

AT15-32 Biology Sampling Summary

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Over the course of the cruise, we successfully sampled biology from six venting localities during five dives. Almost all samples obtained have video footage of the site and the physical collection itself. Electrochemical data were obtained for all sampling sites as well. In total 23 different species were sampled from three major assemblage types (*Tevnia* assemblage, mixed *Tevnia* and *Riftia* assemblage, and mussel assemblage). The following is a brief summary of the results of this sampling effort. All biological samples were either frozen or preserved and will be transferred to Dr. Timothy Shank's lab at the Woods Hole Oceanographic Institution for further analysis.

1) Tica (x: 4571 y: 78167) was the most extensively sampled site. Manipulator grabs and slurps were conducted on four separate dives (4401, 4403, 4405, and 4407) in diffuse flow communities. Specific assemblages sampled included stands of *Tevnia* tubeworms on two occasions, an amphipod swarm, *Riftia* tubeworms, and bathymodiolid mussels. Fauna sampled in association with these dominant species includes brachyuran crabs, polynoids, amphipods, polychaetes, and multiple species of limpets.

2) We were able to recover six of seven previously deployed colonization experiments from the P vent marker 20 area (x: 4622 y: 77938). Diffuse flow at the deployment area had essentially ceased, resulting in the presence of very few living organisms. A basalt sample from the same area provided evidence of recent mussel colonization, with many of these mussel colonists dead.

3) We sampled tubeworm communities in the RESET 06 Marker 35 area (x: 4785 y: 76896), also known as the "Stadium", on two separate dives (4407 and 4408). One sample consisted of a *Tevnia* community and the other was a mixed community of both *Tevnia* and *Riftia* tubeworms. Associated fauna included brachyuran crabs, two species of limpets, two species of amphipods, and multiple species of polychaete worms.

4) A mixed community of *Tevnia* and *Riftia* tubeworms was sampled from the Marker 28 diffuse flow area (x: 4671 y: 77738) during dive 4405. This community was quite robust with a large diversity in sizes of tubeworms present within the sample. Associated fauna were similar to that sampled in other tubeworm communities with amphipods, brachyuran crabs, polychaetes and two species of limpets present.

5) *Tevnia* tubeworms were also sampled from a diffuse flow community in the Marker 141/Mkr 15 area (x: 4748 y: 77143) during dive 4407. The fluid flow in this area was markedly lower than during RESET 06, and the tubeworm tubes had a rusty appearance. Associated fauna included amphipods, limpets, and polynoids, but were not sampled in as great abundance as at other sites.

6) A sulfide sample at Bio9 (x: 4608 y: 77980) yielded a single Alvinellid polychaete specimen.

Off-axis dives indicated the presence of common deep-sea fauna including holothurians, ophiuroids, asteroids, crinoids, sponges, galatheids and multiple species of fish. None of these organisms were physically sampled but do appear in the video footage.