



JOYCE GOULD

# Alberta's Western Spiderwort

(*Tradescantia occidentalis*)

**endangered**

## status

**Alberta:** Recommended by the Endangered Species Conservation Committee (ESCC) as Endangered

**Saskatchewan:** Endangered

**Manitoba:** Threatened

**Canada (COSEWIC):** Threatened

**USA:** Likely secure (N5?)

## Description

Western spiderwort is a perennial flowering plant with a slender stem measuring 10 to 50 cm in height. The leaves are linear, extend from 10 to 30 cm in length, and are folded lengthwise. The flowers, which usually appear in early July, have rose to dark blue petals (10-15 mm long) arranged in groups of three. Although the flowers grow in clusters, just one flower opens at a time and each flower lasts only one day. The plant spreads through the production of seeds, and also through the development of roots on the stem.

Western spiderwort's unusual name comes from the soft, stringy material that can be pulled from the broken ends of the stem. After exposure to air, this material hardens into a thread that appears similar to a cobweb.

## Distribution and Habitat

In Alberta, the western spiderwort is known to occur in only one small area in the southeastern corner of the province – the Pakowki Lake sand hills. In 2002, the plants were found scattered within an area of approximately 2 km<sup>2</sup>. This area is part of the Dry Mixedgrass Subregion of the Grassland Natural Region, the warmest and driest subregion of Alberta. It was first discovered here in 1986.

Western spiderwort usually grows in sand dune areas that have active (drifting) sand, where vegetation is relatively sparse. In Alberta, it is found in somewhat low areas among the dunes, growing close to drought-resistant grasses, shrubs and trees.

In Canada, western spiderwort is at the northern limit of its range. Besides the population in Alberta, it is found at one location in southern Saskatchewan and at three sites in southwestern Manitoba. The populations in Alberta and Saskatchewan are widely separated from each other and the nearest populations in the United States. However, the Manitoba populations are connected with the plant's main distribution throughout the central United States.

## Population

The size of the western spiderwort population in Alberta varies from year to year, depending on moisture levels. For example, the population was estimated at 7450 plants in 2002 and 210 plants were recorded in 1990, both very wet years, whereas only 30 plants were found in 1987 and 27 in 1999, both dry years. In 2001, an exceptionally dry year, only approximately 20 plants were found. A population trend is difficult to determine as a result of this fluctuation with moisture.



## endangered

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## Threats

The main threat to this species' survival in our province is the loss or alteration of its habitat. Active sand dunes are becoming increasingly rare in Alberta because they require disturbance to persist. Historically, natural prairie wildfires and large mammals such as plains bison discouraged vegetation from growing in these sandy areas. The active sand dune area at Pakowki Lake has been reduced, likely as a result of fire control, a change in grazing patterns, and possibly climatic factors; however, the exact mechanism behind this is unclear. The Pakowki Lake site is leased for grazing. Low to moderate cattle grazing has limited impact and may even prevent the revegetation of the sand dunes, but overgrazing is harmful. This presents a management dilemma, as the positive or negative effects of grazing and fire control at various times of the year are unknown. Fire control as well as changes in grazing patterns and possibly climatic factors have drastically changed the factors that shape sand dune environments. Potential invasion of leafy spurge (*Euphorbia esula*) is also a threat, as it has affected the habitat of all other Canadian populations.

## Management

In 1997, Alberta's *Wildlife Act* was amended to allow designation, protection and recovery of "Threatened" and "Endangered" plants.

There is currently no national or provincial recovery plan in place for western spiderwort. Within one year of its listing, a provincial recovery team, including Alberta Sustainable Resource Development and other stakeholders, will prepare a recovery plan to set goals, objectives, strategies, and actions needed to guide the management of western spiderwort over the next five years. Since the rest of the North American population appears healthy, initial recovery efforts for this species will likely focus on the identification and conservation of the existing population(s),

rather than the creation or reintroduction of new populations. Protection of all western spiderwort populations should be implemented to ensure that there are no losses as a result of industrial, agricultural or recreational activities.

In order to manage and conserve western spiderwort in Alberta, research is needed into its population dynamics and genetics, as well as the effects of grazing and fire control at various times of the year. Alberta biologists will coordinate and consult with other jurisdictions regarding their management strategies.

## What You Can Do To Help

**As a member of the public, a land manager, or an industrial developer:**

- Report any observations of the western spiderwort to the nearest office of the Fish and Wildlife Division, Alberta Sustainable Resource Development or the Alberta Natural Heritage Information Centre (ANHIC), and avoid disturbing areas where these plants occur.
- Permit only low-intensity cattle grazing between May and late July in areas where western spiderwort grows.
- Contact wildlife management staff at the nearest Fish and Wildlife Division office to discuss ways that you can modify industrial activity to minimize impacts on western spiderwort.

