



Cleanup Review

Summer Issue 2011 Vol. 20, No. 1

The Durable, Potent Cigarette Butt

By Charlene Brooks, Water Recreation Specialist (Conservation Corps Minnesota)

“Cigarette butts are the most common form of plastic litter on the beaches of the U.S. and worldwide”.- Bulletin of American Littoral Society

When people think of cigarette butts, they don't think of plastic. However, they are actually made of cellulose acetate, a slowly-degrading plastic. Cellulose acetate fibers are white filaments, thinner than sewing thread, tightly compressed to create a filter as dense as a cotton ball. The first cork-colored filter to use cellulose acetate was developed in 1936 and introduced to the market in



Photo Credit: Phillip Morris

Anti-Litter Poster

1952. This material has been the industry standard ever since for filtered cigarettes. Asbestos had previously been used as a filter and was discovered to be hazardous. Cellulose acetate filters are promoted to improve the quality and taste of smoking. Of all cigarettes produced in the U.S., 98% are now produced with filter tips.

How do cigarettes affect public waters?

In addition to undermining the aesthetic value of our shorelines and public waters, cigarette butts leach chemicals into the water. Some of these chemicals include arsenic, formaldehyde, and benzene. These chemicals poison plankton, including water fleas, a major source of food for

small water predators.

Researchers have found that two cigarette butts are enough to kill all water fleas in a one gallon container. With fewer cigarette butts, plankton experience a change in swimming patterns and are weighed down by dark deposits left by the cigarette butts.

Water fleas are important to aquatic environments, because they are a food source for higher life forms, such as fish. The death of water fleas thus disrupts the food chain, which ultimately impacts humans.

Moving beyond water fleas, biologists have discovered in the intestines of many fish species the remains of cigarette butts that have been accidentally mistaken for food. These cigarette butts accumulate in fish stomachs, thus creating digestive disorders.

(Continue on page 2)

New Beginnings Program finds bicycle during May 10 cleanup!



Photo Credit: Sue Schmidt

This year, Lina and Aimee, were 2 of 40 volunteers who cleaned East Creek in Chaska. Since 2007, New Beginnings has collected 485 pounds from the creek.

(Continued from page 1)

Worldwide, an estimated 4.3 trillion cigarette butts float into lakes, rivers, and coastal waters annually. Because of their buoyancy, they rapidly wash into the storm water drains each time it rains.

Sources: Cigarette Butts: Litter. <http://www.longwood.edu/cleanva/cigarettelitterhome.html>. <http://www.cigarettes-online.com/viceroy-filters.html>, <http://www.fas.usda.gov/tobacco/circular/1999/9908/tableb.pdf>

Cigarettes Impact Wildlife



Fish accidentally eat cigarette butts found in their habitat.

What can you do?

Cigarette butts can easily get misplaced, especially from cars. Help educate your family and friends about how the streets connect to our local waterways through stormwater drains. Join a shoreline cleanup and pick up what floats in our public waterways. Your efforts could even focus upon the cigarette filter, the most common item found in cleanups worldwide (Center for Marine Conservation).

New Adopt Groups 2011

Fergus Falls Salvation Army Youth Program

East River Rats

Richmond Thundering Herd 4-H Club

Valley View Middle School (Edina)

Minnesota Steelheaders

Brokerbin.com

Rotaract of Austin, MN

Sota Home Brew Company

Clearwater Masons

Clearwater Outfitters

Madelia Sportsman's Group

Prairie Elementary (Worthington)

Creativity!

People grapple with the impact of trash in differing ways. We all ask "what difference does it make that trash accumulates on the landscape?" We ask, "does it linger?" Then we ask "why does it matter?" Finally we ask, "what can we do to help?" Beyond just removing them, some will want to process them in some way to make them a rallying point for better stewardship. Enter the artist and adaptive re-use.

Artists like Alexandra Guerrero took the next step with all of the cigarette butts she was collecting in her native Santiago, Chile. With the help of an environmental engineer, she has been able to take out 95% of the toxins. Achieving this level of purification allows her to use the clean butts safely in her fashion creations. Besides clothing, cigarette butts are used as the materials for displayed artwork and household goods, such as rugs.

Source: <http://www.treehugger.com/files>



Yard developed from cleansed cigarette fibers have been used to make clothing.



Cleansed filters have been developed into another art form.

Photo Credit: Scott Harben

Artist Credit: Alexandra Guerrero

Artist Credit: Jesus Bubu Negron

A New ~~Twist~~ On Cleanups: Stand-Up Paddleboarding

Many people desire the thrill of doing an on-the-water cleanup, but don't have a boat or canoe, or even a pair of waders. Perhaps you want to try stand-up paddleboarding or "sup" for your next cleanup. This quickly developing outdoor sport began in Hawaii. It uses a 9-12 foot paddleboard made of fiberglass, epoxy and traditional bamboo. Some paddleboards are constructed from a heavy plastic and are inflatable, thus easy to transport. Sup provides an effective, low-impact workout. Because of their stability in the water, using a sup is a great and fun way to assist an Adopt-a-River cleanup. Most boards have more than enough room to collect bags during a cleanup.

Some paddleboards provide more flexibility than boats and canoes in terms of storage and transportation. Sups have been classified by the U.S. Coast Guard as vessels, and riders are obliged to wear personal flotation devices, such as life vests. Concerning DNR regulations, they do not require a registration if under 9 feet in length. If the board is 9-17 feet long, it is considered a water pleasure vehicle and will need a permit. Initial DNR registration is \$31.50 for three years, and renewals are \$29.00. This boat registration needs to be adhered to the top surface of the board. See your local DNR office for more details.

“Stand-up paddleboarding is quickly gaining popularity, and there are amazing places to paddle throughout Minnesota. The DNR and its partners manage 4,400 miles of mapped routes. You can find maps, river level reports, outfitters, paddling clubs, etc. at www.mndnr.gov/watertrails”. - Erik Wrede (DNR Water Trails Program Coordinator)



Demonstrating the fine art of stand-up paddleboarding. Even during the winter!!

Alex Linnell Travels Entire Mississippi River by Standup Paddleboard

Alex is on the adventure of a lifetime. Starting at Lake Itasca on June 1, he is nearing completion of a fund-raising voyage for American Red Cross. It will put him in the record books as the first person to ever travel the entire 2,350 miles of the Mississippi by stand-up paddleboard. He is now passing the state of Mississippi and going strong. To follow his day-to-day progress, check him out at www.alexlinnell.com.

Q. Is a sup easy to balance?

A. Yes, if you can stand on a sidewalk, you can probably maneuver a paddleboard in mere minutes. They can be a useful devices for retrieving trash.

Celebrating the Significance of Water

HISTORICAL MOMENT: Draining the Great Oasis of Murray County December 15, 1913

Paul E. Nordell, Coordinator, DNR Adopt-a-River Program

In 1883, state law authorized county commissioners to establish and control ditches for water drainage purposes. By 1900, county ditches were being developed in southwestern Minnesota. It was the era of the State Drainage Commission (1897-1919) and the Department of Drainage and Waters (1919-1931). Eventually 4.7 million acres, or 50% of Minnesota's original wetlands, were drained for crop production. One example of the intensity of drainage was the ditching of the Great Oasis, five miles west of Lake Shetek in Murray County, between 1910 and 1915. Murray County Ditch 20 (Bear Lake Ditch) drained a cluster of four lakes and surrounding wetlands, covering 6,000 acres across almost 20 square miles of farmland.

The Great Oasis was a celebrated wildlife area known as Bear Lake Woods, an area where four lakes surrounded a wooded area, shielding it from the regular occurrence of wind-swept prairie fires. Before settlement, it supported an abundant fur-bearing habitat and a Native American population of up to 300 people. From 1834 to 1838 it was the site of an American Fur Company post operated by Joseph LaFrambois. Farming began there in 1866, and in 1899 the first drainage petition was filed by eighteen landowners adjacent to the four prairie lakes. Marshall Low, a farmer who stood to gain the most from the increased drained acreage, opposed the project. He preferred to entertain sportsmen and duck hunters who had hunting shacks on his lake-front property. Among those supporting the drainage was Charles Swan. He was tired of farming around a slough that flooded during the wet season and had thousands of black-birds devouring his grain the rest of the season. He hoped to expand his acreage from 160 to over 500 acres by ditching these lakes.

The last appeal opposing the ditch in the Minnesota Supreme Court was filed August 10, 1911.



Before the steam-powered dredge, bull ditching was a method of draining wet Minnesota prairie." The Swamp Angel Ditching Co. (1880-1910) used a 20-bull team to dig a ditch 3.5 feet deep and 10 feet wide.

Source: MN Hist. Soc. Negative 1761, circa 1900

On November 1, 1911 the court voted in favor of drainage. In the winter of 1911-1912, Forestal and Feyen of St. Paul shipped a giant barge on the Chicago, St. Paul, Minneapolis and Omaha Railroad to the nearest rail location, four miles to the south of the site, in Hadley. The barge was unloaded and pulled piece by piece by team and wagon to the lakes, where it was reassembled on the ice. The dredge was over 30 feet high, with a boom more than 40 feet moving the shovel up and down as it swung from side to side. The barge required a crew of 7 to 10 men, and consumed over 800 tons of coal during its first season. By October 1913, the lakes were completely drained, and on **December 15, 1913**, the ditch was formally accepted by Murray County as County Ditch 20.

For an update about current views on the topic of agricultural drainage, see <http://mnriver.org> and view "Minnesota Bound 5: Draining the Prairie for Food."

Sources: Draining the Great Oasis, by Janet Timmerman (1993) Southwest History Center, Marshall, MN; The Modification of the Wet Prairie in Southern MN (1969), Robert T. Moline, unpublished Ph.D. Thesis, University of Minnesota; www.bwsr.state.mn.us/wetlands/wca/history.html.

Creature Feature

BLUEGILL *Lepomis macrochirus*

Appearance & Personality

The bluegill is a colorful species of sunfish that is distinct from other pan fish because of its iridescent blue and purple cheek and opercle (gill cover). The rest of the fish is various shades of yellow, olive and dark blue. It is relatively small, ranging between 4-10 inches in length and weighing between 4 ounces and 1 pound. The bluegill is quite passive and not very shy of people. They may nibble pieces of ham and bread crumbs thrown on the water and may also nibble at moles on swimmers who may be lying quietly in shallow water.

Habitat

This fish can be found in every part of Minnesota. It has a wide distribution of habitat including ponds, lakes, and slow-moving streams. Beyond Minnesota, it can be found as far east as Maine and south to Georgia. Volunteers can improve the bluegill's habitat by protecting shorelines and submergent aquatic vegetation from disturbance. This includes trees that fall into the water along the shoreline. All life stages of the bluegill need submerged branches to find food and protection from predators.

Food

Besides attacking your hook, this carnivorous species likes to eat aquatic insects, small minnows, fish eggs and crustaceans. It may also eat algae when its preferred food is scarce.

Even though the bluegill is a predatory fish, it is a source of prey for larger Minnesotan fish like northerns, walleye, muskies and largemouth bass.

The Bluegill and Minnesota Fishing

Bluegill fishing is a popular sport for many Minnesota residents year-round, including the winter when it is popular among anglers who are ice fishing. Anglers suggest fishing with small bait, jigs and flies. If they can not be found in shallow water, bluegills are found over weed bed in 15 to 25-foot-deep water. Currently, the Minnesota daily catch limit is 20. The DNR and fishing groups are considering ways to relieve fishing pressure on the bluegill population in an effort to increase their size.

Photo credit: John Lyons



View of a bluegill from above.



A bluegill swimming in a shallow pond.



A bluegill caught through an ice-fishing hole.



On the Water

Featuring: Rush Lake Improvement Association, White Bear Lake Conservation District & Minnesota Steelheaders



Snowmobiles as well as all-terrain vehicles are of great assistance for lake ice cleanups.

Rush Lake Improvement Association (RLIA)

On March 5, the RLIA organized an ice cleanup with the help of the Flickabirds Resort and East Central Sanitation, who provided the dumpster. After a busy ice- fishing season, remnants of garbage and equipment were found on the ice.

The Rush Lake Improvement Association is a private, 400 family/business volunteer-based group that works to prevent the spread of pollutants and to provide a healthy environment for all users of East Rush Lake and West Rush Lake in Chisago County. The organization became very active in 1988 when the two lakes were connected by a watercraft channel to promote recreation.

The organization sponsors a yearly college sponsorship, in memory of Grant Allen, a young boy, who drowned in Rush Lake. Applicants are required to describe an experience they have had on the lakes.



White Bear Lake Conservation District & Mahtomedi Boy Scout Troops

During their March 5 cleanup on White Bear Lake, these organizations protected the lake by removing 135 pounds of garbage frozen into the ice. Through out the last 6 years, this organization in combination with several local Boy Scout troops have collected 1,300 pounds of trash!



The gathered cleanup force on White Bear Lake March 5.

Minnesota Steelheaders

On April 30, this new and very excited group tackled Sucker River, a trout stream, in Duluth. They collected 170 pounds of trash. The Minnesota Steelheaders is a volunteer group dedicated to the future of steelhead trout. This group, started in 2005, works to provide healthy habitat for trout and salmon in all the North Shore streams of Minnesota's North Shore of Lake Superior. They also offer high-quality information for fellow fly and drift anglers.



Steelhead member at their cleanup on the Sucker River

Adopt-a-River BULLETIN

Landmark for Big
River Journey Reached:
50,000 Students!

Big River Journey Student Artwork



Learn more about the Big River Journey art contest at nps.gov

The Big River Journey is an experiential learning opportunity combining field and classroom work. It encourages students to become better stewards of the Mississippi River. It will have served its 50,000th 4-6th grader this year. This program has included over 1,000 volunteers and worked with 180 different schools, primarily from the Twin Cities. Some have also been bussed in from elsewhere. The students spend time exploring river birds, waterfalls, otters, invertebrates, how to pilot a paddle boat, and the Adopt-a-River Crime Lab!

Cleanup Review is published by the Minnesota Department of Natural Resources for the Adopt-a-River Program in the Parks and Trails Division.

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mndnr.gov/adoptariver.

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*Don't forget to
send in your
purple reporting
cards (postage
paid) for the 2011
cleanup season!*





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Adopt-a-River

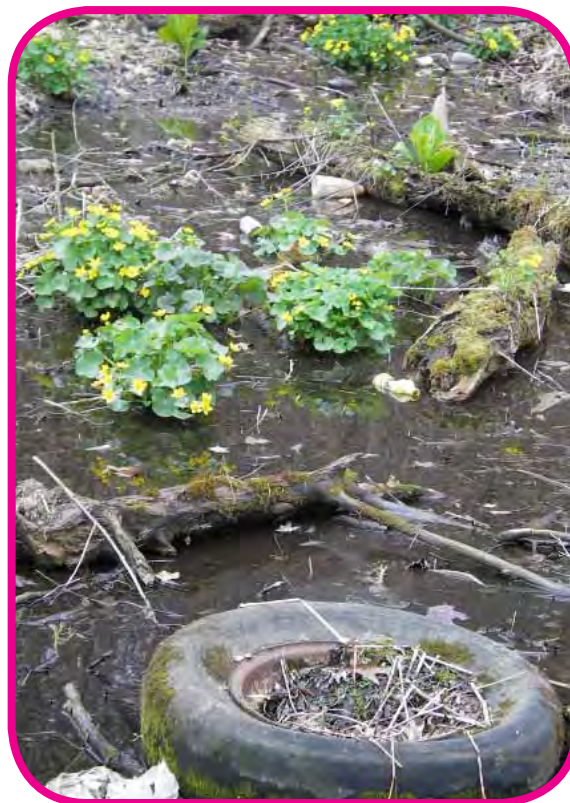
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**Thank you to our
Cleanup Volunteers!**

Marsh Marigolds (*Caltha palustris*) surrounded by tires in a spring-fed boggy area near of the Mississippi River in St. Paul. (May 2011).



CLEANUP STATISTICS: JULY 2011

3,059 cleanups - 84,917 volunteers - 5,958,023 pounds collected - 10,023 miles cleaned

(Since program began in 1989)