

**Western Ecological Research Center**

**Publication Brief for Resource Managers**

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# Winter Habitat Selection by Female Northern Pintails in the Tulare Basin, California

Habitat selection and use are measures of relative importance of habitats to wildlife and necessary information for effective wildlife conservation. To measure relative importance of flooded agricultural fields and other landscapes to northern pintails wintering in the Tulare Basin, California, USGS scientists Drs. Joseph P. Fleskes and David S. Gilmer and Oregon State University professor Dr. Robert L. Jarvis radiotagged female pintails during late August–early October, 1991–93 in the Tulare Basin and other San Joaquin Valley areas, and determined use and selection of these Tulare Basin landscapes through March each year. Results of this study are reported in a recent issue of the *Wildlife Society Bulletin*.

Availability of landscape and field types in the Tulare Basin changed within and among the years of this study. Pintail use and selection (based upon comparison of use to availability) of landscape and field types differed among seasons, years, and 24-hour periods. Fields flooded after harvest and before planting (i.e., preirrigated) were the most available, used, and selected landscape type before the hunting season (prehunt), accounting for 44 % of the available flooded landscape and receiving 77–84 % of the pintail use. Safflower was the most available, used, and except in 1993 when preirrigated fallow was available, selected preirrigated field type during prehunt, accounting for 63 % of the available preirrigation and receiving 56–68 % of the pintail use of preirrigated fields. Preirrigated grain (barley/wheat) received 19–22 % of use of preirrigated fields during prehunt, but selection varied greatly among years. Alfalfa comprised 16 % of available preirrigation but received  $\leq 8$  % of pintail use; cotton comprised 2 % of available preirrigation and received  $< 1$  % of the pintail use during prehunt.

## Management Implications:

- Agriculture conservation programs could improve the Tulare Basin for pintails by increasing post-harvest flooding of fallow and harvested safflower and grain fields.
- Conservation of remaining wetlands should concentrate on increasing the amount and productivity of marsh that is shallow-flooded as preirrigated grain fields dry.
- Managers could minimize contaminant risks that are associated with exposure to drainwater evaporation ponds by providing pintails with adequate preferred field and marsh habitats, including hunt-day sanctuaries.

During and after hunting season, managed marsh was the most available, used, and along with floodwater areas, selected landscape type, accounting for 46–53 % of the available flooded landscape and receiving 62–83 % of the pintail use. Preirrigated fields accounted for only 5–6 % of available flooded landscape but received 11–17 % of pintail use. Cotton and alfalfa comprised 97 % of the available preirrigation during and after hunting season, but like during prehunt, usually ranked lower in selection by pintails than other preirrigated field types. Agricultural drainwater evaporation ponds, sewage treatment ponds, and reservoirs accounted for 42–48 % of flooded landscape available but were little used and least selected. Exodus of pintails from the Tulare Basin coincided with the drying of preirrigated fallow, safflower, and grain fields early in winter, indicating that preferred habitats were lacking in the Tulare Basin during late winter.

*Fleskes, J. P., R. L. Jarvis, and D. S. Gilmer. 2003. Selection of flooded agricultural fields and other landscapes by female northern pintails wintering in the Tulare Basin, California. Wildlife Society Bulletin 31(3):793–803.*