

Subject: Assessment work plan and meeting

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Date: Wed, 07 Jun 2006 07:35:13 -0400

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Bruce -

In the attachment, you will find the revised version of the proposed assessment work plan, as modified slightly by the trustees.

Regarding the possibility of meeting in Copa Marina, this Thursday I have a doctor's appointment and Friday I have a conflict with another meeting out of the office.

Next Monday, the 12th is open so far. Would this work?

Regards,

Craig

**T/V MARGARA GROUNDING INCIDENT  
EMERGENCY RESTORATION  
ASSESSMENT WORK PLAN**

Impact Delineation: The rough boundaries of grounding impact have been defined during the coral triage/reorientation action. Two primary impact locations, prop wash areas and several smaller areas of impact have been identified during the coral triage/reorientation action and are hereafter referred to as 1) initial impact, 2) exit impact, 3) prop wash, 4) *Acropora cervicornis* impact and 5) other impact locations. Dive tows will be conducted inside the outside the current impact boundaries, to be certain all grounding-related injuries have been identified. The GPS track of the towed dives will be recorded. The track will then be plotted along with the impact points to insure proper coverage of the entire area.

A diver/DGPS buoy system will be utilized to accurately delineate all impact locations. A diver equipped with a wireless Diverlink communication system will direct the mapping of impact locations. The diver will swim along the margins of impact sites towing a Trimble differential global positioning system (DGPS) buoy which transmits the navigational position telemetrically back to a computer on board the survey vessel. The DGPS will be interfaced with a computer installed with Coastal Oceanographics, Inc. Hypack<sup>®</sup> Max navigation and data acquisition software. The navigation system provides digital navigation data logging, and a real-time display of the diver/buoy track along the survey area. The displayed and recorded positions will be calculated from DGPS data (WGS-84). Navigational data will be processed to estimate area of impact and to produce a scaled map of the individual areas of impact and the overall impact area.

Quantitative video data will be collected at both impacted and unimpacted areas directly adjacent to the grounding site to quantitatively assess biological community structure lost in the impacted areas and could be utilized to assess natural resource recovery relative to baseline conditions. Each impacted area will be the subject of quantitative video transect(s) to determine 1) pre-existing condition of post-grounding site; and 2) serve as a record for pre-emergency restoration site conditions. Unimpacted areas will be selected for quantitative video transects in close proximity and parallel to the grounding sites. Quantitative video transects will extend 25 m (or less as required by the geometry of smaller sites), and at a width mutually agreed to between the Responsible Party and the Trustees. A tape measure will be deployed along each transect to provide scale during analyses and document transect length. The navigational coordinates for each transect will be recorded utilizing the DGPS.

Quantitative video data will be collected using a Sony<sup>®</sup> digital video camera in an underwater housing. A steel rod that extends approximately 45 cm (18 in.) beyond the video camera lens will be attached to the top of the underwater housing to provide and aid in maintaining a constant height above the substrate. To collect quantitative data, the video camera and housing will be held perpendicular to the substrate and slowly moved along the length of the transect. Video data collected along each transect will be initialized with transect number and survey date.

Quantitative video data will be analyzed to determine density (colonies per m<sup>2</sup>) of hard corals (including fire coral, *Millepora* spp.), soft corals, and other sponges. Non-overlapping video

frames along each transect will be analyzed. Video frames will be saved as computer image files and reviewed using Adobe Photoshop<sup>®</sup> computer software. Hard and soft corals will be identified to lowest taxonomic level and counted for each video frame image file to estimate their density (colonies per m<sup>2</sup>). The area of each video frame will be estimated utilizing the scale provided by the tape measure present in the field of view.