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Plan for Coordinating Science

Annotated Outline

Executive Summary

The Executive Summary will provide an overview of the entire science coordination process and results, and will focus detailed attention on the coordination actions in the Plan.

I. Introduction

This section will:

- Describe the need for, and importance of, science coordination to ensure restoration success as defined by Task Force goals and objectives. This includes the use of science to aid restoration decision making, such as for developing performance measures and targets, and planning and executing restoration projects, through an integrated adaptive assessment and management strategy.*
- Summarize Task Force and Science Coordination Group (SCG) roles and responsibilities, including Task Force requirements for science coordination. The Plan will address the responsibility to respond to the Congressional request to draft a science coordination plan that tracks and coordinates programmatic-level science and other research, identifies programmatic-level priority science needs and gaps, and facilitates management decisions.*
- Explain that the Plan development is a two-phase process. An initial plan will be developed by September 2004 in coordination with the Biennial Report. The*

26 *initial plan will consist of processes developed and applied to a subset of*
27 *ecosystem stressors and attributes. It also will include a subset of science needs*
28 *and gaps identified and the actions described to address these needs and gaps.*
29 *The full plan will be completed in 2005. The full plan will address the remainder*
30 *of ecosystem stressors and attributes evaluated and needs, actions, and gaps*
31 *identified. The plan will be reevaluated and revised periodically thereafter.*

- 32 • *Set the tone for the Plan and briefly summarize the major sections.*

33

34 **II. Scope**

35

36 *This section will describe the scope of the plan as:*

- 37 • *Covering the full extent of South Florida ecosystem restoration [i.e.,*
38 *Comprehensive Everglades Restoration Plan (CERP) and non-CERP] activities,*
39 *and all regions, including uplands, coastal waters, wetlands, and estuaries.*
- 40 • *Addressing science at the programmatic-level, which means science necessary to*
41 *ensure restoration success defined by Task Force goals and objectives.*
- 42 • *Addressing science activities, including research, modeling, monitoring, and the*
43 *application of this science to restoration decision making (referred to in the Plan*
44 *as connections to management).*

45

46 **III. Coordinating Programmatic-Level Science to Facilitate Management Decisions**

47

48 *This section will describe the processes by which the Task Force will coordinate*
49 *science and its application to ensure restoration success. The process will include*
50 *identifying science needs and associated gaps, prioritizing them based on the Task*

51 *Force goals, and determining how or if they are being addressed. The process also*
52 *will include addressing whether and how knowledge generated is linked to restoration*
53 *management decisions. This section also will describe quality assurance, which is a*
54 *collection of processes critical to assuring that restoration science is sound, relevant,*
55 *and communicated in a useful form for management decision making.*

56

57 **A. Identifying Science Needs and Gaps**

58

59 *This section will describe the overall approach for each step in identifying science*
60 *needs and gaps and linking them to critical restoration management decisions. The*
61 *depth and breadth of science issues associated with South Florida ecosystem*
62 *restoration is substantial. The process used to identify needs and gaps focuses on*
63 *programmatic-level issues posing the greatest threat to restoration success rather*
64 *than individual, research-project level activities, except in the case where an*
65 *individual research project is determined to be critical to overall restoration success.*

66

67 *The process begins by identifying science needs, which are the broad issues that pose*
68 *threats to restoration success. The next step is determining whether each need is*
69 *being addressed adequately. Determining the needs that are not being adequately*
70 *addressed will result in the identification of gaps. Gaps can be insufficient knowledge*
71 *(e.g., lack of research) or insufficient connections to management (e.g., lack of a*
72 *critical performance measure).*

73

74 **1. Needs Identification**

75

76 *This section will describe the approach to identifying the most significant needs for*
77 *restoration success.*

78

79 *The following summarizes the approach that will be applied.*

- 80 ▪ *John Ogden is working with a consultant to further develop this approach.*
- 81 ▪ *The approach uses the ecosystem conceptual models to assist in prioritizing*
82 *needs for ecosystem restoration success. Conceptual models are effective*
83 *tools for helping scientists develop a set of intuitive hypotheses to explain the*
84 *effects that the major stressors have on different elements of the ecosystem.*
- 85 ▪ *Prior to the identification, the SCG will develop criteria for determining needs*
86 *and identifying their potential level of impact for restoration success (i.e., a*
87 *ranking scheme). Additionally, the SCG will develop a threshold for further*
88 *identification. Needs above this threshold will be evaluated further in the gap*
89 *identification.*
- 90 ▪ *Key scientists involved in the development of each conceptual model will*
91 *participate in a workshop to review the model to identify the attributes of, or*
92 *stressors on, the ecosystem that pose the greatest needs for restoration*
93 *success. For the 2004 Plan, the approach will be applied to two conceptual*
94 *models: the Total System Model and the Florida Bay Model. Based on the*
95 *success of this approach, the remaining conceptual models will be evaluated*
96 *in 2005.*
- 97 ▪ *The scientists will apply the ranking scheme and threshold developed by the*
98 *SCG and use their professional judgment to prepare a short list of critical*
99 *needs, ranked by their significance to restoration success.*

100

101 **2. Gap Identification**

102

103 *This section will describe how gaps will be identified for each restoration need. The*
104 *process of gap identification will include reviewing ongoing science activities to*
105 *determine how well they address the restoration needs identified in the previous step.*
106 *Gaps in knowledge and connections to management can be identified.*

- 107 • *First, key RECOVER programs will be reviewed. Activities will be identified as*
108 *they relate to the critical needs and how they address these needs from a scientific*
109 *and connection to management perspective.*
- 110 • *Next, individual agency/tribe and multiple-agency/tribe partnership programs will*
111 *be reviewed. Activities that address the critical needs will be identified, as they*
112 *relate to the critical needs from a scientific and connection to management*
113 *perspective.*
- 114 • *The SCG will develop criteria for what constitutes sufficient science and*
115 *connections to management for a need to not warrant further attention by the*
116 *Task Force. These criteria will guide the determination of gaps in science and*
117 *connections to management.*

118

119 **a. Gaps in Science**

120

121 *This section will describe the criteria by which critical gaps in science will be*
122 *identified. Then, this section will use the criteria to identify these gaps. Examples of*
123 *the criteria will include:*

- 124 • *Whether the programs are of sufficient technical depth to address the critical*
125 *need.*

- 126 • *Whether the programs are of sufficient spatial or ecosystem extent to address the*
127 *critical need.*
- 128 • *Effectiveness of the program to communicate and coordinate with other interested*
129 *stakeholders.*
- 130 • *Completeness and usefulness of information synthesis.*

131 *The gap identification will be conducted using the established criteria, and gaps in*
132 *science will be identified.*

133

134 **b. Gaps in Connections to Management**

135

136 *This section will describe the criteria by which the gaps in connections to*
137 *management will be identified. Then, this section will use the criteria to identify these*
138 *gaps. Examples of the criteria will include:*

- 139 • *Effectiveness of the program to communicate and coordinate with other interested*
140 *stakeholders.*
- 141 • *Completeness and usefulness of the information synthesis to support management*
142 *decision making.*
- 143 • *Timeliness of program results to support management decision making.*

144 *The gap identification will be conducted using the established criteria, and gaps in*
145 *connections to management will be identified.*

146

147 **B. Coordination Actions to Address Programmatic Gaps**

148

149 *This section will describe the actions by which the Task Force will coordinate to fill*
150 *gaps. The actions will leverage the Task Force's coordination role. The Task Force*

151 *has a broad suite of actions available to address each gap. Actions can include*

- 152 • *Developing partnership agreements.*
- 153 • *Defining roles and responsibilities.*
- 154 • *Establishing improved communication mechanisms.*
- 155 • *Conducting conferences and workshops.*
- 156 • *Aligning or realigning programs to milestones.*
- 157 • *Synthesizing information.*
- 158 • *Coordinating information sharing.*

159 *These actions may be implemented by the entire Task Force, a subset of the Task*
160 *Force membership, or through the SCG and Working Group on behalf of the Task*
161 *Force. A single action may adequately address a gap, or multiple actions may be*
162 *appropriate. Additionally, a single action may address multiple gaps. The type(s) of*
163 *action(s) will be dependent on the gap.*

164

165 *The SCG will develop an option for addressing each gap in science or connections to*
166 *management and will propose the responsible organization to address the action, as*
167 *well as a deadline to complete the action. The SCG will recommend the option,*
168 *responsible organization, and deadline to the Task Force for review, approval, and*
169 *incorporation into the Plan.*

170

171 **C. Quality Assurance**

172

173 *This section will describe the processes by which the Task Force addresses quality*
174 *assurance. Quality assurance provides unbiased, scientifically-based and*
175 *independent review to answer the questions:*

176 • *Is the science sound?*
177 • *Is the relevant science being performed?*
178 • *Is the science being communicated in a useful form for managers?*
179 *Quality assurance goes beyond traditional peer review, which provides for*
180 *independent review of scientific results and merits of specific research projects and*
181 *products. Conducting peer review is the responsibility of individual agencies or*
182 *partnerships that are conducting the research. However, the Task Force's quality*
183 *assurance needs may require coordinating peer review processes or procedures*
184 *across agencies.*

185
186 *A significant Task Force quality assurance need includes the ability to determine the*
187 *quality of information that is synthesized from many different scientific studies across*
188 *scientific disciplines, because such synthesized data will be required to make many*
189 *restoration decisions. This area of quality assurance is gaining greater recognition*
190 *in the scientific community for large-scale efforts such as ecosystem restoration. The*
191 *SCG will develop an approach for addressing quality assurance for South Florida*
192 *ecosystem restoration. The approach will take into consideration quality assurance*
193 *processes and procedures developed for other ecosystem restoration efforts and be*
194 *tailored to the unique responsibilities of the Task Force and requirements of South*
195 *Florida ecosystem restoration.*

196

197 **IV. Tracking Progress and Reviewing the Plan**

198

199 *This section will describe the Task Force processes for reevaluating critical needs*
200 *and gaps, tracking progress in filling gaps, and periodically reviewing and improving*

201 *the process.*

202

203 **A. Tracking Progress**

204

205 *This section will describe the processes by which the Task Force tracks progress in*
206 *addressing gaps. The processes will evaluate whether the gaps are being adequately*
207 *addressed and the science is adequately supporting timely management decision*
208 *making. The section will describe the frequency with which the gaps and actions are*
209 *tracked and the process by which they will be tracked (e.g., annual science plan*
210 *review, database, etc.). The section will address a process for identifying how and*
211 *where coordination is not working and the steps the Task Force will take to improve*
212 *coordination.*

213

214 **B. Reviewing the Plan**

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216 *This section will describe the processes by which the Task Force reviews, updates,*
217 *and revises the coordination plan. The process will ensure that the science*
218 *coordination process is reviewed on a periodic basis to evaluate impacts to*
219 *coordination, resulting particularly from changes in science (e.g., changing needs)*
220 *but also from changes in policy or funding.*

221

222 **V. Appendices**