

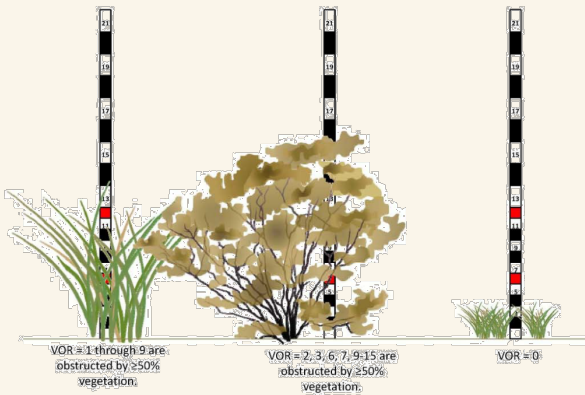


Lesser Prairie-Chicken

*Advancing Collaborative, Proactive, Science-Based
Fish and Wildlife Conservation and Management Across the West*

HABITAT MONITORING

Visual Obstruction Method Density of Vertical Cover



A cover pole is a monitoring tool used to estimate the visual obstruction resulting from standing plants or residues; an indicator that reflects the density of vertical cover. The cover pole is placed vertically at a specified monitoring point, then observed from a predetermined distance and height. The amount of the pole visually obstructed by vegetation is recorded.



Range conservationists in New Mexico use a cover pole during vegetation monitoring. Photo: Jake Swafford

Building a Cover Pole

DESIGN

Cover pole dimensions, contrasting band colors, and measurement criteria often vary depending on measurement objectives, the typical vegetation height in the study area, and the intended interpretation of the data.

To make meaningful comparisons between multiple studies it is recommended to have consistency in pole design and application. The following guidelines are intended to provide consistency for monitoring lesser prairie-chicken habitat.

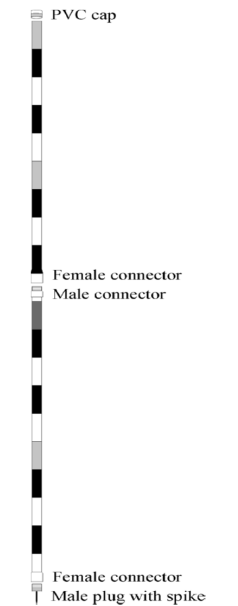
Cover Pole Design for Lesser Prairie Chicken	
Cover Pole Height	1.5 m (5 ft)
Observation Height	0.5 m (1.5 ft)
Observation Distance	2 m (6.5 ft)
Segment Width	2.54 cm (1 in)
Segment Height	Bands are 10 cm (4 in)

This cover pole design is lightweight and transportable designed to be self-supporting to allow a one-person operation.

This design is provided by David Toledo as published in the 2008 Journal of wildlife management (Toledo 2008) with adaptations made for lesser prairie chicken habitat conditions and the goals and objectives for monitoring.

COVER POLE MATERIALS

- 1 piece of schedule 40 polyvinyl chloride (PVC) pipe, 1.5 m (5 feet) long, 2.54 cm (1 in.) diameter
- 1 threaded male PVC connector, 2.54 cm (1 in.) diameter
- 2 threaded female PVC connectors, 2.54 cm (1 in.) diameter
- 1 threaded male plug, 2.54 cm (1 in.) diameter
- 1 PVC cap, 2.54 cm (1 in.) diameter
- 1 flat-headed spike, 20 cm (8 in.) long, 1.3 cm (0.5 in.) diameter
- PVC cleaner, primer, and glue
- Epoxy
- Masking tape
- Enamel or PVC paint (black)
- Indelible marker (if numbered bands are desired)



COVER POLE CONSTRUCTION

1. Cut the PVC pipe into two 0.75-m (2.5 ft) pieces. These will become the bottom and top halves of the pole.
2. Use PVC cleaner and primer to prepare the unthreaded inner wall of the male and female connectors.
3. Use PVC cleaner and primer to prepare the outer wall of one end on one pipe and prepare both ends of the other pipe; these will become the top and bottom halves of the cover pole, respectively.
4. Glue a female connector to a prepared end on each pipe. Each pipe will have one female connector.
5. Glue the male connector to the remaining prepared end of the bottom pipe.
6. Drill a 1.3-cm (0.5-in.) hole in the center of the flat end of the threaded male plug. Insert the spike fully through the hole until the spike head is firmly seated against the inside of the plug. Inject epoxy into the plug, covering the spike head and filling the plug. Ensure that the spike is straight and allow the epoxy to harden.
7. After the PVC glue and epoxy have dried, assemble the cover pole: screw the top and bottom halves together, and screw the plug into the female end of the bottom pipe. Tighten connections until they are snug but avoid overtightening. Some threads on the connectors will remain exposed when the pole is fully assembled. Attach the remaining PVC cap (unglued) to the open end of the top of the cover pole.
8. Measure the cover pole and mark the top end at the 1.5-m mark.
9. Remove the cap and trim the open end of the top pipe to produce a 1.5-m-long (cap to plug) pole.
10. Reassemble the pole. Use masking tape and paint to paint alternate segments in contrasting colors on the assembled pole. The design in is alternating 10-cm (4 inch) white and black segments.
11. Use the marker to number bands in each segment, numbering sequentially from the bottom of the pole.

Optional: interchangeable spikes.—Use additional plugs and spikes to modify the cover pole for use on a range of substrates: use a longer, flat spike for looser, sandy soils; a shorter nail-like spike for compacted, less penetrable soils; or a spikeless plug for impenetrable surfaces such as bedrock.

SIGHT POLE MATERIALS

- 1 schedule 40 PVC pipe; .6 m (24 inches) long, 1.3 cm (0.5 in.) diameter
- 2 PVC caps; 1.3 cm (0.5 in.) diameter
- Cord, 2.25 m (7.5 ft) in length

SIGHT POLE CONSTRUCTION

1. Using the cleaner, primer, and glue, attach one PVC cap to one end of the PVC pipe.
2. Drill a 0.6-cm- (0.25-in.) diameter hole through the PVC pipe, 0.5 m from the bottom of the capped end of pipe (approx. 10 cm (4 inches) from the uncapped, open end).
3. Attach the remaining PVC cap (unglued) to other end of pipe.

Tether. Use the cord to tether the 2 poles, exactly 2 m (6.5 ft) apart, thus ensuring that measurements are consistently taken from the desired distance without needing to measure distances at every point.



ASSEMBLY

For convenient transport to the field, bundle the sight pole and unassembled halves of the cover pole together; alternatively, store the sight pole inside the assembled cover pole. We recommend disconnecting the spiked cap from the pole during transport and embedding spike points in a rubber stopper or similar material to prevent injury; a spikeless male plug can be used to cap the pole during transport if desired. Store line point intercept pins inside the capped sight pole to reduce potential damage to pins in transit.

REFERENCES

Toledo, D. et.al. 2008. Cover Pole Design for Easy Transport, Assembly, and Field Use. Journal of wildlife management. 2008 Feb., v. 72, no. 2, p. 564-567.



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