

Plum Creek Timber Company White Paper

# Thompson River Riparian Reconnaissance and Monitoring

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## Overview

The riparian area along the Thompson River in northwest Montana has been impacted by a variety of legacy land use activities over the past 100 years. These have included riparian shrub and willow clearing to create hay meadows, livestock grazing, timber harvest, and road construction. In 1993, Plum Creek acquired many of these lands from Champion International. Plum Creek contracted with Riparian Resources, Inc., to assess conditions along 4 miles of the Upper Thompson River and recommend options for vegetative restoration. This report will be used to make decisions about what riparian restoration projects are necessary. In 1998, 1/4 mile of the most severely impacted riparian area was treated based on this report. This approach will be used as a template for how other impacted Key Migratory Rivers are assessed and treated as part of the NFHCP.

## Key Points

The purpose of this white paper is to present the Upper Thompson River riparian reconnaissance and monitoring. The paper accomplishes the following:

- Describes the riparian assessment methods
- Records the results of monitoring
- Predicts future riparian vegetation changes
- Recommends methods for restoring impacted riparian areas

## Supporting Technical Information

To evaluate the impacts of past activities and propose reclamation, scientists established a baseline for the Thompson River riparian area and evaluated past practices. This section describes the methods and results of the study.

### *Riparian Monitoring Methods*

The project area was divided into eight polygons. The following data were recorded for each polygon:

- Dominant vegetation type
- Other common plant species
- Noxious weeds
- Riparian zone width
- Physical stream type (geomorphology)
- Comments

The polygons and dominant features were tied to GPS locations and mapped. The maps were also compared to aerial photos taken in 1935, 1955, 1969, and 1992.

### *Monitoring Results*

The project area is dominated by a few shrub and grass (graminoid) types. Tree types were uncommon in the riparian area. The most common woody plant type was the succulent hawthorn (*Crataegus succulenta*). This plant community type may be **disturbance induced**. Long-term disturbances to native shrubs, such as willow, occurred as a result of livestock use or removal by humans. Once these native plants were gone, plants like the

succulent hawthorn occupied a larger area. The mountain alder (*Alnus incana*) community type is also common within the project area and is thought to increase with disturbance.

The next two most common shrub types, the Drummond willow/beaked sedge (*Salix drummondiana/Carex rostrata*) habitat type and the Geyer willow/beaked sedge (*Salix geyeriana/Carex rostrata*) habitat type, are less common now than historically. In the past, these shrubs were removed from the project area to convert the valley bottoms to hayfields and for other agricultural uses.

The most common grass is a cultivated species of reed canarygrass (*Phalaris arundinacea*), which was a major part of the hayfield grasses planted in the project area during the past 50 years. This plant dominates large areas of six polygons, and grows aggressively in dense, tall stands that essentially hold no other plants.

In addition to the vegetation survey, a cross-section of the stream was completed for each polygon. By evaluating the cross-sections, scientists determined whether the stream was functioning properly, or if stream function was at risk because of past disturbances. Of the eight polygons, four were functioning properly (single channel with established banks) and four were functional-at risk channels (unstable banks and stream braiding).

### ***Projected Vegetation Changes***

Based on the vegetation data collected, the shrub types may change to willow or possibly conifer plant types over time. However, the aggressive reed canarygrass may prevent significant vegetation change in areas where it currently dominates. Even

with disturbance, this plant re-establishes itself quickly. In fact, it will probably continue to invade other moist areas in the riparian zone.

### ***Reclamation Methods***

The goal of reclamation is to speed the recovery of natural shrub species and decrease the grass species. Two approaches could be used:

- Hand-remove small areas of reed canarygrass and other hayfield grasses and plant shrubs, such as willow
- Mechanically remove large areas of reed canarygrass and plant willow

Banks along the main channel and overflow channels are good sites for hand removal of reed canarygrass and planting shrubs. Because of the invasive nature of the hayfield grasses, it may be necessary to go back and remove grasses again as the shrubs are becoming established.

Many locations are available for mechanically removing large sections of the grasses and planting shrubs by hand. However, Plum Creek should evaluate the success of the hand-planting efforts before attempting large plots.

Rebuilding parts of the river channel is probably not needed. As grazing is limited, the channel will likely recover by itself.

### ***Conclusion and Implications***

Based on this reconnaissance and monitoring, the Thompson River channel is likely to recover from past impacts. However, the riparian vegetation surrounding the channel may need help and reclamation measures to re-establish the natural shrub community.