

Table 13. Ecologically important characteristics of natural hydrologic cycles in marshes.

Hydrologic characteristics	Ecological significance	Measured parameters	References
Mean Depth; Frequency of Inundation	Establish wetland plant communities, prevent oxidation of organic soils	Mean daily values; Percent of time water levels exceed a given ground elevation	Brooks and Lowe 1984, Lowe 1983, Stephens 1984.
Maximum water elevations	Prevent prolonged flooding from damaging marsh plant communities	Annual 14 day continuous maxima; Annual 30 day continuous maxima; Annual 60 day continuous maxima	Biagiotti-Griggs and Girardin 1980, Lowe 1983, Whitlow and Harris 1979.
Minimum range of yearly Fluctuation	Important to plant germination, plant community composition, wading birds foraging, snail kite nesting	Annual 30 day continuous maxima; Annual 30 day continuous minima; Annual range between daily high and daily low	Bancroft et al. 1990, Bennetts et al. 1988, Gunderson 1994, Kushlan et al. 1975, Kushlan 1976, Mitsch and Gosselink 1986.
Timing of fluctuation	Important to wading bird and alligator breeding cycles; fish community structure	Julian date of annual 1 day maxima and 1 day minima	Fogarty 1984, Frederick and Collopy 1989, Kushlan et al. 1975, Kushlan 1976, Loftus and Kushlan 1987.
Water level recession rates	Influences wading bird nesting; too rapid recession can cause anoxia and fish kills	Negative difference between daily means at 7 day and 30 day intervals	Frederick and Collopy 1975, Kushlan et al. 1975, Toth et al. 1990.
Minimum water levels for natural lakes	Prevent extreme drawdown events from adversely impacting sport fish communities	Annual 1 day minima	Kushlan 1974, Loftus and Kushlan 1987, Durocher et al. 1984.