

*Summary Report of Acoustic Measurements in San Ignacio Lagoon  
Winter Season, 2007*

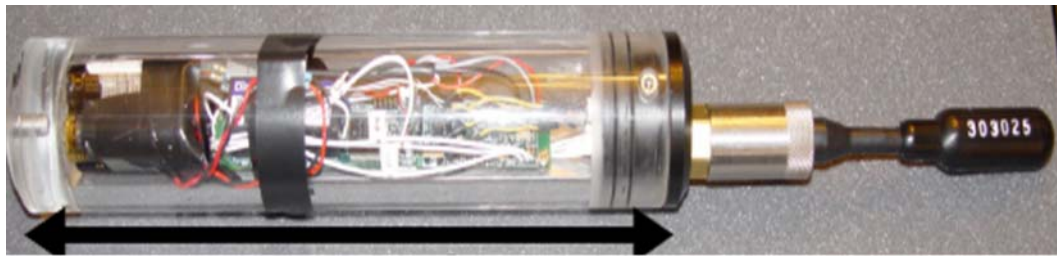
Melania Guerra  
Graduate Student  
Scripps Institution of Oceanography  
San Diego, California

Continuing the successful collaboration of the past two years, scientists from Scripps Institution of Oceanography (SIO) at the University of California San Diego (UCSD) participated in this year's scientific field season at Laguna San Ignacio, Baja California Sur, Mexico. Complementing the work performed by our partners, the focus of our study remains the acoustics of gray whales and the propagation of these sounds in the lagoon waters.

The overall, long-term goals of this effort have been:

- To demonstrate the potential of autonomous instruments and novel acoustic techniques for localizing vocalizing gray whales in the lagoon.
- To learn if levels of ambient noise have varied over decadal timescales, by comparing our measurements to those taken 20 years ago by M. Dahlheim at the same site.
- To study if levels of gray whales vocal activity are associated with number of animals recorded in the immediate area by visual census, and how that correlation varies with factors like time of day, weather conditions and presence of boats.

During 2005 and 2006, procedures were developed and tested to create underwater acoustic stations using autonomous sensors. These instruments are based on Greeneridge Inc.'s "Bio-probe" tags. The core electronics' motherboard, four AAA batteries and a 1Gb flash memory chip are fitted inside a transparent acrylic pressure casing of dimensions 25cm in length and 5cm in radius. Sealing is applied by two greased O-rings around a Delrin plug, connected to an HTI-96-MIN hydrophone (Figure 1).



**Figure 1.**  
**BioProbe: pressure-cased autonomous acoustic device**