

## Recovery Efforts for Howell's Spectacular Thelypody

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Howell's spectacular thelypody (*Thelypodium howellii* ssp. *spectabilis*) is a rare biennial in the mustard family (Brassicaceae) listed as threatened by the U.S. Fish and Wildlife Service (USFWS), and as endangered by the State of Oregon. It is currently known from only 11 small native grassland remnants in northeastern Oregon. The Oregon Department of Agriculture (ODA) is involved in a multipart Howell's spectacular thelypody recovery project that addresses several of the needs stipulated in the USFWS Recovery Plan for the species. The project incorporates experimental introductions, population and vegetation monitoring, seed collection and storage, and grow-out and seed increase trials. ODA recovery efforts and results are described.

In 2001 and 2002 the agency, in cooperation with the USFWS and the Natural Resources Conservation Service (NRCS), conducted experimental introductions of the species at two sites in northeastern Oregon using both seeds and greenhouse-cultivated plugs. The greatest per-propagule success was observed among the transplants, with 32.8% surviving to flower in 2003. Only 1.0% of the introduced seeds produced plants that survived to flower. Monitoring of a natural Howell's spectacular thelypody population at the Haines thelypody mitigation site in Baker County, Oregon was performed in 2003 by ODA, in conjunction with the Baker County Weed Control agency. GPS "cluster" monitoring was used to census and map the population, and photopoints were established to provide further baseline data for population management. Vegetation monitoring transects were installed to estimate the diversity and frequency of native and non-native species associated with Howell's thelypody, and continued annual monitoring will track habitat changes at the site over time. Seed collection was performed at the Haines mitigation area in 2003 for off-site seed banking at the Berry Botanic Garden. Grow-out trials were initiated fall 2002 and spring 2003 to determine procedures for cultivating Howell's spectacular thelypody and creating a renewable off-site seed supply for recovery efforts. Cultivation was undertaken by ODA and by two partner nurseries using seed stock from a natural thelypody population. Preliminary results from the ODA trials are poor, with almost no seedlings produced the first year.