

Session K4: Identifying and Protecting Healthy Watersheds

Room A107-109
3:30 – 5:00 pm

0313
K4-1

Maryland's GreenPrint: A Model for Targeting and Protecting the State's Most Ecologically Valuable Lands and Watersheds

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Maryland's GreenPrint program for strategic and targeted land conservation is based on the premise that the protection of the State's most ecologically valuable lands and waters must be of the highest priority. Based on this principle, an interdisciplinary team of natural resource biologists and land conservation managers at the Maryland Department of Natural Resources (MDNR) developed a modeling approach to identify Targeted Ecological Areas (TEAs). TEAs are the lands and watersheds ranked as the most ecologically valuable in the State. They are the "best of the best". These lands include large blocks of forests and wetlands, wildlife and rare species habitats, aquatic biodiversity hotspots, forests important for protecting water quality, high value coastal ecosystems, lands important for climate change adaptation, and areas supporting important fisheries. DNR mapped where these high priority lands and watersheds occur based on the analysis of over 30-years of collected data and the expertise of agency ecologists. TEAs are preferred for conservation funding through Maryland's Stateside Program Open Space.

Another key principle underlying Maryland's GreenPrint program is the development of land conservation strategies that are based on transparent, scientifically defensible criteria, designated geographic targets, clearly defined objectives and measures of success. When projects are considered for acquisition or easement, a conservation scorecard is produced to quantify ecological benefits. Funding decisions are based on how high projects score relative to other projects. GreenPrint also uses interactive mapping technology to geographically present the Targeted Ecological Area designations to the State's partners in land conservation: the public, private landowners, government agencies and land trusts. Ecological information at the parcel scale is available and is actively used to identify specific parcels for landowner outreach. The GreenPrint tool also shows where projects have been conserved, how much funding was required and tracks progress towards the Targeted Ecological Area goal at both the State and county scale.

0213
K4-2

Mapping Vermont's Critical Watershed Resource Areas: Data Integration Using the Recovery Potential and Healthy Watersheds Approach

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Protecting Vermont's healthy watersheds requires maintenance of high quality aquatic ecosystem components, and their supporting landscape networks. Detailed integrated assessments are used to identify areas characterized by high biological, chemical and physical integrity, and intact process. Vermont has completed an integrated "desktop assessment" using readily available national and state data which takes a screening-level approach to assessing watershed health and other environmental characteristics. The approaches used merge the concepts of recovery potential and healthy watersheds; complementary current initiatives of USEPA. The resulting maps can be used to identify areas for prioritized protection, more aggressive implementation of antidegradation, or conservation.

0330
K4-3

What is a Healthy Watershed? Minnesota's Systems Approach to Measuring, Monitoring and Communicating

Beth Knudsen and Ian Chisholm

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The Watershed Assessment Tool (WAT), developed by the Minnesota Department of Natural Resources with support from the University of Minnesota, uses a five component system to evaluate watershed health. This web-based tool uses a systems approach to describe watershed processes and encourage a comprehensive view of watershed health.

The WAT has recently completed Health Assessments that quantify thirty two statewide data layers related to hydrology, geomorphology, biology, connectivity and water quality for each of Minnesota's eighty one major watersheds. Inside of the five component framework, eighteen indices are compared and scored. The pattern of results from the eighteen index values helps land managers to evaluate the drivers of watershed health in each major watershed. The indices also combine to create a health ranking for each of the five components.

Additionally, the index and component results reveal broad landscape level trends in watershed health. This information will be used to inform a coordinated strategy for measuring, monitoring and communicating the drivers of Minnesota's watershed health challenges.

0511
K4-4

Developing California's Healthy Streams Partnership: Integrated Assessments and Information Delivery Through the California Water Quality Monitoring Council's Ecosystem Health Internet Portal

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The objective of the federal Clean Water Act is to "restore and maintain the chemical, physical, and biological integrity of the nation's waters. US EPA recently launched their Healthy Watersheds Initiative, which augments the watershed approach with proactive, holistic aquatic ecosystem conservation and protection. In 2010, California initiated the Healthy Streams Partnership (HSP) intended to promote a paradigm shift from focusing on impaired streams to identifying and protecting healthy streams. The California HSP supports hypothesis driven data collection, analysis and reporting to provide integrated information for resource managers at the State and local levels.

This paradigm shift requires a change in how we monitor and assess, and what tools we use to identify what is good about a stream. The State Water Board's Surface Water Ambient Monitoring Program (SWAMP) is developing and implementing the programs and tools to support the necessary framework to reshape our statewide monitoring effort. The California HSP effort is about coordinating monitoring efforts, striving for data comparability, and emphasizing the need for monitoring to be question driven to support statewide adaptive management.

Agreeing on the definition of stream "health" is a policy decision, while stream "condition" is assessed through scientific sampling and analysis methods. A major role of the California HSP is to connect these two concepts so that distributed data and analyses are converted into actionable knowledge for more direct use in decision-making.

As a starting point, the California HSP, in collaboration with US EPA's Healthy Watersheds Initiative, will use existing data to conduct an integrated assessment of the six essential ecological attributes: biotic condition, landscape condition, natural disturbance, hydrology, ecological processes, and chemical and physical condition. These assessments will be presented through the web accessible Ecosystem Health portal, one of several *My Water Quality* portals supported by the California Water Quality Monitoring Council. The portal will serve three purposes: 1) provide valuable information for local managers and stewardship and education programs, 2) identify data gaps, and 3) encourage coordination among state, federal, and local agencies, tribes and local watershed groups to be build on existing partnerships.