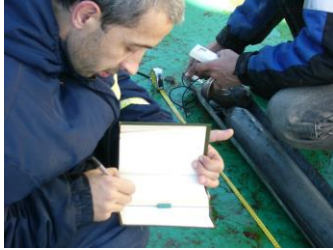


Remotely Operated Video Operations

Kathleen Crane, NOAA, Arctic Research Office
Viacheslav Gladish SONIC, VNIIOkeangeologia, St. Petersburg
Boris Smirnov, SONIC, VNIIOkeangeologia, St. Petersburg
Vitaly Kaulio, VNIIOkeangeologia, St. Petersburg



Slava Gladish, Photo, K. Wood

Intershelf 105,
Remotely Operated Video operations (ROV) were

an integral part of the observation programs onboard the R/V Professor Khromov. The SONIC group of VNIIOkeangeologia, St. Petersburg, Russia, provided an Intershelf 105 fish, which enables color video to be transmitted over 150 m of coaxial cable up to the ship. Images are captured on computer and transferred directly into MPEG 4 files for hard drive and CD storage.

During the second leg of the RUSALCA expedition, the Intershelf ROV was lowered to the seafloor eleven times. The sedimentary environments ranged from cobbled, to soft clays. Water column conditions included 1.7 -knot currents to regions occluded by high plankton concentrations, underneath large chunks of multiyear ice.

In most of the stations shallower than 60 meters, the ship anchored for ROV operations. At other stations in the Herald Trough (Canyon), the ROV operations took place while the ship drifted with the currents.

Station 14 ROV #1 67 38.2 N, 169 02.49 W, August 12 21:23 – 23:40 GMT

Test station, high productivity, difficulty observing the bottom

Station 15 ROV #2 67 52.54 N, 168 18.81 W, August 13, 19:20 – 19:50 GMT

59 m deep. Strong currents, flat, sedimented, seafloor, some bioturbation, many fish, varieties of starfish, hermit crabs, other crabs, orange particles in water column near bottom, high productivity zone



ROV, Photo: T. Whitledge

Station 18 ROV #3 68 57.007N, 166 54.751 W, August 14, 19:11 –19:46 GMT

49 m deep. Very flat, sedimented, seafloor, less benthic life than at station 15, crabs (dominant), starfish, high productivity in water column, Anemones, isolated colonies of benthic life, lebenspuren (long tracks)

Station 20 ROV #4 69 00.373 N, 168 53.685 W August 14, 18:58 – 19:29 GMT

Station 23 ROV#5 68 31.151 N, 171 27.829 W, August 15, 11:52 – 12:29 GMT

56 m deep. Water column filled with phyto and zooplankton, many egg cases?, long streamers, many fish (eelpouts?), pink colored on video, very strong currents, anemones, sedimented bottom with some rubbly areas, brittle stars, crabs, sculpins.

Station 25 ROV#6 67 52.343 N, 172 32.651 W, August 16, 04:28-05:08 GMT
Smooth sedimented seafloor, starfish spread out, not clustered together, fish, high productivity, anemones, hermit crabs

Station 106 ROV#7 70 44.898 N, 175 32.14 W, August 18, 19:35 –20:15 GMT
72 m deep, at the head of the Herald Trough (Canyon), sedimented seafloor covered primarily by hundreds of brittle stars living in clusters

Station 89 ROV#8, 72 19.073 N, 175 58.515W, August 21 07:43 – 08:10 GMT

(recorded 85B)

103 m deep, northernmost station in the middle of the Herald Trough, sedimented bottom, brittle stars, fish, stalked anemones, stalked soft coral

Station 73B ROV#9 71 55.300 N, 175 28.319W, August 21, 15:34 – 16:13 GMT, 71 m deep, Middle of Herald Trough, Dominant epibenthic species brittle stars feeding (arms pointed, upwards)

Station 62 ROV#10 71 23.506 N, 174 51.177 W, August 22, 00:30-01:02 GMT
77 m deep, Narrowest point of the Herald Trough, center of the trough, many cobbles, manganese nodules that

look like dried apricots, sea urchins, many fish (or shrimp, or euphausiids?)

Station 107 ROV#11 70 53.359 N , 172 44.411 W, August 22, 13:59 – 14:29 GMT, 40 m deep, sedimented bottom, micro-cone shaped mounds, 1.7-knot currents (difficult to reach bottom, visible benthic species: Stalked Anemones, few crabs and starfish

MICROMV SONY IP camera operation



Kathleen Crane, Photo, B. Bluhm

A SONY MicroMV IP digital video camera was used to better image the in-situ functions of equipment used on the RUSALCA expedition. The

NOAA owned camera was installed in a 150-meter housing and attached to a frame outfitted with a battery pack and two ROV lamps. The underwater camera was attached to:

1. The CTD –Rosette system and imaged launch and recovery operations and the Video Plankton Recorder in the water column.
2. Downward looking on the Bongo Plankton nets to image the operation and to observe the qualitative concentrations of particles in the water column.
3. Upward looking on the Bongo Plankton Net wire to qualitatively image the upward concentrations of particles in the water column.

Additional deck shots covered the daily activities of the RUSALCA expedition

(Leg 2).