Wisconsin Potato and Vegetable Growers Association Groundwater Task Force:
Accomplishments 2009-2012

Executive Summary

**Background:** The Wisconsin Potato and Vegetable Grower Association (WPVGA) Groundwater Task Force was formed in 2009 in response to growing concerns over the potential impact of irrigated agriculture, climate, urbanization, and other factors on the groundwater aquifer and surface waters of the Central Sands. The focus of the Task Force is to bring together resources and expertise to foster the sustainable use of water resources.

The group meets monthly and has a diverse membership that includes: potato and vegetable growers from all parts of the Central Sands; major potato and vegetable processors (McCain Foods, DelMonte Foods and Seneca Foods); rural communities (Villages of Plover and Coloma); University of Wisconsin Research and Extension Specialists from the Departments of Soils, Horticulture, Entomology, Plant Pathology, the Nelson Institute, and the Wisconsin Institute for Sustainable Agriculture; and support expertise from WPVGA, Wisconsin Public Service, USDA-Natural Resources Conservation Service, irrigation and drainage companies and other groups that are called on as needed. The Task Force is chaired by Nick Somers (Plover River Farms) and Jeremie Pavelski (Heartland Farms).

**Task Force Goals:**

- Be an advocate for responsible water use practices and informed, science-based public policy that will protect the Central Sands groundwater aquifer and its associated streams, lakes and wetlands.
- Promote and maintain a sustainable agricultural industry.
- Foster vibrant rural communities.

**Objectives and Accomplishments:**

**Objective 1:** Consolidate and build on the extensive existing knowledge-base related to the hydrogeology of the Central Sands and the potential impacts of water use, drainage, climate and other factors on the groundwater aquifer and associated surface water bodies.

- Established a program to monitor groundwater elevations in privately owned irrigation wells both across the Central Sands and over time.
- Purchased and installed equipment to continuously monitor groundwater fluctuations in nested groups of wells placed in areas designated as high risk for surface water impacts (Little Plover, Long Lake, Pleasant Lake).
- Commissioned a study of the hydrogeology of Long Lake by the UW-Extension Wisconsin Geologic and Natural History Survey to improve understanding of the formation of tunnel channel lakes and the impact
of clay layers deposited in their formation on groundwater-surface water interaction.

- Engaged an independent hydrogeologist to assess strengths and weaknesses of ongoing Task Force activities and examine groundwater issues and solutions in other parts of the US that may be applicable to the Central Sands.

**Objective 2: Identify, implement and evaluate strategies to increase the efficiency of irrigation.**

- Conducted a water use survey to establish a baseline of grower practices in irrigation and identify areas for potential improvement.
- Commissioned, tested, and implemented new irrigation scheduling software.
- Evaluated site-specific, precision irrigation based on variability of soil moisture holding capacities across fields.
- Conducted on-farm research on potential for deficit irrigation in irrigated crops.
- Conducted research on drip irrigation for high water use crops.
- Investigated the potential for re-designing the century old drainage system in the Central Sands to reduce water loss and increase recharge.

**Objective 3: Investigate evaporation from crops, natural landscapes and bare soil and its relationship to climate, irrigation, recharge, and fluctuations in groundwater.**

- Investigated year-round water consumption of irrigated crops, natural vegetation, and bare soil.
- Established a digital data-base that tracks land use across the Central Sands from 2001–present to identify changes in landscapes and potential relationships to water fluctuations.

**Objective 4: Communicate Task Force activities and accomplishments to the farming community, the citizens of the Central Sands, and the people of Wisconsin, and seek broad input from all concerned parties to determine potential solutions.**

- Assisted in the facilitation and participated in an in-depth analysis of the science surrounding water issues in central Wisconsin in four symposia at the University of Wisconsin.
- Co-sponsored four citizen gatherings in the Central Sands to seek input from all concerned parties in an assessment of issues and development of solutions to water issues.
- Co-sponsored two field tours in the Central Sands where farmers and citizens were able to visit working farms, wetlands, streams and lakes; experience first hand all aspects of water-related issues; and discuss potential solutions.
- Conducted educational meetings with growers and processors to expand their understanding of water issues and increase their participation throughout the industry.
- Engaged public relations expertise to improve the ability of the Task Force to communicate and work effectively with all concerned parties.