

A Proposal for a National Spatial Data Infrastructure Standards Project

PROJECT TITLE:

Adoption of a **Riparian Mapping Standard** for areas of the United States where mean annual evaporation exceeds mean annual precipitation

DATE: November 14, 2000

TYPE OF STANDARD:

This proposed standard is classified as a Data Classification Standard (definition and hierarchical nomenclature) and the accompanying Data Symbolology or Presentation Standard (cartographic conventions) according to the FGDC Standards Reference Model.

SUBMITTING ORGANIZATION:

Subcommittee for Wetlands, Federal Geographic Data Committee

POINT OF CONTACT:

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OBJECTIVES:

- To develop a unified Riparian Mapping Standard to define riparian, delineate its application, and to describe and define cartographic conventions for use in riparian mapping for the National Spatial Data Infrastructure (NSDI).
- To minimize redundancy in effort in developing riparian mapping standards, ensure consistency in application of standards, facilitate data sharing and integrate riparian spatial data with data developed under the FGDC Wetlands Standard.

SCOPE:

What is Riparian? (taken from "A System for Mapping Riparian Areas in the Western United States," U.S. Fish and Wildlife Service, December 1997) <http://wetlands.fws.gov/Riparian.htm>

"There are many riparian definitions used by government agencies and the private sector. Riparian initiatives often concentrate on either functionality or land use application where an exact definition is not required. However, a riparian definition is essential for consistent and uniform identification and mapping. For these purposes, in the area of applicability:

Riparian areas are plant communities contiguous to and affected by surface and subsurface

hydrologic features of perennial or intermittent lotic and lentic water bodies (rivers, streams, lakes, or drainage ways). Riparian areas have one or both of the following characteristics: 1) distinctively different vegetative species than adjacent areas, and 2) species similar to adjacent areas but exhibiting more vigorous or robust growth forms. Riparian areas are usually transitional between wetland and upland.”

This proposed national standard would standardize and ensure consistency of the geospatial mapping of riparian areas in the United States where evaporation exceeds precipitation. The U.S. Fish and Wildlife Service has adopted this standard (“A System for Mapping Riparian Areas in the Western United States” attached), developed with Federal and State agency participation, as an Agency Riparian Standard. The U.S. Fish and Wildlife Service has recently completed testing of this mapping standard to assess its completeness and utility by Federal client agencies (sample maps are provided with this proposal). Member agencies in the Federal Geographic Data Committee’s (FGDC) Subcommittee for Wetlands have reviewed the Agency Riparian Standard and have agreed to propose it as an FGDC Standard.

This standards development process under the FGDC would expand the review of the Agency standard, make any needed changes identified during the process, and propose the riparian mapping standards for adoption under the Federal Geographic Data Committee Standards. Once adopted, the Riparian Standard would be made available both through the Service’s and the FGDC websites. Once a riparian standard is adopted, the digitized wetland-riparian maps will be made a part of the National Spatial Data Infrastructure.

JUSTIFICATION/BENEFITS:

Riparian areas are among the most important vegetative communities for wildlife species. Chaney, et al. (1990) observed that greater than 75 percent of terrestrial wildlife species in the Great Basin region of eastern Oregon, as well as in southeastern Wyoming, are dependent on riparian areas. In Arizona and New Mexico, 80 percent of all vertebrates use riparian areas for at least half their life cycles; more than half of these are totally dependent on riparian areas. Similarly, the Arizona Riparian Council found that 60-75 percent of Arizona’s resident wildlife species depend on riparian areas to sustain their populations, yet these areas occupy less than 0.5 percent of the state’s land area. Aquatic and fish productivity are directly related to a properly functioning and healthy riparian habitat (Washington Dept. Fish and Wildlife 1995). Mapping of riparian areas is an important tool for managing wildlife habitat in the United States.

The Fish and Wildlife Service, through the National Wetlands Inventory, is Congressionally mandated to identify, classify, and digitize all wetlands and deepwater habitats in the United States. The Service is also authorized to map habitats used by fish and wildlife resources under the Fish and Wildlife Act of 1956. The Fish and Wildlife Service chairs the FGDC Wetlands Subcommittee. As such, the Fish and Wildlife Service is responsible for coordinating the development, use, sharing and dissemination of wetlands data. The Fish and Wildlife Service’s Agency Wetlands Standards were adopted as FGDC Wetlands Standards in December 1996. The Wetlands Standard (Cowardin et al. 1979) is the basis for all wetlands maps prepared by the Fish and Wildlife Service’s National Wetlands Inventory.

The National Wetlands Inventory has extensive mapping expertise and knowledge involving wetland identification and classification, photointerpretation, and digital data capabilities. Periodically the Fish and Wildlife Service has added upland habitat at the request of funding agencies. Reflecting this expertise, the National Wetlands Inventory is asked to provide resource mapping guidance, and with increasing frequency, is requested to map riparian areas of the western United States. To meet the increasing riparian mapping requests, the Fish and Wildlife Service, with assistance and review by other Federal and State agencies, developed an Agency riparian mapping standard in December 1997 entitled "A System for Mapping Riparian Areas in the Western United States."

Riparian mapping standards were necessary to ensure consistency in riparian mapping efforts in various regions and for the various Federal agencies that were funding these efforts. Riparian standards consistent with the FGDC Wetlands Standard were needed for combined wetland-riparian mapping. Compatibility with the FGDC Wetlands Standard is also very important because the Fish and Wildlife Service has completed draft or final wetland maps for over 90 percent of the conterminous United States using this standard. Because the Agency Riparian Standard was developed using the same hierarchical and cartographic system as the FGDC Wetlands Standard, they can be used in concert. The Fish and Wildlife Service has begun mapping riparian areas for land management agencies using the Agency Riparian Standard in conjunction with wetland mapping using the Wetlands Standards. During the three years the Service has used Riparian Standards, it has produced 41 wetland-riparian maps at the scale of 1:24,000 that are available for review and discussion.

A few riparian mapping projects have been completed by non-Federal organizations that did not use the hierarchical Wetland Standard as a model. These projects do not complement the Wetlands Standard and cannot be used for comparison across projects and for data sharing. They are also in variance with the Fish and Wildlife Service's Agency Standard. To avoid this incompatibility continuing, it is important to develop and adopt a Federal standard that can be reviewed, commented on, and adopted by outside organizations on a voluntary basis to assure uniformity of data development. Riparian data developed using FGDC Standards can be added to the National Spatial Data Infrastructure. Riparian data developed using other standards would not be added to the wetlands layer of the National Spatial Data Infrastructure and not available to agencies that need to use the data. Having an FGDC Riparian Standard would remove this impediment to data sharing. It is also expected this riparian mapping standard will foster new and enhanced coordination among Federal and States agencies, standardize data, and advance data sharing.

DEVELOPMENT AND COMPLETION SCHEDULE:

		<u>Time Frame</u>	<u>Custodian</u>
Proposal Stage			
Step 1.	Develop Proposal	November 2000	Wetlands Subcommittee, Development Group
Step 2.	Review Proposal	Dec 2000 - Jan 2001	Standards Working Group
Project Stage			
Step 3	Set Up Project	Early Feb. 2001	Wetlands Subcommittee, Development Group
Draft Stage			
Step 4	Produce Working Draft	Feb. - March 2001	Wetlands Subcommittee, FGDC, Development Group
Step 5	Review Working Draft	April 2001	Standards Working Group
Review Stage			
Step 6	Review and Evaluate	May - June 2001	Standards Working Group
Step 7	Act on Recommendation	July 2001	FGDC Coordination Group
Step 8	Coordinate Public Review Hold 3 Regional meetings	Aug. - Sept. 2001	FGDC Secretariat
Step 9	Respond to Public Comments	Dec. - Feb. 2002	Wetlands Subcommittee, Development Group
Step 10	Evaluate Responsiveness to Public Comments	April 2002	Standards Working Group
Step 11	Act on Recommendation	May - June 2002	FGDC Coordination Group
Final Stage			
Step 12	FGDC Steering Committee Review	July - Sept. 2002	FGDC Steering Committee

POTENTIAL PARTICIPANTS:

Because of its legislative mandates and authorities, the Fish and Wildlife Service will lead this effort to develop an FGDC Riparian Standard through its Chair of the Wetland Subcommittee of the FGDC. Every Federal agency with interest in wetlands and riparian mapping is represented on this Subcommittee. The Wetlands Subcommittee agencies involved with the development of the Riparian Standard as an FGDC Standard will be:

Principal Agencies for Standards Development Group:

U. S. Fish and Wildlife Service, DOI (Chair)

U. S. Bureau of Land Management, DOI

National Park Service, DOI

U. S. Forest Service, USDA

Natural Resources Conservation Service, USDA

National Marine Fisheries Service, NOAA

U. S. Army Corp of Engineers

U. S. Geological Survey

Other Reviewing Agencies in the Wetlands Subcommittee:

Bureau of Reclamation, DOI

U. S. Environmental Protection Agency

Department of Energy

Biological Resources Division, USGS

Office of Surface Mining, DOI

Department of the Interior

National Oceanographic and Atmospheric Administration

U.S. Marine Corp

U. S. Navy

National Air and Space Administration

Tennessee Valley Authority

U.S. Air Force

Department of Housing and Urban Development

There was wide participation in the development of the Fish and Wildlife Service's Agency Riparian Standard. The principal authors of the Riparian Standard are David Dall, Chuck Elliott, and Dennis Peters; NWI Regional Wetland Coordinators in the Western United States. Several early drafts were reviewed by National Wetlands Inventory staff of all the Fish and Wildlife Service's 7 Regions. Subsequent review was provided by Field Offices of the Division of Ecological Services and Refuges. Valuable review and criticism of the draft was provided by the following outside agencies and organizations as the draft approached the final version: Arizona Game and Fish Department, California Department of Fish and Game, Iowa Department of Natural Resources, Kansas Department of Wildlife and Parks, Louisiana Department of Wildlife and Fisheries, Nebraska Game and Parks Commission, Nevada Division of Wildlife, Texas Parks and Wildlife Department, Utah Division of Wildlife Resources, Wyoming Game and Fish Department, U.S. Army Corps of Engineers, U.S. Bureau of Land Management, U.S. Bureau of Reclamation, U.S. Environmental Protection Agency, U.S. Geological Survey, U.S. National Park Service, U.S. Natural Resources Conservation Service, U.S. Office of Surface Mining, University

of Montana (School of Forest Resources), Wyoming Natural Diversity Database, and Donn Kesselheim.

The Fish and Wildlife Service's Agency Riparian Standard has been available and distributed in printed format for three years. It has also been available on the Internet at the National Wetlands Inventory website at <http://wetlands.fws.gov> for three years. In Step 8, Coordinate Public Review, in order to ensure a systematic review of the draft FGDC standards and the resultant maps, we envision one or more regional meetings, in the area of applicability. States, conservation groups, academia, and industry would be invited. Suggestions for modifications would be reviewed by the Standards Development Group and recommendations made to the Wetlands Subcommittee as a whole. The Subcommittee would be the approving body for the draft standard and for subsequent changes that are identified after implementation.

The draft standard will include maintenance and update procedures. The Subcommittee will use a consensual method of decision making for all changes suggested. Consensus is defined in Circular A-119 as general agreement, but not necessarily unanimity, and includes a process for attempting to resolve objections by interested parties, as long as all comments have been fairly considered, each objector is advised of the disposition of his or her objection(s) and the reasons why, and the consensus body members are given an opportunity to change their votes after reviewing the comments. Riparian mapping is a dynamic enterprise; changes and refinement are expected throughout the life of the Standard.

RELATED STANDARDS:

The proposed FGDC Riparian Standard was developed in the hierarchical framework of the existing FGDC Wetlands Standard (Cowardin, et al.), using standard wetland mapping conventions. The developers of the proposed Riparian Standard are experts in wetland mapping using the FGDC Wetlands Standard. The proposed standard is fully integrated with and does not overlap with the FGDC Wetlands Standard and has been used to produce a few composite wetland-riparian maps. Once a standard is in place, the data generated using that standard will be added to the National Spatial Data Infrastructure and will be available over the Internet.

A Vegetation Classification Standard was recently adopted by the FGDC. That standard was established to "enable Federal agencies to collect vegetation information in a standard format and apply a standard classification system to vegetation in reports and on maps. This uniform National Vegetation Classification Standard (NVCS) should complement regional or local classifications that are designed to meet more specific objectives." Although the FGDC vegetation standard contains associations of vegetative communities that would fit the riparian definition, in reality, those communities can be both riparian and upland. This makes them incompatible with the need by land managing agencies to map riparian areas.

There are no other Federal riparian mapping standards available nor are there any similar Federal riparian mapping standards being developed.

There are neither any "voluntary consensus standards," nor any "non-consensus standards," "Industry standards," "Company standards," nor "de facto standards," to adopt for mapping

riparian areas as defined in OMB Revised Circular No. A-119, dated February 10, 1998. If available, they would be used even though A-119 does not apply to this action because the proposed riparian standards are not for procurement or regulatory activities.

The Fish and Wildlife Service's Agency Riparian Standard was developed by Federal employees, does not contain any proprietary information, is not copyrighted, and has no licensing limitations.

The proposed FGDC Riparian Standard stands independent of any specific technology application. It does not limit any appropriate vendor from access.

RESOURCES REQUIRED:

FGDC Wetland Subcommittee members will provide the resources to prepare the working draft. Funding may be sought from the FGDC for travel by participants from States and other concerned organizations for the one or more regional meetings being considered.

TARGET AUTHORIZATION BODY:

The FGDC Steering Committee is the target authorization body for this standard.