

Experimental Proposals at Barkley Canyon

BACKGROUND

Last summer we agreed to the deployment of a multi-element sediment enrichment experiment around the Barkley Canyon Pod 3 camera. This represented the first in situ manipulative experiment on the NEPTUNE network, although we have a history of caged faunal-exclusion and forensic (pig deployments) experiments on the VENUS network in Saanich Inlet and the Strait of Georgia (see comment below). The Barkley Canyon organic enrichment experiment was deployed during the Falkor cruise in September and will be terminated in May with the collection of push cores and removal of the 18 square frames. We subsequently agreed to the one-year deployment of blocks of whale bone and carbonate substratum at the same experimental site, beginning in May this year, on behalf of Craig Smith (Univ. Hawai'i) and Lisa Levin (Scripps Institute of Oceanography). Also, forensic scientists from Simon Fraser University have also expressed an interest in deep-water pig carcass deployments in Barkley Canyon. Finally, for the past two weeks, we have been corresponding with Craig Smith about the feasibility of deploying an entire large whale carcass (from a future stranding) at a deep-water site on the NEPTUNE network, with Barkley Canyon being a primary candidate site. A whale carcass and skeleton would become a permanent feature of the observatory, since the whale bone communities appear to persist for decades.

EXPERIMENTAL SITE PROPOSAL

We need to go beyond ad hoc management of requests for manipulative experiments and consider designating certain sites as "experimental areas", where we can schedule, deploy and recover experiments, and maximize community participation in experimental observations and the interpretation of results. Regardless of whether ideas for experiments come from individual investigators or groups, the Ocean Networks Canada open data policy and the collective nature of our facility, will ensure that anyone can access all experimental observations. I propose therefore that we designate two areas in Barkley Canyon for experiments involving, in a first instance, the addition of substrata or organic enrichments. One site would be to the east of the Hydrates junction box, reachable by the tracked vehicle Wally, and a second site at the Pod 3 camera. This would leave Pod 1 (canyon axis), Pod 2 (upper slope) and Pod 4 (mid-canyon) reserved for long-term observations. Experimental proposals would be reviewed by ONC and the benthic processes research community, for their technical feasibility and their potential impact on passive observations. We would leave the scientific merit review to the funding agencies.

ATTACHMENTS

File	Modified
PDF File Whale_fall_documentary_scenario_4.pdf Whale fall colonization/succession experiment to be deployed and monitored in the NE Pacific	12-Feb-14 by Dwight Owens
PDF File Smith and De Leo Barkley Canyon bone wood proposal_plus NSF proposal.pdf	08-Mar-14 by Fabio Cabrera
PDF File Treude et al 2009.pdf	08-Mar-14 by Fabio Cabrera
PDF File Smith and Baco 2003 - Ecology of whale falls at the deep seafloor OMBAR pdf.pdf	08-Mar-14 by Fabio Cabrera
PDF File Smith et al - Seven year enrichment - submitted to MEPS.pdf	08-Mar-14 by Fabio Cabrera

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COMMENTS