

Comprehensive Everglades Restoration Plan: Framework to Restore, Protect, and Preserve America's Everglades

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The Everglades ecosystem has been altered from over 130 years of highly effective efforts to drain water from the land. As a result, the remaining Everglades ecosystem no longer exhibits the structure, function, or diversity that historically defined the pre-drainage system. The Comprehensive Everglades Restoration Plan (CERP), authorized by Congress in 2000, restores, preserves, and protects the south Florida ecosystem while providing for other water-related needs including water supply and flood protection. CERP focuses on quantity, quality, timing, and distribution of water flow, given modern constraints, to recover critical ecological functions that characterized the historical Everglades and other portions of the south Florida landscape. Through construction and operation of 68 interdependent components, CERP aims to restore natural hydrology through removal of more than 240 miles of internal levees and canals, improving the health of over 2.4 million acres by allowing water to flow nearly unobstructed throughout the south Florida ecosystem.

Due to its size and complexity, many uncertainties are associated with CERP planning and implementation. Uncertainty exists when there is (1) a lack of knowledge about the ecosystem to be restored; and (2) the restoration design and its associated targets. As a result, uncertainties can impede planning, design, and operation, and pose a risk to successful restoration. To reduce these uncertainties, CERP employs an Applied Science Strategy implemented by REstoration, COordination and VERification (RECOVER), an interagency and interdisciplinary scientific and technical team created to ensure that system-wide science guides CERP implementation. The major components of the strategy include conceptual ecological models, performance measures and restoration targets, a system-wide monitoring plan, and a performance assessment protocol. Conceptual ecological models identify major drivers and stressors on the environment, how these stressors affect the environment, and which biological indicators are best to measure ecological responses. Performance measures determine the degree to which proposed project plans are likely to meet, or whether implemented plans have met, restoration targets. Data collected through the system-wide monitoring plan inform development of these predictive tools and are used to assess whether ecosystem performance is moving towards CERP restoration goals. If CERP projects are not moving towards defined goals, an adaptive management strategy is undertaken to adjust implementation to improve the probability of achieving success. Extensive planning and scientific investigations conducted by RECOVER, along with formulation and evaluation of CERP projects, have greatly increased scientific knowledge and understanding of the current and historic system, and reduced uncertainty surrounding the actions needed to achieve restoration goals.

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