Conference Proceedings

Restoring Greenspace: Ecological Reuse of Contaminated Properties in EPA Region 4

Atlanta, Georgia
May 21-23, 2007

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INTRODUCTION

On May 21-23, 2007 the Wildlife Habitat Council (WHC) hosted its seventh annual Restoring Greenspace conference in Atlanta, Georgia. This regional conference was hosted with the purpose of encouraging and enabling the restoration and reuse of contaminated land using wildlife habitat enhancements and community partnerships.

The regional conference provided training opportunities and presented a first-hand look at innovative programs, new initiatives and case studies that highlighted the incorporation of ecological reuse practices in site restoration activities focusing on the US Environmental Protection Agency (EPA) Region 4. EPA Region 4 includes the states of Florida, Georgia, Mississippi, Alabama, Tennessee, North Carolina, South Carolina, and Kentucky.

The conference objectives were:

- To identify ecological approaches to clean up and identify the costs and benefits of ecological reuse through case studies;
- To identify performance metrics for success in ecological restoration;
- To assess regulatory challenges to using ecological enhancements on contaminated properties;
- To evaluate approaches for obtaining constructive and meaningful stakeholder involvement; and
- To determine next steps for EPA Region 4 stakeholders to address issues surrounding the ecological reuse of contaminated properties.

CONFERENCE SUMMARY

Welcoming Remarks

Bob Johnson, President, Wildlife Habitat Council: For over 20 years, Wildlife Habitat Council (WHC) has helped member firms create and manage wildlife habitat on their properties and more recently WHC has focused on the topic of restoring contaminated lands. This is the seventh conference held by WHC focusing on restoring and reusing contaminated property. WHC programs help the private and public sectors use their properties more creatively to manage wildlife habitats, and when the Board of Directors decided to expand WHC efforts to include contaminated lands, there was a recognized need to provide stakeholders with more information on how to do this and to foster the partnerships needed to make these efforts succeed. To begin to address this issue the Board decided to establish a forum. WHC partnered with the Environmental Protection Agency (EPA), states (Interstate Technology and Regulatory Council), and WHC member companies, publishing a manual entitled "Making The Case For Ecological Enhancements." This was followed with a guidance document to help with implementation. This made both the tools and information resources available to enhance the ecological restoration of contaminated lands.

The Wildlife Habitat Council felt that the next step was to establish information exchange opportunities on the local level, and this gathering in Atlanta is the fifth such regional conference. Next year WHC is continuing with the regional outreach by hosting a west coast meeting in May 2008 in the EPA Region 9 San Francisco Bay area.

Mr. Johnson then thanked Regional Administrator Jimmy Palmer and EPA Region 4 for hosting this event. He also thanked the conference sponsors, partners, and staff and introduced Ms. Emer OBroin, Chairman of WHC.

Emer OBroin, WHC Chairman of the Board and Vice President, Safety, Environment and Human Rights, Monsanto: Ms. OBroin noted that she spoke in her dual role as Chairman of the WHC Board and Vice President, Safety, Environment and Human Rights at Monsanto.

Ms. OBroin noted that as part of WHC's internationally recognized wildlife habitat certification program, Monsanto has six WHC certified sites and many wildlife management areas on company properties. Ms. OBroin explained that the WHC helps companies manage unused lands for benefit of habitat. WHC provides expert technical assistance to members and gives tools to help companies become environmentally safe, environmentally friendly places. They enable companies to use their unused lands for habitat, wildlife, education, and in general to benefit the earth. Ms. OBroin noted that Monsanto is an active participant in WHC's Corporate Lands for Learning Program and stated that "restoring green space is the right thing to do". WHC successfully uses the regional Restoring Greenspace conference as a vehicle to identify the obstacles, to share solutions, and to highlight best practices to use property in a sustainable way.

This conference aims to fulfill the need for identifying the next steps, to advance these concepts, and to benefit the environment and economy on a sustainable basis.

Mr. Johnson then introduced Regional Administrator Jimmy Palmer, EPA Region 4. He stated that Mr. Palmer is one who has a working knowledge of the WHC programs and expertise and noted that Mr. Palmer is a very effective EPA leader who can address not just what is, but can also envision what should be.

Jimmy Palmer, Regional Administrator, EPA Region 4: Mr. Palmer began by welcoming the participants to the 2007 Restoring Greenspace conference and noting the variety of government, private sector, and community interests represented at the gathering, are all people who have made the choice of habitat creation and restoring greenspace as their priority. Mr. Palmer reaffirmed the importance of the "restoring greenspace" topic to the eight states in Region 4 (the most states in any of the ten EPA regional offices). EPA Region 4, in the southeast United States, is an area which is incredibly blessed with natural resources: Everglades eco-system; Great Smoky Mountains; longest coastline (one third of the lower 48 state coastline is in Region 4); and 460,000 miles of rivers, lakes, and estuaries. The economy in Region 4 is changing with an inflow of high-tech industry but continuing to also rely on agriculture, mining and mineral extraction, and tourism. There has been a great increase in the regional population; it has doubled in the last 40 years causing incredible pressure on the resource base. An indicator is the rapid rate of land development; five of the top ten growth states are in Region 4. Fifty acres of trees disappear per day in the Atlanta metropolitan area!! Rapid growth is causing great environmental stress. For example, implementing TMDLs shows how serious this business is: at present, the dissolved oxygen TMDL limit at the Georgia/South Carolina border provides no capacity for additional wastewater discharges, no capacity for additional growth. Region 4 is also reaching the limits of growth as prescribed by ozone and particulate limits.

There is a need to have a better plan for the growth, especially in the area of future water supply needs; one can't regulate one's way out of this dilemma.

Mr. Palmer closed with a quote from Pogo, "We have met the enemy, and it is us". We have caused problems, now we need to clean up. Jimmy Palmer stressed how the Restoring Greenspace conference can identify the "centerpiece of opportunities" amid this growth dilemma.

Mr. Johnson summarized the welcome session and noted that while Mr. Palmer spoke of the high rates of land conversion, WHC members have much land "under management": lands which industry can "rehabilitate" by working with federal, state and local pollution control programs and integrating these programs into land and habitat restoration efforts. Much of the land in the 48 states is owned by industry. Industry has a major opportunity to provide habitats. Today's emphasis on "being green" means pollution control and cleanup can be linked to the critical need for land use as habitat, use by plants and wildlife.

Overview of Conference Objectives

Marcia Maslonek, Wildlife Habitat Council Vice President of Programs introduced the next set of speakers, noting the diversity among the participants in this conference with attendees representing a wide variety of stakeholders.

Melissa Allen Heath, Associate Regional Counsel, Office of Environmental Accountability, EPA Region 4: Ms. Heath, an enforcement attorney who has worked with EPA Region 4 for over 20 years, spoke of how she has seen the agency evolve from a "stovepipe by statute" agency to one with a more holistic view. There has been a shift away from just counting beans, to looking for environmental results as noted in "Everyday Choice", EPA's environmental stewardship document (on the www.epa.gov web site since 2005). Also, the Southeast Ecological Framework database and "GeoBook" are used by EPA for planning and provide user-friendly databases.

There are several documents on the EPA website which point to these changes at EPA in support of greenspace restoration and habitat creation and three of the five overreaching goals within the EPA. "Strategic Plan: 2006-2011" examines impacts to habitat and greenspace areas. EPA is interested in environmental results that will help implement this five year strategic plan.

Region 4 also wants to use more Supplemental Environmental Projects (SEPS) in enforcement cases where there are demonstrable environmental results and where a nexus to the enforcement case can be identified. A SEP is a voluntary project that is taken on by a defendant as an offset of cash penalties. Communities and others can propose SEPs. Enforcement case information is on the EPA website. All of this is public information that can assist communities. For example, tree planting projects might be a SEP relevant to a future CO2 emission air enforcement action. A good example of a Region 4 SEP occurred at the Blue Ridge Paper Co. in Canton, NC which bought a paper mill, then upgraded wastewater controls, then improved river habitat adjacent to the plant.

Other EPA programs which support the "restoring greenspace" concept are EPA's Smart Growth Program, which gives grants to provide technical assistance and recognition for sustainable development that counters the sprawl mentality that has shaped the landscape for so long.

The EPA C.A.R.E. Program provides level 1 and level 2 grants for grassroots programs looking for both technical and financial assistance in dealing with toxins.

There is also a Five Star training grant program where students work to restore wetlands and streams.

For more information about EPA stewardship programs go to the website at www.epa.gov/innovation/stewardship .

Timothy Bent, Director of Environmental Affairs, Bridgestone Americas Holding, Inc.: Mr. Bent stated that as a corporation, Bridgestone Americas was

working to develop and maintain positive relationships with communities. In 2000 the company donated 10,000 acres of wilderness for an East Tennessee town's 100th anniversary. In simple terms, Bridgestone wants "to see less bad and more good" from industry. The company is seeking ways to develop positive relations with communities.

An example of this is the Woodlawn Site Landfill, a large Superfund National Priorities List site in Northern Maryland. With support from WHC, EPA, and the State of Maryland, stakeholders realized that natural processes were at work. They wondered why not take a basic, natural approach to remediating the landfill and perhaps demonstrate that even a large landfill could become a safe, sustainable community resource. WHC identified the opportunity at the Woodlawn landfill; creating a wildlife habitat where nature's species can prosper. There have been similar experiences at the Industrial Excess Landfill Superfund Site in Ohio. Positive sustainable results are being developed through ecological restoration, which benefits community, creates habitat, and enhances local community real estate values. WHC support, WHC programs and expertise, and WHC's devotion to environmental restoration provide great "credibility" with all stakeholders and this brings results. In the long run these sites have been safely remediated, have saved over $40 million by using more natural processes and materials versus engineered ones. These projects demonstrated that sometimes there is a need for a more holistic approach, and the results helped alleviate the fear of the people, alleviate their concern over living near these Superfund sites and helped restore wildlife and true community involvement in these areas.

Mr. Bent stated that he is attending this year's Restoring Greenspace conference to help spread the good news.

David Lloyd, Director, EPA Office of Brownfield Cleanup and Redevelopment: EPA just issued over $70 million in 2007 Brownfields grants to communities for assessment and cleanup, but even this large amount of grant funding can address only a small part of the problem. The many stakeholders, local governments and private sector interests in the brownfields community are needed to help address the universe of brownfield sites. Mr. Lloyd thanked Region 4 for their revitalization efforts in turning brownfields to greenspace for all kinds of areas: urban, suburban, and rural; and for recognizing the importance of land revitalization in all EPA cleanup programs. EPA region 4 has developed strong relationships with the southeast states. The Region has established a goal of reducing anxiety and fear among landowners and among communities that have contaminated lands. For example, CD's of information have been distributed to help reduce anxiety and to help overcome barriers, which will assist communities in development of cleanup visions that support ecological reuses.

Mr. Lloyd challenged involved parties to make sure that ecological re-use achieves cleanup goals and meets community expectations. Also to be considered are the costs to the landowner, what are the benefits, what technologies are available for each project, and what are the staff training needs to support ecological reuse. He noted that cleanup and reuse support each other, and that reuse needs early interaction with stakeholders.

Keynote Session

Stephen A. Elbert, Past WHC Chairman of the Board and Vice Chairman, BP America Inc.:

"An Activist Partnership Between Business and Wildlife"

Mr. Elbert focused his remarks on the rich ecotone where business and wildlife meet. The theme of the conference, "Ecological Reuse of Contaminated Property", couldn't be timelier. There are many benefits and many challenges to this business of remediation and reuse. Next year, WHC will celebrate its 20th anniversary. There have been tremendous accomplishments during the first 19 years. As WHC approaches its third decade, there is an opportunity to use the lessons learned so far — the very best of these corporate and environmental synergies — to achieve even higher levels of success in the next 20 years. Starting right here and today, those in attendance at the conference can have great effect by thinking even bigger and acting with even more urgency than ever have before as the Council's work is spurred forward.

Those employed by business need to go back to their companies and communicate the message about what is really possible if one acts now. It is important to spread the word to like-minded business people beyond one's own corporate boundaries. Mr. Elbert then provided numerous examples of BP America's challenges and accomplishments over the last several years in their habitat and open space creation efforts.

There are some key benefits that businesses enjoy when embracing creation and protection of America's wildlife habitat with genuine enthusiasm:

- A company is more appreciated by employees for its efforts on behalf of wildlife, and that translates to pride in the company. Caring about wildlife also helps attract the best employees, the kinds who make business succeed.
- Customers are attracted to the notion of habitat creation, and that means increased sales and general customer satisfaction. Letters from customers provide indications of this, and detailed customer surveys provide ample proof to back up the anecdotal information.
- For investors, there is the allure of a company that demonstrates a determination to act responsibly and sustainable with regard to preserving something of immense value and ensuring its abundance in the future.
- For government officials and the general public, it demonstrates that corporate interests extend to the communities around their operations and that the "license to operate" that is granted to corporations is earned and deserved.
- Any work with wildlife habitat generally means coming to better understand past environmental mistakes and learning to avoid making them again. This naturally produces new, more economical efficiencies for businesses. Raw materials and products that are not released to the environment can be sold, rather than spending money to clean them up.

It is import to continue habitat and open space restoration efforts, but with even more vigor and excitement than during the first two decades of WHC's existence. These

efforts can't afford to wait. If the wait is too long to cope with today's growing threats to wildlife habitat, a scale of opportunity will be missed that will never come again.

Lunch Presentation- May 22, 2007

Bob Donaghue, Director, Georgia Department of Natural Resources Pollution Prevention Assistance Division

"Nature Rules- Putting Nature's Laws into Environmental Laws and Programs"

There are gaps between policy and economic sustainability: With economic sustainability the ecosystem remains healthy and functional, locally and globally, to preserve the biosphere.

The UN Millennium Ecosystem Assessment indicates that two-thirds of the planet's ecosystems are in decline or not managed in a sustainable manner. Vital natural resource laws need to be grounded in environmental sustainability.

The Multi-State Working Group is a group which promotes dialogue on environmental issues. Their website which discusses "ecologically sustainable America" is www.mswg.org . They also hold several meetings called "Path to Washington". They discuss how to overlay sustainability on existing laws and programs. Their goal is to bring WHC approaches with industry members to States' programs, including examining how NEPA can protect the services provided by ecosystems in addition to assessing environmental impact. A few of their meetings are to be held in Park City, Utah, Washington, and New York City. Some of the themes of the Washington meeting are business sector focused, discussing long term views, resources, education and awareness, market drivers, how to reconnect, ecology and faith "caring for creation". At the Napa Valley meeting they will gather case studies, look at NEPA to see how it can include ecoservices, as well as foster dialogue on ecoservices and restoration.

Mr. Donaghue discussed his "pollution prevention" division's programs and efforts to assist the private sector and communities in developing pollution prevention and sustainability fostering programs in protecting watersheds. He spoke on how one can enhance watershed management efforts by overlaying an environmental management system on a variety of water-related programs. He is working with Fort Benning, Georgia, a growing area, on such a pilot project.

Field Trips

Restoring Greenspace conferees participated in two excellent Atlanta-area field trips to view first hand the opportunities and experiences in land restoration within the rapidly growing metropolitan area.

The Emerald Necklace: The Beltline Initiative

The innovative new initiative aims to establish an "emerald necklace" within Atlanta by creating and connecting over 2,000 acres of park land. The project also involves

creating greenspace from brownfields and other industrial sites, such as the former Vulcan Bellwood Quarry.

The beltline is comprised of 22 miles of railway corridors, winding through forty-seven Atlanta neighborhoods, and contains over 30 miles of trails. Four distinct railway corridors comprise the beltline with two of the four railways unused, or abandoned. One of the four railway corridors is very busy with 52 trains a day, and one corridor, still in use, has only one customer. The first corridor was purchased privately for $25 million from Norfolk Southern.

The beltline is vital to Atlanta because only 3.8% of Atlanta is park land, the lowest percentage of any major city. Boston, New York City, and Washington, DC have between 16%-18% of their land area as parkland. Trust for Public Land (TPL) hired Alexander Garvin to study greenspace opportunities along Atlanta's Beltline railroad corridor, mile by mile. Garvin's study recommended to the city that they break the Beltline work into two work products, so that implementation could begin immediately. He advised the city to begin acquiring park properties and the Beltline Trail for the first phase. The second phase would establish a Beltline Transit system. Atlanta municipal bonding and tax increment financing will finance the beltline parks, providing many millions of dollars. The project is spurring in-fill development in Atlanta and property values are increasing in areas near the Beltline.

Clayton County Water Authority's Newman Wetland Center and Atlantic Station

The Newman Wetland Center is the focal point of the Clayton County Water Authority's community education efforts. It was created to demonstrate the importance of preserving wetlands environments and to provide public education in matters of natural resource conservation. The Center consists of 32 acres and includes a wetland trail and 4,888 sq. ft. building complex comprised of a central exhibit/ learning lab area, a 50 seat auditorium, offices, restrooms, and a conference facility. A guided tour was provided that highlighted the wetlands, wildlife and vegetation of this spectacular area. Participants were provided a driving tour through Clayton County's re-constructed wetlands project. These re-constructed wetlands are being developed to replace lands that were used for the construction of a reservoir for Clayton County's water supply. The wetlands pass advanced treated second effluent through developed cells that will remove nitrates, BOD, and phosphates. Treated wastewater will be passed into a drinking water system. About 10% will be used for drinking water. Eventually, there will be a total of five cells developed.

Atlantic Station, occupying 138 acres, is one of the largest urban brownfield redevelopments in the United States, and is built on the site of the former Atlantic Steel facility which operated for 100 years. It has been transformed into a large community within Atlanta, including residential and business uses, conveniently close to downtown and transportation. In many ways it serves as a model community. It is a model for energy efficiency. It is a national model for sustainable development. It provides middle class and upscale homes for 10,000 people and it provides 30,000 jobs.

Breakout Session Set 1

Performance Measures / Metrics

Establishing metrics and performance standards to measure the progress of greenspace restoration efforts requires consideration of a wide array of different values and functions that depend upon the specific habitat and its relationship to surrounding natural and human environments. This panel examined methods to identify and implement performance standards for remediation/reclamation and water projects, and to establish definitions of success in such projects.

H. Spencer Banzhaf, Associate Professor of Economics, Georgia State University discussed the reasons for establishing performance measures:

- Fulfill a natural desire to understand trends that affect our society and its welfare.
- Provide an indication of what policies are successful and what remains to be done.
- In any policy context where there is to be trading, banking, or offsets, it is impossible to proceed without a precise unit of account.

There has been a failure to adequately define the term "ecosystem services". Mr. Banzhaf's proposed definition is: *Ecosystem services are components of nature, directly enjoyed, consumed, or used to yield human well being*.

An example of how this definition of ecosystem services might operate can be seen in the case of a lake or stream supporting recreational angling. Ecosystem services associated with angling include the water body, visually available natural resources abutting it, and the target fish population. The water body is a service because it is necessary for angling. Visually available natural resources in proximity are a service because they contribute to the aesthetic enjoyment of the angling experience. The target fish population in the water body is a service. Things that would *not* be final ecosystem services associated with angling include the food web and water-purifying land uses on which the target population depends. The angler's catch is not a good measure of an ecosystem service because it is dependent upon more than the contribution of the ecosystem; it includes the skill of the angler, the quality of equipment, and the time invested.

Existing model considerations for overcoming challenges of defining ecosystem units of account:

- Governments have played an active role in creating and stabilizing markets by establishing uniform weights and measures and monetary units of account (some of the enumerated powers of the US Congress).
- Those that established national income and price accounts systems in the early decades of the last century faced daunting problems of their own. They did not have "readily available" prices and quantities. They had to gather those data. Moreover, they often faced a great deal of heterogeneity in product quality and in the forms of price quotes (apples of various grades, each by pound, bushel, or number).

- Today, the keepers of price and income statistics are faced with ever-shifting heterogeneity (faster cars, bigger houses). Each of these problems has posed challenges for the best way to define conventional marketed goods and services. Each has been overcome with creativity and persistence.

Maria Parisi Vickers, Deputy Director, EPA Office of Solid Waste and Emergency Response presented information on EPA efforts to establish performance metrics. EPA is developing and using pragmatic measures to track accomplishments in redevelopment and land reuse. Efforts to redevelop contaminated sites help efforts to cleanup contaminated sites.

In addition to long-standing measures of progress in EPA's cleanup programs (such as number of sites completing construction and number of sites with human exposure under control), EPA is also measuring the number of acres at sites where human health has been protected and is tracking the number of properties that are ready for reasonably anticipated land reuses. Beginning in 2008, all EPA cleanup programs will use the new "universal indicator" in this regard, the total number of acres being addressed. In addition, the number of acres with no complete pathway for human exposure based on current site conditions and the number of acres ready for anticipated uses will be tracked in all cleanup programs. EPA will measure, in addition to total acres, those site acres which have become protective for people and those site acres which have become protective for all uses. All of these new measures will help link the concepts of successful site remediation and successful land revitalization.

Edward H. Chu, Director, EPA Land Revitalization Office addressed "Micro" measures of land revitalization efforts, i.e., those compiled on a site-specific level and "Macro" measures, i.e., those compiled on a national level and discussed how the two relate to each other. In a holistic sense, not all cleaned-up and restored acres of land are the same. Acres are a "gross" measure of cleanup and restoration accomplishment. Some acres are more contaminated than others. In addition, land uses may vary at a given site and are not static as they may vary over time. A holistic measure would take changing site conditions into account as well as consider changing uses of land at sites.

In developing metrics to track land revitalization and greenspace restoration outcomes, it is important to be aware that the money aspect serves as a bottom line. This is a difficult task that needs to be accomplished: to quantify the benefits of land revitalization, quantify the costs, monetize these measures, and keep it easy to understand.

Phil Perhamus, Senior Biologist, AMEC Earth & Environmental spoke on how to define success for a particular project. It is relatively easy to define performance success for a particular project, but more difficult to specify how success will be measured and even more difficult to address unpredictable events.

Monitoring plans should incorporate any known contingencies that are likely to occur as well as consider the validity or usefulness of temporally variable performance metrics. Both are elements of an "Adaptive Management" strategy.

There will be conflicts between those who develop performance metrics and codified regulations. One needs to ask should this conflict discourage innovative techniques or should one just "roll over"? Some believe that performance metrics often indicate success when the reality is that a restored system may not be functioning properly. It's a great idea to communicate mistakes along the way. Other considerations include:

- Should plant vigor and reproductive success be examined instead of percent cover, number of stems, plant height, etc.?
- Should what the site can contribute to the landscape be examined?
- Should a system's resiliency to unplanned disturbances be examined?

Overall Accomplishments, Impediments, and Recommended Courses of Action to come out of this session are presented below.

Accomplishments:

- Land re-use is a high EPA priority;
- EPA is now tracking progress in the form of:
    - Number of acres
    - Number of sites;
- Protective for people;
- Ok for "use";
- How measure "ECO";
- Concrete outcomes;
- Link to eco-system services; and
- Proposed definition.

Impediments:

- "Holistic benefits" not being measured;
- Measures of EPA land programs;
- Measure acres, but not all acres are equal;
- Site uses change over time;
- Site conditions change over time; and
- Money and simplicity of measure.

Recommended Courses of Action:

- Action by EPA/States to survey the "eco-status" of representative sites to obtain baseline data;
- Incorporate "Adaptive Management" approaches into site cleanup plans;
- Develop temporally variable metrics that recognize land use changes over time; and
- Evaluate EPA first-ever national attempts to track "acres" after fiscal year 2008.

Wetlands Restoration - Coastal

Our nation's coastal wetlands are disappearing at an alarming rate. This panel examined the science of coastal wetlands restoration, proposed policy changes and impacts of proposed policy changes, and available resources and partners.

Leslie Craig, Habitat Restoration Specialist, NOAA Restoration Center discussed available resources provided by the National Oceanic and Atmospheric Administration (NOAA) Restoration Center. Past historical practices, such as mosquito ditching, mosquito impounding, and dredge and fill activities have resulted in destruction or degradation of coastal wetlands. Landowners should be encouraged to consider opportunities to restore wetlands and/or enhance degraded marsh on their coastal properties. The NOAA Restoration Center staff facilitates restoration of these habitats through programs including the Community-based Restoration Program (CRP), Damage Assessment Restoration and Remediation Program (DARRP), Coastal Wetlands Planning, Protection and Restoration Act Program (CWPPRA) and Research Program.

The CRP is a grant program designed to engage communities in on-the-ground restoration of local habitats. NOAA helps with site selection, project design, implementation, and monitoring. It requires a non-federal match, which can include skilled labor. The DARRP assists in restoring marine resources injured as a result of oil spills, toxic releases, or ship groundings. CWPPRA has implemented, and is currently designing, several large-scale barrier island and wetland creation projects in coastal Louisiana with the goal of combating the rapid loss of wetland along this productive, but highly impacted, shoreline. The Research Program advances restoration technology, science and cost-effective practices.

Restoration opportunities include impounded wetlands drainage ditches, road beds constructed through wetlands, seawalls and hardened shorelines, upland created as a result of placement of dredge spoils, culverts, and isolated wetlands with little or no tidal connection.

Dr. Deborah J. Shafer, Research Marine Biologist, Engineer Research and Development Center, U.S. Army Corps of Engineers discussed problems with coastal wetlands restoration, including limited upfront information; spatial and temporal variability; and limited time and money. These issues contribute to another problem-that of initially establishing clear goals and objectives. This is critical to any environmental enhancement or restoration project because there are so many varied interests, points of view, and mistrust and misunderstanding between agencies. Projects should include performance standards – observable or measurable attributes that show whether the project met the objective, as well as specific monitoring methods to measure the performance standards. Initial agreement should also be reached on remedial actions – what will be done if the standards are not achieved. The good news is that coastal marshes are among the most successful types of dredged material wetlands because of the predictable hydrology. However, these typically have less "edge" than natural mashes. A design challenge is to find innovative ways to increase the "edge" in created wetlands. Innovative approaches to coastal wetland restoration include thin layer placement and innovative technologies for submerged aquatic vegetation planting.

Wilbert Paynes, Chief South Atlantic Division Planning and Policy, US Army Corps of Engineers discussed the Army Corps of Engineers (ACOE) potential role with wetlands restoration. The ACOE can get involved in wetlands restoration either through a specific congressional directive or through their continuing authorities for smaller

projects involving restoration of ecosystems damaged by prior Corps projects; aquatic ecosystems; and beneficial use of dredged materials. These general authorities require a cost share from the project sponsor. Mr. Paynes explained that the ACOE will determine whether a project is economically and environmentally justified; the definition of project success is critical in making this determination. In addition, projects with strong partnerships are more likely to be selected.

Watershed planning establishes goals and objectives at a watershed scale and allows for more flexibility in looking at ecosystem issues. There is a need to collect data on created wetlands. There are five to seven thousand created annually, but this is small compared to the acreage lost. There is a need to examine how to beneficially use dredged materials and encourage partnerships. An innovative approach is the use of adaptive management, which allows the plan to be adjusted based on field results instead of relying solely on models.

Greg Green, Regional Biologist, Ducks Unlimited, Inc. presented a large-scale wetlands restoration case study with which his organization is involved in the San Francisco Bay area. The Napa-Sonoma Marshes Wetland Restoration Project involves purchasing salt beds and converting them to restored wetlands. The salt marshes were initially created by the construction of a levy that eliminated water access, creating salt ponding. The water passes through a series of ponds over a five to fifteen year period. During this time, they get saltier and saltier until the salt crystallizes and is then harvested for industrial use. Over the past 20 years, commercial salt production has decreased and the lands once used for this purpose have sat fallow or been sold to federal and state agencies for conversion back into wildlife habitats.

In 1994, the State of California purchased nearly 10,000 acres of former salt ponds along the Napa River to be included as part of the CA Department of Fish and Game's Napa-Sonoma Marshes Wildlife Area. Project proponents undertook an eight-year planning and permitting process to determine the most feasible and scientifically sound restoration approach. The existing salt marshes provided some benefits to some birds, so the challenge was to maintain some habitat for these species while transforming additional acreage to tidal marsh habitat for other species. The restoration techniques were fairly simple; allow natural processes to take place through levee breaches at the historic tidal sluice mouths.

Overall Accomplishments, Impediments, and Recommended Courses of Action to come out of this session are presented below.

<u>Accomplishments</u>:

- Thin layer placement (innovative technology);
- Partnerships;
- Reuse of dredged materials;
- Adaptive management; and
- Purchase of properties to prevent degradation.

<u>Impediments</u>:

- Research needed to determine how to successfully plant from seed as planting seedlings is costly and typically has a high mortality rate;
- Need for funds to meet program cost share requirements;
- More work needed to develop a high success rate with submerged aquatic vegetation (SAV) restoration;
- Need to understand and quantify benefits of projects;
- There are competing interests between maintaining the status quo and restoring wetlands;
- Restoration is always complicated by difficulties in constructing and planting in water;
- Water quality impacts during construction; and
- Need data on quality, quantity, successes, and benefits of wetlands.

Recommended Courses of Action:

- Establish a definition of success/performance standards, monitoring methods;
- Maximize "edge" of restored coastal marshes;
- Focus on watershed ecosystem as a whole;
- Need longer term funding to allow for long term monitoring and maintenance; and
- Need for mapping to identify opportunities for restoration.

Greenspace

Working at the local grassroots level is viewed as an effective means to establish greenspace in communities. This panel focused on ways in which greenspace can be incorporated into a community's culture through engaging schools, government, and grassroots citizen groups in the effort to balance the needs of greater density with open space.

Walter Hufford, Environmental Business Manger, Atlantic Richfield Company discussed a holistic and innovative approach to taking a portion of a contaminated manufacturing site in Gnaddenhutten, Ohio and converting it to open space with dedicated wildlife habitat areas. Politics are mostly local and in dealing with local communities, it is very important to establish trust and to be transparent. That makes it much easier to handle bad news when it arises. Mr. Hufford stressed the need for vision and also for involving local stakeholders. He also recognized the value of having groups like the WHC as a resource and playing the role of a neutral advocate when trying to establish greenspace on contaminated property.

Jim Stokes, President, Georgia Conservancy spoke of the need for establishing and protecting greenspace. All parties lose when land is turned into asphalt. The Atlanta region is experiencing rapid growth, losing 54 acres of trees per day. The Emerald Necklace serves as an example of separate, individual greenspace parcels being connected to each other to form continuum of open space. Three collaborating organizations, the Georgia Conservancy, the Atlanta Regional Commission, and the Trust for Public Land, have teamed together to identify regional priorities and build momentum for greenspace protection.

Mr. Stokes believes that greenspace discussions need to go beyond political boundaries to grow a greenspace vision for greater Atlanta. It is also important for land conservation entities to establish partnerships, to access technical and financial assistance, and to provide educational outreach. Mr. Stokes discussed his green-infrastructure toolkit, which included acquisition methods; regulatory methods; incentives for landowners; funding mechanisms; and available resources. People favor greenspace.

Terry DeMeo King, Executive Director, Chattahoochee Hill Country Alliance discussed the work of her community based nonprofit, the Chattahoochee Hill Country Alliance. They have been working to establish a balanced growth approach that protects the land and rural character, ensures quality development, and provides options for landowners to gain value for their property without selling or developing it. Ms. DeMeo King described how Fulton County has a special set of ordinances that direct development and protection including a land use plan and an overlay district specifying three high density mixed use villages and a number of smaller hamlets.

A master plan covering four counties was established extending over traditional boundaries. In fact, the visioning and planning phases crossed political boundaries. The effort was funded with a $2 million federal transportation earmark. Three main components helped the project become a success: balanced growth; ensuring protected lands; and helping people capture value from their properties.

Steve Nygren, Founder and Managing Partner, Serenbe Development told the story of how the Chattahoochee Hill Country Alliance was created to bring together developers, conservation groups, local government and landowners in a 40,000 acre area to create and pass the largest land use change in Atlanta's recent history.

Mr. Nygren started development with his own 900 acres. His goal was to demonstrate that greenspace in Georgia has value. He stressed that economic value must be part of the development package. He wants to prove that this can be economical. His plan is to preserve 70% of the land, only developing 30%.

Overall Accomplishments, Impediments, and Recommended Courses of Action to come out of this session are presented below.

Accomplishments:

- Well documented examples of risk;
- Developers, bankers, and politicians are developing an increased comfort level with establishing greenspace;
- Balance: win/win for everyone; and
- Trust for Public Lands website www.TPL.org.

Impediments:

- Lack of general understanding and appreciation of the value of greenspace;
- Need for public voice to be heard that they want more greenspace; and
- Many government programs and regulations are disincentives to greenspace development.

Recommended Courses of Action:

- Make greenspace economically comparable in value to other land uses;
- Recognize benefits of ecological enhancements in cleanup actions;
- Conduct a broad review of all major regulations for negative impacts to greenspace development (for example DOT regulations);
- Educate developers and bankers on greenspace risks and benefits;
- Listen to people and move them into the political process as they favor greenspace;
- Develop inventories of sites for greenspace; and
- Make greenspace a win/win for everyone.

Long-term Stewardship: Managing Site Liability and Institutional Controls

With many site cleanups reaching completion and new State and Federal Brownfields laws enacted, there have been exciting new developments to address the expectations of land trusts and reassure communities of the long-term viability of site remedies. This session included discussions of current insurance programs to help manage long-term liability, as well as issues associated with implementing and tracking effective land-use controls.

Katherine Eddins, Executive Director, Chattowah Open Land Trust, Inc. spoke about the structure and mission of land trust organizations, how her organization uses 'chains' of conservation easements on multiple properties as an institutional control to protect and preserve greenspace in perpetuity, and challenges that land conservation organizations face with establishing and maintaining open space. Most land conservation trusts deal with local issues; the formation of the Land Trust Alliance creates an avenue for addressing larger broad based issues such as bundling insurance policies for land conservation trust member organizations.

Jesse Tremaine, Senior Vice President, Acordia / WFIS Energy and Environmental provided a brief overview of the liability issues associated with reuse of contaminated properties. Risk management approaches include retain risk with first party and third party liability; transfer some of the risk; and full liability transfer to a third party. Environmental insurance is a means to backstop the indemnity associated with a contaminated project. Types of insurance available that are typically used to mitigate risks associated with remediation projects: cleanup cost cap (aka stop loss); pollution legal liability (addresses third party liability); environmental protection programs; and guaranteed insurance structures (risk gets transferred to contractor performing cleanup). Insurance premiums are a function of limits on policy; deductible; level of site characterization performed; level of agency oversight; future use; and level of competition among insurance carriers. These types of policies are site specific. Policy terms are typically five to ten years.

Kevin Matthews, Director of Government Relations, AIG Environmental provided information regarding what is and what may be in the insurance industry. Mr. Matthews provided additional detail regarding the use of pollution legal liability and cleanup cost cap insurance. Mr. Matthews also spoke about what is on the horizon for

corporate management of liability associated with site cleanups. Establishment of the Recovered Property Assurance Trust (RPAT) by passing Federal legislation would create a liability transfer vehicle for responsible parties to receive some finality associated with completed cleanups. The RPAT would accept properties where with No Further Action letters (properties must be remediated) exist.

Evan Van Hook, Vice President, Health, Safety, Environment & Remediation, Honeywell International Inc. provided a corporate perspective on issues associated with site remediation and creation of open space. Honeywell has moved five major brownfield sites this year. Use of brownfields for creation of open space is exceptionally good public policy: development of brownfields goes a long way toward preventing development of green fields and where there are concentrations of brownfields, there typically is a lack of open space/habitat.

The number one concern of corporations with development of their brownfields is the assurance that the remedy will remain protective of human health and the environment. Honeywell's corporate tools for managing liability with institutional controls:

1. Partner with competent, specialized, consultants for land reuse team: technical, real estate, financial;
2. Knowledge: if site is completely characterized, it alleviates unknowns;
3. May want to work with developers and retain liability if dealing with a complicated site;
4. Stick with contractual limitations with end use; and
5. Capacity of regulators: consider legislative framework and agency personnel's ability to handle institutional controls.

Overall Accomplishments, Impediments, and Recommended Courses of Action to come out of this session are presented below.

<u>Accomplishments</u>:

- Formation of Land Trust Alliance to serve as an umbrella group for local land conservation trust entities;
- Established an accreditation program for land trust organizations;
- Insurance products can be tailored to provide coverage for what is needed; and
- Corporate holders of contaminated properties have gotten savvy to productive mechanisms for redeveloping sites while mitigating contamination issues.

<u>Impediments</u>:

- Limited time frame associated with term of insurance policies. Typically 'long term' insurance policies provide coverage for only 10 years;
- Usually too expensive to have a policy underwritten for individual land conservation trust's projects;
- Land trusts don't usually posses the capacity for long term ownership of properties (usually just manage easements);
- A better linkage needs to be created with open space, natural resource damages, and cleanup;
- Often difficult to find the right entity to be the owner of contaminated open space where institutional controls need to be maintained;

- Lack of public confidence with land trusts and others tasked with maintaining easements; and
- Lingering liability issues on contaminated sites to be used for open space underscores need for remedy assurance.

Recommended Courses of Action:

- Establish a digital data management system for tracking and maintaining institutional controls;
- Need for better linkages between creation of open space as part of a clean up and the Natural Resource Damage programs;
- Encourage state programs which allow for multiple end uses of remediated property;
- Establish a carbon trading system which could provide a mechanism to create more open space (creation of carbon sinks);
- There is an opportunity for EPA to get involved with assisting the Land Trust Alliance with strategies to manage long term institutional controls on open space projects; and
- Educate or assist with increasing the sophistication level of land trusts so that they have the capacity for long term ownership of remediated property.

Breakout Session Set 2

Ecosystem Services - Creating Value

Various techniques are being used for valuing eco-system services including tracking property value increases, identifying tax benefits, and others. This panel focused on how ecosystem services (e.g., flood control, carbon sequestration, open space, and wildlife habitat) can create value in the marketplace.

Dr. Laura O. Taylor, Associate Professor of Economics, Georgia State University presented information on measuring value creation through the marketplace. Measures of value of ecosystem services may not be reflected in the price of land. Use-values may include recreation; "ecosystem production services" (such as water filtration, flood control, and fish hatcheries); and homeowner values (such as scenic vistas, privacy and access to property. Non-use values may be more important nationally and include a demand for the existence of habitat (e.g., "I've never been to the Okefenokee National Wildlife Refuge but value its existence").

Many studies of non-market values are available, a lot of data exists. Key studies include "The Value of Open Space: Evidence from Studies of Nonmarket Values" by Virginia McConnell and Margaret Walls, *Resources for the Future*, January, 2005 (available online at: www.rff.org) and "Toward Benefit Estimates for Conservation Programs in Agriculture-Meta Analyses for Improvements in Wetlands, Terrestrial Habitat, and Surface Water Quality" by Alan Randall, Ayuna Borisova-Kidder, Ding-Rong Chen(www.agecon.ag.ohio-state.edu/people/publications.php?user=randall.3)

One can leverage this important data on the dollar value of eco-restoration to fund restoration projects and support. For example, the creation of Tax Increment Financing

(TIF) programs, where a public entity will advance the additional property tax revenue to be generated from a restoration project to fund the project itself (such as the TIF used by the City of Atlanta to fund the Beltline Project).

Gregory R. Biddinger, Environmental Programs Coordinator, Exxon Mobil provided information on valuation techniques. Mr. Biddinger stated the value of starting with the end in mind, and proposed a model where one looks to complete site cleanup based on revitalization, anticipating the services to be obtained from future uses, rather than exclusively remediating sites based on risk. It is important to consider future use assessment, the Net Environmental Benefits Assessment (NEBA) and future site services, not just the risks posed by site. This will change the ecological risk assessment too. He stated the importance of incorporating NEBA to select among remediation and eco-restoration options, otherwise site cleanup may be achieved, but the site could have no value to the community, no restoration of site services.

Traditional risk assessment approaches focus on negative outcomes to be avoided while a service focus looks at lost use to be restored or new uses to be established. One can compare two Superfund sites, Depage County Landfill (where early inclusion of county foresters led to a vision of ecological reuse, consideration of ecological elements in remediation and a focus on revegetation and reuse as a county park), now one of the best birding areas for raptors in the area, and Charles George Landfill (where there was no consideration of reuse, where contaminated groundwater risks drove management of the site and resulted in property fencing and use of an alternative drinking water source), which is now a fenced and fallow site with a visible negative impact on the community. It is clear that a focus on ecosystem service values, integrating these values with site risks and desired future use, leads to better alignment of risk management and revitalization and leads to achievement of better outcomes.

Chris Olson, Real Estate Manager, BP America Inc., presented a case study of a BP site. In this site example, the appraiser indicated that only a fraction of the land was "usable". He was speaking of only residential and industrial uses, ignoring the great ecological value of wetlands with eagle nests and unique sand beaches. The monetary value is greatly reduced if it is not used for residential purposes.

Mr. Olson stated that businesses need to know how to capture the ecological value on the company's balance sheet. Wetland mitigation banking is one way. Donation by use of conservation easements is another.

Ed Chu, Director, EPA Land Revitalization Office stressed that those in attendance at the conference need to be the drivers for change. He linked the eco-restoration goals of the conference with today's energy crisis due to the cost of oil. The reuse of sites for habitat purposes should be measured within the context of the national greenhouse gas concerns with cap and trade systems in place elsewhere in the world. Mr. Chu raised questions regarding current energy intensive site remediation practices where cost-effective green alternatives are not often considered. For example, while pumping and treating a contaminated groundwater plume is a traditional site remediation approach, if one considers the energy needs for such a project, creation of treatment wetlands, or other, less energy-intensive solution, may become a feasible option. Within site

remediation programs, greenhouse gas offsets are going to become more important with new questions being raised, such as "How do you sequester carbon?" and "Are there carbon sinks that can be created?" Such considerations will help drive site remediation toward restoring greenspace.

Overall Accomplishments, Impediments, and Recommended Courses of Action to come out of this session are presented below.

Accomplishments:

- Many studies are available to value eco-systems services. These can be used to support innovative project financing approaches such as TIFs and special Tax Allocation Districts;
- In FY 2008 EPA is to begin using "Acres" measures to show re-use and link reuse to site remediation efforts; and
- Effective site remediation results have been achieved by incorporating the NEBA approach, to supplement traditional risk assessment-based decision making.

Impediments:

- Ecological values are not often reflected in economic values for a company's bottom line;
- Difficult to measure outcomes of eco-restoration project: include dollar value or not?; and
- There needs to be widespread recognition that not all acres are the same.

Recommended Courses of Action:

- Look into whether tax allocation districts can be used more often;
- Have States/EPA survey eco-status of sites. This could include incorporating eco-restoration considerations into EPA's new "Acres" measures;
- Look into whether climate change and energy costs can serve as drivers to change site cleanup programs and promote more eco-friendly, less energy consuming remediation approaches;
- Convene a separate conference to address these over-arching new concepts: valuation of greenspace, metrics of site restoration programs, and the impact of new considerations related to climate change upon traditional site remediation approaches;
- Clean up programs need to set revitalization goals and then conduct risk assessments that are more performance based;
- Government should help to define ecosystems services and benefits: perhaps a conference to focus on these topics is appropriate; and
- Site-specific outcome expectations need to be flexible. Possibly adaptive management approaches would help.

Wetlands Restoration - Freshwater

Freshwater wetlands, including swamps, bogs, marshes, and floodplains are critical habitat and are being lost at an alarming rate. This panel examined case studies on the restoration and creation of freshwater wetlands and provided information about the

regulatory environment that guides such projects and ways to encourage such restoration projects.

Connie Bersok, Environmental Administrator, Florida Department of Environmental Protection presented a case study of the restoration of the Kissimmee River Valley in Florida. Wetlands in the river valley were drained during the 1960s with the construction of the C-38 canal which replaced the meandering historic river channel. The goal of the restoration project was to bring back the historic system. The restoration involved backfilling the C-38 canal and eliminating the water control structures to allow the river to return to its historic channels. Key components of a successful restoration include establishing a target or reference native community; knowing its placement in the landscape; and providing the appropriate hydrology and substrate. Landscape aspects include a consideration of the supporting watershed and connection to other natural communities, both wetland and upland.

Issues which arose during construction were the need for a temporary variance from water quality standards during construction and the need to stabilize the backfilled material. The construction was conducted in stages with the opportunity for lessons learned to be put to use in subsequent phases. Once the restorative activities are completed, it is also important to consider those processes necessary to maintain the site in as natural a condition as possible, such as use of prescribed fire.

David J. Charette, Senior Associate and Director, Natural and Cultural Resources Group, Langan Engineering and Environmental Services, Inc. discussed the challenges of restoring wetlands on sites with environmental contamination. Due to the cost of excavating and removing large volumes of soils from contaminated sites, regulatory programs often allow certain contaminated soils to be left in place and capped. Capping typically involves placing thick layers of clean material and/or impervious surfaces on top of the contaminated soils. Alternative caps covering the contaminated soils, including clay liners and geotextile membranes, can be used to provide a more natural cap upon which a freshwater wetland can be constructed. Requirements for standard wetland mitigation projects and the type of caps on contaminated soils should be considered on a case-by-case basis.

Laurie Fowler, Co-Director, University of Georgia, Institute of Ecology, River Basin and Science Policy Center discussed some best practices as far as freshwater wetland policy efforts. Given recent U.S. Supreme Court decisions limiting federal jurisdiction over wetlands and scientific reviews challenging the efficacy of federal wetlands mitigation efforts, the role of state and local governments in protecting wetlands is more important than ever. A review of state regulatory, incentive, and acquisition programs reveals some clear winners. Local governments, such as Gwinnett County, Georgia, take advantage of the no-net-loss policy by targeting restoration of wetlands and stream banks to priority areas identified in their watershed protection plans. In the current regulatory environment, there are typically no incentives to protect wetlands or to restore them voluntarily. Some states are experimenting with such incentives, as well as providing financial incentives and expedited permitting.

Phil Perhamus, P.W.S. Senior Biologist, AMEC Earth & Environmental, Inc. presented a case study of McClees Creek restoration site in the protected Pine Barrens of New Jersey. The municipal client commissioned a study to eliminate the invasive phragmites reed which had taken over this tidally-influenced freshwater marsh from the 20-acre segment of the marsh owned by the town. A comprehensive restoration design was developed and an argument created to justify the project through ecological and fisheries benefits. Significant outreach was conducted with surrounding landowners to gain acceptance of the phased plan for phragmites removal. Various cost estimates were generated ranging from $300,000 to $900,000. However, the project never took place because the town's expectations for the project cost were out of line with reality. In addition, even if the project were conducted, the marsh would revert back to a phragmites dominated marsh in time, as the underlying causes for the invasive species wouldn't be addressed.

Overall Accomplishments, Impediments, and Recommended Courses of Action to come out of this session are presented below.

Accomplishments:

- Demonstrate recreational benefits of wetlands restoration, including Ecotourism;
- Use of native sea bank, natural channels, controlled fire, native vegetation; and
- Must modify conditions to avoid having invasive species return after restoration.

Impediments:

- Ownership questions, unclear title in historic channels;
- Presence of contamination;
- Unclear communication on funding;
- Water quality violations during construction;
- Conflicting regulations;
- Competing land uses and objectives; and
- Lack of money.

Recommended Courses of Action:

- Insurance could serve as a driving force for change, making it financially attractive to purchase property to prevent degradation and long term flooding;
- Look at projects from a watershed basis;
- Establish definition of success with timelines and associated monitoring;
- Public education
    - Value of wetlands
    - Temporary impacts
    - Use of herbicides; and
- Educate private landowners on what they can do on their wetland property.

Community Engagement / Environmental Justice

Upfront community outreach can save time and money in generating support for remediation and restoration projects. This session highlighted successful community outreach techniques, successful efforts to green-up land in socio-economically

disadvantaged communities, and successful outreach programs from brownfield and superfund projects.

Timothy Bent, Director, Environmental Affairs, Bridgestone Americas Holding, Inc. shared a number of insights from his experience working with communities on greenspace. Mr. Bent started with the question "how clean is green?" The existing EPA process for site remediation wasn't enough to work through green strategies and issues. It is necessary to hold public meetings in very controlled situations,as well as to knock on doors to get people's attention. The other issue is to whom in the community do you listen? The loudest ones aren't often the ones who best represent the community and so it may be necessary to counteract some people.

Mr. Bent stated that green solutions have to be worked through the community engagement process, and that people understand their health is protected. It is also very important to communicate effectively. Often highly technical information must be presented when there is little time. We should focus on where the project is going and its goal, not the process. The key is finding common goals with the community.

Rick Durbrow, Program Analyst, EPA Region 4 discussed the Southeastern Ecological Framework (SEF) Web GeoBook application, which focuses on providing users with easy to access data and information that supports local or regional decision-making. In essence, the application allows data to be viewed on a computer with little GIS expertise. The SEF Web GeoBook allows local, regional, and non-profit organizations to make proactive decisions that support environmental protection. Although EPA doesn't own land, it works with people who do and can put data directly into the hands of those people. EPA is very eager to work with interested groups on this communication tool.

David Lloyd, Director, EPA Office of Brownfields Cleanup and Redevelopment provided an overview of EPA's brownfields and other cleanup programs. He discussed their approach to ensuring meaningful community engagement and involvement, and identified a number of the tools available to communities to assist in this effort. He also identified several examples of how greenspace creation and habitat restoration was becoming part of brownfields projects. Mr. Lloyd also discussed how the Agency addresses environmental justice issues related to brownfields development. One component used for brownfields development is greenspace community development agreements. He also stressed that it is important in community engagement to filter out noisy people and identify the true community champions.

Jim Myers, Senior Environmental Engineer, Chevron discussed some of the public domain community engagement tools that are commonly used in Environmental and Social Impact Assessments (ESIA). The ESIA process was, in part, developed for projects funded by the World Bank under the Equator Principles. When funding major capital projects, it is critical to educate community stakeholders on the project and to learn from the stakeholders. It is a two way process and failure to effectively engage a community can delay or cancel a project. Mr. Myers emphasized that understanding and working within the cultural context is essential. He saw the greenspace community engagement initiatives as excellent fits for the ESIA concepts.

Overall Accomplishments, Impediments, and Recommended Courses of Action to come out of this session are presented below.

Accomplishments:

- Continued experience in greenspace community engagement is being obtained in corporate projects and EPA brownfields program; and
- A number of useful tools have emerged in the public domain for greenspace community engagement in World Bank projects and with EPA's SEF Web GeoBook.

Impediments:

- Establishing trust;
- Reaching and educating the right members of the community; and
- Getting regulators to understand and see the value of greenspace options as part of the remediation.

Recommended Courses of Action:

- Get regulators to look more at environmental solutions;
- Identify potential sites;
- Help community see projects from the macro to the micro picture: put it in context;
- Don't let developers dictate the project;
- Highlight greenspace success stories to communities;
- Bring in a neutral partner like WHC to validate project with community;
- Spend more time doing front-end assessment of community needs and cultural context;
- Identify and work with real champions such as neighborhood associations;
- Engage political leaders, but at the correct time; and
- Provide financial support for people from environmental justice communities to participate in projects.

Integrating Natural Resources Damage Assessment with Site Cleanup

Site cleanup programs strive to overcome the significant challenge of integrating the processes of remedy selection, design, and construction with those of natural resources damage assessments and restoration. The session examined how critical long-term goals of remediation and restoration can be successfully accomplished, while avoiding sequential processes, at many complex contaminated properties.

Joe Nicolette, Vice President, CH2M HILL, Director, EcoValuation Practice provided an overview on Net Environmental Benefits Analysis (NEBA) and where ecosystem service benefits could be integrated into the traditional remediation program process. By using a risk benefit analysis approach to environmental management options, an analytical framework for quantifying the effects on the environment is created.

Dr. Michel Gielazyn, Regional Resource Coordinator, NOAA Office of Response and Restoration presented an overview of Natural Resource Damage Assessment

(NRDA) from the perspective of a Natural Resource Trustee. Her presentation included information on who the Natural Resource Trustees were; the regulatory framework of NRDA; the over reaching objectives of the NRDA process; how NRDA can be integrated into the remedial process; and case study examples.

Tom Campbell, Partner, Pillsbury Winthrop Shaw Pittman LLP provided a historical perspective of the interplay between remediation activities and NRDA. The NRDA movement started with a focus on monetization and has shifted to restoration as the endpoint. The emerging trend is to have significant contamination risks addressed by remediation activities and residual risks handled by restoration activities. Benefits of this approach include cost savings, positive public relations, and ability to leverage Potentially Responsible Party (PRP) funds with funding accessible to non-profits. The ability to restore damaged ecosystems is crucial to the long term viability of the impacted community.

Stephen K. Davis, Senior Project Director, WSP Environmental Strategies, LLC presented a detailed case study of how NRDA can be used as an effective tool in RCRA closures. The case study focused on a legacy facility owned by the Kimberly Clark Corporation. The Cooperative Assessment Process undertaken engaged state regulators, Trustees, PRPs, and a non-profit land trust. The focus of the NRDA was the lingering groundwater contamination at the site. Habitat Equivalency Analysis was used as the basis for the valuation analysis. By finding the nexus between the natural resource injury and the appropriate compensation, they were able to create a canoe launch providing public access to the river; to preserve riparian habitat; to realize a tax donation benefit; to generate good press; and to save millions in transaction costs over the RCRA monitoring period.

Overall Accomplishments, Impediments, and Recommended Courses of Action to come out of this session are presented below.

<u>Accomplishments</u>:

- Growing number of stakeholders recognize that it makes the most sense to have clean up and NRDA processes be coordinated parallel processes;
- Keys to success with integrating restoration with remedial process:
    - Early coordination with Trustees
    - Early integration of NRDA in remedial process
    - Good working relationships with stakeholders to include PRPs, Trustees, and Regulators
    - Communication;
- There are some states where coordination between regulators and Trustees has worked well. Texas and Louisiana regulation models can be replicated in other states; and
- Conservation groups can serve as broker for supplemental environmental projects. Helps process move more quickly.

<u>Impediments</u>:

- Remediation actions can create natural resource damages and/or injury if not integrated with NEBA;

- Trustees and Regulators are not usually brought together early in the process;
- Semantics issue negatively impacts discussion: the NRDA/Remediation processes should be *coordinated* not *integrated* as they are separate processes;
- Negative perceptions on part of Non-Governmental Organizations (NGOs) may make finding a non-profit to partner with Cooperative Assessment Processes challenging;
- NGOs may not have capacity to handle complex land negotiations often needed for restoration projects; and
- Turf issues between Regulators and Trustees.

Recommended Courses of Action:

- Have an Executive Order issued making mandatory coordination of restoration and clean up processes;
- Tie EPA grant funds to states with requirements to apply same metric;
- Create SEP case study database so that others may learn and benefit from those SEPs that have come before them;
- WHC could have a workshop or short course to discuss/educate on:
    - Human health
    - Ecosystem health

  Dissenters of coordinating restoration with cleanup could be identified and invited to participate to open dialogue;
- Association of State and Territory Waste Management Officials had a NRD working group. The working group was apparently dropped in the fall. It was suggested that WHC could fill the void by creating a new working group;
- NRDA and remediation can be coordinated with creativity and 'out of the box' approach;
- There is a need to conduct educational outreach at RPM level throughout all the EPA regions; and
- NGOs can fill need for facilitators of restoration project implementation.

Lunch Presentation- May 23, 2007

Scott A. Sherman, Associate Assistant Administrator, EPA Office of Solid Waste and Emergency Response

Companies are growth engines but are also engines for environmental qualitative improvements and ecological improvements. EPA can't proceed alone, but needs to partner with others like WHC to accomplish innovations with industry such as greater efforts to restore greenspace at waste sites.

Three things which are needed:

1. Articulate benefits of incorporating ecological success measures.
2. Articulate the long-term stewardship of the work.
3. Articulate the climate change the project will influence.

To articulate the benefits of incorporating ecological success measures we need to use the internet, write frequently asked questions on documents, publish papers on the use of native plants, write guidance, and have training for practitioners.

One International City/County Management Association (ICMA) report cites that 60% of the sites have some eco-reuse potential. Take electronic recycling as an example. We seek new approaches, but let's look at traditional remediation approaches too. There are eco-friendly remedies that can be used.

To articulate long-term stewardship of work, one must separate "real" green projects from so many claims of "being green" today. We need to include better performance measures, like sites ready for reuse, sites with institutional controls in place. EPA has "ready for reuse" certificates for example. One region has dozens of sites; thousands of acres of land in their ready for reuse certificates. Similarly, WHC's internationally recognized certification program has definite criteria and outcome requirements.

Do all habitat remediation restoration efforts need to show as positive on a company's income statement? No, we need to better define VALUE, in context of climate change, greenhouse gases. We need to be able to use environmental offsets. Currently EPA's defining "metrics" for environmental projects; advocate credit-trading systems.

EPA can provide technical expertise and articulate feasibility of eco-friendly remedies. EPA can advocate long-term stewardship and sustainability. EPA can work with WHC to foster restoration of greenspace in environmental justice communities, to link greenspace restoration and natural resource damage issues and to further develop innovative approaches to help site remediation include ecological enhancements. Finally EPA can use the market place, trading systems to foster these approaches in the context of climate change issues.

Plenary Session: Making the Case for Ecological Enhancements; A Regional Action Plan

Robert Johnson, President, Wildlife Habitat Council
Steve Luftig, Facilitator, Brownfield Redevelopment Solutions

Several themes emerged during the two day conference, which could lay the groundwork for a regional action plan. The first is the need for activism; there is a need to find a champion, a driver for change to take on a project and establish a vision which will attract and excite others. Many projects also benefit from a neutral advocate, such as WHC. Just as strongly, the importance of developing partnerships was articulated in session after session. Examples of restored greenspace projects often involve the landowner, the community, regulators, and non-profits. The vision for the project often must evolve from a balance of interests and competing goals; often there are differences in values which must be recognized. It is important to maintain open communication to develop the vision for the reuse within the context of the community. Another message which came out was the goal of sustainability in these projects, to

ensure success in the long term. This requires careful planning and a whole project approach, as well as attention to long term monitoring and the overall risks and regulatory environment.

When launching a habitat restoration project, speakers again and again articulated the need to define what a successful project would look like upfront, so that clear goals are established and agreed upon prior to the implementation of the project. This is useful in developing monitoring programs, in establishing remediation and restoration goals, in determining long term liability, and in developing the overall approach. Another common theme is the importance of being able to measure the benefits of such projects. Benefits are not only quantitative (acres reused), but should also include qualitative measures such as improved water quality, the quality of created habitat, and recreational opportunities. Some benefits could be monetized, such as benefits to energy efficiency and contributions to preventing climate change. Benefits should be looked at over time, as well as at both the micro and macro levels.

Best practices were discussed. The benefits of adaptive management and the ability to change approaches as the project progresses were discussed in many sessions. This flexible approach recognizes the difficulty in predicting the results of such projects upfront. Also, a focus on ecosystem services in designing the restoration results in a better project with a higher quality outcome.

The need for increased education was also found to be important. Legislators, regulators, landowners, and community groups all need to understand how such projects can benefit them, and policies and practices which discourage such projects must be changed. To effectively educate and conduct outreach, data is necessary. This need was expressed throughout the conference, and is critical in decision making, to prioritize projects, to engage in education, to design successful projects, and to appropriately value projects, among other things. Both quantitative and qualitative data should be developed on successful projects and on the benefits of projects. Mapping of habitat and opportunities to create habitat would be helpful in decision making, and mapping of existing institutional controls would help to manage liability and track compliance.

Finally, the need for additional incentives was discussed throughout the sessions. These incentives may be financial or process. Measures discussed include grants, insurance products, credit trading and banking programs, valuation of conservation easements, expedited permitting, and incentives to encourage community participation in projects.

This summary of overall conference themes, information discussed and lessons learned should be the basis to move forward and work with the folks in the region to effect change. This information can be used as a basis for moving forward with the next regional restoring greenspace conference planned for EPA Region 9 to be held in the San Francisco area in 2008.