

The Role of RECOVER in the Implementation of the Central & Southern Florida Project Comprehensive Plan for South Florida Ecosystem Restoration.

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The Central & Southern Florida Comprehensive Review Study developed an “Applied Science Strategy” as a means of effectively linking science and management during the feasibility study for the Comprehensive Plan (attachment 01). The creation of a science application strategy was motivated by the need for a broadly accepted process for organizing extremely large amounts of existing scientific and technical information, and converting that information into planning and evaluation tools that would directly support the C&SF Project restoration program. The science strategy uses conceptual ecological models as a basis for identifying the key ecosystem stressors and biological indicators (attributes) in the natural and human systems in south Florida. The identification of these key elements of the natural system becomes the basis for creating a comprehensive set of restoration performance measures, which are used to evaluate how well alternative structural and operational designs potentially achieve restoration and other water-related targets. These elements also become the basis for designing a system-wide monitoring program and an adaptive assessment protocol (attachment 02), which are used to measure and evaluate actual system responses and to refine plan design, respectively, during the implementation of the Comprehensive Plan.

At the April 1999 planning workshop of the Restudy team, it was decided that a process known as RECOVER (REstoration COordination and VERification) would be organized within the overall Restudy process. RECOVER will be responsible for the coordination and implementation of all system-wide elements of the applied science strategy, with the overall goal of insuring that the Comprehensive Plan achieves success. RECOVER will be responsible for continuing and expanding the plan evaluation and assessment tasks during the development of new feasibility studies and during the prolonged implementation period for the Comprehensive Plan. RECOVER will have the lead for the system-wide plan evaluation, monitoring and adaptive assessment tasks associated with each Project Implementation Report. For meeting these responsibilities, RECOVER will be organized into several discreet teams to perform a number of planning and evaluation tasks. The teams/tasks are, (1) Regional Evaluation, (2) Adaptive Assessment, (3) System-Wide Evaluation Tools, and (4) Comprehensive Plan Refinement. The four teams and eleven tasks presently identified as RECOVER responsibilities are shown in attachment 3, and are explained below.

Evaluations and Assessments

The Recover process defines “evaluations” and “assessments” differently. Evaluations

are conducted during the design of a plan, by using models and other evaluation “tools” to predict the performance of a plan or of potential components of a plan. As part of the evaluation process, the predicted performance of a plan is compared to the desired targets defined by a set of pre-determined performance measures.

Assessments are conducted from the time when one or more components of a plan are constructed and become operational. Assessments use information on actual system responses that are measured by the system-wide monitoring program to determine how well the plan is meeting its desired targets. Refinements in the design of a plan can occur if assessments show that actual system performance does not meet expectations (adaptive assessment).

Regional Evaluation Team

Purpose: The Regional Evaluation Team (RET) will combine the tasks of the former Alternative Evaluation and Alternative Development teams (AET & ADT) into a single evaluation and modeling team. The new RET will have three major responsibilities. The first is to review and improve the set of regional water quantity, water quality and water supply performance measures for the overall Comprehensive Plan. Initial attention will be directed to incorporating new biological performance measures derived from the conceptual ecological models, the development of new water quality measures and targets, and the development of new water supply and flood protection measures applicable to new finer scale surface and ground water models. The second responsibility will be to use the total package of performance measures as a basis for modeling and evaluating the system-wide effects of the new regional feasibility studies (e.g., s.w. Florida, Florida Bay, Florida Keys) and the Project Implementation Report components of the system-wide Comprehensive Plan. The third task will be to identify and resolve any technical issues associated with the choice, design and application of the performance measures and their targets.

Team Composition: The RET will be a multi-agency, multi-disciplinary team, consisting of modelers, hydrologists, ecologists, and resource specialists. Members of the RET will be assigned by the participating agencies.

Schedule and Priorities: The RET will meet as needed to improve the performance measures, and to evaluate plan components. The priorities during 1999 and 2000 are, (1) to review and improve the existing set of performance measures, (2) to create new performance measures as needed, (3) to evaluate the regional effects of the alternatives identified by the Water Preserve Areas Feasibility Study, and the alternative C-111 and Modified Water Deliveries plans, and (4) to update and prioritize the performance measures issues report.

Adaptive Assessment Team

Purpose: The Adaptive Assessment Team (AAT) will carry responsibilities that have not been previously a part of the Restudy process. The AAT will have four major tasks. The first of these is to coordinate the review and revision of the conceptual ecological models for south Florida. Where these revisions in the conceptual models reveal a need to revise existing performance measures, or result in new measures, the AAT will provide these new biological measures to the RET. The second task of the AAT will be to recommend the content and design for a regionally comprehensive monitoring program, for the purpose of measuring the success of the Comprehensive Plan restoration program. The monitoring plan will be designed to track the measures and targets established by the performance measures used by the RET. In addition, the AAT will evaluate the effectiveness of this monitoring program, and make recommendations for improvements throughout the implementation period. The third task will be to coordinate the overall adaptive assessment process. This responsibility will require the team to design an adaptive assessment strategy, and to regularly review the success of this strategy. The AAT will contribute to the adaptive assessment strategy by reviewing the data that comes from the regional monitoring program, as a basis for interpreting ecosystem responses during the implementation of the Comprehensive Plan. These reviews will assess how well the components of the Comprehensive Plan, individually and collectively, are achieving the restoration targets. As part of this assessment, the AAT will issue annual reports on the overall success of the restoration effort, and may recommend plan modifications where anticipated responses and targets in the natural and human systems are not being met. The final task of the AAT will be to coordinate through established peer review processes, any peer review that may be desirable pertaining to the application of science to the activities of the Restudy.

Team Composition: The AAT will be multi-disciplinary. Because the AAT will be responsible for working with the conceptual ecological models and for interpreting complex ecosystem responses, the team will require strong participation from experienced south Florida natural and social scientists. To assure adequate representation from the appropriate disciplines and from among the more experienced south Florida scientists, some members will be “name-invited.” It will be advisable to include University scientists, and “outside” experts as needed.

Schedule and Priorities: An initial start-up task for the AAT will be to review the existing set of conceptual ecological models, to review current proposals for a system-wide adaptive assessment strategy, and to develop a recommended system-wide, comprehensive monitoring program. The design of the monitoring program has a very high priority. During implementation of the Comprehensive Plan, the AAT will meet twice-annually to review the monitoring program and monitoring results, and to prepare annual reports on the success of the south Florida restoration program. Other meetings of the AAT will occur as needed.

System-Wide Evaluation Tools Team

Purpose: The System-Wide Evaluation Tools Team (ETT) will be charged with the overall task of ensuring that the tools used to conduct the evaluations of Comprehensive Plan components (the PIRs) are consistent with the scales and targets set by the performance measures. This task requires that the predictive models be reviewed on a regular basis. These reviews will determine the adequacy of the models for predicting responses in natural and human systems, at scales and in formats that are appropriate to the measures and targets set by the performance measures. Where improvements in existing models are required, or new models may be needed, this team will identify these needs and coordinate the actions necessary to accomplish these tasks.

Team Composition: These tasks will require the participation of modelers, hydrologists, and members of the RET.

Schedule and Priorities: The team will meet as needed. Some meetings will occur at the request of the RET, as that team identifies the need to refine or develop new models, or model output, that support the evolving set of performance measures. A priority is to review the current version of the NSM, to address questions of potential improvements in the NSM, and to establish consistent guidelines for appropriate uses of NSM output for evaluating and comparing the performance of plan components.

Comprehensive Plan Refinement Team

Purpose: The Comprehensive Plan Refinement Team (PRT) will make refinements to the Comprehensive Plan throughout the implementation period, as new information that identifies where, how and why these improvements should be made becomes available. Much of this new information will come from the AAT, as it assesses actual responses in the natural and human systems following the implementation of components of the plan, and as new research results become incorporated into the conceptual and predictive models and performance measures. The results of pilot projects that evaluate uncertain technologies will also provide new information. Refinements to the Comprehensive Plan may also come about as a result of RET evaluations of each PIR. The PRT will contribute a written section to each PIR that relates the predicted performance of that particular project to the overall performance of the Comprehensive Plan. This report may recommend changes in the Comprehensive Plan, where needed, based on the performance predicted for each PIR component.

Team Composition: This task will require a protocol of regular coordination and review of the Comprehensive Plan design and performance among Restudy managers, project managers, modelers, and representatives from the RET and AAT.

Schedule and Priorities: Reviews of the Comprehensive Plan and its implementation strategy should occur at appropriate steps during the implementation of the Comprehensive Plan. These steps include, (1) following each evaluation by the RET of the predicted regional effects of each set of plan components, (2) following each annual assessment by the AAT of system responses, and (3) as new information from pilot projects or research becomes available.

Coordination Among the RECOVER Teams

Although each of the four RECOVER teams has discrete responsibilities, each of the teams also depends on linkages with the other teams to fully fulfill these responsibilities. Major links between teams are identified in the discussions of team responsibilities presented above. In addition, the RET and AAT will collaborate to create a restoration “report card” as a means for communicating the progress and success of the Comprehensive Plan to the public and decision-makers. It is anticipated that many team members will participate in multiple teams, and that the focus, priorities and team procedures will adapt to the needs of the overall RECOVER process and goals.