



United States Department of the Interior

U.S. GEOLOGICAL SURVEY

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To: Office of the Chief Scientist (Attn: Daniel James)
From: Murray Laubhan and Ned H. Euliss, Jr.
Date: 12 January 2006
Re: Refuge Cooperative Research Program, Annual Progress Report for FY05 concerning project entitled "Wetland processes: a 10-20 year study to improve wetland management capabilities of the National Wildlife Refuge System through integration of research, continuing education, and adaptive management."

Progress in Fiscal Year 2005 – The principal investigators interacted with USFWS staff (regional office, refuge managers/biologists, and fire branch) numerous times during Fiscal Year (FY) 2005 to resolve issues regarding the application of fire in wetlands. The two primary issues addressed were the inability to adequately dewater refuge impoundments to achieve a dry marsh phase necessary to control cattail with prescribed fire and the counteracting issue that achieving the dry marsh phase would result in an increased fire hazard that potentially would be too risky to implement on an applied basis. These issues, which were originally identified during FY 2004, were resolved using a combination of continuing education efforts, initiating drawdowns on numerous wetlands to evaluate water discharge capabilities, and evaluating fire behavior on sites similar to those selected for this study that were burned during the 2005 growing season. Continuing education activities included workshops, conferences, and site visits to refuges. Participation varied depending on topic, but the principal investigators met with USFWS refuge staff, USFWS fire staff, New York Department of Environmental Conservation staff, and USFWS regional office staff in Regions 3 and 5. Information synthesized from previous research studies were used to stimulate discussions regarding (1) the importance of evaluating fire, soils, and hydrology simultaneously, (2) the ability and value of conducting prescribed fires during the growing season to control cattail, and (3) identifying the potential risks and benefits of conducting prescribed fires when environmental conditions would result in more intense fires. Attempts to dewater some impoundments during FY 2005 indicate that drying marsh sediments to the desired extent may be possible but may require multiple years in some cases. In addition, USFWS fire branch staff evaluated the behavior of fires conducted on sites similar to those selected for the study during the summer of 2005 and determined that potential risks associated with ignition of soil material, fire intensity, and the ability to control and extinguish fires were within acceptable limits. At the conclusion of FY2005, agreement was reached between research, management, fire, and administration regarding constraints and opportunities of the project and the decision was made to proceed with study plan development and equipment purchases.

Expected Accomplishments in Fiscal Year 2006 – A study plan that includes the roles and responsibilities of each organizational unit (e.g., research, management, and fire) will be drafted and submitted to the Northern Prairie Research Advisory Committee for approval. Remaining equipment will be purchased and data collection protocols finalized. Refuge management staffs will initiate activities to create specified environmental conditions in study wetlands and fire personnel will develop and obtain authorization for prescribed burn plans. An attempt will be made to apply all treatments and collect pre- and post-fire data during FY 2006. However, some wetlands may not be burned if environmental conditions do not meet the criteria established for either safety or biological control of cattail. In these cases, treatments will be applied during FY 2007.

Highlights and Concerns – The successful application of fire requires considering not only biological objectives, but also potential safety, social, and political impacts. Significant progress in the development of an effective communication network was made in FY 2005 as evidenced by the different organizational units reaching a consensus on study design and treatment application that ensures that results can be applied in a management context. Given the difficulty associated with the application of many management treatments, our experiences suggest that developing an effective communication network between organizational units should be incorporated as a strategic first step in developing future research projects to ensure that results are both scientifically valid and contribute to the development of applied management strategies that are safe and practical.