

WIND JAMMER, a portable wind screen: its fabrication and use

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The Wind Jammer is a portable protective screen designed to reduce the impact from wind during rangeland data collection.

Rangeland research projects usually sample data during scheduled successional measurement periods (e.g. herbage biomass production collected biweekly). The measurement periods, of necessity, are inflexible to the presence of wind, which is an inherent condition on rangeland. Consequently, the technical crew performing routine data collection is usually working under the hardship of being fully exposed to the elements, which can cause increased levels of physical exertion. This wind fatigue can be prevented by screening crew members and their immediate work station with the Wind Jammer.

The Wind Jammer (figure 1) has a simple design and is easy to fabricate. Two one-yard square aluminum frames are held together at a flexible joint by a piano hinge (figure 2). Hemmed canvas covers are lashed to each frame by a nylon rope threaded through grommets in the canvas cover and matching drilled holes in the frame (figure 2). Bellows-style sample bag pockets are sewn onto the inside of the canvas cover (figures 3 and 4). Three soil pins, used to stake the Wind Jammer to the ground, move up and down through holes in two mounted guides and the bottom

angle of the frame. The guides are made of aluminum angle sections and have cut notches that securely latch the soil pin handle in the up or down position (figures 5 and 6).

When the Wind Jammer is being transported between sample collection sites, the soil pins are latched in the up position and the two frame halves are folded together. When the Wind Jammer is in use (figure 1), the two frame halves are opened into a “V” shape with the center pointing into the wind (figure 2). The work station on the leeward side (figure 3) is protected from the wind. The sample bag pockets (figure 4) allow convenient access to sample bags and prevent collected samples from being blown across the prairie. The three soil pins are pushed into the ground to provide stability and to prevent movement of the Wind Jammer in windy conditions (figures 5 and 6).

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Table 1. Materials for one Wind Jammer.

Quantity	Description and Use
8	Aluminum angle for two 1-yard square frames with ends mitered at 45°. 36 inches long, 1 X 1 inch angle, 1/8 inch thick.
6	Aluminum angle for mounted guides of three soil pins with 3/8 inch hole and notch. 1 inch long, 1 X 1 inch angle, 1/8 inch thick.
3	Steel rod for soil pins (threaded at top end and 1 inch point at bottom end). 12 inches long, 3/8 inch diameter.
3	Steel rod for soil pin handle (threaded at one end). 3 inches long, 3/8 inch diameter.
1	Piano hinge with bolt and nut fasteners used to connect the two 1-yard square frames. 30 inches long, 1.5 inches total width.
2	Solid braided nylon rope for lashing canvas cover to frames. 156 inches long, 1/4 inch diameter.
2	Canvas for a hemmed cover on the 1-yard square frames. 36 X 36 inches, 18 oz. weight, choice of colors.
6	Canvas for sample bag pockets (3 pockets on each of the two 1-yard square canvas covers). 10 inches high, 8 inches wide plus a 2 inch bellows on each side, 18 oz. weight, color of canvas cover.
32	Grommets in canvas cover for lashing to the 1-yard square frames, 16 grommets per canvas cover, placed four per side with one in each corner. 1/3 inch diameter hole.
6	Acorn nuts for capping the threaded ends of the three soil pins and soil pin handles. 3/8 inch.



Fig. 1. Wind Jammer on location.



Fig. 2. Wind Jammer windward view.

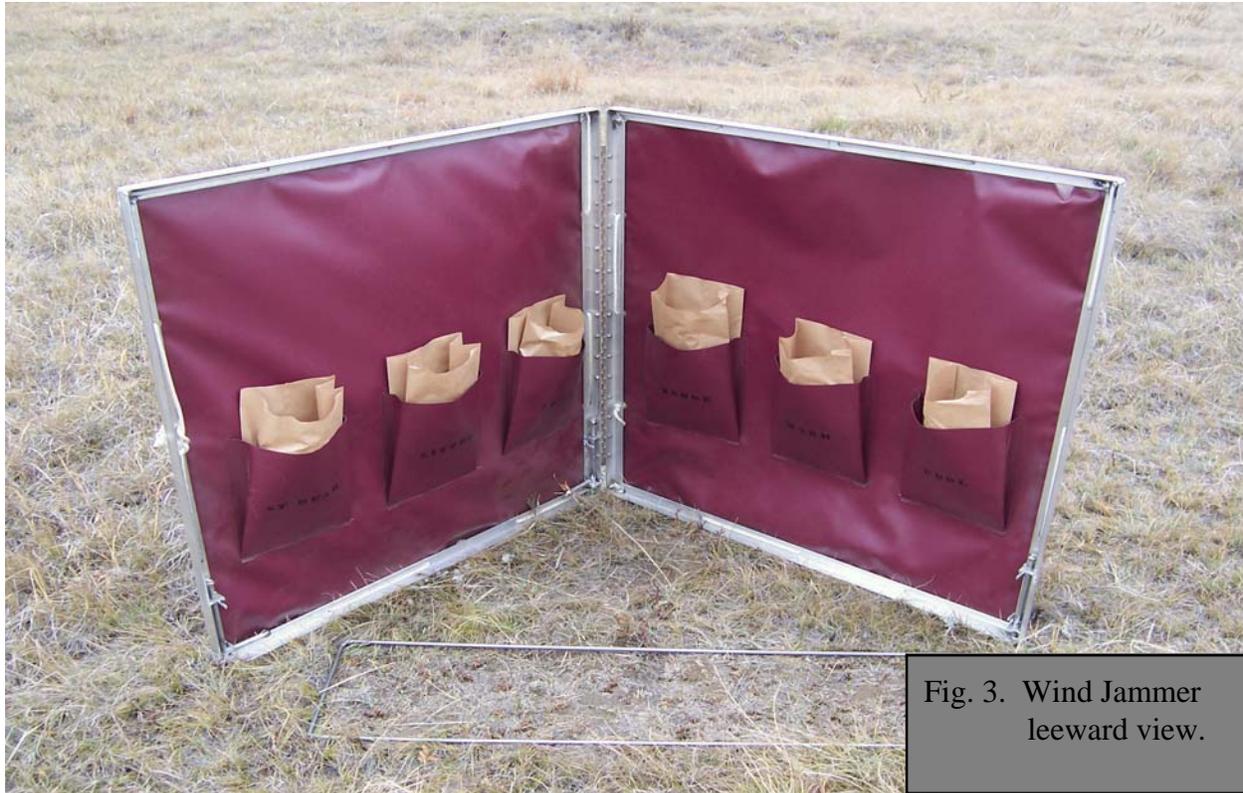


Fig. 3. Wind Jammer leeward view.



Fig. 4. Wind Jammer sample bag pockets.



Fig. 5. Wind Jammer soil pin up.



Fig. 6. Wind Jammer soil pin down.