Paddle River Riparian Health Assessments - 2009

Dates of work:
July 27-30, 2009
Work completed by Norine Ambrose, with extensive assistance by Craig Wallace (West Central Conservation Group) and involvement of some landowners.

Landowners that participated:
Bob and Larry Kidd – 1 site (done as part of a Riparian Health Assessment field day, and a brief walk on part of it later without the landowners and other watershed group members)
Harvey Hagman – 2 sites (both RHA, without the landowner during, but landowner provided general tour prior to RHA)
Ralph and Lorree Erdell – 3 sites (landowners participated in all 3 sites; note 1 site is owned by Dale Masterson, but used by Erdell's)
Dale Masterson – 2 sites (1 on Howard Sharp's rented land; 1 on Erdell's, used by D. Masterson)

Note: names of participants are shared with West Central Forage Group, since they were involved in selecting landowners and participated in field work.

In general, the landowners were very interested and keen in the work, and wanted to share their knowledge and historical experiences about the Paddle River.

Total sites examined: 8

Commentary on sites examined along the Paddle River

Sites included in the project for 2009 were all within agricultural areas, but included areas where:

- cattle grazing had never been present (or at least not for many decades and no signs of impact were present)
- cattle grazing has been excluded (or attempted to be excluded) in the last 5-35 years
- cattle grazing has recently been modified in intensity or season of use, but had been primarily uncontrolled in the past
- cattle grazing is uncontrolled, extensive and intensive in the riparian area

Sites included in this work were spread out along various reaches of the Paddle River, but all were upstream from the reservoir on the Paddle River, which is located south and east of Mayerthorpe.

Additional sites could have been done on the Kidd property, if time and resources had permitted, since they indicated interest in getting more information.

Concerns and Good News with Riparian Health

Riparian health varied widely between sites, with some sites having many impairments and severely lacking in health, to sites that had little impairment and were functional. Although each site varied, there were some frequently noticed concerns affecting riparian health.

1. Most reaches examined were moderately incised. Channel downcutting means that water is less able to access a suitably wide floodplain, which can lead to drying out of the sites and narrowing of the riparian area. This can ultimately reduce productivity and diversity because of drier conditions and changes in the plant community.
2. Invasive plant species, particularly Canada thistle (*Cirsium arvense*), were present on all sites, and in some cases, were quite widespread. Fortunately, total cover of invasive plants was relatively low, except in some patches.
3. Disturbance – caused undesirable herbaceous plants were common and generally covered large areas of the sites. The most common disturbance plant species were grass species, such as smooth brome (*Bromus inermis*) and Kentucky blue grass (*Poa pratensis*), and these had either been seeded into or adjacent to the riparian area, or invaded from surrounding areas. These species sometimes reflect a history of long-term heavy grazing pressure, particularly Kentucky blue grass, which can withstand heavy, repeated grazing. In general, the prevalence of these species is often associated with lack of sufficient deep-binding roots from other species.
4. Because of the generally steep banks, a number of sites had few alterations to the banks immediately next to the channel. This mostly results from inaccessibility or difficulty in traversing these areas by cattle; it means that there are often intact, naturally contoured banks, which are positive.
5. Human-caused bare ground is generally not extensive, and in some sites essentially non-existent, which is very positive. Well vegetated riparian areas are more resistant to high water events and are able to trap and filter sediment more effectively, and these areas will not contribute as much soil into the channel due to erosion as compared to sites with more bare ground.

Riparian Health Assessment Field Day

Landowners Participating in Their Riparian Health Assessments

Photos showing lack of deep binding roots and extensive agronomic grass coverage

Photo showing channel incisement; some weeds in foreground of centre photo

Photos showing high levels of deep-binding roots and moderate to high levels of woody vegetation along the banks.

Photos showing steep banks and willows

Photo showing eroding bank, likely due to channel location change:

Well vegetated area:

Thick vegetation with sediment deposit at base of bank, next to channel: