

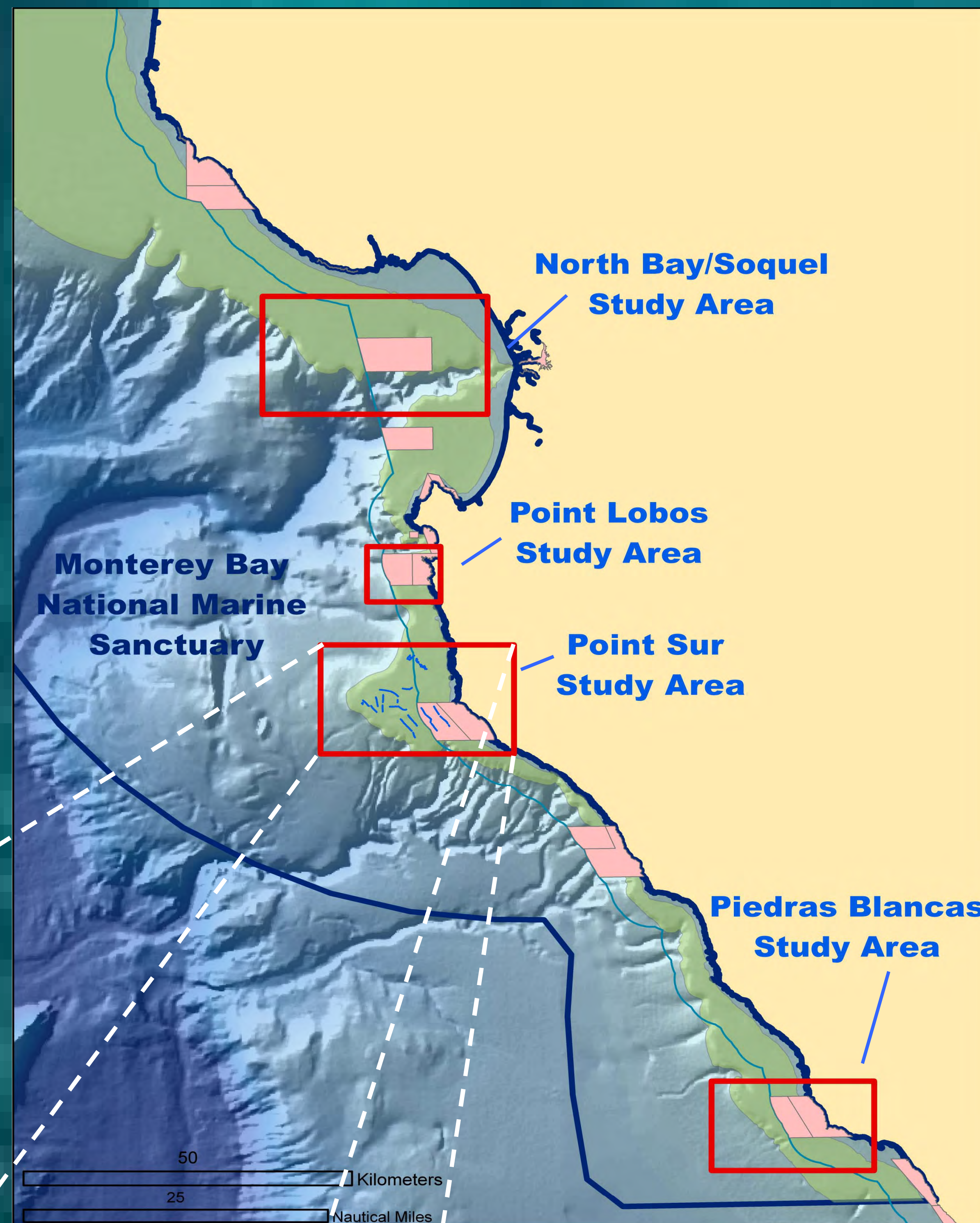
Sanctuary Characterization Image Display (SCID): closing the time-gap between data collection and dissemination

Wrubel, KR¹; Lindholm, JB¹; DeVogelaere, A²; de Marignac, J²; Knight, A¹; Watson JL¹

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

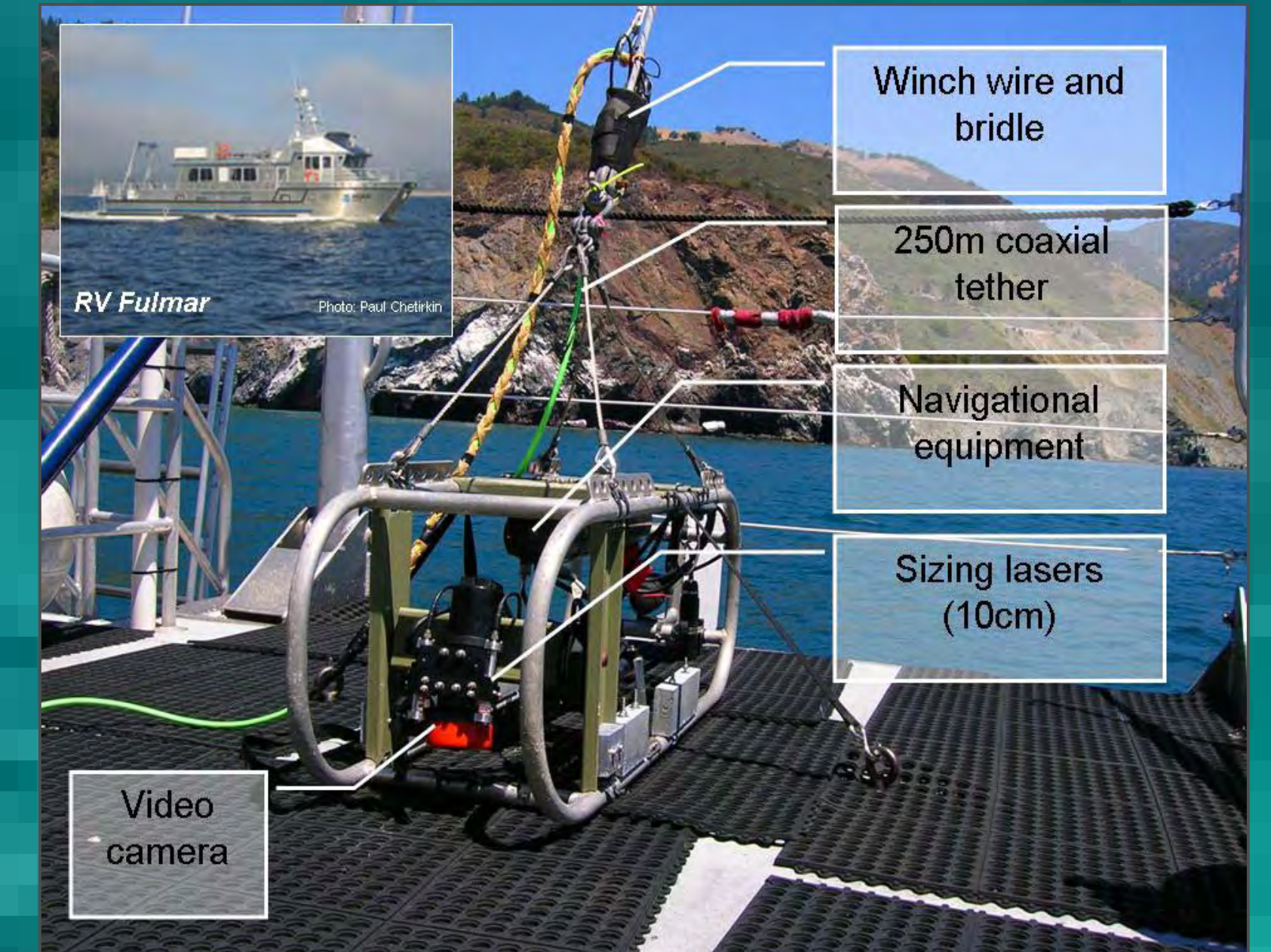
The endeavor of science is founded on the timely dissemination of research results to the wider world. However, the reality of data processing and analysis time frequently impedes this timely dissemination. The implications of delayed reporting of scientific data are particularly acute where management 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.



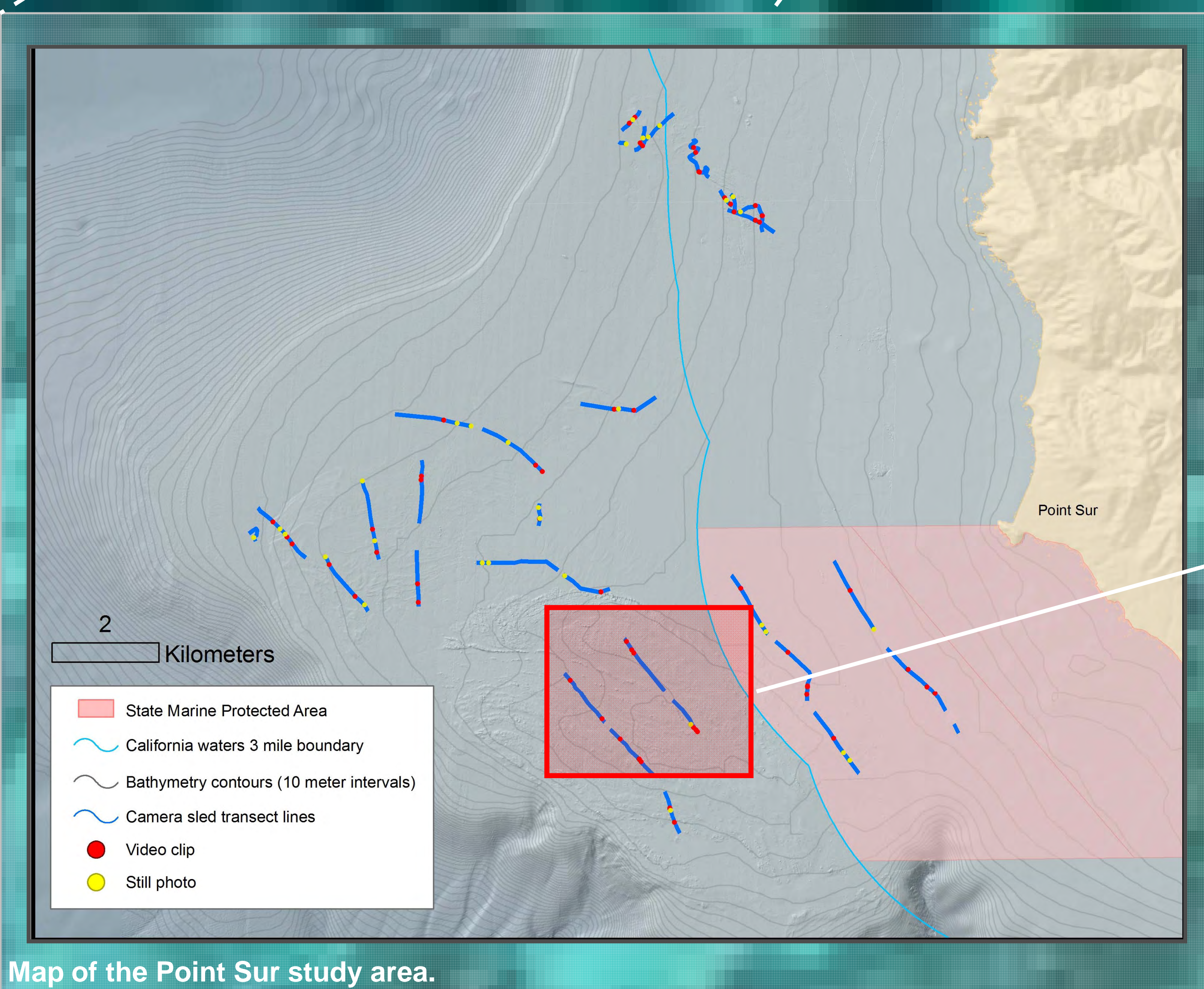
Methods

The camera sled has been collecting data in four main study areas in 2006, 2007, and 2008: North Bay/Soquel Canyon Area, Point Lobos Area, Point Sur Area, and Piedras Blancas.

The camera sled is composed of a single camera, two high-powered lights, and a computer that determines the camera depth and altitude above the seafloor. These components are protected by a sturdy aluminum frame and powered by a ~300 meter (1010 foot) umbilical tether attached to the Sanctuary's research vessel Fulmar.

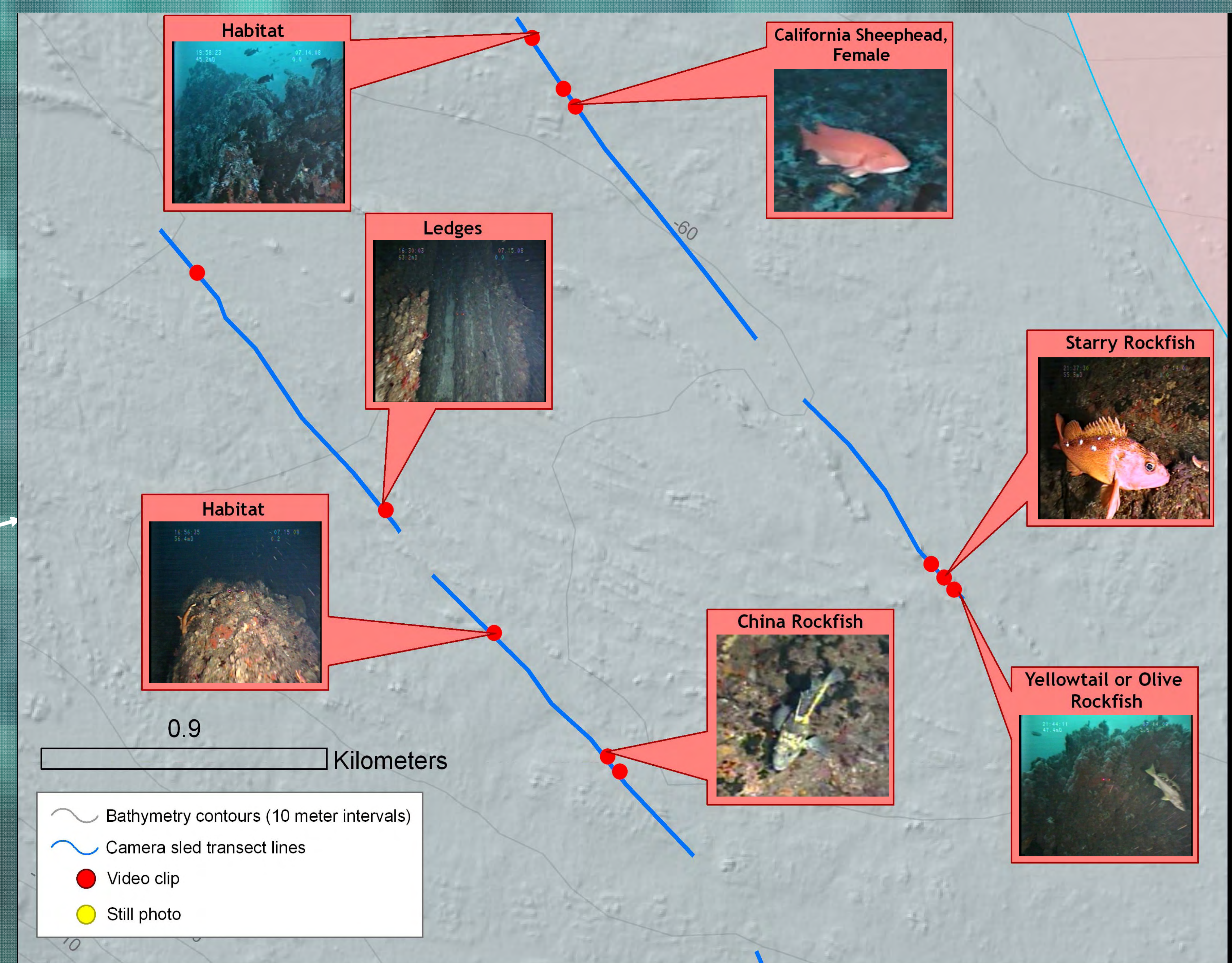


Videographic data are processed to locate distinguishable fish and invertebrate species along each transect either through a video clip or still image. Video and still images are extracted using a spatial media program, MediaMapper (Red Hen Systems Inc. 2005), which obtains GPS coordinates allowing for correct placement along each transect line. Using ArcGIS 9.2 (ESRI 2006), transect lines are overlaid on high resolution bathymetry maps. Red and yellow dots are inserted along the transect line representing where video or still images are located; red signifies a video clip and yellow a picture. Maps and images are posted on the web using Dreamweaver web design software (Adobe).



Map of the Point Sur study area.

Results



A zoomed in map of combined transect lines in the Point Sur study area is shown above. When scrolling over media points (red or yellow dots) a bubble will pop up with the species name and picture (as shown above). When clicked on, a new window opens with either a larger picture of the species or a video clip.