Planning for Floodplain and Riparian Area Special Environmental Concerns

Presented by:

Richard Weber
Hydraulic Engineer
Central National Technology Support Center
and
Craig Goodwin
National Water Quality Specialist/Aquatic Ecologist
Ecological Sciences Division

Session Moderator: Matthew Judy

7/17/2013

Topics Addressed:

- Definition
- Purpose
- Authority
- Policy/Procedures
- Information/Data Sources & Tools
- Evaluation and Documentation
- Mitigation
- Examples

CPA-52

Page 3 Special Environmental Concerns

Special Environmental Concerns: Environmental Laws, Executive Orders, policies, etc.

In Section "I" complete and attach applicable Environmental Procedures Guide Sheets for documentation. Items with a "•" may require a federal permit or consultation/coordination between the lead agency and another government agency. In these cases, effects may need to be determined in consultation with another agency. Planning and practice implementation may proceed for practices not involved in consultation.

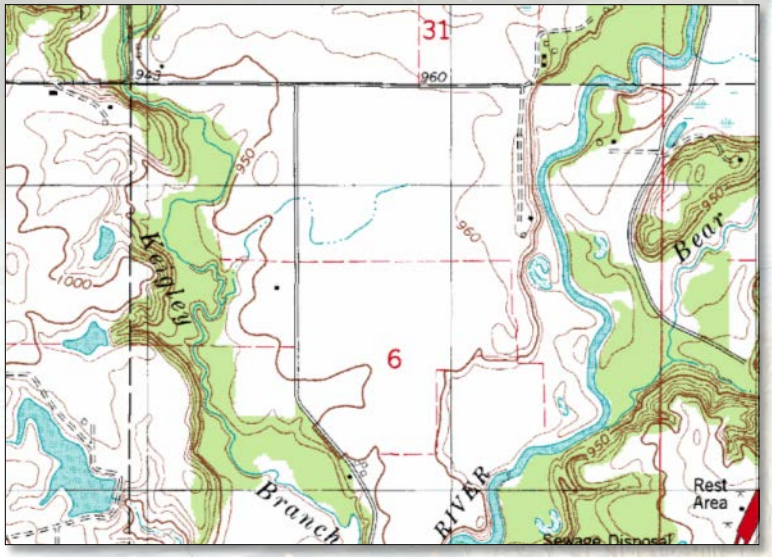
I. Special Environmental Concerns (Document compliance with Environmental Laws, Executive Orders, policies, etc.)	J. Impacts to Special Environmental Concerns					
	No Action		*Alternative 1*		*Alternative 2*	
	Status and progress of compliance. (Complete and attach Guide Sheets as applicable)	√ if needs further action	Status and progress of compliance. (Complete and attach Guide Sheets as applicable)	√ if needs further action	Status and progress of compliance. (Complete and attach Guide Sheets as applicable)	√ if needs further action
•Clean Air Act		☐		☐		☐
•Clean Water Act / Waters of the U.S.		☐		☐		☐
•Coastal Zone Management		☐		☐		☐
Coral Reefs		☐		☐		☐
•Cultural Resources / Historic Properties		☐		☐		☐
•Endangered and Threatened Species		☐		☐		☐
Environmental Justice		☐		☐		☐
•Essential Fish Habitat		☐		☐		☐
Floodplain Management		☐		☐		☐
Invasive Species		☐		☐		☐
•Migratory Birds/Bald and Golden Eagle Protection Act		☐		☐		☐
Prime and Unique Farmlands		☐		☐		☐
Riparian Area		☐		☐		☐
•Wetlands		☐		☐		☐
•Wild and Scenic Rivers		☐		☐		☐

K. Other Agencies and Broad Public Concerns	*No Action*	*Alternative 1*	*Alternative 2*
Easements, Permissions, Public Review, or Permits Required and Agencies Consulted.			

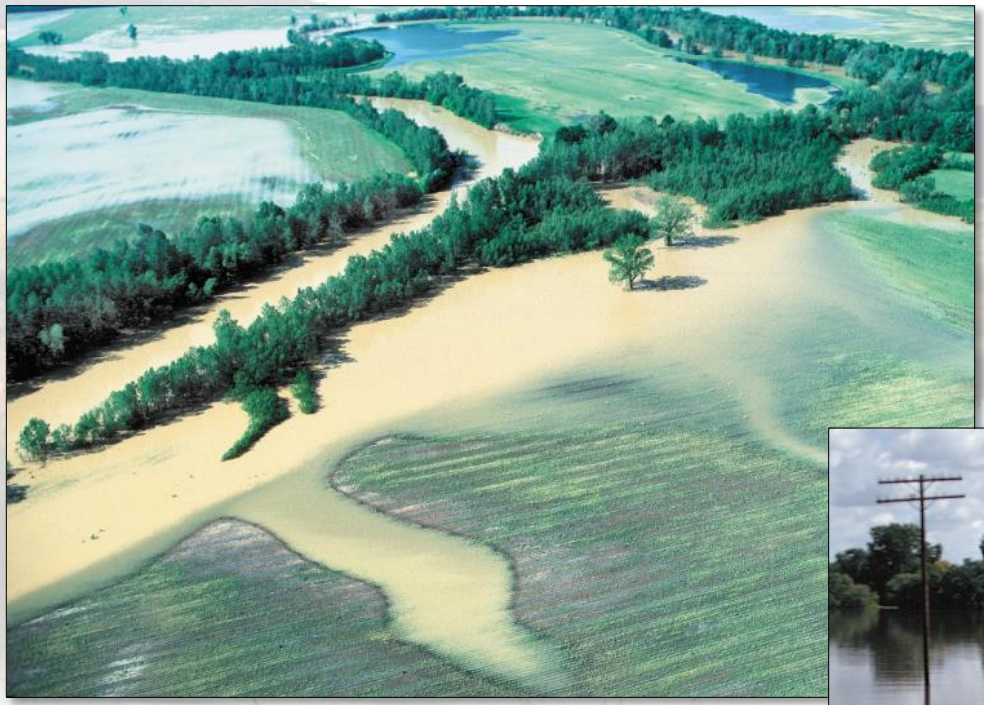
Floodplain Management

Riparian Area

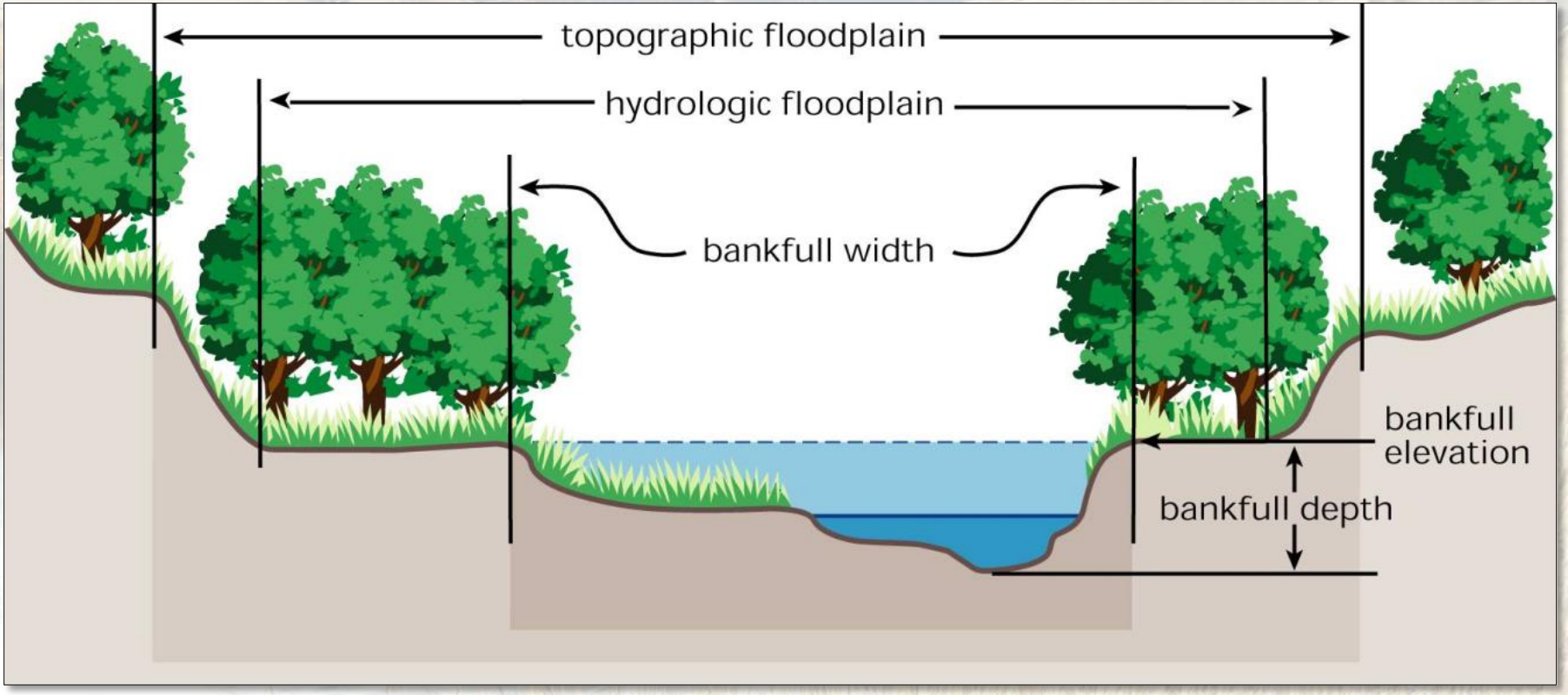
What are Floodplains and Riparian Areas?



Floodplains



Floodplain Cross Section

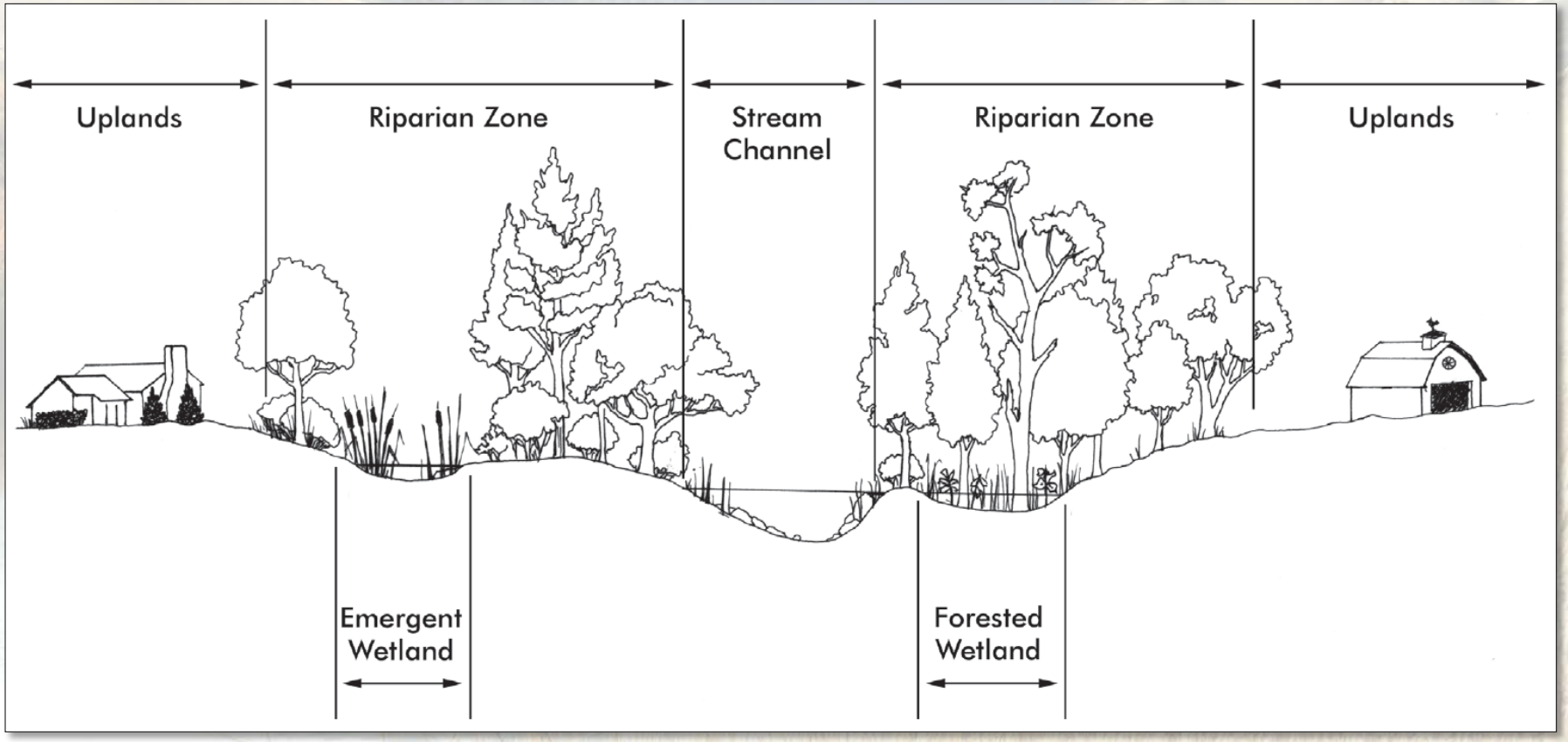


From Stream Corridor Restoration: Principles, Processes, and Practices, 1998 (NEH-653).

Riparian Areas

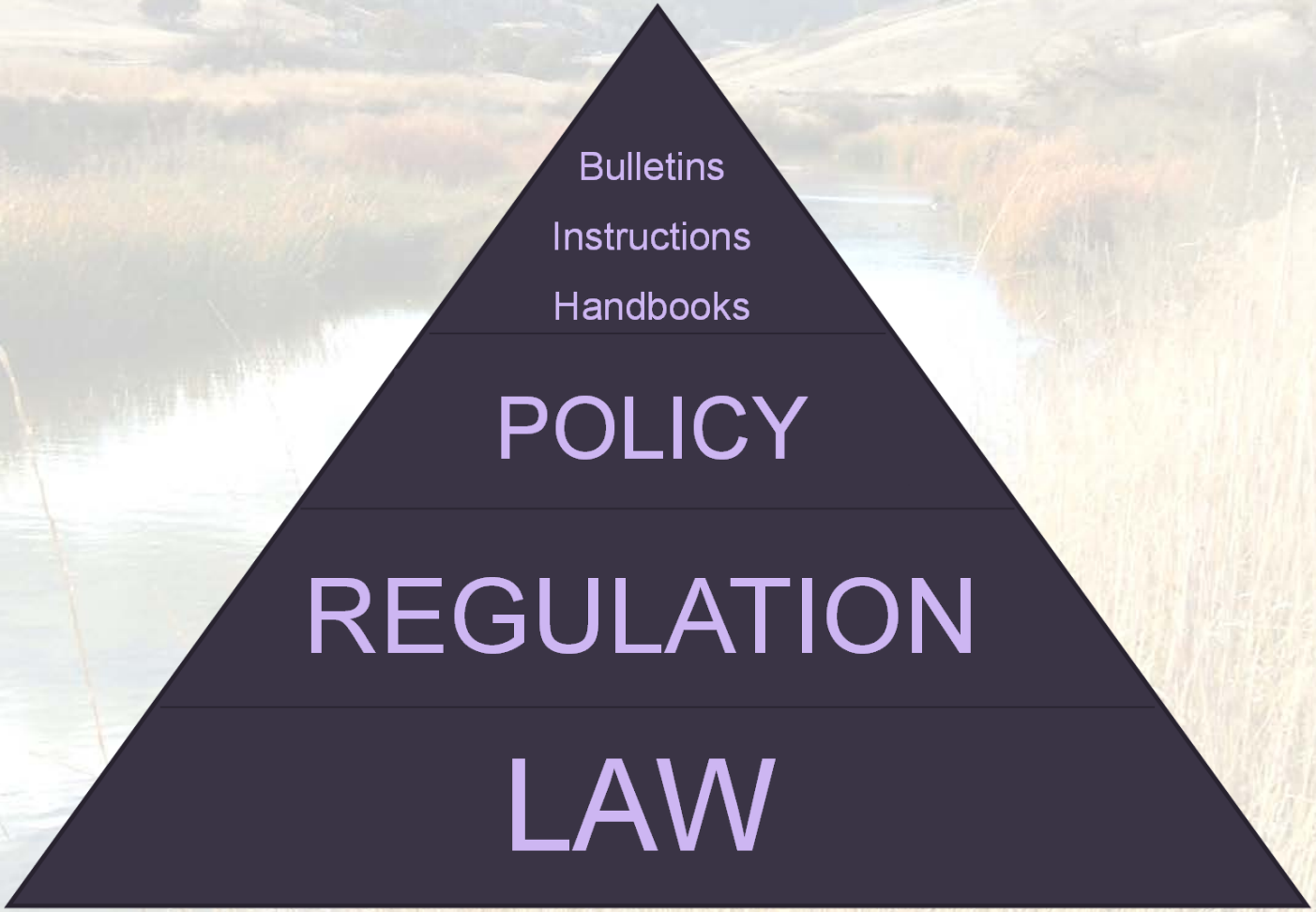
Riparian areas are not a separate land use, but may exist within all land covers and uses, such as cropland, hayland, pastureland, rangeland, and forest land. [GM 190 Part 411.3 (B)]

Riparian Area Cross Section

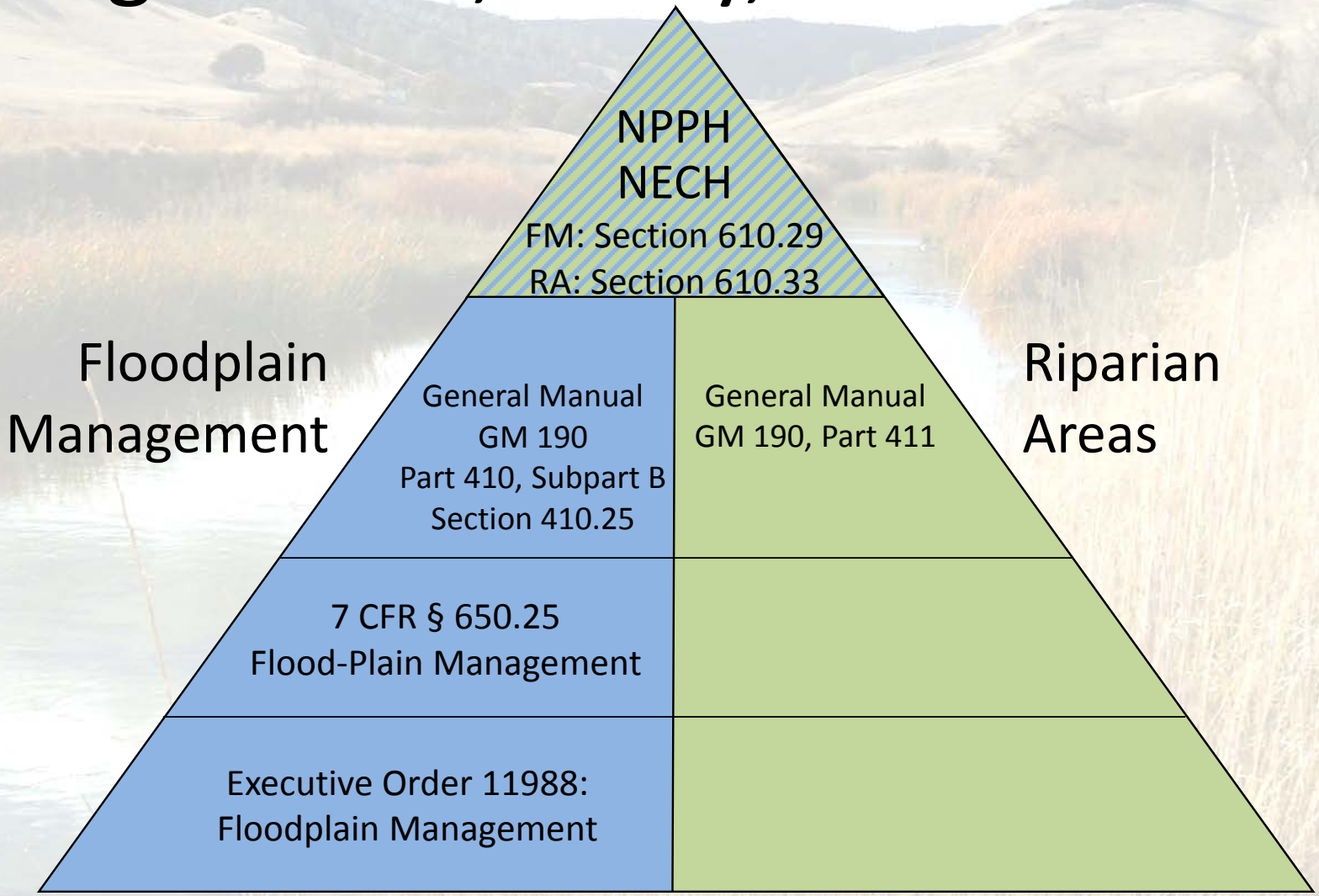


Relationship Between Wetlands, Uplands, Riparian Areas, and the Stream Channel (EPA, 2005).

Review: Laws, Regulations, Policy, and Guidance



Riparian/Floodplain Laws, Regulations, Policy, and Guidance



Executive Order 11988: Floodplain Management

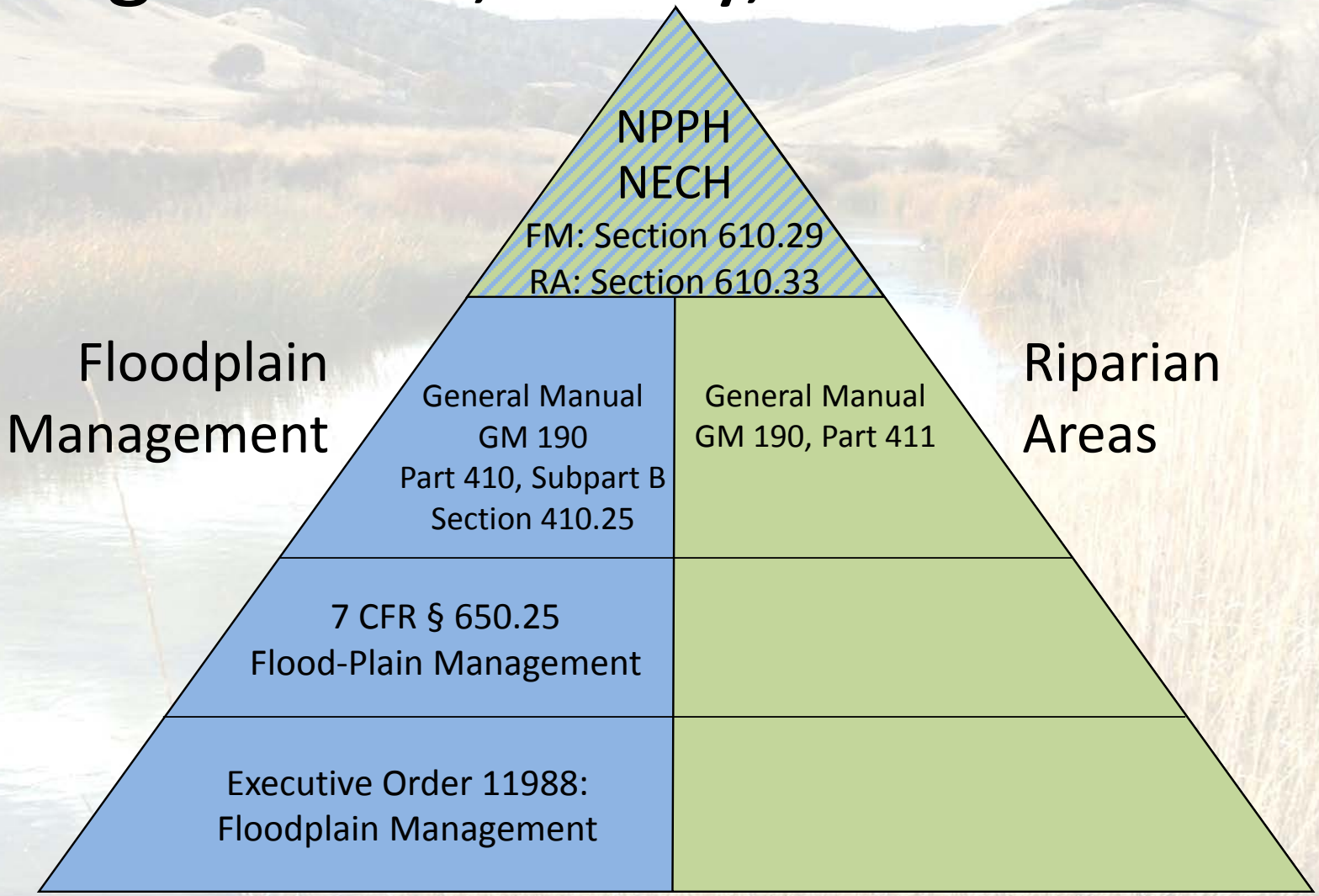
Agency shall take action to:

- Reduce the risk of flood loss,
- To minimize the impact of floods on human safety, health, and welfare, and to restore and
- Preserve the natural and beneficial values served by flood plains.

Applies when agency is:

- Acquiring, managing, and disposing of Federal lands, and facilities
- Providing Federally undertaken, financed, or assisted construction and improvements
- Conducting Federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulating, and licensing activities.

Riparian/Floodplain Laws, Regulations, Policy, and Guidance



NRCS Policy (General Manual)

Floodplain Management

GM 190 Part 410, Subpart B Section 410.25 (B)

… to conserve, preserve, and restore existing natural and beneficial values in base flood plains as part of technical and financial assistance in the programs it administers.

Riparian Area Management

GM 190, Part 411.0

… to guide NRCS personnel in providing assistance on lands that include riparian areas. NRCS assistance helps land users make sound resource management decisions. NRCS must strive to provide the best alternatives for the proper use and management of these important natural resources.

NRCS Definitions

Floodplains

GM 190 Part 410, Subpart B Section 410.25

Base Floodplain: Areas with a 1 percent chance of being flooded in any given year, also referred to as the 1 percent exceedance probability or the 100-year return interval.

Critical Action Floodplain: is defined as the 500-year floodplain (the 0.2-percent chance floodplain) where there is the presence of a facility, such as a school, hospital, nursing home, utility, or a facility producing volatile, toxic, or water-reactive materials.

Riparian Areas

GM 190, Part 411.1 (A)

Riparian Areas: Riparian areas are ecotones that occur along watercourses or water bodies. They are distinctly different from the surrounding lands because of unique soil and vegetation characteristics that are strongly influenced by free or unbound water in the soil. Riparian ecotones occupy the transitional area between the terrestrial and aquatic ecosystems. Typical examples would include perennial and intermittent streambanks, floodplains, and lake shores.

Identifying Floodplains

GM 190 Part 410.25

- HUD/FEMA flood insurance maps
  - https://msc.fema.gov
- Other available maps and information, such as NRCS watershed plans and floodplain management studies
  - Soil survey interpretations
- On-site determination of the approximate level of the base flood

Indicators of Riparian Areas

GM 190 Part 411.1 (B)

- Vegetation
  - Reflect the influence of free or unbound water from an associated watercourse or water body
  - Contrasts with terrestrial vegetation
- Soils
  - Consist of stratified sediments of varying textures
  - Subject to intermittent flooding or fluctuating water tables that may reach the surface
- Water
  - Directly influenced by water from a watercourse or water body
  - Occur along natural watercourses such as perennial or intermittent streams and rivers, or adjacent to natural lakes
  - May also occur along manmade watercourses or water bodies such as canals, ponds, and reservoirs

Floodplain Management

GM 190 Part 410.25 (B)

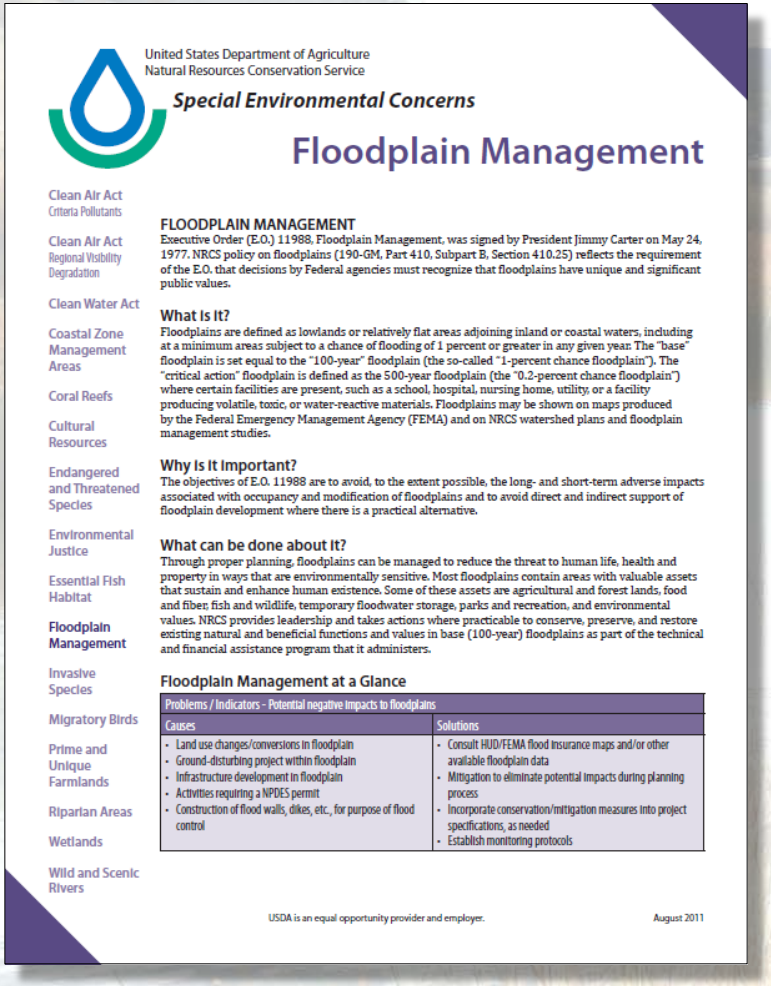
- Compatible land uses:
  - (i) Agricultural flood plains that have been used for producing food, feed, forage, fiber, or oilseed for at least 3 of the 5 years before the request for assistance.
  - (ii) Agricultural production in accordance with official state or designated area water quality plans.
- Non-Project Assistance: No technical and financial assistance provided these actions are likely to have significant adverse effects on existing natural and beneficial values in the base floodplain if there are practicable alternatives outside the base flood plain.

Riparian Area Planning

GM 190 Part 411.3

- NRCS will assist the land user to recognize the values and functions of riparian areas…
- Plans that include riparian areas will meet the quality criteria for the soil, water, air, plant, and animal resources within the riparian areas.
- Riparian area management shall be integrated into plans and management alternatives developed for the conservation treatment unit (CTU).
- The planner should always consider the water quality and quantity benefits, and fish and wildlife benefits provided. The plans must maintain or improve those benefits.
- If the land user's objectives are in conflict with conservation of the riparian area resources, alternatives must be presented that identify ways to resolve conflicts.

Where to Start:



United States Department of Agriculture
Natural Resources Conservation Service

Special Environmental Concerns

Floodplain Management

Clean Air Act Criteria Pollutants
Clean Air Act Regional Visibility Degradation
Clean Water Act
Coastal Zone Management Areas
Coral Reefs
Cultural Resources
Endangered and Threatened Species
Environmental Justice
Essential Fish Habitat
Floodplain Management
Invasive Species
Migratory Birds
Prime and Unique Farmlands
Riparian Areas
Wetlands
Wild and Scenic Rivers

FLOODPLAIN MANAGEMENT

Executive Order (E.O.) 11988, Floodplain Management, was signed by President Jimmy Carter on May 24, 1977. NRCS policy on floodplains (190-GM, Part 410, Subpart B, Section 410.25) reflects the requirement of the E.O. that decisions by Federal agencies must recognize that floodplains have unique and significant public values.

What Is It?

Floodplains are defined as lowlands or relatively flat areas adjoining inland or coastal waters, including at a minimum areas subject to a chance of flooding of 1 percent or greater in any given year. The "base" floodplain is set equal to the "100-year" floodplain (the so-called "1-percent chance floodplain"). The "critical action" floodplain is defined as the 500-year floodplain (the "0.2-percent chance floodplain") where certain facilities are present, such as a school, hospital, nursing home, utility, or a facility producing volatile, toxic, or water-reactive materials. Floodplains may be shown on maps produced by the Federal Emergency Management Agency (FEMA) and on NRCS watershed plans and floodplain management studies.

Why Is It Important?

The objectives of E.O. 11988 are to avoid, to the extent possible, the long- and short-term adverse impacts associated with occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development where there is a practical alternative.

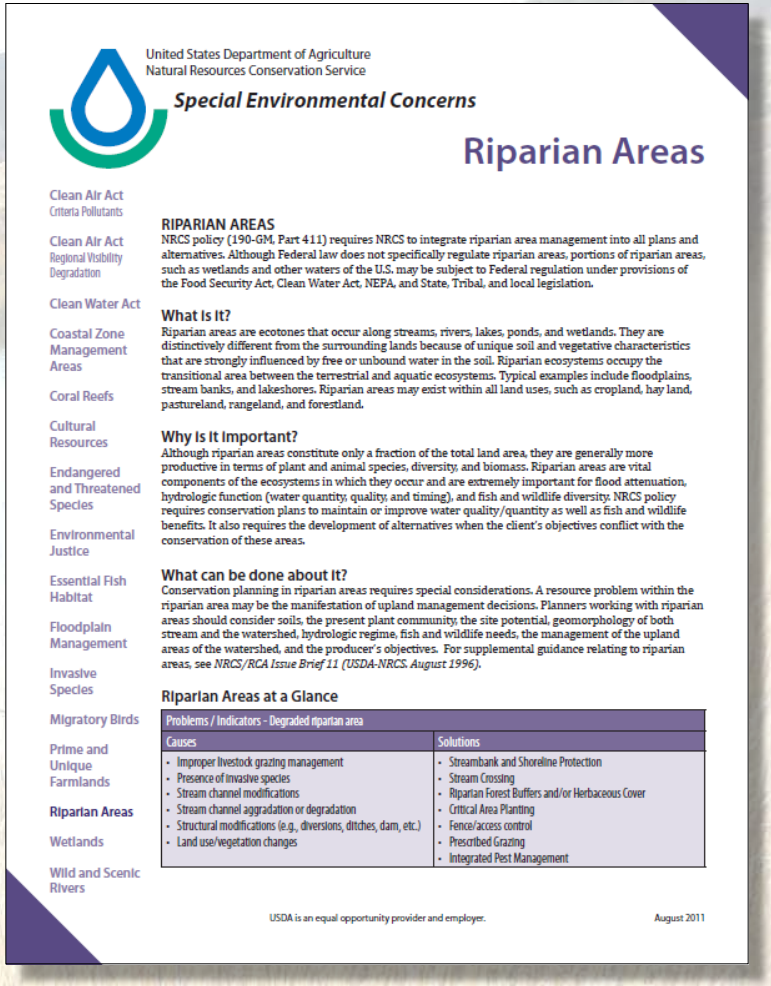
What can be done about it?

Through proper planning, floodplains can be managed to reduce the threat to human life, health and property in ways that are environmentally sensitive. Most floodplains contain areas with valuable assets that sustain and enhance human existence. Some of these assets are agricultural and forest lands, food and fiber; fish and wildlife, temporary floodwater storage, parks and recreation, and environmental values. NRCS provides leadership and takes actions where practicable to conserve, preserve, and restore existing natural and beneficial functions and values in base (100-year) floodplains as part of the technical and financial assistance program that it administers.

Floodplain Management at a Glance

Problems / Indicators - Potential negative impacts to floodplains	
Causes	**Solutions**
• Land use changes/conversions in floodplain • Ground-disturbing project within floodplain • Infrastructure development in floodplain • Activities requiring a NPDES permit • Construction of flood walls, dikes, etc., for purpose of flood control	• Consult HUD/FEMA flood insurance maps and/or other available floodplain data • Mitigation to eliminate potential impacts during planning process • Incorporate conservation/mitigation measures into project specifications, as needed • Establish monitoring protocols

USDA is an equal opportunity provider and employer. August 2011



United States Department of Agriculture
Natural Resources Conservation Service

Special Environmental Concerns

Riparian Areas

Clean Air Act Criteria Pollutants
Clean Air Act Regional Visibility Degradation
Clean Water Act
Coastal Zone Management Areas
Coral Reefs
Cultural Resources
Endangered and Threatened Species
Environmental Justice
Essential Fish Habitat
Floodplain Management
Invasive Species
Migratory Birds
Prime and Unique Farmlands
Riparian Areas
Wetlands
Wild and Scenic Rivers

RIPARIAN AREAS

NRCS policy (190-GM, Part 411) requires NRCS to integrate riparian area management into all plans and alternatives. Although Federal law does not specifically regulate riparian areas, portions of riparian areas, such as wetlands and other waters of the U.S. may be subject to Federal regulation under provisions of the Food Security Act, Clean Water Act, NEPA, and State, Tribal, and local legislation.

What Is It?

Riparian areas are ecotones that occur along streams, rivers, lakes, ponds, and wetlands. They are distinctively different from the surrounding lands because of unique soil and vegetative characteristics that are strongly influenced by free or unbound water in the soil. Riparian ecosystems occupy the transitional area between the terrestrial and aquatic ecosystems. Typical examples include floodplains, stream banks, and lakeshores. Riparian areas may exist within all land uses, such as cropland, hay land, pastureland, rangeland, and forestland.

Why Is It Important?

Although riparian areas constitute only a fraction of the total land area, they are generally more productive in terms of plant and animal species, diversity, and biomass. Riparian areas are vital components of the ecosystems in which they occur and are extremely important for flood attenuation, hydrologic function (water quantity, quality, and timing), and fish and wildlife diversity. NRCS policy requires conservation plans to maintain or improve water quality/quantity as well as fish and wildlife benefits. It also requires the development of alternatives when the client's objectives conflict with the conservation of these areas.

What can be done about it?

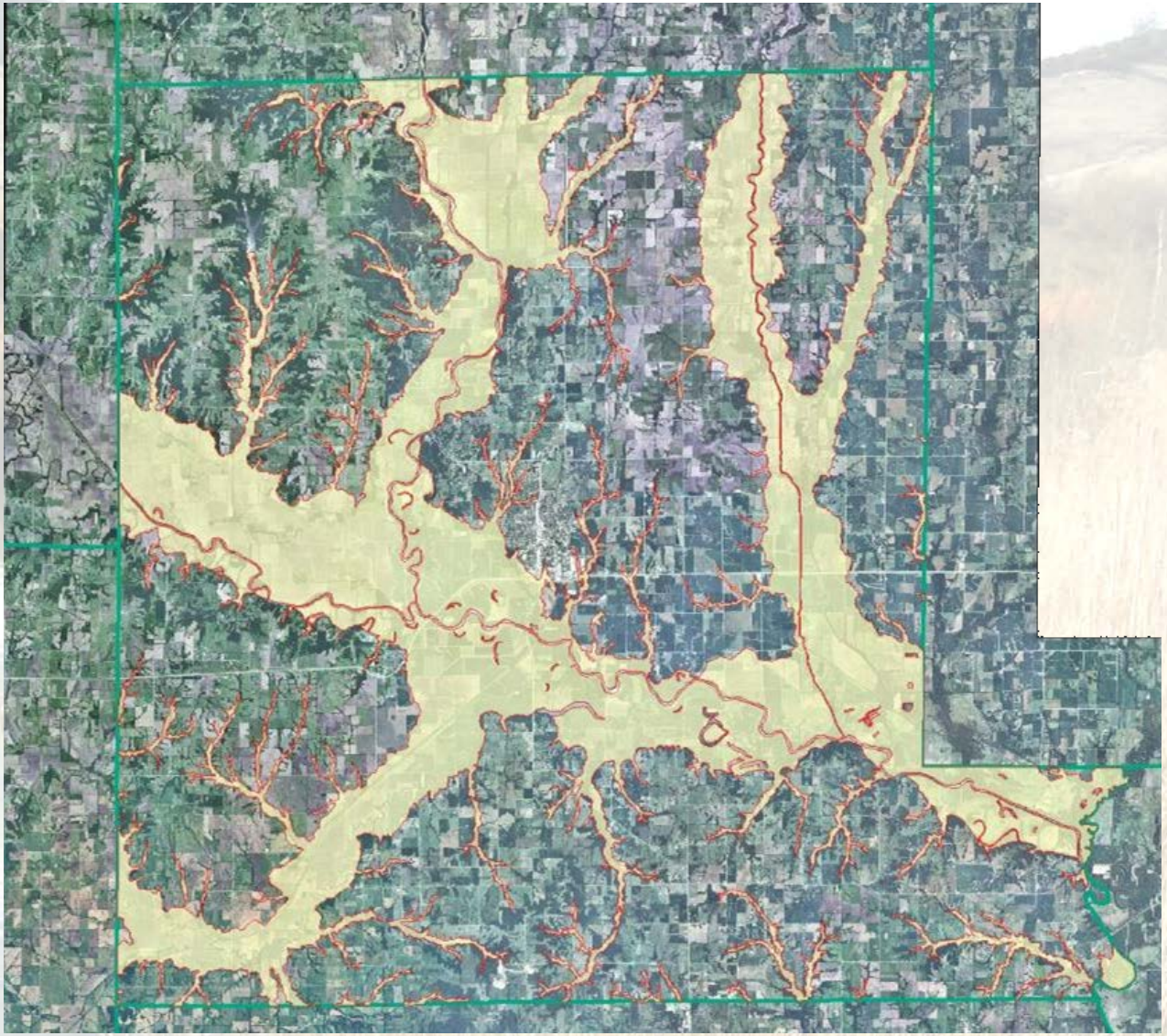
Conservation planning in riparian areas requires special considerations. A resource problem within the riparian area may be the manifestation of upland management decisions. Planners working with riparian areas should consider soils, the present plant community, the site potential, geomorphology of both stream and the watershed, hydrologic regime, fish and wildlife needs, the management of the upland areas of the watershed, and the producer's objectives. For supplemental guidance relating to riparian areas, see *NRCS/RCA Issue Brief 11 (USDA-NRCS. August 1996).*

Riparian Areas at a Glance

Problems / Indicators - Degraded riparian area	
Causes	**Solutions**
• Improper livestock grazing management • Presence of invasive species • Stream channel modifications • Stream channel aggradation or degradation • Structural modifications (e.g., diversions, ditches, dam, etc.) • Land use/vegetation changes	• Streambank and Shoreline Protection • Stream Crossing • Riparian Forest Buffers and/or Herbaceous Cover • Critical Area Planting • Fence/access control • Prescribed Grazing • Integrated Pest Management

USDA is an equal opportunity provider and employer. August 2011

The Floodplain/Riparian Landscape

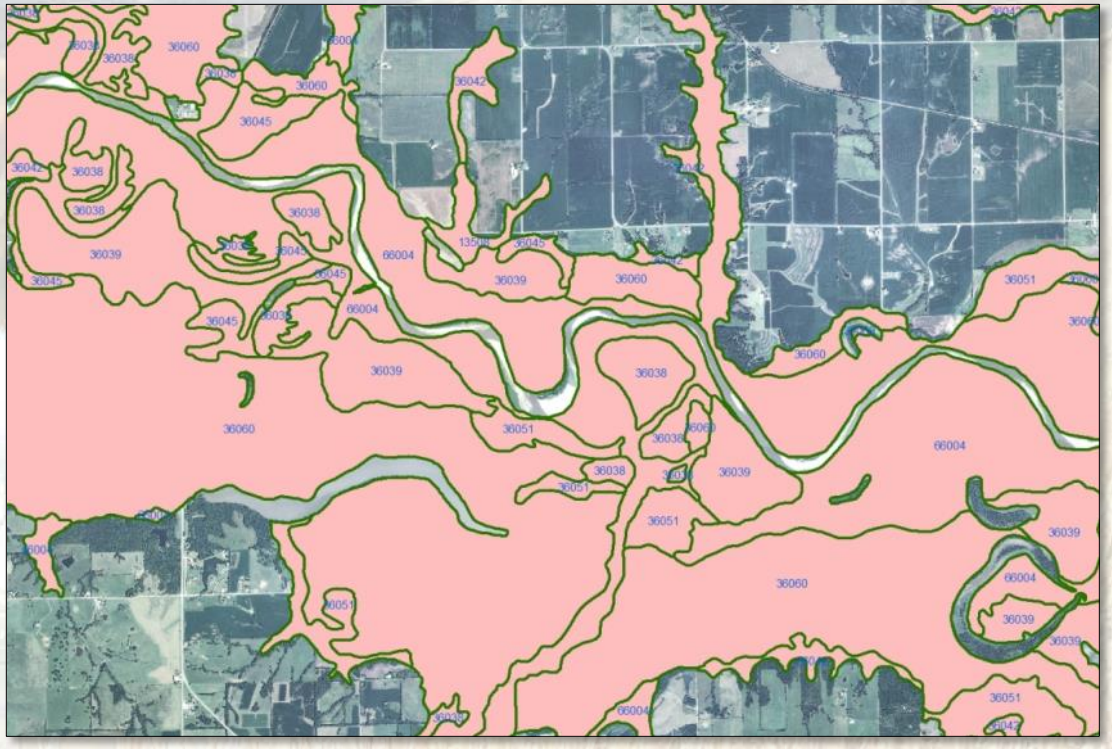


Floodplain/Riparian Landscape Form

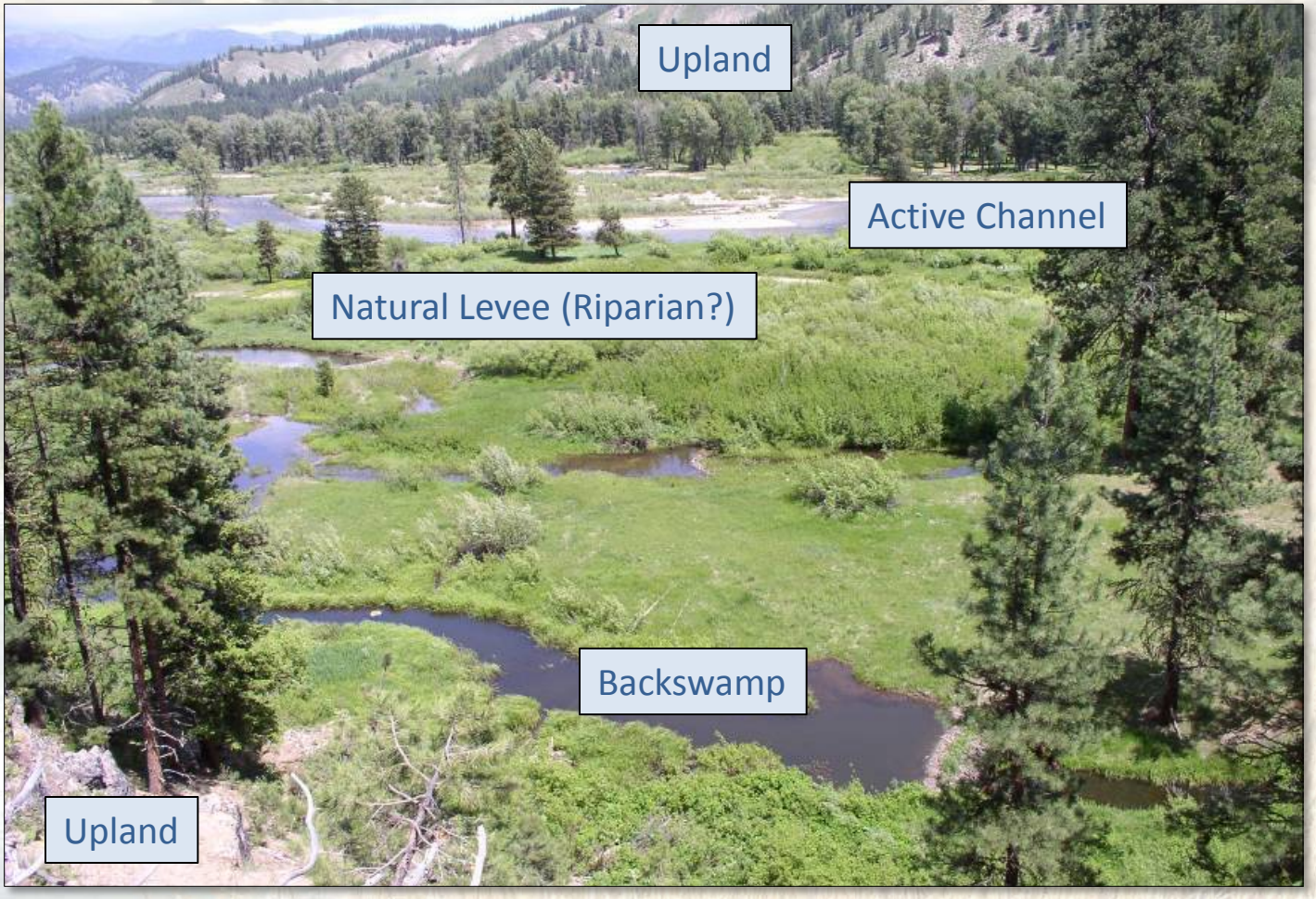
- Soils Formed and Maintained by Fluvial Processes
- Include Separate Landscape Elements Which are Connected by Hydrology
- Exist in a Continuum Along Stream Reaches in the Watershed Network
- Connect With Adjacent Landscapes in a Predictable Way

Floodplain/Riparian Soils

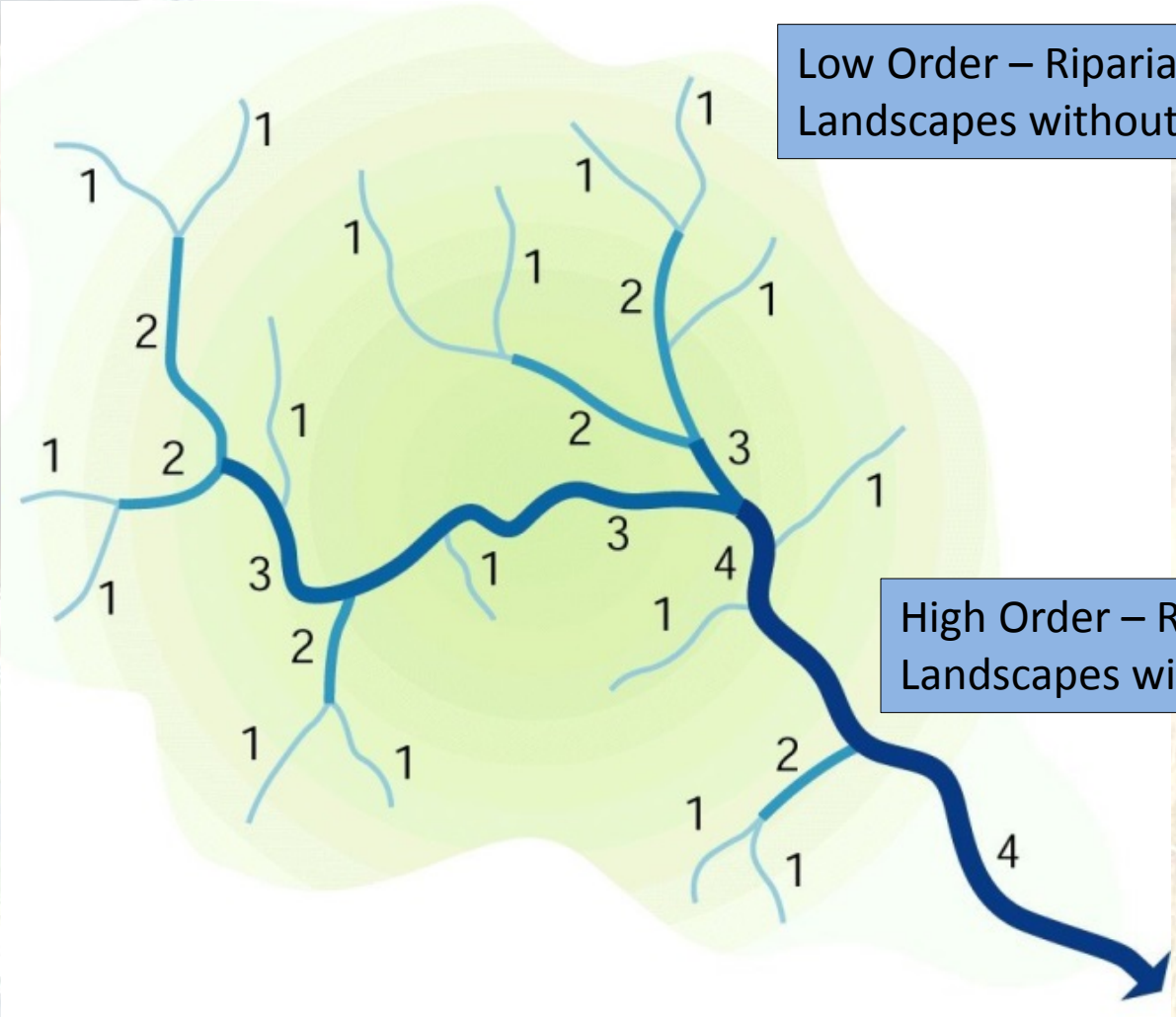
- Geomorphic Description
  - Floodplain, Terrace Backswamp
- Taxonomy
  - i.e., Fluvic, Aquic
- Water Features
  - Flooding, Ponding, and Groundwater



Floodplain/Riparian Landscape Elements



Strahler Stream Order

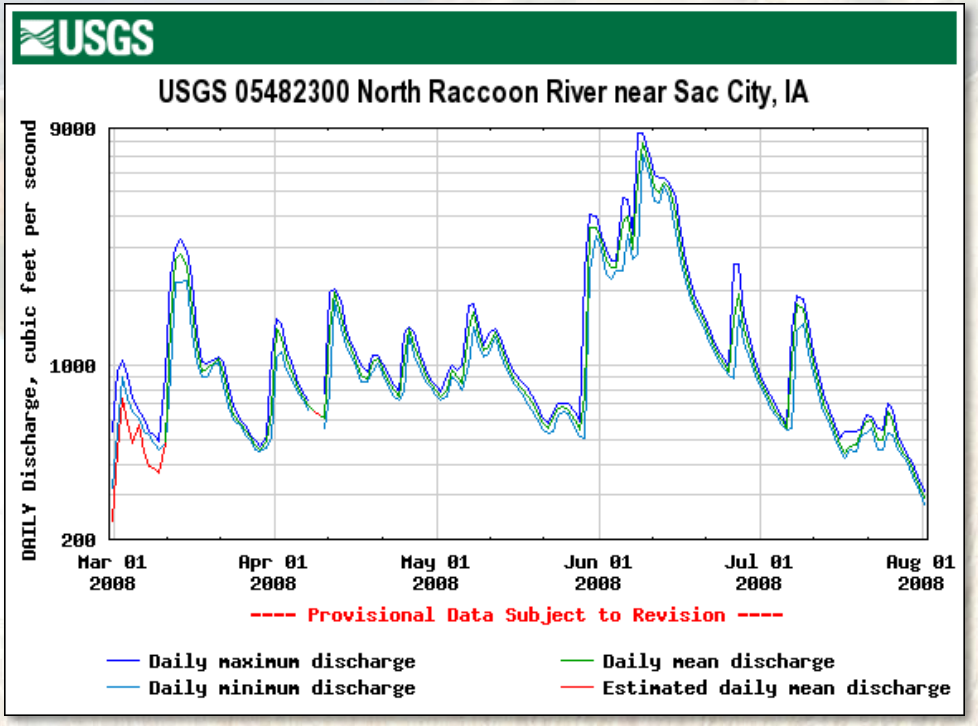


Floodplains and Other Landscapes

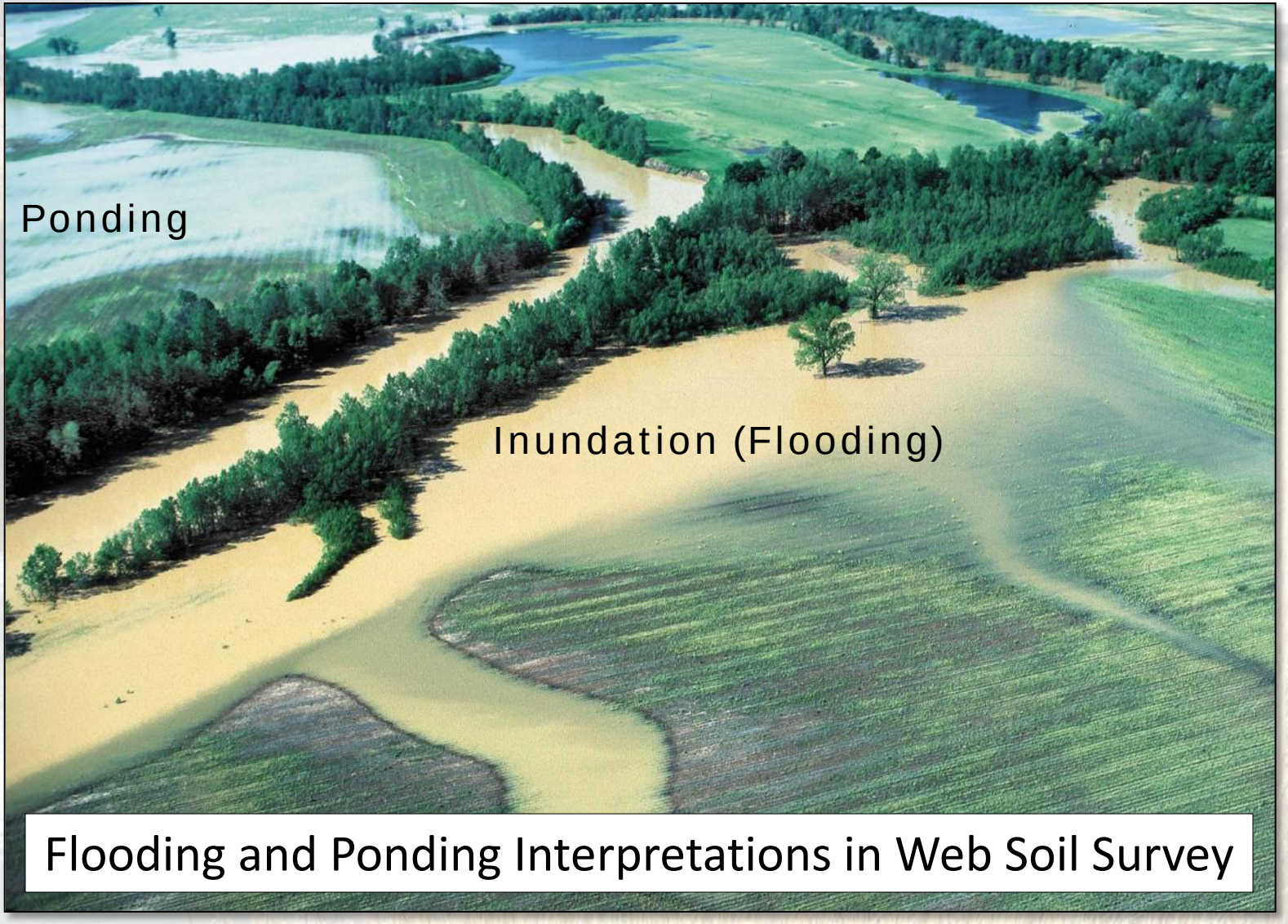
- Floodplains Transition to Other Landscapes
- The Relationships are Unique to the Watershed
- Watersheds are Similar within the MLRA

Floodplain/Riparian Hydrology

- Runoff Hydrographs
- Frequency and Duration of Hydrograph Peaks
- Sediment and Nutrient Cycling
- Flooding, Ponding, and Groundwater



Floodplain/Riparian Hydrology

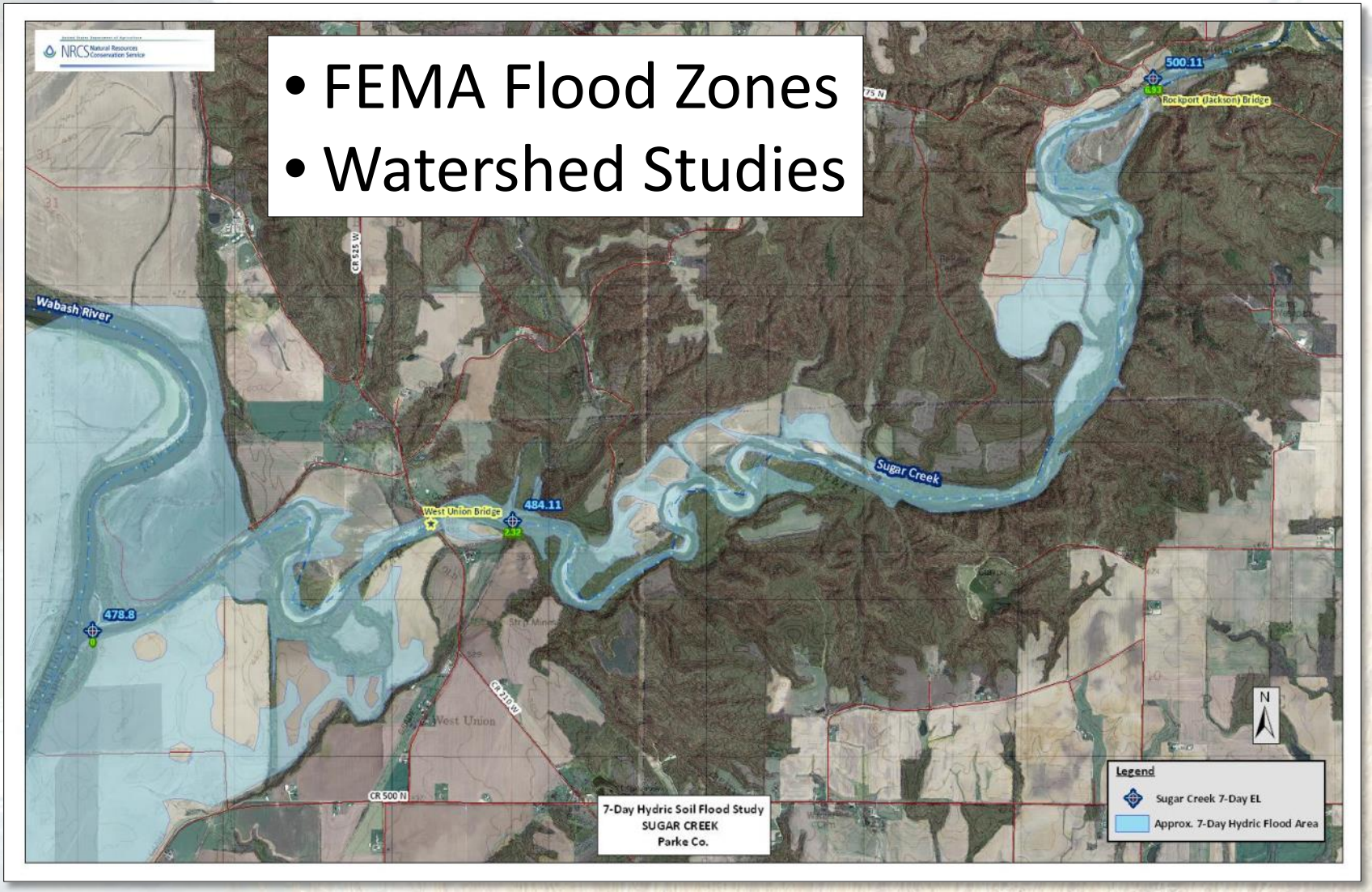


Flooding and Ponding Interpretations in Web Soil Survey

Technical Definitions

- Base Floodplain: 100 – year floodplain
  - 1% chance of inundation in a given year
  - Provided in FEMA flood insurance maps
- Floodplain soils have Flooding Frequency Interpretations in the Water Features Report in Web Soil Survey
  - "Very Frequent": 50% chance in all months
  - "Frequent": 50% chance in any year (2-yr. return period)
  - "Occasional": 5% to 50% chance in any year (2-20 year return period)
  - "Rare": 1% to 5% chance in any year (20-100 yr. return period)
  - "Very Rare": < 1% chance in any year (500-yr. floodplains)

Floodplain Hydrology Studies



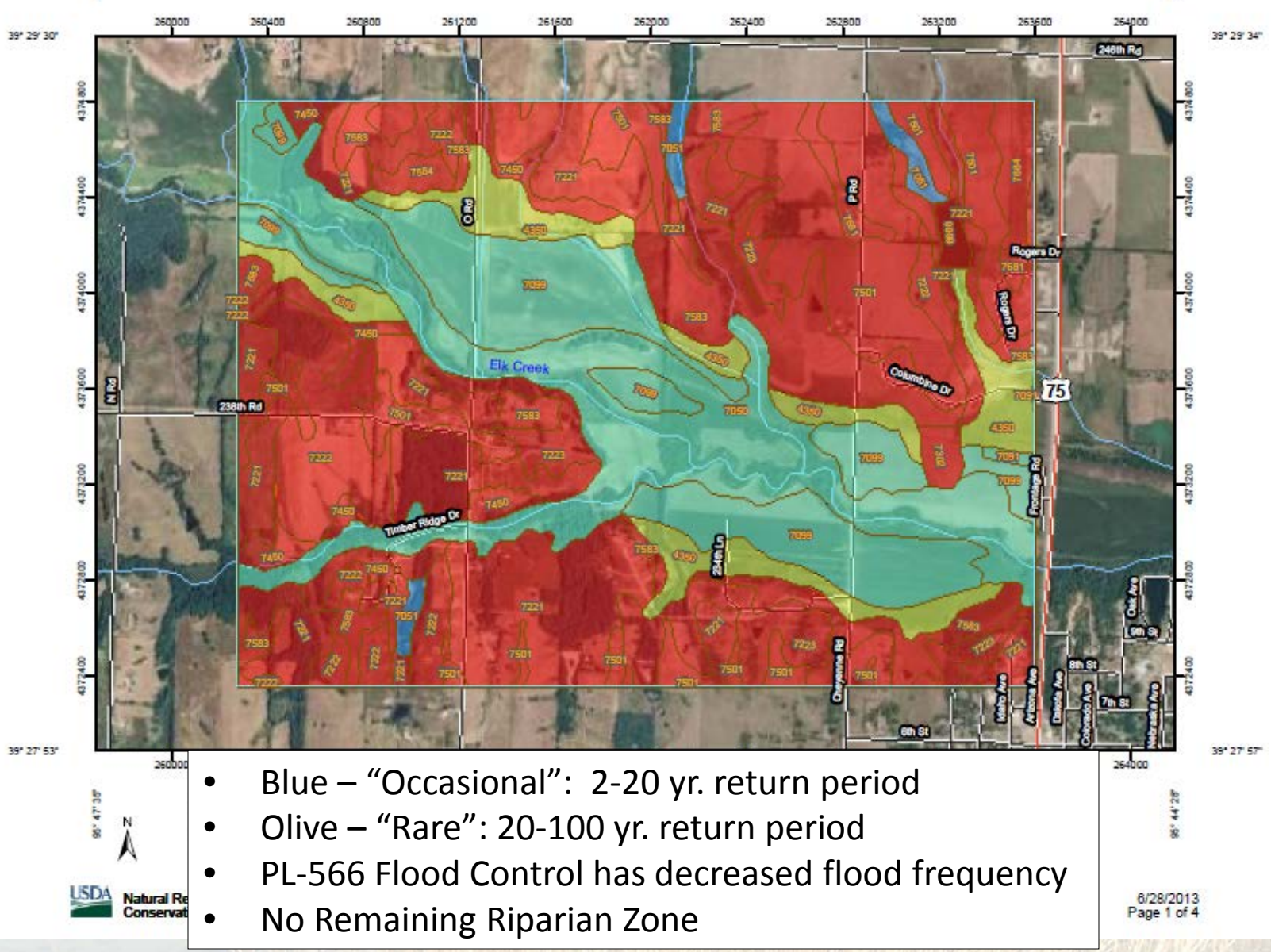
What's not in the Technical Definition

- Groundwater
  - Many floodplains have low frequency of inundation but have high groundwater tables
- Ponding
  - Many floodplain backswamps have infrequent flood access, but are annually ponded from upland runoff
- Duration of Inundation
  - Definition only addresses flood frequency, not duration
- These regimes are in the Riparian Area, even though they're not in the 100-year floodplain

Example - Ninnescah River, Reno Co., KS "Kansa" Soil Series

- Long-Term High Groundwater
- Infrequent Flooding
- Extent of Groundwater Saturation Much Greater than 100-yr. Inundation Area
- Small 100-yr. Floodplain, Large Riparian Zone

Elk Creek Floodplain – Jackson County, Kansas



- Blue – "Occasional": 2-20 yr. return period
- Olive – "Rare": 20-100 yr. return period
- PL-566 Flood Control has decreased flood frequency
- No Remaining Riparian Zone

Web Soil Survey
Water Features Report

Water Features–Jackson County, Kansas

Water Features– Jackson County, Kansas										
Map unit symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface depth	Duration	Frequency	Duration	Frequency
				Ft	*Ft*	*Ft*				
7050—Kennebec silt loam, occasionally flooded										
Kennebec	C	—	January	—	—	—	—	None	Very brief	Occasional
	C	—	February	3.3-3.7	>6.0	—	—	None	Very brief	Occasional
	C	—	March	3.3-3.7	>6.0	—	—	None	Very brief	Occasional
	C	—	April	3.3-3.7	>6.0	—	—	None	Very brief	Occasional
	C	—	May	3.3-3.7	>6.0	—	—	None	Very brief	Occasional
	C	—	June	—	—	—	—	None	Very brief	Occasional
	C	—	July	—	—	—	—	None	Very brief	Occasional
	C	—	August	—	—	—	—	None	Very brief	Occasional
	C	—	September	—	—	—	—	None	Very brief	Occasional
	C	—	October	—	—	—	—	None	Very brief	Occasional
	C	—	November	—	—	—	—	None	Very brief	Occasional
	C	—	December	—	—	—	—	None	Very brief	Occasional

Dealing with Impacts

(a) Avoiding the impact altogether by not taking a certain action or parts of an action.

(b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation.

(c) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.

(d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.

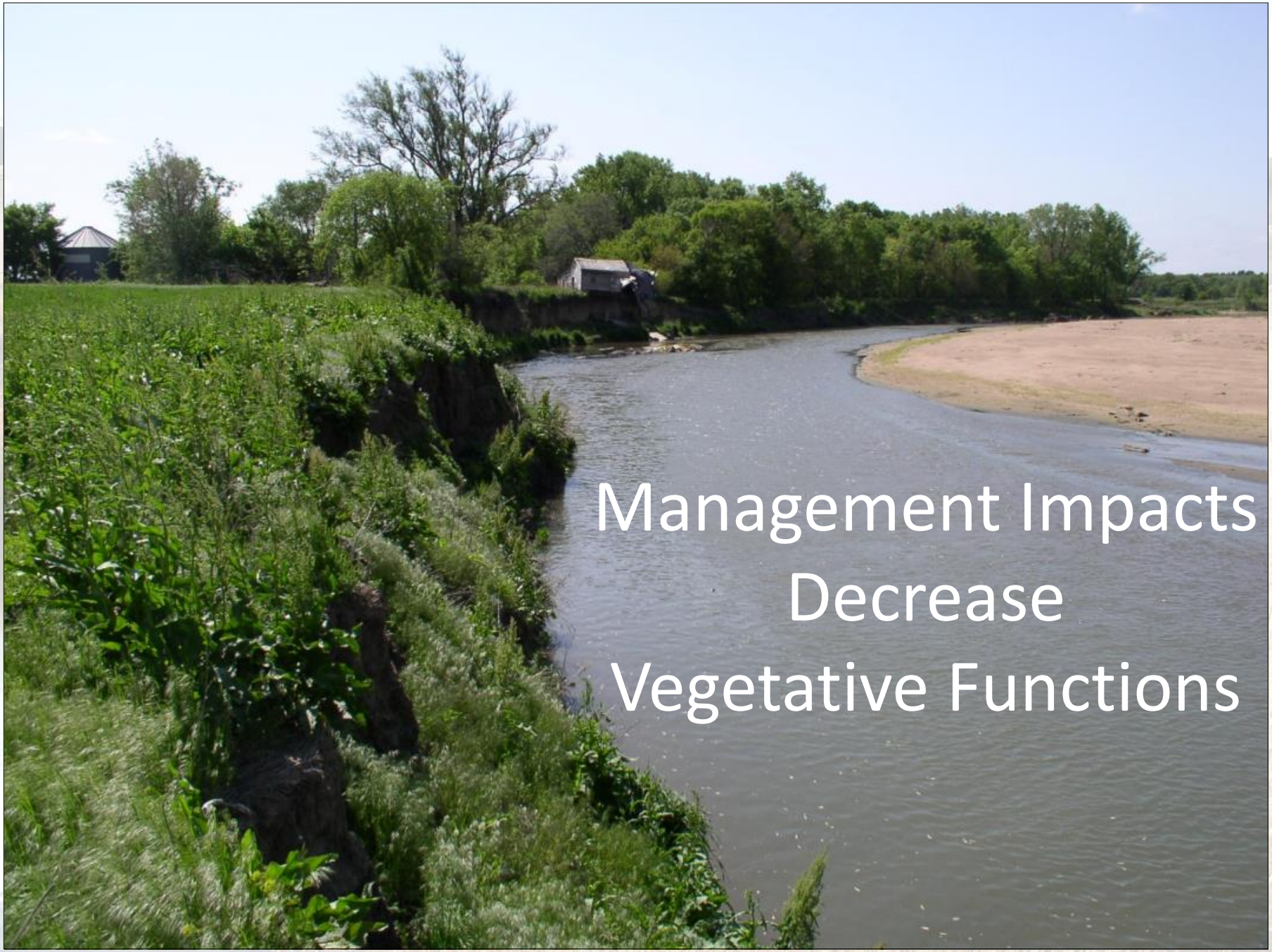
(e) Compensating for the impact by replacing or providing substitute resources or environments.

Impacts Reduce Floodplain/Riparian Ecosystem Services

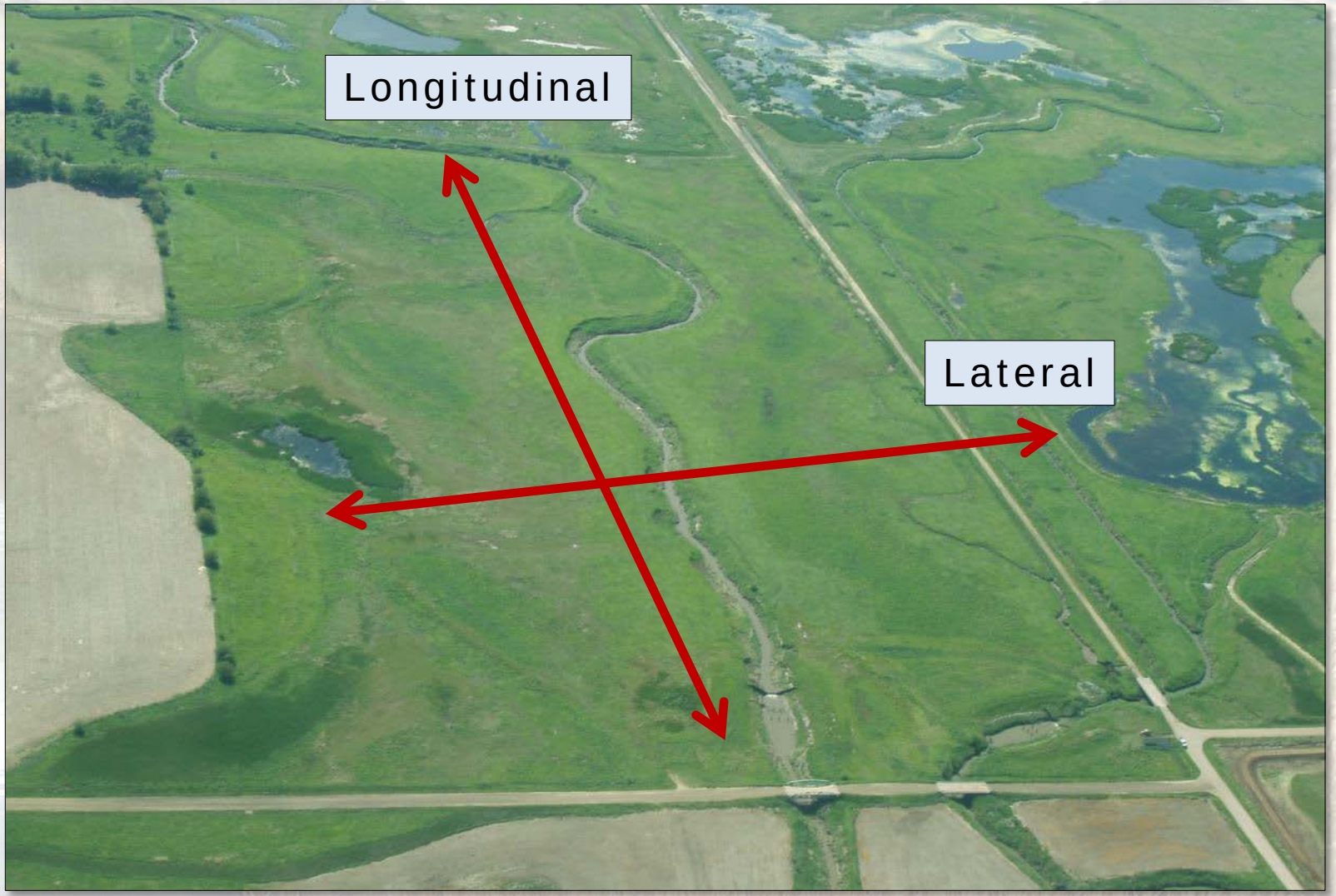
- Cycling of Sediment, Nutrients, and Compounds
- Maintain Floodplain Landforms
- Maintain On-Site Hydrology
- Fish and Wildlife Habitat
- Dynamic Floodwater Storage
- Aquifer Recharge
- Many, Many Others

Impacts to Floodplain/Riparian Areas

- Breaks in Hydrologic Connectivity
  - Dikes, Levees, Dams, Diversions
- Change in Hydrologic Regime
  - Increase in Flood Elevation
  - Decrease in Flood Elevation
  - Change in Duration and Frequency of Inundation, Ponding, or Groundwater
- Loss of Floodplain/Riparian Habitats
  - Change in Land Use
  - Loss of Landscape Elements


Management Impacts
Decrease
Vegetative Functions

Hydrologic Impacts Reduce or Increase Connectivity



Examples

Riparian Area Example

CPA-52, Page 1

U.S. Department of Agriculture Natural Resources Conservation Service **ENVIRONMENTAL EVALUATION WORKSHEET**	NRCS-CPA-52 4/2013	**A. Client Name:** Bill Smith, Jr. **B. Conservation Plan ID #** (as applicable): Plan #1, 2013 **Program Authority** (optional): EQIP
D. Client's Objective(s) (purpose): Prevent pasture land loss due to erosion; improve pasture management		**C. Identification #** (farm, tract, field #, etc as required): Smith Ranch, Tract # 123, Field 3

E. Need for Action:	**H. Alternatives**		
	No Action √ if RMS ☐	***Alternative 1*** √ if RMS ☐	***Alternative 2*** √ if RMS ☐
Control bank erosion, reduce pollutant loading to stream	Continue grazing operations with no bank re-vegetation		

Resource Concerns

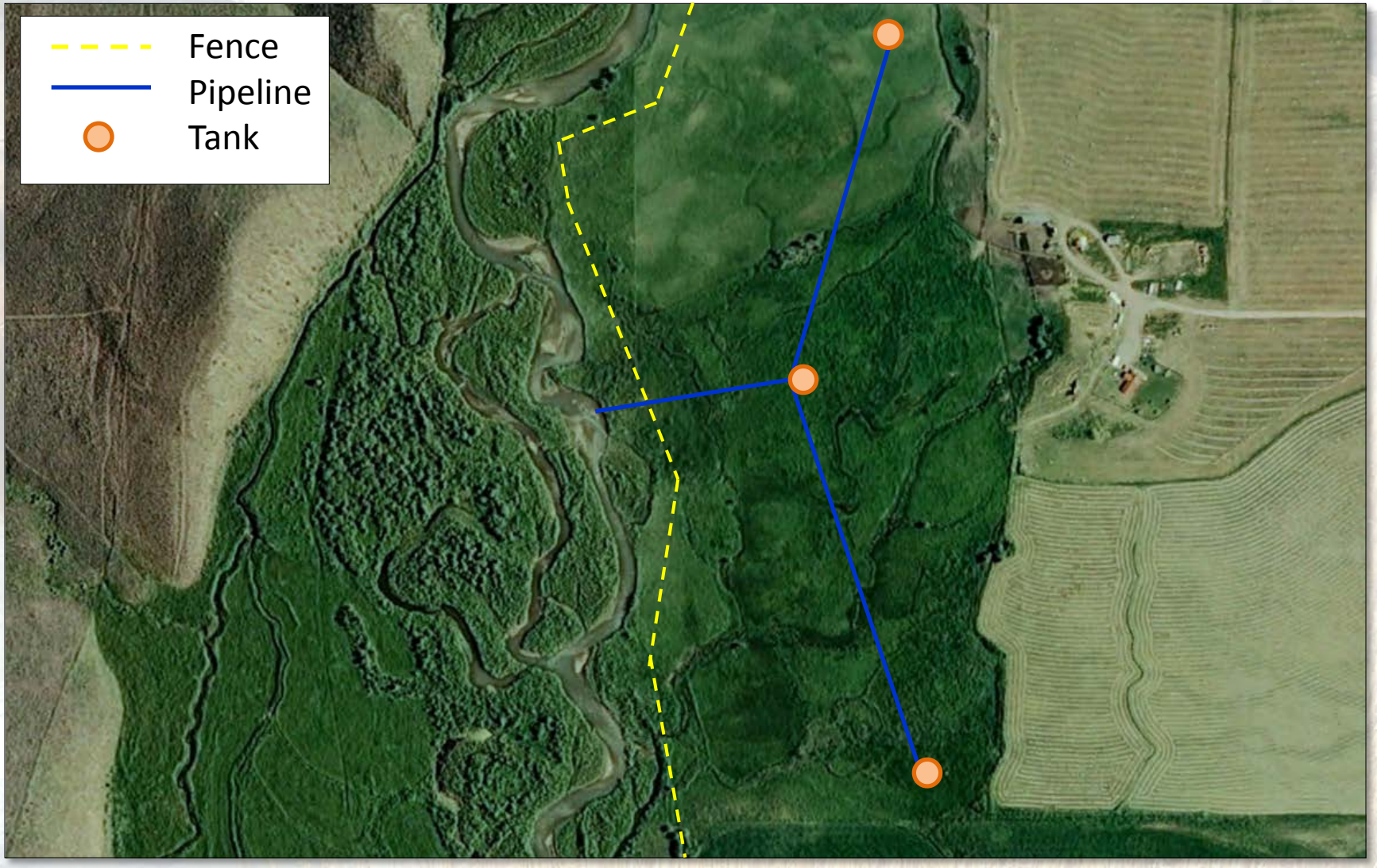
In Section "F" below, analyze, record, and address concerns identified through the Resources Inventory process. (See FOTG Section III - Resource Planning Criteria for guidance).

SOIL: *EROSION*						
Bank erosion 0.06 ac/year 330 t/year (calculated)	Pasture loss due to erosion will continue at 0.06 ac/year 330 t/year (calculated)	☒ NOT meet PC		☐ NOT meet PC		☐ NOT meet PC
WATER: *WATER QUALITY DEGRADATION*						
Stream sediment 125 t/year of fine sediment (calculated)	Fine sediment production will continue at 125 t/year (calculated)	☒ NOT meet PC		☐ NOT meet PC		☐ NOT meet PC

Plan

- Establish permanent vegetation on bank
  - Critical Area Planting (CPS 342)
- Fencing to keep cattle off banks
  - Fence (CPS 382)
- Off-stream watering tanks
  - Watering Facility (CPS 614)
  - Pipeline (CPS 516)

Plan



CPA-52, Page 1

U.S. Department of Agriculture Natural Resources Conservation Service **ENVIRONMENTAL EVALUATION WORKSHEET**	NRCS-CPA-52 4/2013	**A. Client Name:** Bill Smith, Jr. **B. Conservation Plan ID #** (as applicable): Plan #1, 2013 **Program Authority** (optional): EQIP
D. Client's Objective(s) (purpose): Prevent pasture land loss due to erosion ; improve pasture management		**C. Identification #** (farm, tract, field #, etc as required): Smith Ranch, Tract # 123, Field 3

E. Need for Action:	**H. Alternatives**		
	No Action √ if RMS ☐	***Alternative 1*** √ if RMS ☐	***Alternative 2*** √ if RMS ☐
Control bank erosion, reduce pollutant loading to stream	Continue grazing operations with no bank modifications	CPS 382 (fence), CPS 342 (planting), CPS 614 (tanks), CPS 516 (pipeline)	

Resource Concerns

In Section "F" below, analyze, record, and address concerns identified through the Resources Inventory process. (See FOTG Section III - Resource Planning Criteria for guidance).

SOIL: *EROSION*						
Bank erosion 0.06 ac/year 330 t/year (calculated)	Pasture loss due to erosion will continue at 0.06 ac/year 330 t/year (calculated)	☒ NOT meet PC	Pasture loss reduced to natural rate (estimated at 0.006 ac/year 33 t/year (calculated)	☐ NOT meet PC		☐ NOT meet PC
WATER: *WATER QUALITY DEGRADATION*						
Stream sediment 125 t/year of fine sediment (calculated)	Fine sediment production will continue at 125 t/year (calculated)	☒ NOT meet PC	Fine sediment production reduced to 12.5 t/year (calculated)	☐ NOT meet PC		☐ NOT meet PC

Riparian Area Guide Sheet

RIPARIAN AREA
NECH 610.33
Evaluation Procedure Guide Sheet

Check all that apply to this Guide Sheet review: ☒ Alternative 1 ☐ Alternative 2 ☐ Other

Client/Plan Information:
Bill Smith, Jr.
Plan #1, 2013
EQIP
Smith Ranch, Tract # 123, Field 3

STEP 1.
Is a riparian area present in or near the planning area? (Definition can be found in Title 190, General Manual, Part 411.)

☐ No **If "No," document on the NRCS-CPA-52, or notes section below, the finding, rationale, and information sources used and proceed with planning.**

☒ Yes **If "Yes," go to Step 2.**

STEP 2.
Do the action(s) address maintanence or improvement of water quality, water quantity, and fish and wildlife benefits provided by the riparian area?

☐ No **If "No,"** revise the plan to maintain or improve water quality, water quantity, and fish and wildlife benefits. Document the benchmark conditions and effects on the NRCS-CPA-52, or notes section below, **go to Step 3.**

☒ Yes **If "Yes,", go to Step 3.**

STEP 3.
Do the action(s) conflict with the conservation values/functions of the riparian area?

☒ No **If "No," document on the NRCS-CPA-52, or notes section below, the finding, rationale, and information sources used and proceed with planning.**

☐ Yes **If "Yes,"** inform the client of the values and functions of riparian areas, including their contribution to floodplain function, stream bank stability and integrity, nutrient cycling, pollutant filtering, sediment retention, and biological diversity, and present alternatives that will resolve the conflict. **Document on the NRCS-CPA-52, or notes section below, the finding, rationale, and information sources used and proceed with planning.**

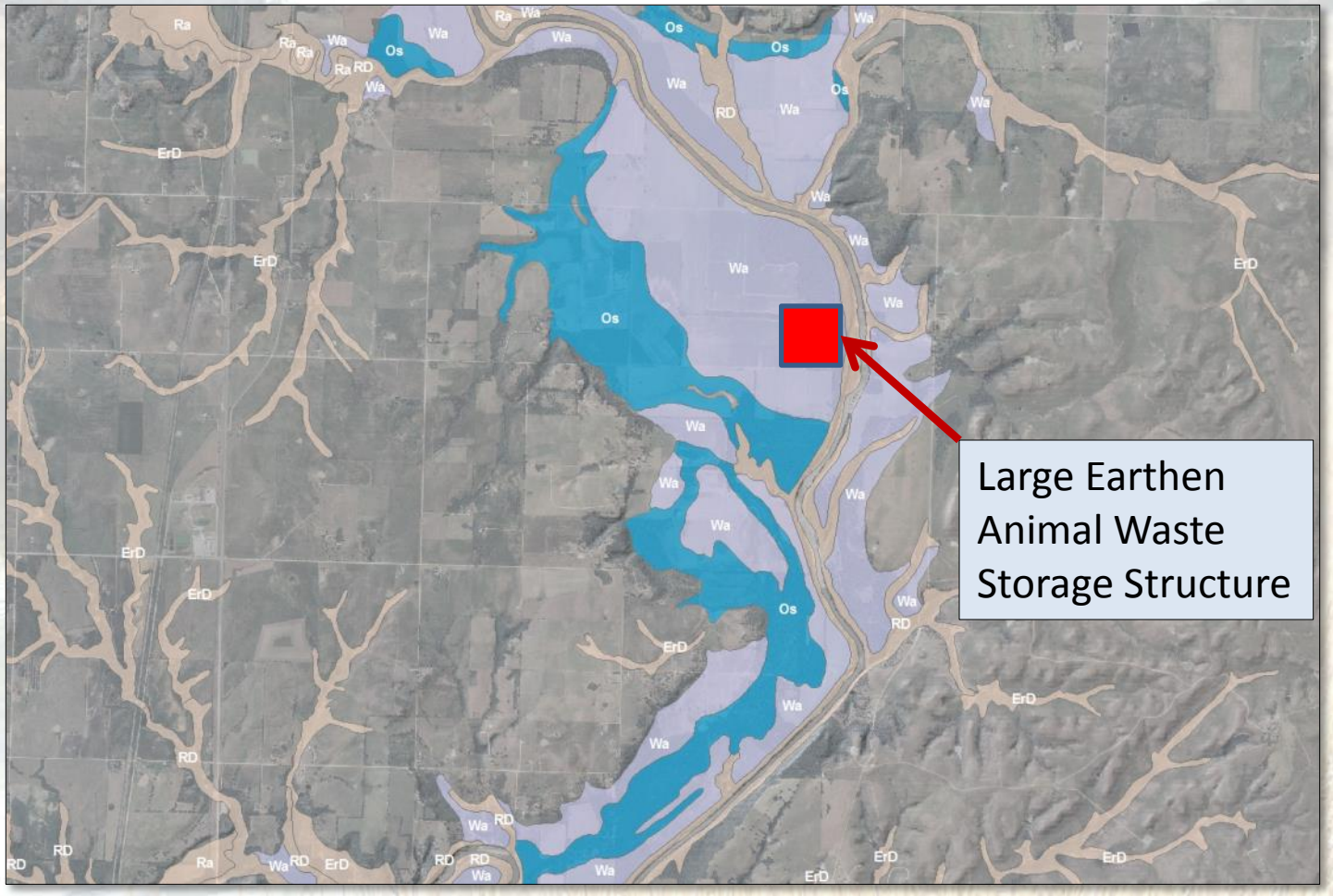
Notes:

1) Resource management system is planned to a) reduce pasture erosion, b) reduce fine sediment load into trout stream, and c) provide T/A wildlife habitat through plantings used to stabilize banks. Consistent with the Smith Fork watershed plan.
2) Cattle fenced at least 35 feet from stream to provide riparian buffer and wildlife corridor improvement. Limit nutrients/pathogens to stream

CPA-52 Page 3

Special Environmental Concerns: Environmental Laws, Executive Orders, policies, etc.						
In Section "I" complete and attach applicable Environmental Procedures Guide Sheets for documentation. Items with a "•" may require a federal permit or consultation/coordination between the lead agency and another government agency. In these cases, effects may need to be determined in consultation with another agency. Planning and practice implementation may proceed for practices not involved in consultation.						
I. Special Environmental Concerns (Document compliance with Environmental Laws, Executive Orders, policies, etc.)	**J. Impacts to Special Environmental Concerns**					
	No Action		***Alternative 1***		***Alternative 2***	
	Status and progress of compliance. (Complete and attach Guide Sheets as applicable)	√ if needs further action	Status and progress of compliance. (Complete and attach Guide Sheets as applicable)	√ if needs further action	Status and progress of compliance. (Complete and attach Guide Sheets as applicable)	√ if needs further action
Riparian Area 1.2 ac (½ mile) PFC Nonfunctional riparian area	No change, remains PFC Nonfunctional	☒	PFC Functional-at-Risk, Trend Upward	☐		☐

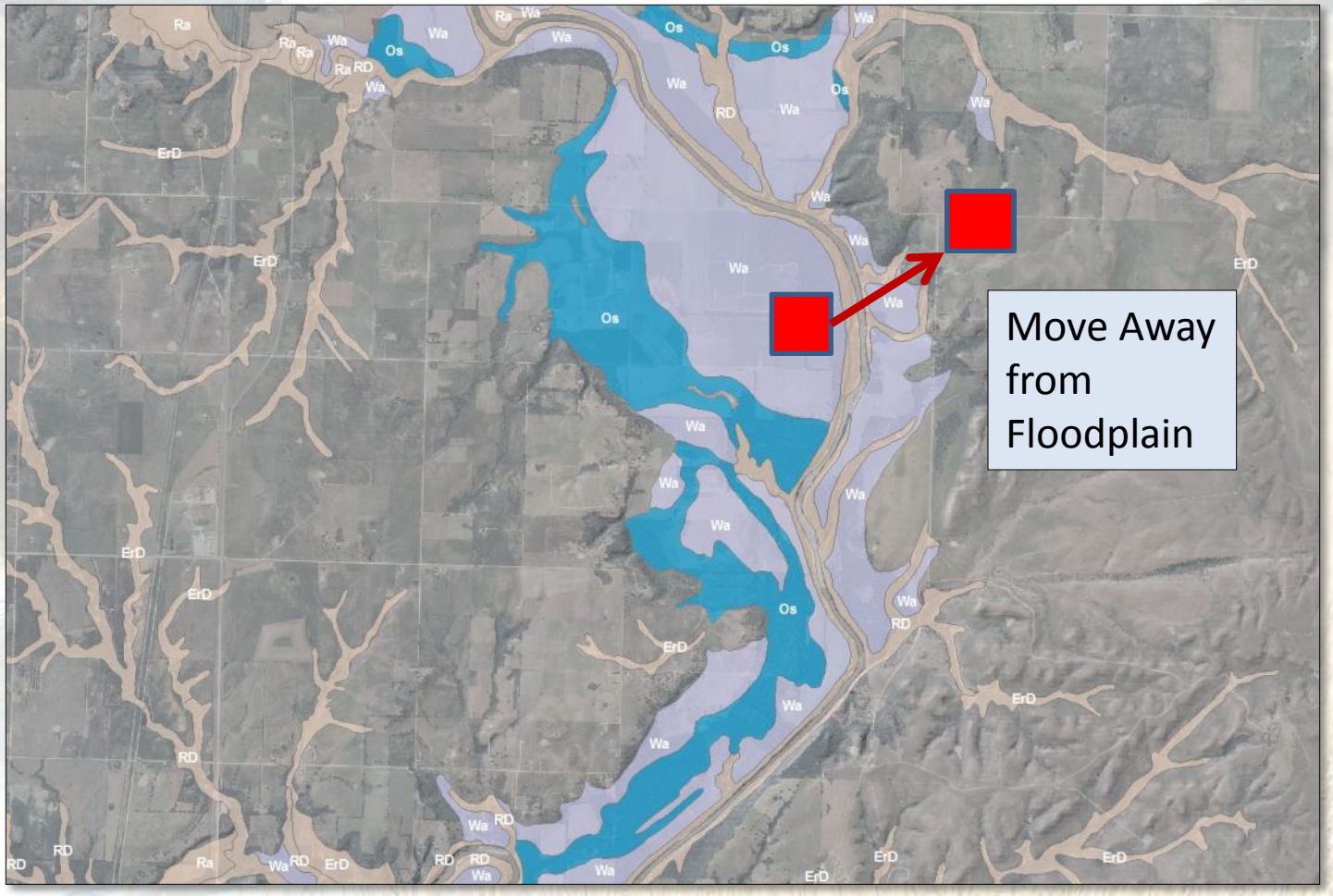
Animal Waste Structure Example



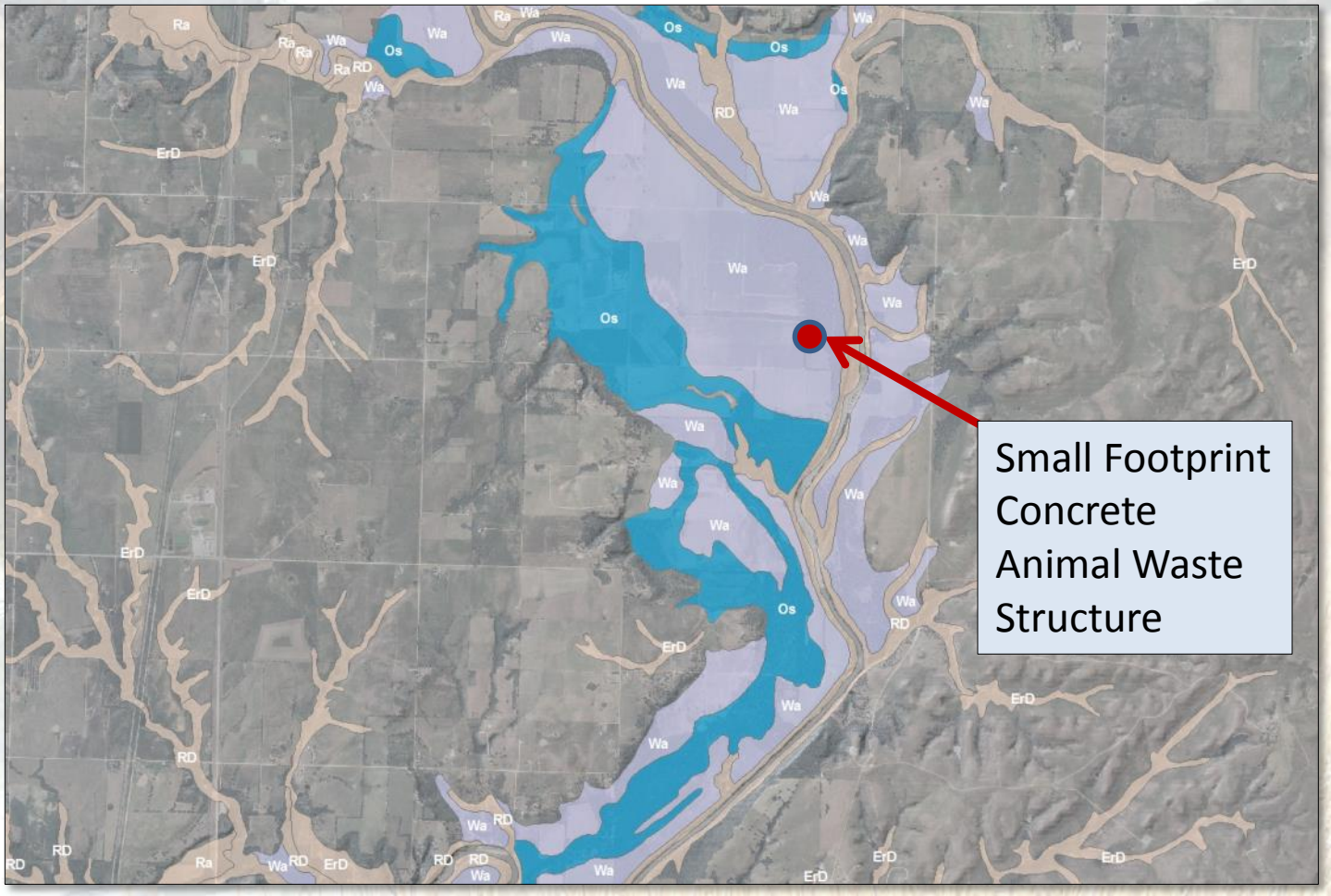
Animal Waste Structure Impacts

- Increase in Flood Water Surface Profile
- Loss of Wildlife Habitat due to Land Use Change
- Change in Sediment/Nutrient Cycling
- Modification to Floodplain Landscape Maintenance Processes

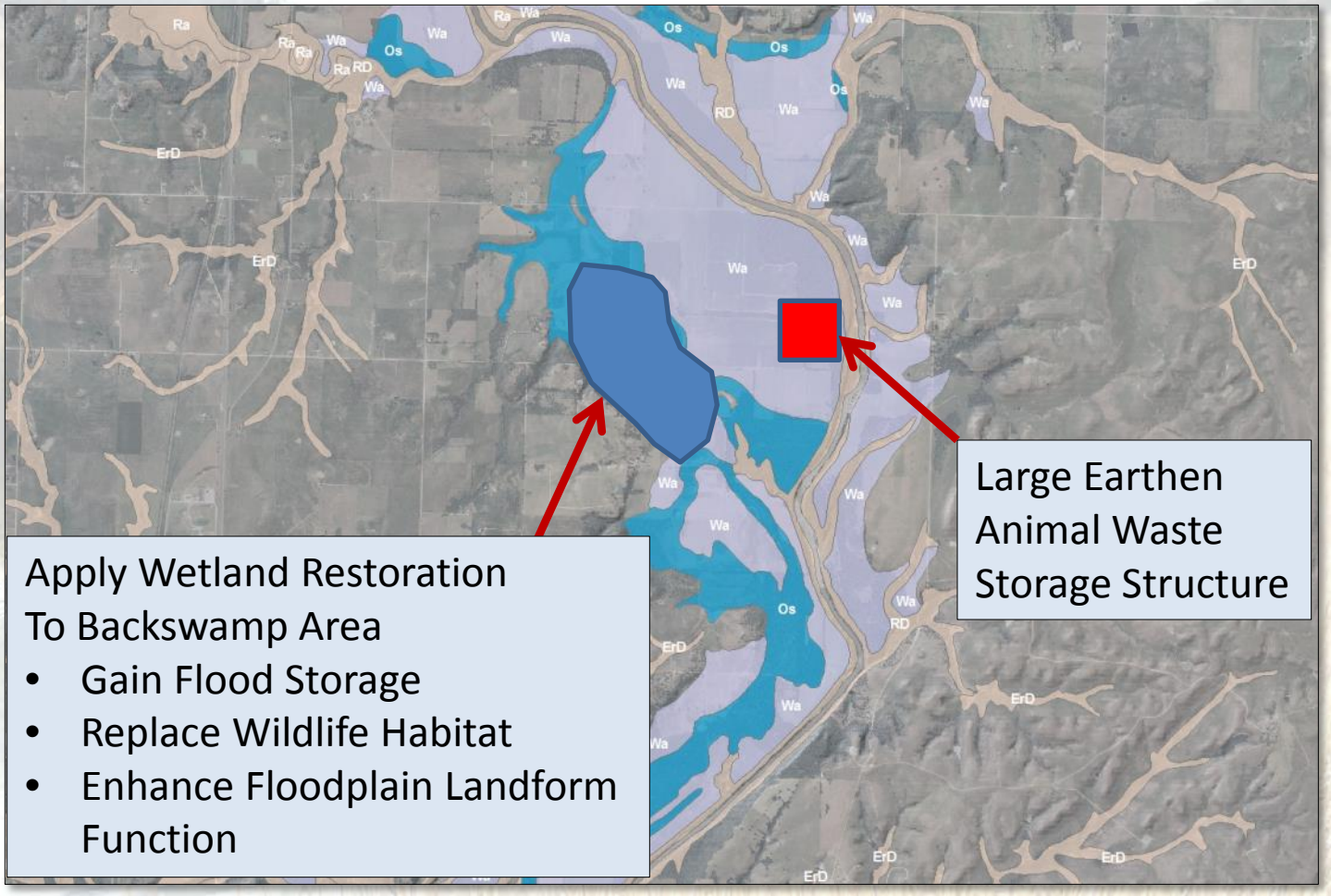
Animal Waste Structure: Avoid Impacts



Animal Waste Structure: Minimize Impacts



Animal Waste Structure: Compensate Impacts



CPA-52 Page 3

Special Environmental Concerns: Environmental Laws, Executive Orders, policies, etc.						
In Section "I" complete and attach applicable Environmental Procedures Guide Sheets for documentation. Items with a "•" may require a federal permit or consultation/coordination between the lead agency and another government agency. In these cases, effects may need to be determined in consultation with another agency. Planning and practice implementation may proceed for practices not involved in consultation.						
I. Special Environmental Concerns (Document compliance with Environmental Laws, Executive Orders, policies, etc.)	**J. Impacts to Special Environmental Concerns**					
	No Action		***Alternative 1***		***Alternative 2***	
	Status and progress of compliance. (Complete and attach Guide Sheets as applicable)	√ if needs further action	Status and progress of compliance. (Complete and attach Guide Sheets as applicable)	√ if needs further action	Status and progress of compliance. (Complete and attach Guide Sheets as applicable)	√ if needs further action
Floodplain Management		☒	Locate Str. Outside of floodplain	☐	Compensate w/wetland rest.	☒
Riparian Area		☐		☐		☐

FLOODPLAIN MANAGEMENT
NECH 610.29
Evaluation Procedure Guide Sheet

Check all that apply to this Guide Sheet review: ☐ Alternative 1 ☐ Alternative 2 ☐ Other

Client/Plan Information:

NOTE: This Guide Sheet is intended for evaluation of "non-project" technical and financial assistance only (individual projects). For "project" assistance criteria (those assisting local sponsoring organizations), consult Title 190, General Manual, Part 410, Subpart B, Section 410.25.

STEP 1.
Is the project area in or near a 100-year floodplain?

☐ No — **If "No," document on the NRCS-CPA-52, or notes section below, the finding, rationale, and information sources used and go to Step 4.**

☒ Yes — **If "Yes," go to Step 2.**

☐ Unknown — **If "Unknown,"** review the HUD/FEMA flood insurance maps and other available data such as soils information relating to flood frequency. If still "Unknown", contact the appropriate field or hydraulic engineer. **Repeat Step 1.**

STEP 2.
Is the planning area in the floodplain an agricultural area that has been used to produce food, fiber, feed, forage or oilseed for at least 3 of the last 5 years before the request for assistance?

☐ No — **If "No," go to Step 4.**

☒ Yes — **If "Yes," document the agricultural use history and go to Step 3.**

STEP 3.
Is the floodplain's agricultural production in accordance with official state or designated area water quality plans?

☐ No — **If "No,"** advise the client of conservation practices or other measures that will bring the land into accordance with water quality plans and incorporate these into the conservation plan. **Go to Step 4.**

☒ Yes — **If "Yes," document on the NRCS-CPA-52, or notes section below, the finding, rationale, and information sources used and go to Step 4.**

STEP 4.
Over the short or long term, will the proposed action or alternative likely result in an increased flood hazard, incompatible development, or other adverse effect to the existing natural and beneficial values of the floodplain or lands adjacent or downstream?

☐ No — **If "No," document on the NRCS-CPA-52, or notes section below, the finding, rationale, and information sources used and proceed with planning.**

☒ Yes — **If "Yes,"** modify the action if possible to avoid adverse effects. Inform landuser of the hazards of locating actions in the floodplain and discuss alternative methods of achieving the objective and/or alternative locations outside the 100-year floodplain. **If the action can be modified, describe the modification on the NRCS-CPA-52 and repeat 4. If the action cannot be modified to eliminate adverse effects, go to Step 5.**

NRCS-CPA-52, April 2013

FLOODPLAIN MANAGEMENT (continued)

STEP 5.
Is one or more of the alternative methods or locations practical?

☐ No — **If "No,"** the District Conservationist will carefully evaluate and document the potential extent of the adverse effects and any increased flood risk before making a determination of whether to continue providing assistance. **Document on the NRCS-CPA-52, or notes section below, the finding, rationale, and information sources used and go to Step 6.**

☒ Yes — **If "Yes," and the client agrees** to implement the alternative methods or locations outside the floodplain, **document on the NRCS-CPA-52, or notes section below, the finding, rationale, and information sources used and proceed with planning.**

☐ Yes — **If "Yes," and the client DOES NOT AGREE** to implement the alternative methods or locations, advise the client that NRCS may not continue to provide technical and/or financial assistance where there are practicable alternatives. **Document on the NRCS-CPA-52, or notes section below, the finding, rationale, and information sources used and go to Step 6.**

STEP 6.
Will assistance continue to be provided?

☐ No — **If "No,"** provide written notification of the decision to terminate assistance to the client and the local conservation district, if one exists. **Document on the NRCS-CPA-52, or notes section below, the finding, rationale, and information sources used and proceed with planning.**

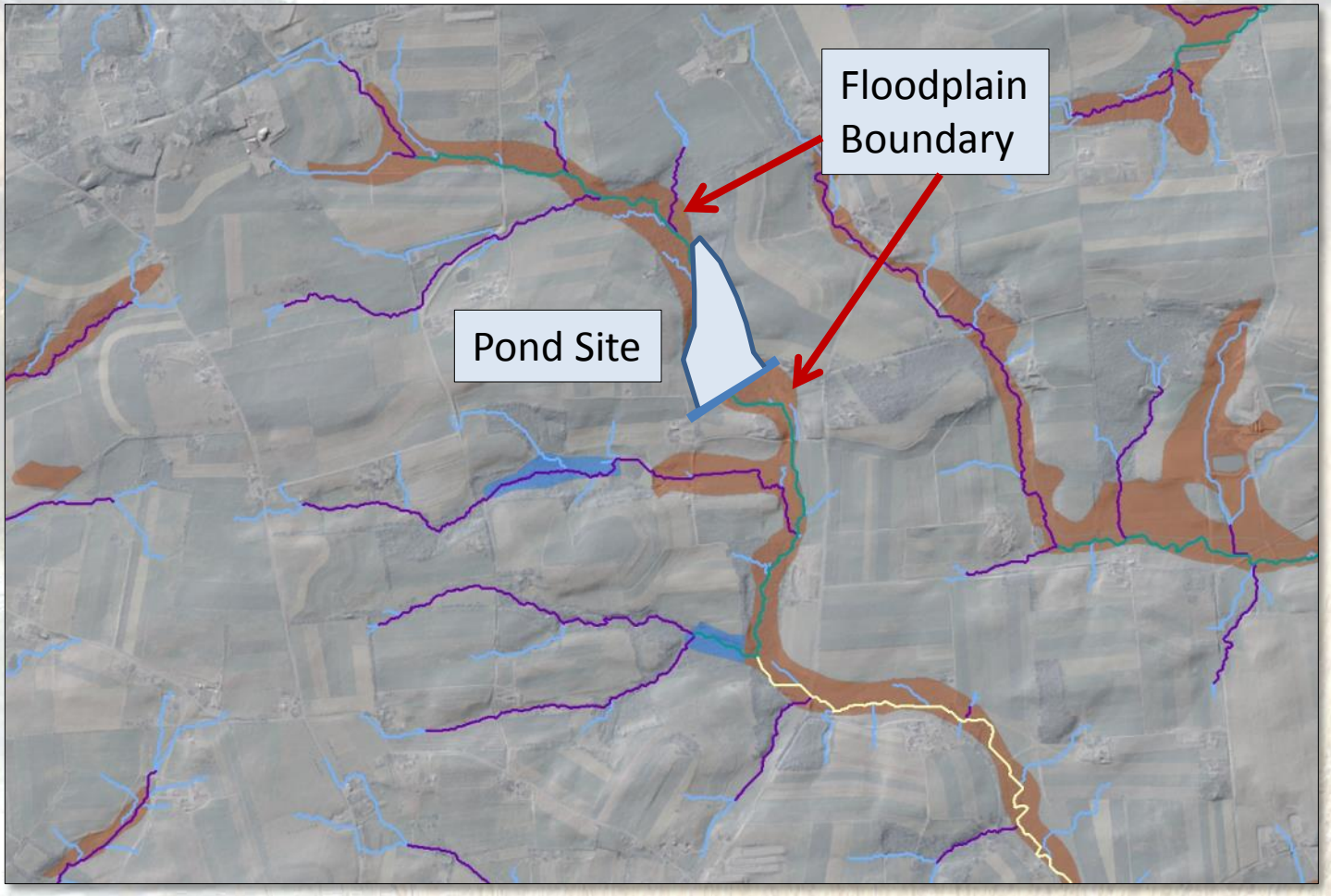
☒ Yes — **If "Yes,"** the district conservationist should **design or modify the proposed action or alternative to minimize the adverse effects to the extent possible. Circulate a written public notice** locally explaining why the action is proposed to be located in the 100-year floodplain. **Document on the NRCS-CPA-52, or notes section below, the finding, rationale, and information sources used and proceed with planning.**

Notes:

Landowner agreed to proceed with planning for WSP located outside the floodplain.

NRCS-CPA-52, April 2013

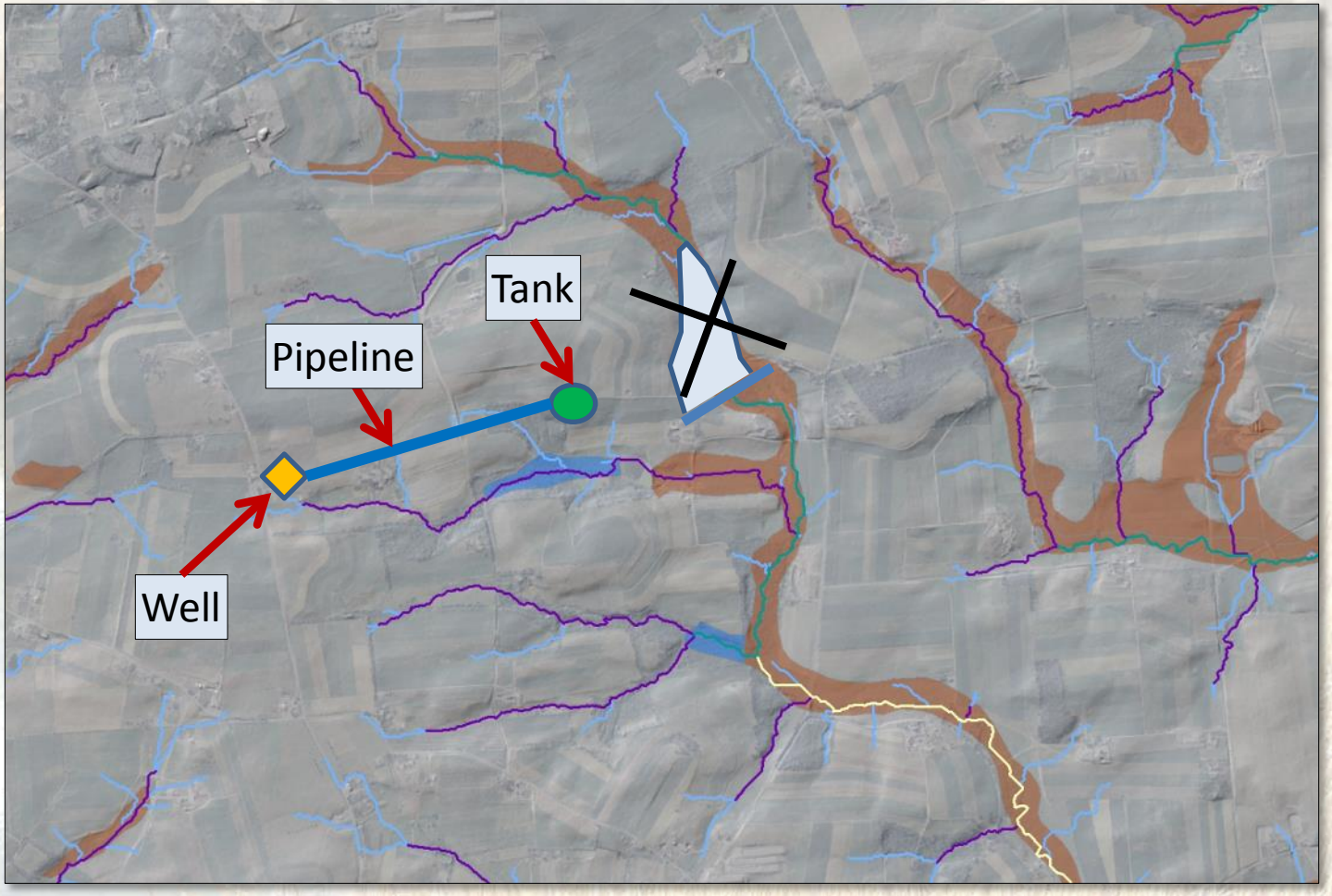
Stockwater Pond Example



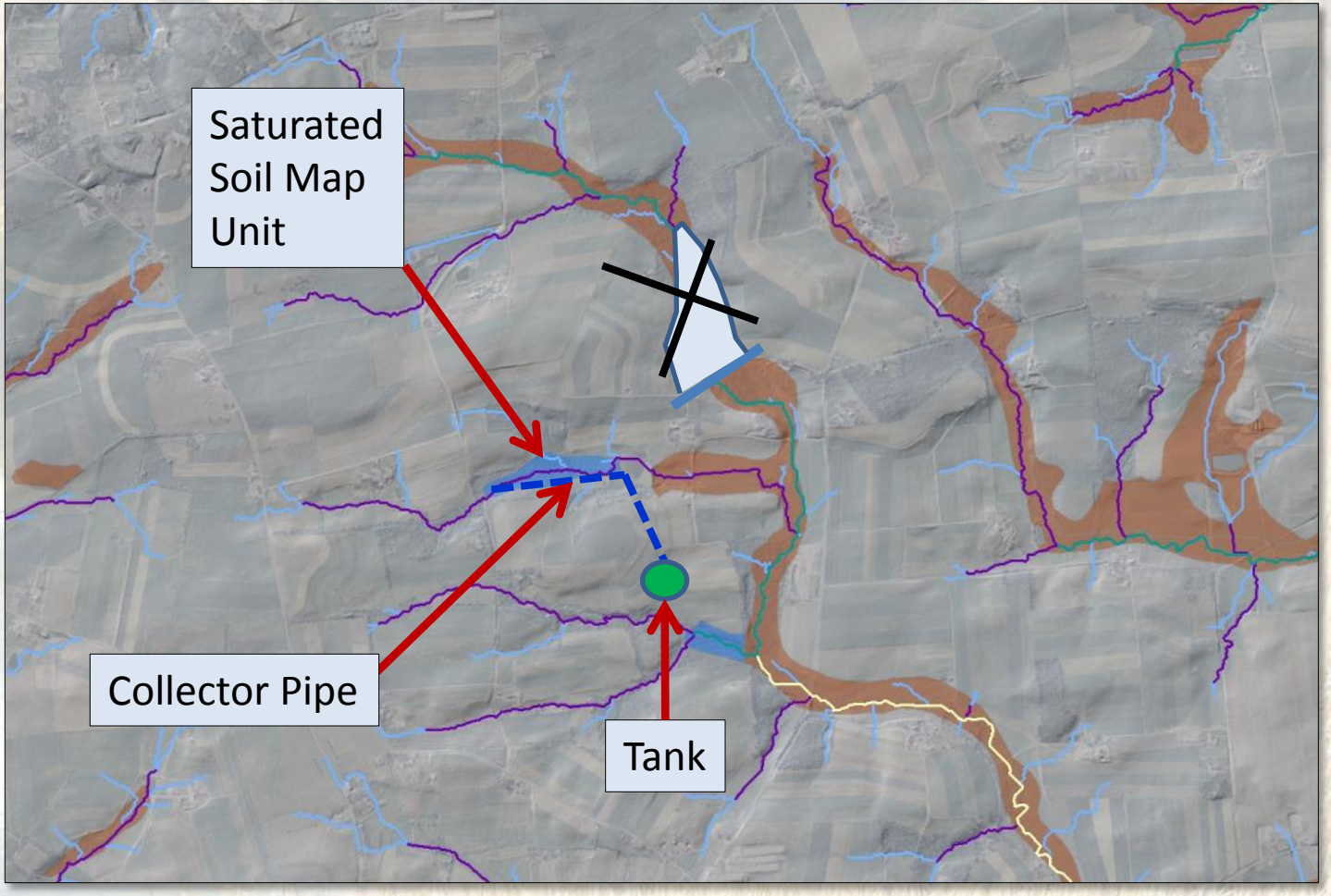
Impacts

- Break in Longitudinal Connectivity
- Loss of Wildlife Habitat due to Change in Hydrologic Regime
- Interruption in Sediment Transport/Cycling
- Decrease in Flooding/Ponding/Groundwater Downstream

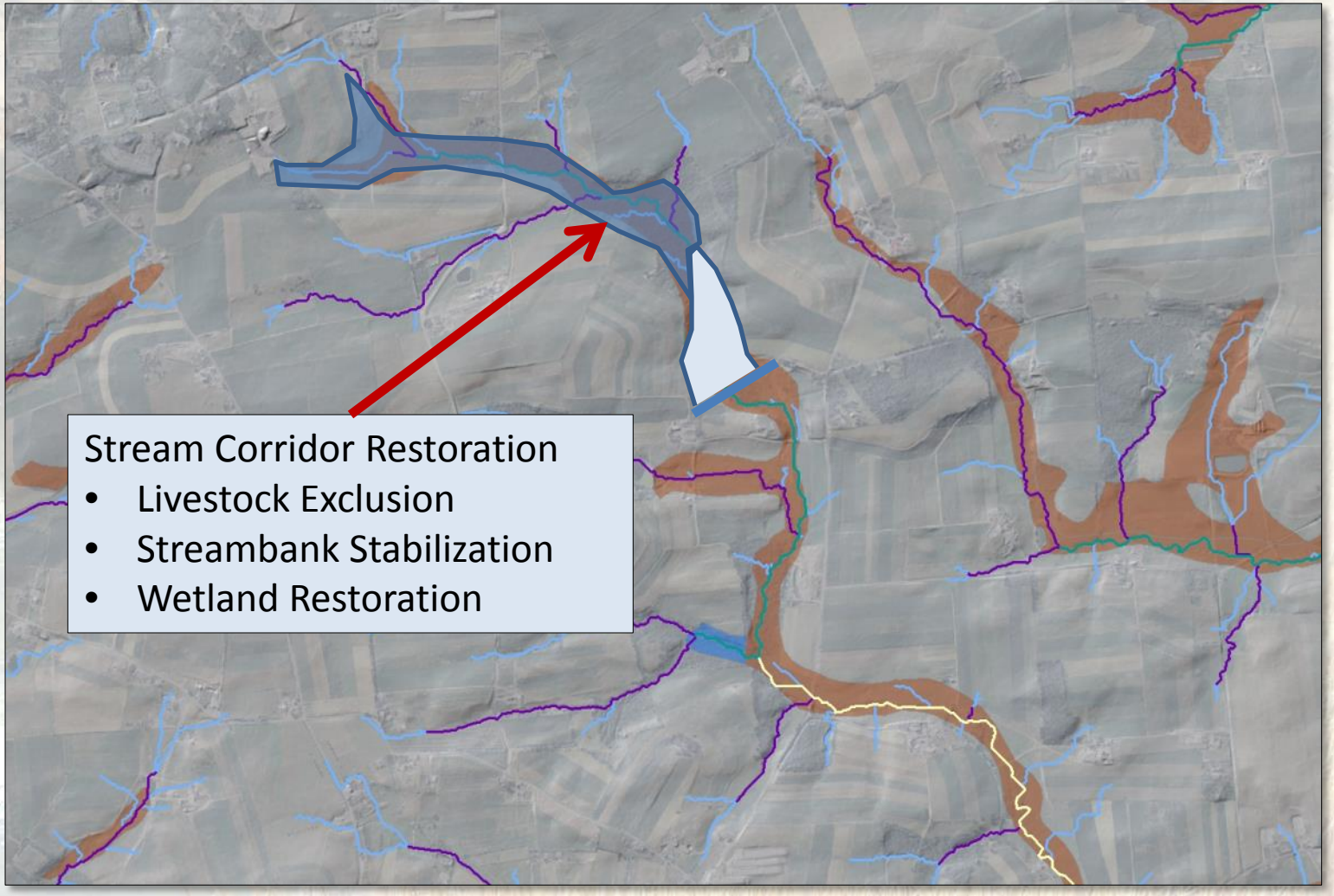
Stockwater Pond Example: Avoid Impacts



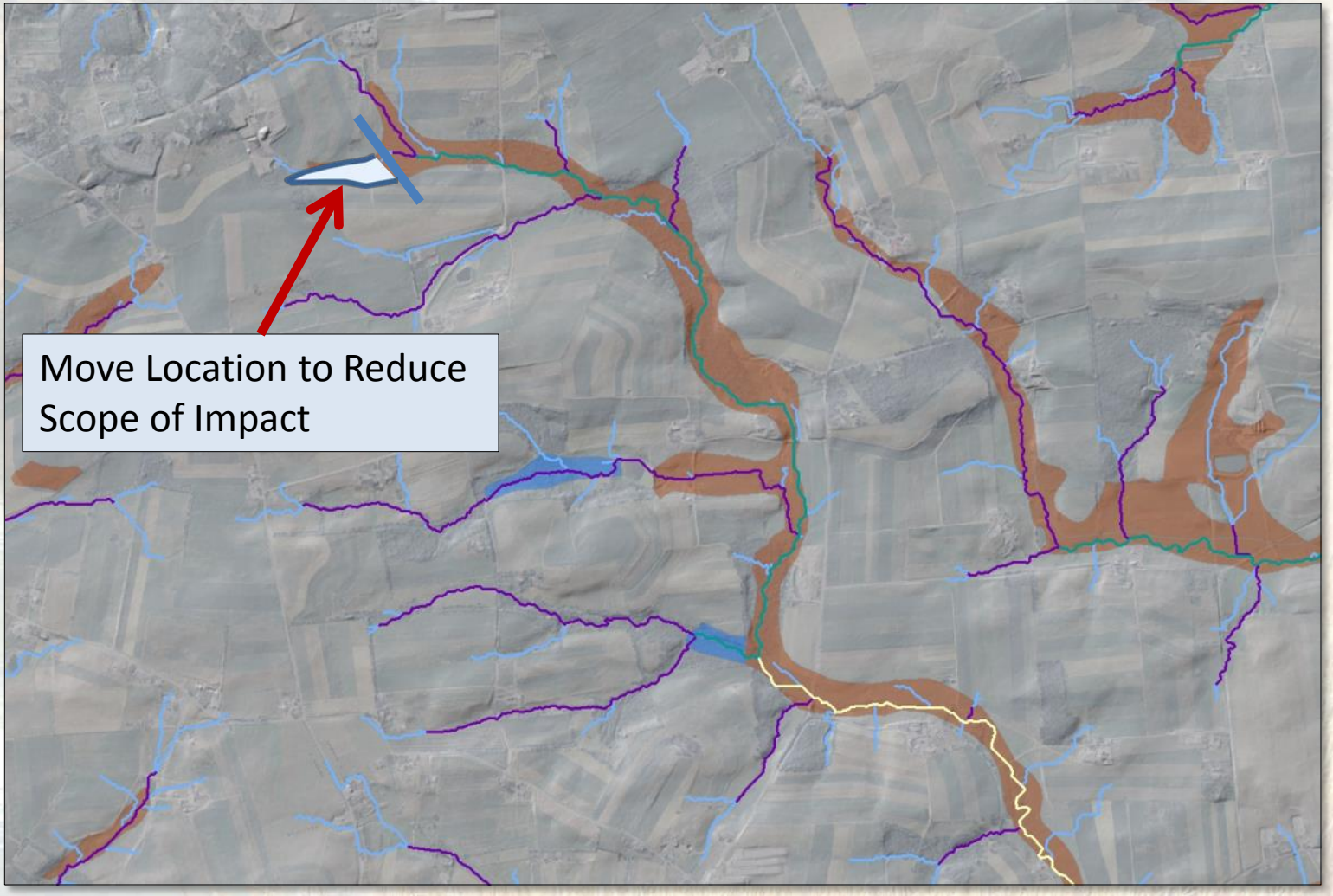
Stockwater Pond Example: Avoid Impacts - Spring Development (Be careful!)



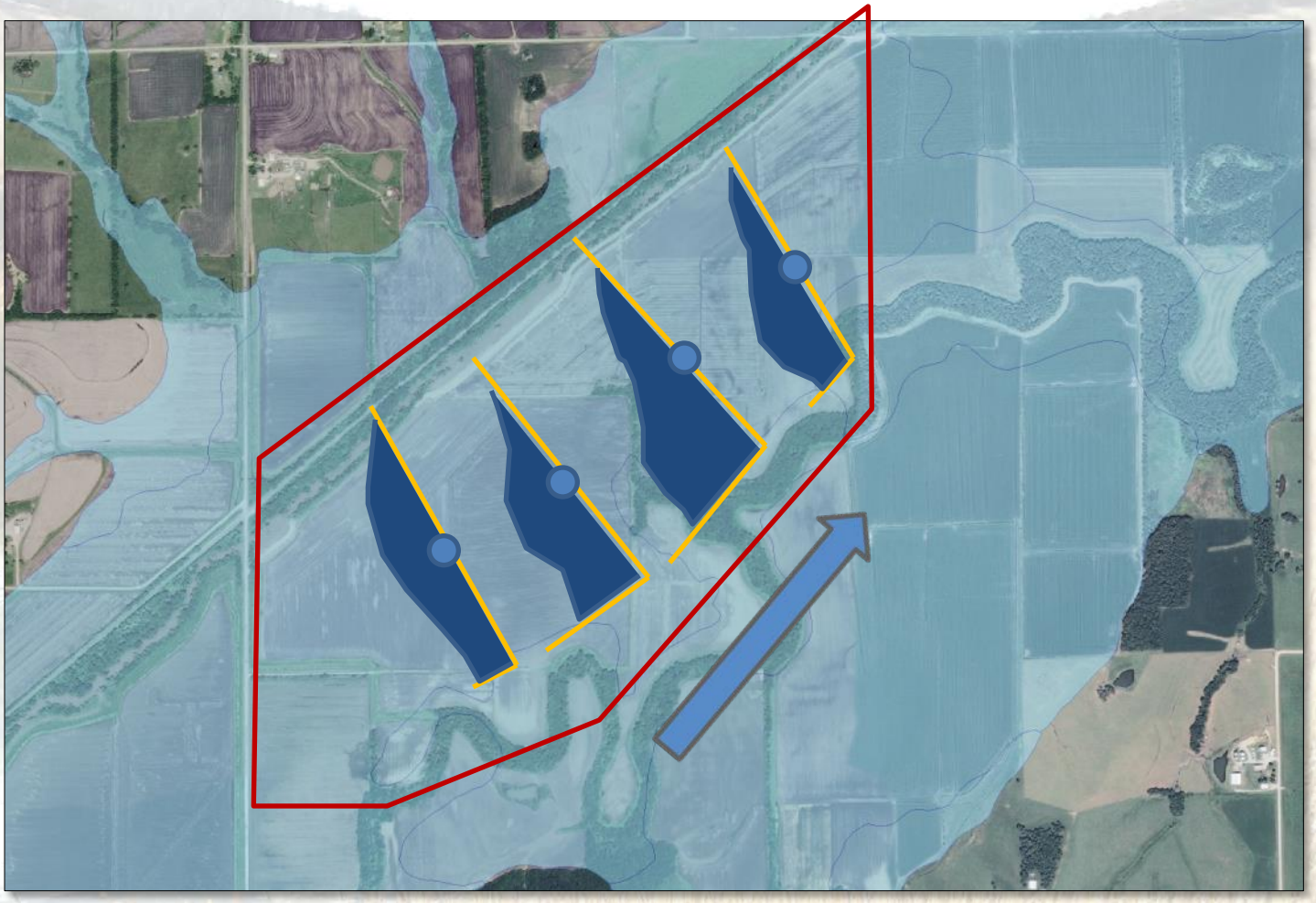
Stockwater Pond Example: Compensate Impacts



Stockwater Pond Example: Avoid or Minimize Impacts



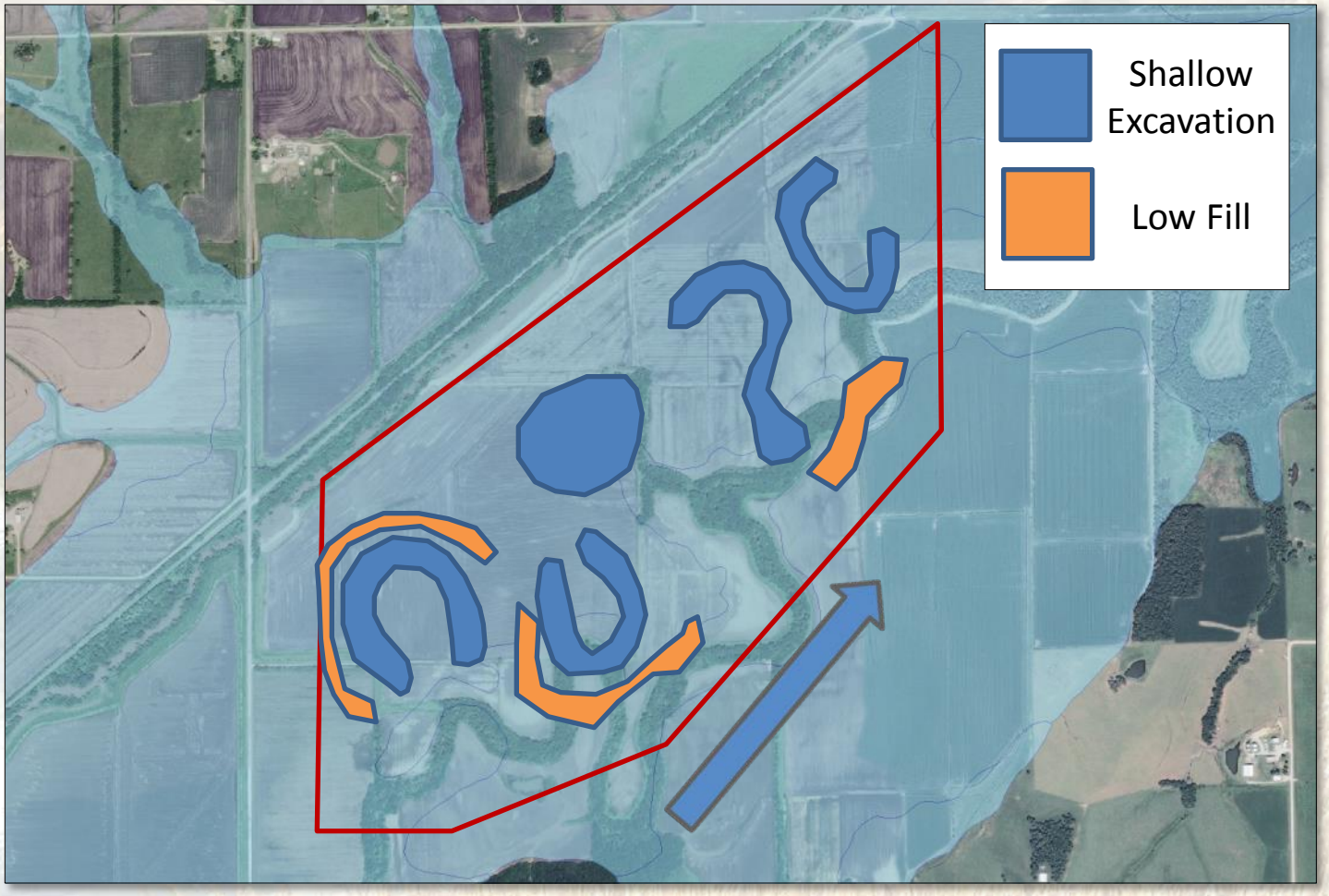
Wetland Enhancement Example



Impacts

- Loss of Dynamic Floodwater Storage
  - Increase in 100-yr Floodplain Water Surface
- Conversion of Inundation to Ponding
- Loss of Sediment Cycling (Sink)
- Conversion of Habitat Types

Wetland Enhancement Example: Avoid / Minimize / Compensate



Summary/Questions?

For Additional information…

- On Floodplains and Riparian Areas, contact:
  - Richard Weber, richard.weber@ftw.usda.gov 817/509-3576
  - Craig Goodwin, craig.goodwin@wdc.usda.gov 202/205-7711
- On NRCS Environmental Evaluations contact:
  - Andree DuVarney, andree.duvarney@wdc.usda.gov 703/235-8091
  - Matthew judy, matthew.judy@ftw.usda.gov 817/509-3291