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Hunting Influences the Diel Patterns in Habitat Selection by Pintail Ducks

Northern pintail (*Anas acuta*) populations wintering within the Suisun Marsh of California have declined markedly over the last four decades. The reasons for this decline are unclear, and more research on the factors that influence pintail habitat selection could help inform management strategies.

In a study published in *Wildlife Biology*, USGS and California Department of Fish and Game biologists investigated the effects of hunting disturbance on pintail habitat selection at the Grizzly Island Wildlife Area.

Female pintails were captured and fitted with backpack-style radio transmitters. Researchers located the tagged birds several times per week during daylight and night hours, from September to March of the two study years. Location data were analyzed using GIS for overlap with sanctuary boundaries, and with habitats of known importance to pintails, such as brass buttons (food item), bulrush (shelter) and permanent water pools (foraging). Daytime and nighttime habitat use were compared between pre-hunting season versus hunting season (October to January).

The study found a difference in diel patterns in habitat selection between pre-hunting versus hunting seasons. For example, pintails favored brass button habitat in the daytime during pre-hunting season. But during hunting season, pintails preferred permanent water pools in the daytime, although they returned to brass button habitat during the night.

Sanctuary areas within Suisun Marsh had more permanent wetlands than hunted areas, and appeared to function as daytime refugia during hunting season. Understanding habitat preferences of pintails under hunting disturbance could help wildlife managers design habitat management strategies that balance pintail populations and hunting opportunities.

Management Implications

- Sanctuary areas encompassed most of the pintail locations during the daylight hours of the hunting season, and are very important to the distribution of pintails throughout Suisun Marsh.
- Sanctuaries interspersed with managed wetland habitats throughout Suisun Marsh could provide pintails access to feeding areas, and should improve recreational opportunity on the numerous hunting areas and duck clubs located in the region by helping to distribute birds throughout the region.
- Brass button (*Cotula coronopifolia*) habitats were highly selected by pintails, especially at night when pintails are known to feed. Vegetation management for these plants will likely encourage pintail use.

THIS BRIEF REFERS TO:

Casazza, ML, PS Coates, MR Miller, CT Overton, DR Yparraguirre. Hunting influences the diel patterns in habitat selection by northern pintails *Anas acuta*. *Wildlife Biology* 18:1-13. doi: 10.2981/09-099

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Northern pintails appear to be using permanent water pools as daytime refugia from hunting disturbances, until they can return to brass button foraging habitat at night.