undercutters used in the project. The undercutters satisfying the criteria are: the DuraTech 'Haybuster', the Great Plains 'Plains Plow', and the Orthman 'Lazer Plow'. To date, a total of 29 Great Plains Plows, 15 Haybusters, and 2 Orthman Lazer Plows have been purchased.

## No-Till and Conventional Tillage Fallow Winter Wheat Production Comparison in the Dryland Cropping Region of Eastern Washington

AARON ESSER[1] AND RICK JONES[2]
1. WSU EXTENSION, LINCOLN-ADAMS COUNTY
2. LINCOLN COUNTY WHEAT PRODUCER

Winter wheat (WW) (*Triticum aestivum* L.) production on tillage based summer fallow systems has been a standard practice for producers in the dryland cropping region of eastern Washington for generations. This practice has been profitable but it comes at a cost that includes soil loss through wind and water erosion. Producers have examined alternative methods including no-till farming systems for maintaining or increasing profitability and reducing soil erosion. A series of on-farm tests were completed over a 5 year period examining WW established under three treatments; 'conventional' tillage fallow system, 'No-till early', or seeded at the same time as the conventional treatment, and 'no-till late' or planting was delayed 1 month. Conventional methods include a chisel sweep and multiple cultiweeding for fertilization and weed control and seeding with a deep furrow hoe drills. No-till include multiple chemical applications for weed control and seeding and fertilization with a no-till hoe drill with Anderson® paired row openers. Similar to previous research, conventional increased seed zone moisture (0-8") but no differences were detected between treatments in total moisture to a depth of 3 feet. Soil compaction was monitored to a depth of 18 inches in one-inch increments. Less soil compaction was detected in no-till at a depth of 10-16 inches. No difference in grain yield was detected between conventional and no-till early averaging 71-bu/acre. No-till late produced 20% less yield. Economic return above variable costs was similar to yield with no differences between conventional and no-till early and lower when seeding was delayed.

## Dust Mitigation and Monitoring Research for Williston Reservoir Beaches in British Columbia, Canada

WILLIAM SCHILLINGER[1], WILLIAM NICKLING[2], AND DONALD FRYREAR[3]
1. DEPARTMENT OF CROP AND SOIL SCIENCES, WSU
2. DEPARTMENT OF GEOGRAPHY, UNIVERSITY OF GUELPH, GUELPH, ONTARIO
3. CUSTOM PRODUCTS, BIG SPRING, TX

Williston Reservoir in northern British Columbia was created when BC Hydro constructed Bennett Dam on the Peace River in 1968 to generate hydroelectric power. Williston Reservoir is the largest body of freshwater in British Columbia with a surface area of 685 square miles and a shoreline of 680 miles. The First Nation Tsay Keh band was forced to relocate to the north end of the reservoir as a result of the water impoundment. When reservoir levels are at low pool in the spring, 25,000 acres of beach is exposed (Fig. 1). Winds of more than 15 miles per hour create dust storms from exposed beaches that impacts visibility and air quality in Tsay Key village. With funding and coordination by BC Hydro, we initiated a 3-year field research project in 2008 to: (i) evaluate the effectiveness of two tillage practices to mitigate dust from beaches, and (ii) conduct regional dust monitoring at seven sites surrounding Williston Reservoir. The tactic for the

Fig. 1. Wind erosion scientists, Tsay Keh community members, and BC Hydro administrators at a Williston Reservoir beach during a dust storm.