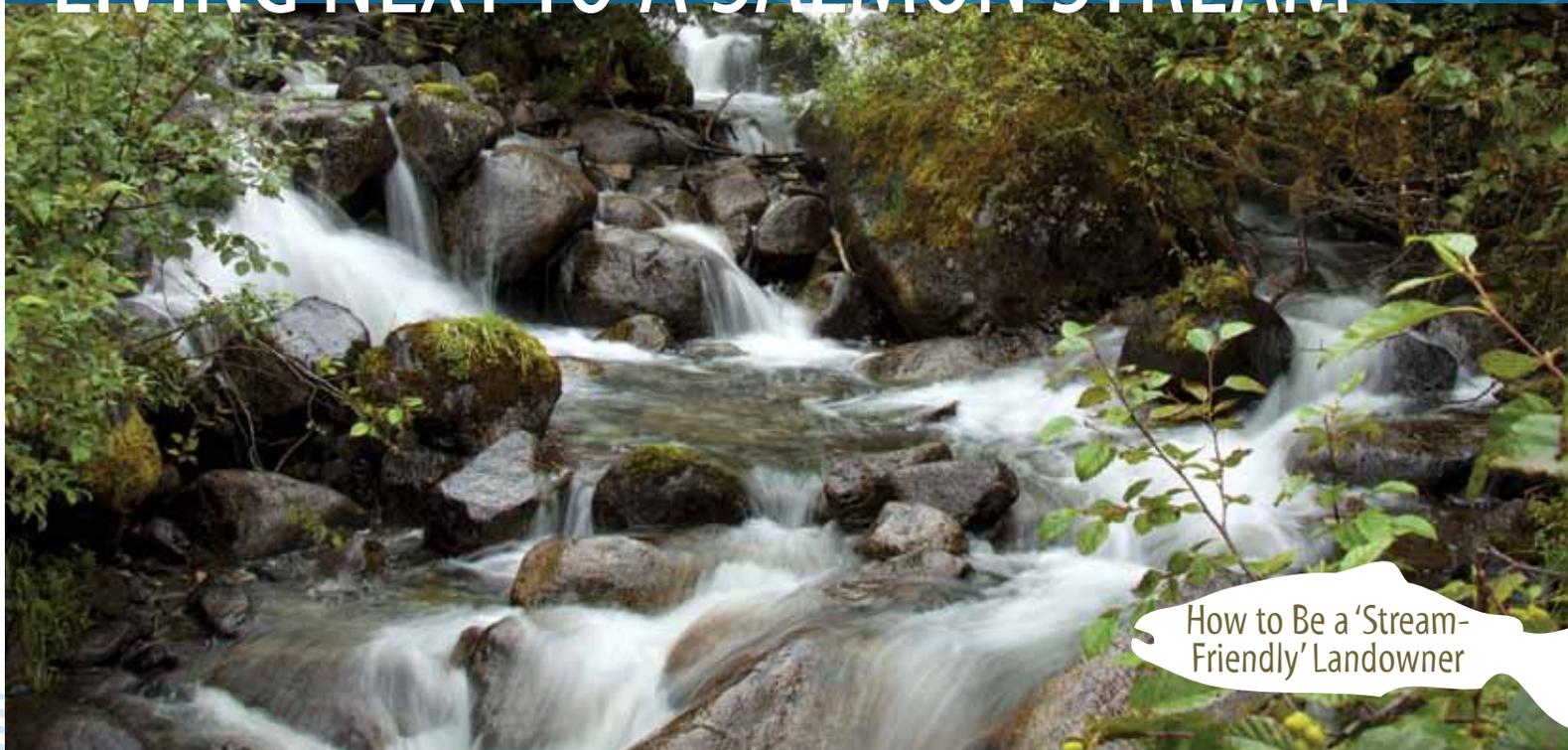


LIVING NEXT TO A SALMON STREAM



How to Be a 'Stream-Friendly' Landowner

JUNEAU WATERSHED PARTNERSHIP

www.juneauwatersheds.org

THE JUNEAU WATERSHED PARTNERSHIP (JWP)

is a non-profit organization whose mission is to promote community stewardship and sustainable use of our local watersheds.

Protecting Clean Water and Salmon Habitat in Juneau	1
Elements of a Salmon Stream	2-3
Water Quality and Salmon Habitat	4
Riparian Zones and Buffers	5-6
Vegetation and Re-Vegetation of Riparian Buffers	7
Native Plants vs. Invasive Plants	7
Stream-Friendly Lawn Care	8
Septic System Maintenance	9
Local Guidelines for Streamside Development	10
Being Stream-Friendly	11
Contacts and Resources	12
Glossary/References	13

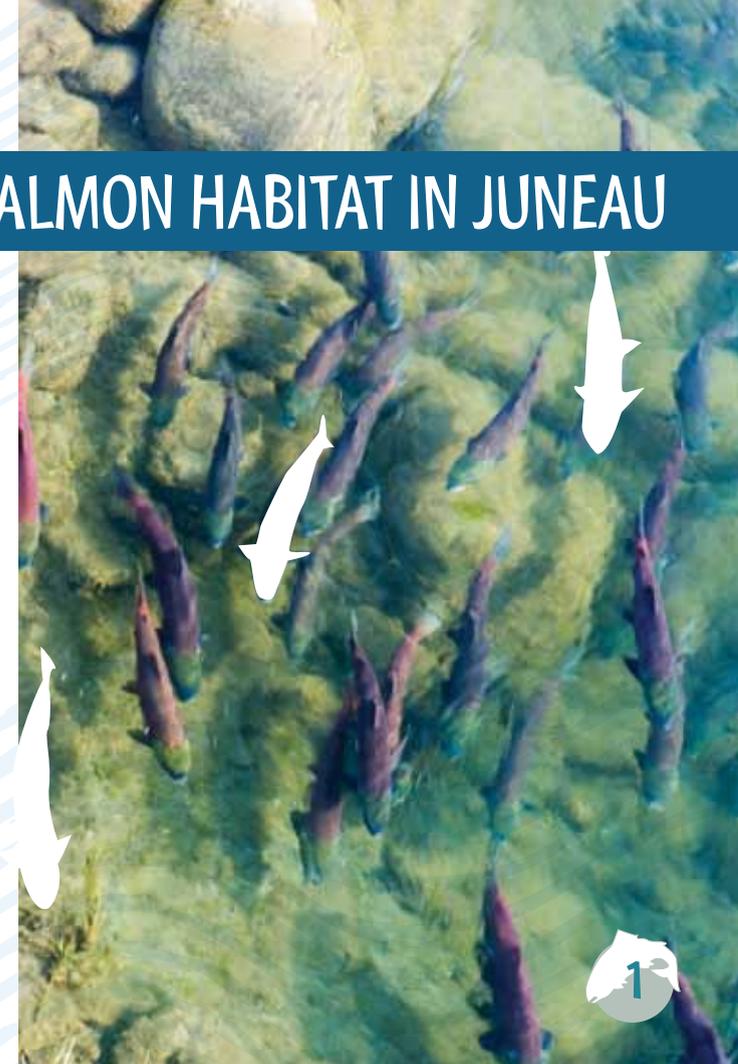
We are a member driven organization, and if you like our work we encourage you to join us at:

Juneau Watershed Partnership
PO Box 20649
Juneau, Alaska 99802
(907) 586-6853
www.juneauwatersheds.org

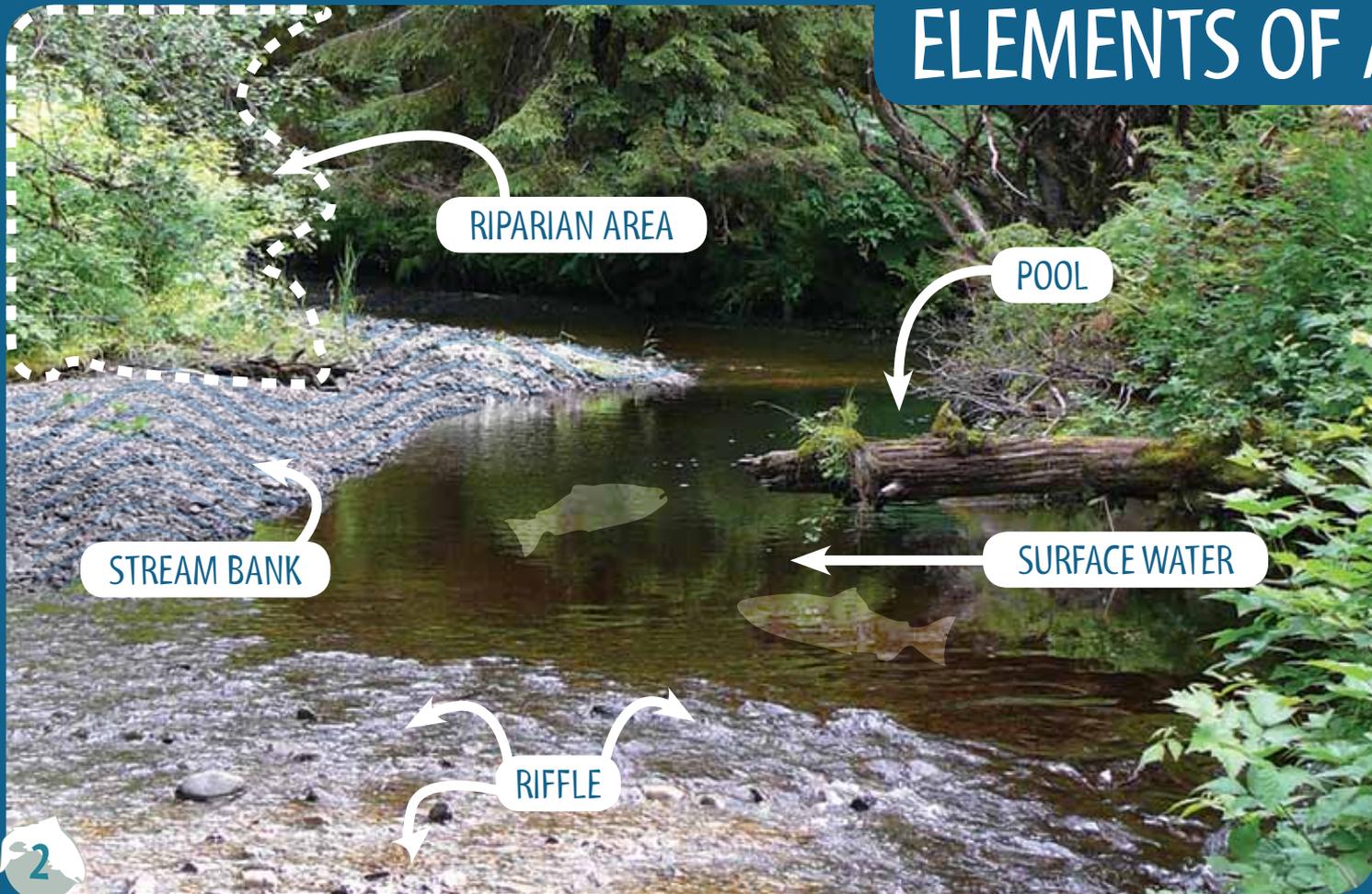
PROTECTING CLEAN WATER AND SALMON HABITAT IN JUNEAU

There are hundreds of salmon streams in the City and Borough of Juneau (CBI). If you are reading this brochure there is a good chance you live close to one of them. Stream side landowners in Juneau play a critical role in protecting and maintaining the high quality of water and habitat our salmon and wildlife populations need to thrive.

Being a 'stream-friendly' landowner means making choices that minimize impacts to our creeks, streams, rivers and lakes. The pay-off for being 'stream-friendly' is clean drinking water, healthy and functioning fish and wildlife habitat, and sustained fish and wildlife populations. The purpose of this guide is to offer home and yard care tips, and resources to landowners to help maintain the health of Juneau water ways.



ELEMENTS OF A SALMON STREAM



Habitat means 'home', and a healthy home for salmon is a stream with pollution-free water and a variety of environments important to different life stages of fish and the organisms they depend on for food.

Salmon need water with certain characteristics, such as: the right amount of dissolved oxygen to support aquatic life, a correct balance of hydrogen ions (i.e. pH) and nutrients, and cool temperature. Water quality in our local streams can be degraded by pollutants that enter into streams from homes, yards, and driveways. These pollutants include chemicals, fuels, oils, bacteria, sediment, and fertilizers.

HERE ARE WAYS YOU CAN HELP PROTECT WATER QUALITY IN OUR STREAMS

Store oil, grease, household chemicals, pesticides, and other potential contaminants in secure containers and dispose of them properly at CBJ's Household Hazardous Waste events. To see when these disposal events occur throughout the year visit the CBJ website: <http://www.juneau.org/pubworks/hazardwaste.php>.

Put dog waste, grass clippings, garbage, ashes, and yard trimmings into your garbage can and not into streams, ditches, or areas that drain into local stormwater systems.

Snow from driveways and streets can contain sediment, de-icing chemicals, oil, and other pollutants harmful to streams. Store snow away from the stream, preferably on grassy areas where pollutants are filtered from the melted water before it flows into a stream.

Keep the stream and its banks free of garbage and debris.

Salmon use different types of in-stream habitats during their life-cycle. When salmon are young they need safe, slow places to hide from predators, such as undercut stream banks or small pools. When it is time to head out to sea, young salmon need clear water and consistent passage down the stream channel. Adult salmon need gravel free of fine sediments to safe-keep their developing eggs. Habitat quality in our local streams can be degraded by activities that change or impact stream banks and stream flow.

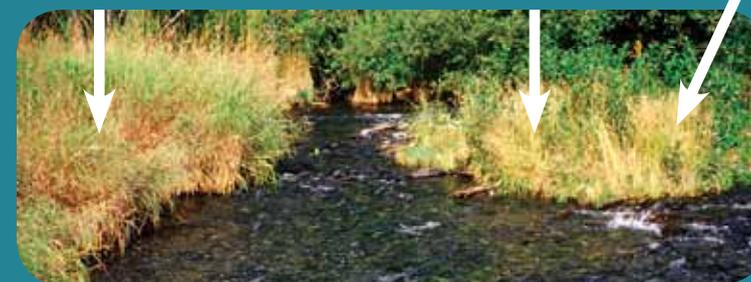
AS A LANDOWNER, YOU CAN HELP PROTECT SALMON HABITAT IN OUR STREAMS BY:

- Not obstructing the flow of a stream or altering a stream channel or banks.
- Maintaining stable and naturally vegetated stream banks.
- Keeping bikes, ATVs and other vehicles out of the stream and off stream banks.
- Keeping stream banks and water free of garbage and debris.

RIPARIAN ZONES AND BUFFERS

Riparian zones are areas where water and land meet, such as stream banks and lake shores. Riparian zones serve several functions to maintain healthy water systems including: providing cover for fish to avoid predators, stabilizing stream banks, filtering sediment to maintain salmon habitat, and supplying food and nutrients important for fish and other aquatic organisms.

In urban areas stream buffers, or setbacks, are corridors of limited use or development adjacent to streams. They are often established to ensure the values and functions of riparian areas are protected for the benefit of wildlife and landowners. Buffers not only help maintain good quality salmon habitat, but also help prevent streambank erosion by retaining vegetation to hold soil in place. In addition, they may provide added protection to homes and property in the event of floods—structures that are separated from streams by a vegetated buffer are far less likely to be inundated by high flows than those located close to a stream.



WHAT SIZE BUFFER IS RIGHT FOR YOUR PROPERTY?

VEGETATION AND RE-VEGETATION OF RIPARIAN BUFFERS

Salmon-friendly riparian buffers are established in two ways: you can leave your natural vegetation in place and avoid disturbing it, or you can revegetate bare buffers with native plants and trees.

The easiest way to buffer a stream from pollution and erosion is to simply leave a wide swath of the original vegetation along your streambank. Revegetating your buffer is more labor intensive and costly. You will need to check with the CBJ to see what actions are allowed in your buffer for planting vegetation. Check to see if you need a permit and double check your property boundaries. Make a planting plan and use only native plants to revegetate your buffer. For more resources, assistance, and information on re-vegetating riparian buffers, visit the "Landowner Resources" page at our website at www.juneauwatersheds.org

6



The CBJ requires landowners living next to a salmon stream to site all structures at least 50 ft. from the water, and leave a 25 ft. buffer zone between the lawn/yard and stream where no vegetation is removed or disturbed. That is the bare minimum requirement for riparian buffers on salmon streams in Juneau, though more ecologic value is gained with each additional foot of buffer width.

For more information about invasive plants in Juneau, visit the Juneau Cooperative Weed Management website at www.juneauinvasives.org

NATIVE PLANTS VS. INVASIVE PLANTS

When constructing a riparian buffer native plantings are an important component. Native plants are plant species that evolved naturally in a region and were not introduced by human contact. Once established, native plants require less maintenance than other ornamentals and they mimic natural streamside habitat. Listed below are just a few that are hardy, attractive, and naturally suited for the Southeast Alaska floodplain habitat found in Juneau.

SMALL TREES AND SHRUBS:

RED OSIER DOGWOOD
DIAMOND LEAF WILLOW
PACIFIC WILLOW
SITKA WILLOW
BARCLAY'S WILLOW
HIGH BUSH CRANBERRY
SALMONBERRY

LARGE TREES:

BALSAM POPLAR-COTTONWOOD
SITKA SPRUCE
WESTERN HEMLOCK

GRASSES & SEDGES:

BLUEJOINT REEDGRASS
TUFTED HAIRGRASS "NORTRAN"
RED FESCUE
SITKA SEDGE
WILD FLAG

Invasive weeds are becoming more problematic in Juneau. Defined as non-native plants with the ability to displace native species, invasive weeds mature early, grow fast and spread hardy seeds that survive over time in the soil. Invasive weeds can cross-pollinate with local plants and in some cases alter the soil itself. Their ability to out-compete native plants for water and nutrients can threaten our local fish and wildlife habitat.

One of the primary ways invasive weeds have been introduced to Southeast Alaska is through improper gardening and landscaping practices. As a landowner, you can help reduce the spread of weeds by:

Learning about native and non-invasive alternatives to plant in your garden

Being diligent about checking around purchased starts as soils imported from other areas may contain weed seeds.

Avoiding "wildflower" seed mixes, which often include nonnative and/or invasive species.

Pulling or spraying weeds in your yard before they produce seeds.

Not sharing unfamiliar plants with neighbors.

7



STREAM-FRIENDLY LAWN CARE

Although lawns are somewhat rare in Juneau, if you do own a lawn your grass can trap pollution and sediment if it's not cut too short. High grasses, shrubs, and trees slow runoff as well. A few simple steps can help prevent the input of pollution into our salmon streams:

- ✓ Allow your lawn to grow just an inch or two higher than normal between mowing.
- ✓ Put a barrel under gutter spouts to catch and re-use rainwater.
- ✓ When washing the car, do it on a grassy surface rather than on your driveway.
- ✓ Choose permeable paving or gravel for driveways.
- ✓ Use organic fertilizers, and apply them sparingly because even chemical-free varieties can leach nitrogen, phosphorus, and other nutrients to streams and lakes.



Failed or inadequately maintained septic systems can cause serious pollution problems in salmon streams, and may be a public health hazard as well. According to the Alaska Department of Environmental Conservation, Division of Water (ADEC), landowners who are not on the CBJ sewer system need to regularly maintain their septic systems. ADEC also suggests that you use water wisely so you do not overload the system, inspect your system annually and pump your tank regularly. Here is a list of items that should be kept out of your septic system:

- | | |
|----------------------|--------------------------|
| ✗ COFFEE GRINDS | ✗ SANITARY NAPKINS |
| ✗ TAMPONS | ✗ PAPER TOWELS |
| ✗ DENTAL FLOSS | ✗ PAINTS |
| ✗ CIGARETTE BUTTS | ✗ VARNISHES |
| ✗ DISPOSABLE DIAPERS | ✗ THINNERS |
| ✗ CONDOMS | ✗ WASTE OILS |
| ✗ KITTY LITTER | ✗ PHOTOGRAPHIC SOLUTIONS |
| ✗ FAT, GREASE OR OIL | ✗ PESTICIDES |

SEPTIC SYSTEMS

LOCAL GUIDELINES FOR STREAM SIDE DEVELOPMENT

There are specific rules and regulations for developing land near salmon streams. If you are planning construction or re-development adjacent to a salmon stream, it is up to you to understand the regulations and permit requirements for your development. For more information on CBJ regulations and requirements, call the CBJ Permit center at (907) 586-0715.

KEY REGULATIONS AND PERMIT REQUIREMENTS FOR STREAM SIDE DEVELOPMENT, INCLUDE BUT ARE NOT LIMITED TO:

Buffer Zones: Landowners must retain a 25' undisturbed buffer zone along all salmon streams and must site all structures at least 50' ft. from the water.

Waste water Discharges: You cannot discharge grey water, water contaminated with human waste, into a salmon stream without a permit. For waste water permits, contact the Alaska Department of Environmental Conservation at 907-269-6285

Wetland Permits: Section 404 of the Clean Water Act requires approval prior to discharging dredged or fill material into the waters of the United States. For wetland fill permits, contact the US Army Corps of Engineers at 907-790-4490.

IF YOU PLAN TO DEVELOP YOUR STREAM SIDE PROPERTY, PLEASE USE BEST MANAGEMENT PRACTICES (BMP'S) FOR YOUR DESIGN, CONSTRUCTION AND DEVELOPMENT. THESE BMPS INCLUDE:

Have a sediment, erosion or storm water plan in place before construction.

Have extra erosion control materials on hand for sudden needs including silt fencing, straw bales, and absorbent storm water socks or filters.

If you need to excavate any vegetation, keep it intact and replant it post-construction where possible.

For more information, refer to the CBJ Stormwater BMP Manual available at the CBJ website:
http://www.juneau.org/engineering/SW_BMP/Guidance_Manual.php

BEING STREAM-FRIENDLY

Five streams in Juneau are classified as 'impaired' by the State of Alaska including Duck, Jordan, Vanderbilt, Lemon and Pederson Hill Creeks. Impairment status means that the water quality and fish habitat in these streams are degraded by garbage, sediment, fecal matter, and other pollutants. Unfortunately, most of these impairments are due to poor development practices and human activities.

When you choose to be 'stream-friendly' you are actively working to improve our impaired waterbodies and keep our salmon streams healthy. Working together, we can keep salmon in our local streams for future generations. For more information on this brochure or other water quality, habitat or watershed concerns, please contact the Juneau Watershed Partnership at (907) 586-6853 or email us at jwp@alaska.net.

JUNEAU WATERSHED PARTNERSHIP

175 South Franklin St., Suite 424
PO Box 20649
Juneau, Alaska 99802
(907) 586-6853

**CITY AND BOROUGH OF JUNEAU-
PERMIT CENTER**

Offices:
230 South Franklin Street
4th Floor - Marine View Center
Mail:
155 S. Seward Street
Juneau, Alaska 99801
Telephone: (907) 586-0715
Telefax: (907) 586-3365
Inspection Hotline: (907) 586-1703
e-mail: Permits@ci.juneau.ak.us

**JUNEAU FISH AND WILDLIFE
SERVICE FIELD OFFICE**

Habitat Restoration Program
3000 Vintage Blvd., Suite 201
Juneau, Alaska 99801
(907) 780-1180

**ALASKA DEPARTMENT OF
ENVIRONMENTAL CONSERVATION
DIVISION OF WATER**

555 Cordova Street
Anchorage, Alaska 99501-2617
Telephone: (907) 269-6285

GLOSSARY

HABITAT:

A place where an organism or population lives.

IMPAIRED WATER BODY:

A water body that does not meet the State of Alaska's water quality standards.

INVASIVE PLANTS:

A non-native plant with the ability to displace native species.

NATIVE PLANTS:

Plant species that evolved naturally in a region and were not introduced by human contact.

POLLUTANT:

A substance that contaminates air, water, or soil.

RIFFLE:

A short, relatively shallow and coarse-bedded length of stream over which the stream flows at higher velocity and turbulence than it normally does.

RIPARIAN ZONE:

An area where land and water meet.

REFERENCES

Alaska's Wild Salmon. Alaska Department of Fish and Game. 2002
Landowners Guide to Fish Habitat Conservation and Restoration Practices. Compiled by William J. Hauser and Edward W. Weiss. Alaska Department of Fish & Game, 2001.
Rivers, Banks and Buffers Series- # 1 and 8 Connecticut River Joint Commission. 2000
Streambank Revegetation & Protection: A Guide for Alaska. By Jeanne Walter and Dean Hughes. Alaska Department of Fish & Game, rev. 2005.
Stream Care- A Guide for Property Owners in the Clark Fork Watershed Clark Fork Coalition. 2008



“Working Together for Healthy Watersheds”

Juneau Watershed Partnership

175 S. Franklin St., Ste 424

PO Box 20649

Juneau, AK 99802

(907) 586-6853

www.juneauwatersheds.org

DECEMBER 2010
DESIGN BY T. PETERS