

Habitat restoration and management for least terns and piping plovers by the Platte River Trust

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Abstract: Since 1982 the Platte River Trust has cleared trees and shrub growth from the Platte River in central Nebraska to restore open, relatively treeless stretches of channel for roosting sandhill and whooping cranes and nesting terns and plovers.

A variety of experimental techniques, including herbicide spraying, chainsawing, disking, and chopping the vegetation, has been used. These techniques cost \$80 to \$180 per acre for 10- to 15-year-old growth, and more than \$700 per acre for more established 40- to 50-year-old-growth.

The most successful technique employed chainsaws and a "Klearway," a tree chipper that is driven into the vegetation. The Klearway cuts a 10-foot wide path, chipping trees up to 8 inches in diameter. Woody regrowth has been successfully eliminated by periodically disking cleared areas with a 36-inch notched blade. Herbaceous annuals and perennials, however, have persisted, leaving the majority of the cleared sites unsuitable for tern and plover nesting. Disking probably promotes herbaceous species as it disrupts the soil profile and allows germination of its abundant seedbank.

Dredging clean sand (little or no seedbank) onto cleared islands was suggested as an alternative technique for creating relatively vegetation-free nesting sites. A grant from the U.S. Fish and Wildlife Service in 1990 was used to partially fund the project.

Two nesting islands were initially built, using a H & H Pump Co. Model 177-10 dredge; a 7-acre site near Shoemaker Island (Wood River to Alda segment), and a smaller, 2.5-acre site near Prosser (Shelton to Wood River segment). Construction was done in late summer following potential nesting activity. The dredge sites were patterned after the spoil piles created by sand and gravel operations near the Platte. Spoil piles at sandpits often remained unvegetated for 6 to 8 years, presumably because of a depauperate seedbank. Dredging also raised the elevation of potential nest sites, making them less susceptible to midsummer inundation.

Excluding the costs for the dredge (\$98,000) and initial clearing (estimated at \$13,000 to \$26,000 per site), construction cost \$53,000 or about \$25,000 per island. Labor and repairs were the greatest expenses. The dredge's pump

assembly had to be replaced twice (\$3,500 each time) as a result of abrasive sand from the Platte which eroded completely through the metal housing.

In the 1991 nesting season, there were 17 tern and five plover nests at the Shoemaker site. This was high compared to 13, 14, 2, 5, 2, and 1 nest(s) during 1985-1990 respectively. No nesting has occurred at Prosser. The Prosser site is smaller, has a narrower channel, is closer to woodlands, and has no history of nesting.

Nesting also occurred on the Shoemaker site in 1992, but all nests or young were destroyed by predators, probably coyotes.

Since 1990, vegetation has developed on less than 5% of the dredge spoil. Dredge operations have, therefore, been successful in creating nesting habitat, but reproductive success at these sites has been disappointing. The Trust and the Nebraska Public Power District built two more islands in 1992. Measures to reduce predator impacts are being considered. Over time and with additional management experience, the full effectiveness of the dredging technique will be evaluated.