



Patuxent Wildlife Research Center Science Brief for Resource Managers

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Restoring Wild Rice to the Patuxent River Marshes

Description:

The Patuxent River (Jug Bay) component of the Cheapeake Bay National Estuarine Research Reserve is well known for its diverse and luxuriant freshwater emergent vegetation and especially its extensive acreages of wild rice (*Zizania aquatica*). Critical to fall migrant wetland birds, especially sora rails (*Porzana carolina*), the wild rice has been mysteriously declining along the Patuxent River over the past 2 decades. Over the past two years, our studies using fenced exclosures have shown that herbivory by resident Canada geese (*Branta canadensis*) is the primary cause of the rice decline. Once grazed, the rice is set back significantly; multiple grazing most often eliminates the plants. Goose grazing is more than a problem, it is at a level that has changed the vegetative landscape and makeup of the marshes. The objective of this task is to investigate the use of fenced exclosures as a restoration technique to exclude geese and re-establish rice to the Patuxent marshes.

Progress to Date:

Rice seed was collected in fall 2000 and used to plant plots in April 2001. Vinyl-coated wire was used to create two arrays of 6 circular plots with a diameter of 10 m. The first array was placed on a mudflat in Melloy marsh and the second array was placed near Pig Point. Previously enclosed plots of naturally occurring rice were expanded with the addition of further fencing. Permits were obtained to addle goose eggs and to cull geese from the NERR marshes with firearms during summer of 2001. Eggs in approximately 30 goose nests were destroyed but only a single goose was removed by designated state sharpshooters. Local land managers were cooperative in allowing hunting blinds on their properties in a major effort to reduce the local goose population during the September resident goose season. This effort was extremely successful and over two years (2001-2002) hunting seasons over 700 geese are estimated to have been removed from the area. The

response of the marsh in the 2002 growing season was spectacular. Wild rice and millet was more abundant along river-bordering marsh than it has been in years.

Management Implications:

The catastrophic loss of wild rice along the Patuxent River is an excellent example of invasive herbivory, this time by a native species. However, the displacement of Canada geese to these southern latitudes during the breeding season is strictly a result of man's manipulation, a result of good intentions gone wrong. Certainly Canada geese have been coveted for decades as one of our most prized game species and certainly one of our most majestic and inspiring of waterfowl. Unfortunately there are now about 1 million resident geese mostly concentrated in the mid Atlantic states and the population continues to grow. Our findings along the Patuxent River should serve as an alarm that geese can not only be a nuisance at ball parks, school yards, and agricultural fields, but can cause irreversible damage to our valuable natural marshes as well. Along the Patuxent, this damage was causing a major decline in the vegetative composition of the marsh that would have major ecological implications to many species of migrant birds that depend on wild rice and associated food sources for migration.

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