

# **Bostic and Zippel Creeks Watershed Assessment Fact Sheet**

The Lake of Woods County Soil and Watershed Conservation District (SWCD), with assistance from USDA Natural Resources Conservation Service, is undertaking a watershed assessment of Bostic and Zippel Creeks. The assessment will focus on sedimentation issues in these watersheds and impacts on Bostic Bay and Zippel Bay. Specific goals of the project include:

- Identifying major sources of sediment within these watersheds
- Quantifying the sedimentation damages (monetary and environmental)
- Identifying the causes of ditch systems' instabilities and erosion
- Using landowner input, identify potential conservation practices for reducing sediment loads and sediment movement within the watersheds

Natural resource managers within the watersheds feel that the combination of increased drainage, excessive flow velocities, unstable soils, and steep side slopes has resulted in excessive bank erosion, channel scour, and down cutting. At the same time ditch system maintenance for both watersheds is an issue. The Judicial Ditch system and assessment process is not implemented on most ditches within the county, so repairs and maintenance must be done with limited resources. Also, as sediments move to the outlets of these watersheds, the sediments settle out leading to degraded fish habitat and increased dredging costs in Bostic and Zippel Bays.

## **The Watersheds**

Bostic and Zippel watersheds are approximately 31,500 acres and 62,000 acres in size respectively. A beach ridge, which was left by the retreating Glacial Lake Agassiz over 10,000 years ago, runs diagonally through the southern third of these watersheds. The soils north of the beach ridge are mainly wet organic soils over clay while soils south of this ridge are mainly wet and droughty deep sandy soils. Land slopes south of the beach ridge are very flat (approximately 10 ft/mile) while slopes north of the ridge are steeper (approximately 25 ft/mile). Most cropland is north of the beach ridge.

According to the National Land Cover Dataset (1992), the majority of land cover for both watersheds is woody wetlands (50-60% of the total area). Cropland and pasture represent approximately 25% and 30% of the total land area for Bostic and Zippel respectively. Types of crops grown in these watersheds include wheat, soybeans, sunflowers, potatoes, canola, grass seed and hay. Some grazing of cattle exists. The Lake of Woods County Drainage Management Plan reports that the Bostic and Zippel watersheds have 134 miles and 192 miles of surface water ditches respectively. The surface ditches provide necessary drainage to much of the agriculture community with the lower reaches providing valuable fish spawning habitat and recreational access to Lake of the Woods.

## **Watershed Assessment Schedule**

As part of this assessment, field inventories will be started in the summer of 2009 and extend into the spring of 2010. The type of field data to be gathered includes land use, ditch inventory (dimensions, slope, and condition), gully measurements, daily rainfall amounts, and stream flow measurements at various points in these watersheds. In addition to field data, dredging and ditch maintenance records will be collected. The data will be analyzed in summer/fall 2010 with a final report produced by summer 2011. Public meetings will be held to get land owner perspective on current watershed conditions and potential solutions.

# Zippel & Bostic Creek Watersheds

