

View From a Wetland

News and Technology for Riparian and Wetland Management



Interagency Riparian/Wetland Plant Development Project
Natural Resources Conservation Service
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Project Leader

J. Chris Hoag, Wetland Plant Ecologist

"The roots of the willows do not suffer the banks of the canals to be destroyed; and the branches of the willows, nourished during their passage through the thickness of the bank and then cut low, thicken every year and make shoots continually, and so you have a bank that has life and is of one substance."

-Leonardo Da Vinci (1452-1519)

Introduction

This newsletter is part of the Aberdeen Plant Materials Center's continuing effort to provide useable information to the public on wetland and riparian plants, plant establishment, and management. This newsletter is the ninth issue published since the Interagency Riparian/Wetland Plant Development Project was established in 1991.

Riparian Ecology and Restoration Workshops



As part of our technology transfer program a two-day Practical Streambank Bioengineering Workshop (renamed from the Riparian Ecology, Restoration, and Management Workshop) was developed. The first day of the workshop is devoted to the classroom where basic riparian dynamics, riparian zone vegetation, plant acquisition, and bioengineering techniques are discussed. The second day is spent at a field location where participants classify the

riparian site and install a series of bioengineering structures on an eroding section of streambank.

Each year the Project conducts several workshops in different parts of our service area. If you are interested in attending this course, contact Pat Blaker at the PMC for the next scheduled workshop. If you are interested in having a workshop in your area and you have about 30 people that would like to attend the training, contact Chris Hoag and we will try to schedule a course in your area.

Certified Seed--not just Cultivars anymore

Mark Majerus, PMC Manager, Bridger, MT

In the past, all new conservation plant materials were released as 'Cultivars' (Cultivated Varieties). Because of the need for and the shortage of a diversity of native plant materials, new short-cut methods of releasing plant materials have been enacted throughout most of the U.S. The Pre-Varietal Germplasm release procedures make it possible to release a plant quicker, but at the expense of extensive field testing for adaptation. This release mechanism recognizes three classes of pre-varietal certified seed/plants: Source Identified (yellow tag), Selected (green tag), and Tested (blue tag).

Any plant material that has been released through the Pre-Varietal release mechanism and grown and inspected under the guidance of a State Certified Seed Program is indeed certified seed, equal in quality and grown under the same guidelines as Cultivar releases.

Woody Plant Species to plant if Beaver and/or Muskrat are a problem

When planting in streams where beaver are present, it is prudent to try and establish plant species that beaver and muskrats do not prefer to eat. It is naive to say that beaver and muskrats will never eat these species, but generally they only eat the species listed below if there are no other preferred species around.

The woody riparian species recommended are:

1. Hawthorn (*Crataegus species*)
2. Redosier Dogwood (*Cornus sericea*)
3. Alder (*Alnus species*)
4. Birch (*Betula species*)
5. Skunkbush Sumac (*Rhus trilobata*)

New Publications

Idaho NRCS Technical Note 42, Willow Clump Plantings has recently been completed. Willow clump plantings are a streambank soil bio-engineering technique that can be used when large stands of willows are available in the project area. This technique harvests and plants an entire live willow clump including the above ground stems and roots. This method unlike pole cuttings, already has part of the root system present, so the willow doesn't need to grow as many new roots from scratch. This results in a significant advantage for the plant in terms of shortened establishment period, lower failure rate and faster protection of the problem site.

Jon Fripp, Stream Mechanics Civil Engineer, and I have recently finished a new publication titled - **Streambank Soil Bioengineering Field Guide for Low Precipitation Areas**. It is intended as a pocket field guide for soil bioengineering treatments that are used to reduce streambank erosion. It incorporates a general discussion on riparian planting zones, plant materials selection criteria, and different treatments including installation guidelines and materials requirements. It is based on the *Practical Streambank Bioengineering Guide*, which is a companion publication to the Field Guide and really should be read first.

Riparian-Wetland Soils; riparian area management is a new publication from the National Riparian Service Team, Prineville, OR. It is Available from the BLM National Business Center, Denver, CO. Ask for Technical Reference 1737-19, 2003.

Determining whether a planting is successful

Patience is the key word when deciding whether to call a planting a success or a failure. In many cases, a planting is identified as a failure after the establishment year only to return the second year

and discover those we thought were dead were really alive and sprouting. We recommend that you hold off your decision until at least the end of the second growing season before you label the planting a success or failure.

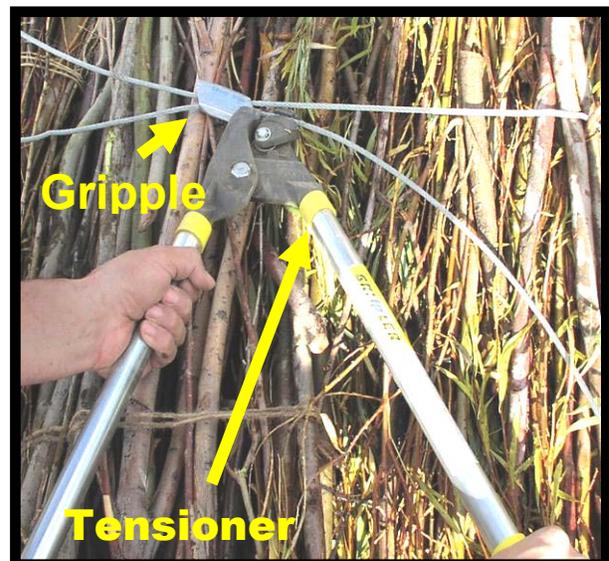
Installing Vertical Bundles

After tying the willows together into a vertical bundle, dig a trench vertically up the bank about the depth of the diameter of the bundle. Stake the bundle into the trench and start backfilling with soil. The best success will occur if water is washed over the soil several times during the backfilling process. This ensures the best chance of getting the soil washed in around the stems, reducing air pockets, and ensures a good rooting environment for the bundle.

Recommendations for establishing dormant unrooted woody plants

Recently, while evaluating a brush layer that had been completed last year, the person who had installed the planting said; "After finishing the installation, I did not cut the willows off like you suggested I should and look, they still grew just fine." Does not following all the recommendations mean that your planting will fail? No. The planting recommendations are meant to increase your chances of a successful planting. Riparian plants are extremely adaptive, competitive, and resilient. I am always amazed at how well they sprout, grow, and establish in very tough places with very adverse conditions. When you put a major effort into a planting, you want all the cards in favor of them establishing roots and growing. Hence the recommendations! Every site is different. All we can do is give you recommendations based on our experience and knowledge.

Gripples – a Self-Locking Wire Rope Grip



If you are working with cables to tie down a streambank bioengineering treatment such as revetments, most of the time cable clamps are the only way to attach the cables to the revetment trees. An alternative to cable clamps is a gripple. A gripple is like a Chinese finger puzzle. You stick one end of the cable in one side of the gripple and the other end into the other side and a small ratchet mechanism clamps on to the cables and as you pull the cables through the gripple, it tightens the grip. With a Tensioner, you can tighten the cables tighter than you could ever get a cable clamp. Check them out at <http://www.griipple.com/>.

A question of soaking



Should you soak fascines for a few days as you would pole cuttings, or should you install them without soaking? I recommend soaking all willows, dogwoods, and cottonwoods before building vertical bundles, fascines, poles, etc. when possible. The need for soaking depends on several factors; time of year, length of storage time, length of time after harvest, and moisture in the streambank. If you are fall planting, soaking does not appear to be as important as spring plantings mainly because you are planting during the dormant time of the year and do not expect the cutting to sprout until spring. If you store the cuttings for any length of time, always soak them before planting. If you are harvesting and planting within a few days, soaking may not be as crucial. It really depends on the soil conditions at the harvest site (normal water, too much water, too little water, etc.). If the bank you are planting into is moist, not like most present conditions after 4-5 years of drought, you may not need to soak the willows. Soaking hydrates the cutting and allows the root primordia to begin swelling. On average, the roots will emerge from the bark in about 14 days plus or minus depending upon species and site conditions. You want the buds to swell until they are almost ready to emerge, but have not come out yet. This means that the cutting is in the 'real world' for a shorter period of time before it puts out roots into the soil. Our success rates have been higher when we

soak in almost every instance. So, we recommend soaking the cuttings whenever possible!

When to plant unrooted cuttings and when not to

One question often asked is "why didn't these cuttings grow? I followed all of the planting recommendations to the letter." Planting recommendations in publications such as Idaho Technical Note 23 - *How to plant willows and cottonwoods for Riparian Rehabilitation* will increase your chances for a successful planting, but they do not guarantee success. There are too many variables that affect the planting. One of those variables is the plant community that you are planting into. When planting dormant unrooted willow cuttings into a streambank, pay attention to the amount of sedge present in the planting site. In general, when sedges and rushes make up 50% cover or more, do not try to plant unrooted woody cuttings. Sedges and rushes produce such a dense mass of roots that the unrooted cuttings are basically out-competed and have major difficulty growing new roots. The presence of sedges and rushes also indicate areas that are generally too wet for unrooted woody cuttings to grow. Usually, we recommend planting the cuttings above the line of wetland plants.

Post vane (i.e. spur, barb, weir, etc.)



While in AZ at a workshop sponsored by Natural Channel Design (Flagstaff, AZ), Tom and Stephanie demonstrated a Post Vane. This structure was constructed in the same manner as a brush spur or rock barb except that it was built using posts instead of rocks or willow bundles. Stephanie told me the concept was from Bill Zeedyk, NM. Basically posts are driven into a trench dug into the stream bed and the excavated material is pushed up around the posts. They are angled upstream at 20-30% off the bank. The posts are then cut with a chainsaw to obtain the proper slope. These post vanes offer an alternative to rock that may be beneficial in remote situations or where rock is hard to get.

Additional Information

All publications are now available on the Internet in Adobe Acrobat format. You can download each of the papers below by going to <http://www.Plant-Materials.nrcs.usda.gov/idpmc/riparian.html>. If you do not have access to the Internet or would like to receive a hard copy, please contact us.

Bioengineering Information

- 1) *The Practical Streambank Bioengineering Guide: A user's guide for natural streambank stabilization techniques in the arid and semi-arid Great Basin and Intermountain West.*
- 2) *Streambank Soil Bioengineering Field Guide for Low Precipitation Areas*

Individual Wetland Plant Fact Sheets –

Description, ecology, collection, propagation, management, and uses of 6 different wetland species.

Riparian/Wetland Project Information Series

No. 2 - Selection and Acquisition of Woody Plant Species and Materials for Riparian Corridors and Shorelines.

No. 3 - Use of Willow and Cottonwood Cuttings for Vegetating Shorelines and Riparian Areas.

No. 6 - Seed and Live Transplant Collection Procedures for 7 Wetland Plant Species.

No. 7 - Use of Greenhouse Propagated Wetland Plants Versus Live Transplants to Vegetate Constructed or Created Wetlands.

No. 8 - Constructed Wetland System for Water Quality Improvement of Irrigation Wastewater.

No. 9 - Design Criteria for Revegetation in Riparian Zones of the Intermountain Area.

No. 10 - Perigynium removal and cold-moist stratification improve germination of *Carex nebrascensis* (Nebraska sedge)

No. 11 - Getting "Bang for your Buck" on your next Wetland Project.

No. 12 - Guidelines for Planting, Establishment, Maintenance of Constructed Wetland Systems.

No. 13 – A Reference Guide for the Collection and Use of Ten Common Wetland Plants of the Great Basin and Intermountain West.

No. 14 - Harvesting, Propagating and Planting Wetland Plants.

No. 15 - Costs and considerations of streambank bioengineering treatments.

No. 16 – Riparian Planting Zones

No. 17 – Waterjet Stinger: A tool to plant dormant unrooted cuttings of willows, cottonwoods, dogwoods, and other species

Idaho NRCS PM Technical Notes

No. 6 - The Stinger, a tool to plant unrooted hardwood cuttings of willow and cottonwood species for riparian or shoreline erosion control or rehabilitation.

No. 13 - Harvesting, Propagating and Planting Wetland Plants.

No. 23 - How to Plant Willows and Cottonwoods for Riparian Rehabilitation.

No. 32 – User's Guide to Description, Propagation and Establishment of Native Shrubs and Trees for Riparian Areas of the Intermountain West.

No. 38 - User's Guide to Description, Propagation and Establishment of Wetland Plant Species and Grasses for Riparian Areas in the Intermountain West.

No. 39 - Waterjet Stinger: A tool to plant dormant unrooted cuttings of willows, cottonwoods, dogwoods, and other species

No. 42 – Willow Clump Plantings

For a copy, write or call:

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