

Western Ecological Research Center

Publication Brief for Resource Managers

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September–March Survival Of Female Northern Pintails Radiotagged in San Joaquin Valley, California

Northern pintail populations in North America reached an all time low in the early 1990s. Despite loss of over 90 percent of Central Valley wetlands since the early 20th century, about half of the pintails in North America still winter there, arriving as early as the first week of August and remaining through March. USGS scientists Drs. Joseph P. Fleskes and David S. Gilmer and Oregon State University professor Dr. Robert L. Jarvis are finding answers as to why abundance of wintering pintails has declined more in the San Joaquin Valley than in other central California areas, identifying causes of mortality, and providing a better understanding of pintail winter survival needed to project recruitment and harvest. The scientists radiotagged a total of 419 young and adult female northern pintails in the San Joaquin Valley after their late-summer arrival and tracked their survival in central California until spring each year, 1991–94. Results of this study are reported in a recent issue of the *Journal of Wildlife Management*.

The scientists found that hunting accounted for 83 percent of deaths in the radiotagged pintails, and survival was consistently lower during hunting than in nonhunting intervals. Arriving on wintering grounds about two weeks later and with less experience than adults, young female pintails had less time and ability to regain weight lost in migration before the start of hunting seasons, and were more vulnerable to hunting pressure. Cumulative winter survival was 75.6 percent for adult pintails and 65.4 percent for young females, which is slightly higher than reported for Louisiana but lower than in Mexico. Most radiotagged pintails spent early winter in the Grassland Ecological Area, in the northern San Joaquin Valley. Early-winter deaths from all causes were greatest during the 1991–92 drought year. Early-winter survival increased as habitat conditions

Management Implications:

- Loss and degradation of habitat and high harvest rates have reduced female pintail survival in the San Joaquin Valley below that in other central California areas.
- Increasing wetlands and suitable flooded agricultural lands in the San Joaquin Valley would likely improve survival there and increase the valley's pintail carrying capacity. Conversely, the recent expansion of cotton agriculture into the Sacramento Valley will likely be detrimental to pintails there if rice acreage is reduced.
- Adequate early-winter habitat is especially important to improve survival of young female pintails, particularly in drought years.
- Because fall body condition of pintails may vary greatly among years, relative harvest vulnerability of adult and young pintails will not be constant. This should be considered to avoid over- or understating production if age ratios of harvested pintails are used as indices of recruitment.

improved in the Grassland Ecological Area. Daily odds of survival were 21.3 percent lower in the San Joaquin Valley than in the Sacramento Valley. The San Joaquin Valley was dominated by cotton production with little agricultural flooding, whereas post-harvest flooding of rice and other crops provided abundant habitat in the Sacramento Valley.

Joseph P. Fleskes, Robert L. Jarvis, and David S. Gilmer. 2002. September–March survival of female northern pintails radiotagged in San Joaquin Valley, California. Journal of Wildlife Management 66:899–909.