



Sustaining Riparian Landscapes

Report of Activities FY 2000



Sustaining Riparian Landscapes

An Integrated Research and Development Program

USDA Forest Service
North Central Research Station

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The Sustaining Riparian Landscapes Integrated Program (SRLIP) was formally launched by the North Central Research Station in 1998, but has gained momentum this year with the creation of the additional Integrated Programs. During FY 2000, we expanded the working group of interested scientists within the Station, created new ties to collaborating scientists from other agencies and universities in the region, developed an implementation plan to guide future research efforts, and began several significant research projects. Below we report on our FY 2000 activities in research planning, project development, and communications.

Research Planning: During the last 12 months we continued the research planning process, including initiating a large new effort within the Riparian program focused on post-industrial landscapes; we further conceptualized the structure and goals of the research program; and we identified priority research projects as seen by our Station scientists and external clients.

- 9/99:** SRLIP Workshop. 10 Station attendees submitted and discussed 5 research idea proposals.
- 10/99:** Fall Management Team Mtg. Presentation of implementation plan and research projects on hybrid poplar/floodplain restoration, post-industrial riparian landscapes (Calumet), riparian monitoring with FIA data, predicting development pressures for Minnesota lakeshores, and riparian management implications for biodiversity.
- 12/99:** NC Scientist tour of the Calumet Region (many other tours were conducted through out the year, too)
- 1/00:** SRLIP Workshop. 17 Station attendees; discussed new implementation plan; presented and discussed refined proposals (e.g. Itasca County Lakes, Assessment, Seasonal Pond Buffers, and Calumet).
- 4/00:** SRLIP Workshop. 30 Station and 3 select external partners attended. Presented project updates (Assessment, Itasca Lakes, Seasonal Pond Buffers, Indian Creek rehabilitation in Calumet) and discussed new research possibilities (e.g., modeling projects to integrate biological, physical and social sciences).

Research Projects: The Sustaining Riparian Landscapes Integrated Program has well over a dozen existing projects reflecting continuing research by Station scientists. These projects range from investigating the potential for phytoremediation where rural landfills degrade riparian areas to understanding the needs and issues of urban park users in riparian areas (see Charter for complete listing). More importantly, we began several new projects that involve a number of RWU's and outside cooperators. These projects are funded with IP funds, RWU operating budgets (with input from 4902, 4351, 4502, 4154, 4501), Station year-end funds, and extramural funding sources. The studies include:

Riparian Assessment:

- **Quantifying Riparian Areas in the North Central Region:** Swee May Tang, Bethel College; Brian Palik, Pam Jakes, Tom Schmidt, Sandy Verry, NCRS. *This research uses sensitivity analysis to quantify the amount, type, and condition of riparian areas using different approaches for delineation, and relates implications of measures to social systems.*
- **Understanding Riparian Area Condition in an Urban/Industrial Landscape** William Sullivan, U. IL-Urbana; Lynne Westphal, Brian Palik, NCRS. *The purpose of this project is to produce baseline data of existing landscape conditions in the Calumet study area in order to inform ecological revitalization of this and other post-industrial riparian landscapes.*

Calumet:

- **Aligning Social and Ecological Drivers of Urban Landscape Change: The Calumet Urban Riparian Area** Joan I. Nassauer, U. Mich.; Lynne Westphal, NCRS; Kathy Dickhut, City of Chicago Department of Planning and Development. *The intent of this research is to develop policy and design guidelines to increase the ecological integrity of rustbelt, industrial landscapes.* A co-project with the Landscape Change IP.
- **Indian Creek Rehabilitation** Sandy Verry, Dan Day, Lynne Westphal, (all NCRS) and William Sullivan, U. IL-Urbana, Kathy Dickhut, City of Chicago Department of Planning and Development. *This research will increase the ecological health of a human-made creek in concert with a major industrial redevelopment of the riparian area.*
- **Meaning, Community and Landscape Change in Calumet** Daniel T. Cook, U. IL-Urbana. *The intent of this research is to understand the relationship between riparian landscape change and social change, specifically in the Calumet Region of southeast Chicago.*
- **Environmental Factors Influencing Recreation Choice in Post-Industrial Landscapes** David Klenosky, Purdue U. *The goal of the research project is to develop a better understanding of the factors influencing recreation choice in areas like the Lake Calumet region.*
- **User Group Perceptions, Attitudes, and Uses of Open Space in the Calumet Region** Lynne Westphal, NCRS; Calumet Heritage Partnership; Wolf Lake Bi-State Gathering; City of Chicago Department of Planning and Development; Metro Chicago Information Center. *This study will develop information on stakeholder views from those who do not attend the myriad environmental group meetings in the Calumet Region. This project will ensure that all voices are heard as ecological and economic revitalization moves forward.*
- **Calumet Area Integrated Database** Lynne Westphal, NCRS; Paul Adelson, Sweetspring Systems; Jim Bash, Chicago Area GIS, U. IL-Chicago; Nina Savar, Northeastern Illinois Planning Commission; Paul Heltne, Chicago Academy of Sciences. *This project will develop an electronic, web-based, searchable database of Calumet Region research.*
- **Special Places in the Calumet Region.** Herbert Schroeder, NCRS. *This study will analyze descriptions of Calumet Region special places from local residents and visitors to the region to inform revitalization efforts and to further our understanding of the role of special places in natural resource management.*

Riparian Structure and Function

- **Testing the efficacy of buffers and residual trees at protecting seasonal ponds and breeding songbirds.** Brian Palik, Bob Haack, Mike Ostry, NCRS; JoAnn Hanowski, NRRI-U of MN; Mark Hanson, MN DNR; Charlie Blinn, U of MN; Mike Phillips, MN DNR; Mike Houser, Potlatch Corp.; Norm Moody, Cass

Co. Land Department. *This projects tests the effects of different buffer management approaches on seasonal wetland structure and function.*

- **Effects of Riparian Best Management Practices on Forest Resources.** Hong He, U. of MO; Frank Thompson, Steve Shifley, Brian Palik, NCRS. *This project determines how different riparian definitions and management practices effect landscape patterns in vegetation and forest productivity*
- **Analyzing Linkages in Itasca County Lakes.** Pam Jakes and Dale Nichols, NCRS. *This project relates biophysical characteristics of lakes to development potential.*
- **Landscape Level Analysis Linking Urban Sprawl and Aquatic Ecosystems.** Dan Brown, Joan Nassauer, U of MI; John Dwyer , NCRS. *This project will improve our ability to assess the influences of land use change on critical environmental outcomes (e.g. stream integrity). A co-project with the Landscape Change IP.*
- **Reforestation of Bottomland Forests in Missouri.** Dan Dey, Frank Thompson, NCRS. *This study will develop techniques for restoring bottomland forests in abandoned agricultural lands, and to evaluate the effect of restoration methods on songbird communities. Co-project with FPIP.*
- **Habitat Benefits of Riparian Buffers in Agricultural Landscapes in Missouri.** Frank Thompson, NCRS. *This study evaluates songbird and herpetofaunal populations in relation to type of riparian vegetation in north Missouri.*
- **Social Costs & Benefits of Forest Buffers at the Urban Fringe** William Sullivan, U. IL-Urbana and Paul Gobster, NCRS. *This study will investigate the perceptions of homeowners, farmers, and other stakeholders of the use of forest buffers in riparian areas and between new housing and agricultural lands. A co-project with the Landscape Change IP*

Communications, Consultations and Technology Transfer: NCRS scientists are actively involved in communication of Program goals to external clients and in sharing our already impressive riparian research experience with users. The past year's communication and outreach activities include:

- *NC News* articles included "Decisions at the Water's Edge: Sustaining Riparian Landscapes." (June 1999) and "Kissing TOADS and Greening Brownfields – Research in the Riparian Rustbelt." (1999/January 2000).
- Crossing Boundaries: The Chicago *Rivers* Project. A seminar delivered to the School of Natural Resources, University of Michigan. Described developing research and programs that cross disciplinary professional boundaries.
- The first Calumet Research Summit was held May 1 and 2, 2000. It brought together many of the researchers in the area addressing a myriad of issues. This was in partnership with the Calumet Government Working Group, including USDA Forest Service, Chicago Department of Environment, Illinois DNR, US EPA, and Illinois EPA.
- Station scientists consulted on the Ecological Management Strategy for the Calumet Region in the City of Chicago (Westphal, Verry).
- NC scientists served on scientific review team for the State of MN's riparian and seasonal pond management guidelines (Palik, Zasada, Crow, Loewenstein)
- Consultations with the Audubon Society of MN on development of riparian and seasonal pond management guidelines for non-industrial private landowners (Palik)

- Publication of *Riparian Management in Forests of the Continental Eastern United States*, edited by Sandy Verry, et al., with contributions from Barro, Buech, Crow, Dwyer, Edwards, Jakes, J. Mattson, Palik, Thompson, Verry, and Zasada.
- Participant in national FIA/FHM riparian focus group charged with developing riparian techniques and protocols for the national FIA/FHM program. Tom Schmidt
- FIA/FHM riparian focus group adopts riparian definitions developed by S. Verry, B. Palik, (NCRS), B. Ilhardt (R-9) as national standard.
- Riparian Management Alternatives. Presentation to Northeastern Association of State Forest Planners Annual Meeting. B. Palik. 11-99
- Riparian delineation and management. Short-course to USDA FS Silviculture Certification School. B. Palik and S. Verry. 10-00
- Forest management around seasonal ponds. Presentation to the MN DNR Regional Ecologists Annual Meeting. B. Palik. 1-00.
- Paul Gobster and Lynne Westphal won the Station's Multicultural Award for their research in the *ChicagoRivers* project.