

Sustainable Raritan River Conference

Cook Campus Center – New Brunswick, NJ

June 13, 2014

Session 1: Concepts and Practice

Session 1 was introduced by Ken Klipstein, Director, Watershed Protection Program, NJ Water Supply Authority. This session's purpose was to define ecosystem services, and elaborate on their practical applications, both around the country and here in the Raritan. Ken spoke of the need to recognize the intrinsic value of ecosystem services, especially in its role in keeping water clean.

Stephanie Pendergrass Dalke, Project Director, Pinchot Institute for Conservation, spoke on natural capital and ecosystem services, defining them as such:

- Ecosystem Services are services that are part of natural systems
- Natural Capital is the stock of natural materials that flow into the economy

Stephanie spoke at length about how we value both of these, noting that our economic view as a society is typically that of an isolated system with an unfortunately short-term view. Lost natural capital is not well accounted for in accounting, and we frequently fail to view many services.

We value these things for what they provide us. Degradation or loss often causes significant harm. We do a good job of measuring environmental products that we directly use, such as timber, or fields for grazing; these are direct use value. But we do a poor job of measuring the value ecosystems supply in less easily visualized ways, such as carbon sequestration or water purification, both of which are indirect use values. Placing proper values on ecosystem services ensures that society does not spend vastly more money to recreate those services with “gray” infrastructure.

Stephanie provided several real life applications of properly valued ecosystems providing services for much less than it would cost to replicate them with hard infrastructure

- New York City's regulations for drinking water reduced contaminants in the upstream watershed, rather than building water purification plants
- The Tualatin River in Oregon was too hot; instead of a chilling plant, policymakers worked with farmers to put in riparian buffers
- Portland, ME avoided membrane filtration by ensuring clean water

The most important things we need in order to promote natural capital and ecosystem services concepts are scientific justification (better modeling) and appropriate political leadership.

Michael Catania, Executive Director of the Duke Farms Foundation spoke directly towards ecosystem service projects in the region. Examples cited were

- Habitat restoration projects at the historic great beds of the Raritan Bay: a total cost of \$1.3 million was spent to ensure ability to continue oystering and fishing activities off Staten Island
- Hatco/Raritan walkway restoration projects: the purpose of these projects were to improve water quality in the area, as well as promote eco-tourism.

Michael focused on the case study of Duke Farms; by presenting benefits such as filtering pollutants, growing local plants, and supporting ecotourism, local governments will take the issue more seriously. In New Jersey, great infrastructure exists that can help natural restoration. However, there are issues that exist within policy, and many existing regulations may make it difficult to restore a wetland in a public area.

Natural capital and ecosystem services are not new topics, yet there are a great many challenges we face to prevent environmental degradation. We have the scientific, engineering, and research knowledge to save many of these ecosystems, but many decisions on land use are made at the municipal-local level in New Jersey, though the ecosystems in question are easier to visualize and support on the regional level. Environmental economics should be incorporated more into land-use decisions, and projects need to be documented with baseline data.

Anne Heasley and **Beth Ravit** were respondents to this session. Anne and Beth both spoke to the policy challenges in the Raritan watershed and Upper Delaware Basin.

Session 2: Examples of Valuations

Session 2 was introduced by Kerry Miller, Director of the Association for NJ Environmental Commissions. This session introduced who is valuing natural capital and shows examples of where resources have been valued, with a focus on public access/recreation and stormwater management/flood mitigation.

Elizabeth Schuster, environmental economist with The Nature Conservancy presented on quantifying the impact of ecological restoration. The focus on this presentation was making valuation more relevant to local policymakers. Elizabeth's primary example was the Lower Cape May Meadows restoration project.

The Lower Cape May Meadows restoration project saw NJDEP and the US Army Corps of Engineers as the main funders for a dune, wetland, and shore restoration in Lower Cape May, an abandoned resort town. The project used mixed methods analysis, focusing on flood reduction and ecotourism. Flood analysis showed that restoration would minimize damage from equivalent storm surges and buffer the effect from storm water surges. The improved ecosystem also provided habitat improvements for birds. Ecotourism analysis included

valuation of spending value of tourism, focusing on the impact of birding tourism; this analysis suggested that the economic impact of birders in Cape May County is equivalent to \$313 a year.

The lesson learned throughout the study was that healthy landscapes bring both financial and ecological benefits to communities. Coastal flooding and erosion are key issues in the Raritan. Valuating natural capital is useful for making informed decisions, because we have a better concept of relative value and potential benefits.

John Miller, Associate and Water Resources Engineer of Princeton Hydro spoke on stormwater management and how ecosystem services are valued in the floodplain. Since 1978, there has been approximately \$5.5 billion in insurance claims for damage from coastal and riverine flooding in New Jersey. Much of this is repetitive loss, areas where there have been more than one claim. A higher percentage of repetitive loss properties exist within the Raritan River Basin.

Programs exist to mitigate this problem, such as property buyouts or the Green Acres/Blue Acres programs. Unfortunately, multiple FEMA buyout programs are only available after a flood event occurs. Subsidies for insurance also bring up values.

John also spoke of the natural and beneficial functions of open space as floodplain mitigation, and how we can monetize open space as it provides those benefits. The 2012 Open Space and Natural Functions Credits program has two goals

- To reduce and avoid flood damage to insurable property
- Strengthen and support the insurance sector

Cindy Ehrencloou and **Dr. Amy Soli** were respondents to this session. Dr. Soli spoke of interdisciplinary approaches, and discussed buyouts and rateables. Cindy spoke of the importance in translating scientific messages on this topic into formats that the public will understand, driving future decisions towards a better end.

Keynote Speaker: Gerald Kauffman, Director, Water Resource Agency, University of Delaware

During lunch, Gerald Kauffmann spoke on the value of watershed management restoration. The statewide value of nature in NJ is estimated at \$20 billion, and our water supply system is a good indicator of our economic strength. Jobs in recreational sports are useful to the economy, and all of these (paddling, boating, birding, fishing) require clean water.

Session 3: Valuations and Outcomes

Session 3 was introduced by Debbie Mans, Baykeeper and Executive Director of NY/NJ Baykeeper. Session 3 focused on reframing public dialogue around

protecting the environment as a benefit, not a cost, and further explored how valuations have been used to change land use decisions and ecological outcomes.

Patricia Elkis, Deputy Director for the Delaware Valley Regional Planning Commission spoke on the topic of preserving open space, both in the present and in the future. Patricia showed analysis suggesting that open space leads to economic returns and creates jobs; it sustains and improves home and property values, working to preserve regional prosperity.

Patricia highlighted many opportunities and risks; 25 acres a day are lost to development, a rate that is set to potentially grow. Certainly, new population is welcome, as are new jobs, but the suggestion is to locate them in some of the existing (or existing abandoned) infrastructure.

Quantifying the value of open space has been performed by:

- Econsult Corporation
- Keystone Conservation
- League Trust
- US Forest Service

Case studies were performed on:

- Parkiomen Trail
- Hopewell Big Woods
- Peace Valley Park
- Clark Park
- Radnor Trail

Findings indicated (or confirmed) that open space naturally protects property, filters drinking water, and cleans the air. It is essential for the filtration/purification of water, as well as aiding in the process of groundwater recharge. Physical activity on protected open space saves money (avoiding almost \$800 million in healthcare costs) in the form of improved health. Open space attracts visitors, supports local economies, and helps create and sustain jobs. In all, open space adds almost \$16.3 billion in value to the region's housing stock.

In order to support open space, we have to recognize the value of open space, support open space initiatives (including local funded open space programs), and generate money for open space benefits.

Ben Spinelli, NJ Field Representative with The Conservation Fund spoke about issues in the Raritan Basin, among those issues were:

- Growth management
- Water supply protection
- Active agriculture
- Flood control
- System interconnectivity

Ben spoke on the importance of valuing open space. If value is not established, the value is zero. Market value is also not the public value. It is difficult to understand the true value of transactions, and to allow intelligent and rational planning. To work towards that, we buy land; land is acquired for the following uses:

- Recreation
- Water source protection
- Ecological value
- Density control
- Agriculture
- Present Development
- Flood protection

Paying for open space must be seen as an investment; it is paid out over multiple generations. This view balances acquisition costs vs societal values. This is a very important goal, however, as it will also help us adjust to a changing climate. We need to value open space and natural systems, and see these as infrastructure. We need to act nationally, create balance, and value open space regionally. Doing so saves society money. Treating Croton's water for New York costs significant amounts of money; it is much cheaper just to keep it clean in the first place.

Carlos Rodriguez and **Mayor Brian Wahler** were respondents for this session. Carlos spoke towards the need to involve private capital in land acquisition programs. The Mayor concurred with Carlos, and cited Newmarket Pond in Piscataway.

Session 4: Tangible Next Steps

Session 4 was introduced by Bill Kibler, Director of Policy and Science, Raritan Headwaters Association. This session exhibited tools or resources that are being utilized in the valuation process that could be useful to regulatory and non-profit entities in our region.

Julie Ulrich, Urban Strategies and Watershed Coordinator with The Nature Conservancy spoke on the need to bring ecology back into the equation, engage a broader audience, and incorporate all benefits to make environmental projects more competitive. Ecosystems provide benefits to cities; trees reduce stormwater, air pollution, carbon dioxide, and provide heating and improve property values.

InVest, a natural capital project, is a tool to map and value ecosystem services. It can be found at <http://www.naturalcapitalproject.org/InVEST.html>. <http://coastalresilience.org> is a good tool to visualize coastal impacts.

New Jersey is especially vulnerable to sea level rise. The entire region must be proactive to meet these challenges. Philadelphia is a good example of proactivity, spending an estimated \$2 billion in developing green infrastructure.

Going forward, there are several identified strategies for valuation of ecosystem services. These include:

- Prioritize conservation
- Offer true cost accounting
- Harness resources
- Engage a wider audience of constituents

To do this, the concepts must be better defined; investment in planning must be better linked to its purpose.

Dr. Nina Chen, Director of Conservation Investments at The Nature Conservancy began her presentation by discussing how the public values drinking water. Funding sources for watershed protection range from fees to taxes; foundations and beverage companies are very interested. Professional organizations provide help on ecosystem assessments in all sectors.

Other organizations could also help fund efforts to protect water supplies. Philanthropic funders, medical insurance companies, hospitals, and corporate wellness funding could contribute towards public parks and trails. Spiritual and religious organizations could also help.

Fran Varacalli and **Mirah Becker** were respondents for this session.

Conference Summary prepared by Daniel Horner

About the Sustainable Raritan River Initiative

The Sustainable Raritan River Initiative is an independently funded joint initiative of the Environmental Analysis and Communications Group at the E.J. Bloustein School of Planning and Public Policy and the School of Environmental and Biological Sciences at Rutgers, The State University of New Jersey that brings together the broader university with key leaders from across the region and state. The Initiative supports the Sustainable Raritan River Collaborative, which is a network of organizations and agencies in the Raritan River region working together to promote the integration of sound planning and a vision for the Raritan Basin that balances social, economic and environmental objectives. For more information, visit www.raritan.rutgers.edu, email raritan@ejb.rutgers.edu, or call 848.932.2720.