



# IROQUIOIS ENVIRONMENTAL NEWSLETTER

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## “The Kidneys of Mother Earth” Wetlands of Akwesasne

People recognize terms like “swamp”, “marsh” or “bog” as representing some sort of area containing water during at least part of the year, but unfortunately, a “wetland” often triggers images of mosquito-ridden, snake-infested, smelly areas where disease is rampant. As a result of these misperceptions, nearly half of the nation’s wetlands have been destroyed or degraded and converted for agricultural uses, housing, and industry.

Archaeological information indicates that Great Lake wetlands were utilized by the Paleo-Indians as early as 9500 B.C. By 5000 B.C., Native Americans were producing tools from wetland shells and bones. They also gathered edible wetland plants and seeds. During the Lake Archaic period, approximately 2000 B.C., a transition began from big-game hunting to an increased dependence upon wetland plants and animals.

By A.D. 1600, wetland products were used for

beverages and flavorings, remedies, ceremonial events, smoking, and dyes. Wild rice, an aquatic grain, was a staple of the diet at this time. Native Americans recognized the medicinal properties of at least 62 wetland species. Cures were known for nervous system, circulatory, and digestive illnesses as well as skin inflammations, eye wounds and ear disorders.

Wetlands are among the most important ecosystems on Earth! They are sometimes described as “the kidneys of Mother Earth” because of the functions that they perform in water and chemical cycles and because they function as the downstream receivers of wastes from both natural and human sources.

Wetlands contribute significantly to the diversity of life and ecosystems by providing habitat for plants, mammals, birds, reptiles, amphibians, fish and countless invertebrates. Loons build their nests on floating vegetation and waterfowl gorge on wild

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**IROQUOIS ENVIRONMENTAL NEWSLETTER**

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*The viewpoints contained in this newsletter are not necessarily those of the USEPA or the St. Regis Mohawk Tribe. The IEN encourages free and open discussion of all environmentally related issues. We encourage submission of letters, comments, and articles from our readers so as to promote a greater awareness among our people about environmental issues and to foster the free exchange of information, technology, and culturally relevant values of all Iroquois people.*

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## **BOATING QUESTIONNAIRE ENCLOSED FOR LOCAL RESIDENTS**

Enclosed with this newsletter is a green questionnaire asking local residents about their boating experiences on the St. Lawrence River. Cornell University is working with the St. Regis Mohawk Tribe Environment Division on the water level study of the St. Lawrence River, funded by the International Joint Commission. We are sending out the questionnaire because we would like to know about boating activities on the River and any problems local residents may be having with water levels. Information from this survey will help the International Joint Commission better understand the problems boaters face in this section of the River. If you do not boat on the St. Lawrence River, please answer just the first question and return the questionnaire (postage has been provided), so that we'll know how many people boat on the River.

### **Happy Trails**



The SRMT Environment Division would like to wish Shawn Martin a fond farewell as he takes on a new position as program manager of the Tribe's water plant. Shawn spent 9 years working at the Environment Division.

His dedication and professionalism in his capacity as Water Quality program manager is a true testament to the man, the myth, and the legend.



The Man



The Myth



The Legend

# News From the Tribe's Solid Waste Management Program

IN

Written by:  
**Laura J. Weber**  
**Director- Solid Waste Management**

This is an exciting time for the Tribe's solid waste program. We continue to provide curbside collection of garbage through the use of the Tribe's pay-as-you-throw program and operate the Tribe's recycling depot. In 2003, we collected 161 tons of garbage, 51 tons of mixed paper, and 25 tons of hard recyclables (glass, tin/aluminum cans, plastic bottles).



We are also gearing up for the grand opening of the Tribe's transfer station sometime this summer. Construction on the transfer station began in April 2003 and is about 85 % completed. The building is up and the Transtors were installed in January. The Transtors are two 53-cubic yard containers (shown at right) that will be used to hold garbage. Once the Transtors are full, they will be emptied and the garbage will be disposed in a landfill that will be located off the reservation. For more information about the Tribe's transfer station, please visit the following website link: <http://www.srmtenv.org/srmtswts.htm>.

The Tribe held its second annual fall cleanup in 2003. The Tribe's solid waste program hired three additional temporary workers and used two vehicles to collect white goods, scrap metal, and other bulky items from the community. The white goods and scrap metal were taken to a facility for recycling while the non-recyclables (83 tons) were disposed at local transfer station. A total of 38 refrigerators, 37 stoves, 53 washers, 30 dryers, and 46 hot water heaters were recycled.



We have also updated our website with lots of new information; please visit the following link: [http://www.srmtenv.org/sw\\_index.htm](http://www.srmtenv.org/sw_index.htm). The main page has current news for the solid waste program and this information is changed every month in order to provide you with the most current information. Please visit the website and email us any feedback that you would like.

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rice before beginning their long migration south. Giant muskies lurk under pond lilies in secluded bays and young smallmouth bass hide from predators under the cover of floating plants.

In Akwesasne, we have a precious aquatic resource termed the Snye Marsh Complex. The Snye Marsh Complex is a large wetland in the northeastern part of Akwesasne that extends from the St. Lawrence River as much as 12 miles inland from the Quebec portion of the community well into upstate New York. It was formed by a complex interaction between ice dams and St. Lawrence River flows.

The Snye Marsh Complex is a highly productive area, providing spawning habitat and shelter for fish, food and nesting areas for birds and building materials for beavers and muskrats. In a study



conducted in 2003, we found the Snye Marsh to contain various habitats and numerous inhabitants. Disturbing facts we found, however, are that because of the decreased natural flooding and scouring prevented by the St.

Lawrence Seaway and our own man-made disturbances, the Snye Marsh Complex diversity is declining.

The marsh can be managed in its natural state for environmental protection, for recreation and aesthetics and for the production of renewable resources.



Here are some applicable goals:

- Maintain water quality
- Reduce erosion
- Protect from floods
- Provide a natural system to process airborne pollutants
- Maintain a gene pool of marsh plants and provide examples of complete natural communities
- Provide aesthetic and psychological support for human beings
- Produce wildlife
- Control insect populations provide habitats for fish spawning and other food organisms
- Produce food; for example aquaculture
- Scientific studies

Community members are encouraged to contact the Environment Division if they would like to help protect their wetlands or would like to learn more about our available programs. International cooperation in wetland protection is needed as we are beginning to realize that wetland function knows no country, state or provincial boundaries.

If you would like a copy of the full report, *Wetlands of Akwesasne: Snye Marsh Ecological Preliminary Report*, you can visit our website and download the report at [www.srmtenv.org](http://www.srmtenv.org) or call our office at 518-358-5937 and ask for a copy.



IEN

## Thinking Big:

### Tackling Invasives in the Adirondacks

The Adirondack Park is big. Bigger in fact than Yosemite, Grand Canyon, Glacier, and Yellowstone National Parks combined. No single organization could possibly address the biodiversity threats associated with non-native, invasive species across the six-million-acre region.

Recognizing this, The Nature Conservancy's Adirondack Chapter has teamed up with partners to tackle this issue.

The Adirondack Park Invasive Plant Program (APIPP) is the umbrella under which the Conservancy, Adirondack Park Agency (APA), NY Departments of Environmental Conservation and Transportation, as well as private landowners, local communities, and volunteers keep tabs on and take action to control invasive aquatic and terrestrial plants. With few access routes, the Adirondacks are one place in New York where preventative measures to control invasive species can be taken before widespread infestations are established.

Eurasian watermilfoil, water chestnut, and curlyleaf pondweed are on APIPP's "least wanted" aquatic plant list and purple loosestrife, Japanese knotweed, common reed grass, and garlic mustard are on its terrestrial list. The environmental, social, and economic impacts of these plants are many. They can affect native plant and wildlife populations; impair recreational access to and use of land and waterways; reduce property values; negatively impact tourism, fishing, and boating opportunities; are easily spread by human activities; and are extremely difficult and costly to remove.

Each partner makes the program greater than the sum of its parts. The Department of Transportation, responsible for 10,000 right-of-way acres in the park, is evaluating and improving its maintenance practices to prevent invasive plants from becoming established and to limit their distribution. The APA and Conservancy are sharing and following best management practices by working with

community leaders, private landowners, and public land managers. In its land management plans for specific sections of Forest Preserve the Department of Environmental Conservation has included provisions for controlling invasive species. A community advisory panel represents the public's interests and provides counsel to the program. Community and watershed groups and volunteers are also heroes in this effort. They monitor lands and waters, increase public awareness, encourage stewardship, and help remove tons of unwanted plants each field season.

APIPP's mantra, prevention, early detection, and rapid response, is its prescription for success and the common message carried by its partners to diverse audiences.

For more information, visit [www.adkinvasives.com](http://www.adkinvasives.com) or contact Hilary Oles, APIPP Coordinator, at (518) 576- 2082 x131 or [holes@tnc.org](mailto:holes@tnc.org).

“Bad Air is All Around Us,” is the first video the St. Regis Mohawk Tribe - Environment Division – Air Quality Program has made. In this video the Air Quality Program focuses on the indoor air quality and its effects on our youth. In our area there are many people young and old who suffer from respiratory illnesses including asthma.

This 10 minute video production uses the Thanksgiving Address to show how our every day activities affect our environment. How the cycle of life is affected by both indoor and outdoor air pollution. How we need to protect the next seven generations.

When you check out the video you will see how indoor air affects people, plants and animals. Some respiratory illnesses are caused by triggers. These triggers could be from dust, cigarette smoke, airborne chemicals and pets. In the environment today many man-made elements are harmful to people, plants and animals. Some of the elements can lose their potency as time goes on, but are still harmful.

The Air Program receives many calls from residents concerning the air quality within their homes. As a free service to our community, we respond to any indoor air concerns.

When a call comes in, we will ask you a series of questions, such as when did this first occur, do you have any combustion appliances, do you have any pets, or do you have any medical conditions. We will then schedule an appointment when one of our technicians can make a site visit to check the home. If the problem is found, we will give you recommendations on how to correct the problem. In many instances the corrective action is simply a change in living habits. Other times, it may include calling a

service technician to repair faulty appliances.

When doing a site visit, our technicians rely upon air monitoring equipment. They record levels of carbon monoxide, carbon dioxide, hydrogen sulfide, petroleum products, humidity, and temperature. All of these factors are relevant in trying to locate the nature of the problem.

The production was funded by from the USEPA's National Environmental Information Exchange Networking Grant.

Indoor Air Quality Video Now Available in VHS, DVD or mpeg on CD formats. Contact Marlene Thompson-Ivany at [marlene\\_thompson@srmtenv.org](mailto:marlene_thompson@srmtenv.org) for a copy at no charge. Or call 518-358-5937 to reserve a copy, or if you're in the neighborhood stop by and pick one up.



## Welcome !!

The SRMT Environment Division would like to welcome the newest member of the Air Quality Team: Geraldine (Jeri) Jacobs. Jeri comes to us as an air technician running and maintaining instruments for Criteria Pollutants in our air. The instruments are monitoring levels of Sulfur Dioxide, Nitrogen Oxides and Ozone.

Jeri currently has her Associates of Applied Science Degree in Informational Technology and has extensive work experience from her longstanding employment with the Carrier Corporation and Keane, Inc.

Welcome Jeri, we are glad to have you in our organization.



## NRDA Seeks Community Members for Advisory Panel

As part of the NRDA process, we are looking for community members to participate on a Community Advisory Committee. We hope this Committee will ensure that the process is proceeding in a manner that is acceptable to the community.

The intent of the Natural Resources Damages Assessment Program is to identify, evaluate, and assess the impacts that industrial contamination to the surrounding natural resources has had on our community. Through a Cultural Impact Study, information has been collected, including elders' interviews, which will provide a foundation of Kanienkehaka lifestyle prior to contamination.

### Tasks

The Akwesasne Community Advisory Committee will meet with the Cultural Researchers on a regular basis and possibly provide the following assistance:

- v Review and comment on research findings
- v Possibly translate any materials needed
- v Identify potential sources of existing data
- v Assist in development of restoration options
- v Advise and guide the researchers as needed

There are also support funds available to assist committee members for their time and assistance.

Please contact:

St. Regis Mohawk Tribe, Environment Division  
412 State Route 37  
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518-358-5937

## Akwesasne Natural Resource Damage Assessment (NRDA)

### *Winner of Cultural Impact Study survey April Tarbell*

The SRMT NRDA program conducted a survey and asked what the community would like to do to help restore our cultural connections with the natural environment. The top 10 suggestions were chosen and the winner randomly selected.

The winning suggestion : was to have more programs for our younger generations. A class or workshop that would teach more about our medicines; how to find; what to look for and how to restore after you have taken the medicines.



## You and the Environment!

by Les Benedict



The Tribe's Environment Division (Division) has been managing environmental programs since the late 1980's, growing from a single staff person then to almost two dozen today. The scope of work and services provided by the Division have increased as well. The main concern of the Division early on was hazardous waste and PCB contamination coming as a result of industrial contamination at the neighboring industrial plants. As the Tribe and the Division opened their eyes to environmental management it soon became apparent that there were concerns with air quality, water quality, solid waste,

emergency response, petroleum storage, conducting environmental assessments, monitoring drinking water. The Division also began building its capability to assess damages from industrial pollution through its Natural Resource Damage Assessment (NRDA) program. The Division also developed a program to address community outreach and education concerning hazardous substances.

The Division built its programs based on needs that it saw and opportunities for funding that presented itself. This approach was reactive and a response to environmental conditions such as hazardous waste, changes in solid waste market services, air pollution and water contamination. This approach worked but did not involve the long-term visions of the community for a clean, safe and healthy environment.

As the Division learned about environmental management it realized that in order to truly serve the community it must involve the community in developing clear direction, through goals and objectives, to determine what our environment and resource usage will be for our children and children's children.



In the past decades we have seen our community transform from an agriculturally based community to a retail and commercial based community. This change has come about in our community, like many others, as a result of the changing economic conditions of our world. Moving from an agricultural community has resulted in land usage changes that has placed economic development in the midst of residential areas and presented many issues for solid waste management, water pollution control, air quality and oil spills. Increase in our own population has resulted in housing development that has transformed wooded areas into residential developments, increased soil erosion and runoff and placed septic systems closer to

neighboring homes and wells.

For better or worse our community has changed environmentally from 20-years ago and we are all affected by it, whether we realize it or not. Can anyone say that what we see today is what our

parents, grandparents or great-grandparents had envisioned for us? We are soon realizing that even our own community has a capacity for the number of gas stations, retail stores, septic systems, homes, businesses that in some foreseeable time will be reached, maxed out. Before we get to that point it is important for our community to consider this and to take part in assisting the Division with coming up with a vision for what they would like to see for their environment in the coming years and coming up with ways to achieve this vision.

The Division is at the beginning of its process to develop a Performance Partnership Agreement (PPA) with the US Environmental Protection Agency (EPA), its primary funding source, to develop a vision and a plan for the future. The Division asks for your participation in bringing to mind what types of concerns you have with the environment and where you would like the Division to place its effort.

Despite having close to two-dozen staff members, managing environmental concerns is very challenging and resource intensive. There is a limited amount of time, funds and resources available to respond to the many challenges the Division faces from both the outside and from within. However, with ideas and comments that come from public involvement the Division can work toward addressing issues that present themselves as community priorities.

Space is limited in this newsletter and prevents me from being able to share with you the extent of any one program's goals and objectives that each program manager has developed. I encourage you to go to our website to view the document that is called the PPA and examine any or each of the program areas that you might be interested in and provide us comments by letter, e-mail or calling to speak with us. You can also view a copy of the draft PPA at the Akwesasne Library or by visiting our office. We will also be setting up public meetings and publishing articles in local papers as well as discussing the PPA on the air very soon.

**“PPA”.....continued on page 15**

## ENVIRONMENTAL INCIDENT REPORT

*By Craig Arquette*

**November '03 - March '04**

This is the bi-annual installment of the Environmental Incident Report to the Iroquois Environmental Newsletter (IEN). An updated incident report will continue to be in all future issues of IEN. The purpose of this report is to make the readers of IEN aware of the numbers and types of incidents that our Environmental Response Team responds too. If you are faced with a spill at night or weekends, you can contact the Tribal Police at 358-9200 and they will contact the Response Team to assist you.

The St. Regis Mohawk Tribe's certified Environmental Response Team members include Ken Jock, Les Benedict, Shawn Martin, Craig Arquette, Laura Webber, Lornie Swamp, Angela Dunn, Marie Benedict, Aimee Benedict-Debo, Denean Cook, Teres Thompson, Jim Snyder, Tom Debo, Adrian McDonald, Joyce Barkley, Jennifer Herne, Evan Thompson, Jari Thompson, Jessica Jock, Russel Philips and Bobby Phillips.

There are no incidents to report.

## Should You Care What Happens in the Grasse River?

by  
**Jessica Jock**



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The Grasse River is located just upstream of Akwesasne where it flows into the St. Lawrence River near the Snell Locks. Seven miles upstream of the Grasse River is ALCOA, which has historically dumped PCBs into this river since the 1940's. These PCBs over the years have made their way downstream the 7 miles of the Grasse so that they are located everywhere within the Lower Grasse River and are working their way into the St. Lawrence River.

Data shows that PCBs are distributed throughout the river. This years data also shows there are areas of contamination located near the mouth of the Grasse River near the St. Lawrence that weren't there before.

How did these contaminants get there? Well it could be just from the natural dynamic actions of a river, but Alcoa has done studies and reports saying the sediment is stable and there's no event that could possibly move the PCBs...UNTIL this past year when there were multiple Ice Jams in the contaminated sediment areas that caused scouring. Now they're willing to admit under certain conditions, sediments are NOT always stable. This scouring moved multiple feet of

sediment and relocated it downstream. Through sediment sampling in 2003, the technical team was able to determine where some of the PCB contaminants went, but not all of it. We believe what didn't settle back into the Grasse is now located in the St. Lawrence River...somewhere.

So what's the big deal about Ice Jams? Ice Experts were brought in on Alcoa's Technical Team and researched historical data since early 1900's and viewed tree scars left by 2003's Ice Jam event and past Ice Jam events, to determine that an Ice Jam occurs on the Lower Grasse River approximately once every 10 years. But data shows that Ice Jams happened 4 times out of the last 10 years. That's a lot of opportunity to scour and displace contaminated sediments, unknown to us where it has moved.

Akwesasne is the only community immediately downstream of the Grasse River. Any contaminants

moved from the Grasse River into the St. Lawrence will eventually make their way to Akwesasne. The fish in the Lower Grasse River have been so contaminated for years that there is a health advisory for people not to eat ANY fish. But, do the fish really remain in just the Grasse River, or do they swim out into the St. Lawrence to where you may be fishing for your family? The Lower Grasse River and Banks are all part of the One-mile Square in Massena that was reserved for Mohawk usage, but have through the years gotten lost in land claims and political disputes. This has not relinquished Mohawks rights to the resources and the right to have clean and safe fish to eat, clean animals to hunt, usable medicinal plants along the banks that have not lost their healing powers due to contaminants, and clean water to drink from and

## AQUATIC NUISANCE SPECIES AND AQUATIC RECREATION



People have inadvertently introduced non-native plants and animals to new marine and freshwater areas. In many cases, these plants and animals are free from their natural predators, pathogens, parasites and competitors that normally keep them in check. Once these species become established they can cause negative impacts on natural ecosystems. They can displace native species, increase operating costs of infrastructure and degrade ecosystems. Because of their impacts, these species are referred to as aquatic nuisance species.

People love to spend time on the water. Swimming, boating, fishing, sailing, jet skiing and



scuba diving are some of the many ways people enjoy water and water related activities. Because we have the ability to move from water body to water body, we increase the chance of moving aquatic nuisance species each time we go to a new recreation area.

There are a few guidelines that the people of this community can use to help reduce the spread of nuisance species when they are participating in aquatic recreation activities.

### Always do the following:

**Inspect your equipment**—Look for visible plants and animals before traveling and remove them.

**Always drain water**—drain any water in your equipment before transporting it.

**Always clean your equipment and working dogs**—especially when leaving infested waters, clean everything before going to other waters.

**Always report questionable species**—contact the Environment Division for identification assistance. Information is available from many sources on aquatic nuisance species. Specimens are needed to confirm sightings. Check with natural resource agencies for instructions and regulations on possessing and transporting nuisance species for this purpose.

### Avoid the following:

**Transporting animals and plants**—mud, aquatic plants and animals from lakes, rivers, wetlands and coastal areas.

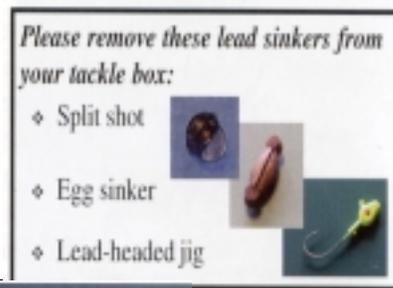
**Releasing animals and plants**—including all aquarium species, bait, pets or water garden plants. Do not release these into the wild unless you know they are native to the water body.

There are specific guidelines that can be followed that are pathway specific. For further information on the specific guidelines for scuba diving, waterfowl hunting, bait harvesting, angling, boating, seaplane operation and personal watercraft use, contact the Environment Division at 518 358 5937.

## Get the Lead Out! Lead Harms loons and other waterbirds



In the United States and Canada, it is estimated that hundreds of tons of lead fishing tackle are deposited in marine and freshwaters annually, primarily through the loss of sinkers and jigs while fishing. More than 20 species of waterbirds, including loons, have the potential to accidentally ingest lead fishing tackle while feeding. Loons and other birds normally ingest small pebbles, “grit”, which enables their gizzard to break down fish bones, a normal component of their regular diet. Loons often have as many as 20-30 pebbles in their gizzard at any one time. Unfortunately, birds often mistake lead fishing tackle for the pebbles they normally consume.



Ingestion of lead fishing sinkers or jigs results in lead toxicity, and eventually death, as the lead is broken down by the acidic conditions of the stomach and absorbed into the bloodstream. Research conducted by members of the Northeast Loon Study Workgroup and by the NYS DEC Wildlife Pathology Laboratory has shown that lead poisoning due to lead fishing tackle ingestion is a significant cause of mortality in breeding adult loons in the northeastern United States and Canada. To date, cases of lead toxicity have accounted for 20-50% of loon mortalities analyzed by the NYS Wildlife Pathology Laboratory and the Wildlife Clinic at

the Tufts Univ. School of Veterinary Medicine (excluding catastrophic events, such as the botulism outbreak in Lake Erie). Lead toxicity is one anthropogenic cause of mortality in Common Loons that can be minimized through public education programs and regulation of the use or sale of lead fishing tackle. In 2002, New York passed legislation banning the sale of small lead sinkers weighing less than 1/2 ounce. This legislation will take effect on May 8, 2004. New Hampshire and Maine have also recently passed legislation regulating the use or sale of lead fishing tackle and promoted education programs for anglers about non-toxic alternatives. Vermont implemented a similar public education initiative, including brochures and a lead sinker exchange program, to encourage anglers to voluntarily use non-lead fishing alternatives. Efforts to reduce mortality in waterbirds due to lead poisoning have also been made on an international front in Great Britain and Canada through environmental policies banning the use of lead fishing sinkers and jigs. In the United States, lead sinker use has been banned on a number of national parks and wildlife refuges. Currently the U.S. Fish and Wildlife Service is currently considering banning the use of lead fishing tackle on all national wildlife refuges. The combination of lead fishing tackle regulation and public education programs reflect a commitment towards improving the health of aquatic ecosystems and reducing the impacts of lead on wildlife populations.

## EARTH DAY 2004

IN



Earth Day activities in Akwesasne kicked off on Thursday April 22<sup>nd</sup> with a public availability session at the Akwesasne Housing Authority. Staff members from the SRMT Environment Division set up poster displays, sampling equipment, and fact sheets to raise awareness within the community to the different services the Division offers. On Saturday, April 24<sup>th</sup> the Akwesasne Task Force on the Environment (ATFE) sponsored a Roadside clean up. The clean-up was coordinated to designate one day during the year whereby community members could gather in a concerted effort to rid the ditches around Akwesasne of garbage and other debris. The volunteers who braved the cool weather and high winds were tackling an issue in Akwesasne that not only looks unpleasant but displays an air of uncaring to others, including visitors to Akwesasne. Irregardless, an impressive number of individuals came out to lend their assistance in this clean-up effort. The ATFE sponsored a small contest where clean-up groups could compete to see who picked up the greatest number of bags of roadside garbage. Thirty-six teams registered to compete for cash prizes. The winning team from the Akwesasne Freedom School collected the most bags at 157 and won the grand prize of \$250.00. Overall, the organizers of the clean-up day were happy with the amount of volunteers, young and old, who showed their enthusiasm for the esthetic qualities of Akwesasne through their participation. It goes without saying that such an effort wouldn't be necessary if people would just stop littering. Especially in light that garbage pick-up is free on the Canadian side of Akwesasne and there are a number of haulers who provide pick-up services at reasonable rates on the US side, including the SRMT Solid Waste program. So please, don't pollute. Sheesh!!



If fluoride is a poison, why is it being put in our water and dental products?

Have you ever read the warning label printed on the back of your tube of toothpaste? This is typically what you will find: **WARNING:** Keep out of the reach of children under 6 years of age. If you accidentally swallow more than used for brushing, seek professional help or contact a poison control center immediately.

Beginning in April, 1997, the Food and Drug Administration (FDA) has required this warning label on all dental care products containing fluoride.

You may be wondering why the FDA put a warning label for fluoride in toothpaste in 1997 when fluoride had been used in toothpaste for many years, as well as having been used in water fluoridation since 1945. What is fluoride, and why -- 52 years later -- is it now considered a poison?

To begin, the dictionary defines fluorine as a pale yellow, highly corrosive, poisonous, gaseous halogen element. Fluoride is a compound of fluorine. Fluoride is the most electronegative and most reactive of all the elements.

## Fluoride: Friend or Foe? Part I

by Warren A. Mitchell, D.D.S

The definition of sodium fluoride (found in toothpaste, dental care products and fluoridated water) is a colorless crystalline salt used in fluoridation of water, in treatment of tooth decay, and as an insecticide and disinfectant.

If fluoride is a poison, why is it being put in our water and dental products?

To understand, let's first take a look at the history of what we know about fluoride. Fluorine is the thirteenth most abundant element found in the earth's crust. Up until the Industrial Revolution, most of the fluoride in the environment was safely locked up with other elements in rocks, coal and clay. Only small amounts of fluoride were released as a result of volcanic activity, or by the slow leaching of this element into some waters. With the Industrial Revolution came the burning of coal and the production of products such as aluminum, steel, glass, enamel, brick, and fertilizers. Factories began dumping fluoride into rivers and streams; they polluted the air with fluoride gases and particles.

In the 1930s, H. Trendely Dean, D.D.S., Director of Dental Research for the U.S. Public Health Service (USPHS), conducted extensive surveys of cities in Texas, Colorado and Illinois. From these surveys, he found people with brown spots on their teeth, known as mottled enamel. His

surveys showed that as fluoride levels in the water increased, so did the damage to teeth. Dean started publishing incomplete data to show that at 1 part per million (ppm), fluoride produced a minimal amount of brown teeth and resulted in the reduction of tooth decay. This condition of brown teeth, or mottled teeth, is now known as dental fluorosis, and happens during tooth formation. In very mild cases with low levels of fluoride, teeth may appear to have white spots or flecks. In higher concentrations, teeth may have white patchy areas of increased porosity. In severe cases of dental fluorosis, fluoride produces pitting, dark brown staining and widespread disfiguring of the enamel tooth structure. Teeth that are in this state of fluorosis are very brittle, easily broken and highly susceptible to cavities.

Warning signs were posted, advising people not to use high-fluoridated water for cooking or drinking, especially for children. Communities began removing fluoride from public water supplies, and court actions were taken against major industrial polluters for damage to livestock and crops.

By the late 1930s, the many lawsuits against industries such

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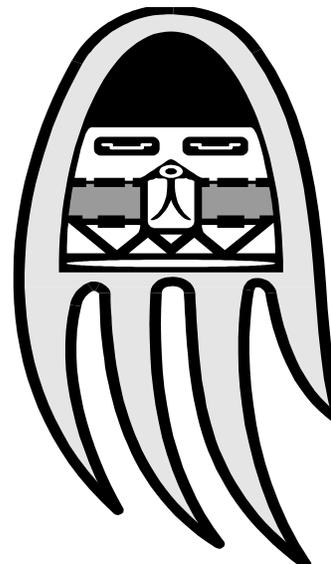
swim in. It is an injustice to Mohawks to have this river system remain contaminated.

So what is going to be done? The US Environmental Protection Agency (USEPA), NYS Dept. of Environmental Conservation (NYSDEC), NYS Dept. of Health (NYSDOH), SRMT Environment Division, and ALCOA's Technical Team have been working together to come up with an appropriate remedial option. Due to some uncertainty remaining in the river, more sampling and investigation will take place this Spring/Summer 2004 in the river. There are plans to have some opportunity for Public Availability Sessions this spring/summer to inform you on what will be the next steps by the USEPA to address this problem that affects Akwesasne. So watch in the papers for announcements or listen to the radio to find out when you can tell the EPA how you'd like to see the Grasse River cleaned and restored to benefit Akwesasne, and the need to prevent future PCB loading to Akwesasne from this upstream source.

Questions to consider when reviewing the PPA:

- What are you concerned about? What affects you the most? Outdoor air, Indoor Air, Drinking Water, River Water, Solid Waste, Natural Resources (fish, game, forestry).
- From the previous list, what 3 things are the most important to you? Can you add to this list?
- What areas should the Environment Division work on that they are not already?
- What vision do you have for the reservation environment in the future, for your children, grandchildren and beyond?
- How can the Environment Division improve its services to you?
- What has the Environment Division done that has been of benefit to you?

Your comments are welcome and encouraged.





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### Postal Patron

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as ALCOA (the world's largest aluminum producer) were increasing and becoming a problem. The growing cost of removing fluoride from public water supplies was also problematic.

At this time, ALCOA was selling their unwanted waste by-product of sodium fluoride as a rat poison and insecticide. However, ALCOA found they had more waste product than they could sell. They needed another market to rid themselves of the excess burden of this hazardous waste.

About the same time, Dr. Gerald Cox, a biochemist from the University of Pittsburgh, was employed as a member of the Mellon Institute (the Mellons were the owners of ALCOA). Cox's job was to do research and find another way to reduce the excess of ALCOA's sodium fluoride waste.

Cox began working in the laboratory with a number of pregnant and lactating rats. He fed them a select diet of fluoride from 10 to 40 ppm. At the end of this research, Cox wrote, "The present trend toward the removal of fluorine from food and water may need some reversals." There was never any solid scientific research

done. Though Cox noted in his 1939 paper (published in the Journal of Dental Research) that rats who received more fluoride had more cavities, this information was ignored. Cox gathered information from his "study" and additional information from a study done earlier by Armstrong and Brekhaus, who had reported higher levels of fluoride in dental enamel of healthy teeth than in teeth with cavities. (In 1963, Armstrong recanted his original findings as incorrect and stated that there was no difference in fluoride content between healthy teeth and teeth with decay.) Cox prepared six summaries of the literature on tooth decay for the Food and Nutritional board of National Research Council, which led to the Council's endorsement of fluoridation.

The major companies who produced the unwanted by-products of fluorides could now dispose of their hazardous waste, and at a profit to boot. But to whom? And how did they convince people that rat poison was good for them?

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