

Waterbirds benefit from crops and field management practices in California's Sacramento–San Joaquin River Delta

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Agricultural intensification has been a major factor in the loss of global biodiversity. Still, agricultural landscapes provide important habitat for many bird species, particularly in the Central Valley of California, where >90% of the natural wildlife habitat has been lost. As wildlife professionals increasingly work with agricultural producers to promote 'wildlife-friendly' farming, it is important to understand the relative value of specific crops and field management practices to birds.

In 2010–11 and 2011–12, Point Blue, in partnership with The Nature Conservancy, assessed the value to wintering waterbirds of seven treatments (crop and management practice combinations) across two crops (corn and winter wheat) at Staten Island in the Sacramento–San Joaquin Delta of the Central Valley.

We found significant variation in the relative abundance of waterbirds among crops and management practices. Post-harvest flooding and chopping and rolling (mulching) of corn were the most beneficial to waterbirds. As expected, most waterbirds were common in flooded treatments, but geese, cranes and long-legged waders also were numerous in some dry treatments.

Waterbirds varied in their associations, both positive and negative, with particular field conditions. For example, dabbling ducks had a positive association with the amount of area flooded and a negative association with the amount of stubble. By contrast, crane abundance was positively associated with the amount of field stubble and negatively with water depth.

Our data suggest that a greater waterbird species richness and abundance can be achieved by maintaining a mosaic of dry and flooded crop types, varying water depths and continuing the chop-and-roll practice for flooded corn.

The differential value of crop treatments across bird groups emphasizes the importance of adequately defining waterbird population objectives and then establishing the needed composition of crop treatments to meet those objectives.

The observed benefits of particular crops and field management practices in this study should aid in the development of incentive-based and other types of programs to improve the habitat value of other working

lands both within, and outside, the Delta.

Main Points

With the great loss of historic wetlands, agriculture fields now provide important habitat for a variety of waterbirds wintering the Central Valley.

Maintaining a mosaic of dry and flooded crops, varying water depths, and continuing the post-harvest mulching practice for flooded corn will enhance waterbird biodiversity.

Practices developed at Staten Island will have a much greater benefit to birds and farmers if incorporated in economic incentive-based and other types of programs available over a broad geographic area.

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