EPA
United States
Environmental Protection
Agency

OPPTS Tribal News

Summer/Fall 2004

Highlighting Grand Opening Events of the National Museum of the American Indian, Washington, DC

Environmental voices

Office of Prevention, Pesticides, and Toxic Substances and Tribal Environmental News Exchange

www.epa.gov/opptintr/tribal

Echoes of Green in Indian Country

It was several years ago, that the *OPPTS Tribal News* took the opportunity to feature information from Tribes and EPA regarding a variety of articles on pollution prevention programs, activities, and issues, as well as innovative solutions to the challenges of pollution prevention. Finding ways to prevent pollution at its source and reducing amounts of pollution appears to be where challenges and innovation combine to address the needed solution. Familiar pollution prevention activities, and new emerging technologies, are discussed in this issue. Topics include wind and solar power; green agriculture; green buildings, facilities and landscaping; green chemistry; green cleaning; green energy and lights; green engineering; green labels and purchasing; green meetings; and green tourism.

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From the Editor...

On behalf of the *OPPTS Tribal News* staff, I hope that our readers are inspired by the featured articles that encourage a greening initiative. I thank everyone who contributed to this issue and my heartfelt thanks to the solid supporters and contributors to the pilot publication.

A very special thanks goes to summer Washington Center intern Serene Thin Elk. Serene is from the Sicangu (Rosebud) Lakota and Ihanktonwan (Yankton) Dakota people. Serene influenced this issue by utilizing the *Arts* as a backdrop for communicating environmental and public health issues and concerns. She is a graduate from the University of South Dakota with an undergraduate degree in psychology. Serene, an accomplished, traditional Indian flutist, performed at the opening of the EPA's Diversity Project Meeting in July, and her performance transcended our environment beyond words.

I want to note that our pilot publication, EPA Tribal News, Fall 2003-Winter 2004, was well received. Several readers expressed their genuine appreciation of the information presented in the issue, as well as the efforts of the contributors whom helped to produce it. It clearly demonstrated that EPA and Tribes have a wealth of information to share with each other in order to effectively manage and protect the environment and human health.

In addition, nearly all readers expressed their unquestionable appreciation of the beautiful front cover photos.

I would like to extend my congratulations and good wishes to all American Indians for celebrating the opening of their *unique place,* the National Museum of the American Indian. The new national museum is a tribute to all Native Peoples of the Americas. Their past, present, and future histories, cultures and natural environments will be safeguarded for the ages.

— Mary Lauterbach, EPA Office of Pollution Prevention and Toxics, OPPTS Tribal News Editor

OPPTS Tribal News Mission Statement

OPPTS Tribal News seeks to provide an opportunity to promote a two-way dialogue with EPA and American Indian Tribes, including Alaskan Native Villagers, regarding a vast array of environmental issues and concerns that affect Indian country. The mission and hope of the publication is to maintain an open, constructive exchange of information between the federal government, Tribal governments, and Tribal organizations. Together, we can build mutual understandings and forge effective partnerships to achieve our common goals of protecting the water, air, land, and communities, now and in order that the circle will continue on for generations to come.

—*OPPTS Tribal News* Staff

OPPTS Tribal News requests interesting, relevant stories about pesticide and pollution prevention programs and projects in Indian country from our readers. If you want to share your experience with our readers, please write or send an email message to Mary Lauterbach, EPA Office of Pollution Prevention and Toxics, 1200 Pennsylvania Avenue (MC7408M), Washington, DC 20460, lauterbach.mary@epa.gov.

OPPTS Tribal News, Volume 5, Number 1, EPA 745-N-00-001

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OPPTS Tribal News can be viewed on the Internet at www.epa.gov/opptintr/tribal

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From New York to Minnesota, EPA Administrator Mike Leavitt Lobbies Support for Great Lakes Protection

Don Deblasio, EPA Region 5, Office of Public Affairs

EPA Administrator Mike Leavitt has been an advocate for the protection of the Great Lakes and a proponent of the Great Lakes Legacy Act. Under the Legacy Act authorized by Congress in November 2002, $270 million dollars will be dedicated to the cleanup of contaminated sediment in the Great Lakes over the next 10 years. During his recent travel from New York to Minnesota, the Administrator visited Tribes of the Great Lakes region to gain even more insight into prevalent environmental issues.

Although they are giants among lakes, the five Great Lakes — Erie, Huron, Michigan, Ontario, and Superior — are suffering environmental stress.

Those who do not live near the Great Lakes may wonder why is so much attention given to the region. But those who live near these massive bodies of water live in awe of their majesty and bounty. Like their salt-water cousins, the Great Lakes have inspired songs akin to sea chanties. One of the most famous is Gordon Lightfoot's "Wreck of the Edmund Fitzgerald," which recounts the 1975 sinking of a ship laden with ore. Because they are so clearly bounded by land, outsiders cannot appreciate the magnitude of the Great Lakes. But standing on the shore of Lake Superior, especially on a stormy day, one can begin to understand the immensity of these huge bodies of water. The Great Lakes cover 94,000 square miles. Their 6 quadrillion gallons of water contain one-fifth of the world's fresh water supply. If spread out over the contiguous 48 states, the water would reach a depth of nearly 10 feet. Although they are giants among lakes, the five Great Lakes — Erie, Huron, Michigan, Ontario, and Superior — are suffering environmental stress.

Bad River Tribal Conservation Officer Bob Wilmer (left) and EPA Adminstrator Mike Leavitt travel through the Kakagon Sloughs.

Leavitt is working his way around the Great Lakes from Buffalo, New York to Duluth, Minnesota to heighten public awareness of the requirement to control sources of pollutants affecting the Great Lakes now in order to protect the lakes for future generations. Among his recent stops were visits to the Ashland, Wisconsin and the Bad River Reservation of the Lake Superior Chippewa, near Ashland.

First the Administrator met with representatives of several federal agencies responsible for cleanup of the lakes, including the National Fish and Wildlife Service, Forest Service, Department of the Interior, Bureau of Indian Affairs, and U.S. Corps of Engineers.

Leavitt pointed out that there are at least 140 legislative acts dealing with environmental protection of the Great Lakes, but the problem is that there is little coordination among agencies responsible for carrying out those measures. Because of concerns for the Great Lakes, the President issued an executive order to create a cabinet level interagency task force to develop an overall strategy for their protection. Canada will be a vital part of this coalition of government bodies working on the strategy.

The Administrator also is making sure that the sovereign interests of the Tribes will be taken into consideration.

After meeting with federal representatives, Leavitt visited Donald Moore, Chairman of the Bad River Reservation of the Lake Superior Chippewa. While their discussions were confidential, the Tribe has been outspoken in its concern about pollutants, such as mercury and polychlorinated biphenyls (PCBs), which adversely affect the Great Lakes. Many members of the Bad River Tribe are subsistence fishers and

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are at risk because of exposure to these pollutants.

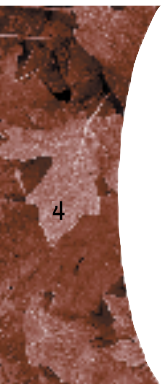
Pollution is causing many states to issue fish consumption advisories about the kinds and quantities of fish that are safe to eat from the Great Lakes. Like many other Tribes in the Great Lakes basin, the Bad River Tribe is concerned about the effects of pollution on one of the major crops of Midwestern Indians — wild rice. Wild rice is a staple for many American Indians in this area, and members of the Bad River Tribe worry that pollutants may be damaging their food staple.

They also are concerned about protection of the most basic of human needs — drinking water. That concern was dramatized to the Administrator at a water ceremony conducted by Sue Nichols (Wawoanookwe), Bad River Tribal member and Three Fires Midewiiwin. Nichols was invited to perform the ceremony by the Great Lakes Indian Fish and Wildlife Commission (GLIFWC). While its headquarters is located in Chief Blackbird Center of the Bad River Chippewa Tribe, GLIFWC is a consortium carrying out environmental work for 11 Great Lakes Tribes.

Nichols lifted a cloth from a copper vessel on a table. The pot contained cool water that had been spoken for (prayed for) earlier that day, and offered to Leavitt and the other guests. Water is such an important part of human life, for without it, life would not be. For the Anishinabeg (Original People), water is considered sacred. Everyday we give acknowledgement and our Miigwechs (Thanksgiving) for its life giving gift.

The Administrator should use his authority and influence to protect this precious resource, Nichols urged. Leavitt agreed with her assessment and said he was working to do just that.

Also, GLIFWC Director James Schlender performed a smudging ceremony. He placed some sage in an abalone shell and set fire to it. He passed the shell from person to person, fanning it gently to keep it smoldering. The pleasant smelling smoke is cupped in the hands and passed over the body for spiritual cleansing.



Pictured performing the smudging ceremony is GLIFWC Director James Schlender, along with GLIFWC Policy Analyst Jim Zorn (back left), EPA Administrator Mike Leavitt, and EPA Officer Gary Gulezian.

Pictured performing the water ceremony is Sue Nichols, along with Administrator Leavitt.

"We bless and drink fresh water before all else, before coffee, before milk, anything," Nichols said.

The visit to the Tribe ended with a trip to the Kakagon Sloughs where the Administrator learned about the growth and harvest of wild rice. The labor intensive harvesting takes place in early Fall. Again the Tribe issued a plea to protect the waters of the Great Lakes in order to help preserve the ancient traditions of the Tribes. They also noted that the water resources provide jobs, as well as sustenance and subsistence.

Leavitt left Ashland, Wisconsin for Duluth, Minnesota, where he visited EPA's Midcontinent Laboratory. Leavitt is the first Administrator to visit EPA's Midcontinent Laboratory. Leavitt has more visits to the Great Lakes planned before this year's Winter.

OPPTS Finalizes the Tribal Strategic Plan

Caren Rothstein-Robinson, EPA Office of Prevention, Pesticides and Toxic Substances

The Office of Prevention, Pesticides and Toxic Substances (OPPTS), is pleased to announce the finalization on September 8, 2004, of its *Tribal Strategic Plan (TSP) for Fiscal years 2004-2008.* The Office is very excited to issue the TSP which is intended to guide Agency staff and managers in working with the Tribes to support successful pesticide, toxic management and pollution prevention programs. For this to be an effective tool, OPPTS recognized that strong Tribal input and a genuine partnership were critical.

While developing the TSP, OPPTS held six Tribal focus group meetings to obtain Tribal perspectives and recommendations on how to improve its programs in Indian country. Almost 100 Tribal representatives participated in the various meetings across the country. Many issues were discussed at these meetings. However, perhaps the most consistent issue raised throughout these discussions by Tribal representatives was related to increasing the federal knowledge about and attention paid to Tribal lifeway and subsistence concerns.

While implementing this document, OPPTS hopes to place new emphasis on understanding and considering Tribal lifeway concerns when developing options for action within our program areas. The TSP will also help promote the best use of resources to foster environmental gains in Indian Country and other Tribal areas including those in Alaska. OPPTS look forward to implementing this Plan with strong Tribal input through a collaborative approach.

The Office recognizes that successful implementation of the TSP will require integration with other related Tribal efforts and Agency processes and intends work to connect these processes and to ensure that priorities and efforts between them are complementary. Further, the office is firmly committed to enhancing its partnerships with Tribes to mutually address the environmental concerns faced within Indian country and other Tribal areas including those in Alaska.

Following is a reprint of the Overview of the TSP from the final document. For the remaining text captured in the OPPTS Tribal Strategic Plan, readers can visit: http://www.epa.gov/oppts/tribal.htm

Overview: The OPPTS Tribal Strategic Plan: Fiscal Years 2004-2008

OPPTS plays an important role in protecting public health and the environment from potential

risks caused by toxic chemicals, including pesticides. The Office promotes pollution prevention and provides the public with critical information on potential and existing chemical risks.

OPPTS safeguards Americans, including children and other particularly vulnerable members of the population, by evaluating the potential adverse impacts of pesticides and chemicals, as well as by regulating their manufacture, use, application, storage, and disposal. Top OPPTS priorities include mitigating pesticide risks to humans, domestic animals, endangered species and the environment; preventing lead poisoning; reducing risks from persistent, bioaccumulative, and toxic chemicals: improving public access to basic hazard information on high-production volume chemicals; and researching emerging issues such as endocrine disruptors.

OPPTS includes several separate program offices, including the Office of Pesticide Programs (OPPTS), the Office of Pollution Prevention and Toxics (OPPT), the Office of Program Management and Operations (OPMO), and the Office of Science Coordination and Policy (OSCP). OPPTS and OPPT have responsibility to implement the major programs mandated by legislation.

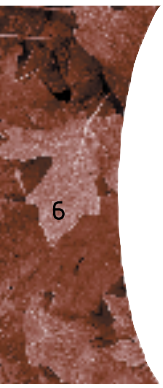
OPPTS has primary responsibility within EPA for implementing the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), the Toxic Substances Control Act (TSCA), the Federal Food, Drug, and Cosmetic Act (FFDCA), the Food Quality Protection Act of 1996 (FQPA), the Asbestos Hazardous Emergency Response Act (AHERA), the Asbestos School Hazard Abatement Act (ASHAA), and the Pollution Prevention Act (PPA).

NTEC 11th National Conference Focused on Conserving Harmony in Creation, Empowering Tribal Nations

Karen Ware, National Tribal Environmental Council

Conserving harmony in empowering Tribal nations was this year's theme at the National Tribal Environmental Council's (NTEC's) 11th National Conference. This year's conference was hosted by the Catawba Indian Nation of South Carolina in Myrtle Beach during April 16-22, 2004.

NTEC, headquartered in Albuquerque, New Mexico, has a membership of 175 Tribes and Alaskan Native Villages and addresses environmental concerns for land, water, and air.



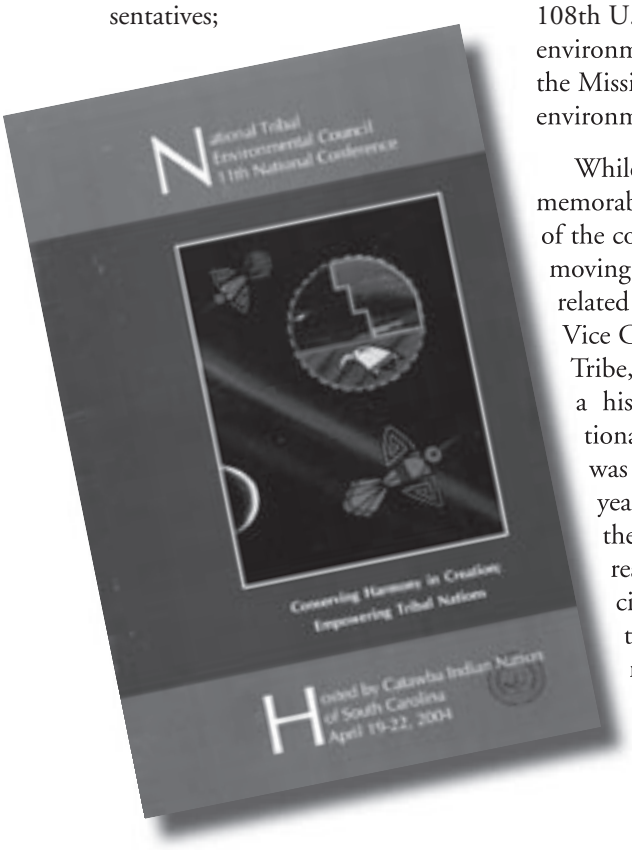
Approximately 225 Tribal leaders, environmental professionals, and organization representatives; congressional representatives; and federal officials attended the conference. The conference agenda included an opening ceremony with John George, Medicine Man from the Catawba Indian Nation, plenary sessions, display and materials showcasing, and a Tribal environmental round-table discussion. The conference agenda also included the presentation of the Michael Frost Award Presentation. See page 7 for more detials.

During plenary sessions, Tribal panels discussed a wide variety of environmental issues and concerns. Many of the breakout sessions included important topics stemming from indoor air, clean-up issues in marine environments, Tribal sustainability, climate change, traditional foods, outdoor environments, the alternate dispute resolution and cleanup of Fort Mill, the 108th U.S. Congressional Update, environmental activities protecting the Mississippi River, and Tribal environmental justice.

While there were many memorable sessions, one highlight of the conference was a very moving illustration of whaling-related Tribal traditional lifeways. Vice Chairman of the Makah Tribe, Gordon Smith, presented a historic resumption of traditional whaling, a practice that was suspended for over 70 years due to the scarcity of the gray whales. This scarcity resulted from the commercial whaling industry, and the Tribe is struggling to resume their cultural traditional practices and the heritage of whaling. In order to practice this sacred way of life in their own environment, the Tribe had to adapt to new practices granted by the International Whaling Commission. The Makah Tribe still engages in court challenges to retain their traditional whaling rights.

The conference ended with a banquet, where keynote speaker, Dr. Gerald McMaster, Siksika Nation, showcased the anticipated opening of the Smithsonian Institute National Museum of the American Indian.

NTEC's 12th National Conference will be held in May 2005 and hosted by the Oneida Nation, Green Bay, Wisconsin. For more information, please contact NTEC at 505.242.2175 or visit their web site at www.ntec.org.



NTEC Honors Innovations in Pollution Prevention through the Michael Frost Award

During the NTEC 11th National Conference, Dr. Norman Richards was recognized for his outstanding contribution to environmental protection as he received the Michael A. Frost Award. Dr. Richards serves as the Director of the Environmental Protection Department of the Mohegan Tribe of Connecticut. Dr. Richards was credited with "setting the standard for innovation in pollution prevention."

This prestigious award, presented during the April 20th awards ceremony, is given in memory of Michael A. Frost, a Tribal member from the Southern Ute Indian Tribe. Mr. Frost served as the Director of the Tribe's Environmental Programs Division from October 1991 to January 1998. Recipients of the Michael A. Frost Award are nominated for:

- their outstanding leadership or management skills in advancing environmental protection or Tribal issues
- developing Tribal environmental programs through capacity building
- promoting environmental protection on Tribal lands, including the protection of air and water quality
- building inter-Tribal and intergovernmental relations
- contributing to the national agenda for environmental protection of Tribal interests.

From left to right, Virgil Frazier, Environmental Director Southern Ute Tribe; David Conrad, Executive Director, NTEC (back); Dr. Norman Richards; Fred Corey, Environmental Director, Aroostook Band of Micmacs (back); and Virgil Masayesva, Director, Institute for Tribal Environmental Professionals. Virgil Frazier and Virgil Masayesva are the two past recipients of the Michael A. Frost Award.

Through his many contributions to environmental excellence, Dr. Richard's carries forward the legacy of Michael A. Frost whose impact will continue to resonate through the Southern Ute Indian Tribe and all Native governments.

EPA Administrator Leavitt Reaffirms Agency Indian Policy

At an Open House commemorating the 20th Anniversary of EPA's Indian Policy, EPA Administrator Mike Leavitt reaffirmed the EPA Indian Policy on September 17, 2004. According to Leavitt, "…EPA became the first Federal agency to adopt a formal Indian Policy …I am proud to formally reaffirm this Policy, which embodies the core principle of working with federally-recognized Tribes on a government-to-government basis."

Administrator Leavitt also believes that since EPA published its Indian Policy in 1984, the Agency has made a tremendous amount of progress to include (1) establishing the American Indian Environmental Office to manage EPA's National Indian Program, (2) increasing the funding and staffing of EPA Tribal programs, (3) working with Tribes and Congress in supporting Tribes to directly assume program authority, (4) establishing the Tribal Operations Committee to advise EPA on Tribal matters, and (5) reaching a substantial portion of the EPA workforce with the Working Effectively with Tribal Governments training.

Leavitt issued the memorandum near the opening of the National Museum of the American Indian.

USDA Plant Material Centers Provide Resources through Natural Resources Conservation Services

Serene Thin Elk, EPA Office of Pollution Prevention and Toxics

Plant Material Centers (PMC) are components of the U.S. Department of Agriculture-Natural Resources Conservation Service (USDA NRCS). The purpose of PMC is to develop plant solutions and provide plant science technology for the conservation of natural resources. An important activity is to (1) select plants observed to be in the best range of adaptability, growth rate, and hardiness; and (2) increase their numbers so they can be released to those growers who wish to re-establish native plants.

The PMC also provides "seed" for plants that are of cultural and religious significance to American Indians, such as sweet grass in the northern plains. The PMC in Bismarck, North Dakota reports that through their seed outreach program they have supplied sweet grass to over 30 Tribes. The Standing Rock, Fort Totten and Turtle Mountain Sioux Tribes are a few of the Northern Plains Tribes who have benefited from this outreach program.

The Bridger PMC in Montana is also providing sweet grass to the Black Foot, Northern Cheyenne, Crow, Flat Head, Fort Peck, Rocky Boy, Fort Belknap, and Rosebud Tribes.

For more information, readers should contact the nearest NRCS office. Readers also may contact Richard White, National Program Leader, Plant Materials, USDA-NRCS, at 202.720.0536, richard.white@usda.gov; or John Englert, PMC Manager/Horticulturist, USDA-NRCS, at 301.504.8175, john.englert@md.usda.gov. More information also is available at the USDA NRCS Plant Material Centers web site, http://plant-materials.nrcs.usda.gov.

Photo courtesy of Mary Annette Pember, www.mapember.com

A Review of Anh D. Crutcher's Yakoana Film

Serene Thin Elk, EPA Office of Pollution Prevention and Toxics

Yakoana, a documentary by Anh D. Crutcher, is the authorized documentary of the First World Conference on Indigenous Peoples, which was held one week prior to the United Nations (UN) Earth Summit in 1992. This hour-long film is set in the jungles of Brazil and documents the gathering of nearly 1,000 Tribal leaders from around the world sharing ancient lifeways through song, ceremonies, dance, and stories. These Indigenous people communed to voice their struggles of colonialism, oppression, and environmental ruin. The conference participants selected Marcos Terena, a Brazilian Tribal leader, to address the UN Earth Summit in discussing the environmental concerns of Indigenous peoples. The UN Earth Summit allotted Terena five minutes to speak, in which he delivered a forgiving, powerful, and constructive message on behalf of the conference participants. "We the Indigenous Peoples are moving towards the future along the trails left by our forefathers," says Terena. "This is our culture. This is our strength, the spiritual strength that mankind is losing…Indigenous Peoples are united by a circle of life, it's a circle of life that circles the Earth, waters, air, what you call…the environment."

Yakoana tells the stories of Native cultures, their struggle for recognition and human rights, and their ancient ways of living sustainably and in harmony with Mother Earth. Tribal people around the world are inherently interwoven with nature, and they share this valuable wisdom with the world through this spiritually moving documentary. As the environment is ruined, so are the earth-centric cultures around the world. Every year, two Tribes become extinct.

> "This life code that no scientist has ever managed to unveil rests with the Indians. You don't have to look any further…or spend millions of dollars on new research. Are you prepared for that? Is the contemporary world prepared for what we want to convey after 500 years of silence?"
>
> —Marco Terena

Pojoaque Pueblo Say Goodbye to Beloved Governor Viarrial

Adapted from "Viarrial led pueblo for more than 20 years," The Albuquerque Tribune, Monday Afternoon, June 28, 2004

Pojoaque Pueblo Governor Jacob Viarrial died on June 26, 2004 at 58 years of age. For more than 20 years, the well-known and respected governor led the Pojoaque Pueblo of northern New Mexico. With the support of Tribal members, Governor Viarrial debated important issues of gaming with the Attorney General's Office during his appointment, and in March 2004, helped break ground for a new, $250 million destination resort planned for the Tribe's tourist industry. Governor Viarrial was known for his efforts in improving the economy of the Pojoaque Pueblo and initiating sustainability.

> "He held an uncompromising commitment to preserving the sovereignty of his pueblo and a determination to achieve economic independence for his people…"
>
> — New Mexico Governor Bill Richardson

Mercury Impacts on the Aroostook Band of Micmacs Tribal Community

Fred Corey, Environmental Director of the Aroostook Band of Micmacs

For the Aroostook Band of Micmacs, and many other northeastern Tribes, mercury is among the most perplexing and pervasive environmental issues that must be addressed. On the Aroostook Band of Micmacs Tribal lands, and elsewhere in Maine, mercury deposition has had a far-reaching impact. Currently, the Micmac Tribe and the state of Maine have issued state-wide fish consumption advisories as a result of elevated mercury levels in fish tissue. It is clear that the major source of mercury that is impacting the fish is atmospheric, since the fish advisory extends to fish that are taken from remote ponds, lakes, and streams far-removed from mercury point sources.

The fish consumption advisory has had a severe impact on the culture of the Aroostook Band of Micmacs since the Tribe traditionally depends upon fish as a major food source and fishing as a major cultural activity. Although some Tribal members continue to fish and consume fish despite the fish consumption advisory, there are many Tribal families that no longer engage in cultural practices associated with fishing, and are thus not passing these traditions to new generations. The loss of Tribal cultural ceremonies, language, and songs associated with fishing thus

A Tribal Perspective by Fred Corey[x]

Notwithstanding the human health and environmental issues associated with mercury emissions, EPA has a legal trust responsibility to protect Tribal resources, and must act in good faith to protect Tribal resources. This legal trust responsibility is further strengthened by treaties between the federal government and Indian Tribes for fishing and sustenance rights. Failure by EPA to adequately control mercury emissions therefore not only results in a breech of the federal trust responsibility to Indian Tribes, but also results in a breech of treaty obligations by the United States.

It is commendable that EPA heavily favors using good science and a risk-based approach to implement its regulatory programs. However, inconsistent with EPA's "science-based" philosophy, it may not appear that EPA's mercury reduction goals are based on protecting human health and the environment. Has EPA ignored the use of good science and the risk-based approach to establishing regulatory standards for mercury? Has EPA chosen arbitrary mercury reduction goals instead of using a risk-based approach to determine appropriate mercury emissions standards?

Based on the serious human health and environmental impacts associated with mercury emissions, the Aroostook Band of Micmacs suggests that the strongest possible measures be used to control this extremely destructive and pervasive environmental contaminant. In addition to EPA's long-term mercury reduction goals, there is an immediate need to regulate mercury in a manner that will result in immediate reductions in mercury emissions to the environment.

Because Tribal health and culture depend heavily upon the wellness of plants and animals, the Micmacs Tribe, as well as other northeastern Tribes, is extremely vulnerable to mercury exposures. The protections anticipated by EPA's proposed mercury emission rules may be too late to save the loss of Tribal cultural practices and those wildlife species that are being threatened by atmospheric mercury deposition. Also, additional delays in amending and implementing Clean Air Act regulations to control mercury emissions will serve to further increase the impact of mercury on the Tribe and the environment. Therefore, the Aroostook Band of Micmacs is urging EPA to take swift and decisive action to identify a regulatory alternative for mercury that will enable EPA to fulfill its mission to protect human health and the environment and in a manner that utilizes good science and risk-based decision making.

represents a significant impact on the Tribe and results in a permanent loss of the culture which defines the Tribe.

Mercury contamination in fish is also impacting the Micmacs' ability to successfully address prevalent health issues in the Tribal community, such as diabetes and obesity, which are largely the result of consuming alternative, unhealthy foods. Although the Micmacs Tribe realizes the health benefits of consuming fish and the traditional importance of fish in the diet, the current fish consumption advisories create conflicts for Tribal health practitioners providing information about healthy diets to the Tribal community, as well as Tribal members concerned about their health.

Also, Researchers in the state of Maine concluded that some populations of piscivorous wildlife, including the loon, otter, and mink, are suffering from impacts of mercury. Along with the cultural importance of these species to the Aroostook Band of Micmacs, the loon, otter, and mink are well-known icons of Maine's backcountry, or North Maine Woods. As is the case for protecting the health and culture of the Tribe, for these species, the fish consumption advisory is clearly not effective in protecting wildlife from mercury deposition. The loss of these culturally important species also results in the further erosion of Tribal culture and may result in profound changes in the structure and function of natural ecosystems in Maine, upon which the Tribe depends for food, medicine, and spirituality.

*The Office of Prevention, Pesticides, and Toxic Substances is pleased to include the comments and opinions of contributors. Byline articles and interviews represent the opinions and views of contributors and not necessarily those of the U.S. Environmental Protection Agency.

Researchers Found Evidence of Mercury in Cicadas

Provided by Patricia Hilgard, EPA Office of Pollution Prevention and Toxics
Adapted from "Don't Eat 'Em, Levels of mercury found in some cicadas," Cincinnati Post, June 1, 2004, April Yee and David Wecker, and " Even Cicadas Found to be Full of Mercury," Mercola.com Newsletter

Researchers have warned the public against eating cicadas after evidence of significant mercury levels in the insects. This evidence is based on cicadas studied in three communities, where concentration levels ranged from 0.02 to 0.20 parts per million.

Also, experts warned pregnant women and young children against the consumption of cicadas and expressed concerns over pregnant women passing on the toxic effects of mercury into the nervous system of their unborn children.

It has yet been determined whether or not the mercury levels in cicadas result from exposure to man-made factors or to the natural sources in soil.

Two scientists completed a study that involved taking measurements of mercury in cicadas, particularly in areas where there were power plants. Their goal was to use their method as a type of indicator that the soil they were in would become polluted.

In the past, researchers have warned the public of the effects of ingesting any kind of insect like cicadas, which lay dormant underground for 17 years and are possible carriers of heavy metals.

An Update from the National Pollution Prevention and Toxics Advisory Committee

Adapted from "Guiding EPA Future Direction — Progress by the National Pollution Prevention and Toxics Advisory Committee," FOSSTAGram, Newsletter of the Forum on State and Tribal Toxics Action, Spring 2004.

The National Pollution Prevention and Toxics Advisory Committee (NPPTAC) is the national advisory body that provides advice, information, and recommendations on the overall policy and operation of programs managed by OPPT as they relate to the Toxics Substances Control Act (TSCA) and the Pollution Prevention Act (PPA). NPPTAC provides a forum for public discussion and the development of independent advice to the EPA Administrator by taking advantage of the experience, strength, and responsibilities of a broad range of Agency constituents and stakeholders. The objective of the Committee is to provide policy advice and recommendations in areas such as assessment and management of chemical risks and risk management, risk communication, pollution prevention, and opportunities for coordination.

NPPTAC has four work groups to support the four major topic areas of interest originally defined when the Committee was formed. The four work groups are the High Production Volume Chemicals Work Group, Existing/National Program Chemicals and Broader Issues Work Group, Pollution Prevention Work Group, and Tribal Issues Work Group.

NPPTAC also has published documents that highlight the full history of the Committee, Work Group meeting summaries, as well as background documents, on the NPPTAC web site, www.epa.gov/opptintr/npptac/listserv.htm. Readers can find a link to the Listserve when visiting the web site and will receive document updates when posting their information.

NPPTAC is co-chaired by Harry Gregori, Environmental Solutions, Inc., and Tom Burke, Johns Hopkins University. When the original article "Guiding EPA Future Direction — Progress by the National Pollution Prevention and Toxics Advisory Committee," was published, Harry Gregori was employed with the Virginia Department of Environmental Quality. Since then, Mr. Gregori accepted another position with an environmental firm in Virginia, but still remains dedicated to NPPTAC. For more information on NPPTAC and its progress, please contact Harry Gregori, Vice President, Environmental Solutions, Inc., 804.672.7570, harry.gregori@envirsol.com.

Photo courtesy of Mary Annette Pember, www.mapember.com

"This land is the house we have always lived in..."

Linda Hogan, Chickasaw

Sustainable Development and Green Buildings

Mary Lauterbach, EPA Office of Pollution Prevention and Toxics, OPPTS Tribal News Editor

Many professionals working in the field of environmental management, as well as others concerned about the current state of the environment, have long realized that resources are not infinite. In order for future generations to survive, decision-makers and experts need to find better ways to conserve and live as stewards with the environment.

In order to protect and conserve resources, researchers and scientists have realized the importance of pollution prevention in buildings, homes, schools, and recreational areas. These are areas where most people work, play, and live. In fact, people in the U.S. spend more than 90 percent of their time indoors! Buildings have a tremendous impact upon the environment.

The following successful case studies highlight two Agency-specific green building projects where experts have designed an environment that seems to incorporate traditional resource conservation with new greening technologies.

A Green EPA Campus at RTP

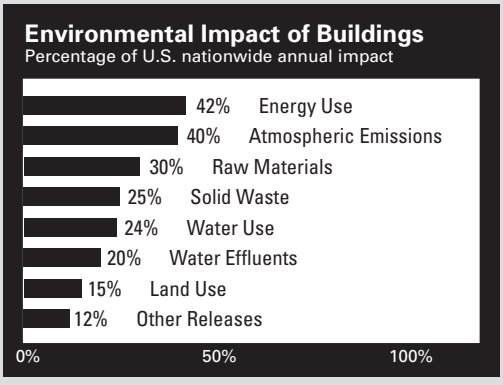
Adapted from The Greening Curve, Lessons Learned in the Design of the New EPA Campus in North Carolina, EPA Office of Administration and Resources Management, November 2001 (MD-C-604-05)

As EPA planned to build its largest facility in Research Triangle Park, North Carolina, experts considered the environmental impacts from the usage of building materials, electricity, fuel, and water. The Agency faced the challenge of building more than one million square feet of labs and offices while sustaining and protecting the environment surrounding the 132-acre site. Design architects and engineers, therefore, used new innovative technologies to construct a "green" building. The EPA Campus at Research Triangle Park was completed in 2001.

Results of the RTP Green Design

Site Design

The building fits within the contours of the site, reducing the need to regrade and limiting disruption to habitats and wetlands. Natural woodlands and wildflower plantings minimize water, fertilizer and pesticide use and reduce associated maintenance costs.



Source: Worldwatch Institute and U.S. EPA

Designers of green buildings generally try to limit the adverse impact on the environment and health throughout the site's entire life cycles—from the site selection, acquisition of materials, transportation, construction, use and eventual disuse. The building must be viewed holistically and consider its environmental impact related to its site development, transportation, and infrastructure, as well as the impact related to the full cycle of all building materials and products that make up the building. Green buildings represent important steps in the evolution of buildings and communities towards sustainability and should consider all opportunities to:

- Conserve Resources
- Prevent Pollution
- Protect Ecosystems
- Enhance Indoor Environmental Quality

P2 and Greening Innovations

Water Quality

Stormwater runoff is treated naturally using bio-retention, an innovative system that uses soil and plants to remove contaminants from stormwater. Reductions in impervious surface for roadways and parking increases green space.

Energy Conservation

Compared with standard new lab and office construction, the EPA campus uses 45 percent less energy for a projected savings of more than $1 million per year by conserving non-renewable fossil fuels and reducing air emissions.

Lighting

Daylighting, high efficiency lamps and ballasts, task lighting, and smart controls yield savings in electrical energy use and improve lighting quality.

Building Materials

Building materials were selected based upon durability and low maintenance and the need to minimize life-cycle environmental impacts. Specifications ensure compliance with environmental requirements, such as recycled content, sustainably-harvest wood, and chemical content limits.

Indoor Air Quality

Improved ventilation criteria, special construction requirements and careful selection of materials and finishes promote superior indoor air quality.

Waste Recycling

The green building design enabled constructors and building contractors to recycle 80 percent of all construction waste and reuse selected building materials.

Sustainable development, as defined by the United Nations World Commission on Environment and Development in the 1987 Brundtland Report, "considers those paths of social economic and political progress that meet the needs of the present without compromising the ability of future generations to meet their own needs."

To learn more information about the greening of the EPA RTP Campus, please contact Wanda Allen, EPA RTP, 919.541.7645 or allen.wanda@epa.gov. Additional information also may be found at www.epa.gov/rtp/new-bldg.

Greening in the Lab

Adapted from EPA's Green Future for Laboratories, A Case Study of the Kansas City Science & Technology Center, EPA Sustainable Facilities Practices Branch, May 2003 (EPA-200-F-03-001)

As one can imagine, science laboratories use more energy and water per square-foot than a normal office building because of intensive ventilation requirements and other health and safety concerns. Therefore, the potential to instill these safety techniques in a design and construction process to preserve natural resources and ensure occupancy health can be boundless in any laboratory design.

One case study example is the EPA Kansas City Science and Technology Center in Kansas City, Kansas. A decision was made in the mid-1990s, to construct a new facility to replace the existing Science and Technology Center facility of thirty years. In its planning phase, the facility incorporated many green features and strategies. Aside

from its noteworthy, energy and resources conservation measures, was the use of recycled materials during the construction of the facility.

Results of the Kansas City Center Green Design

Building Materials

Approximately 72 percent of the construction debris was diverted from the landfills due to recycling or project planning. These waste materials were placed in recycled bins instead of the general refuse, and the existing asphalt on the original site was milled and reused later as backfill, thereby saving landfill, transportation and disposal costs. Some of the recycled content in the new materials included the following: concrete, drywall, insulation, metal studs, rebar, reinforced steel, structural steel joists, miscellaneous steel, window glass, acoustic ceiling tile, carpet, and ceramic tile flooring.

Water and Energy Conservation

This laboratory was especially designed to employ water and energy conservation with low-flow plumbing fixtures and heating, ventilating, and air-conditioning (HVAC) systems that are connected to a rooftop rainwater recapture system. The site also features five modular, natural gas-fired boilers, three water cooled chillers, and programmable thermostats. Current modeling predicts that the site will use 270,000 BTUs of energy per gross square feet per year. This translates to an estimated 47 percent savings over a normal energy efficient building.

Green Features at RTP

Natural Landscaping

One of the unique features of the EPA Campus in Research Triangle Park, North Carolina was the use of low maintenance natural landscaping as a pollution prevention strategy. There is a selection of plants that are tolerant of native soils, climate and water availability. This allows for irrigation systems to be simplified or eliminated, and the associated maintenance and irrigation costs are greatly reduced. Plant health is maintained through the use of compost and organic mulches prepared on site. Native plants also minimize the need for fertilizers and pesticides.

Grasses and wildflowers, instead of traditional turf grass, cover the 15 acres of land along the road. These wildflowers and grasses are available in five colors and species. A detailed wildflower specification identifies species and quantities of seed for each palette, with a schedule that will establish a permanent colony over a three-year period. The specification includes seeding directions for spring and fall plantings and the use of environmentally acceptable herbicides and bio-degradable soil retention blankets. This low-maintenance alternative will add diversity and attract wildlife while requiring mowing with a "bush hog" only once a year to control woody vegetation.

Wetland Plantings

A 0.154-acre wetland area will be constructed. The wetland pond and lake will exchange water through an underground transfer pipe to support wetland annual maintenance and control weedy overgrowth. This pond and lake underscores the value of wetland environments.

Composting

Plant health can be greatly improved by the use of compost and organic mulches. Remaining debris from the construction site was shredded and used for mulch. The compost was mixed directly into the topsoil where the decomposed material will aerate and amend the soil for more productive plant growth. Cafeteria waste at the campus also was used for compost in the landscaping.

P2 and Greening Innovations

Rooftop Rainwater Recaputure System

Rainwater is directed to a portion of the roof into pipes that lead directly into a 1,500 gallon underground sediment tank near the buildings mechanical room. Water then flows from the top of the sediment tank into a 10,000 gallon, precast concrete tank just outside the building where a sump pump in the holding tank which supplies the pressure tank which provides gray water for toilet flushing, cooling tower makeup, and landscape faucets. It is expected that the rooftop collection system will supply approximately 763,000 gallons of water per year.

Lighting

Daylight and energy-efficient lamps were incorporated into the energy-efficient lighting scheme. Designers used low-energy glass for all windows, T-5 and halogen lamps for indirect lighting, and T-8 lamps for direct lighting. A high-ceiling open-bay office area allows natural light into the building through its large clerestory windows.

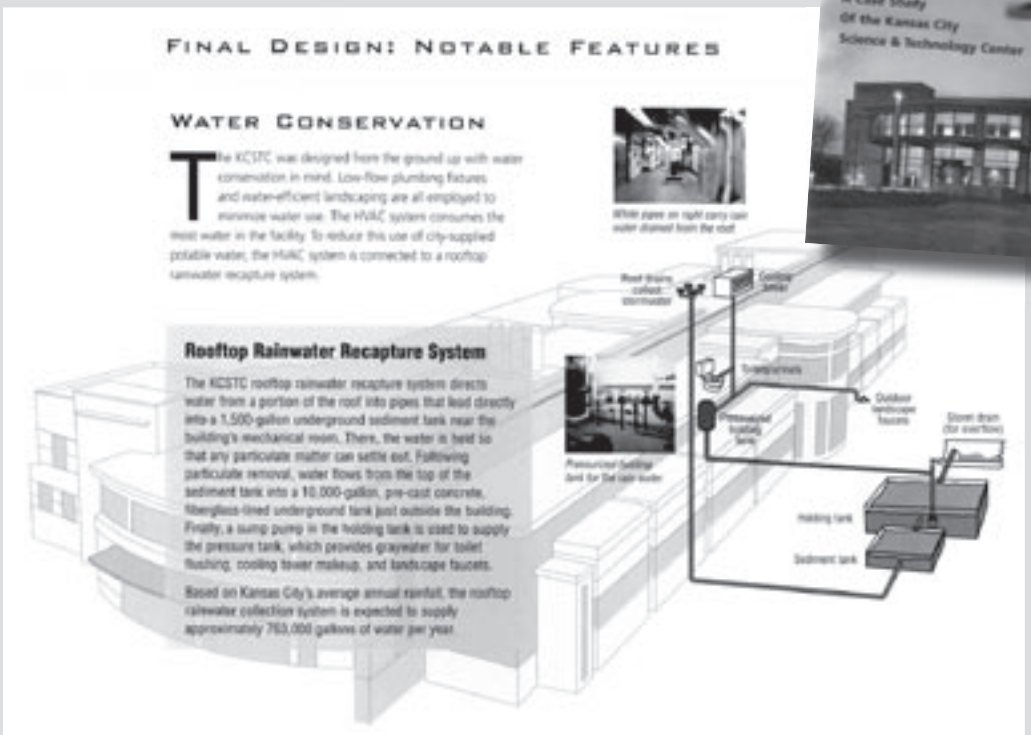
Other EPA facilities actively incorporating green building principles include the following:

- Fort Meade, Maryland
- Chelmsford, Massachusetts
- Boston, Massachusetts Regional Office
- Denver, Colorado Regional Office
- Kansas City, Kansas Regional Office

Natural Landscaping

Xeriscaping is a landscape design concept used at the Kansas City Center focuses on the use of native plants to reduce the need for watering and irrigation, considers soil types, and employs the use of mulches to retain soil moisture. This sustainable landscaping design will also save money on landscape maintenance fees.

To learn more information about the Region 7 green office building project, visit www.epa.gov/region7/p2/offtheshelf or www.epa.gov/greeningepa.



Helpful Resources for Green Buildings and Green Building Designs

- Shop responsibly with ResponsibleShopper, www.responsibleshopper.org
- Use forest products wisely with the WoodWise program, WoodWise Consumer Guide, www.woodwise.org, 800.58.GREEN
- Building Wind Power, NativeEnergy's WindBuilders program,www.nativeenergy.com/coop, 800.924.6826
- Solar Catalyst Group, www.solarcatalyst.org
- A Green Energy Future, Co-op America Quarterly magazine, 800.58.GREEN
- Real Money: Local Action Begins at Home, Real Money newsletter, 800.58.GREEN
- Green Festivals: "The Green Pages in 3-D," www.greenfestivals.com, 877.727.2179

The resources listed above were obtained from Co-op America's 2004 Edition of the National Green Pages. The resource guide features exhaustive resources for strategies of buying green, socially responsible investing tips, and simple actions for building community, as well as listings of many natural and/or organic-based products. To obtain copies of the guide, readers may contact Co-op America, 1612 K Street, NW, Suite 600, Washington, DC 20006, 202.872.5307, 800.58.GREEN, www.coopamerica.org.

Legislation Introduced to Support Green Buildings Initiative

Recently, legislation was introduced to promote the development and construction of "green" federal buildings and schools. Congress will vote on a "High-Performance Green Buildings Act of 2004" in order to authorize $35 million in budget funds over the next five years to support the design and construction of buildings and schools that improve environmental, economic, health, and productivity performance. The new legislation is based on the reports "Building Momentum: National Trends and Prospects for High-Performance Green Buildings," prepared by the U.S. Green Building Council, and "The Federal Commitment to Green Building: Experiences and Expectations," prepared by the President's Office of the Federal Environmental Executive.

The "High-Performance Green Buildings Act of 2004" will:

- expand existing green building research
- provide $10 million in grants to state and local education agencies for the implementation of EPA's Tools for School Program, school facility design, construction, and renovation, as well as improvements with school siting, indoor air quality, contaminants, and other health issues
- promote research on schools to identify relations between school facilities and student health, safety, and productivity

According to the U.S. Green Building Council, there are 118 certified green buildings in the United States, with 1,395 future plans for green buildings.

- provide alternative sources of energy and water in the event of a terrorist attack
- provide for public outreach and assistance to states
- support green building-related markets
- provide an incentive for making investments in federal green building purchases and practices.

As a result of the proposed legislation, the General Services Administration will adopt an Office of High-Performance Green Buildings to promote outreach, research, and development, and an Interagency Steering Committee will be created to increase coordination of all relevant agencies in their implementation of associated laws and executive orders. Also, the Comptroller General will be required to review the federal budget process to identify and incorporate long-term savings from the use of life-cycle costing in building construction.

Tribal College Leverages Federal Funding to Achieve Sustainability

Margaret Tifft Janis, Program Manager, IAIA Initiative for a Sustainable Future

The Institute of American Indian Arts (IAIA) in Santa Fe, New Mexico has developed one of the most ambitious plans for sustainable development of any college campus in the country. IAIA is one of thirty-three Tribal colleges in the US, and the only one that is Congressionally-chartered and charged with serving Native Americans and Alaska Natives from all Tribes. IAIA was founded in 1962 as a high school program for contemporary Native American arts. In 1971 IAIA began to offer Associate degrees and in 2001 it became a four-year college.

In 1990 IAIA was given an undeveloped 140-acre parcel of land south of Santa Fe for a new campus, and for the first time could look forward to developing a campus that would be uniquely its own. The campus master plan, developed in 1992, called for many sustainable features but when IAIA began to build the first campus buildings, sustainable design was considered a luxury that was not affordable. As a result, IAIA designed and built the original campus buildings, which opened in August 2000, using conventional approaches. These buildings met only minimal standards for indoor environmental quality and energy and water efficiency.

In 2001, when IAIA began planning for a second phase of campus development, Della Warrior, the President of IAIA, determined that IAIA could no longer afford to ignore sustainable design. IAIA was facing potential water shortages as the Santa Fe government looked for ways to limit water demand during a long-term drought. The local wastewater treatment plant operators indicated that treatment capacity might be limited for new campus development. There was concern that utility rates might begin to climb, just as IAIA needed more energy and water to operate. Also IAIA was becoming aware of its responsibility to address more

The Library and Technology Center.

global concerns such as environmental degradation, carbon emissions, water shortages, and global warming.

IAIA plans a five-fold increase in campus buildings over the next fifteen years, from 71,000 to 365,000 square feet. Moreover, the new buildings being built on the campus, whether sustainable or not, will last for fifty years or more. IAIA recognizes that the opportunity to build a sustainable campus will be lost if the issue is not addressed in the next phase of campus construction. Further, IAIA recognizes that, perhaps more than other institutions, it is ideally suited to teach by example. If IAIA builds a sustainable campus, it will send knowledgeable graduates back to their home communities to address the environmental issues that often restrict economic development and health in Native America.

Out of these concerns the IAIA Initiative for a Sustainable Future (the Initiative) was born. Della Warrior recruited staff and consultants to develop the Initiative. Initiative staff immediately formed a partnership with the New Mexico Energy, Minerals and Natural Resources Department to provide advice and technical assistance. With the support of state advisors, the Initiative staff developed broad goals and a general plan for implementation.

In the spring of 2002, IAIA and the State energy staff applied for a Federal Energy Management Program (FEMP) planning grant through the Department of Energy's (DOE) State Energy Program Special Projects solicitation. In October 2002, DOE awarded a $100,000 planning grant for the Initiative. Subsequently IAIA received two technical assistance grants from FEMP. The first was to conduct a Federal Greening Charrette or strategic planning retreat for the campus. This was the first federally-supported greening charrette for a Native American organization, and the first for an educational institution. Technical experts provided by the National Renewable Energy Lab (NREL) facilitated the charrette and sixty-five participants from IAIA and other organizations attended. Out of the charrette, a seven year strategic plan with explicit short and long term goals emerged. A second technical assistance grant teamed IAIA with NREL to develop an initial technical and cost-benefit analysis of options for use of renewable energy.

The FEMP planning grant and technical assistance were critical to rapid development and implementation of the Initiative. Not only did FEMP funding provide the seed money to conduct underlying analyses and detailed planning for the Initiative, it afforded Initiative proponents the leverage to redirect campus development, almost from the day the grant was in place. While there are already many positive outcomes that can be directly attributed to the leverage provided by DOE support, two examples dramatically demonstrate how important this initial funding proved to be.

Within two months of receiving the planning grant from DOE, IAIA had awarded a contract to provide technical support to the Initiative staff. Among the first tasks IAIA assigned to the contractor was to conduct a third party review of the completed plans for the future Library and Technology Center (LTC) to identify measures that would increase energy efficiency and indoor environmental quality. The LTC architects had addressed IAIA's desire for improved sustainability in new buildings through a more energy efficient building envelope, mechanical systems and other measures, but the Initiative staff believed that additional measures could be taken to enhance building performance. The review resulted in increased daylighting, shading, occupancy sensors and upgrading of the energy management and control system to achieve greater energy efficiency and improved building functionality. While the third party review was undertaken when construction was about to start, it still had a significant impact on the quality of the LTC. As a result of the initial design and the recommendations of the third party review, IAIA estimates that the LTC is at least 30 percent more energy

efficient than older buildings on the campus and the quality of the work environment has been significantly enhanced.

Through the LTC design and construction process, IAIA learned two valuable lessons that have influenced later decisions. First, do what can be done to improve sustainability when the opportunity arises. Second, establish clear and aggressive goals for sustainability before a design team is selected and before design begins, or sustainability will be compromised.

A second and much more dramatic example of the leverage provided by DOE funding is the design of the future Lifelong Learning Center (LLC). The 126,000 square foot LLC will provide educational programs for over 16,000 people each year in a complex with housing, conference, dining and recreational facilities. Based on analyses and plans developed with FEMP support, IAIA administrators decided that the LLC would be the ideal IAIA prototype for high performance. Before selecting a design team, Initiative staff developed guidelines that were incorporated into the request for proposals. The guidelines outlined sustainable performance goals for energy, materials, landscaping and water use and established requirements for the architecture team to demonstrate experience and knowledge in sustainable design.

Through a competitive procurement, Mazria, Odems, Dzurec (MOD) was selected to lead the LLC design team. MRO, a Santa Fe architecture firm, is internationally recognized for its sustainable design approaches and award-winning buildings. Rather than starting with a conventional design and adding materials and systems to increase energy and water efficiency, MOD took a radical approach to designing the LLC complex. The design virtually eliminates the need for mechanical heating, ventilation and cooling in the complex. Extensive daylighting will reduce the need for electric lighting during daylight hours. Solar hot water will replace conventional hot water heaters in the residential units. Rainwater will be used for toilet flushing and wastewater will be treated on site in constructed wetlands and re-used

Main Entrance Lifelong Learning Center. Artists rendering by Mazria, Odems, Dzurec (MOD).

Dancers from the Alaska Native Heritage Center celebrate the dedication of the Library and Technology Center and the unveiling of Raven, the Creator, a sculpture by John Hoover. Photo courtesy of Chad Gasper, IAIA

for irrigation. Water that enters the campus either in the form of purchased water or precipitation, will be treated and re-used many times before it finally re-enters the water table.

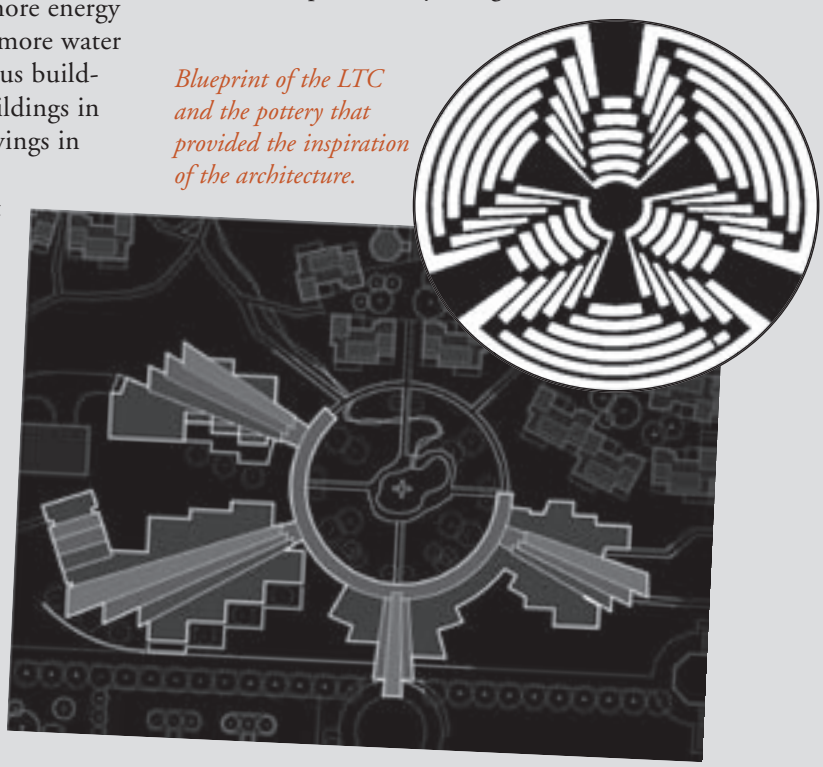
Initial modeling indicates that the LLC will be 60 to 65 percent more energy efficient, and up to 60 percent more water efficient than the original campus buildings and other conventional buildings in Santa Fe. IAIA estimates the savings in purchased energy, purchased water and wastewater treatment will be $138,000 per year or $2.1 to $2.7 million over the first fifteen years of operation, depending on utility rate increases. IAIA expects the LLC to be one of the most advanced sustainable complexes in the nation.

It is important to note that while FEMP funding and technical assistance enabled IAIA to hire technical experts to support the Initiative, and to conduct planning and analytic studies that were important to the success of the Initiative, the two most visible accomplishments to date, upgrading the design of the LTC and designing the LLC as a high performance prototype, came about without spending any FEMP money. Rather, these accomplishments resulted from the leverage provided by the FEMP grants.

In the twenty months since first receiving FEMP support, IAIA has completely redirected campus development. The first new building constructed since the Initiative began is 30 percent more energy efficient than it would have been without the Initiative, and the LLC complex will be a national showcase of sustainability. IAIA can now look forward to becoming a leader in sustainability for Native America, Santa Fe, New Mexico and the nation. These accomplishments are, in no small part, the result of receiving a relatively small planning grant from DOE at a critical time in development of the Initiative. The payoff from these grants will be felt for many years in Santa Fe and in Native American communities around the nation.

All graphics and photos appearing in this article were provided by Margaret Tifft Janis.

Blueprint of the LTC and the pottery that provided the inspiration of the architecture.



Anderson Announces Greening Designation of the Baca/Dlo'ay azhi School

Nedra Darling, U.S. Department of the Interior
Adapted from "Anderson Lauds Baca/Dlo'ay azhi School as First 'Green' Building in New Mexico and BIA School System," Department of Interior News, April 20, 2004

In an Earth Day celebration on the Navajo Nation reservation, Indian Affairs Assistant Secretary, David W. Anderson, announced that the Baca/Dlo'ay azhi Community School was designated the first Leadership in Energy & Environmental Design (LEEDTM)-certified building within New Mexico and the Bureau of Indian Affairs (BIA) school system. The Prewitt, New Mexico school received its designation from the U.S. Green Building Council.

Baca/Dlo'ay azhi Community School opened in August 2003 as a replacement facility for the BIA's Baca Day School and Thoreau Boarding School and serves over 400 students in grades K through 6 on the Navajo Nation reservation. The community school was the first collaborative effort between the Department of Interior and the U.S. Army Corps of Engineers in establishing a sustainable design that incorporated elements sacred to the Navajo culture. Also, the design, construction, and operation of the green building minimized negative environmental impacts and energy demands.

As a LEEDTM-certified building, Baca/Dlo'ay azhi Community School provides better indoor air quality by limiting sources of construction contaminants, isolating dust and other pollutants, and incorporating a Green Housekeeping program. The community school also will decrease its utility expenses and building water usage.

The Baca/Dlo'ay azhi Community School incorporates elements sacred to the Navajo Nation culture. Specifically, the building's main entrance faces east to greet the morning sun, symbolizing the beginning of life. It's four wings surrounding its central core represent the four directions of north, south, east, and west. These wings also are painted to coincide with sacred colors attributed by the Navajo to each direction.

"I want to congratulate the Baca/Dlo'ay azhi Community School on its designation as the first LEEDTM-certified BIA school and as the first 'green' building in the state of New Mexico…Baca has set a new standard for future BIA replacement schools: to provide a healthy, environmentally-friendly and culturally sensitive setting for BIA students to learn in."

— Indian Affairs Assistant Secretary David W. Anderson

The U.S. Green Building Council is a national coalition of building industry leaders that promotes environmentally responsible design, construction, and maintenance for private, public, and commercial buildings.

Baca/Dlo'ay azhi Community School. Photo provided by Nedra Darling, U.S. Department of the Interior.

Turtle Mountain Constructs Environmental Research Center

Gail Harms, Environmental Studies Program, Turtle Mountain Community College

Tribal members and volunteers from many parts of the U.S. gathered at the Turtle Mountain Community College (TMCC) campus at Belcourt, North Dakota to construct an Environmental Research Center (ERC) using straw bales. The project began in July 2004 and is funded by grants from the U.S. Department of Agriculture (USDA) and the American Indian Sustainable Housing Initiative. The non-profit Red Feather Development Group provides support for the design and construction of the straw bale building. The ERC design includes environmentally-sustainable features such as super-insulating straw bales, agriculturally-derived particle board, Forest Stewardship Council certified lumber, non-toxic natural stains, a concrete-saving insulated foundation system, thermal mass reservoirs, an evaporative cooling system, a rainwater collection system, energy efficient lighting, and a day-lighting/passive solar driven design. This structure is a real-life example of energy conservation and an example of the wise use of locally available renewable resources. The structure also addresses the prevalent problem of black mold by incorporating an insulated slab foundation. The project classroom will present TMCC students with the opportunity to observe, first hand, features that conserve energy through materials, design, and orientation. Also, it will be the local comparison base for studies in energy conservation and green building.

In addition, the participation of Turtle Mountain community volunteers in the build activity will provide experience in straw bale construction that may lead to future construction of straw bale homes, which could help to address the housing shortage on the reservation. In all, it is good, it is timely, and it is needed.

For more information, readers may contact Gale Harms, Environmental Studies Program, Turtle Mountain Community College, P.O. Box 340, Belcourt, ND 58316, harley@tm.edu or visit www.turtle-mountain.cc.nd.us.

Photo courtesy of Michelle Humphrey.

NISH Aspires to Lead the Nation in Green Janitorial Services

The National Industries for the Severely Handicapped (NISH) is promoting the use of green cleaning products in buildings across the country and provides green cleaning training for janitorial businesses. NISH is the national non-for-profit agency designated by the Committee for Purchase From People Who Are Blind Or Severely Disabled to provide technical assistance to Community Rehabilitation Programs (CRPs) interested in obtaining federal contracts under the Javits-Wagner-O'Day (JWOD) Program. NISH reports that the average adult inhales 3,400 gallons of air per day, and many workers are inhaling chemicals from cleaning materials, mold spores, pollens, and other allergy-causing pollutants that are in the surrounding air while in their offices and places of business. Experts believe that pollution prevention and green approaches can help to decrease these exposures to pollutants and improve our everyday life.

In recognition of this same approach, the federal government added requirement #23.703 to the Federal Acquisition Regulation, which requires executive agencies to identify and purchase environmentally preferable products and services. EPA provides guidance on the use of these products and services and also promotes the use of non-hazardous and recovered materials. NISH supports this regulation and encourages janitorial businesses to get ahead of the curve with training and consultation. NISH's "green guy," Blaine Robinson, offers consulting and training on green cleaning solutions and believes that helping community rehabilitation programs (CRPs) will position them as leaders of green janitorial services.

"The regulations mandating green janitorial services for federal agencies are in place, but the news is filtering out slowly to contracting officers," said Blaine Robinson, NISH Senior Program Manager.

What is Green Cleaning?

"Green cleaning" is a comprehensive approach to cleaning that is designed to reduce the impacts on the health of building's occupants and workers, while at the same time reducing the environmental impact from the products selected for and used in the cleaning process. Green cleaning takes a "stewardship" (leadership and caring) approach to the building and encourages a sense of shared responsibility, whereby everyone in the building — occupants, managers, and cleaning personnel, as well as visitors and outside contractors — recognize the impact they have on their shared indoor environment.

NISH also summarizes key changes that a CRP should carry out in order to implement a green cleaning program. Key changes include:

- establishing an agreement — ensuring the customer, tenant organization, and the building management are in agreement on the green cleaning program
- building a team — creating a stewardship team to communicate the ideas and goals of the green cleaning program
- conducting assessment surveys — distributing and analyzing surveys in order to quantify improvements and set baselines
- developing a plan — determining opportunities for improvement and prioritizing options
- getting everyone on board — building support for the green cleaning program from all interested AND affected parties.

More information on green cleaning also is available from the EPA Environmentally Preferable Purchasing (EPP) web site, www.epa.gov/oppt/epp/documents/docs.htm. For more information, or to obtain copies of the article inset on page 25 about green cleaning, readers may contact Blaine Robinson, NISH, at 571.226.4646 or brobinson@nish.org.

Gila River Receives Award for Post Consumer Recycling Biodiesel Project, "From Fry Bread to the Fuel Tank"

Candice Bell, Environmental Specialist, and Margaret Cook, Senior Environmental Planner, Department of Environmental Quality, Gila River Indian Community

The Gila River Indian Community Department of Environmental Quality (DEQ) was awarded a grant under the Pollution Prevention and Solid Waste Program in October 2002. This project was a demonstration project designed to produce biodiesel from food production waste. Two staff members of the DEQ, Ed Holyan, Environmental Specialist and Andrea Kroger, DEQ intern were assigned to the project.

The methodology chosen to produce the biodiesel was obtained from the book, From the Fryer to the Fuel Tank, by Joshua Tickell. Initially, Ed and Andrea made the biodiesel, using vegetable oil, in preparation for the first demonstration. Later they produced the biodiesel from the waste oil from a local restaurant which makes fry bread. Gila River Farms Construction provided a diesel fueled generator for the demonstrations used during the development of the biodiesel to show Community members and other agencies how to use biodiesel.

The production used a high level of standards and entailed scientific measures to produce the biodiesel. The process is fairly technical and required laboratory type procedures. The most challenging part was getting the pH balanced; in order to determine the amount of lye required. The staff found that the dirtier the oil, the more lye required.

Staff have put together a biodiesel information notebook and brochure. This information is available for review upon request.

Ed Holyan and Andrea Kroger, Gila River. Photo courtesy of Brian Bennon.

As additional information is received, it will be added to the notebook. When biodiesel becomes accessible to the community, the DEQ will recommend the use of this alternative fuel. In addition, the DEQ staff are encouraging community members to develop their own biodiesel or alternative fuel programs.

What is biodiesel?

Biodiesel is a fuel made from 80-90 percent vegetable oil, 10-20 percent alcohol, and 0.35-1.5 percent catalyst. It is a stable fuel, performs reliably in all diesel engines, cuts emissions, mixes well with petroleum diesel fuel, made easily, safe to handle, and will work with all diesel fuel storage and pumping systems. No engine modifications are needed to use biodiesel in a diesel engine.

The first diesel engine was designed to run on vegetable oil. The patented diesel engine ran on almost any hydrocarbon from gasoline to peanut oil. The diesel engine has since been modified to run on the cheapest fuel available, petroleum. The petroleum industry capitalized on the diesel engine by labeling one of the byproducts of gasoline distillation diesel fuel. Thus, cheap, dirty diesel fuel became the fuel of the diesel engine and vegetable oil was all but forgotten as a fuel source.

Why biodiesel?

Biodiesel has many advantages over petroleum diesel fuel. Biodiesel fuel is reliable and renewable. Biodiesel, mixed with petroleum diesel fuel, increases the fuel lubricity. Diesel fuel was once lubricated with sulfur. When fuel containing sulfur is burned, it produces sulfur dioxide (SO_2), the primary component of acid rain. When legislation mandated that amount of sulfur be decreased, vehicles experienced fuel system problems due to the reduced lubrication.

During the assessment of the project, the following determinations were made:

- The production of biodiesel from vegetable oil is relatively easy.
- The production of biodiesel from waste oil is very technical and requires laboratory type procedures and some scientific knowledge.
- Minor setbacks occurred with mixing the ingredients in a household blender. The methanol reacted with the rubber seal, the seal disintegrates and the mixture leaks from the blender. A blender without rubber seals would be more cost effective.
- The emissions from the generator were visibly reduced after the 20 percent biodiesel mixture was added.

Fry Bread Recipe

- 5 cups of flour
- 1/2 cup of powdered milk
- 1/2 tablespoon of salt
- 2 packages of yeast
- 3 cups of warm water (add more water as needed, add water little at a time until you have soft dough)
- 5 tablespoons of sugar
- Oil for frying

Mix together dry ingredients in large bowl and then add water a little at a time until you have a soft dough. Mix all ingredients with hands by kneading.

Grease a large bowl and put ball of dough in bowl. Cover and place in a warm area and allow the dough to rise for half an hour or more (30-60 minutes).

Using an electric skillet or large frying pan, heat enough vegetable oil to cook several pieces at one time. (Oil is ready when dough sizzles and begins to brown)

Next, lay a thin layer of flour on a designated area to roll dough out on, it can be a table or counter top. Roll out dough until it's about _ inch in thickness and then cut into squares. Cut a small hole in the center of each piece and put into the hot oil. Cook until brown on one side and then turn over. It is preferable to use tongs to turn bread. When both sides are brown, drain on paper towels.

*There is no one single recipe for fry bread, the same basic ingredients are used but many people do not measure their ingredients too carefully. Usually family recipes are handed down and each has it's own unique look and taste.

Because of its lubricating properties, biodiesel can increase the life of diesel engines. Along with the measurable reductions in pollutant emissions, burning biodiesel also reduces the offensive odor associated with petroleum diesel. Sulfur is responsible for much of the odor problems with diesel. There is more of a cooking or frybread smell depending on whose waste oil is utilized in the production of the biodiesel.

The chemistry involved in producing biodiesel is simple enough that almost anyone interested in renewable energy can make biodiesel in their garages, basement or workshops. Some of the more industrious people are making soap out of the glycerin that is precipitated out as a by-product. Biodiesel derived from cooking oil is the greenest liquid fuel available because the primary ingredient is a post consumer waste product.

Biodiesel is fully biodegradable, so spills are much less of a problem than with petroleum diesel. Most biodiesel biodegrades within 3 weeks.

What are the benefits of biodiesel?

Biodiesel can be derived from agricultural crops, as well as from waste cooking oil and animal fats. From an environmental standpoint, producing biodiesel from waste oils and fats is a more environmentally attractive option, because the raw material is a post-consumer product. A gallon of waste oil produces just under one gallon of biodiesel (after adding methanol and precipitating out glycerin).

Photos of fry bread were obtained from www.nathpo,org

Santo Domingo Tribe Introduces Used Oil Collection Pilot Project

Boyd Nysledt, Santo Domingo Tribe, Tribal Utilities Department

Within Santo Domingo Tribal lands, as well as many rural areas, community members have limited access to facilities that change or accept used oil. In many instances, individuals often utilize remote areas for changing oil in their automobiles. On Santo Domingo Tribal lands depressions are dug in the sandy oil near the Rio Grande River, where oil is drained from vehicles. These situations, and many others involving the improper disposal of used oil, call for innovative pollution prevention projects beyond the recognition and funding of existing businesses.

Also, the Santo Domingo Tribe is looking for capital to build an oil changing facility (two bays) as a service to the community. This project could serve as a pilot demonstration project for other Tribes and rural communities, provide a site to collect and store used oil, and as a result, remove the potential for environmental degradation through unwanted disposal. Additionally, by working with the state of New Mexico and licensed disposal sites, the Tribe will be able to transport and properly dispose of collected used oil.

At the onset, there would probably be a very nominal fee, if any, for utilizing the disposal facility, which would be open primarily to community members. However, if proven to be a success, the facility would be open to surrounding communities and members of regional Tribes. Fees would be collected to cover the cost of storage, transportation, and disposal. This project has the potential to remove hundreds of gallons of unwanted used oil, as well as the adverse environmental impacts associated with it, from the middle and lower Rio Grande watershed.

For more information, readers may contact Boyd Nysledt, Director, Tribal Utilities Department, Santo Domingo Tribe, P.O. Box 70, Santo Domingo Pueblo, New Mexico, 87052, 505.465.0055, bnystedt@sdutilities.com.

Hualapai Tribe Receives Award for the Earthship Housing Demonstration Project

SereneThin Elk, EPA Office of Pollution Prevention and Toxics

The Hualapai Tribe of northwestern Arizona received an EPA Jobs Through Recycling grant in 1995 for its "Earthship Housing Demonstration Project" which constructed the reservation's first Earthship structure. Earthship buildings use tires filled with compacted soil as the primary building material in load-bearing walls. Aluminum cans, as well as cardboard and glass bottles, serve as decorative filler in nonbearing walls. In building the structure, the Tribe diverted 500 tires and 500 pounds of aluminum that might otherwise have been landfilled from the waste stream. In the Hualapai Earthship, the Tribe achieved additional reuse by installing surplus windows from an Air Force base.

The Tribe arranged filled tires in three-foot-thick walls, which provide durability and excellent insulation. The insulating quality of the walls, installation of south-facing windows for winter warmth, and setting the building on the side of a hill for temperature moderation keep the Earthship building comfortable for occupants without the use of heating and cooling systems. This reduces construction costs, saves energy, and avoids a gas utility connection. Photovoltaic panels on the structure generate solar electricity, a water collection system on the building's roof obviates a well or municipal water hookup, and diversion of gray water to planters in the house allows for production of food. These advantages appealed to the Tribe since only about five percent of the reservation has full utility service.

The Hualapai Earthship opened in January 1997 and now houses the Tribe's Geographic Information Systems Program. The Hualapai employed 14 Tribal members during the course of construction, proving that jobs are indeed created through recycling. The Tribe hopes these individuals can put this experience to use by building more Earthship buildings and is actively marketing its Earthship construction capabilities to other Arizona Tribes and municipalities. The Tribe gained valuable exposure when 500 visitors, including members of other Tribes, toured the first Earthship structure during its opening ceremony.

Jack Ehrhardt has been involved in Earthship construction for over 15 years and acted as a teacher and mentor for the Hualapai Tribe's first Earthship construction effort. Ehrhardt has also been instrumental in spreading information about this technology to local and state agencies. In fact, the Mohave County Supervisors have recently passed a resolution to construct an Earthship library and information center in Dolan Springs, Arizona. In addition, nearby Lake Havasu City will incorporate Earthship technology in new recreational facilities.

In addition to the technical, economic, and employment advantages of the Earthship structure, there are cultural benefits. Using recovered materials and setting the building on the side of a hill make the Earthship building reminiscent of traditional Hualapai structures, according to Hualapai Cultural Resources Program Manager Loretta Jackson. "Traditionally, Hualapai people built their homes with similar concepts, utilizing materials on hand in their environment. Wa' da mad, an underground building, was constructed for cellars and homes. These homes were used in summertime to escape heat."

For more information on the Hualapai Tribe's Earthship construction program, contact Dr. Kerry Christensen, Hualapai Department of Natural Resources, at 520.769.2255, or Jessica Gaylord, EPA Region 9, at 415.744.2122. Readers also may contact Jack Ehrhardt, Hualapai Tribe, P.O. Box 179, Peach Springs, AZ 86434, 928.769.2216.

National Museum of the American Indian Announces Grand Opening September 2004

Serene Thin Elk, EPA Office of Pollution Prevention and Toxics

Located directly in front of the U.S. Capitol on the National Mall in Washington, DC, the National Museum of the American Indian opened its doors for the first time on Tuesday, September 21, 2004. The 250,000-square-foot Smithsonian Institute museum is home to one of the largest and most diverse collections of Indian art and artifacts in the world. Showcasing objects representing a 10,000-year time span—from the ancient pre-Columbian era through the beginning of the 21st century—the opening exhibitions captured the vast diversity of the Indians of the Americas told from their own perspective.

As part of the grand opening of the Smithsonian Institute National Museum of the American Indian, a six-day First Americans Festival was held on the National Mall. Free to the public, this outdoor, cultural event featured Native performers, who presented contemporary and traditional music ranging from blues, rock, and hip hop to throat-singing, Hawaiian chants, slack-key guitar, and hymn singing. Dance, storytelling, demonstration pavilions on instrument-making, and dance regalia-making also was featured. The First Americans Festival included more than 300 participants who represented more than 50 Tribes and Native communities and several hundreds of onlookers.

Opening day events began with the Native Nations Procession, the Opening Ceremony, and the First Americans Festival.

Concert Series

Opening Night Concert, Tuesday, September 21

Charlie Hill (Oneida), Emcee

Rita Coolidge (Cherokee), contemporary vocals, with flutist Mary Youngblood (Aleut/Seminole)

Lila Downs (Mixtec), world beat

Indigenous (Nakota), rock and blues

Buffy Sainte-Marie (Cree), contemporary vocals

Saturday Night Concert, Saturday, September 25

Pappy Johns Band with Murray Porter (Six Nations Reserve), blues

Keith Secola (Anishinabe), rock and blues

Star Nayea, rock and blues

Sunday Morning Hymn Singing, Sunday, September 26

Cherokee National Youth Choir

Victoria Huggins (Lumbee)

Gospel Light Echoes (Navajo)

Oneida Hymn Singers

"You can hear the sound of drums, and the keening sounds of Tribal rituals all along the march route...

"and see the sun flashing on turquoise, feathers, and gold, as if an alternate world and history had come out of the clouds..."

— Gary Tischler, The Downtowner

Native Nations Procession

Thousands of Natives—many in traditional clothing—participated in the Native Nations Procession. The procession route started in front of the Smithsonian Castle and continued to the main stage.

Opening Ceremony

Jumbotrons located throughout the Mall broadcasted the event on the National Mall.

The program included remarks from the National Museum of the American Indian Director W. Richard West; Jr., Smithsonian Secretary Lawrence M. Small; Senator Ben Nighthorse Campbell and Senator Daniel K. Inouye; and was followed by cultural presentations and a blessing ceremony.

First Americans Festival,

During this event, participants enjoyed native foods at the food pavilion and works of artisans and festival performers at the Indian Marketplace. The Festival was held on the National Mall in front of the U.S. Capitol Tuesday, September 21 through Sunday, September 26.

For more information on the Opening Ceremony and the First Americans Festival, readers may contact museum staff at NMAIFestival@si.edu or 202.633.1000, or visit www.americanindian.si.edu.

Photos taken at grand opening of the National Museum of the American Indian were provided courtesy of Michelle Humphrey, Caren Rothstein-Robinson, Marlene Regelski-Reddoor, and Ella Mulford. The photo of the Tribal member displayed on the cover of this issue also was provided courtesy of Irina Myers.

Announcing the New Tribal P2 Web Site

A new web site, Tribal P2, has been launched in an effort to assist Tribal leaders and environmental managers with pollution prevention (P2), resource conservation and best management practices. The web site, www.tribalp2.org, has been produced through a collaborative effort between the National Pollution Prevention Roundtable (NPPR), the Pollution Prevention Resource Exchange (P2Rx), EPA, and the Montana State University Extension Service. As stated in its mission, the web site provides P2 information that can assist Tribes with achieving environmental sustainability and will help improve Tribal communities. The web site was launched in October 2004 by the NPPR Tribal P2 Workgroup.

A team at the Montana State University Extension Service, Peaks to Prairies Pollution Prevention Information Center, developed the web site, and the Crow Tribe of Montana developed the graphics, layout, and color scheme. The web site highlights Project Resources, a Calendar of Events, Contact Information, Funding Details, and Tribal News.

Questions or comments regarding the web site, content, and design are welcome. Readers should forward feedback and comments to NPPR via email at staff@p2.org. Readers may also submit information for Project Resources, News, or Calendar items by completing the information forms found at the appropriate web page or by emailing them to tribalp2@montana.edu.

How Well Do You Know Your Labels?

Michele Amhaz, EPA Office of Pollution Prevention and Toxics
Adapted from EPA EPP Update #9, www.epa.gov/epp/documents/dowupdates.htm

Do you know what it means when a product claims to be "organic" or "environmentally friendly?" And who monitors companies' claims? A new "Eco-Labels" web site helps consumers decipher labels on food and wood products so they can make more informed decisions about the products they buy.

Developed by Consumers Union, the publisher of Consumer Reports Magazine, the Eco-Labels site provides users with information about the products on which the eco-labels are used and the organizations and standards behind each label's environmental claims.

Users can search the database three different ways—by label, product, or certifier—and are given a list of the associated eco-labels. For example, selecting "Sustainable Wood" in the label search box identifies three labels found on products claiming to use sustainable wood. Clicking on the specific label brings the user to a page of detailed information, including a program description, how a particular product qualifies to carry that label, and a Consumer's Union evaluation assessing the quality of the labeling program. The site also provides contact information for organizations and a list of products carrying that label.

Searching by product provides users with another way to sort and access the information on eco-labels. For example, selecting "Bread" in the product search box identifies 15 different labels found on bread. Each label represents a different positive environmental attribute, such as organic, no additives, or antibiotic-free. The user can then access the same detailed information pages mentioned above. The site does not, however, evaluate specific product brands. Users also can search for a certifying organization or program, such as Rainforest Alliance, Green Seal, or the Department of Agriculture.

In addition, the site provides a glossary and a page describing the criteria used to evaluate "What Makes a Good Eco-Label." You can visit the Eco-Labels web site at www.eco-labels.org.

Save Money and the Environment by Meeting Green

Michele Amhaz, EPA Office of Pollution Prevention and Toxics
Adapted from EPA EPP Update #9, www.epa.gov/epp/documents/dowupdates.htm

Don't be left behind—more and more people are adopting the "green meetings" concept when planning events and conferences. Although some might view green meetings as a fad, current initiatives that are underway are proof to the contrary. Before going any further, however, it is important to identify what exactly a green meeting is, the environmental impacts of holding a meeting, and how to minimize those impacts. Then, this article profiles organizations that are helping develop the green meetings market, and shows how coordinated and collaborative this type of work is.

What makes a meeting 'green'?

Bringing people together for meetings, often for multiple days at a time, can create a variety of environmental impacts—from the smog and greenhouse gas emissions associated with air and ground travel to the paper, plastic, and food waste associated with feeding attendees. Fortunately, however, more and more meeting planners are realizing that they can reduce these impacts and save money in the process, without sacrificing the quality of the attendees' experience.

The Oceans Blue Foundation, a Canadian coastal conservation group, defines green meetings as "an assembly or gathering of people, for the purpose of the exchange of information, where, through careful planning, negative impact on the environment is minimized." In the early 1990s, a green meeting might have meant that brochures were printed on recycled-content paper or that soda cans were collected for recycling. The costs associated with even these simple steps were often prohibitive for most meeting planners and meeting service suppliers. Today, however, the opportunities to "green" meetings and events are almost limitless—often offering ways to save money and increase efficiency in the process.

What can be done to minimize the impacts?

Depending on the size of a conference, incorporating environmentally responsible decisions into meeting planning can begin months, or even years, in advance. Start by carefully choosing the city and conference site that offer the most environmental advantages. This can be the most critical step in laying the groundwork for either a 'green' or 'brown' meeting. Other opportunities to reduce meeting-related impacts on the environment can be divided into six categories. The following few steps can be followed in the six categories:

Accommodations

- Choose a hotel that has energy and water conservation programs, including automatic controls for the HVAC system; fluorescent lighting and automatic lighting controls; low-flow taps, showerheads, and toilets; and gray water initiatives (the recycling and reuse of unpurified water)
- Give hotel guests the option to reuse towels and sheets.

The Mohegan Sun Casino, located in Uncasville, Connecticut, utilizes reduced and alternative energy sources, recycling, and transportation with hybrid vehicles and diesel automobiles in order to promote a "greener" facility. For more information, contact casino management at 888.226.7711 or information@mohegansun.com.

Transportation

To minimize vehicle emissions, plan a meeting so as to maximize the ability to reach meeting locations, accommodations, area restaurants, attractions, and the airport via mass transportation or by walking.

Food and Beverages

- Plan menus around abundant, locally produced ingredients and avoid threatened species.
- When possible, all surplus food should be donated to local shelters and food banks
- Consider providing drinking water in pitchers or large reusable containers instead of small plastic bottles.

Meeting Facilities

Look for facilities that invite meeting attendees to share in energy conservation and the waste reduction process—for example, by reducing paper towel use, supporting use of soap dispensers vs. individual soaps, avoiding waste, and participating in recycling programs that utilize visible signage informing attendees on what is and is not recyclable

Exhibits

- Use signage and evaluation bins that are reusable whenever possible.
- Discourage exhibitors from bringing to the show large quantities of excess materials, which often end up in the trash because exhibitors don't want to ship the excess back at the show's conclusion. Encourage exhibitors instead to refer clients to their web site. Also, useful environmentally responsible gifts are preferable to items that will be discarded at the end of the show.

General Office Practices & Communications

- Take advantage of or promote the use of electronic communication, registration, and proceedings distribution.
- Use double-sided copies.

Who is working to green meetings?

Europe and Canada are far ahead of the United States when it comes to planning green meetings or providing green meeting services such as transportation, food and beverage, or lodging. For example, Fairmont Hotels, formerly Canadian Pacific Hotels, has created their own Eco-Meet program. There is an ever-increasing number of green meeting "pioneers" in the United States, but many meeting planners are still having a difficult time finding green services for their meeting. This is why it is important to remember that asking for "green" is key. It is the first step toward showing that there is a demand for reduced environmental impacts associated with a meeting. For example, when enough meeting planners ask for reusable mugs, nontoxic cleaning services, or energy efficient lighting, hotels, convention centers, and meeting service providers will begin to respond.

Several organizations have undertaken efforts to promote green meetings.

The U.S. Environmental Protection Agency's Green Conference Initiative

www.epa.gov/oppt/greenmeetings

The goal of this initiative is to develop a "one-stop shopping" location at which meeting planning and service providers are able to learn about green meetings. The information is meant to help planners request, and help suppliers provide,

EPA has created the following "10 Easy Ways to Green a Meeting" as a guide to some of the initial steps a meeting planner should take first.

- Ask meeting facilities and hotels if they recycle.
- Paper - Newspaper - Aluminum containers and cans - Tin cans - Corrugated boxes - Plastics - Glass bottles - Organic Waste - Coat hangers - Printer Cartridges - Kitchen grease - Fluorescent lamps - Sterno (liquid fuel).
- Submit rooming lists, settle master accounts, and send other documents by e-mail.
- Plan food and beverage events without using disposable items.
- Plan menus focused around organic, vegetarian, and/or locally grown ingredients.
- Recycle toner cartridges and other items from your on-site office. Use plain paper fax.
- Allow attendees to register online. Confirm registration by e-mail when possible.
- Limit printing of hand outs.
- Instruct facilities to place recycling cans in meeting rooms and hallways.
- Print any necessary marketing and registration materials on processed chlorine-free, high postconsumer content recycled paper.
- Donate surplus food to local shelters, soup kitchens, and food banks—local culture and regulations permitting.

green options for meeting planning. The web site includes the following: a checklist of opportunities that when applied, minimize the environmental impacts of holding meetings; contract language for obtaining "greener" conference planning/support services; and links to information on other related initiatives.

Oceans Blue Foundation

www.oceansblue.org

Oceans Blue Foundation (OBF) is a Canadian environmental charity that was created in 1996 to help conserve coastal environments through environmentally responsible tourism. It is the first organization in North America to focus on developing and promoting best practices and standards for all sectors of the tourism industry, as well as the first to develop guidelines for green meetings.

The Coalition for Environmentally Responsible Economies (CERES) Green Hotel Initiative

www.ceres.org/about/Programs/ghoverview.html

The Green Hotel Initiative seeks to increase green lodging and meeting options by catalyzing market supply and demand. This multi-stakeholder effort—involving business, the hotel industry, nongovernmental organizations, labor, academia, and environmental advocates—promotes environmentally responsible hotel services and encourages meeting planners and travel buyers to stimulate the hotel market.

Meeting Professionals International (MPI)—Green Meeting Task Force

www.mpiweb.org>

In October 1997, Meeting Professionals International's Board of Directors authorized the creation of a task force on Green Meetings. The task force developed a white paper to address options for planning green conferences. Information includes recommendations to MPI planner members and MPI supplier members on how they can make their services and products more environmentally responsible. It also provides specific recommendations to MPI on how to make its own meetings more environmentally responsible.

Fairmont Hotels Eco-Meet Program

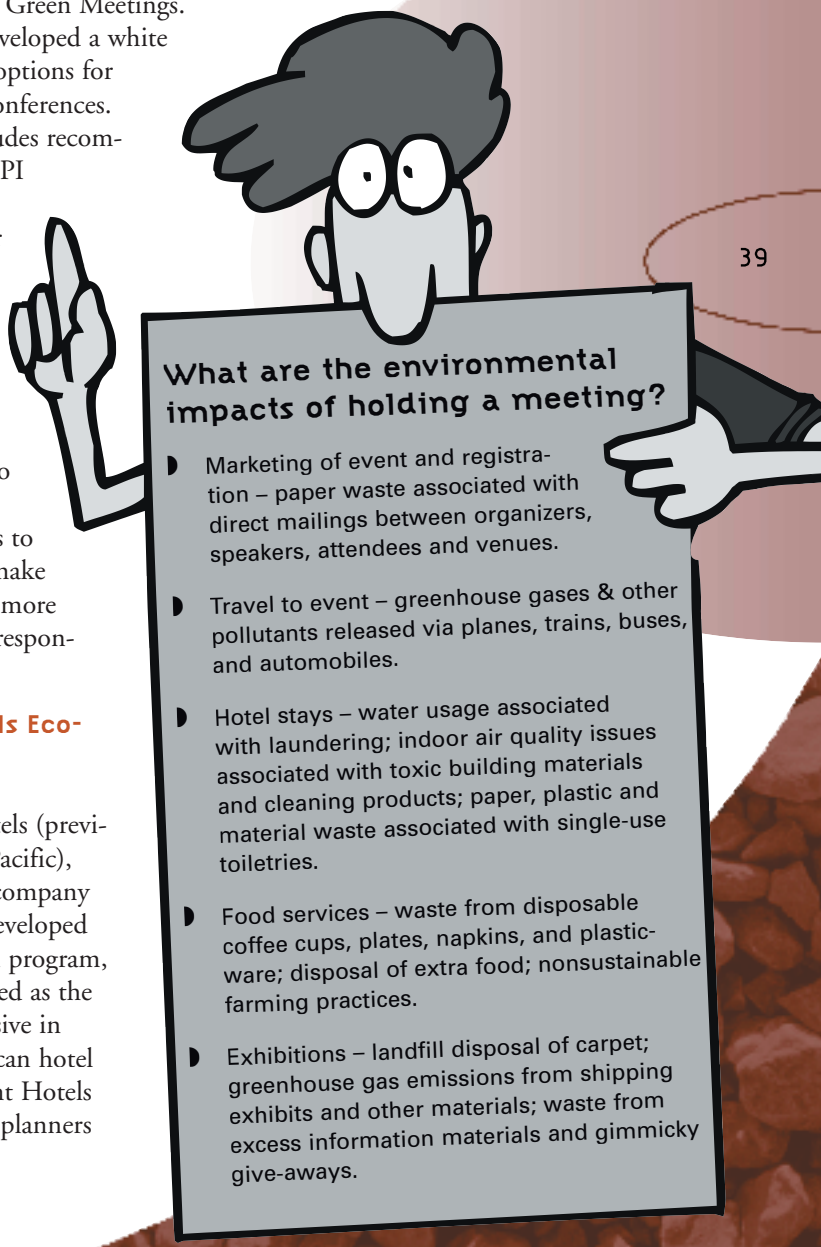
www.cphotels.ca

Fairmont Hotels (previously Canadian Pacific), the largest hotel company in Canada, has developed an environmental program, which is recognized as the most comprehensive in the North American hotel industry. Fairmont Hotels offers conference planners a "ready-made" green conference package called Eco-Meet.

Look for more details on these initiatives and for information on many other initiatives and activities focused on greening meetings and hotels at www.epa.gov/oppt/greenmeetings. The descriptions can be found under the "Current Initiatives" heading.

Meetings Facts and Figures

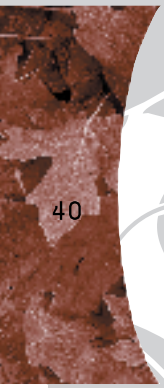
- An average hotel purchases more products in a week than 100 families purchase in an entire year.
- Travel and tourism is now the world's largest industry. Meetings make up a growing component of this industry, which weighed in a few years ago at $280 billion annually, worldwide.



Putting Pests in their Place

Michele Amhaz, EPA Office of Pollution Prevention and Toxics
Adapted from EPA EPP Update #7, www.epa.gov/epp/documents/dowupdates.htm

From rodents to microorganisms; from urban apartments to rural farmlands, many Americans are faced with the challenge of controlling pest populations. In fact, every year in the US, more than 4.5 billion pounds of chemicals are used to control unwanted insects, rodents, and weeds. Unfortunately, these chemicals can have long-lasting negative effects on the health of the surrounding environment and people that live there.



To minimize the environmental and health impacts associated with the use of these chemicals, many farmers, school administrators, city planners, homeowners, and others are using Integrated Pest Management (IPM) as an environmentally preferable alternative. This sustainable approach to pest management, gardening, and food production is rooted in traditional Native American techniques.

IPM is a process that uses a variety of biological, physical, and chemical tools to minimize economic, health, and environmental risks. A wide assortment of IPM approaches exist, from large-scale industrial agricultural applications to green building methods employing pest resistant construction materials. Combining education, alternative agricultural practices, limited applications of less toxic chemicals, and traps and barriers, IPM aims to drastically reduce pesticide quantities while still controlling pest populations.

Native farmers learned sustainable methods of agriculture, such as intercropping and hand control of pests, from their elders before westernization introduced pesticides. The University of Idaho Extension Office has been working closely with the Nez Perce Tribe in Lapwai, Idaho to incorporate IPM back into the community. In response to a renewed interest by Tribal members in backyard gardening, the university, U.S. Department of Agriculture (USDA), and Nez Perce citizens worked together to create a community IPM garden. For five years, hands-on demonstrations and educational classes about IPM have been given at the garden for the Lapwai Boys and Girls Club and the larger Tribal community. In addition to IPM techniques, classes cover garden construction, culture, husbandry, and nutrition. The garden not only serves as an educational tool, but also provides fresh vegetables to the USDA Tribal Food Center for dispersal to more than 280 needy people monthly.

Technical education is the focus of the Haskell Environmental Research Studies Center and the National Institute for Land Management and Training at Kansas State University. The curriculum is designed to help Tribal-operated pest management and livestock operations reduce the negative impacts of pests through the prudent use of pesticides and incorporation of Native American knowledge. The project also utilizes the knowledge of the Prairie Band Potawatomi Nation in northeast Kansas.

IPM is most often thought of in terms of agriculture, but it can be used in many different situations. When Dengue Fever broke out in American Samoa a few years ago, the Western Region IPM and the local Department of Public Health took an alternative approach to spraying pesticides over a wide area. Instead, the groups promoted sanitation methods to cut down on breeding grounds for mosquitos, taught sanitation methods to villagers and worked with local village leaders to survey the island for mosquitos. With help from graduate and high school students, as well as the local media, information about the mosquitos was distributed throughout the island leading to a drop in mosquito populations and disease victims.

IPM Resources

- EPA IPM Resources, www.epa.gov/epp/documents/ipm.htm
- IPM Institute of North America, www.ipminstitute.org
- Technical Outreach Services for Native American Communities (TOSNAC), http://bridge.ecn.purdue.edu/~tosnac/
- Integrated Pest ManagementFlorida,http://ipm.ifas.ufl.edu, and School IPM, http://schoolipm.ifas.ufl.edu/index.html
- Haskell Indian Nations University, www.haskell.edu/haskell/
- University of Idaho Extension, www.uidaho.edu/extension/.

Did You Buy Any Mercury Today? Recognizing Mercury-Containing Products and Their Alternatives

Michele Amhaz, EPA Office of Pollution Prevention and Toxics
Adapted from EPA EPP Update #12, www.epa.gov/epp/documents/dowupdates.htm

You may not realize it, but chances are you recently purchased a product that contains mercury. Don't be so surprised—after all, mercury's unique ability to conduct electricity has proven invaluable in the consumer products industry, where it is used to manufacture hundreds of items, from toys to medicine. Mercury contamination poses a major threat to human health and the environment, however, because it is a persistent bioaccumulative toxic (PBT) pollutant. Mercury contamination is now at crisis levels in many areas of the US.

Identifying some of the products and processes responsible for mercury contamination is the first step toward empowering consumers to purchase environmentally preferable products. While there is no complete list of every mercury-containing product on the market, common items include thermometers, thermostats, electrical switches, batteries, gas appliances, cleaning solutions, lamps, and blood-pressure equipment. Automobiles also contain large amounts of mercury, which is discharged from steel smelters when used cars are recycled. Fortunately, several mercury-free substitutes are readily available, price-competitive, and often sold by the same vendors that sell mercury-containing products. Alternatives for these products use technologies and mechanisms (e.g., aneroid, electronic, or digital) to replace mercury.

Some lifecycle trade-off issues, however, can complicate the choice to eliminate mercury from purchases. For example, facilities and homes throughout the country use fluorescent lamps that contain mercury. Fluorescent lamps conserve electricity and thus reduce mercury emissions from power plants. An analysis of these pros and cons indicates that continuing to use fluorescent lamps for their energy efficient properties is preferable, but users should prevent the mercury in the lamps from polluting the environment by sending the lamps to a recycler instead of disposing of them when they burn out. Sending fluorescent lamps, even those claiming to be "low-mercury," to a reputable lamp recycler ensures proper handling and disposal with minimal mercury pollution. While examining the environmental attributes of all the products we buy is important, purchasing mercury-free products reduces the risk of occupational exposure, decreases the costs of hazardous waste disposal, and prevents mercury pollution in the environment.

For more information on:

- mercury, visit www.epa.gov/mercury
- PBTs, visit www.epa.gov/pbt
- mercury-containing products and alternatives, visit www.informinc.org/fsmercalts.pdf
- buying mercury-free cars, visit www.cleancar-campaign.organd www.informinc.org/ p3_09.php.

Persistent, Bioaccumulative, and Toxic Pollutants

Mercury enters the environment, and ultimately our bodies, through a very direct process. When products and processes release mercury into the air, it often falls into our lakes and streams or onto the ground where it leeches into ground-water supplies. Microorganisms transform the mercury into methyl mercury, which then accumulates in living organisms. Fish, birds, humans, and other animals cannot break down methyl mercury and, thus, mercury accumulates in our bodies as it travels up the food chain. Studies indicate that babies of women who eat large quantities of mercury-contaminated fish show increased neurological, developmental, and behavioral problems, and recent evidence suggests that adults who consume large amounts of contaminated fish are also susceptible to neurological and other problems stemming from mercury poisoning. Contact with mercury from broken thermometers and other means also increases our exposure.

EPA Region 9 Tribal Clinic P2 Assessments

Wendi Shafir, Eileen Sheehan and Tesha Boado, EPA Region 9

Region 9 conducted Tribal Clinic and Hospital Pollution Prevention (P2) Assessments in order to develop resources that will help Tribal clinics and hospitals reduce their generation of toxics (including mercury) and waste. Region 9 hopes to encourage Tribal facilities to participate in the Hospitals for a Healthy Environment (H2E) initiative. H2E challenges facilities to:

- virtually eliminate mercury-containing waste from their waste streams by 2005
- reduce their overall volume of waste (both regulated and non-regulated waste) by 30 percent by 2005 and by 50 percent by 2010
- identify hazardous substances for pollution prevention and waste reduction opportunities, including hazardous chemicals and persistent bioaccumulative and toxic pollutants.

EPA Region 9 has been working with hospitals and clinics in order to minimize their environmental impact by reducing waste and toxics. In May 2003, this project was expanded to include Tribal and Indian Health Service (IHS) facilities.

In conducting the P2 Assessments at Tribal healthcare facilities EPA identified economically beneficial waste reduction opportunities and developed resources allowing the facilities to incorporate environmental concerns into their mission of providing uncompromised patient care. Specifically, these no-cost assessments helped healthcare facilities decrease their generation of toxics (including mercury) and waste, developed and enhanced recycling programs, improved the indoor environment for patients and staff, and saved energy. Each assessment included a brief initial phone interview to gather basic information, a risk-free and a financially-free waste walk-through assessment at the facility, a P2 Recommendations Report which identified potential projects and included implementation resources and a cost-benefit analysis for the facility, and help with P2 implementation. Facilities track, collect, and document data on actual costs and benefits.

To date, seven assessments have been completed across California, Arizona, and Nevada. These P2 assessments have identified opportunities in reduction/elimination of mercury containing devices; red bag (medical) waste reduction of high

Lessons Learned from Tribal Healthcare P2 Assessments:

- Mercury reduction opportunities were identified at most clinics and hospitals to increase staff and patient safety, minimize environmental impact, and provide financial benefits. Although there are initial costs incurred in mercury reduction, clinics ultimately reap long-term savings in reduced training, spill kits, and clean-up costs. (Mercury spills can cost anywhere from $1000 to over $100,000 to clean.)
- Most facilities can implement/improve recycling of solid and hazardous waste streams, realizing cost savings and risk reduction.
- Many resources and contacts are available for healthcare facilities to implement cost saving opportunities in waste/toxic reduction or pollution prevention. There is generally high potential for cost savings related to decreasing red bag waste.
- Product substitutes (for equipment and chemicals) that are more environmentally friendly are usually available. Replacing products with environmentally preferable products when possible is important especially when dealing with health-compromised patients and provides additional benefits to staff as well.
- Overall, there are various cost-saving opportunities at each facility, which can help transform the healthcare industry to ecological sustainability, without compromising the care and services for patients.

cost incinerable waste; initiation or increase in recycling of metals, hazardous, and solid waste; and minimization of toxics exposure from cleaning, disinfection and pest management practices by identifying environmentally preferable products, procedures and best management practices. Mercury reduction was a primary goal of the assessments, and mercury reduction opportunities ranged from about 2000 grams of mercury at one clinic, to virtually no mercury at newer facilities. Clinic red bag waste minimization could result in savings from $600 to over $20,000 annually. Recycling of solid waste could reduce amounts going to landfills by up to 36 tons per year at one clinic alone.

For more information, readers may contact Wendi Shafir, EPA Region 9, 415.972.3422, shafir.wendi@epa.gov.

Resources:

EPA Region 9
http://www.epa.gov/region09/cross_pr/p2/projects/hospart.html

EPA Region 9 works with hospitals, Tribes, state and local agencies, and non-governmental organizations to prevent pollution from hospitals. Its web site provides factsheets and many other resources.

Hospitals for a Healthy Environment (H2E)
http://www.h2e-online.org/

The H2E is a voluntary program designed to help health care facilities enhance work place safety, reduce waste and waste disposal costs and become better environmental stewards and neighbors.

CA Department of Health Services, Medical Waste Program
http://www.dhs.ca.gov/ps/ddwem/environmental/Med_Waste/HP3/default.htm

This web site offers P2 tools including a mercury assessment tool, and many useful links.

CA Integrated Waste Management Board (CIWMB)
http://www.ciwmb.ca.gov/

The Board promotes a zero waste California in partnership with local government, industry, and the public. This means managing the estimated 76 million tons of waste generated each year by reducing waste whenever possible, promoting the management of all materials to their highest and best use, and protecting public health and safety and the environment.

Health Care without Harm
http://www.noharm.org/

Health Care without harm is an international coalition of 437 organizations in 52 countries working to transform the health care industry so it is no longer a source of harm to people and the environment.

Pollution Prevention in the Office of Pesticide Programs

Barbara Madden, Office of Pesticides Programs

For much of its history, the primary function of the Office of Pesticide Programs (OPP) has been to register and regulate pesticides, particularly chemical pesticides. In recent years, however, OPP has begun to shift from simply regulating pesticides to promoting systems of pest management that better protect human health and the environment. This approach recognizes that pesticides are only one element in controlling pests and that, in some cases, non-chemical alternatives can be as effective as chemical pesticides with fewer risks. Related to this shift in approach have been the Agency's efforts to "reinvent" OPP's ways of conducting its work.

An important initiative in this area was the creation of the Biopesticides and Pollution Prevention Division (BPPD). This division is devoted to registering and promoting biologically-based pesticides and activities designed to measure the reduction of pesticide risks. A major effort being spearheaded by BPPD is the Pesticide Environmental Stewardship Program (PESP).

PESP is a broad collaborative effort by EPA, the U.S. Department of Agriculture, and the Food and Drug Administration to work with pesticide users and stakeholders to reduce pesticide risk and use in agricultural and non-agricultural settings. Created in 1994, PESP is a voluntary public/private program that fosters partnerships with the pest management community to leverage research, IPM programs, grants, demonstrations and communications tools to implement pollution prevention strategies specifically aimed at reducing the health and environmental risks associated with pesticide use.

Organizations with a commitment to pesticide risk reduction are eligible to join PESP. The program offers two membership categories. They are:

- Partners: Organizations or groups that use pesticides or represent pesticide users (such as growers, school systems, pesticide applicators, golf course associations, energy producers, and others)
- Supporters: Organizations that do not use pesticides, but have significant influence over the pest management practices of pesticide users. (Food processors, for example, may influence the use of pesticides on produce they buy, even though they do not apply pesticides to the

Photo courtesy of Michelle Humphrey.

produce themselves.) Supporters may also include public interest groups whose constituencies have a strong interest in pesticide risk reduction.

All PESP members make a commitment to reduce pesticide risk and develop activities to achieve risk reduction.

Currently, there are over 140 members in the PESP program. Members are from a wide range of agricultural and nonagricultural sectors including: Antimicrobials, Commercial/Residential Pest Control, Crop Consultants, Environmental Organizations, Field/Row Crops, Food Processors, Government, Landscaping/Turf, Non-Tree Fruits, Organic, Rights-of-Way, Schools, Technology Transfer, Trade Associations, Tree Fruits and Nuts, and Vegetables. The Sector designations are for use by the PESP to encourage information exchange between Partners and Supporters sharing similar interests and issues.

Goals and Principles

The goal of PESP is to reduce pesticide risk in both agricultural and nonagricultural settings. While government regulation can reduce pesticide risk, PESP is guided by the principle that, even in the absence of additional regulatory mandates, the informed actions of pesticide users reduce risk even further. Based on this principle, membership in the program is completely voluntary.

By joining PESP, organizations pledge that environmental stewardship is an integral part of pest control, and they commit to working toward pesticide practices that reduce risk to humans and the environment. Members take a strategic approach to risk reduction and undertake specific, measurable activities toward achieving their risk reduction goals. In addition to formally signing a statement to support the goals of PESP, Partners and Supporters are required to write an annual Strategy that reports and describes their long-term strategic approach to risk reduction and measurable activities to achieve pesticide risk reduction.

The EPA also provides funding to help support member risk reduction activities. There are two separate grants programs that are associated with PESP. Each is administered differently and has unique eligibility requirements. The first, Regional PESP Grants are administered by EPA's Regional offices. These grants support pollution prevention projects that are important to and complement ongoing efforts in EPA's ten regional offices. The second, PESP Project Grants are administered by the National Foundation For IPM Education (NFIPME). These grants support the overall goal of PESP to educate pesticide users and reduce the risks from the use of pesticides in agricultural and non-agricultural settings in the United States.

Additional information about PESP is available on the EPA/PESP web site. You may direct specific questions or comments to PESP's Communications Officer Michael Glikes at 703.305.6231 or call the PESP InfoLine at 800.972.7717.

Photo courtesy of Michelle Humphrey.

A Year of Progress for the Resource Conservation Challenge

Diane Bartosh and Felicia Wright, EPA Office of Solid Waste and Emergency Response

EPA published in February 2004 the first annual report on the Agency's Resource Conservation Challenge (RCC): The Resource Conservation Challenge: A Year of Progress (EPA530-R-04-001). Announced in September 2002, the Resource Conservation Challenge is a major cross-Agency initiative that identifies and uses innovative, flexible, and protective ways to conserve natural resources and energy. EPA is challenging all Americans to make smarter purchasing and disposal decisions that conserve our natural resources, save energy and preserve the environment for our children and future generations. The RCC goals are to:

- Increase the national recycling rate to 35 percent by 2005
- Cut the generation of 31 priority chemicals in hazardous waste in half by 2005.

Challenging Ourselves to Change Our Ways

Everyone has a role in preserving our environment. Through the Resource Conservation Challenge, EPA is asking makers of goods, sellers of goods and buyers of goods to join U.S. in a better way of doing business. The RCC challenges U.S. to:

- reduce waste through reusing materials and recycling
- acquire and use recycled materials
- purchase products containing recycled materials
- make products that are easy to recycle
- reduce the use of toxic chemicals
- conserve energy and materials.

In short, Americans need to adopt a resource conservation ethic–one that helps U.S. to recognize both the good and harmful impacts of our actions on our environment. The RCC means more than conserving our natural resources. It also means reasonable waste management requirements and costs; fewer environmental releases and risks; less greenhouse gas emissions; and more energy savings and recovery.

Forming Partnerships to Meet the Challenge

EPA is forming partnerships to help industries, Tribes, states, and others reduce waste, and provide faster, smarter, voluntary solutions that safeguard our natural environment. It is accomplishing these goals with partnerships and programs that protect human health and the environment; save energy; reduce greenhouse gases; create jobs; and grow the economy. Nearly all the environmental benefits derived through the RCC are based on the work of voluntary public-private partnerships.

RCC's partners range from Fortune 500 companies to small businesses, and include federal, state, and Tribal governments. In 2003, existing RCC partnerships grew, new ones were formed, and many more are taking shape. The Agency's long-established partnership, WasteWise, grew to over 1,300 members, and new ones–like the National Waste Minimization Partnership Program (NWMPP), the Coal Combustion Products Partnership (C2P2), Plug-In to eCycling, and the GreenScapes Alliance–grew from the ground up. RCC's partners identified environmentally beneficial solutions to specific problems and implemented them.

Tribes have also joined with EPA on a sustainable development project. In a joint venture with the Department of Housing and Urban Development (HUD), EPA Region 5 is developing a 5-day course on sustainable development in rural areas, which will discuss incorporating waste reduction and energy efficiency concepts into economic development, community infrastructure, land use, and building design practices. EPA Region 5 is supporting the Fond du Lac Band of Chippewa's effort to provide pollution prevention training to Region 5 Tribes in areas such as Tribal health care facilities, schools, casino/hotel operations, construc-

"I'm thrilled at the energy and enthusiasm surrounding the RCC–and the real sense of ownership by EPA nationwide. It's a true collaboration among diverse stakeholders. We'll accomplish more in less time than years of regulatory development and litigation could ever do…This report shows U.S. that the old ways of doing business are too slow and discouraging, and that the RCC is a successful, collaborative tool for achieving future progress on the environment."

— Marianne Horinko, Former EPA Office of Solid waste and Emergency Response Assistant Administrator

tion and demolition projects, and community outreach. Region 5 is also supporting the Oneida Tribe of Indians of Wisconsin in their effort to create a pollution prevention environmental protection ordinance ensuring that waste reduction; energy, water and resource efficiently; and conservation of natural resources are incorporated into the planning of the Tribe's development projects. For more information contact Dolly Tong at tong.dolly@epa.gov.

To learn more about the RCC or to see the annual report in its entirety, visit www.epa.gov/rcc. Paper copies of The Resource Conservation Challenge: A Year of Progress (EPA530-R-04-001) and other RCC publications may be ordered online from the National Service Center for Environmental Publications (NSCEP). For on-line ordering, please visit www.epa.gov/ncepihom/ordering.htm or call 800.490.9198 or 513.489.8190. The URL for the annual report is www.epa.gov/epaoswer/osw/conserve/resources/rcc-rpt1.pdf.

Photo courtesy of Michelle Humphrey.

Plug-In to eCycling

EPA's Plug-In to eCycling is a campaign that seeks to give Americans more opportunities to safely, conveniently and affordably recycle their old electronics. It is administered out of the Office of Solid Waste's Municipal and Industrial Solid Waste Division. Under Plug-In To eCycling, EPA partners with manufacturers, retailers, and local governments to improve the collection infrastructure and seek market-based solutions to reusing and recycling obsolete electronics. EPA provides its partners with recognition for their efforts as well as resources and information. The Plug-In to eCycling partners safely recycled of 26.4 million pounds of electronic equipment in 2003. For more information go to www.plugintoecycling.org

Starbucks Offers Grounds for Your Garden

Starbucks developed "Grounds for your Garden," a program that will help to reuse the largest portion of their solid waste- - spent coffee grounds. Through this initiative that began nine years ago, Starbucks is providing five pound bags of used coffee grounds to customers, parks, nurseries, and schools for use in composting and gardening at no charge. The coffee grounds can provide a significant nutritious value to gardens and speed up the composting process when mixed with browns such as leaves and straw. Internationally, Starbucks has developed several other initiatives to reuse organic waste. In Japan, for example, the company newsletter is printed on paper that uses the grounds as an ingredient. In addition, Starbucks has also taken measures to reduce all waste by reducing the size of paper napkins and plastic storage bags, two initiatives that will eliminate more than 1.8 million pounds of solid waste in 2004. For more information go to www.starbucks.com/aboutus/compost.asp.

WasteWise

The Fort Independence Reservation in California received a 2004 Program Champion Award from EPA's WasteWise program for developing and implementing an innovative solid waste management program. The Tribe has recycled over 1,200 pounds of recyclable materials including glass, plastic, paper, cardboard, and aluminum. By encouraging community recycling and negotiating with the local landfill, the Tribe also has received enough money from the sale of these materials to fund its program.

Tribal Clinic Waste Reduction Initiative

Dolly Tong, EPA Region 5

EPA Region 5, along with the Minnesota Technical Assistance Program (MnTAP) and the Federal Occupational Health Service, conducted a waste reduction assessment of the Ho Chunk Health Care Center in Black River Falls, Wisconsin. Region 5 and MnTAP introduced the Tribe to the Hospitals for a Healthy Environment Program and other tools in order to promote pollution prevention in the clinic. A recommendations report identified opportunities for pollution prevention and general waste reduction. The Tribe conducted a chemical inventory of the clinic, and worked with EPA and MnTAP to identify P2 opportunities to reduce some of the hazardous chemical use. Under an Interagency Agreement between EPA and the Indian Health Service, the Ho-Chunk is receiving funding to implement the project. The Tribe will develop environmentally preferable purchasing guidelines for the clinic lab, housekeeping, and staff, and will work towards a mercury free clinic and implement other waste reduction measures for the clinic. Implementation hopefully will begin before the end of the year. It is hoped that this pilot project will be used as a case study that can be presented to other Tribes to implement waste reduction concepts at their facility. This effort could be scaled up to help other tribes implement pollution prevention and waste reduction at their health care facilities. For more information, readers may contact Dolly Tong, EPA Region 5, tong.dolly@epa.gov.

Environmental Hazard Assessment Training Courses Available in Indian Country

Felicia Wright, EPA Office of Solid Waste and Emergency Response

EPA's OSWER program is helping to support a unique training course, Environmental Hazard Assessment in Indian Country, in which Tribes can identify environmental issues of concern in their community together with representatives from the Bureau of Indian Affairs, EPA and Indian Health Services. The Environmental Hazard Assessment training courses are being offered by the Harvard School of Public Health. Participating in small group exercises, attendees learn first hand how to conduct a hazard assessment survey, and, based on findings, learn about emergency response planning and pollution prevention, as well as other important topics. This course is offered locally in Indian country at the request of a Tribe.

For more information, readers may contact the Harvard School of Public Health, Attn: Barbara Blanchard, 677 Huntington Ave., CCPE-Dept. A, Boston, Massachusetts 02115-6096, 617.384.8687, bblancha@hsph.harvard.edu.

Tribal Construction and Demolition Debris Management Training

Dolly Tong, EPA Region 5

Region 5 EPA and the Tribal Association of Solid Waste and Emergency Response (TASWER) sponsored a Tribal Construction and Demolition Debris Management Training - "The ABCs of C&D Debris." The training was hosted by the Bois Forte Band of Chippewa in Tower, Minnesota on June 15-17, 2004. There were 43 participants, mostly representing Tribal solid waste, construction, housing, planning, environmental, and other staff; along with federal, state, and local governmental and non-governmental representatives. The training provided an overview of C&D debris management, following the waste management hierarchy of prevention before recycling before disposal. The course included information and hands-on exercises covering compliance with applicable regulations and best management practices. Tribal specific issues, experiences, and case studies were featured throughout the course. The course also included a site visit to the Bois Forte Reservation's C&D landfill. The training course received very positive evaluations; TASWER plans to repeat this course in other Regions in the future. For more information, visit www.taswer.org. Readers may also contact Dolly Tong, EPA Region 5, tong.dolly@epa.gov.

EPA Project Supports Development of Fish Consumption Survey Software for Tribes

Claudia Walters, Office of Research and Development

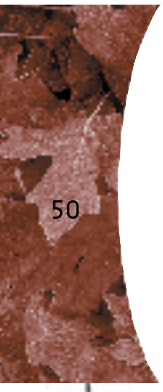
EPA's National Health and Environmental Effects Research Laboratory (NHEERL) is supporting efforts by EPA's Region 10 Office in Seattle, Washington, to assist Tribes with development of their own water quality standards. Scientists are developing Tribal fish consumption survey software that can be used by Tribes in making regulatory decisions to protect water quality. The project is funded by EPA's Regional Applied Research Effort (RARE) program.

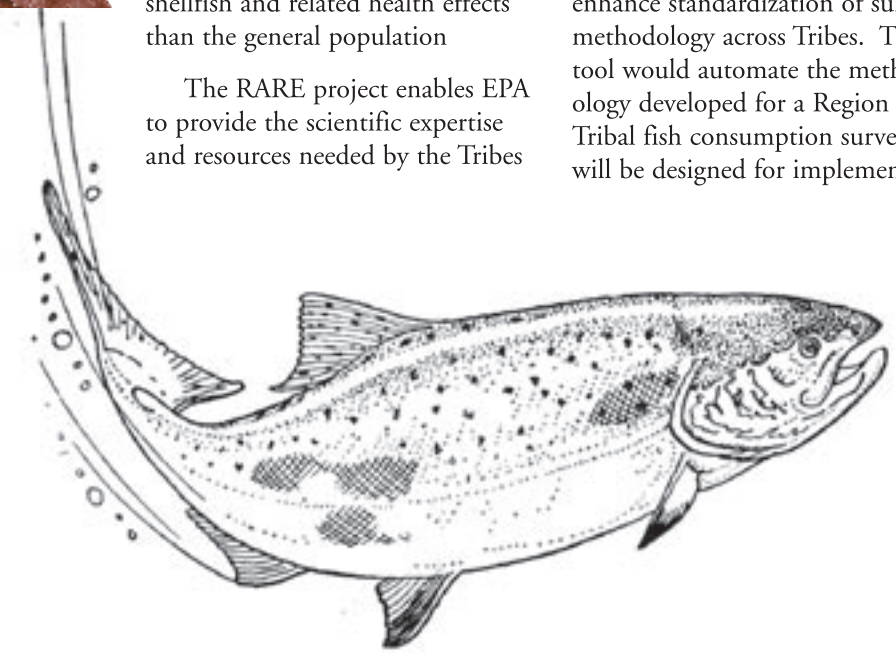
Tribal members consume much larger quantities of fish than the general population and may be exposed to much greater amounts of fish and shellfish tissue contaminants than the general population. This greater exposure potentially places Tribal members at greater risk to chemicals found in fish and shellfish and related health effects than the general population

The RARE project enables EPA to provide the scientific expertise and resources needed by the Tribes to support health-protective water quality standards. The primary objective is to develop and test an easy-to-use electronic survey instrument and database to collect fish and shellfish consumption information. The project also will provide a user's guide for Tribal trainers that will assist them with modifying the software to fit their Tribe's particular consumption needs; assist with development of survey recruitment plans: and provide recommendations on study design to ensure that results are statistically robust for regulatory use. Also provided will be a data dictionary for use by the Tribes in further training and use of the software and resultant database.

The survey instrument will be developed to facilitate collection of fish and shellfish consumption data by Tribes and will be designed to enhance standardization of survey methodology across Tribes. This tool would automate the methodology developed for a Region 10 Tribal fish consumption survey and will be designed for implementation as a computer assisted personal interviewing (CAPI) system so that survey questions and subject responses are directly recorded on a personal computer. Interested Tribes will be given an opportunity to test the software instrument. The tools are expected to be available for Tribal use in fall 2004.

For more information, readers may contact Dr. Ann Williams, EPA National Health and Environmental Effects Research Laboratory, Human Studies Division, at 919.843.4833 or williams.annhepa.gov.





EPA Science Forum 2004

Adapted from Proceedings, EPA Science Forum 2004: Healthy Communities and Ecosystems, June 1-3, 2004

On June 1-3, EPA's Office of Research and Development sponsored the EPA Science Forum 2004: Healthy Communities and Ecosystems at the Mandarin Oriental Hotel in Washington, D.C. Over 1,000 attendees viewed more than 220 posters and 23 exhibits and participated in plenary sessions and speaker presentations that emphasized the importance of promoting scientific collaboration and moving the results of scientific efforts into action. The Science Forum also included a poster awards ceremony and reception on Capitol Hill.

Below OPPTS Tribal News highlights speaker sessions thought to be of interest to our readers. Readers may visit www.epa.gov/ord/scienceforum to get more information on the EPA Science Forum 2004 and to download the entire Proceedings document.

Protection of Tribal Cultural Practices Through the Development of Native American Exposure Pathways

Fred Corey, Environmental Director of the Aroostook Band of Micmacs, discussed the need to develop Native American-specific exposure pathways, as well as the project approach and expected results. The Native American-specific exposure pathways project represents a Direct Implementation Tribal Cooperative Agreement between EPA and the following five Tribes: Aroostook Band of Micmac Indians, Houlton Band of Maliseet Indians, Passamaquoddy Tribe Indian Township, Passamaquoddy Tribe Pleasant Point, and Penobscot Indian Nation. Undertaking this project enabled EPA to fulfill its trust responsibility to protect the Tribal resources and ensure that Tribal lands are suitable for Tribal use.

Mark Your Calendars!

Next year's EPA Science Forum will take place May 16-18, 2005 at the Ronald Reagan Building and International Trade Center, Washington, D.C. The theme — "Collaborative Science for Environmental Solutions" — will focus on collaborations among public and private partners, federal agencies and international partners. Topics will include technology for sustainability, information and data systems, and measuring and quantifying environmental benefits.

There are more than 6,000 enrolled Tribal members in Maine, inhabiting Tribal land holdings in excess of 250,000 acres. These land holdings represent different types of ecosystems, including wetlands, uplands, farmland, developed land, and frontage on rivers, streams, lakes, ponds, and the Atlantic Ocean. In Maine, traditional food, medicinal, spiritual, and recreational practices are linked to water resources.

Therefore, water resource protection is essential to ensure the health and safety of Tribal members engaging in their cultural practices. The use of plants and animals must be safe to ensure the preservation of cultural practices.

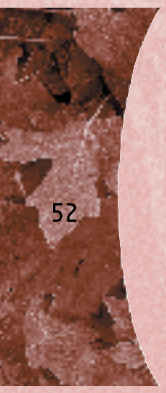
The purpose of this project is to document the cultural practices and resource utilization patterns of the five Native American Tribes in Maine through the development of multi-pathway exposure scenarios to support the development of appropriate water quality standards for Tribal lands. Typically, EPA focuses on uses such as drinking water and recreation, and does not consider traditional uses such as plants, animals, and sweat lodges. Standards are needed that will be protective of such tribal uses, and development of exposure scenarios is essential to human health protection. The project seeks to protect the most vulnerable portions of the Tribal population, which are the Tribal members who live off the land, ingest a lot of resources, have a lot of contact with the environment, or are children.

Although the project approach combines some elements of consumption surveys, it relies heavily upon anthropological research to determine historic, natural resource utilization patterns. To demonstrate that the approach is scientifically sound and legally defensible, experts will assist in assembling the information, which will undergo peer review by a Tribal panel and EPA risk assessment experts.

However, personal/confidential information will be proprietary to the Tribe because they are unique to

a given Tribe. Consumption survey topics include suppressed consumption associated with fish advisories, land use constraints, depleted natural resources, social oppression, and economic factors.

The goals of the Tribes in Maine are to re-establish Tribal fisheries, understand and repeat the historic use of resources dating back to 500 years ago, and develop exposure scenarios indicative of fresh water and marine natural resource utilization patterns. These scenarios will be used to develop water quality standards to sustain the cultural traditions of the Maine Tribes.



Towards a Better Understanding of Mercury Fate and Transport on the Fond du Lac Reservation: Monitoring Air, Water, Sediments, and Biota

Nancy Cost, the Fond du Lac Water Project Coordinator, discussed concerns of mercury in the lakes of the Fond du Lac Reservation, the Tribal air monitoring program, sediment assessments, other studies pertaining to cultural uses of the natural resources on the reservation, and areas for future research. The Fond du Lac Reservation, located approximately 15 miles inland from Lake Superior, encompasses approximately 40,000 acres of wetlands.

Because these wetlands support the most important natural resources to the Tribe, water resource protection is critical. Although there are no significant point sources of pollutants, the boreal forest/wetland ecoregion is especially sensitive to mercury deposition. In this ecoregion, ionic and elemental forms of mercury are more likely to be methylated, creating greater bioavailability to the aquatic food web. Bioaccumulation in higher trophic levels has been seen in piscivorous fish, eagles, osprey, loons, kingfishers, mink, otters, and people. The aquatic food web is of increasing importance due to the recent resurgence of Tribal members moving back to the Reservation to practice their cultural traditions.

The Tribal community relies upon natural and cultural resources such as wild rice, fish, waterfowl, and game for sustenance. The use of these resources is compromised by the health concerns associated with exposure to environmental contaminants. Therefore, it is important that monitoring and protection efforts acknowledge risks posed by mercury.

Tribal air monitoring has included participation in the National Atmospheric Deposition Program since January 1997. Participation in this program provides information on acid deposition and chemistries, and allows the Tribe to review any air permit within 50 miles of the Reservation, including those for some nearby power plants. Additionally, the Tribal air monitoring program includes monitoring for mercury and methyl mercury in precipitation. The close proximity of the Reservation to academic and Federal laboratories enables the Tribe to take advantage of their expertise and laboratory capabilities.

Two sediment assessments were conducted on the Fond du Lac Reservation. The first studied 12 lakes in an effort to characterize sediments; assess contaminant levels in the bioavailable portion for mercury, polychlorinated biphenyls (PCBs), and lead; and conduct toxicity tests. The results of the study indicated higher total mercury values associated with organic sediments, one-third of the sites sampled were in the zone where the possibility exists for effects to aquatic biota, and shallow lakes had consistently higher mercury levels. Data collected in the database were used to rule out PCBs as a contaminant of concern, but did not support the elimination of lead from consideration.

The second sediment assessment project studied 12 St. Louis River sites using the same parameters of the first study with the addition of methyl mercury. Archived samples taken during the first assessment were also evaluated for methyl mercury and the results were added to the sediment quality database.

Graphical interpretation of the data revealed the following:

- A significant relationship exists between the presence of high volatile solids and high total mercury
- Shallow lakes continued to have high mercury levels, and lakes that had both shallow and deep ends showed lower mercury levels in the shallow end sediment samples than in the deep end sediment samples
- A relationship exists between the size of the watershed and total mercury in sediment, with larger watersheds showing consistently higher mercury levels
- Lakes that had higher total suspended solids levels also had higher mercury levels in sediment
- Lakes that were well buffered had low mercury concentrations
- Mercury levels have no relationship with conductivity and pH.

In addition, the Tribe partnered with the Minnesota Department of Health to study fish contaminants in an effort to develop culturally-sensitive guidelines for fish consumption. Results of the study indicated that mercury drives consumption restrictions, and PCBs, organochlorine pesticides, and toxaphene could be ruled out as consumption restriction drivers. Also, In partnership with the University of Minnesota, and funded by the Minnesota Sea Grant, the Tribe conducted a study to determine if the cultural and nutritional benefits of wild foods, as compared to market alternatives, offset contaminant exposure. The study concentrated on food harvested from the aquatic environments on the Reservation and was analyzed for mercury and lead. The study revealed that waterfowl and fish have comparable mercury levels. Therefore, waterfowl should be considered in risk assessments.

Recommendations for future research studies include additional waterfowl sampling, continued fish tissue analysis, continued atmospheric deposition monitoring, and investigations into potential sediment mercury mitigation techniques.

Primary Production Study of Coastal Waters of the Bay of Fundy

Steve Crawford, with the Pleasant Point Passamaquoddy Environmental Department, discussed the goals of the Primary Production Study, sources of major impacts on the Quoddy region of the Gulf of Maine, the resulting impacts to aquatic life and farming, and methods to measure primary production. The goals of the Primary Production Study of the Quoddy Region are to measure and monitor photosynthesis and to monitor algal species biomass on clam flats to establish a baseline for nutrients.

Aquaculture, non-point sources, industry, and sewage treatment can all be sources of major impacts on coastal waters, yet there is no baseline. Although species composition data exist, there are no data on primary production in the area. Another problem is the philosophy that an impact does not exist if there is no science to support an impact determination.

Aquaculture can be a good thing in moderation. There are many salmon farms in concentrated areas that hold approximately 22,000 metric tons of salmon in the Quoddy Region. This generates 4,000 metric tons of feces and 2,000 metric tons of uneaten food. Another impact from salmon farming is the slice used to treat fish lice, which is specific to arthropods, yet researchers have found this in a shellfish (mussel) in a location 1 mile away from the nearest salmon farm. This discovery of such accumulation in mussels raises the question of the severity of the impact of this material on copepods.

Sewage treatment has the potential to cause major impacts in coastal waters. For example, 30 percent of the sewage coming in from St. John in untreated. Impacts seen thus far include suffocating green slime, increased red tides, altered ecosystems, unknown chemical pollution (slice), and eutrophication. Green slime, which grows in the flats, is made up of over 20 species. The suffocating effect of the slime has impacted the waters to the point that Tribal members can no longer make a living harvesting clams because there are too few to harvest. Salmon farms are not believed to be the cause of green slime. A clam restoration project was undertaken involving the planting of clams in flowerpots. Although the data are still being analyzed, preliminary results indicate that the area is no longer useful for growing clams.

Although red fallar traditionally migrated into the Quoddy Region by the millions in the month of August, this migration has not been seen since 1989. Another indication of ecosystem alteration is the disappearance of cod greater than 24 inches in length, the legal limit for cod tagging. All of the specimens that have been caught and examined have been healthy but none have been over 24 inches. It is not known why the large cod have disappeared.

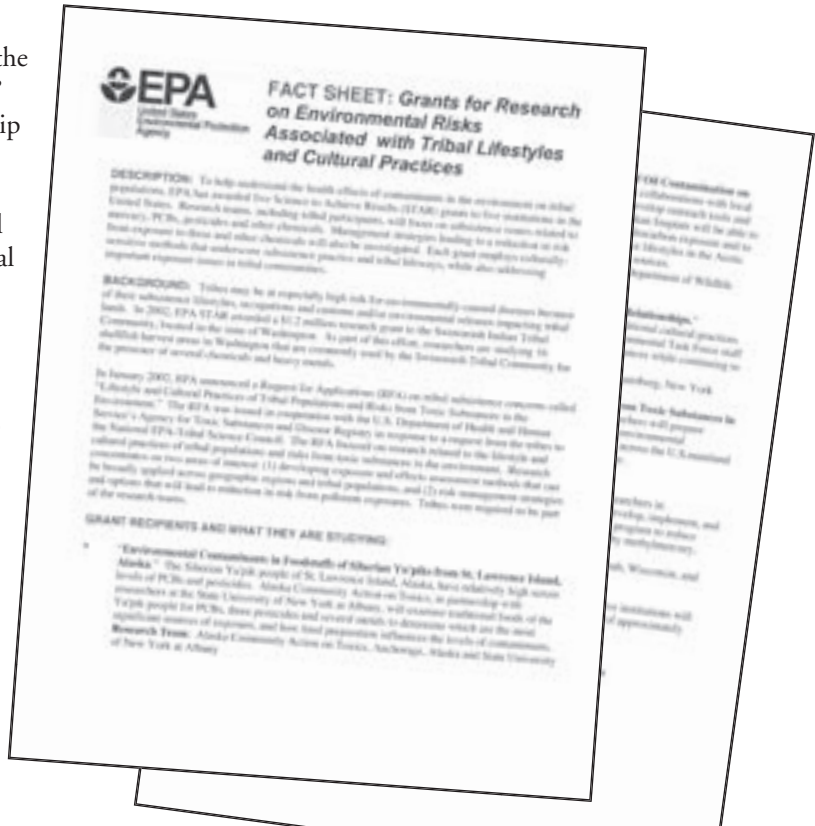
EPA STAR Grants Awarded for Tribal Lifeways Research and Environmental Risks

EPA has issued five Science to Achieve Results (STAR) grants to five institutions in order to promote the understanding of health effects of contaminants in the environment on Tribal populations. Researchers, including Tribal participants, have been tasked to focus on subsistence issues that may result in exposures to mercury, PCBs, pesticides, and other chemicals, as well as management strategies leading to a reduction of exposure to these substances. Each grant employs culturally-sensitive methods that underscore subsistence practice and Tribal lifeways, while also addressing important exposure issues in Tribal communities.

The following five grant recipients are listed below, along with a summary of their proposed study:

- "Environmental Contaminants in Foodstuffs of Siberian Yu'piks from St.Lawrence Island, Alaska." The Siberian Yu'pik people of St. Lawrence Island have relatively high serum levels of PCBs and pesticides. Alaska Community Action on Toxics, in partnership with researchers at the State University of New York, Albany, will examine traditional foods and the effects of food preparation prevalent in their community for PCBs, three pesticides, and several metals.
- "Risks to Northern Alaskan Inupiat: Assessing Potential Effects of Oil Contamination on Subsistence Lifestyles, Health, and Nutrition." Building on existing collaborations with local authorities and citizens of Alaska's Northern Slope, researchers will develop outreach tools and communication mediums for Alaskan Inupiats to help the Tribal community make informed decisions on reducing their risk from petroleum hydrocarbon exposure and maintaining good nutrition and health.
- "Iakotisa'tstentsera:wis Ne Ohontsia: Reducing Risk by Restoring Relationships." Research teams will examine the impacts of toxic substances on the traditional cultural practices of Haudenosaunee Nations. Teachers, youth, and the Akwesasne Environmental Task Force staff will be trained to reduce the risk associated with exposure to toxic substances while continuing to support traditional cultural practices.
- "Lifestyles and Cultural Practices of Tribal Populations and Risks from Toxic Substances in the Environment." This partnership between Tribal and university researchers will prepare regional scenarios that illustrate where Tribes are traditionally exposed to environmental contaminants.
- "Reducing Risks of the Anishinaabe from Methylmercury." Tribal researchers in collaboration with Citizens for a Better Environment of Milwaukee and the Great Lakes Indian Fish and Wildlife Commission will develop, implement, and evaluate a comprehensive, systematic and culturally sensitive intervention program to reduce risks associated with subsistence-based consumption of fish contaminated by methylmercury. The study will focus on the Anishinaabe Tribe in Northern Wisconsin.

For more information, readers may contact Nigel Fields, EPA National Center for Environmental Research, at 202.343.9767 or fields.nigel@epa.gov.



EPA P2 Grants Awarded in Recent Years

Michele Amhaz, EPA Office of Pollution Prevention and Toxics

Within OPPT's Pollution Prevention Division (PPD), federally-recognized Tribes are eligible to directly apply for funding through the following grant programs.

Pollution Prevention (P2) Grants (formerly Pollution Prevention Incentives for the States).

EPA started the Pollution Prevention Grants program with the goal of supporting states as they encourage industry, small and medium-sized businesses, local governments, and the general public to shift priorities from pollution control to pollution prevention. P2 Grants are targeted at state and Tribal technical assistance programs that address the reduction or elimination of pollution by businesses across all environmental media—air, land, and water. Only states and federally-recognized Tribes are eligible for funding. Over the past five years, the annual funding expenditure has held steady at approximately $5,000,000. Since the inception of the grant program in 1988, EPA has awarded 30 grants to Tribes, totaling more than $1.1 million. For more information about the P2 Grant program, please visit EPA's Pollution Prevention Grant home page at www.epa.gov/p2/grants or contact Michele Amhaz, EPA OPPT, 202.564.8857, amhaz.michele@epa.gov .

Source Reduction Assistance (SRA) Grants

The SRA grant program grew out of the Agency's requirement in 2003 to compete all grant/cooperative agreements that award $75,000 or more in programmatic

Some recent examples of various grants awarded to Tribes:

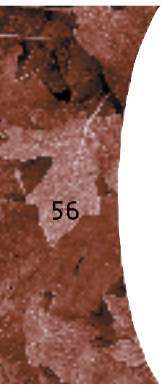
In 2002, EPA awarded a P2 Grant to the Houlton Band of the Maliseet Indian Tribe. The grant allowed the Houlton Band of the Maliseet to launch their "Green Range Initiative Pilot Project." The Tribe set out to partner with state and federal environmental agencies to decrease the levels of lead found in top soil at shooting ranges within and around the Houlton tribal community. High levels of lead exposure can lead to possible health problems. Children and pregnant women are particularly at risk. Lead poisoning can cause learning disabilities, decrease growth, impair hearing, and cause a range of other health problems. Contact: Brenda Commander, 207.532.4273.

In 2002, EPA awarded a P2 Grant to the Suquamish Tribe. The grant allowed the Tribe to: 1) increase awareness of pollution prevention alternatives among businesses on the Port Madison Indian Reservation (PMIR), including all Tribal businesses, 2) develop partnerships with the Suquamish Tribe Community Development, Kitsap County Community Development, and Kitsap County Waste Management to create a system whereby, new businesses and activities can be planned with pollution prevention in mind, and 3) exercise tribal authority to protect the Reservation's environment and community members from pollution-causing products. Contact: Cherri Crowell, 360.598.3311.

In 2002, EPA awarded a grant to the Gila River, Big Valley and Smith River Tribes through the Persistent Bioaccumulative and Toxics grant program. Use of the grant funds allowed the tribes to reduce backyard barrel burning in their respective areas. Specifically, the Big Valley tribe and the Smith River tribe worked to identify barriers to reduce residential burning, and implemented alternative waste management practices to address those barriers. They accomplished these goals by conducting baseline surveys of burning practices, developing comprehensive programs that addressed barriers identified in the baseline survey, and packaged the approaches and results into a final report. The report serves as resource for other tribes nationwide to access in order to replicate these pollution prevention practices within their communities. Contact: John Katz, katz.john@epa.gov.

Poster created for Pollution Prevention Week, September 2003

funds to one or more recipients. The SRA program solicitation notice thus covers additional grant funding resources available from EPA Headquarters and the regional pollution prevention program offices. Eligible recipients include: States, federally-recognized Tribes, local governments, and non-profit groups. In Fiscal Year 2004, HQ and the regional offices supported SRA grant projects that focused on source reduction, pollution prevention, and resource conservation activities. For more information about the SRA Grant program please visit EPA's Pollution Prevention Grant home page at www.epa.gov/p2/grants or contact Michele Amhaz, EPA OPPT, 202.564.8857, amhaz.michele@epa.gov.



Regional and State-based Persistent Bioaccumulative and Toxic (PBT) Project Grants

Each year EPA makes funds available to the EPA Regions to support projects that help to implement key aspects of the PBT Program Strategy and Action Plans. These can be projects developed by the EPA Regional Office itself or it can involve proposals from States, Tribes and other governmental and non-profit organizations. In the past, PBT project grants have supported activities involving: pollution prevention activities, cross-media coordination among program offices within and among regions, and the Agency-wide PBT Program. The PBT Program includes such things as advancing goals and strategies from the draft National Action Plans, or addressing cross cutting issues that support the Program as a whole, such as supporting the Hospitals for Healthy Environment (H2E) Program objectives; projects that focus on the decommissioning of PCB equipment; establishing state fish consumption advisory programs in states which do not have them; or establishing an initiative which focuses on a regulation or sector associated with significant PBT emissions, such as hazardous waste incinerators. For more information about the regional and state-based PBT project grant program, please visit EPA's PBT Recent Additions home page at www.epa.gov/pbt/whatsnew.htm or contact Paul Matthai, EPA OPPT, 202.564.8839, matthai.paul@epa.gov.

EPA awarded a SRA grant to the National Pollution Prevention Roundtable (NPPR) in 2003. A portion of the grant funding was used to create a Tribal work group composed of representatives from Tribes and states. The work group was set up to provide a forum for Tribes and states to collaborate on pollution prevention technical assistance and capacity building initiatives. The work group will work closely with the Forum on State and Tribal Toxics Action (FOSTTA) to help leverage resources and extend communication.

OPPTS Congratulates the 2004 Presidential Green Chemistry Challenge Award Winners

Green chemistry is chemistry designed to reduce or eliminate the use of hazardous substances. The Green Chemistry Program fosters chemical methods that reduce or eliminate the generation of toxic substances during the design, manufacture, and use of chemical products and processes. The program also supports basic research in environmentally benign chemistry and numerous other educational activities. The Presidential Green Chemistry Challenge Awards Program invites nominations that describe the technical benefits of a green chemistry technology, as well as human health and environmental benefits. The Awards Program is open to all individuals, groups, and organizations.

2004 Presidential Green Chemistry Challenge Award Winners

Alternative Synthetic Pathways Award, Bristol-Myers Squibb Company**

Development of a Green Synthesis for Taxol® Manufacture via Plant Cell Fermentation and Extraction

Paclitaxel, the active ingredient in the anticancer drug Taxol®, was first isolated and identified from the bark of the Pacific yew tree, Taxus brevifolia, in the late 1960s. The complexity of the paclitaxel molecule makes commercial production by chemical synthesis from simple compounds impractical. Therefore, in 1991, National Cancer Institute (NCI) and Bristol-Myers Squibb (BMS) agreed to ensure supply of paclitaxel from yew bark while developing a semisynthetic route (semisynthesis) to paclitaxel from the naturally occurring compound 10-deacetylbaccatin III (10-DAB). Since then, BMS developed a more sustainable process using the latest plant cell fermentation (PCF) technology. By replacing leaves and twigs with plant cell cultures, BMS improves the sustainability of the paclitaxel supply, allows year-round harvest, and eliminates solid biomass waste. Compared to the semisynthesis from 10-DAB, the PCF process has no chemical transformations, thereby eliminating six intermediates.

Alternative Solvents and Reaction Conditions Award, Buckman Laboratories International, Inc.

Optimyze®: A New Enzyme Technology to Improve Paper Recycling

Recycling paper products is an important part of maintaining our environment. Although produced from renewable resources, paper is a major contributor to landfilled waste. Some papers contain adhesives, coatings, plastics, and other materials that form sticky contaminants, creating serious problems during the paper recycling process. These contaminants, called "stickies" by the paper industry, can produce spots and holes in paper goods made from recycled materials, ruining their appearance and lowering their quality. Stickies also waste significant manufacturing resources when production must stop to clean the equipment.

During its first five years, the PCF process will eliminate an estimated 32 metric tons of hazardous chemicals and other materials. In addition, the PCF process eliminates 10 solvents and six drying steps, saving a considerable amount of energy. BMS is now manufacturing paclitaxel using only plant cell cultures.

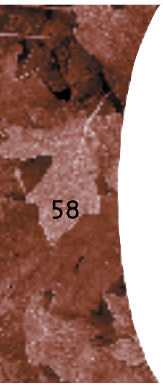
Optimyze® technology from Buckman Laboratories uses a novel enzyme to eliminate common problems in the manufacture of paper from recycled papers. Optimyze® contains an esterase enzyme that catalyzes the hydrolysis of this type of polymer to polyvinyl alcohol, which is not sticky and is water soluble. As a protein, the enzyme is completely biodegradable, much less toxic than alternatives, and much safer.

Since May 2002, more than forty paper mills have converted to Optimyze® for manufacturing paper goods from recycled papers. This new enzyme technology has improved production of a broad range of paper products and improves the quality and efficiency of papermaking, dramatically reducing downtime to clean equipment.

Designing Safer Chemical Award, Engelhard Corporation

Engelhard Rightfit™ Organic Pigments: Environmental Impact, Performance and Value*

Historically, pigments based on lead, chromium(VI), and cadmium have served the red, orange, and yellow color market. When EPA began regulating heavy metals, however, color formulators typically turned to high-performance organic pigments to replace heavy-metal-based pigments. Although high performance pigments meet performance requirements, they do so at the expense of the following: 1) their higher cost often acts as a deterrent to reformulation; 2) their production uses large volumes of organic solvents; 3) some require large quantities of polyphosphoric acid resulting in phosphates in the effluent; and 4) some are based on dichlorobenzidine or polychlorinated phenyls.



Engelhard has developed a wide range of environmentally friendly Rightfit™ azo pigments that contain calcium, strontium, or sometimes barium instead of heavy metals. In 2002, Engelhard produced only 1.2 million pounds of heavy-metal pigments; they expect to phase them out completely in 2004. Rightfit™ pigments have additional benefits, such as good dispersibility, improved dimensional stability, improved heat stability, and improved color strength. Their higher color strength achieves the same color values using less pigment. Rightfit™ pigments also cover a wide color range from purple to green-shade yellow color. Rightfit™ pigments provide environmentally friendly, value-added color to packaging used in the food, beverage, petroleum product, detergent, and other household durable goods markets.

Academic Award, Professor Charles A. Eckert and Professor Charles L. Liotta, Georgia Institute of Technology

Benign Tunable Solvents Coupling Reaction and Separation Processes

For any chemical process, there must be both a reaction and a separation. Generally, the same solvent is used for both, but is optimized only for the reaction. The separation typically involves 60-80 percent of the cost, however, and almost always has a large environmental impact. Conventional reactions and separations are often designed separately, but Professors Eckert and Liotta have combined them with a series of novel, benign, tunable solvents to create a paradigm for sustainable development: benign solvents and improved performance. Supercritical CO_2, nearcritical water, and CO_2-expanded liquids are tunable benign solvents that offer exceptional opportunities as replacement solvents. They offer substantial property changes with small variations in thermodynamic conditions and provide wide-ranging environmental advantages. The team of Eckert and Liotta has worked with a wide variety of government and industrial partners to identify the environmental and commercial opportunities available with these novel solvents.

Small Business Award, Jeneil Biosurfactant Company

Rhamnolipid Biosurfactant – A Natural Low Toxicity Alternative to Synthetic Surfactants

Surfactants are chemicals that can reduce the surface tension of water. Surfactants are widely used in soaps, laundry detergents, dishwashing liquids, and many personal care products, such as shampoos. Other important uses are in lubricants, emulsion polymerization, textile processing, mining flocculates, petroleum recovery, and wastewater treatment. Many of these chemical surfactants pose significant environmental risks because they form harmful compounds from incomplete biodegradation in water or soil. Jeneil Biosurfactant Company has successfully produced a series of rhamnolipid biosurfactant products, making them commercially available and economical for the first time. These biosurfactant products provide good emulsification, wetting, detergency, and foaming properties, along with very low toxicity. They are readily biodegradable and leave no harmful or persistent degradation products. Their superior qualities make them suitable for many diverse applications. Rhamnolipid biosurfactant is a naturally occurring extracellular glycolipid that is found in the soil and on plants.

US Department of Energy National Renewal Energy Lab and the Tribal Energy Program

The National Renewal Energy Lab (NREL) is a national laboratory of the U.S. Department of Energy (DOE), Office of Energy Efficiency and Renewable Energy. NREL is the principal research laboratory for the DOE Office of Energy Efficiency and Renewable and is home to three national centers of excellence: the National Center for Photovoltaics, the National Bioenergy Center and the National Wind Technology Center. The DOE, Office of Energy Efficiency and Renewable Energy also supports a Tribal Energy Program in order to promote Tribal energy sufficiency, economic development, and employment on Tribal lands through the use of renewable energy and energy efficiency technology.

The National Center for Photovoltaics (PV) encourages the most efficient use of the nation's PV resources. The program supports the PV industry in improving the cost-effectiveness, performance, and reliability of its products. Most companies cannot afford large research facilities of their own. Therefore, the national program funds long-term, high-risk, and high-payoff research, development, and testing of PV components and systems in partnership with the PV industry.

The National Bioenergy Center was established in October 2000 to support science and technology goals of the DOE Biomass Program. The goal of the center is to advance technology for producing fuels, chemicals, materials, and power from biomass. The National Bioenergy Center collaborates with industrial, academic, related energy efficiency and renewable energy programs, and other governmental research and development entities to foster capability building in renewable bio-based fuels, chemicals, industrial products, and power. These efforts enable experts to catalyze the creation of new industries and support technical improvements in efficient and economical use of biomass in agriculture- and forest-based industries.

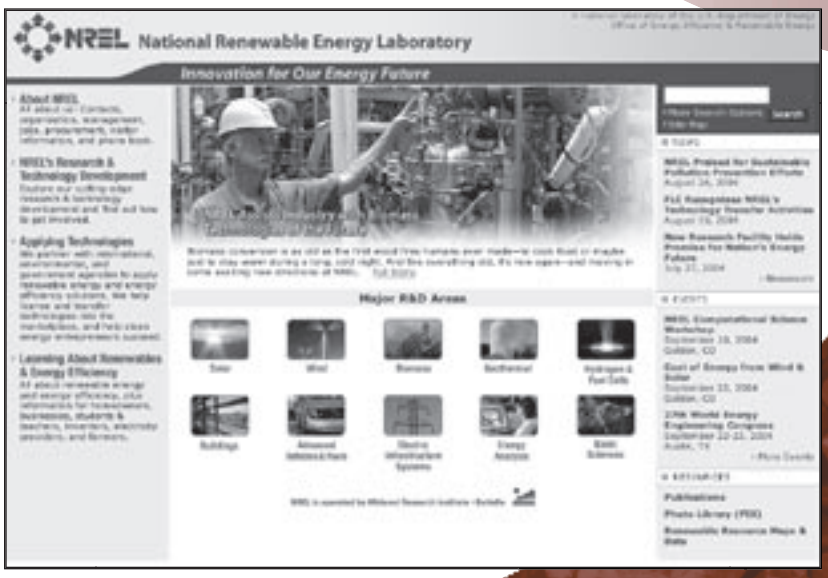
The National Wind Technology Center is located at the foot of the Rocky Mountains near Boulder, Colorado. The National Wind Technology Center researchers work with members of the wind energy industry to advance wind power technologies that lower the cost of wind energy through research and development of state-of-the-art wind turbine designs.

NREL's renewable energy and energy efficiency research focuses on the following program areas:

- Advanced Vehicle Technologies & Fuels
- Basic Energy Science
- Biomass
- Building Technologies
- Electric Infrastructure Systems
- Energy Analysis
- Geothermal Energy
- Hydrogen & Fuel Cells
- Wind Energy.

Recently, NREL sponsored the World Renewable Energy Congress and the NREL Computation Science Workshop. The World Renewable Energy Congress was held August 29-September 3, 2004 in Denver, Colorado, and the NREL Computational Science Workshop was held on September 10, 2004 in Golden, Colorado.

For more information, readers may visit www.nrel.gov.



Supporting Tribal Energy Research at the U.S. Department of Energy

By offering financial and technical assistance to Tribes, the Tribal Energy Program enables leaders to make informed decisions, brings renewable energy and energy efficiency options to Indian country, enhances human capacity through education and training, and improves local Tribal economies and the environment.

Over the last two years, the Tribal Energy Program has funded 38 Tribal energy projects with $7.5 million. Current projects include five development projects, 24 feasibility studies, and nine "first step" projects. For fiscal year 2004, DOE selected seven federally-recognized Tribes and Alaskan Native Corporations to conduct feasibility studies for renewable energy installations on Tribal lands. Specifically, the studies will demonstrate the potential sustainability of renewable energy development, including the potential economic and environmental benefits.

The Tribal organizations and communities selected for awards include:

- Ak-Chin Indian Community, Maricopa, Arizona
- the Confederated Salish and Kootenai Tribes of the Flathead Nation, Ronan, Montana
- Kenaitze Indian Tribe, IRA, Kenai, Alaska
- Mesa Grande Band of Mission Indians, Santa Ysabel, California
- Quinault Indian Nation, Tahola, Washington
- Three Affiliated Tribes of the Mandan, Hidatsa, and Arikara Nation, New Town, North Dakota
- Yavapai-Apache Nation, Camp Verde, Arizona.

For more information, readers may visit the Tribal Energy Program web site at www.eere.energy.gov/tribalenergy. The web site also provides information such on business opportunities, Tribal energy solicitations, case studies on renewable energy projects on Tribal lands, reports and resources, and links to other relevant sites. The DOE Tribal Energy Program has also produced a Guide to Tribal Energy Development, and this document is available for readers to download at the Tribal Energy Program web site.

Laboratories for the 21st Century, 2003 Annual Conference

EPA and the U.S. Department of Energy sponsored the Laboratories for the 21st Century 2003 Annual Conference in October 2003. The conference was held at the Adam's Mark Denver Hotel in Denver, Colorado during October 21-23. The purpose of the conference was to provide an opportunity for architects and engineers behind successful sustainable and green laboratories to meet, exchange ideas, and showcase new study and research results.

During the event, industry leaders showcased their projects, highlighting sustainable features, and discussed strategies for improving laboratory energy efficiency and environmental performance. Attendees also participated in smaller roundtable sessions to discuss sustainable campus planning, performance benchmarking, exhaust systems and fume hoods, project financing and economics, codes and standards for laboratories, and specialty labs, including pharmaceutical, forensic, teaching, and bio-containment laboratories.

For more information, readers may visit www.epa.gov/labs21century.

You're Invited to Participate in the 7TH National Tribal Conference on Environmental Management

The Grand Traverse Band of Ottawa and Chippewa Indians (GTB) is pleased to invite you to participate in the 7th National Tribal Conference on Environmental Management (NTCEM) in Traverse City, Michigan June 7 - 10, 2005. The NTCEM is being held at the Grand Traverse Resort and Spa, owned by GTB.

The NTCEM is one of the premier environmental events in Indian Country. With approximately 1000 people expected, the conference provides an opportunity for Tribal leaders, environmental managers, scientists, and organizations; federal agencies; and other interested entities to share information about Tribal environmental programs and discuss issues of vital interest to Indian country.

The Grand Traverse Resort and Spa is the Midwest's largest year-round resort and conference center. Well respected in the travel industry, the resort is ranked in the top 20 mainland resorts and top 50 travel destinations and services worldwide by Conde Nast Traveler.

The National Tribal Conference on Environmental Management (NTCEM) has generally been held on a bi-annual basis since 1992. This year's Tribal co-host, the Grand Traverse Band of Ottawa and Chippewa Indians was selected through a national competition. The conference focus is generally on multi-media environmental issues affecting Tribes, familiarizing Tribes with the full extent of Tribal and federal environmental program activities, and generally on exchanging knowledge and skills that will enhance the environmental protection of native communities throughout the US.

The GTB is actively seeking agenda suggestions on environmental issues of importance in Indian Country and will use selected ideas to shape the conference agenda. You are encouraged to submit your ideas on environmental activities, issues, and opportunities for participation in the event. In addition, GTB will have significant room for interested vendors at the conference. For more information please contact Andy Knott, GTB Environmental Stewardship Director, at 231.271.7363 or aknott@gtbindians.com or Suzanne McSawby, GTB Natural Resource Department Director, at 231.271.7104 or smcsawby@gtbindians.com.

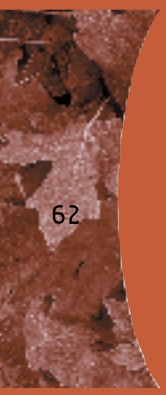
* This Conference is sponsored in part by the U.S. Environmental Protection Agency under a Cooperative Agreement.

How Plants Help U.S. Heal

Serene Thin Elk, Office of Pollution Prevention and Toxics

Respecting and taking care of the earth is taking care of ourselves. The teaching of traditional lifeways in many Tribes is understanding that we are a part of the earth and that our relationship to Mother Earth is as her children. Since we are a part of the earth and we are made of the same minerals, everything that is natural to mother earth is also natural to us. Some of the natural elements are the plant nations and some of these plants are very important to our health and wellness. Many of these sacred plants help Indigenous Peoples heal and to become in balance for a healthy life. Our people learned how to interact and use sacred plants in all aspects of their ways of life by experimenting, observing and through ceremonial knowledge acquisition. Generally, northern plains Tribes use three primary sacred plants for prayer and medicinal purposes. The first plant, mentioned in this article is, peji hota, the second is wacanga, and the third canli (chun-lee) most often utilized when praying and in ceremonial purposes. These plants help unify spiritual powers, focus the participant's mind set, and prepare the body for the purpose of offering prayers to Wakan Tanka (Great Spirit/Creator). These prayers and ceremonial rites are used for purification and healing. When mother earth relationship with natural elements are based upon respect, knowledge, appropriate use by appropriate persons, in regards to specific ceremonies and healing ways it becomes a powerful medicine for the mind, heart and soul. This is why it is very important to show mother earth the same respect she shows U.S. by providing U.S. this medicine.

In conclusion, when we take care of our environment with respect, she will nurture our spirits and restore our balance for health through providing U.S. with her sacred plant medicines. A gift to you the reader, is to find teachers that can share lessons of traditional wisdom and knowledge about the inter-connective ness and interdependence in all of life. Amongst the Lakota, Dakota and Nakota in the northern plains there is a universally encompassing prayer that is said. The Prayer is "Mitakuye Oyasin." Mitakuye signifies our relations and the relationships we make, making everyone and everything connected. The Oyasin signifies that we all have an innate universal soul yearning to once again regain the presence of the Creator and we do this by making good relations and relationships by recognizing the Creator in all of life. In doing this we are aware of the purposes of our earth journeys and when our spirit leaves this earth life, it will understand how it was a relative to the human experience. Mitakuye Oyasin.



Photos of Peji hota, Wacanga, and Canli were obtained from www.medicineshield.com and www.affordablepipes.com.

L/D/Nakota language dictionary:

Wakan Tanka: Great Spirit, Creator

Peji hota: Sage

Wacanga: Sweet Grass

Canli (Chun-dee): Tobacco

Mitakuye Oyasin: We are all Related

Wanigi Tacanku: Milky Way

Peji hota is a silver-leaf plant that is used in many different prayers and sacred rituals for purification. Burning Peji hota reinforces "positive" energy and eliminates "not positive" energies. It can be rubbed upon the body, carried or placed in the environment that is appropriate for the desired prayers. It can be made into a tea for medicinal purposes.

Wacanga has a sweet and pleasant smell when burned. It is used to honor Wakan Tanka and bring blessings to prayers and for purification and healing. The smoke that rises from Wacanga sends prayers to the Great Spirit. When wacanga is burned the White Buffalo Calf woman is present, she told this to the Lakota people when she brought them the Sacred Pipe.

Canli is used in the sacred pipe, rising into the sky as a visible prayer. Canli offerings are made by taking a small amount of canli and wrapping it in tiny squares of colored cloth of the four sacred colors (red, black, white and yellow). These canli tie offerings are made to stand for prayers made to Wakan Tanka. Canli is also used because it opens a portal or communication road between the physical and spirit worlds. The spirits walk on the canli, it is made visible in the heavens, and it is called the Milky Way or wanigi tacanku to the Lakota.

Mark Your Calendars!

January 2005

12-14
Pesticide Sampling and Monitoring
EPA Office of Pesticide Programs and Native Ecology Initiative
Fiesta Inn
Tempe, Arizona
Lillian Wilmore, 617.232.5742
naecology@aol.com

February 2005

28-March 2
NCAI Executive Council Winter Session
National Congress of American Indians
Orlando, Florida
NCAI, 202.466.7767
www.ncai.org

March 2005

16-18
Tribal Pesticide Program Council Meeting
Arlington, Virginia
Lillian Wilmore, 617.232.5742
naecology@aol.com
Georgia McDuffie, 703.605.0195
mcduffie.georgia@epa.gov

April 2005

29-May 1
2005 Indian Health Service Research Conference
Seattle, Washington
Cecily Ybarra, cybarra@hqe.ihs.gov
www.ihs.gov

May 2005

3-5
12th Annual NTEC Conference
National Tribal Environmental Council
Green Bay, Wisconsin
www.ntec.org

EPA Web sites and Hot Lines

EPA	www.epa.gov
OPP	www.epa.gov/pesticides/
OPPT	www.epa.gov/opptintr
Pollution Prevention	www.epa.gov
American Indian Environmental Office	www.epa.gov/indian
Asbestos Abatement/ Management Ombudsman Hotline	1-800-368-5888, 202-566-2855
National Lead Information Center	1-800-424-LEAD, 1-800-424-5323 www.epa.gov/opptintr/lead/nlic.htm
Lead Hotline	www.ace.orst.edu/info/nptn
National Pesticide Information Center	1-800-858-7378 http://npic.orst.edu/index.html
Toxic Substances Control Act (TSCA) Hotline	202-554-1404

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