Weather Effects on Winter and Fall Waterfowl Habitat in the Gulf Coast

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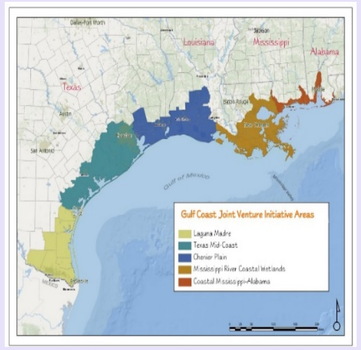
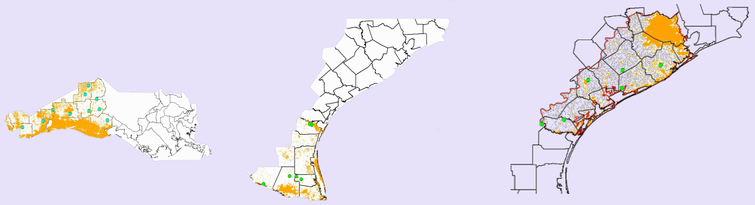
OBJECTIVE

The Gulf Coast Joint Venture (GCJV) desires an appropriate parameter that explains environmental influences on seasonal waterfowl habitat within agricultural landscapes of the GCJV region



AREAS OF STUDY

The study was focused on 3 main regions within the GCJV region. The habitat is important to ephemeral wetlands for migratory waterfowl. Our hypothesis was that the amount of suitable habitat each year is related to rainfall, temperature, and drought patterns



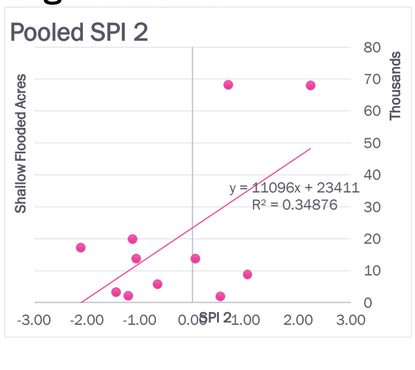
The GCJV uses satellite imagery to quantitatively assess abundance of these habitats.

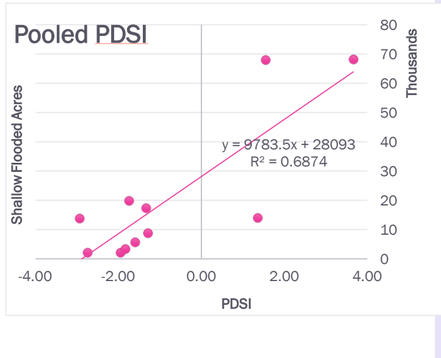
Moist Soil Habitats | Flooded Agricultural Lands | Seasonally & Temporarily Flooded Wetlands

RESULTS | Correlation Results Handout

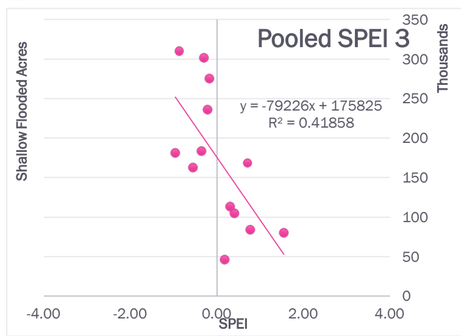
Some Caveats: Analysis is based on average of the chosen weather stations in the area. Also no significant indices for the TX Chenier Plains

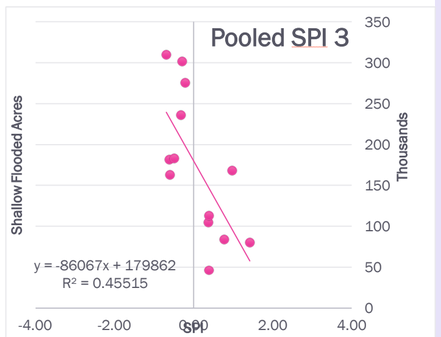
Laguna Madre



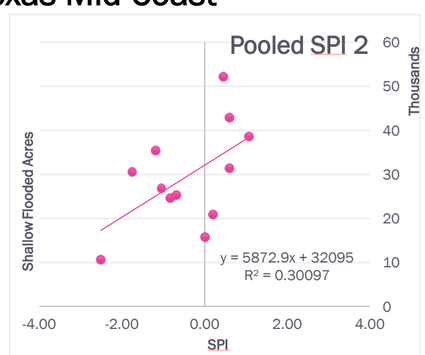


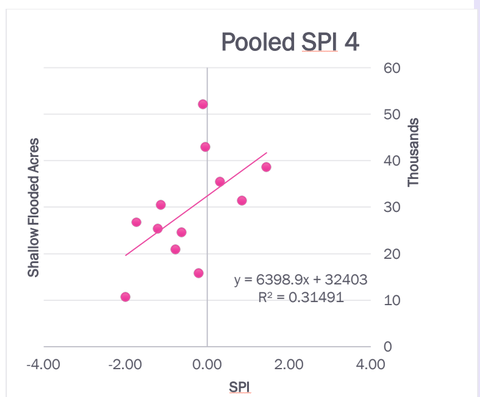
LA Chenier Plains





Texas Mid-Coast





METHODOLOGY

Standardized Precipitation Index (SPI): Based on probability of precipitation departures for any period of time SPI scale:

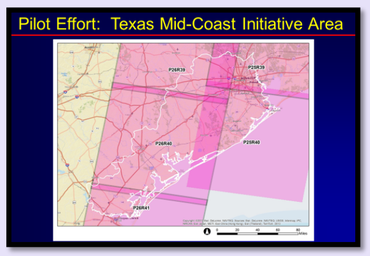
≥ 2 — 0 — ≤ - 2
WET — NEAR NORMAL

Standardized Precipitation-Evapotranspiration Index (SPEI): Takes the premise of the SPI and added a temperature component to capture a simplified water balance. The SPEI scale is:

≥ 2 — 0 — ≤ - 2
WET — NEAR NORMAL — DRY

The Palmer Drought Severity Index (PDSI): The PDSI is a meteorological drought index, and it responds to weather conditions that have been abnormally dry or abnormally wet. The PDSI scale is:

≥ 4 — 0 — ≤ - 4
WET — NEAR NORMAL — DRY



Landsat mosaics were comprised to assess waterfowl habitat on days within the periods that had cloud free images

Statistical Methods: Pearson's Correlation, Spearman's Correlation, and Linear Regression. A small sample size was a limitation in the statistics.

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