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Publication Brief for Resource Managers

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Distribution and Movements 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. The decline of wintering pintails in California's Central Valley was greater in the southern (San Joaquin Valley) than in the northern (Sacramento Valley) part of the Central Valley. 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. Planning and managing waterfowl habitat programs require knowledge of pintail movement patterns and how these patterns change as habitat conditions change. The range of wintering pintails must be delineated to manage their harvest and measure potential exposure to contaminants and disease. In a recent issue of the *Journal of Wildlife Management,* USGS scientists Drs. Joseph P. Fleskes and David S. Gilmer and Oregon State University professor Dr. Robert L. Jarvis studied factors related to pintail movements and compared the distribution of radiotagged female northern pintails during 1991–94 to earlier distribution derived from leg-band studies.

Nearly all of the 395 radiotagged pintails (94.3%) wintered in Central California during 1991–94. The 5.7 percent that left went to southern California, Mexico, or unknown areas early in fall. Of the pintails that wintered in Central California, 83 percent flew from the San Joaquin Valley north to the Sacramento Valley and other Central California areas during September–January, mostly during December. Movements coincided with changing weather and the start of hunting seasons and were related to pintail age, size, capture location, and habitat conditions. Among pintails of less-than-average size, adults tended to leave the San Joaquin Valley earlier than young pintails. A greater percentage of pintails radiotagged in the Tulare Basin (south part of the San Joaquin Valley) wintered south of Central California than pintails radiotagged in northern San Joaquin Valley areas (i.e., Grasslands Ecological Area and Mendota Wildlife Area). San Joaquin Valley pintails went to other Central California areas earlier and south in greater numbers when habitat conditions in the San Joaquin Valley were poor. This occurred in 1991 in the Grassland Ecological Area when drought reduced the quality and quantity of seasonal wetlands there and in 1993 in Tulare Basin when post-harvest flooding of fields there was lowest.

Management Implications:

- Pintails are wide-ranging, and changes in one area can impact their abundance in another.
- Restoration of Tulare Basin habitats is crucial to restore pintails throughout the San Joaquin Valley.

Movements by pintails and changes in pintail distributions, direct recovery distributions, and harvest rates, suggest the disproportionate decline of pintails in the San Joaquin Valley was largely due to a lower percentage of pintails moving to the Tulare Basin in fall and a greater percentage of earlier movements north and south out of the Tulare Basin. With fewer pintails in the Tulare Basin to replace the Grasslands Ecological Area pintails going north in December, pintail abundance in the northern San Joaquin Valley declined during late winter. Changes in movement patterns correspond to habitat loss in the Tulare Basin and increased habitats in the Sacramento Valley and western mainland Mexico.

Fleskes, J. P., R. L. Jarvis and D. S. Gilmer. 2002. Distribution and movements of female northern pintails radiotagged in San Joaquin Valley, California. Journal of Wildlife Management 66:138–152.