



CONFERENCE SUMMARY

RESTORING GREENSPACE: ECOLOGICAL REUSE OF CONTAMINATED PROPERTIES IN EPA REGION 6

May 17-18, 2005

Hotel Monteleone, New Orleans, Louisiana

Wildlife Habitat Council – Conference Proceedings

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Conference Overview and Objectives

The Wildlife Habitat Council (WHC) held its third Restoring Greenspace conference in New Orleans, LA on May 17th and 18th, 2005 at the Hotel Monteleone, which is located in the heart of the French Quarter. This was the third of a series of regional conferences aimed to encourage and enable site managers, local planners, and communities to incorporate ecological reuse as part of remediation techniques or end uses in their Brownfield, RCRA, Superfund or Leaking Underground Storage Tank properties.

This regional conference presented a first-hand look at innovative programs, new initiatives and case studies that highlight the incorporation of ecological reuse practices in site restoration in EPA Region 6 and aimed to identify strategic methods associated with the implementation of ecological enhancements on contaminated lands based on the white paper, "Making the Case for Ecological Enhancements." The white paper was prepared by a group of nationally known experts in 2002 and illustrates known benefits of using ecological enhancements, while relying on actual case studies to capture the lessons learned so far. It makes recommendations on next steps for increasing

the number of success stories.

The conference objectives were to:

- Identify ecological approaches to clean-up and the cost benefits of ecological reuse through case studies;
- Identify performance metrics for success in ecological restoration;
- Assess regulatory obstacles to using ecological enhancements on contaminated properties; and
- Evaluate approaches for obtaining constructive and meaningful stakeholder involvement.

This conference provided a sound foundation for moving forward in the development of an action plan specific to EPA Region 6. This region, with the strong leadership of EPA and the encouragement of communities and non-profit groups, has initiated many remarkable efforts to incorporate ecological enhancements into site remediation plans and as end uses. Finally, WHC plans to form a regional working group to develop and promote on-the-ground measures for ecological reuse of contaminated properties and demonstration sites to increase the use of ecological enhancements in restoration efforts.

Welcoming Remarks

Mr. Bill Howard, President of the Wildlife Habitat Council, welcomed guests to the conference and thanked all the partners, who are working together to make things happen. He stressed that these conferences are designed to stimulate dialogue and promote new technologies and techniques, and that we cannot achieve conservation goals and biodiversity by only preserving refuges or parks; restored lands are essential in protecting and preserving biodiversity.

Ms. Yarrow Etheredge, Environmental Affairs Director for the City of New Orleans, also welcomed attendees, thanked WHC for choosing New Orleans as the conference location, and noted that the largest wildlife refuge in the nation is located right in the New Orleans area - the Bayou Sauvage. With EPA's assistance, Yarrow noted that one initiative in the New Orleans area is to turn 177 abandoned gas stations into open green space. Bioremediation technologies are crucial to getting contaminated sites remediated. Restoring brownfields can help restore neighborhoods. To date, 25 brownfields in the New Orleans area have been developed while the creation of green space is pursued at other sites. Yarrow mentioned that she is inspired by Florida's green space goal and believes that WHC will make it easier to achieve green space goals. "Land is not disposable; land can be renewable. There are many opportunities to work together through the transformation of relationships between community and other involved stakeholders"

Mr. Dan Hunter, a board member of the Wildlife Habitat Council from ConocoPhillips, addressed the attendees and posed the question: How far do we go or when are we done? Dan noted that "it is a lofty goal to move from 'brown to green', but we must

aspire to move from brown to green to 'bright green'. Bright green sites are those that go beyond removing any contaminants. Turning brownfields into green spaces is good, but turning "brownfields into bright green spaces is better." Dan emphasized that this is the role of WHC and no candidate is too large or small for their services. WHC can help formulate an active management plan and can be a valuable, contributing member of your team. Without assistance from WHC, "ConocoPhillips would have stopped at the green stage and would not have been inspired to strive for the bright green".



"It is a lofty goal to move from 'brown to green' but we must aspire to moving from 'brown to green to bright green."

Welcoming Remarks

Bill L. Luthans, Deputy Director of Multi-Media Planning and Permitting Division for EPA Region 6, provided the federal government's regional perspective and mentioned that the area has been involved in several conferences on land restoration, but this is the first time they have focused on the bright green and ecological reuse of contaminated properties. He noted that thus far, it has been a very educational and rewarding experience. Bill commented that EPA has moved beyond the role of command and control to an agency that facilitates and encourages innovation, as well as one that it is now playing a more advisory and consultative role

when looking at these issues. His team looks forward to sharing some of the innovative tools from Region 6.

The region is and will be looking for additional information from WHC on how best to incorporate ecological reuse into the "Ready for Reuse Program." Bill stressed that it is not enough just to clean up a site; the goal now is to come full circle and return the property to the community.



Bill Luthans (right) welcoming attendees

Keynote Address - Karen Gautreaux, Deputy Secretary, Louisiana Department of Environmental Quality

Karen began by discussing how voluntary efforts are very important to improving habitat while restoring a site. She noted that ecological impacts can often result on lands affected by human impact. The key elements of her presentation pertained to the land loss causes and restoration techniques of Louisiana's coastal ecosystems and how this system can be rehabilitated.

Karen explained that land loss in Louisiana arises from several factors. In the coastal area, the region has lost 1,500 square miles of coastal wetlands since the 1930s. The impact has been seen on global, national, and local levels. She emphasized that the ecosystem can be rehabilitated with the appropriate techniques. The challenge lies with the energy

infrastructure, as the state has one of the largest wetland habitats for migratory waterfowl, however, 25% of all gas consumed in the United States travels through these very same wetlands. Louisiana also has one of the largest port systems in the world. Due in large part to floods, the region loses 160 million tons of sediment per year, which causes a rise in the insurance risk. Hurricanes and storm surges also result in coastal land loss, and salt water intrusion occurs from the Gulf of Mexico areas to the wetland regions. Canal and levee construction drains 41% of the continental U.S. waters.

Keynote Address - Karen Gautreaux, Deputy Secretary, Louisiana Department of Environmental Quality

Karen noted that the state has initiated a comprehensive plan to restore coastal Louisiana through a partnership between the state and five federal agencies.

She also presented several restoration techniques, including sediment diversion in the Mississippi River Delta and River Water Re-introduction, which reconnects alluvial influences with estuarine marine systems. Restoring natural drainage patterns, actively managing water flow, decreasing or halting shoreline erosion, and restoring and protecting barrier islands are all mechanisms for restoration. Other methods include sediment and nutrient trapping through Sabine terraces, vegetative plantings, and other projects administered by the federal Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA).

Wetlands have also been used to treat wastewater for centuries. The addition of freshwater lowers the salinity and helps prevent salt water intrusion from occurring, resulting in significant water quality improvements. In the Thibodaux Wetland Enhancement Project, for example, there was a documented increase in accretion, with savings estimated at \$1.5 million. Freshwater input has been shown to be critical to the survival of freshwater wetlands.

Karen concluded by emphasizing that comprehensive environmental protection is necessary for people and wildlife, and then addressed the following

questions.

Question 1: Do you have a breakdown of cost savings? (regarding the use of wetlands and wastewater treatment)

Answer 1: They can be obtained from Dr. John Day.

Contact Information:

Dr. John Day
2237 Energy Coast and
Environment Building
LSU-Coastal Ecology
Institute
Baton Rouge, LA 70803
(225) 578-6508 office
johnday@lsu.edu



In the coastal area of Louisiana, the region has lost 1,500 square miles of coastal wetlands since the 1930s.

Q2: Can you summarize how you go about connecting with stakeholders?

A2: No one wins if nothing happens and there is recognition in the state that this needs to happen. There is a 97% awareness of the issues by the people of Louisiana, so there is tremendous buy-in and acknowledgment of pressures so that we know we have to do something. In Louisiana, we're making people aware that it is in their best interest to get involved through outreach, public education and by utilizing non-traditional venues.

Q3: Wetlands Tertiary Treatment has become attractive for fisheries. Is that an issue here?

A3: Dr. Day can probably answer the question.

Keynote Address - Karen Gautreaux, Deputy Secretary, Louisiana Department of Environmental Quality

Q4: Can you describe the brownfield tax credit bill?

A4: Senator Fonteneaux originated the bill. It's a 15% credit on site investigation and 25% credit on the cost of cleanup, but there is a cap on cleanup. Negotiations are about state budgets. The sum of all tax-credits exceeded the budget so it is being looked at again.

Q5: What are some of the drivers for partnerships between traditional and non-traditional organizations?

A5: People have different motivations. One organization may want to avoid a regulatory program; another may see the benefit of working together. No one can accomplish anything significant without a solid partnership because the issues are so complex. There is a change in enforcement philosophy that has created ripe opportunities for partnerships.



“No one can accomplish anything significant without a solid partnership”

Panel: The Region 6 Scene - What Are the Opportunities and Obstacles in the Ecological Reuse of Contaminated Properties?

Distinguished speakers on this first panel of the conference included Jeff Margolin of ENVIRON, Joe Nicolette of CH2M HILL, and Dale Young, the current chair of ASTSWMO's Natural Resource Damages Focus Group.

Jeff's presentation, titled “Approaches to Ecological Risk Characterization and Management – Selecting the Right

Tools for the Job”, centered around many opportunities and obstacles pertaining to the best use of the land. He emphasized that the regulated and non-regulated communities need to begin looking at an overarching benefit of the land and, from an ecological use stand-point, the best use of the land is that which is achievable. Jeff stressed that we need to move from the standard ecological

risk assessment methodology to achieving superior risk management.

He also noted that beneficial reuse alone does not give us enough information; by encouraging beneficial reuse of property that has been historically disturbed, those disturbed conditions can be strategically enhanced, development in undisturbed natural

Panel: The Region 6 Scene - What Are the Opportunities and Obstacles in the Ecological Reuse of Contaminated Properties?

areas can be avoided or diminished, and net environmental gains can be optimized. Jeff commented that we must first determine the relative acceptability of ecological risks and evaluate current expectations of future population levels' ecological function and/or risks, then determine whether site specific clean-up and/or restoration is needed or warranted and evaluate whether other alternatives provide superior management options. There is an eight-step process for the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) by EPA; however, CERCLA does not state that one must use this process and no one has monitored or measured any results from using the equation in the process. The equation uses concentrations of the chemical and divides it by a benchmark. If the result is greater than one, adverse impacts could occur. It provides a clear-cut screening tool.

Jeff explained that there are obstacles and limitations to this process and that there is little consensus on how hazard quotients (HQs) can be used for managing risks to population, community, and ecosystems. There are "right" occasions to use HQs; some of the alternatives to a chemical-specific HQ

approach are compensatory restoration, net environmental benefit, performance-based ecological monitoring, and ecological significance criteria.

For future efforts, Jeff suggested that field validated risk-based screening levels ("Ecological Significance Criteria") would better distinguish sites that need remediation from those that don't. Superior Management would focus spending resources on the areas that really matter. There is already much known about how to study habitat, so the idea here is to overlay the information we know with site-specific information, accept limitations, provide flexibility to select right tool for the right job, and foster better stakeholder communication and involvement.

Joe's presentation, "Use of a Net Environmental Benefit Analysis (NEBA) Framework in Site Remediation and Land Re-use" also focused on the opportunities of using NEBA. He began by stating that there has been a convergence of thinking that has resulted in a coordinated approach to assessment, remediation and restoration. The Natural Resource Damage Assessment (NRDA) is a regulatory program under the Oil Pollution Act (OPA)/CERCLA. NRDA assesses the following benefits: ecological,

direct human uses, and passive uses. In quantifying the Natural Resource Change Services, we compare the Services Lost Area "A" (debit) with the Services Gained Area "B" (credit). Restoration projects evolve where area B is greater than area A; this is also known as the service-to-service approach as it utilizes service "units" and not dollars.

Joe explained that alternative comparisons using NEBA include land re-use designs, remedial actions, NEPA alternatives, land management actions, restoration and recreation area designs. The comparisons review any actions that affect natural resource services values (ecological and human use).

The goal of NEBA is to assist in remedy selection to avoid creating natural resource injury (NRI) and to encourage selection of remedial options that offer the greatest benefit to the environment and public. This analysis considers both cleanup and natural resource issues. It is consistent with EPA's Ecological Benefits Assessment Strategic Plan. All in all, NEBA provides a collaborative framework for addressing risk and injury issues.

Panel: The Region 6 Scene - What Are the Opportunities and Obstacles in the Ecological Reuse of Contaminated Properties?

The NEBA approach and framework:

- 1- Provides information for management decisions using technical, scientific, and credible tools and uses quantifiable metrics providing a basis for decisions (e.g., layer of protection from third party-suits);
- 2- Results in better environmental management and greater environmental improvement at lower costs;
3. Shows benefits to the public and demonstrates environmental sustainability; and
4. Offers a consistent methodology with the policy and direction of natural resource agencies.

Dale Young provided a background to Natural Resource Damages (NRD), in her presentation, “Restoration Opportunities, Working with Natural Resource Trustees”. There are federal, state, and tribal trustees – many designated by a governor. The objectives are to assess and to restore injured resources. It can also be used to implement compensatory restoration. The trustees look at the resource and determine how to maximize quality habitat restoration. Under OPA and CERCLA, part of the Mandatory Criteria indicates that there must be a discharge of oil or release of a hazardous

substance and that the quantities/concentrations are such that there is natural resource or biological injury.

Dale presented information from the case study, New Bedford Harbor, MA, a National Priorities List site. In this case, the degradation involved 18,000 acres of habitat. PCB levels were tested at almost 300,000 ppm in the sediment. In order to overcome “injuries” including degraded marsh wetlands, species mortality, PCBs in shellfish and loss of boating and beach use, approximately \$20 million was allocated to Restoration Projects.

Dale stressed that there is a need for better coordination and communication and for cooperative NRDA-voluntary participation and suggested that WHC could be a catalyst via “Restoration Opportunities” including NRD and remedial coordination. WHC could also work with the trustee & industry representatives in a cooperative NRDA. ASTSTWMO has sought to further both and continue to be on the cutting edge of innovation via their “Focus Group” which involves 11 states gathered to “Promote Effective, Efficient, and Consistent NRD Assessment & Restoration”

Questions and Answers to the Panel

Q1: In some cases, NEBA reports have been done without agency cooperation. How do we improve NEBA so that we agree?

A1: It must be done as a collaborative agreement from the beginning.

Q2: Will we see a change in that regard?

A2: The next step will need to be worked through and refined by all the agencies. For this specific case, the original intent of NEBA was not to produce a final document. There is a disclaimer stating that if analysis is to be used, the agencies must be brought together in a collaborative process.

Q3: What timeframe do you consider appropriate?

A3: The timeframe has already occurred when we look at toxicity; it is recognizing that the trajectory has already started to occur. It depends on the species, the contaminant, and the injury.

Q4: How do we convince regulators to take a risk?

A4(a): It is an education process. We need to bring forward the case that the

Panel: The Region 6 Scene - What Are the Opportunities and Obstacles in the Ecological Reuse of Contaminated Properties?

methodology, in some cases, is harming the environment, and NEBA can show that you need good inputs. What is being shown out there may not be in the best interest. It is our responsibility to develop the cases and take them to the regulators. We have not kept track of how to improve things overtime.

A4(b): Using some of the methodologies can provide a mechanism and being able to quantify the value can give a better argument.

A4(c): We are developing quantitative means to measure the benefits of restoration.

A4(d): Population density studies are also being conducted. We

are at the point to where the hazard quotations may need to be recalculated.

Q5: What level should be used in measuring restoration?

A5: The baseline is the basis of restoration, and this has been quite controversial. A cooperative assessment approach is necessary. It is a case-by-case basis.

Q6: Should restoration be conducted at the point of impact or should there be a system approach?

A6: The Trustees are realizing that in order to maximize benefits, we need to look at the areas the species use. The greatest challenge in restoration is the expedition of the restoration of resources.

The greatest challenge in Restoration is the Expedition of the Restoration of Resources!

Lunch Address - Bob Lamb, Senior Advisor, U.S. Department of Interior

Bob Lamb greeted lunch guests with an inspiring speech, explaining that there are efforts being made to re-make the way the government serves its citizens. Things need to be remarkably different, he commented, specifically the voluntary actions to improve the status of habitat and lands. Bob stressed that working together is always more powerful than working alone. No government agency, commu-

nity group, landowner, or industry can deal with the issues it faces by itself. He then went on to present the changes that are being implemented in the Department of the Interior (DOI) to expedite conservation and collaboration.

The first change: Problems call for different solutions, and local knowledge and information is being provided to make better decisions. Con-

servation decisions benefit not only from expert knowledge but also from experiential knowledge. This information cannot be obtained from far off cities; it can only be obtained from local circumstance.

The second change: Incentives are as important as enforcement and often more effective. To nurture the work of our citizens, government is learning to offer a carrot in-

Lunch Address - Bob Lamb, Senior Advisor, U.S. Department of Interior

stead of the stick, and this can bring about positive, self-motivated change.

The third change: There is a wider use of accessible tools (e.g., Geographic Information Systems), and government is providing information and feedback at the local level.

The result of these changes is the encouragement of innovation. When citizens and groups have knowledge, they can apply their expertise. Co-

operative conservation cannot occur with one hand clapping; it requires partnerships. DOI is working in this manner and transforming their 70,000-person workforce. The Secretary of DOI made the statement that conservation is made of four “C’s”: conservation, communication, cooperation, and consultation. The new theory is, “Hire on attitude and train on skill.”

Other steps DOI has taken

include:

1. Developing FAQ’s on laws and regulations;
2. Instructing senior executives to improve the working climate within divisions;
3. Conducting an analysis of the training provided and embedded partnership training;
4. Creating an awards programs; and
5. Building competency in collaboration.

Field Trip – City of Gretna

Mayor Ronnie Harris began the tour by providing some history and background of the City of Gretna. The city is 175 years old and combines historic neighborhoods with an industrial riverfront corridor. Within Gretna, 30% of all residents live below the poverty level, and minority residents comprise almost 40% of the population. The shortage of available land in Gretna (just 3.5 square miles), makes the re-use of brownfields imperative. Mayor Harris has been the mayor since 1985 and has had a pivotal role in this success story.

Beginning in the 1930s, a group of Gretna residents do-

minated 90 acres of land to the city and specified that the land was to be used for recreational purposes only. Local residents developed a master plan that called for a golf course, tennis courts, and rose gardens, but nothing materialized. In the late 1950s and early ‘60s, growth created infrastructure needs and the disposal of garbage became a major problem for the city. As a result, large amounts of solid waste were disposed in an unpermitted dumpsite that was intended to be the recreational area for residents and a natural area for local wildlife. The Louisiana Department of Environmental Quality cited the city and the dump was closed and

cleaned up.

Beginning in 1990, the city retained rainwater in holding ponds until the drainage canals were lowered by mechanical pumps. Following the floods of 1978, drainage became a top priority for the elected officials. The city spent \$1 million, dug a seven and a half acres pond, and capped off the former dump site. The threat of flooding was, thus, better controlled. It was through the creation of these ponds that the city unwittingly developed wildlife habitat. Residents now see and enjoy birds, ducks, geese, bass, catfish, and the occasional alligator in this

Field Trip – City of Gretna

natural setting. City officials like Mayor Ronnie Harris believed that the recreational vision of the 1930s could finally be realized.

City officials wanted to readdress the earlier master plan that was developed for the site in the 1930s, which was originally ignored during the early phases of historical master planning processes. Other than the school and the pond, the master plan contained nothing. By working collaboratively with the community and convening public meetings, a new master plan was created. This new Master Plan called for a large area dedicated for sport activities (football, rugby, cross country, track and field, along with an observatory, nature trails, and amphitheatres for outdoor classrooms). Approximately 40 acres of existing woodlands would provide low-impact use for activities such as hiking and provide wildlife habitat. Local ecotourism has become use for the

park.

Mayor Harris reviewed the various Master Plan poster boards, describing the proposed plan for the site, what had been completed, and what still needs to be accomplished. The tour involved a short bus ride through the small bedroom community, and the attendees walked in and around the pond. There were at least two residents fishing. Councilman Vincent Cox pointed out the wildlife habitat that had been created in recent years with the creation of the pond.

There is still much to accomplish with the Gretna City Park Master Plan. Funding is provided via city, state and federal grants. They need approximately \$9 million in additional funds to complete the park and expect to reach this goal in about five years. They learned early on that partnering with non-profits has been helpful for the city in raising additional funds and with assistance in maintaining the site.

For example, the Vietnam Veterans of America (VVA) is helping the city and there are plans to construct a Vietnam Veterans memorial on the park site. Outdoor amphitheatres are also being planned by the VVA.

The City of Gretna has learned from their mistakes and made good use of brownfields' reuse opportunities. Mayor Harris stressed the importance of involving the public in brownfield redevelopment efforts. The City of Gretna involved its residents, local planners, LA

The City of Gretna Park Plan is a true success story – preserving a community while revitalizing a brownfield.



Ponds in Brownfield Area
City of Gretna

Field Trip – City of Gretna

DEQ, various non-profits and environmental organizations and consulted these entities throughout. Community involvement, job creation, work force development, and effective local decision-making can strengthen and enrich the existing community. The Master Plan

represents the ideas and vision of many, not just a few. The City of Gretna Park Plan is a true success story – preserving a community while revitalizing a brownfield. The original group of residents would be proud and future residents will have something to share with their families for generations to come.



Observatory just adjacent to the brown-field site -City of Gretna

Field Trip - City of Mandeville and Lake Pontchartrain Basin Foundation

Anne Rheams with the Lake Pontchartrain Basin Foundation was the tour guide as the attendees crossed Lake Pontchartrain on their way to the City of Mandeville wastewater treatment plant. She provided a history of the clean up efforts in and around the lake. In 1970, the lake was closed to swimming and, for a period of years, the lake had been continually dredged for its valuable shell material. This material was used by the construction industry and was an excellent source of fill for building sites. In 1989, a law was passed that put a halt to all dredging and the Basin Foundation began focusing on three key areas to help preserve the lake: 1) cleaning up the lake; 2) cleaning around the lake; and 3) water quality maintenance. The Basin

Foundation has had great success cleaning up the lake and is now working diligently on non-point source issues around the lake. The greatest challenge with non-point source pollution is on the north shore because the area is mostly rural and many sections are not part of the sewer system. Yet despite these circumstances, the lake is now safe for swimming.

The City of Mandeville (population 12,000) rests on Lake Pontchartrain. Much of the population arrived after a causeway was built in 1956. The city operates a pioneering rock-reed wastewater filtration system to clean and treat wastewater that is eventually released back into the adjacent wetlands. Joe Mistich, Director of Public Works for the City of Mandeville, and his staff were the tour

guides through this unique facility.

Years ago, the facility had some problems with ammonia “excursions.” EPA required compliance and fined the facility \$125,000. Though they could justify that they were not harming the environment, the city council needed to decide whether to build a \$6.5 million standard wastewater treatment plant or commit to rock-reed technology.

Dr. John Day and Louisiana State University were conducting wetland studies and their work showed that bottomland hardwoods and wetlands could benefit from the nutrients that were being released. The council voted to stay with the rock reed filtra-

Field Trip - City of Mandeville and Lake Pontchartrain Basin Foundation

tion system and, as part of the project, they saved 2,100 acres of adjacent wetlands.

During the tour of the city treatment plant, attendees traveled around the various treatment ponds and learned about the rock reed filtration system and its components such as sprayers, which were added to the system to increase water aeration. Highlights on the tour included sightings of alligators, herons, egrets, snakes and other wildlife. Major themes included collaboration and education. Protecting Lake Pontchartrain and the surrounding wetland areas is a result of collaborative efforts. The

Lake Pontchartrain Basin Foundation works with politicians, scientists, students, residents and others to restore and preserve the lake through restoration, education and advocacy. Ms. Rheams regularly brings tour groups to the City of Mandeville wastewater plant to educate the public about this unique system. In addition, the wastewater treatment plant has a classroom lab set up for students to experiment and learn more about the rock reed system and how it helps preserve the lake and the wetland areas. The plant's innovative technology is saving wetland habitat, eliminating the accidental releases of untreated sewage due to flooding, reducing non-point source pollution, and providing a model for other cities to learn about the system.



Wetland adjacent to treatment plant that receives nutrient output.

Field Trip - West Point a la Hache Outfall Management Project & the Jefferson Lake Canal Brownfield

This field trip offered participants the opportunity to see one of only two siphon projects on the lower Mississippi and to view the restoration of the adjacent Jefferson Lake Canal Brownfield. The West Point a la Hache diversion project restores freshwater, sediments, and nutrients to over 15,000 acres of adjoining

brackish marsh and wetlands. The project is located within the Barataria Basin in Plaquemines Parish at river mile 49.

The project area suffers from a lack of freshwater and sediments historically provided by the annual flooding of the lower Mississippi River. Flooding was halted in the 1930s with the

building of flood control levees. Additional channelization has resulted in the export of organic marsh soils. The objectives of the diversion are to protect the area from continued habitat degradation and introduce soils and nutrients to improve growing conditions of target plant species.

Field Trip - West Point a la Hache Outfall Management Project & the Jefferson Lake Canal Brownfield

The project, which opened in 1993, allows for up to 2,144 cubic feet per second of river water and sediment to be redirected from the Mississippi. Eight 72-inch diameter siphons divert the water into a dedicated discharge pond and engineered outfall channels. The Plaquemines Parish government, in concert with the Louisiana Department of Natural Resources, Coastal Restoration Division, manages the project. Additional data collection comes from the Louisiana Department of Wildlife and Fisheries, the U.S. Army Corps of Engineers and others.

Field trip participants were also given the opportunity to view the Jefferson Lake Canal brownfield restoration project. Adjacent to the Point a la Hache Diversion Project, the restoration project is an example of a public-private partnership to restore the “dead end” of the Jefferson Lake Canal. This area was historically used for marine-related activities that were abandoned or fell into disrepair. It was selected along with others in a four-parish area, to receive funding for reclamation planning and initial cleanup. Much of the abandoned material has been removed, and other identified contaminants have been cleaned up. Local government continues to work with canal users and adjacent businesses to invest in the property, improve water quality, and conserve habitat around the site.

Jefferson Lake Canal (top right); Attendees tour canal on airboat (bottom left); Attendees learn about outfall project from Andy MacInnes, GIS Manager & Coastal Zone Administrator, Plaquemines Parish (bottom right)



Breakout Session – ITRC Review of Guidance Document on Ecological Reuse

Charles Johnson, ITRC Ecological Land Reuse Team Chair, presented the latest information on the production of the Team's guidance document.

The guidance focuses not on site enhancements, but on the restoration or creation of ecological use and service, consistent with land remediation and reuse goals. Thus, it presents a process to design ecological land re-use considering natural or green technologies as alternatives to more traditional remedies, and considers natural or ecological end-uses as alternatives to traditional property development or redevelopment. It contains the principal decision points in a flow diagram format and discusses the practicality of applying natural or green technologies to traditional remediation processes. Ecological bene-

of the remediation process, as well as of end-use of an environmentally impacted site. A team, with experience and expertise in remediation and ecological and habitat development techniques, including community stakeholders, the regulated community, government regulatory agencies, non-governmental organizations, and other government agencies incorporated various perspectives into this guidance to improve its applicability, usability and value among a variety of users.

This document includes benefits, incentives, and limitations for implementing ecological elements at environmentally impacted sites; case studies where the ecological elements are incorporated into the remedial design and/or end use; recommendations for the successful design

of ecological elements at environmentally impacted properties; recommendations for improvements to foster greater acceptance and flexibility for the incorporation of ecological elements as components of remedial actions and end use; and areas where additional scientific research is needed.

Other presenters included Lesley Kordella of the Wildlife Habitat Council and John Chambliss, who is a stakeholder and board member of the ITRC. The two presented applicable case studies which are included in the guidance document, one of which being the City of Chattanooga, TN. This breakout session was offered again during the second set of sessions.

Breakout Session - Tools for Expediting Restoration- Louisiana Oil Spill Coordinator's Office

Chuck Armbruster provided an overview on how he manages a program to facilitate the NRDA process in a more consistent manner and provides some case work on the restoration side. The Louisiana Oil Spill Coordinator's Office's (LOSCO) primary goal is to implement NRDA under OPA. The authorizing legislation for NRDA

was the OPA in 1990 and the Louisiana Spill Prevention Act. The Natural Resource Trustees include state (Louisiana) agencies – LOSCO, Louisiana Department of Environmental Quality (DEQ), Louisiana Department of Wildlife and Fisheries (DWF), Louisiana Department of Natural Resources (DNR) – and Federal agencies – U.S. Fish and

Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration (NOAA).

Louisiana's Regional Restoration Planning (RRP) Program goals are to increase restoration and establish a statewide framework. The objectives are to expedite restoration, in-

Breakout Session - Tools for Expediting Restoration- Louisiana Oil Spill Coordinator's Office

crease flexibility, pool funds, and increase predictability and consistency of the NRDA process. Louisiana has 250,000 oil wells across the state, 803 abandoned barges and vessels, and 2,000 abandoned facilities; therefore, a great potential exists for oil spills per year. The Oil Spill Coordinator's Office receives approximately 3,500 calls for responses to oil spills per year. LOSCO works closely with federal agencies during spill events to quickly and efficiently clean impacted areas and to minimize adverse impacts from spills. Depending on the location of the spill, LOSCO, as the SOSC, will work with the Federal On-Scene Coordinator (FOSC) to monitor or direct responses to oil spills reported to the federal government. In the coastal area, the FOSC consists of the U.S. Coast Guard (USCG) Marine Safety Office (MSO) New Orleans, MSO Morgan City, and MSO Port Arthur. The EPA is the FOSC in the inland zone.

The Regional Restoration Plan Program Tool Box: The Programmatic Environmental Impact Statement (PEIS) identifies the conceptual framework and operational components of the program and facilitates pre-incident planning to front load the process. A number of useful tools are available to assist contingency planners and oil spill

responders. Tools to determine the extent of oiling, conduct shoreline assessments, select recovery and response strategies, and establish an effective incident command system include the National Oceanic and Atmospheric Administration Aids for Oil Spill Responders, USCG Guides, and EPA Response Techniques. Louisiana-specific GIS data is available from www.atlas.lsu.edu. The Nexus Analysis, a restoration-type selection criteria, projects selection criteria for RRP's and for cases. Settlement alternatives provide mechanisms for pooling monies.

Restoration types try to match injured resources to services. There are four coastal regions in Louisiana. Each region has a regional plan associated with it. In the RRP Program toolbox, the Regional Restoration Plans identify potentially injured resources in applicable regions and identify restoration projects received from the public that are available for implementation. This facilitates pre-incident planning to front-load the process.

Projects are screened, and if they pass the process, they are entered into a plan. Chuck's office looks to see if this project is going to restore a resource that could be injured by another resource. The office can work with many projects if the Nexus Analysis exists.

Q1: Is precedence given to state/federal projects vs. private projects?

A1: No. We have criteria we apply through the restoration query. The criteria are applied, but it is not designed to favor one group or project over the other. The strength of Nexus is the most important thing.

Once you provide background information, that information is placed in a spatial database and then is used in decision-making. If more information is needed, you will be contacted. The engineering/design does not have to be done. The more information the office has, the faster the process goes.

Mr. Armbruster then walked participants through a hypothetical oil spill scenario from "incident" to "letter of completion." and continued to answer questions.

Q2: What is the timeframe from when the coordinator's office to when the trustees are contacted?

A2: Usually, about two days.

Comment: Often these scenes can be treated as a crime scene, especially after September 11, 2001. Therefore, cleanup can often begin prior to contacting the trustees. Chuck stressed that they try to work with the respon-

Breakout Session - Tools for Expediting Restoration- Louisiana Oil Spill Coordinator's Office

sible party toward a cooperative effort for the restoration project. They use the Coastal Nexus Sheet and apply Recreation and Herbaceous Wetlands. They screen the database for the Region 2 plan, look at the suite of projects (looking for all projects that reside in the database), and determine how many projects exist for each restoration type. Project screening is conducted and the database identifies the projects.

Q3: What do you mean by cost-effective?

A3: We are generally talking about how many service flows the project will produce and then determine

whether it is more or less cost-effective than another project. We often look at dollars per service produced. We're aiming for more restoration for the same amount of money. This program takes the extra step to encourage public participation and stakeholder involvement. It is a consistent process that is predictable and consistent.

Q4: Do you continually request submittal letters?

A4: Yes, region by region. The database is updated periodically.

“We’re aiming for more restoration for the same amount of money. This program takes the extra step to encourage public participation and stakeholder involvement”

Breakout Session - Region 6 Case Study- Occidental Petroleum Corporation, Glenn Springs Holdings, Inc. Gainesville Refinery

Doc Heath, Remediation Manager of Occidental Petroleum Corporation and Glenn Springs Holdings, provided a more detailed overview of this case study, which was presented on the first day of the conference during the second panel. Occidental Petroleum Corporation (OXY USA) is one of the world's largest independent oil and gas explora-

tion and production companies and a leading North American manufacturer and marketer of basic chemicals. The company focuses on finding and developing new sources of oil and natural gas to meet the world's energy needs of tomorrow. OXY USA carries out business operations through oil and gas and chemical subsidiaries and

operates more than 45 subsidiaries. Glenn Springs Holdings, Inc. is one of the subsidiaries.

In 1916, a 4,000-barrel per day refinery was built in Gainesville, TX, to handle crude oil produced from the oilfield in Ardmore, OK. At the time, the two 350,000 barrel reservoirs were the largest in the world. The refinery was closed in 1935, and was sold for salvage

Breakout Session - Region 6 Case Study- Occidental Petroleum Corporation, Glenn Springs Holdings, Inc. Gainesville Refinery

in 1941. In 1942, the property was sold to the Myer family. During the summer of 2000, due largely to record heat, the water covering the north reservoir pit evaporated. Consequently, several species of birds and other wildlife were killed because of the exposure to the petroleum hydrocarbons. OXY USA learned of its responsibility and immediately offered to purchase the land back from the Myer family. OXY USA purchased the property (326 acres) in 2003.

The impacted area is located predominantly in a rural area, with Interstate 35 to the east. The site contains two large (a northern and a southern) reservoir pits, six large tank pads, and just over a million gallons of petroleum hydrocarbon material in the northern pit. There is an RV park located south and east of the impacted area.

The OXY USA remediation team visited the site for the first time on February 14, 2001. It was during this initial visit that they witnessed firsthand the wildlife degradation resulting from the exposure from the petroleum hydrocarbon material. OXY USA agreed to mitigate the immediate threat to wildlife and applied for and was granted acceptance of the site into the

Texas Commission on Environmental Quality's (TCEQ's) Voluntary Cleanup Program (VCP). OXY USA began a remediation phase based upon an accepted "reasonable worst case" scenario. An Interim Corrective Measure (ICM) was selected to remove the petroleum hydrocarbon material from the northern pit inner reservoir. The ICM was implemented in June 2001 and was completed in December 2001.

At the northern pit, the landfill was stabilized with fly ash and top soil was dumped directly on the pit area to act as a barrier. The remediation activities were performed to prevent the vertical migration of the material into the groundwater. The southern pit proved to be a more difficult remediation project because of its size and the amount of material found in the southern pit. OXY USA plans to perform all remedial efforts and NRD restoration on-site and the remediation will be incorporated into the NRD restoration.

By 2003, with the restoration activities taking shape, many wildlife species began to reappear. For example, beaver, birds, turtles, snakes and a bobcat were seen.

OXY USA had met with the

Natural Resource Damage Trustees as early as March 2001. The NRD Trustees included the Wildlife Habitat Council, The US Fish and Wildlife Service, Texas Commission on Environmental Quality, Texas Parks and Wildlife, Texas General Land Office, and Environering, Inc. The discussions were open and candid from the start with the NRD Trustees. Through the ICM phase, OXY USA collaborated frequently with the community, including the City of Gainesville, the mayor, and other public officials to keep them engaged throughout the remediation and restoration process.

OXY USA met with the NRD Trustees in May 2002 to discuss the different approaches to mitigating the damage. During the summer of 2003, OXY USA purchased the property to allow additional remedial alternatives.

OXY USA plans to continue the remediation and restoration activities until the site is cleaned-up to the satisfaction of the NRD Trustees and the Community. There are no long-term plans for the site, however, it is conceivable that the site could someday be preserved as a park.

The environmental value

Breakout Session - Region 6 Case Study - Occidental Petroleum Corporation and Glenn Springs Holdings, Inc. Gainesville Refinery

added to this site can and will be measured by the diversity and strength of wildlife that will frequent this location because it may potentially provide significant habitat. In addition, the site will have an improved aesthetic value and could someday provide an area for community or employee recreation.

Because OXY USA and

TCEQ immediately entered into a VCP, they encountered no problems with the community, the NRD Trustees or EPA Region 6. However, OXY USA has had some difficulty getting a Department of Justice attorney assigned to the Consent Decree.

OXY USA has incurred a total cost, thus far, of approximately \$5 million. If OXY

USA had not entered into the voluntary program, the emergency response and associated costs would have been in the \$20-\$30 million range and the remediation/restoration phases would have been delayed. The VCP and the ICM approaches have been proactive, cost efficient, and innovative.

Breakout Session - Wetland Restoration in Coastal Areas

Andy Nyman of Louisiana State University provided an overview of opportunities in wetland restoration. Restoration of Louisiana's coastal wetlands is too daunting a task for any one party. Restoring these coastal wetlands is all about partnerships. He posed the question: Why do we become partners in such an endeavor? Usually this happens because we have a shared understanding about the cause of the problem and see the value in working together on a solution.

In 1980, Louisiana was losing an acre of wetlands every 20 minutes; in 1960, it was an acre every 40 minutes. It is important both ecologically and economically. One economic reason is the menhaden. This fish is an incredibly

valuable resource and is used dried and ground in chicken feed and pet food. Since 1970, the scientific community has been trying to communicate that a long-term solution to restoring wetlands requires that the river be allowed the means to build a new delta lobe. The scientific community has not been successful in communicating this message, but is succeeding with the restoration of the Everglades. Andy suggested that this is because a marketing firm to broadcast the success stories has been utilized for the conservation of that eco-system. There are a variety of ways for citizens and organizations to become involved to accomplish a similar goal, such as contacting conservation organizations about their pro-

grams (also visit www.est.org).

Clay Bryant of C.H. Fenstermaker & Associates, Inc., who has worked with Andy, provided an overview of compensatory mitigation of wetlands. He explained that we mitigate because we have mandates and requirements from EPA. There is a national "no net loss" policy for wetlands, which requires companies to develop a mitigation plan when they have a project that will affect wetland areas. There are two types of mitigation: compensatory and entrepreneurial. In-kind onsite mitigation is the most preferred method, while the second most preferred method is out-of-kind.

There are three key approaches that limit exposure

Breakout Session - Wetland Restoration in Coastal Areas

in mitigation. The first approach is to focus on project planning and consider using outside consultants in this effort. Secondly, one can involve their operations staff, engineering staff, etc. This will often save a company's time and money. Thirdly, one can take control of the process early on. It tends to be very costly if the regulators lead the process when they do not understand how a company operates.

In regards to regulatory barriers to wetland preservation, Clay noted that more regulatory flexibility (waiver provisions) regarding discharge into the rivers is needed. Clay commented that the federal Clean Water Act is so controversial, many are apprehensive about getting involved with it. The industry and the environmental community need to work together. An appropriate action would be to **form a coalition between environmentalists and industry leaders to discuss options for regulatory flexibility/waiver provisions and jointly approach the state legislators.**

In regards to public barriers to wetland preservation, it was noted in the session that people hear about dangers regarding discharge and water con-

tamination, but often don't understand that, in many cases, these are naturally occurring or are too minimal to be of concern. An appropriate action that was identified was to **discuss strategic ways to communicate these issues and educate the public about them.**

Sustainable harvesting and preserving wetlands was also discussed. There are methods for sustainable harvesting cypress trees; however, scientists are having a difficult time determining which sites can be appropriately harvested and which sites need restoration first. On many sites, there is a need to restore the hydrology before harvesting can take place. The identified action item for this issue was to **present this conversation to the WHC board. Perhaps contact the major companies to talk to them about sustainable harvesting.**

Lastly, the topic of community sustainability and wetland preservation was discussed. It was noted that there is great concern regarding the economic impacts of another hurricane; Wetlands are a crucial buffer to the impacts of major hurricanes. As more coastal wetlands are lost, communities become more vulnerable.

There are many major companies in this area, and if a hurricane devastates their operations, it will not be cost-effective for them to rebuild here. Andy emphasized that there will be a significant loss in infrastructure to the community in these cases. Additionally, it takes time and sig-



Louisiana Coastal Wetland

nificant tax payer dollars to rebuild an area after such major disaster - these economic losses have a national impact. Two action items were noted to tackle this issue. These included **forecasting the local, state and national economic costs of another major hurricane and start presenting this information to regional government agencies. And secondly, there is a need to perform a legal analysis of what happens after such a disaster and who pays and reform the law about reasonable compensation after a hurricane disaster.**

Breakout Session - Region 6 - Ready for Reuse Program & Ecological Reuse of Contaminated Properties

This breakout session began with an overview of the EPA Region 6 Ready for Reuse Program presented by Bill Luthans, Deputy Director of the Multimedia Planning and Permitting Division. Mr. Luthans explained that Region 6 developed the Ready for Reuse (RFR) program to expedite redevelopment of contaminated properties under all EPA and state cleanup programs (including RCRA, Superfund, UST, VCP, Brownfields, TSCA, Solid Waste, etc.). The RFR determination letter acknowledges when a property has been characterized and remediated to the extent that the conditions on the property are protective of human health and the environment and safe for reuse, development, or continued use based on the current and planned future use(s) of the property. The RFR program is also part of EPA's National Land Revitalization Action Agenda. Mr. Luthans challenged participants to provide answers to several questions he posed. This stakeholder input will assist Region 6 in modifying its "Guidelines for Preparing Ready for Reuse Determinations" to incorporate and encourage ecological/habitat reuse or redevelopment that has ecological enhancements.

These were those key questions posed to the group regarding this issue.

Question #1: How can the RFR program be modified to promote and create incentives for ecological reuse or enhancements?

Participants had numerous suggestions, including setting aside federal brownfields financial and technical assistance for ecological reuse/enhancements; using the guidance on ecological reuse under development by the Interstate Technology and Regulatory Council combining/coordinating the RFR program with the EPA Supplemental Environmental Projects (SEP) Program; documenting and advertising the cost savings (and cost/benefit ratio) that result from use of the RFR program – cost savings may result from reduced transaction costs and time, increased economic return from the property, etc.; noting that an ecological reuse offers lower future liability exposure and will reduce operations and maintenance costs; involving the Natural Resource Damages Trustees early in the RFR process and encourage ecological reuse as mitigation of NRD; providing increased liability protection for the eco-

logical "reuser"; and remembering that ecological reuse can overcome community opposition to the reuse of the property.

Question #2: What are possible criteria for ecological components of the RFR Program?

Participants commented that the criteria for ecological reuse/enhancements need to be flexible and accommodate a case-by-case approach. In addition, cleanup standards need to be identified for ecological reuse. If "clean-closure" is required for ecological reuse, then it will likely cost more than commercial reuse and the current approach to ecological risk assessment should be re-evaluating, as compared to determining real on-site ecological health.

Question #3: How can the voluntary RFR Program can be a tool for long-term management and permanent sustainability of habitat?

Participants suggested that leveraging the SEP program's flexibility to encourage ecological reuse where the parties agree to create and permanently sustain habitat enhancements. Also, placing the restored land under conservation easement was suggested for permanent protection of habi-

Breakout Session - Region 6 - Ready for Reuse Program & Ecological Reuse of Contaminated Properties

tat. Lastly, it was suggested to use environmental covenants that run with the title to the land as provided for in the proposed Uniform Environmental Covenants Act (www.environmentalcovenants.org). This has been adopted by several states.

Participants encouraged EPA to work with state, local and regional agencies and authorities to educate them about the RFR program and encourage their partnership in creation of ecological reuse opportunities at sites of importance to them. An incentive for states and local government organizations would be the earmarking of federal brownfields' grant monies for ecological reuses.

...an ecological reuse offers lower future liability exposure and will reduce operations and maintenance costs

Breakout Session - Identifying Performance Metrics for Success in Ecological Restoration

This heavily attended breakout session offered participants the opportunity to engage with several experts on performance metrics, as well as amongst themselves. The majority of attendees represented state governments, followed by the federal government (primarily EPA), industry (primarily petroleum) and consultants. This group offered a very brief “state of the art” in environmental restoration performance measurement, how organizations are applying these metrics, and issues generated from metric use.

The panel kicked off with a discussion of the various perspectives of performance metric use. David Nicholas (EPA OSWER) focused on more analytical metrics associated with contaminated groundwater at Superfund NPL sites and RCRA corrective action sites. Steve Glomb (DOI) addressed scale issues as

it related to their Natural Resource Damage Assessments efforts. There appeared to be a consensus that more actionable metrics provided utility in case- or site- specific scales (e.g., nesting success, re-vegetation rate). Conversely, as metrics are “rolled up” to a regional or national scale (e.g., acres and miles of habitat restored), the utility decreases. The industry perspective from Greg Biddinger, (ExxonMobil) was similar, in that the types of performance metrics were framed in both scale, financial and scientific utility (e.g., total acres preserved or restored or acres preserved or restored per year or percent complete).

This discussion thread sparked an extended conversation on the definite trend (as sometimes evidenced but mostly desired) away from purely quantitative and financial-based

Breakout Session - Identifying Performance Metrics for Success in Ecological Restoration

metrics in ecological enhancement decision-making. Most attendees voiced similar themes (i.e., quality v. quantity; qualitative value versus dollars; habitat efficiency and optimization versus only financial value).

This discussion led into Joe Nicolette's (CH2M HILL) briefing on the use of analytical models to bridge the quantity/quality metrics utility issue, (e.g., valuing change in natural resource service values (ecological and human use) from pre-restoration baselines). These tools include:

1 - Habitat equivalency analysis methodology to measure changes in ecological service values (e.g., service-acre-years); and

2 - Standard economics-based models (e.g., benefits transfer) to measure changes in human use value (e.g., user-days, dollars). These service-to-service models offer the potential to redefine ecosystem value in a multi-dimensional "currency."

This discussion was rounded out with the panel briefly characterizing their organizations' evolving thinking regarding ecosystem benefits assessment. There was a consensus among the panel and among the breakout attendees of the obvi-

ous need to balance social-political and regulatory needs with ecological and ecosystem service needs in developing new models and "value currency."

The remainder of the session was devoted to identifying issues and next steps. The major issues that were identified first pertained to how industry and regulators feel constrained within the framework of statutory mandates. The current regulatory environment does not always support innovation in ecological enhancement. Regulatory relief should be tied to voluntary efforts to restore ecosystems back to the public for unconditional use. In addition, it was noted that the regulatory framework and current business models do not address the trend toward a more balanced story of value (i.e., take a weight of evidence approach to integrate economic choices in an ecological context). This is most evident in better understanding the utility of future value in economic and habitat equivalency models. Also, there is a need to communicate the "why, what and how" performance metrics are used for a broad set of stakeholders. Lastly, scale issues with common metrics units for aggregation need to be addressed. Regulators, industry and stake-

holders need short- and long-term metrics and diverse data sets for ecosystem management.

The question was asked if there should be a dedicated workshop on this topic. The participants agreed there is the need for further conversations within WHC. However, such conversations should be held in concert with the variety of industry, regulators, and stakeholders currently addressing the same metric issues.

There is an obvious need to balance social-political and regulatory needs with ecological and ecosystem service needs in developing new models and "value currency."

Breakout Session - Underground Storage Tank Issues in Region 6

Willie Kelly of EPA's Region 6 Office of Underground Storage Tanks led this dynamic breakout session, explaining first that "our love affair with cars led to the need for underground storage tanks". After using these tanks, it became apparent that some of them do leak. However, many tanks are now unused or abandoned. The use of underground storage tanks is shrinking due to high throughput stations, company mergers, closures of small "mom and pop" shops and the use of above ground storage tanks. Mr. Kelly indicated that there are roughly 32,000 to 64,000 unused tanks in the U.S. These unused or abandoned sites provide a lot of opportunity for reuse. Some of the barriers to returning these sites for use include contamination, liability, costs and funding. The Ready for Reuse program is an excellent tool for informing companies and communities that these sites have been evaluated and are ready for them to reuse. EPA is just starting to get rolling on this program and they are very excited about the potential of the program. The group discussed some key questions for states regarding reuse projects for UST sites, which included:

1. What potential sites are available and what is the priority of these sites?
2. What information is available on a specific site?
3. What types of uses are appropriate for a specific site?
4. What is the return on investment?
5. How can the site be protected long-term?
6. How can we get the word out that these sites are available?

To best address these questions, various action items were identified during the discussion. The first suggestion was to organize design charettes with multiple stakeholders to discuss and craft a proposal for reusing a site before applying for a brownfield grant. A second suggestion was to bring together or interview a group of developers and key people to determine where the sites are that can be reused. And thirdly, it was suggested to ask WHC to talk to their member companies and work with them to focus them in areas where there are opportunities, and to ask their members to choose an area and pilot a project and identify how they could foster ecological development and the necessary resources to do so.

To obtain information and support for new and existing brownfield projects, additional action items were identified. The first action proposed was to get the word out via upcoming brownfield conferences. Secondly, it was suggested that a multi-stakeholder working committee be created that would be tasked with pulling together key resources on this issue. Additionally, there is a need to find funding for WHC to create a one-stop shop or portal on their website for resources on brownfield reuse, and create a list of key resources on this subject. Another proposed action was to provide information on federal, state and local programs, other incentives and low interest loans, and to develop other partners (non-profits, universities) that can provide technical and other resources. Additionally, at the conference, on the website and in publications, it was noted that everyone needs to encourage members to share more reuse examples and highlight successes and failures. Presently, EPA is creating an Appendix for the Ready for Reuse Guide that highlights resources.

Breakout Session - Ecological Restoration – In-Kind and Off-Site Opportunities

Discussion Led by the ASTSWMO Natural Resource Damages Focus Group

This session covered five key issues, including the benefits and incentives of NRDA, the challenges experienced with cooperative NRDA processes, partnerships in restoration, monitoring and management, and other benefits of a cooperative assessment. Industry representatives from various case studies, including Total Petro Chemical and Glenn Springs Holdings, Inc., had a chance to address some of these key issues as it pertained to their case studies and the benefits and incentives of NRDA and cooperative assessments.

It was noted that, in regards to a Colorado City, TX Total Petro Chemical site, both parties recognized there was an incentive to work collaboratively. They also wanted to avoid collecting two sets of data. The philosophy used in this case was communicate with industry proactively and then aggressively pursue remediation projects. Texas pioneered the idea of working with the companies and could not have done this without industry and government working cooperatively. In the Colorado City case study, this process was initiated when the trustees originally approached the industry and then an agreement was formed rapidly. To avoid any struggle and allow people to work with each

other comfortably, it was stressed that issues need to be addressed up front. It was also noted that WHC could benefit from getting into conservation easements and creating a dialogue with some of the land trusts and that the National Land Trust meeting would be a good place to open these discussions.

In addition to Colorado City, one of the conference case studies was discussed in this breakout session. The Glenn Springs Holding's Gainesville, TX site was discussed specifically as it related to the benefits of entering into a cooperative assessment. Doc Heath of Glenn Springs Holdings noted that it simply made economic and managerial sense, and that OXY USA also knew NRDA would be a big issue. Company reps met with NRDA officials and trustees early on in the process. It was commented that Glenn Springs Holding is a very proactive company. The site did not have initial numbers to attempt to quantify costs savings, but went forth knowing that the financial benefits would be substantial. Doc noted that additional damages, contractor sampling, and lab work can cause the price to go up dramatically, though it also depends long the project continues before a cooperative assessment is pur-

sued. If the process reaches the point of litigation, the cost is dramatically more.

In regards to the challenges experienced with cooperative NRDA process, the following questions were posed:

- 1 - What are the boundaries of my liability with regards to the injury?
- 2 - What are the initial apprehensions and motivation to proceed?
- 3 - What concerns arose during the cooperative process?
- 4 - What are the thresholds that could trigger reconsideration of proceeding forward?

In response, it was noted that change will not happen until proper communication is implemented. The term "partnering" is often used, but few people stop to think about what it really means. And a partnership certainly cannot exist without a mutual goal. Once both sides have that common recognition early in the process, the faster the apprehensions disappear. Another response to these questions was that states seek punitive damages, and generally appear to be targeting groundwater issues more than others. It is often thought that

Breakout Session - Ecological Restoration – In-Kind and Off-Site Opportunities

Discussion Led by the ASTSWMO Natural Resource Damages Focus Group

groundwater is considered priority habitat because there are often threatened and endangered species associated with groundwater systems.

One person in the group discussion stressed the value of identifying what ecological measures will be used (and how they will be used) early on in the process, and that there needs to be a more efficient way of understanding the nature of the data being collected.

Participants also discussed ways that industry could partner with trustees cooperatively in the NRDA process. It was suggested that some corporate properties might be potential sites for restoration. When industry representatives were asked if their properties could be inventoried for their potential in restoration, however, they responded that this was challenging and that there is no central database for this type of information to query. They also stressed that there are also liability concerns for previous property holdings. Restoration banking and Aggregation or Restoration Pooling did present themselves as opportunities to look into for the future.

In monitoring and management sustainable restoration

projects, two issues dominated the discussion. These were defining long-term management issues on private, public, and corporate lands, and identifying the role of conservation easements. Participants in this breakout session encouraged WHC to identify potential conservation easement holders. As an example, it was noted that there is a non-profit entity in New York that retains contaminated properties. It is up to states, trustees and companies, however, to set up a program or entity. If there was a national, non-government, non-commercial entity whose mission is to hold and manage conservation easements, establish a uniform banking repository (for more than just compensation injury) and combine the banking and holding of easements into an uninfluenced entity, there might be a potential for this issue to move forward.

Four themes were identified as benefits of integrating NRD and remediation. These suggestions were to streamline on the ground restoration, assess Louisiana and Texas models, evaluate LA RFP lessons learned, and account for the EPA perspective (minimizing ecological harm in remedy). It was noted that while biologists are well equipped to handle

restoration plans, they may not always have the expertise in legal settlements. There is a need, as one participant commented, for a semi-annual trustee summit to start defining the legal settlement issues. It was strongly suggested to set, as well to mandate, a priority for widespread outreach and education on these issues. It was also noted that government needs to do a better job at sending out the message that those companies who enter into cooperative assessments tend to establish better relationships with government agencies and are often recognized for their efforts.

Several action items resulting from the breakout session were identified as a follow up to the dynamic discussion. These included the following:

- We need to do a better job at describing what NRDA is to industry.
- We need to understand how industry and WHC members can become collaborative members. We now know that we need to do a better job at outreach and education on these issues.
- It's time to start taking action with technical and policy related matters. It would be helpful if everyone had a better

Breakout Session - Ecological Restoration – In-Kind and Off-Site Opportunities Discussion Led by the ASTSWMO Natural Resource Damages Focus Group

understanding of the true savings achieved in this process. Data needs to be researched and collected.

- There is a need to address the post-restoration land management issue.
- It was suggested that the group review the OSHA Voluntary Pro-

gram, as it might be an ideal model for this group.

The term ‘partnering’ is often used, but few people stop to think about what it really means. And, a partnership certainly cannot exist without a mutual goal.

Breakout Session - Region 6 Case Study - Alcoa Inc.-Gum Springs Plant, Arkadelphia, AR

Lyn Shepherd, Environmental Technical Coordinator for Alcoa Inc., provided background information and a description of this site, which he touched on during the first day of the conference during the panel dedicated to case studies. The Alcoa Primary Metals Gum Springs Plant site was an active smelter site from 1954 until 1986. The site was closed down because of the high costs of electricity. The site remained idle until 1993. That same year, construction began on a new facility at the site designated for hazardous waste treatment facility with an on-site hazardous waste landfill. The Gum Springs Plant utilizes seven acres, with 1,000 acres leased for grazing, and the remaining 425 acres are composed of scattered

woods and open fields. There are several sources for food, water, protective cover and foraging space, with protective cover for raising young. These include sloughs, storm water drainage ditches, ponds, pastures, lawns, fallow fields, woods, thickets and snags.

As part of Alcoa’s corporate strategy and commitment to environmental conservation and education, a wildlife habitat enhancement program was formally initiated in January, 2001. Management has always supported the program. The first project was to create a pollinator habitat near the plant’s main office building. Following the successful creation of an 8-foot by 4-foot butterfly garden in 2002, wildlife team members planned a

1.5-acre Pollinator Plot Program in 2003. The wildlife team seeded the plot with a commercial wildflower mix and other native seeds that were donated by team members. The team used both native and non-native species in the wildflower mix, each of which was formulated for use in the particular habitat and climate conditions of the region.

The team also focused habitat enhancement projects on successfully constructing, maintaining and documenting the activity of bird populations through a nest box monitoring program. In 2003 and 2004, the wildlife team worked with local elementary schools to expand the nest box monitoring program. The

Breakout Session - Region 6 Case Study - Alcoa Inc. - Gum Springs Plant, Arkadelphia, AR

site successfully doubled the number of nest boxes available for bluebirds to almost 20 boxes, and 200 students and 13 employees were given boxes to take home. Team members also planted additional wildlife food sources and created brush piles to provide more suitable habitat for wildlife species that are regularly seen on-site.

The employees at the Gum Springs Plant have enthusiastically embraced the creation of the habitat area. The local community has supported the Plant as a place of employment, and now they have an increased appreciation for the site location. The Gum Springs Plant has consistently opened its facility doors to the public. The facility has also encouraged the local schools (middle schools, junior

high, and high schools) to tour the facility. Teachers have taken an interest in educating their students by making them aware of what goes on in and around the facility – both from an ecological and an environmental viewpoint.

The plant was one of 143 sites recognized at the 2004 Symposium for creating a habitat program. Since 1990, WHC has certified 353 programs worldwide in recognition of outstanding wildlife habitat management and environmental education efforts at corporate sites. WHC offers third party validation of the benefits of such programs. Certification requirements are strict and mandate that sites apply for periodic renewal. This affirms a facility's commitment to pro-

tecting the environment and is an excellent way to measure progress. A high level of commitment has been evident from the start of this project. The take away message was simple – companies want to do the right thing and are interested in working cooperatively with their communities.

The wildlife habitat enhancement program costs are between \$3,000 and \$5,000. However, the benefits have far exceeded these expenses. For example, in 2004, they instituted a rotational mowing program as a way to save money (e.g., fuel), while protecting the bird habitat. The tall grass has provided an excellent nesting habitat for birds and their young.

Breakout Session - Region 6 Case Study - Bridgestone Americas Holding, Inc., Oklahoma City Plant

The Dayton Tire Case Study offered participants the opportunity to see the rehabilitation and environmental enhancement of a decommissioned RCRA site and discuss with company representatives the obstacles, successes, and outcomes of their efforts. This breakout session was attended by state, tribal and consultant

participants. As this session was modestly attended, it offered the opportunity for more detailed conversations with Phil McCowan, the Oklahoma facility's environmental manager, and Tim Bent, Bridgestone Americas Holding, Inc. Environmental Manager. Mr. McCowan opened the session by sharing a 9-minute public

outreach video of the site, its history, and reclamation efforts. His presentation during an earlier plenary and this video stimulated and focused the breakout session's discussion.

Phil went on to describe the site and its history for attendees. The site consists of 70 acres under one roof with a

Breakout Session - Region 6 Case Study - Bridgestone Americas Holding, Inc., Oklahoma City Plant

capacity to produce 45,000 tires/per day. The facility is ISO 14001 certified. The Land Treatment Unit (LTU) is mostly liquid wastes (oily wastewater), which is applied to 16.5 acres, with a lifetime estimate of 80 years based on zinc loading. The soil pH is maintained at 6.5 or greater. Bridgestone approached Oklahoma Department of Environmental Quality with its wildlife plan illustrating its relationship with WHC. Friendly communications opened avenues with regulators. There is now a pond as a water source and a nature amphitheater for nature education programs for local youth groups.

The Dayton Tire site was historically used as a RCRA permitted land application waste disposal area. This area, adjacent to the manufacturing plant, was decommissioned, under a permitted monitoring plan, and was awaiting final regulatory closure. When site management first approached EPA and its state partners with the idea of creating enhanced habitat at the site, the approach was considered somewhat novel. EPA had to be convinced this was a feasible management approach. The key to success for this dialogue was the need to drive

the regulatory acceptance of this approach. The Bridgestone team felt their gaining earlier final closure was strengthened by supportive monitoring data and the commitment to develop habitat and wildlife enhancements as part of the end use.

The Dayton Tire site was not obligated under any permit to provide habitat enhancement for wildlife. However, once the approach and timing was agreed in exchange for early site closure, the facility management understood the need to be aggressive in their management of the project and apply adaptive management techniques. Mr. McCowan related a clear program vision and goals, understanding that some goals would be met and others not, and some would be modified due to extenuating factors. In a similar vein, it was apparent to the Bridgestone team to include a larger set of stakeholders in developing and implementing enhancement projects. Dayton Tire employees, local community members and groups, business, and federal and state agencies provided resources to assist in site development. Mr. McCowan not only engaged organizations from the community who have assisted either financially or with volunteer work but also

implemented other programs that branch off of the existing habitat management program. The key was the application of adaptive management techniques and engage site stakeholders in creating ecological value at the site.

The breakout session concluded with a discussion of real and apparent value. Tangible ecological value has been gained by adding significant habitat and wildlife diversity. Stakeholder value, often intangible, has been evidenced by better public relations, good will, and increased employee pride and moral. A final discussion thread focused on how businesses can value ecological enhancements as assets giving them “future value.” Many reclaimed brownfield sites get locked away in conservation covenants. Dayton Tire is an example of a company that has reclaimed an industrial use area without such a covenant. The conversation focused on two questions: how/should a company identify ecological enhancements as assets on financial statements (to be available for leveraging as any other hard asset), and how/should a company transfer the value of those assets (during a sale or merger) to ensure the buyer will maintain the asset as an ecological property?

Breakout Session - Ecological Restoration in the Department of Defense

This breakout session began with presentations on two very different reuse scenarios for Department of Defense (DOD) facilities, including what is now known as Caddo Lake National Wildlife Refuge and Brooks City-Base.

Paul Bruckwicky with the U.S. Fish and Wildlife Service gave a presentation on the conversion of the 8,500 acre Longhorn Army Ammunition Plant, a Superfund site located on Caddo Lake in East Texas, to a wildlife refuge managed by USFWS. Longhorn produced flake trinitrotoluene (TNT) during world war II and pyrotechnics and illuminating ammunition such as photoflash bombs, simulators, hand signals and 40mm tracers in subsequent years as well as producing solid propellant rocket motors and fuels for the Nike-Hercules, Falcon, Lacrosse, Honest John, and Sergeant missile programs.

The Longhorn site is adjacent to the Caddo Lake State Park and Wildlife Management Area and contains some of the highest quality old-growth bottomland hardwood forests in the southeastern United States. Caddo Lake is connected to the Harrison Bayou, which is listed as a “Wetland of International Significance”

– one of only 17 so designated in the U.S. A local non-profit organization, the Caddo Lake Institute and stakeholders, lobbied effectively to have the U. S. Army change its decision to clean-up for industrial redevelopment to a level of clean-up that would allow the site to be used as a wildlife refuge.

USFWS was initially reluctant to assume title to the site due to Superfund liability concerns, but they were eventually persuaded through efforts of the Caddo Lake Institute. The management of the natural resources on the lands comprising Caddo Lake NWR would concentrate on the conservation, protection, and restoration of the bottomland hardwood forests, resident waterfowl and neotropical migratory birds, upland pine savanna habitat.

Greg Hammer, with the Brooks Redevelopment Authority, presented an overview of the planned mixed-use redevelopment of Brooks Air Force Base (Brooks AFB), located in urban San Antonio, TX. The Brooks Redevelopment Authority acquired the site for commercial and retail redevelopment, but during the planning process, they decided to retain and enhance existing green space and wildlife habitat/corridors, with a goal of

retaining 25% of the total 1,300 acres as green space. Brooks City Base has formed a partnership with the San Antonio storm water authority to excavate large on-site ponds for combined storm water retention and wetland and wildlife habitat creation. Brooks City-Base was placed on the base closure list the week before this conference. Due to this decision, the Air Force will likely close its operations at the base and allow the Brooks Development Authority to move ahead in a new direction with its redevelopment plans.

After the two presentations, participants in the breakout session discussed how to encourage more Department of Defense cleanup/reuse projects to incorporate ecological enhancements or reuses. Participants predicted an increase in the number of bases being transferred to natural resource agencies due to the quality and quantity of the habitat and natural resources existing on many of these large DOD properties. They encouraged national conservation organizations such as the Trust for Public Land and The Nature Conservancy to press for permanent preservation of habitat and natural resources on DOD lands. A participant

Breakout Session - Ecological Restoration in the Department of Defense

mentioned that conservation conveyance legislation was passed (Title 10 U.S. Code § 2694a) to expedite conveyance, at no cost, of unneeded real property to state/local government or nonprofit conservation organizations to conserve natural resources in perpetuity. However, the law does not protect those acquiring lands from liability for existing contamination on site. The group agreed that potential liability for hazardous substances which may remain on property is a significant barrier to other agencies or nonprofit organizations acquiring these properties. A Memorandum of Understanding (MOU) was suggested as a short-term solution to this barrier, but concerns exist about whether DOD will comply with the terms of the MOU. Brooks Redevelopment Authority negotiated a

“Low-Level Contamination Management Agreement” with the Air Force prior to taking title to the property, which provides a \$1 million fund to pay for previously unidentified environmental problems on the site.

Other participants suggested involving the non-DOD natural resource trustees early in the process so those agencies can press for environmental restoration and habitat protection. A participant stated that DOD does not view its mission as including ecological preservation or enhancement; therefore, DOD’s Natural Resource Management Plans are usually just an inventory of existing resources. Some additional recommendations on techniques to increase DOD’s use of ecological enhancements or ecological reuse included:

- Changing the culture within DOD to view ecological reuse as desirable;
- Demonstrating to DOD decision makers that ecological reuse/enhancements will not increase (and may decrease) costs;
- Negotiating with DOD to allow the use of less costly remedies (such as bioremediation, monitored natural attenuation, etc.) in exchange for permanent use of the site for habitat;
- Involving the surrounding community early in the process to decide what type of reuse will occur; and
- Educating DOD about the benefits of ecological reuse versus the potential increased future liability posed by industrial, commercial or residential reuse.

Lunch Address - Cliff Rothenstein, EPA Office of Underground Storage Tanks

Cliff Rothenstein, EPA Office of Underground Storage Tanks, began by stressing that EPA built a program based on collaboration and partnerships. They are entering the third era of the program: the Environmental Renaissance. He stated that one challenge is to find a way to reuse the more than 2,000 abandoned

gas stations. “An opportunity exists to not only make a difference but also a visible difference.” Each of us has to play a different but important role. State and local agencies are beginning to offer incentives. Industry and government are beginning to see abandoned stations as an asset and an opportunity. Their

challenge is to convince more cities to turn these sites into useful places, rather than allow them to be a breeding ground for crime and decay. There are economic and ecological solutions, and brownfield problems cannot be solved with the snap of a finger. Cliff pointed out to WHC that they should take full advantage of brownfield mon-

Lunch Address - Cliff Rothenstein, EPA Office of Underground Storage Tanks

ies, help EPA develop new tools to identify, cluster, and rank sites and build stronger partnerships to target more petroleum brownfield sites.

Cliff also emphasized that perspective developers need to know where abandoned tanks are located. Yet EPA does not have accurate knowledge of where these sites are located. Cliff felt that they need to develop a way to prioritize and rank sites for these purposes. Potential developers could then use this information and EPA could share this knowledge with end users, lenders, insurers, and other that believe in reusing brownfield sites. This would allow the integration of abandoned sites into community development and land use planning efforts. There is a possibility here to

reinvigorate neighborhoods and also improve environmental quality.

EPA is considering offering Performance Track participants the opportunity to work with communities as part of their “Commitment to Communities” designed to improve the environment. EPA issued a call to WHC to act as a conduit between business leaders and government to assist in the clean up of abandoned gas stations.

“An opportunity exists to not only make a difference but also a visible difference”

Cliff Rothenstein

Panel: Making the Case for Ecological Reuse: A Regional Action Plan

This was the last panel of the conference and consisted of three distinguished speakers including Charles Johnson, ITRC Ecological Land Reuse Team Chair; Stephen D. Villavaso, FAICP; J.D., President of Villavaso & Associates and member of the New Orleans Regional Planning Commission; and Markus Niebanck

who is the Manager of Environmental Analysis and Remediation for the Trust for Public Land (TPL).

Charles Johnson began his presentation with new information regarding ITRC and the use of technical guidance documents in restoration. He noted that state-led organiza-

tions and guidance documents are more effective than regulations or policy. Guidance implementation results in the successful application of innovative technologies. Partners should include state, federal agencies, industry and academic institutions. ITRC has trained 15,000 people. ITRC has started capturing active

Panel: Making the Case for Ecological Reuse: A Regional Action Plan

sites, inactive sites, CERCLA, DOE, RCRA, Solid Waste, Voluntary Cleanup and brownfield sites of all kinds.

The ITRC Guidance Document on Ecological Reuse specifically contains an introduction, an overview of ecological re-use, advantages and disadvantages, regulatory review/flexibility, a decision matrix, costs considerations, stakeholder involvement, and further recommendations for partnerships. Charles elaborated on some of the advantages for ecological reuse of contaminated sites that are outlined in the draft guidance document. These include both ecological and economic benefits, public benefits (including education, good will, improved reputation, aesthetics), and increased natural resources. Disadvantages outlined include obstacles in gaining regulatory acceptance, lack of familiarity with the proposed techniques (e.g. green technologies), evaluation of site-specific unique solutions, allergies, plant use, and lack of readily accepted valuation systems and remedial creativity. Charles had a chance to touch on service capacity as well, which is laid out comprehensively in the draft guidance to date. For example, 70% of businesses believe traditional

technologies cannot successfully be used for ecological land re-use in their organizations. In choosing to restore service capacity, we restore value to society as an outcome by design.

Steve Villavaso provided an overview of regional planning in the Louisiana area and the New Orleans Regional Brownfield initiative. Regional planning in Louisiana includes Metropolitan Organizations and Regional Planning Commissions. The traditional roles have included transportation funding, infrastructure management, community and development issues. New roles and responsibilities include environmental projects, economic development projects, and data management. The regional composting plan for New Orleans, for example, includes a site selection/evaluation, community outreach and education, technology evaluation, and a regional demonstration project. One project focused on composting. Recognizing composting had never been embraced before, this project became a regional umbrella for environmental initiatives. Grant funding underwrote the cost for “backyard composters”. Other regional environmental initiatives included a regional air

quality demonstration to test alternative fuels, a water quality grant including regional awareness for environmental awareness, and a land use project for transportation and community and system preservation.

Under the New Orleans Regional Brownfield initiative, the area received regional a Brownfield Pilot Assessment Grant and a Supplemental Brownfield Assessment, a Regional Brownfield Revolving Land Fund Grant, and Regional Brownfield Petroleum Assessment Grant. They were able to leverage one grant into four other grants and were then able to transform the brownfield’s cookbook into a transparent “How To” manual. They have also been able to create the Regional Brownfield’s Consortium with public meetings linked to multi-level web portals, which was based on the concept of regional technology sharing. They have also formed a partnership with the Center for Brownfield’s Initiatives (www.brownfields.com) and developed a new regional partnership with The Argonne National Lab using the triage model for petroleum contaminated sites, which highlighted transparency and transferability.

Panel: Making the Case for Ecological Reuse: A Regional Action Plan

Steve ended his presentation outlining future regional environmental initiatives, which include smart growth /sustainable development, identifying new grants/programs, safe growth, economic/environmental partnerships, and open space /habitat restoration. He also stressed that the New Orleans Regional Planning Commission would like to work with WHC and their corporate members and partners in regards to the Regional Brownfields RLF Consortiums.

Marcus Niebanck began his presentation with an overview of TPL and some of their projects. He explained that TPL is divided into six regions, with more than 40 offices and over 400 people throughout the

United States. TPL has worked on over 2,678 projects covering more than 1.67 million acres. The TPL' projects include urban park, wildland and water projects. Markus provided three case studies, including their Ellwood Mesa Project, which conserved open-space and habitat through a land swap. Another case study he noted was the Cornfield Project, which was an urban infill development that was originally planned for light industry and warehouses. The new plan includes open and recreational space. The third case study he presented was Honey Lake in Susanville, California. Markus ended his presentation stressing that there is a need for "high mission value", need-driven projects, readily available financial resources,

corporate vision or gain, creative companion benefit-buffer lands, and efforts in mitigation to make these types of projects work.

[Questions and Answers to the Panel, Including Comments for Regional Next Steps](#)

Q1: Is the perception that it is difficult to find acquiring land trusts true?

A1: There is still a gap that needs to be bridged. So many are concerned with liability issues; Steve Villavaso pointed out that there are several actions one can take to protect themselves from liability, and that this concern is more of a perception.

SIX MAJOR ELEMENTS FOR A REGION 6-BASED ACTION STRATEGY WERE IDENTIFIED. THESE WERE TO:

1. Include metrics as a primary goal to enable decisions to happen;
2. Create an environmental covenant where agencies are cooperating with owners and operators rather than dragging people into compliance;
3. Link Region 6 to the future of the rest of the Southeast and Southwest;
4. Enlist nature-based organizations in the planning efforts;
5. Move to more benefit-based clean-ups; and
6. Integrate ecological enhancements into the RFR Program.

Presentation of Letters of Recognition for Ecologically Reuse Sites in Region 6

In a brief awards ceremony Bill Howard, President of the Wildlife Habitat Council and Bill L. Luthans, Deputy Director of the Multi-Media Planning and Permitting Division for EPA Region 6, presented Certificates of Recognition for creating nature for both wildlife and the community and demonstrating the value of incorporating ecological enhancement into restoration design. A table illustrating each site and award recipient is outlined below.

Site Name	Address	Recipient	Website
Alcoa Inc. Gum Springs Plant	500 East Reynolds Road Arkadelphia, AR 71923	Lyn Shepherd, Environmental Manager	N/A
Bridgestone Firestone North American Tire, LLC Oklahoma City Plant	PO Box 24011 Oklahoma City, OK 731124	Phil McCowan, Environmental Manager	N/A
Brooks Development Authority	8030 Challenger Dr San Antonio, TX 78235	Greg Hammer, Environmental Coordinator	www.asu.edu/caed/ proceedings02/GODFREY/ godfrey.htm
City of Gretna	Gretna, LA	Mayor Ronnie C. Harris	N/A
Heifer Project International	1015 Louisiana Street Little Rock, AR 72202	Gerald Cound, Director of Facilities Management	www.epa.gov/region6/ ready4reuse/heifer_rfr.pdf
The Rio Grande Riparian Ecological Corridor Project	Keep Las Cruces Beautiful 575 S. Alameda Boulevard Las Cruces, NM 88001	Carol McCall, Program Coordinator	www.las-cruces.org/PDFs/ RioGrande.pdf
England Industrial Airpark & Community	England Authority 1611 Arnold Drive Alexandria, LA 71303-5636	John Grafton, Executive Director	www.Englandairpark.org/
U.S. Fish & Wildlife Service- Caddo Lake National Wildlife Refuge	P.O. Box 230 Hwy 134 & Spur 449 Karnack, TX 75661	Paul Bruckwicky, Fish and Wildlife Biologist/Contaminants	www.fws.gov/realty/ CaddoLake.html



Phil McCowan and
Tim Bent of
Bridgestone Americas
Holding, Inc. receive
their certificate of
recognition from Bill
Luthans (left) and Bill
Howard (right)

Paul Bruckwicky
of the U.S. Fish
and Wildlife
Service receives
the agency's
certificate of
recognition from
Bill Luthans (left)
and Bill Howard
(right)





Alan Hart of Moore Planning Group, LLC for England Air Park receives the site's certificate of recognition from Bill Luthans (left) and Bill Howard (right)

Mayor Ronnie Harris of the City of Gretna receives the city's certificate of recognition from Bill Luthans (left) and Bill Howard (right)





Wildlife Habitat Council
8737 Colesville Road
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