1-1-2008

Missouri River Recovery Program Bald eagles and cottonwood trees: a dynamic duo

03/01/2008

Missouri River

RECOVERY PROGRAM

US Army Corps of Engineers

BALD EAGLES AND COTTONWOOD TREES: A DYNAMIC DUO

The Majestic Bald Eagle

Cottonwood trees are essential to the preservation of the mighty bald eagle along the Missouri River. Bald eagles come to the Missouri River to nest, to rest during migration and to roost over the winter. Eagles prefer to nest, rest and roost in cottonwood trees because they are sturdy enough to support large nests and are located in areas with plentiful food sources. To survive and reproduce, cottonwood trees require certain levels of soil moisture and nutrients, which historically were provided regularly by the Missouri River's floods.

The symbol of our country and the only sea eagle native to North America, bald eagles live along the entire length of the Missouri River. They have wingspans between six and seven feet and have been known to live up to 28 years. Bald eagles infrequently change mates and will return to the same nest year after year.

BALD EAGLES come to the Missouri River to **nest**, to **rest** during migration **AND** to **roost** over the winter.

A Threatened Home

Flood-control operations, river-system maintenance and bank-stabilization programs along the Missouri River have protected homes, farms and businesses but have also resulted in irregular flooding. The lack of spring flooding across the floodplain has resulted in a decrease in cottonwood regeneration along the river. As a result, the cottonwood forests are being replaced by species such as elm and ash trees, which are not suitable bald eagle nesting or roosting sites. Development of the river floodplain for housing and agriculture has further impacted cottonwood populations.

The U.S. Fish and Wildlife Service initially listed the bald eagle as an endangered species in 1967 after habitat loss, hunting and ingestion of poisons such as DDT and mercury caused decreases in species population.

Coordinated recovery efforts by the U.S. Fish and Wildlife Service and many other agencies and organizations increased the population of the bald eagle. The species was reclassified as threatened in 1995 and removed from the Endangered Species List in 2007. However, the bald eagle is still protected by the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act.

Finding the Right Balance

The continuation of a cottonwood riparian (river bank) forest is paramount to eagles using the Missouri River. To continue to maintain a healthy bald eagle population along the Missouri River, the U.S. Fish and Wildlife Service prescribed three reasonable and prudent measures:

- Map and evaluate the health of the cottonwood forests that currently provide or may provide wintering, non-breeding and breeding habitat for bald eagles on the Missouri River.
- For cottonwood and other riparian forest areas that are not regenerating naturally, a management plan shall be developed, to include plans for natural regeneration, periodic seed germination and seedling establishment. The goal of the management plan is to help cottonwoods regenerate at the same or faster pace than mortality.
- The Corps shall fund and implement actions in accordance with developed management plans on their project lands and, where appropriate, in partnership with adjacent landowners, to ensure that no more than 10 percent of the cottonwood forest habitat suitable for bald eagles, as identified in the reasonable and prudent measures, is lost during the project life.

In addition, the U.S. Fish and Wildlife Service made recommendations to the Corps which included:

- Conduct or participate in annual wintering and nesting bald eagle surveys.
- Determine population dynamics of wintering and nesting birds.
- Protect and manage bald eagle habitat.
- Conduct public outreach on the value of river habitat to the bald eagle.

To achieve compliance with the three reasonable and prudent measures, the Corps collaborated with academia and other agencies in the creation of a cottonwood management plan. South Dakota State University and University of South Dakota are leading the effort to collect vegetative data on the six reaches of the river identified by the U.S. Fish and Wildlife Service as priority reaches for cottonwood establishment and bald eagle habitat restoration. The data compiled by the universities are then mapped and analyzed, and the results are forwarded to the Engineering Research and Development Center to develop a cottonwood habitat model. This model produces habitat "scores" that are used to compare the health of a project site before and after a project treatment; compare the effectiveness of one treatment over another; and compare the results of recovery efforts with the potential impacts of not implementing recovery efforts to determine which treatment will provide the most habitat for dollar spent.

The results of the model are being used to create an overall Cottonwood Management Plan that will result in a variety of measures that can be implemented at each reach along the Missouri River. The model and plan will also benefit the Missouri River Recovery Program by providing information on how cottonwood health and recovery affect other river functions, such as water quality, erosion control and wildlife habitat. The Corps can use this information to make informed decisions about recovery projects on local, regional and basin-wide levels.

The mission of the Missouri River Recovery Program is to implement actions to accomplish Missouri River ecosystem recovery goals in coordination and collaboration with agency partners and stakeholders. The vision of the program is to create a sustainable ecosystem supporting thriving populations of native species while providing for current social and economic values.

For more information on the Missouri River Recovery Program, please visit www.moriverrecovery.org.

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