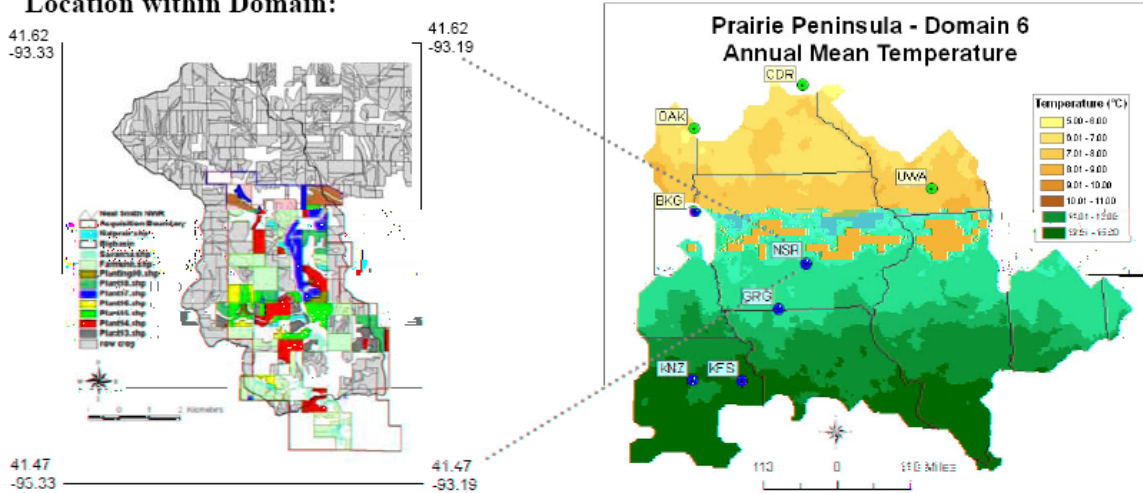


Neal Smith National Wildlife Refuge (NSR): Prairie Peninsula Domain (Gradient Site)

Contact Persons: Dave Engle; email: dme@iastate.edu; Heidi Asbjornsen; email: hasbjorn@iastate.edu. Webpage: <http://www.fws.gov/Midwest/nealsmith/>

Location within Domain:



History: The Neal Smith National Wildlife Refuge (NSR) is a designated National Land Management and Research Demonstration Site established in 1990 and administered by the U.S. Fish and Wildlife Service. Currently, the Refuge encompasses 2,185 ha, with a projected size of 3,502 ha, once remaining agricultural lands within its acquisition boundary have been purchased. The site represents ~27% of the Walnut Creek Watershed.

Key Characteristics: Continental climate with high interannual variability and periodic droughts (mean annual rainfall: 84.8 cm; mean annual temperature: 9.5°C). Vegetation is a mosaic of a chronosequence of prairie reconstructions, oak savanna restorations, pasture, and agricultural land (primarily corn and soybean rotation). NSR supports 6 ponds, multiple wetlands (mostly sedge meadow type), and at least one vernal pool. There are approx. 10 km of riparian area associated with the wetlands, while future removal of tiles will likely strengthen these wetland-riparian connections. Fire and native herbivores (bison and elk) have been reintroduced to the landscape as part of on-going restoration management and research, while the site harbors a diverse array of native plant, small mammal, insect, and avian species.

Existing Infrastructure: NSR hosts a wide range of field equipment and instrumentation associated with on-going research and data collection, including eddy flux towers, weirs and associated stream gauging (both at the scale of the entire watershed and multiple subwatersheds), groundwater wells. As part of the EPA319 research program, intensive monitoring of water quality and flow has been conducted over a 10-year period. Datasets have been developed for diverse research areas, including species lists for multiple taxa, experimental manipulations of hydrological and ecological conditions, population dynamics, invasive species interactions, and restoration ecology.

Facilities: Research laboratory and basic housing to support research activities; located ~80 km from Iowa State University, where more extensive research facilities are available. Additionally, NSR's Learning Center provides an opportunity for thousands of visitors each year to learn about prairie ecology, landscape scale restoration, and agroecosystem management. The site provides year-round access and special permits for researchers allowing unrestricted access to research sites.