1.0 Performance Measure Title

TS-2 White Tail Deer Breeding Potential

Last Date Revised: December 9, 2005

2.0 Justification

The white-tailed deer is the largest herbivore in the Everglades and a major prey source for the endangered Florida panther. Since the early 1960s, when intensive water management began, the greater Everglades and Big Cypress deer population has declined by almost 75 percent, from a high of 25,000 to 30,000 deer. Changing water management strategies for South Florida have impacted deer in several ways, affecting reproductive success and recruitment, movement and foraging, and forage production and availability (Fleming, 1997). During wet years, extended periods of inundation with water depths over two feet are common in the impounded marshes of the northern Everglades. During these high water events, deer move to elevated sites such as tree islands, where they often suffer deterioration of physical condition and increased susceptibility to parasites and disease as food stores became depleted. Does and fawns are particularly susceptible to the effects of prolonged high water. Implementation of the CERP should reduce occurrence of these extreme high water events. Assessment of CERP's effects on white-tailed deer can help managers assess grazing pressure on tree islands during high water events as well as availability of one of the Florida panther's major prey items.

3.0 Relationship to CEMs and Adaptive Assessment Hypotheses

Total System Model (Ogden et al 2005)

White-tailed deer and wild hogs are dominant prey for panthers, while rabbits, raccoon, and armadillos were of secondary importance (Beier et al. 2003). As Florida panthers are scarce and hard to track, white deer are used as a surrogate.

4.0 Restoration Expectation

4.1 Predictive Metric and Target

For the total CERP project, the evaluation target is to improve total breeding potential outside slough areas relative to the 2050 base. For implementation runs, the evaluation target is to meet or exceed 2000 base breeding potential levels.

4.2 Assessment Parameter and Target

5.0 Evaluation Application

5.1 Evaluation Protocol

Predictive models to evaluate this performance measure are still under development and refinement. At this time, this performance measure should not be used to conduct evaluations

5.2 Normalized Performance Output

5.3 Model Output (example attached)

5.4 Uncertainty

6.0 Monitoring and Assessment Approach

7.0 Future Tool Development Needed to Support Performance Measure

7.1 Evaluation Tools Needed

An ATLSS model based on sound science has been developed for this performance measure and has been judged by the USGS as appropriate for use in some model-to-model comparisons. However, it is in need of further calibration and validation and peer review.

7.2 Assessment Tools Needed

8.0 Notes

9.0 Working Group Members

Heather McSharry, FWS

10.0 Acceptance Status

GE Working Group

ET

AT

Public Review

Final Acceptance Date

11.0 References

Beier, C., F. Moldan, and R.F. Wright. 2003. Terrestrial ecosystem recovery – modeling the effects of reduced acidic inputs and increased inputs of sea-salts induced by climate change. Ambio 32:275-282.

Fleming, D.M., J. Schortemeyer and J. Ault. 1997. Distribution, abundance and demography of white-tailed deer in the Everglades. In: Jordan, D. (ed.), Proceedings of the Florida Panther Conference, Fort Myers, Florida, November 1994, United States Fish and Wildlife Service, pp. 494-503.

Ogden, J.C., S.M. Davis, T.K. Barnes, K.J. Jacobs and J.H. Gentile. 2005. Total system conceptual ecological model. Wetlands 25:4(in press)