SECTION 6: IMPLEMENTATION OF MONITORING

For seagrass monitoring to effectively achieve these proposed resource protection objectives, long-term commitment to an organized field sampling and data collection program is necessary at the state management level. Field and landscape sampling designs have been briefly described in this document, but now a formal coordinated program must be set up to begin monitoring on a regular coastwide scale. Potential participants have been identified and contacted as part of this planning process; and they have indicated willingness to assist in conducting seagrass monitoring in an organized, standardized approach. If the commitment is made by the three resource agencies to dedicate appropriate staff and infrastructure (technology and equipment), the program can be initiated at a modest level. Long-term funding for data collection can then be sought within departmental budgets or through outside grants from other coastal management programs (especially the NOAA Coastal Zone Management Program).

As discussed earlier, the details of field sampling design and seagrass health indicators are tentative, since a definitive final monitoring protocol is still under research and development. Evaluation of study results must be performed upon completion of R-EMAP and other projects, in this way accurate, feasible indicators and protocols will be selected for sampling, consistent with the requirements of both, robust statistical data, and cost effectiveness. The field indicator data must also be properly integrated with aerial photography (landscape) data to enhance the efficiency and scale of monitoring coverage with limited resources. This process for evaluating and selecting seagrass health indicators will need to balance the science and management needs of the program. In addition, merely collecting the field data or aerial imagery on seagrass ecosystems will be insufficient without a proper data management structure for accessing, analyzing, and utilizing the data in state management and conservation programs. Thus an immediate action of the program is to establish a database system to compile, maintain and distribute the existing and anticipated, quality-assured seagrass data for use by resource managers.

Recommendations

These tasks especially, represent critical steps in the implementation of the monitoring program. The following recommendations offer a practical approach for implementation which is envisioned to occur in stages.

The first stage in plan implementation is to develop an MOU between the three agencies (TPWD, TCEQ, and TGLO) that proceeds to formally initiate the Seagrass Monitoring Program according to this Strategic Monitoring document. Initial priority actions that the MOU would address are:

1. Set up a formal 3-agency work group responsible for coordination of the Program that will oversee the actual seagrass and environmental monitoring as outlined under this document. Designate the functional

programs in the agencies whose participation is necessary to deal with primary implementation issues.

2. Establish an integrated data management system.
This involves identifying custodial agency databases and the responsibilities for data compilation, ranging from the criteria for data standards and formats, QA/QC requirements, and database maintenance procedures. Coordination between TCEQ and TPWD will need to take place with appropriate data management and programmatic staff, to decide integration issues for SWQM and seagrass GIS databases. It also includes developing a web-based server application, for accessing and analyzing the seagrass data.

3. Evaluate technical data on seagrass health indicators upon completion of R-EMAP and other studies. In collaboration with Seagrass Monitoring Steering Committee, finalize the field sampling design and seagrass indicators to be used for coastwide monitoring. This design work will focus initially on coastal water quality and other environmental assessment applications dealt with by the three state resource agencies.

4. Start planning for the incorporation of seagrass monitoring data into the water quality assessment process. This task will focus on the eventual application of monitoring data in the management process which leads to establishing water quality criteria that protect seagrass propagation as an aquatic life use.

Under this MOU, the three agencies can then proceed as soon as practicable to a second stage. Actions will include:

1. Identify or seek funding to set up and establish the coastwide field sampling scheme.

2. Develop an organized sampling program to acquire high resolution aerial photography for lower Laguna Madre and the Coastal Bend based on the landscape sampling scheme proposed herein.

3. Solicit or develop proposals from identified program participants (see listing below) for intensive field survey projects (actual monitoring and **a**ssessment, as well as research projects).

Potential Participants in Monitoring Program and Area of Expertise
(based on Attendee List from August 2000 Workshop)

- *US Geological Survey (National Wetlands Research Center) and TPWD (map seagrass distributions and conduct status and trends studies)*
- *University of Texas Marine Science Institute (monitor environmental effects on seagrass vegetation based on productivity and growth models; evaluate statistical field sampling design; determine impacts to seagrass community ecosystem)*
- *TPWD (coordinate remote sensing monitoring; maintain GIS database of seagrass landscape data; initiate a web-based data distribution system for linking seagrass databases)*
- *TCEQ (Surface Water Quality Monitoring Program and Water Quality Assessments Program) (modify TRACS database and oversee storage of official seagrass water quality and environmental data for coastal areas)*
- *TGLO (Coastal Division) (provide monitoring support for data acquisition in coastal areas as part of coastal management programs)*
- *USFWS (support monitoring of seagrass restoration and habitat conservation projects through Coastal Ecosystems Program)*
- *Texas A & M University (develop models to support monitoring of effects from light reduction or other stressors on seagrass productivity and growth).*
- *National Marine Fisheries Service (perform and evaluate seagrass restoration projects through long-term monitoring)*
- *Coastal Bend Bays and Estuary Program; Galveston Bay Estuary Program (coordinate and fund regional seagrass monitoring)*
- *USEPA – Region 6 (Office of Wetlands Protection and Water Quality Assessment)(provide technical support and facilitate monitoring projects through regional environmental programs)*