Section 11

REVEGETATION IN ALASKA USING NATIVE PLANTS AND SOILS IN RIPARIAN AREAS /WETLANDS AND INTERPRETATIONS FOR USE

An annotated bibliography

Compiled for the Region II Forest Resources and Practices Science and Technical Committee

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SUMMARY

There is not a lot of information available that provides direction for the use of native plants in revegetation of riparian ecosystems and wetlands. There are, however; a few, and excellent publications that provide sufficient information for successful revegetation using native plant species.

The National Park Service presently has regulations that provide direction to use native plants for revegetation within Parks unless there are no other alternatives. Other land or resource management agencies support, but have not yet developed a written policy for use of native vegetation in revegetation projects.

There are a few guidelines in the following publications can lead to successful use of native plants in revegetation projects. Knowing the soil drainage conditions and soil water holding capacity on the site can be vital for successful revegetation (Lewis, 2003). These properties can vary widely, from hydric (wet) to non-hydric (dry or mesic), over the proposed site. Selection of plant species suitable for the appropriate moisture conditions and placement of these plants in the appropriate site is very important to their successful establishment (Mulbery, 1998 and Wright, 2002). Plant species found in the vicinity of the proposed site will reduce the tendency for establishment of species not native to the specific area, and also reduce the cost of the project. Proper identification of the plants will also aid in the collection and establishment of the correct plants (Collet, 2002 and Viereck, 1992).

REFERENCES

REVEGETATION IN ALASKA USING NATIVE PLANTS

Collet, Dominique M. 2002. Willows of Southcentral Alaska. Sponsored by the Kenai Watershed Forum.

This publication was developed in response to the need for better willow identification for people who are collecting willows for use in revegetation of stream banks and other exposed mineral soils. It contains keys for the classification of willows, both winter and summer; and descriptions with excellent color pictures of all parts of the willow to aid in correct identification. The descriptions also provide good information of the preferred habitats for each of the willows.

Harper-Lore, Bonnie L. and Maggie Wilson, editors. 1999. Roadside Use of Native Plants. Water and Ecosystem Team , Office of Natural Environment, Federal Highway Administration, Washington. D.C. pp. 65-72.

This book contains a map of the different potential natural vegetation zones for all of the 50 states including Alaska. For each State in includes a list of native plants recommended for use in revegetation and landscaping of disturbed sites as a result of highway construction or related disturbance for each of the vegetation zones.

Management of Exotic Species, Section 4.4.4.; Restoration of Natural systems, Section 4.1.5; and Studies and Collections, 4.2. in Management Policies, 2001. National Park Service, U.S. Department of the Interior. (Obtained from Page Spencer, ecologist for the National Park Service in Alaska)

This reference is from the National Park Service Management Polices manual dated 2001. In summary it states that no exotic plant species will be introduced into a park unless it is for a specific, identified management need. The Park Service will also strive to re-establish natural functions on human disturbed sites. Sites with natural disturbances will be allowed to re-establish their natural function by themselves.

Muhlberg, Gay A. and Nancy J. Moore. 1998. Streambank Revegetation and Protection, A guide for Alaska. Dept. of Fish and Game, Tech Report 98-3

This publication provides guidance for the construction of numerous soft or bioengineering type stream bank restoration methods. It contains tables for suggested native grasses, sedges, willow species, and shrubs that are recommended for use for revegetation and stabilization of stream banks and riparian areas in Alaska, It also provides a guide the separates the riparian ecosystem into moisture zones and suggests which plant species will do best in which zone.

Viereck, L.A. C.T. Dyrness, A.R. Batten, and K.J. Wenzlick. 1992. The Alaska Vegetation Classification. USDA, Forest Service PNW Research Station General Technical Report 286.

This publication includes the plant communities and their constituents that occur in Alaska. It also describes in a general sense which landforms or ecosystem where they are most frequently found. This information would be vital in the development of a revegetation plan that uses native species, the locations where sources can most likely be found, and those ecosystems where transplanting will most likely be successful.

Wright, Stoney. 2002+. Revegetation Recommendations for Interior Alaska Based on Soil Characteristics and Available Moisture. Power Point Presentation by Stoney Wright, State of Alaska, Plant Materials Center, Palmer, Alaska.

This is a power point presentation developed by Stoney Wright. It divides the State into six areas based on climatic conditions. He recommends different native grass seed mixtures relative to the soil texture type and moisture conditions in which they will be planted. He has separated the plant species and amounts of seed for planting into saturated, average and very dry categories for the soil groupings of high organic and gravel content, high sand and coarse silt content, and high fine silt and clay content; which parallels the moisture holding capacity of the soil. The recommendation is to fertilize only soils with low moisture holding capacity (gravels) or organic soil. Those soils in the mid range of moisture holding capacity will successfully support the greatest number of plant species with the best success, and those in the high moisture holding capacity (Clayey) will successfully support fewer number of plant species.

MANAGEMENT OF SOILS IN RIPARIAN – WETLAND ECOSYSTEMS

Lewis, Lisa; Team Leader, et al. 2003. Riparian Area Management, Riparian-Wetland Soils. Bureau of Land Management. Denver, CO. Technical Reference 1737-19.

Although this is not a reference that applies directly to Alaska, it does provide excellent information and direction for learning about and interpreting soils for different uses in riparian and wetland areas. This publication is the results of multiple agencies and contractors to provide a document that both the scientist and lay person can use to learn about and initiate management that preserves and utilizes the soils in riparian areas and wetlands for beneficial and non-degrading uses. The book gives an excellent discussion on the basics of soil development relative to the soil-forming factors, the different development processes, and soil identification. It describes the relationships between different soil types and plant communities in riparian and wetland conditions. The book then shows the reader how to use the available soil and plant information in making

interpretations and recommendations for management activities in the riparian or wetland areas.