

Stormwater Pollution

A HEALTHY WATER GUIDE

Stormwater run-off threatens our shared resources

Down the storm drain, into our waterways: As rainwater runs through our town and down our streets, it collects sediment, spilled oil and gas, litter, and other pollutants, and carries them directly into local bodies of water, including Odiak Pond and "Million Dollar" Eyak Lake. This polluted run-off harms fish and wildlife populations, particularly salmon eggs and fry. It can kill native vegetation, contaminate drinking water supplies, and make recreational areas unsafe and unpleasant.

All across the country, polluted

stormwater run-off is recognized as the number one threat to water quality.

Stormwater is the result of precipitation from rain and snowfall events that is unable to percolate into the ground and thus runs overland or over hardened surfaces.

Non-point source (NPS) pollution comes from such diffuse sources as rain, melting snow, and stormwater flow from rooftops, parking lots, ditches, and streets all over the community. The flowing water picks up pollutants that cannot be readily

traced to a single source.

"The best ways to reduce NPS pollution and its effects on local water bodies and habitats is use of Best Management Practices (BMPs) and community-wide involvement" (Jacob Engineering, Cordova Design Study Report, June 2009).



DO YOU KNOW WHAT'S IN YOUR WATERSHED?



Keeping water clean is an investment in our future:

We are all stakeholders in the quality of our waterways and bodies of water. Clean water means a secure future for our salmon, for our community, and for our kids.

Stormwater run-off harms our watershed

- Contaminants in water affect all aquatic organisms.
- Increased levels of harmful bacteria in water pose a health risk to animals and to humans.
- Sediment clogs fish gills, and degrades spawning and rearing habitat.
- The functioning of aquatic ecosystems is damaged and biodiversity is reduced.
- Nutrient-fueled weed growth reduces dissolved oxygen levels crucial to fish (especially salmon and trout) and other aquatic animals.
- Left-over winter road sand washes into and fills ponds and streams
- Trash in waterways creates an eyesore.
- The health and fertility of fish populations is reduced.
- Drinking water can become contaminated, from pet waste and from leaked vehicle fluids and fuel tank leaks.

Community Action for a Renewed Environment: CARE

The Native Village of Eyak was awarded a competitive Environmental Protection Agency (EPA) grant from the CARE program in October 2010 to identify, prioritize, and rank risks on all environmental concerns within our community and our environment.

Through CARE, our local organizations -- which include nonprofits, businesses, schools, and governments -- created a partnership whose goal is to implement solutions to reduce the release of toxic pollutants in our community and minimize our exposure to them.

CARE educates and supports communities by helping us assess the pollution risks we face.

Since the first workshop held in January 2011, community members brought forth over 50 concerns. After several workshops of prioritizing and risk

ranking, we narrowed our large list of concerns to the sources of pollutants that place the highest risk and pressure on the environment, to health, to sensitive populations (children and the elderly), and urgency for action.

Top areas of concern identified for action are Cordova Harbor pollution, solid waste and illegal dumping, stormwater pollution, leaking and old fuel tanks and unreported spills.

We hope to educate and inspire Cordovans and our visitors to follow and read our education outreach on these endeavors. If we all do our part to lessen impacts on our resources, Cordova will be cleaner, healthier, and more sustainable. As Jim Nygaard, former Cordova School District Superintendent, said at one of our workshops, before Cordova becomes a sustainable community, we need to become a responsible one.

Check your oil tank

The Native Village of Eyak has a Brownfield Tribal Response Program, which can assist you with spill prevention, spill reporting, and spill response, tank maintenance and inspections. Spill prevention for residential heating oil tanks can be achieved by proper care of your home heating oil tank, support, lines, and furnace. If you would like a free home heating oil tank inspection and tank safety literature please call NVE at 424-7738.

By law, any oil spill greater than one gallon must be reported to ADEC. Fuel spills can cost tens of thousands of dollars to clean up. There are also environmental costs because diesel is toxic to many life forms in all environments. It can kill young

fish and insect larvae in freshwater streams. It can kill fish and shellfish in near shore marine life, and can coat bird feathers and sea otter fur. Fuels can persist and bioaccumulate in the environment for many, many years. Bioaccumulation is when an organism like a clam absorbs or ingests a pollutant, and the pollutant gets passed on when a human or animal eats the clam.

Please do your part to prevent spills by inspecting your tank. Report any spills immediately to ADEC Spill Prevention and Response at (907) 269-3063 or 1(800) 478-9300.



Brought to you by the Native Village of Eyak CARE program

CARE PARTNERS:
NATIVE VILLAGE OF EYAK
CITY OF CORDOVA
COPPER RIVER WATERSHED PROJECT
CORDOVA SCHOOL DISTRICT
CORDOVA ELECTRIC CO-OPERATIVE
EYAK CORPORATION
PRINCE WILLIAM SOUND SCIENCE CENTER
ALASKA SEA GRANT MARINE ADVISORY PROGRAM

Best Management Practices to

CONSTRUCTION SITES:



When land is cleared for construction, large amounts of dirt and grit are washed away from the exposed ground. This dirt then ends up as coarse sediment in waterways, where it can reduce dissolved oxygen levels, smother trout and salmon eggs, clog fish gills, destroy habitat for insects (a food source for fish), and cover prime spawning areas.

PLAN BEFORE YOU BUILD:



- Develop a site management plan for proper drainage (keep clean water off the site, and treat water on the site by filtering before releasing it from a construction site) and think about how you can use Best Management Practices (BMPs), such as:
- Identify any site features (waterways, vegetation, steep slopes) that shouldn't be disturbed during construction.
- Stabilize areas of exposed dirt by leaving vegetative buffer areas in place or by creating new ones.
- Protect storm drain inlets by filtering run-off before it goes into a drain.
- Phase different construction on different areas of the site to minimize the amount of loose soil exposed at one time.
- Landscape with materials like gravel, ground covers, and trees, which will soak up rainwater and rather than letting it run off.

FIND OUT MORE:

www.state.ak.us/dec/water/wnpspc/stormwater/stormwater.htm
http://cfpub.epa.gov/cfpub.epa.gov/npdes/stormwater/menuofbmps/con_site.cfm

LITTER:



Cordova's 7th graders collected 1,147 pieces of trash at Odiak Pond this spring. Storm water runoff is responsible for many of the smaller and lighter pieces of garbage that end up in the water—if it's on the ground, it ends up in the sound! Litter can damage aquatic ecosystems and potentially kill fish and other aquatic animals.

PET WASTE:



Cordova's 500 dogs produce an estimated 162 pounds of waste every day (1/3 lb. per dog) — that's more than a ton in less than two weeks. And it takes one year to degrade. When that waste is left on the ground, it ends up on our shoes and in our waterways, and poses a serious health threat to humans and is a major contributor to the contamination of our waterways.

Pet waste can transmit hookworms, ringworms, tapeworms, roundworm larvae, salmonella, E. Coli, and fecal coliform bacteria. Transmission of these pathogens can occur when kids and pets play out of doors, and when people and pets come into contact with contaminated waterways.

In addition to causing illness in humans, dog waste in water bodies fuels the growth of algae. Excessive growth of aquatic vegetation and its eventual decomposition both consume oxygen, a process that reduces the oxygen available to fish and other aquatic animals. Salmon and trout depend on high levels of dissolved oxygen and are particularly sensitive to small reductions in oxygen.

SCOOP THE POOP:

Collect your pet's waste with a bag and dispose of it in trash receptacles.

Pet waste bag dispensers can be found at the following locations:

Mt. Eyak Ski Hill • Shelter Cove • Skater's Cabin • Nirvana Park • Library/Museum Building
Breakwater Trail trailhead • South Harbor (ramp at float) • Heney Ridge trailhead • U.S.D.A. Forest Service building
• Hollis Henrichs Park (gazebo) • AMHS Ferry Terminal • Cordova House (light pole in front)

WHAT YOU CAN DO: IT'S EASY TO SCOOP

- 1: Carry a plastic bag with you when you take Spot for a walk. Re-using old grocery bags or a newspaper delivery bag works well.
- 2: Using the bag like a glove, you can pick up the waste, turn the bag inside-out around the waste, and seal the bag by tying a knot.
- 3: Dispose of the bagged waste in a trash can

FIND OUT MORE:

<http://copperriver.org/programs/scoop-the-poop/clean-streets.-clean-streams.-clean-shoes>



Have you seen any of the stormwater around?

SNOW:



Snow is stormwater, too. When it melts and drains away, it carries sand into local waterways just like regular stormwater.

PLANTS:



Greener yard, cleaner watershed? Growing locally adapted plants, and other such things, can help filter and filter rather than becoming storm water run-off.

ANIMAL CARCASSES:



Animal carcasses are also a health hazard when improperly disposed. Carcasses of domestic and other wild animals that come into contact with the water can also cause car accidents if an animal (domestic or wild) is on the road. Field-dress harvested animals and leave the bones, hide, and other parts in the water. Carcasses can also be disposed of in landfills, or by burial or cremation. Carcasses near areas frequently used by other people and animals are a health hazard.

IF WE ALL WORK TOGETHER TO MAKE SURE ONLY RAINWATER GOES INTO STORM DRAINS AND CATCH BASINS

decrease stormwater pollution

PETROLEUM STORAGE TANKS:



In the event of a flood, your tank could be carried away and its contents could be released directly into floodwaters. Tanks can also be a hazard if they leak or spill — 1 drop every 10 seconds adds up to 60 gallons a year, and the released petroleum can contaminate groundwater and waterbodies, disrupt septic systems, cause problems in and around the home, and devalue property.

CHECK YOUR TANK:

If tanks are on elevated structures, ensure that structures are stable and secured to solid ground with earth anchors or long rods. Tanks should be attached to their stand or cradle with two steel bands.

Fuel tank inspections should be done twice a year, before and after winter. Be sure the tank is protected from falling ice and snow from the roof. Look for common causes of leaks and spills, including corrosion, overfilling, damaged pipes and connections, and support failure.

If any spills have occurred, report them to the Alaska Department of Environmental Conservation's Spill Prevention and Response at (907) 269-3063 or 1(800) 478-9300.

FIND OUT MORE:

<http://dec.alaska.gov/spar/perp/hho.htm>

DON'T BE TRASHY



Walking around eating a candy bar? When you're done, carry the wrapper to a trash receptacle rather than simply tossing it on the ground. Do the same for other small pieces of trash that you may deal with during the day. Cigarette butts are trash too -- they do not decompose -- so put them in appropriate trash containers.

Always dispose of all trash properly. Secure trash containers so that wind or foraging animals can't scatter their contents on the ground.

DISPOSE AND RECYCLE AT THE APPROPRIATE LOCATIONS:

- Aluminum cans at the Post Office and the Baler*
- Plastics (1 & 2; please remove lids) and cardboard at the Baler*
- Electronics at the Native Village of Eyak**
- Clothes at the Salvation Army
- Gill nets at the Harbormaster or Baler*

* City Baler open M-F 9 a.m. - 3 p.m. year round, additional hours on Sat., April - August.

** Contact Native Village of Eyak for up-to-date drop-off info (424-7738)

HOUSEHOLD HAZARDOUS WASTES:



Used oil, antifreeze, fuel, unwanted paint, solvents, pesticides, herbicides, and adhesives are all considered hazardous waste and must be disposed of properly. Never dump them or any other hazardous materials on the ground or down household or storm drains. Also keep an eye out for rainbow puddles or other wet spots under your car—is it leaking? One quart of motor oil entering the watershed through a drain can contaminate 250,000 gallons of our water.

DISPOSE OF HAZARDOUS WASTE AT THE APPROPRIATE LOCATIONS:

- Used oil at the collection area behind the Harbor Master's office or near the bathrooms in the old harbor.
- Hazardous materials to the City Baler* on Whitshed Road.
- Car Batteries behind Napa
- If your vehicle is leaking, place oil-absorbent pads under the leak until the problem is fixed. Kitty litter can also be used to catch or clean up hazardous spills and then disposed of in garbage containers.

* City Baler open M-F, 9 a.m. - 3 p.m. year round, additional hours on Sat., April - August.

WHAT DO CORDOVA'S 7TH GRADERS HAVE TO SAY?

"Trash all over Cordova gets into the pond by wind or rain. See a piece of trash? Pick it up! Don't let your garbage fall out of your vehicle or home, because would you want to live in garbage? Pick up after yourself, help save Odiak Pond, for the sake of our economy, fish, and a beautiful park."
- Lauren Phillips

"You can help stop this. Instead of ignoring the trash cans on First Street use them! Whenever you litter the wind and water flow carries it all the way to Odiak Pond or our other waterways."
- Joey and Aaron

"If every Cordova citizen chipped in, just by doing things like making sure your trash cans are closed and picking up trash when you find it... we could help the salmon survive in a healthier habitat."
- Isabell Reese

You noticed these signs of water pollution in town?

ODIAK Pond

way, it carries grime, street trash, and r. Use sand, salt, and other de-icing materials sparingly!

adapted, low maintenance native plants, planting trees, creating techniques are effective methods by which rain water is absorbed off.

properly disposed of, potentially transmitting disease to humans, pets, decomposing carcasses. Carcass remains dropped off around town (wild) is crossing the road to check out the goods. s, and guts far from roads or foot paths (at least 200 feet). Carcasses nation. Don't dump carcasses into waterways and don't ever leave and pets!

SINS, WE CAN ALL HELP TO KEEP OUR STREAMS, RIVERS, AND OCEAN WATERS CLEAN AND THRIVING!

Healthy water starts with you!



Can you circle all the sources of stormwater pollution?



1. Dirty water from washing car.
2. Dirt being swept into a storm drain.
3. Driver throwing litter into the street.
4. Pet waste left on the ground.
5. Uncovered truck load.
6. Trash on the ground from an overflowing garbage can.
7. Grass clippings and leaves being swept into a storm drain.
8. Hosing down the driveway.
9. Recyclables left on the ground.
10. Exposed soil at construction site.
11. Paint and chemicals being poured into the storm drain.
12. Leaking drum of used oil.
13. Fluids leaking from the car at the gas station.
14. Muddy tire tracks.

Cordova stormwater receiving waterbodies

The City of Cordova has nine sub-watersheds. Each was analyzed for major possible non-point source (NPS) pollution sources and probable contaminants in 2008. The watersheds feed three primary receiving bodies directly affected by the City's activities:

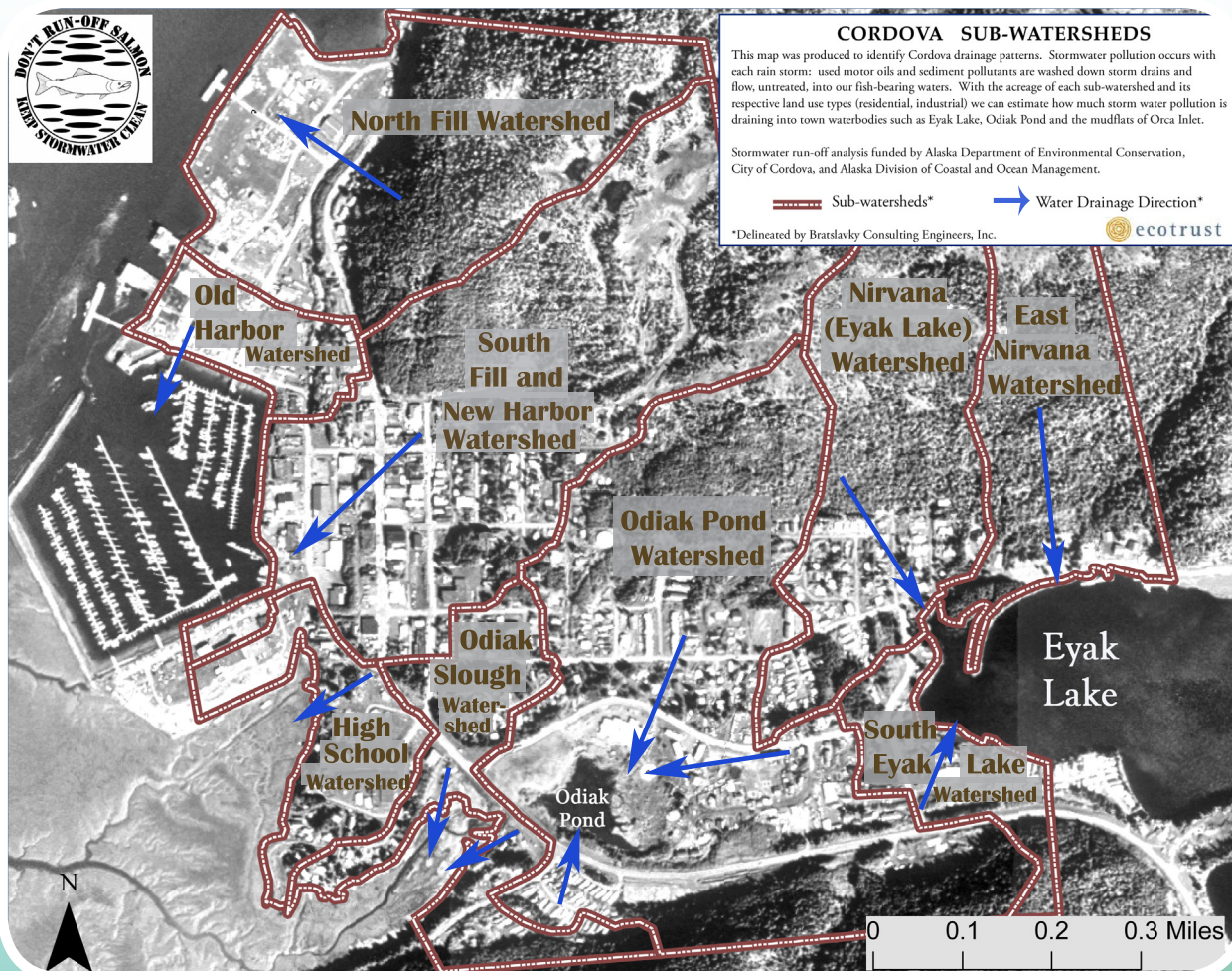
Odiak Pond is the receiving water body for 139 acres. Approximately 60 percent of this sub-watershed is developed. Odiak Pond shows signs of contamination. The heavy growth of foreign grasses in the pond indicates a damaged or destroyed wetland system (Bratslavsky Engineering, 2008). Heavy pollutant loads, such as salt, metals, and other stormwater-related pollutants usually cause this type of destruction. Sources of pollution for Odiak Pond include the Cordova hospital parking lot, influent stream near the highway, old landfill, snow storage sites, and NPS pollution (Jacobs Engineering, 2009).

Eyak Lake: the west end of Eyak Lake has stormwater discharge outfalls from three sub-watersheds, an area of 123 acres. Based on site work, background data collection, and discussions with community members, Jacobs Engineering identified these concerns as potential sources of pollution: roadway and municipal run way erosion, Nirvana Park storm water outfall, construction, snow storage, and additional NPS issues (dog waste, abandoned vehicles, fuel tanks, and sediment). An oil and grit separator was installed at the Nirvana Park outfall in June, 2011 to treat stormwater before being discharged into the lake.

Orca Inlet is the receiving marine water body for about 265 acres in Cordova, 63 percent of which is developed. This drainage area has roughly 2.2 miles

of shoreline with outfalls and watershed drainage, including culverts, streams and overland flow. "The primary concerns for the area are sediment, debris,

and petroleum loading" reports Jacobs Engineering (June 2009).



FOR MORE INFORMATION ON
STORM WATER, CONTACT:

COPPER RIVER WATERSHED PROJECT
P.O. BOX 1560 | CORDOVA, AK 99574
(907) 424-3334

FOR MORE INFORMATION ON
FUEL TANK INSPECTION OR REPAIR, CONTACT:

BROWNFIELD/CARE COORDINATOR
NATIVE VILLAGE OF EYAK
P.O. BOX 1388 | CORDOVA, AK 99574
(907) 424-7738