Untitled Document - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://sep.csumb.edu/ifame/scid/

S C I D

Sanctuary Characterization & Image Display

Sanctuary Characterization & Image Display (SCID): Closing the time-gap between data collection and dissemination

Wrubel, KR[1]; Lindholm, JB[1]; DeVogelaere, A[2]; de Marignac, J[2]; Knight, A[1]

1 Institute for Applied Marine Ecology (IfAME), California State University Monterey Bay, 100 Campus Center, Seaside, CA 93955

2 Monterey Bay National Marine Sanctuary, 299 Foam Street, Monterey, California 93940

More about SCID

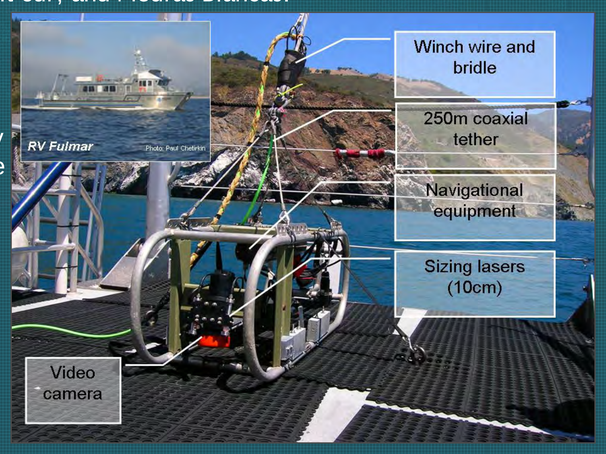
The endeavor of science is founded on the timely dissemination of research results to the wider world. However, the reality of data processing and analysis time frequently impedes this timely dissemination. The implications of delayed reporting of scientific data are particularly acute where management agencies and policy-makers are anticipating the arrival of information to support environmental decision-making. Over the past three years (2006-2008) a new partnership between the Institute for Applied Marine Ecology (IfAME) at CSU Monterey Bay and the Monterey Bay National Marine Sanctuary (MBNMS) has formed to use a towed camera sled to collect videographic data throughout the Sanctuary in support of Sanctuary site characterization efforts as well as MPA monitoring activities. Videographic data are analyzed post-cruise, along traditional scientific timelines, to answer a variety of research questions. However, using a programmable keyboard (X-Keys) at-sea, a courser set of data (1-min intervals) are collected in real time to provide summary data virtually immediately post-cruise. The Sanctuary Characterization Image Display (SCID), the web-based vehicle for the rapid dissemination of camera sled data, is intended to render the water column transparent for a broader public audience. A species matrix characterizes all fish and invertebrate taxa and seafloor habitat attributes observed by the camera sled and the web-interface provides these data via the web as a clickable map of video clips and frame grabs distributed across transects. Through SCID we are closing the gap in the dissemination of scientific data.

X-Keys are a programmable keyboard used at sea that obtain a summary set of data of species and habitat type during each transect. This information is translated into a species matrix.

EcoViz

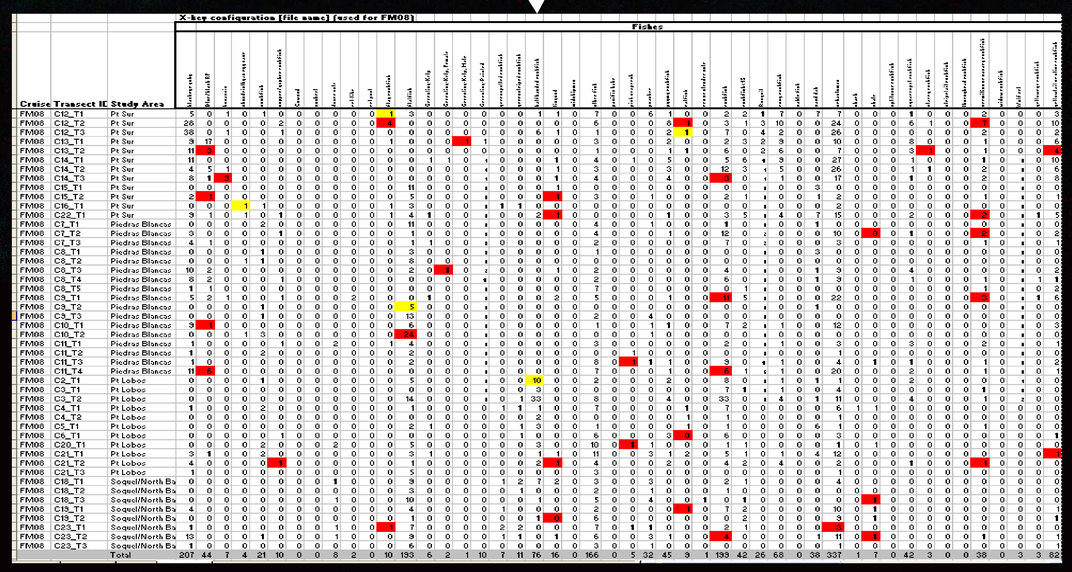
The camera sled has collected data in five study areas in 2006, 2007, and 2008: North Bay/Soquel Canyon, Portuguese Ledge, Point Lobos, Point Sur, and Piedras Blancas.

The camera sled is composed of a single camera, two high-powered lights, and an altimeter. These components are protected by a sturdy aluminum frame and powered by a 300 meter umbilical tether attached to the Sanctuary's research vessel Fulmar.

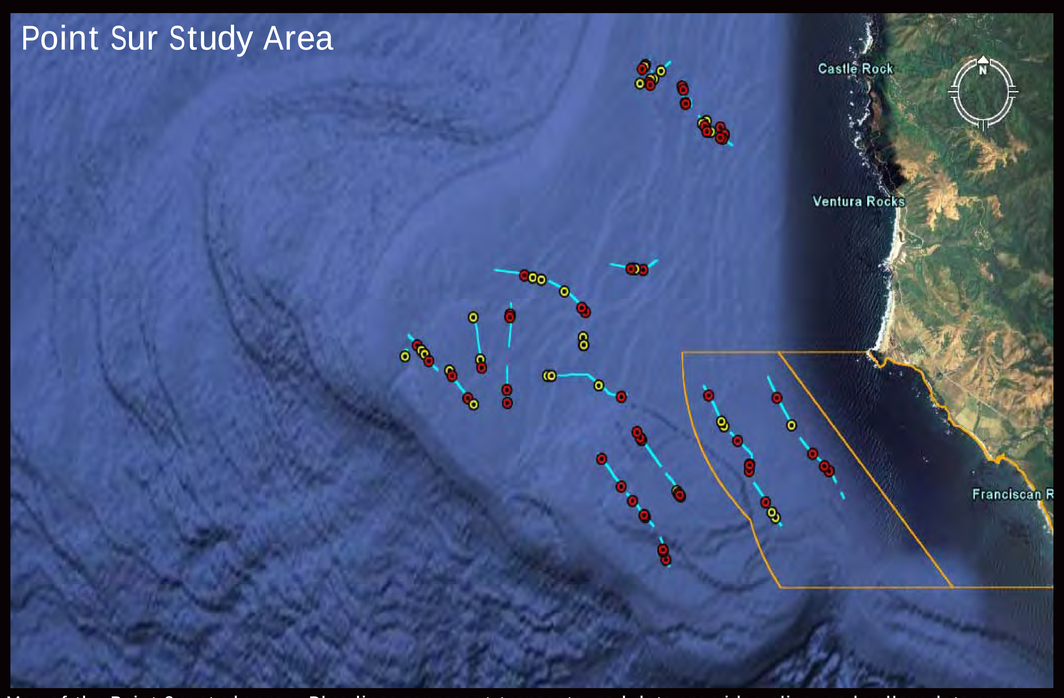


Field Operations

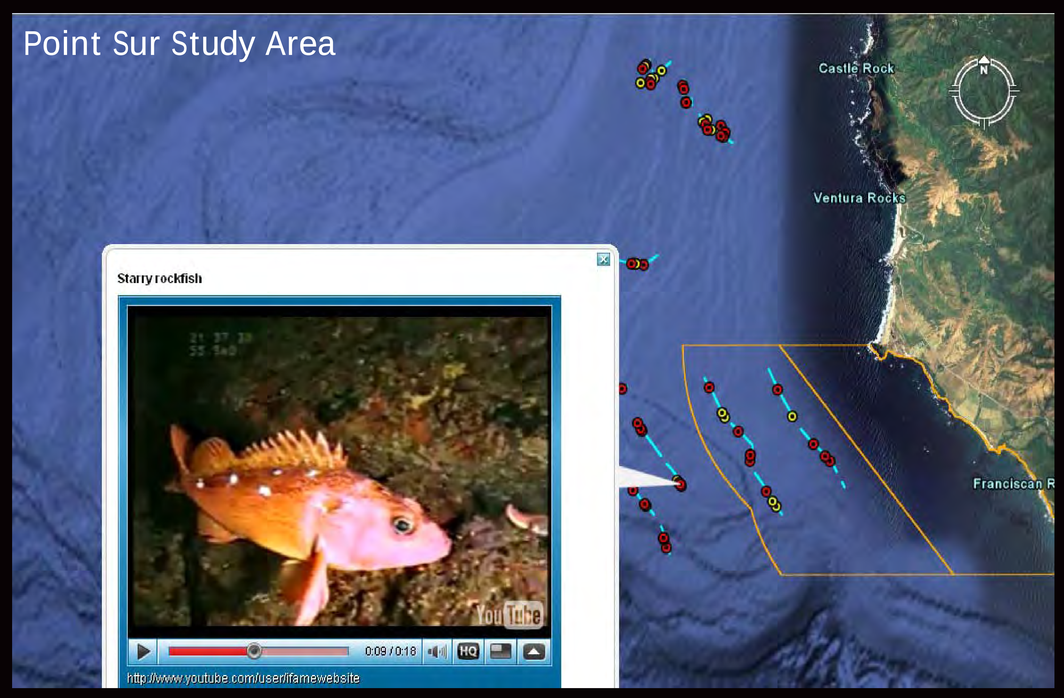
Videographic data are processed by locating distinguishable fish and invertebrate species along each transect and are extracted either as a video clip or still image. Video and still images are extracted using a spatial multimedia program, MediaMapper (Red Hen Systems Inc. 2005), which obtains GPS coordinates of each video clip or photo, allowing for correct placement along each transect line. Data are displayed in a GoogleEarth interface, where the user can view the image location along a transect line, MPA boundaries, and multibeam bathymetry for each study area. Media points are interactive; when a user clicks on a video point the image appears and play automatically via a YouTube link. Still images are referenced by the web server and appear when the user selects the point along a transect line.



A species matrix is created using X-Key data which summaries the species entered on each transect. Species represented on SCID are subsequently highlighted red or yellow in the species matrix to denote the use of a video clip (red) or still image (yellow) of the species across transects.



Map of the Point Sur study area. Blue lines represent transects, red dots are video clips, and yellow dots are photos.



When a media point (red or yellow dot) is clicked on a window pops up with either a video clip embedded through YouTube or a still image referenced through the web server.

SCID is the result of a partnership between the Institute of Applied Marine Ecology (IfAME) at California State University Monterey Bay and the SIMoN program at the Monterey Bay National Marine Sanctuary.

IfAME Institute for Applied Marine Ecology

National Marine Sanctuaries

Background image courtesy IMPACT 2008

We would like to thank and acknowledge Lorraine Anglin, Jessica Watson, Donna Kline, Matthew Subia, Megan Kelly, Josh Hess, Nick Donlou, and AJ Cecchettini for help in the field and the lab; CSUMB's Seafloor Mapping Lab for printing this poster; IMPACT 2008 for the background image; and the crew of the RV Fulmar. Special thanks to Jon Detka for all of the web help with SCID.