

**A Property Owner's Guide to
Shoreline Landscaping
in the Matanuska-Susitna Borough**



Matanuska-Susitna Borough

- Revised June 2003 -

A Property Owner's Guide to SHORELINE LANDSCAPING in the Matanuska-Susitna Borough

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A Property Owner's Resource Guide to **SHORELINE LANDSCAPING** in the Matanuska-Susitna Borough

ALASKA **a land of lakes, rivers, and streams**

The Matanuska-Susitna Borough is in an area of Alaska where thousands of lakes and ponds are located, and where hundreds of rivers and streams traverse the valleys. The population of the borough is growing rapidly and changes in our shorelines are increasing.

The natural beauty of the Matanuska-Susitna valley area has been one of the main reasons people make it their home and a destination to recreate. When looking at the development patterns in the valley you immediately notice that a large percentage of the settlement occurs next to lakes and rivers.



A typical lake shore in the Matanuska-Susitna valley. Bluejoint grass, Marsh Fivefinger, Sedge and Willow help provide habitat for birds and fish.

These areas are very desirable locations to live by, and to get away to.

One of the pleasures of living near lakes and streams is the direct access to water for boating, fishing, and swimming. Our lakes and streams provide pleasing views, and a quiet and peaceful environment. Unfortunately, our love of lakes and rivers can upset their natural balance.

SHORELINE DEVELOPMENT

impacts on water quality

As human activity on land surrounding waterbodies increases, the quality of the water may decrease. In many cases this can be attributed to the loss of vegetation along the shore, and the surrounding land uses that allow pollutants to enter the water.

Land uses

Certain land uses or activities can be more harmful to the quality of the water than others. For example, you could be adding nutrients to a waterbody when spreading fertilizer or pesticides on a lawn, washing the car with soapy water, or having your dog kennel too close to the shore.

The added nutrients speed up the natural aging process of the lake by decreasing the oxygen in the water. Low oxygen levels in lakes may eventually lead to poor water quality. Poor water quality can result in reduced water clarity, poor fish and wildlife habitat, lower recreational opportunities, lower property values, and in some cases, health and safety concerns.

Shoreline vegetation

Shoreline vegetation, especially native plants, provides a number of functions that help keep our lakes and rivers healthy. These functions include such things as providing habitat and food for wildlife, bank stabilization, erosion control and the filtering of surface runoff.

Property owners can help

Owners of shoreline property can help protect the Matanuska-Susitna valleys' water quality by keeping harmful activities away from the water and by leaving as much native vegetation along the shore as possible, or in some places, revegetating damaged or eroded shorelines.

WATER QUALITY

Water quality can usually be linked to the nutrient level of a freshwater lake. The trophic state of a lake indicates the level of nutrients. Often the trophic state of a lake is depicted in the type and amount of vegetation in and around the lake.

POLLUTANTS

Land uses such as dog kennels, feed lots and mechanic shops can be a source of pollution. These types of land uses can cause the amount of nutrients entering the lake to increase. Even vegetable gardens can be harmful to water bodies if pesticides or strong fertilizers are used.



RESOURCE GUIDE

a tool to get you started

This guide is provided to help owners of lake front property landscape around the water. Most of the techniques described here are meant to help protect the water quality of lakes, but many of the techniques may also be used successfully along the banks of rivers and streams.

This guide is a tool to get you started. It provides only the basic "how to" information on landscaping. More importantly it includes information on the local resources available to property owners, such as references to materials, local plant nurseries, landscape businesses, and government agencies.

WILDLIFE

Plants provide an important source of shelter and food for many birds and small animals. The publication *Landscaping for Wildlife in Alaska*, recommends providing a variety of seed and berry producing plants. White spruce trees provide seeds for crossbills and pine siskins. Redpolls prefer alder and birch seeds. Bohemian waxwings eat mountain ash berries. Snowshoe hares eat willow shoots, and flying squirrels prefer spruce seeds and mushrooms. Avoid the use of insecticides. Many birds and mammals are attracted to plants where insects live.

BENEFITS

water, land, and wildlife

Shoreline landscaping and low impact land uses can have many benefits.

Improve or sustain water quality - Proper shoreline landscaping techniques and development can help to preserve water quality in our lakes and rivers.

Improve property values - Good water quality can increase recreational opportunities of lakes and rivers. Recreational opportunities equate to higher property values around lakes and rivers.

Provide wildlife habitat - Plants and grasses provide food and shelter for various forms of wildlife, including birds, butterflies, waterfowl, fish, and small fur bearing animals.

Provide beauty and privacy - Vegetation along shorelines can provide an attractive buffer between your home and the water. A property owner can leave native grasses, plants, and trees in place, and combine them with non-native species to create color and texture that will respond to the seasons.



Reduce maintenance costs - A way to cut costs and maintenance is to leave most of the native plants along the shore and just do some pruning and thinning. This is a low cost but effective way to landscape. Once done there is little to do but sit back and enjoy the view. No large lawns to mow and more leisure time to enjoy.

ESSENTIAL ELEMENTS

make a plan

Designing a shoreline landscape requires careful consideration of your property. Soils, wind, sun, water action, and land use regulations will affect your choice of plants and their placement. You may wish to hire a professional landscape firm, but, if you have the time and desire to do-it-yourself there are some basic guidelines included here to help you get started.

Create a base map

Whether you choose to complete a landscaping project all at once or over a period of years, a map should be created to help you visualize the final appearance. Your base map should include basic information and be easily reproduced.

Start by drawing the boundaries of the property and then add the manmade features, such as buildings, fences, utility lines, walkways and driveways. Make copies so you can experiment with landscape designs.

Do a site inventory

Once you have a base map drawn, make a quick inspection of the property. It is important to know the types of soils, vegetation, and how the elements affect the property.

Vegetation - Note where the trees, shrubs, and grasses are located. Are there some you wish to leave and some you may want to remove?

Topographic features - Note the distinguishing land features, such as rock outcroppings or depressions.

AS-BUILT SURVEYS

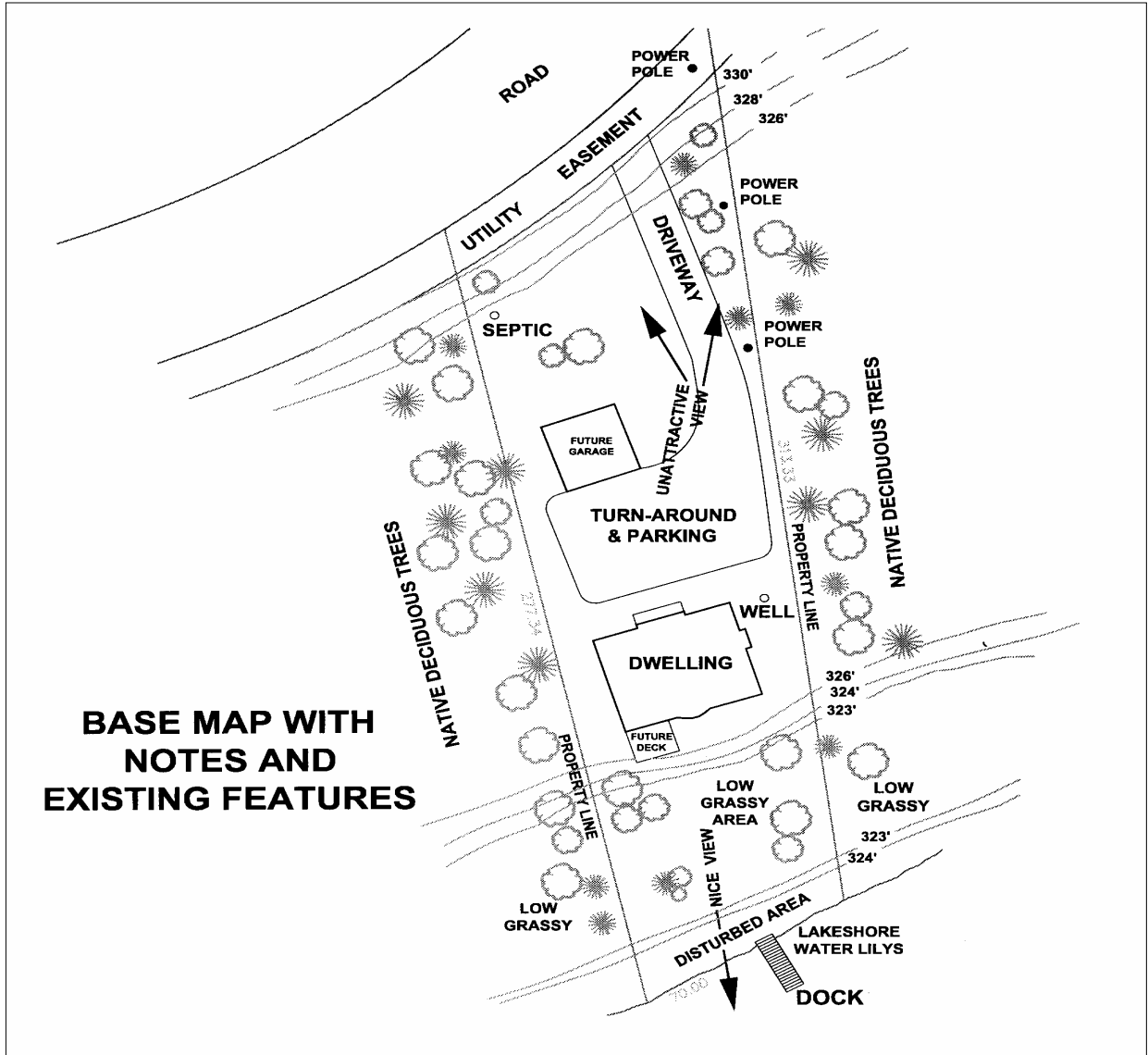
As-built surveys are helpful tools to begin your project, and can be used for a base map. They show property corners, distances, direction and existing structures, power lines, etc. If you do not know where your property corners are located, you may wish to consider hiring a surveyor to establish the corner markers and prepare an as-built survey for you.

EASEMENTS

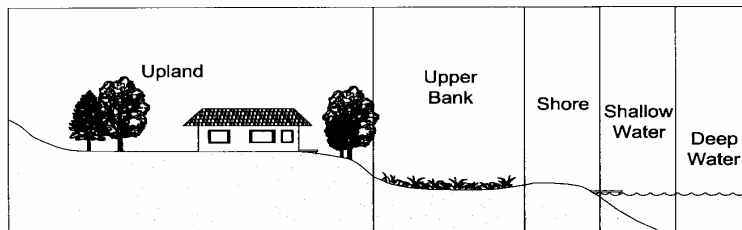
Be sure to note where easements are located on your property. They may restrict your landscaping plans.



Figure 1



PROPERTY SLOPE
CROSS SECTION



Soil - Note on your base map where the soil is rich. If you don't know, check with the Cooperative Extension Service. Their office has information on how to collect and sample soils, and also ways to enrich them.

Elements - Keep an eye on the elements and what effect they have on your property. What is the predominant wind direction, where does the sun warm the soil? Note where rain puddles up or where it runs off and might erode the soil. How about snow and ice? Are there problems with snow storage? Does ice tend to collect in a specific spot?

Figure 1 is an example of a base map with the existing features of a lakeshore property. At the bottom of the drawing is a cross-section of the property. A cross-section shows the property slope and will help you to plant or prune trees and shrubs to the correct height.

Make a site analysis

A factor to consider in the landscape plan is the use of the property. Make a check list or show what people do or where they go. Note them on the base map if possible.

Activities - How is the space is used? Where do the kids like to play, where is there a nice spot to sit and look at the lake, or watch birds.

Circulation - Where do people walk? Note the traffic patterns to and from places, such as the path to the lake, or to the garden or shed.

Views - Show the views from inside and outside the house. Is there a view you wish to enhance or one you wish to eliminate?

Waterfront - During your site analysis look at what is happening in the water. Is your shoreline impacted by boat wakes, or large waves? Do you dock a boat on shore? Is the lake bottom good for swimming in one area and not in another? Is there good fishing from the shore? Do people fish from shore? Consider your use of the water and shore carefully so you can plan accordingly.



Bullrush is a native plant often found along lake shores in Alaska.



REGULATIONS

Property owners should contact the appropriate local, state and federal agencies to obtain information and permits prior to undertaking any development near waterbodies.

Check local land use regulations, and subdivision covenants to determine land use restrictions. Permits may be required, and construction may be restricted or prohibited in areas, particularly near shorelines.

INFORMATION

A good source for information about development regulations in the Matanuska-Susitna Borough is the MSB Code Compliance office. Call them at (907) 745-9853.

UNDERGROUND UTILITY LINES

The local utility companies provide free underground locate services. Call them if you plan to dig on your property.

Have a goal

A goal is a long range vision of how you want your property to appear and be. Make a list of the changes you have in mind for the property. Such as, moving the dog run further from the house, or pruning some trees to improve the view of the lake, or building a dock.

Design

Put your ideas down on paper. Sketch where things should go and what changes need to be made, and in what order. Try to draw the ideas that will solve the goals you listed. Consult with the experts. Visit plant nurseries. Use the resources listed in the back of this guide.

Review

Review your design and goal. Does your design meet your goal and the overall goal to improve or protect the water quality? Don't worry about changing your plan. All plans change. Just keep in mind that when you change one aspect of a landscape plan it may affect another part.

IMPLEMENTATING YOUR LANDSCAPE PLAN

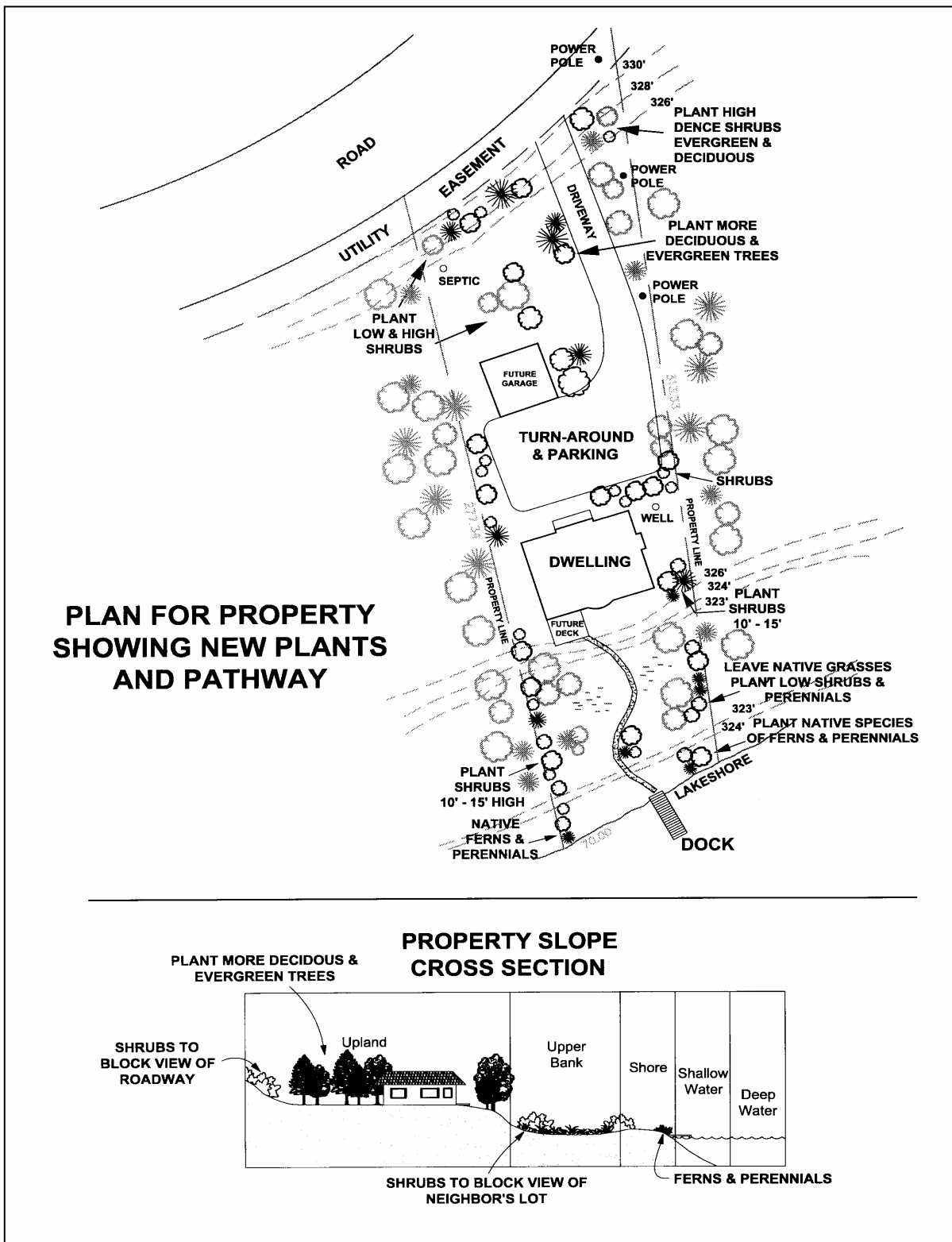
now the fun begins

Once you have prepared your landscape plan, it is time to think about the details; plants and materials, and the how-to's of when and where to plant. Do you want to place plants in a natural setting or mix native and non-native plants to create a more tamed appearance? Will there be pathways and docks?

The plan in Figure 2 shows how the property owners intend to implement their goals. They want some privacy and to lessen the road noise. They want a view of the lake, and want to revegetate a disturbed area near the lakeshore. Most of the native vegetation will be retained. They plan to plant short native shrubs and grasses near the shoreline and taller shrubs and evergreens near the road to create a visual barrier. The barrier will help give the land owner more privacy and reduce noise from the road.



Figure 2





VEGETATIVE BUFFERS

The ideal shoreline vegetative buffer

- **is able to reduce pollutants caused by upland activity**
- **provides a habitat for wildlife and fish**
- **creates a visual barrier**
- **is a mix of plants, such as native grasses, sedges, shrubs and trees**
- **has trees with well developed root systems**

Pathways and docks

Pathways to the water should disturb the shoreline as little as possible. They can be vegetated with grasses, or constructed of gravel or wood. Paths that must cross wetlands should be narrow, elevated and constructed from materials that will allow light to penetrate through them, such as gaps between the boards, or expanded metal. This allows the vegetation to grow under the walkway and water to drain.

Vegetative buffers

It is not possible to create a vegetative buffer that works for all cases. But there are some basics to keep in mind. The vegetation should be able to reduce pollutants caused by upland activities. It is

a good idea to have a mix of plants, and to have a relatively flat contour so rain water runs slowly through the root system. Trees with well developed root systems should be part of the buffer as the roots help hold the soils in place.

Pruning and thinning

It is difficult to duplicate native shoreline plants. So if your shoreline is undisturbed it may be best to leave as much of the native vegetation as possible. You might want to consider just thinning or pruning the native vegetation. Some native plants like alder and willow can be pruned to produce a thicker tamer appearance. Thinning out certain trees or plants can promote the growth of the plants you choose to leave.

Pruning gives plants a more vigorous appearance. Cutting back the branches of shrubs to a dormant bud will promote more branching. It forces the buds behind the growing point of the branch to grow new stems.



Plant size and height

An important consideration when planting new trees or shrubs is their height and width at maturity. They may appear small and sparse when you first plant them, but what will they look like later? That little grouping of spruce trees that you planted as a wind block may eventually grow so thick and tall that it will block the entire view of the lake.

What, when, and where to plant - We can't advise you on what to plant, where or when to plant. It will vary from one site to another. But if you study the natural surroundings you should be able to plant vegetation that is right for your property. Talk to a local nursery or landscape consultant. Study the publications listed in the back of this publication for more information. The University of Alaska Cooperative Extension Service and Alaska Plant Material Center are also available to answer questions.

Native plants are recommended

Most of the local plant experts do agree on one thing. Native plants are best for areas in or near the water. Native plants grow better, root better and require less maintenance. They blend in with the surroundings and provide important habitat for birds and fish.

A few local nurseries carry seeds and seedlings of native plant species. Refer to the list on page 18, Sources of Landscape Plants in the Matanuska-Susitna Borough for more information. The following list of native trees, shrubs and grasses are generally suited for this region, but make sure they are suited to your property and your landscape plan.

The University of Alaska Cooperative Extension Service publishes a list of plant sources for Alaska. Some of the listed plants are simply not available from plant nurseries. So, if you really want them for your landscape project you may have to search for them in the wild.

NATIVE TREES & GRASSES WHICH COULD BE USED FOR YOUR LANDSCAPING PROJECT

Deciduous trees

Sitka Alder

Alnus tenuifolia

Thinleaf Alder

Alnus tenuifolia

Alaska Paper Birch

Betula papyrifera

Balsam Poplar (Cottonwood)

Populus

Black Cottonwood (Cottonwood)

Populus trichocarpa

Evergreen trees

White Spruce

Picea glauca

Black Spruce

Picea mariana

Deciduous shrubs and small trees

Red-Twig Dogwood

Cornus stolonifera

Sweetgale

Myrica gale

Prickly Rose

Rosa acicularis

Native Willows

Salix spp.

Native Grasses

Polargrass

Artagrostis latifolia

Bering Hairgrass

Deschampsia beringensis

Beach Wildrye

Elymus mollis

Bluejoint

Calamagrotis canadensis

American Sloughgrass

Beckmannia syzigachne



TRANSPLANTING

Some of Alaska's native plants are easily transplanted for landscaping projects. Other plants can be harvested for their seeds or cuttings.

Native plant and tree collection

Before you consider digging native plants it is very important to have the land owner's permission, and to know the plant's growing requirements. Frequently plants are damaged when removed from their natural setting. The plants natural environment is difficult to copy, so you may be better off collecting seeds and cuttings in order to grow native plants.

When transplanting wild or native trees it is easier to dig up small trees. Deciduous trees should be transplanted when they are dormant in the spring or fall. Evergreens are best transplanted in the early fall so roots will be established before the winter freeze. Dig around and under the tree to free the roots. A good rule of thumb is to dig outside the outermost branches. Wrap the root ball in a burlap bag or similar material to prevent it from falling apart. Move it carefully and replant it in a prepared hole. Be sure to harvest only what you need, and always leave some of the plant species for natural propagation. You will be more successful if you transplant during the cool hours of the day. Handle the plants carefully. Provide the plants shelter from the wind and sun when moving them from one location to another. Water the plants during and after replanting, air in the root mass can kill a plant.

Growing native plants by seed and cuttings

This method of stem cutting can be used to grow willow and balsam poplar. According to the Cooperative Extension Service stems from willow and poplar can be stuck directly into the soil, and they take root rapidly. Actively growing plants, preferably younger trees, should be used for the stem stock. For the do-it-yourselfer this method of planting native trees and shrubs is inexpensive and fairly easy.

A good reference for planting native vegetation from cuttings is the Cooperative Extensions Services *Revegetative Guide for Conservation Use in Alaska*. It includes a reference to native plant characteristics as they relate to soil conditions, and the best method for growing plant species. In addition, a new publication, titled, *Streambank Revegetation and Protection Guide*, is now available from



the Alaska Department of Fish and Game and the Alaska Department of Natural Resources. The publication contains a collection of techniques and materials useful for growing native plants.

Non-native plants

Selecting non-native plants for your landscape project is much like selecting native plants. You need to know the various environments of your property and also the needs of the plants you wish to use. Then you need to fit the two together. Do some research.

Sun, wind, soil, cold, rain, snow and wildlife are all important aspects to keep in mind when shopping for landscaping plants. You may wish to have plants that provide year-round privacy, or plants that simply provide color and beauty to your property. Check with the local experts if you are unsure of how to choose plants that will meet your goal.

When purchasing plants from a nursery, you will have more latitude with a container grown tree than with bare root seedlings. If you mulch and water regularly you can plant them almost anywhere, at any time, except in the middle of winter. Make sure the plants have been "hardened", which means they have spent a winter in Alaska. Ask the nursery where the plants grow best. A good practice is to allow your plant to be exposed to its new environment for a while before planting it. This should be done gradually, over a course of days, or weeks if possible.

Fertilization

Fertilization rates for plants, grasses, trees and shrubs are different. It should be determined through soil testing procedures. Remember to always mix the fertilizer into the soil thoroughly before planting. Do not broadcast granular fertilizer on lakeshore or stream bank plantings because it is easily washed into the water.

RETAINING WALLS

Some land owners may be tempted to construct retaining walls in order to stop erosion. Unfortunately these structures can destroy fish spawning areas and remove habitat for juvenile fish. Retaining walls also alter river hydrology, and may cause erosion else where. Retaining walls along a lakeshore deflect waves and cause erosion at the base and end of the wall.

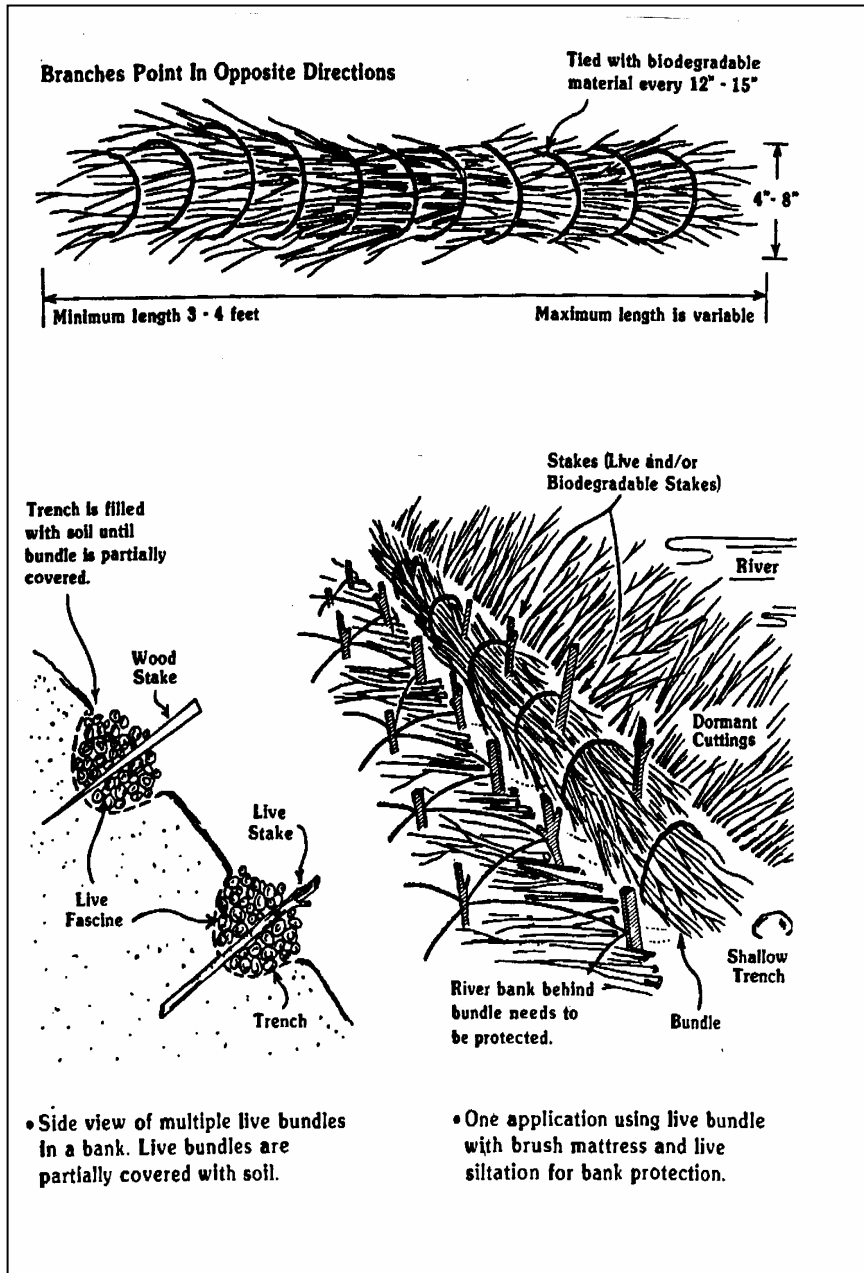


EROSION CONTROL

techniques to hold the dirt in place

If your property is flat, you can usually seed or plant and then perform regular watering and fertilizing. But if you're working on slopes or where water is eroding a shoreline you have to devise

some way of holding in seed and plants to allow them time to root.



Stabilizing slopes and revegetating

There are several techniques for holding newly planted slopes and shorelines. The right method depends on the site and the type of plants you are trying to establish. If slopes are not steep, susceptible to run-off, or wave action, transplanting small shrubs or establishing grasses will work without added expense and materials.

A common practice in Alaska is to use bundles of dormant plant cuttings, such as willow. Bundles are formed by tying together several dormant branches 1/2 to 1 1/2 inches in diameter. The bud tips of the branches are oriented in opposite directions to create a uniform diameter bundle. Bundles should be four or more inches in diameter and at least three to four feet in length. The bundle is tied together with biodegradable twine as shown in *Figure 3*.

Figure 3

Source: *Streambank Revegetation & protection Guide*
 (Reprinted with permission)
 Alaska Department of Fish and Game
 Alaska Department of Natural Resources



In some cases plants are not sufficient to handle erosion problems caused by high water, steep slopes or wave action. Man-made products such as coconut fiber rolls can be placed on top of the soil and plants placed within the fiber to protect them from erosion. Another method is to build a brush mattress by placing branches closely together and flat against the slope covering the soil underneath. Brush mattresses can be installed over rooted plants and live stakes, or combined with other revegetation techniques.

Combinations of these types of materials can also be used. Every site is different, so plan carefully and choose the material that will fit your needs and your budget.

If your project requires revegetating a large site, or one that is particularly difficult, you may wish to consult a landscape architect or one of the local agencies listed in the end of this publication.

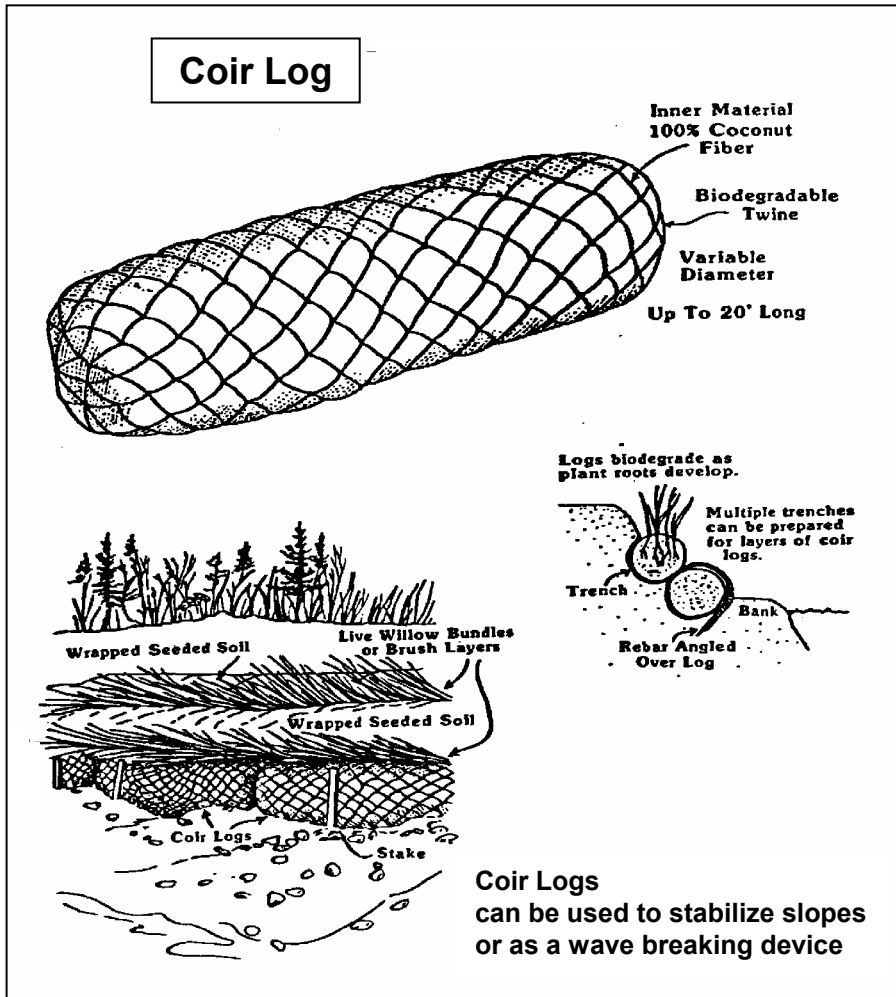


Figure 4

Source: *Streambank Revegetation & protection Guide*
 (Reprinted with permission)
 Alaska Department of Fish and Game
 Alaska Department of Natural Resources

PERMITS

Development in or near water requires permits. Call the Matanuska-Susitna Borough's Code compliance office for information before you begin construction or clearing.
(907) 745-9853

Wave breaking devices

Wave breaking devices protect the shore from fast moving water and allow the establishment of new plants. Temporary breakwaters are placed in the water just beyond the planted areas to stop wave action similar to that shown in *Figure 4*. Brush or other natural fibers, such as straw bales or coconut husk (coir) logs may be used. The barriers are placed waterside of the plants and are anchored with stakes. Bundled brush is probably the most practical and inexpensive for use in a do-it-yourself project. These will hold the water back temporarily, create an area for sediments to gather and allow your plantings to establish themselves. Eventually, the temporary structures will break down.

AVAILABLE RESOURCES

we have many from which to choose

There are an abundance of local plant experts in the Matanuska-Susitna valley area. This may be due to our agricultural history and rich soils. In any case, there are people readily available to help you. Consult with the local nurseries, landscapers, tree growers, Alaska Plant Materials Center, or check the publications at the University of Alaska Cooperative Extension Service.

There is also a wide variety of landscaping books that can be purchased or borrowed that will help you plant in uplands areas. Publications that specialize in planting near ponds and bogs are also available. Commercial publications specific to landscaping near lakes and streams are rare. Check with the university, or local state and federal agencies listed in the back of this publication. They are valuable resources for information on native plants, and landscaping plants that are suited for our climate.



**Landscape and garden consultants and designers
in the Matanuska-Susitna Borough ***

Alaska Ponds, Falls & Pools Palmer 357-2730	Pond installation, design & consultation, fish and aquatic plants for ponds.
Castle Connection Palmer 745-4481	Landscaping and garden design and consultation
Group Three Design Wasilla 376-6298	Landscape design and planning
Horizon Landscaping Wasilla 376-0627	Design and installation; shoreline planting
Northern Fruits Palmer 745-1070	Design services
Recluse Gardens Wasilla 373-0925	Garden and lawn design
Stonehill Gardens Palmer 745-7071	Nature scaping and Stone scaping
Tundra Rose Nursery Talkeetna 733-2410	Landscaping and installation

**Revegetation and erosion control Specialists
in the Matanuska-Susitna Borough ***

Far North Tree and Seed Co. Palmer 745-4024	Erosion control and soil stabilization
Group Three Design Wasilla 376-6298	Revegetation and erosion control services
Horizon Landscaping Wasilla 376-0627	Erosion control
Little Susitna Hydroseed Wasilla 376-7333	Soil stabilization and Revegetation services
Seed n' Tree Nursery Butte 746-7125	Revegetation services
Stonehill Gardens Palmer 745-7071	Erosion control; Revegetation services
Trapper Creek Farm	Revegetation services

* Please refer to local newspapers and yellow pages for additional resources



LOCAL, STATE & FEDERAL AGENCIES IN THE MATANUSKA-SUSITNA BOROUGH	
AGENCY	SERVICES/COMMENTS
Matanuska-Susitna Borough Planning and Land Use Department Code Compliance Division Palmer 745-9853	For information regarding land use, permitting, and regulations.
State of Alaska, Dept. of Natural Resources, Division of Agriculture Plant Materials Center Palmer 745-4469	For plant and seed information. Revegetation recommendations including Streambank Revegetation.
University of Alaska - Fairbanks Cooperative Extension Service Palmer 745-3360	Information on plants, Revegetation guides
US Government, Department of Agriculture Natural Resources & Conservation Service Wasilla 373-6492	Plant & Tree information, soils classification
State of Alaska Department of Fish & Game Palmer 746-6300	Permit information
US Army Corp of Engineers, Wetlands Elmendorf AFB 753-2712	Permit information



SOURCES OF LANDSCAPE PLANTS IN THE MATANUSKA-SUSITNA BOROUGH*

Source	PERENNIALS	SHRUBS and GROUND COVER	TREES	GRASSES	FRUIT & BERRIES	N= Native Plants NN= Non Native Plants COMMENTS
Arctic Organics Palmer - 746-1087			NN		N NN	
Bushes Bunches Greenhouse Palmer - 745-3958	N NN				N NN	
Castle Connection Palmer - 745-4481	NN					
Dearborn Farms Palmer - 745-3501		N NN	NN		NN	
Ewe-Topia Farms Palmer - 746-4134	NN	NN	N NN		N NN	
Far North Tree & Seed Co. Palmer - 745-4024	N NN	N NN	N NN		N NN	Specializes in conifers.
Hawk Hill Nursery Palmer - 745-2303		NN	NN			
Jacobsens Greenhouse & Nursery Wasilla - 376-2123	N NN	N NN	N NN	N NN	N NN	
Lady Bugs Greenhouse Palmer - 745-4516	NN					Bedding Plants only. Open from May 1st thru 31st only
Landscape Supply Corp. Wasilla - 376-3833	N NN	N NN	N NN	N NN	N NN	
McGuires Greenhouse. Big Lake - 892-8783	N NN	N NN	N NN	N NN	N NN	
Northern Fruits Palmer - 745-1070	NN	NN	NN	NN	NN	
Recluse Gardens & Greenhouse Wasilla - 373-0925	N NN	N NN	N NN	N NN	N NN	Specializes in rare and unusual plants. Seed collection.
Seed n Tree Nursery Butte - 746-7125		N NN	N NN	NN		
Stonehill Gardens Palmer - 745-7071	N NN	N NN	N NN	N NN	N NN	
Trapper Creek Farm Palmer - 745-1193				N		Wholesale grass seed.
Tundra Rose Nursery Talkeetna - 733-2410	N NN	N NN	N NN	N NN	N NN	
VanTroba Tree Farm Palmer - 745-2208			N NN			
Walter Mayr Greenhouse Sutton - 745-4304	N NN					Primarily wholesale. Hardy Perennials. Open by appointment only.
Wilderness Nursery Palmer - 745-6205	NN	NN	NN		NN	

* Please refer to local newspapers and yellow pages for additional resources



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