



Voluntary Stewardship Program Lincoln County Work Group



Presented by
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February 21, 2017

Presentation Overview

- Work Plan Structure
- Focus on Key Work Plan Elements
 - Protection and Enhancement Strategies (trends and areas of emphasis)
 - Goals and Benchmarks Methods
- Layout Discussion
- Next Steps

Work Plan Structure

Work Plan - Two volume approach

Volume 1: Work Plan (for producers/general public)

- User-friendly layout with summary level information
 - VSP Introduction and FAQs
 - Regional setting
 - Introduction to critical areas and functions/
baseline conditions
 - Agricultural viability
 - Protection and enhancement strategies
 - Goals and benchmarks
 - Implementation
- VSP Self-Assessment Checklist

Work Plan - Two volume approach

Volume 2: Technical Appendices

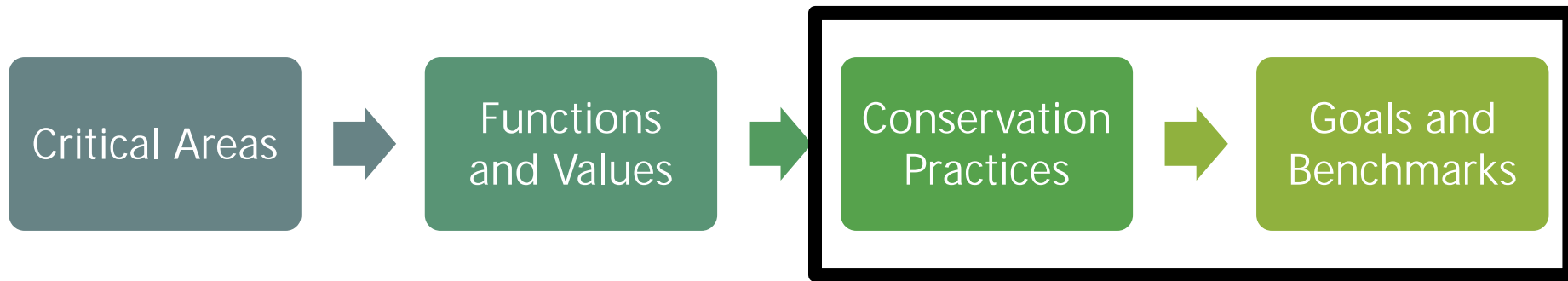
- For implementers
 - Implementation strategy
 - Participation benchmarks tracking
 - Indicators and adaptive management
- For Technical Panel and government agencies
 - More detailed baseline (2011) conditions summary
 - Protection and enhancement strategies
 - Conservation practice benefits

Volume 2: Technical Appendices

- Appendix A - 2011 Existing Conditions Summary
- Appendix B – Goals, Benchmarks, and Measurements
- Appendix C – Analysis Unit Profiles
- Appendix D – Outreach and Implementation Plan
- Appendix E – Existing Plans and Regulations

Goals and Measurable Benchmarks

VSP Crosswalk



Goals: Protect – Voluntary Enhancement

Ag.
Viability



Water
Quality



Hydrology



Soil
Health



Habitat



Goals are Based on Critical Area Functions

Protect ecosystem functions that provide..

- ... water quality
- ... hydrologic storage
- ... groundwater recharge
- ... soil moisture
- ... soil quality
- ... terrestrial habitat
- ... aquatic habitat



- And voluntary enhancement

Goals: Protect – Voluntary Enhancement

Ag.
Viability



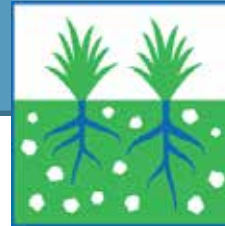
Water
Quality



Hydrology



Soil
Health



Habitat



Objectives: Protect Through Conservation Practices



Direct Seed, Mulch Till/ Range Watering/Nutrient Management/ Pest Management/ Prescribed
Grazing/ Fencing/ Range Planting...

Habitat Goal and Objectives Example

Goal: Protect and enhance terrestrial habitat areas

Objectives:

- Protection and/or Enhancement through:
 - Limiting soil compaction or trampling of habitat
 - Promoting grazing management to protect shrub steppe habitat

- Enhancement through:
 - Restoring or creating new habitat or habitat structures

Goals: Protect – Voluntary Enhancement

Ag.
Viability



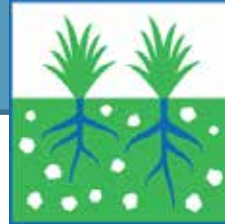
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Objectives: Protect Through Conservation Practices

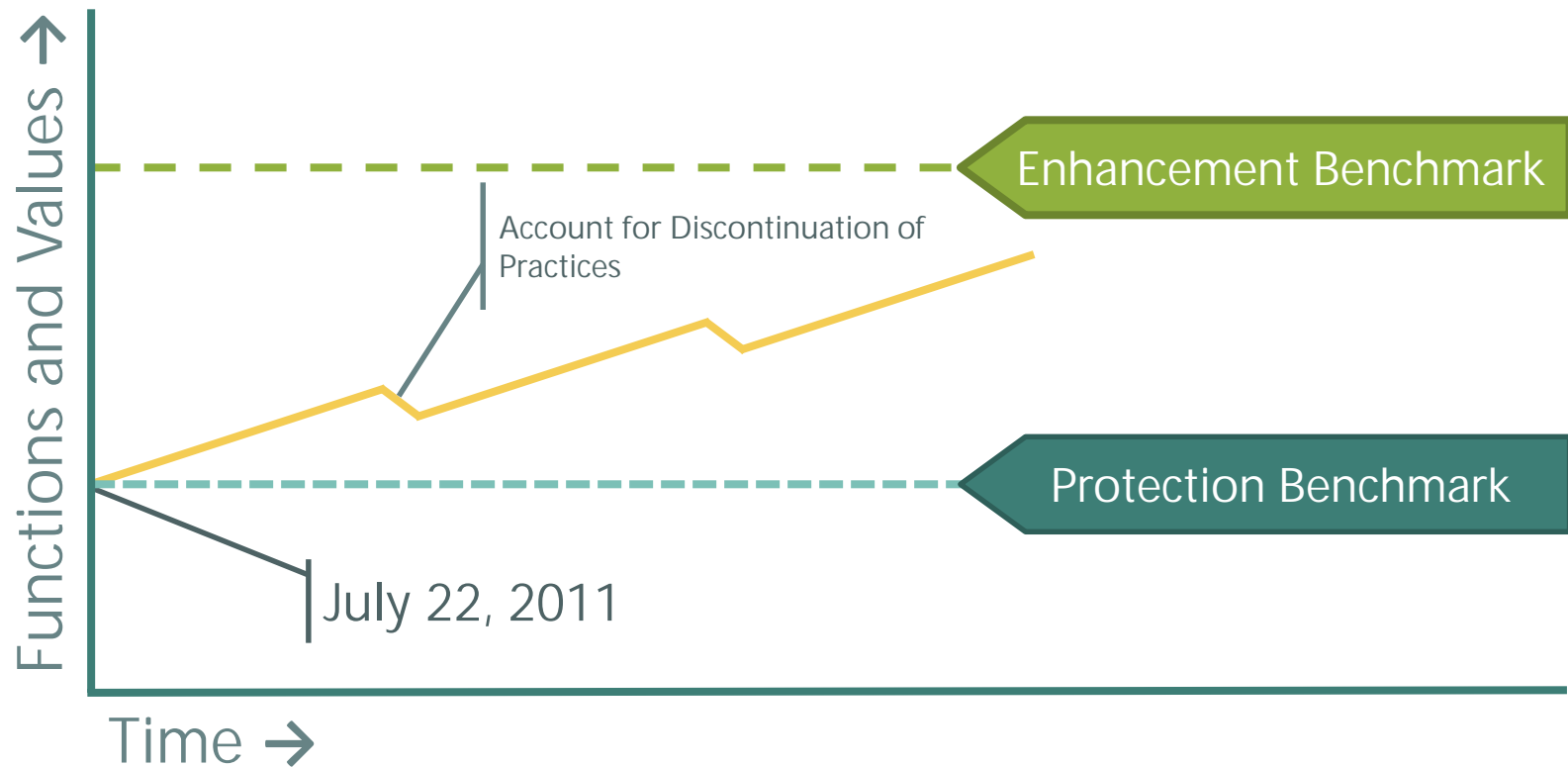


Direct Seed, Mulch Till/ Range Watering/Nutrient Management/ Pest Management/ Prescribed Grazing/ Fencing/ Range Planting...

Measurable Benchmark: Protect/ Enhance Critical Areas functions and values



Measuring Goal Performance using Benchmarks



Tracking Approach

Quantifying Measurable Benchmarks (Steps)

1. Apply methods to relate conservation practices benefits to critical areas functions and values
2. Account for practices implemented, continuing practices, and practices discontinued
3. Tracking implementation and maintenance of Conservation Practices

Relate Practices to Functions and Values

(Step 1 in Quantifying Measurable Benchmarks)

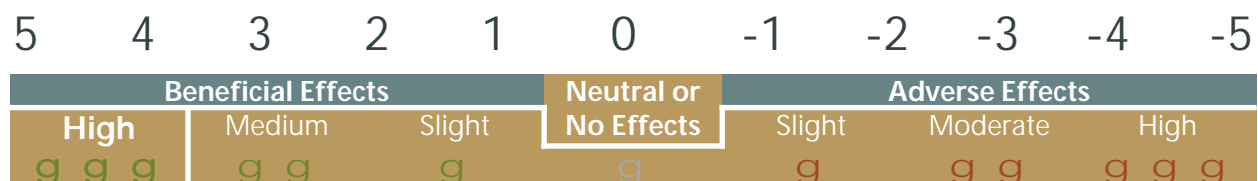
Conservation Practice Physical Effect (CPPE):

- Describes (in great detail) how each practice affects agricultural viability, and natural resource critical functions
- Positive scores have beneficial effect, negative scores have adverse effect

5	4	3	2	1	0	-1	-2	-3	-4	-5
Beneficial Effects					Neutral or No Effects	Adverse Effects				
High		Medium	Slight			Slight	Moderate	High		
g g g		g g	g		g	g	g g	g g g		

CPPE Habitat Example

Fish & Wildlife Problem	Inadequate Food	Inadequate Cover/Shelter	Inadequate Water	Inadequate Space	Habitat Fragmentation	Population Imbalance
Conservation Cover	5	5	0	3	5	1



Using CPPE to relate conservation practices benefits to critical areas functions and values

(Step 1 in Quantifying Measurable Benchmarks)

Conservation Practice	Habitat Effect	Hydrology Effect	Water Quality Effect	Soil Health Effect
Residue and Tillage Management (reduced- and no-till)	g	g	g	g
Pest Management	g	g	g g g	g
Nutrient Management	g	g	g g	g
Irrigation Management	g g g	g g	g g g	g
Prescribed Grazing	g g	g g	g g	g g
Cover Crop	g	g	g	g
Access Control	g	g	g	g
Habitat Management	g g g	g	g	g

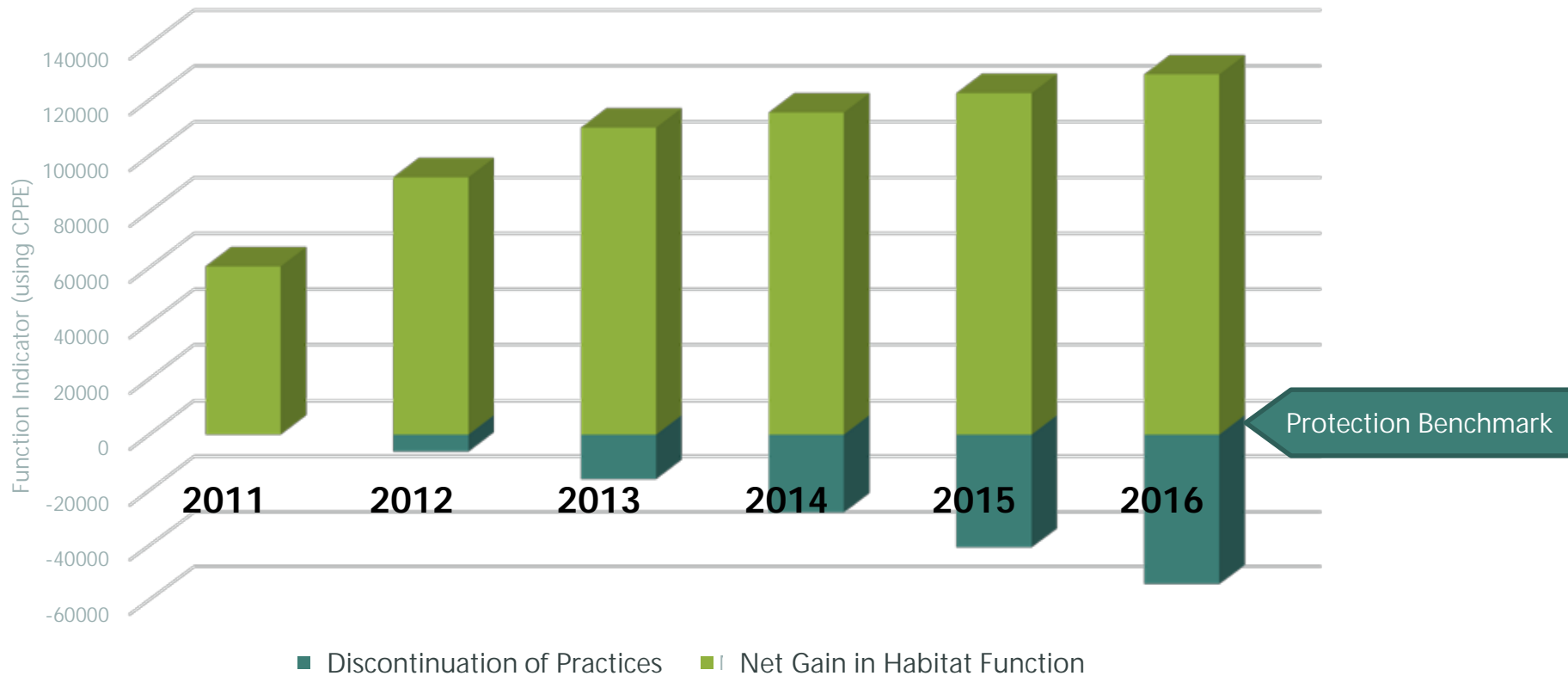
Beneficial Effects			Neutral or No Effects	Adverse Effects		
High	Medium	Slight		Slight	Moderate	High
g g g	g g	g	g	g	g g	g g g



Relate Conservation Practices Benefits to Critical Areas Functions and Values

2011-2016

Habitat Function Protection/Enhancement Enrollment Acreages x CPPE Scores



Account for practices implemented, continuing practices, and practices discontinued

(Step 2)

- Quantify the benefit of stewardship we know has been implemented
 - conservation practices under contract to NRCS
- Estimate future practices for the first 10 years of VSP implementation
- Evaluate if critical area functions and values will be protected through expected net changes in agricultural land stewardship

Track Implementation and Maintenance of CPs

(Step 3)

- Rely on Conservation District to track implementation and continuation of conservation practices
- Use Farm Stewardship Plans or other tools for individual agricultural producers
- Other tracking options – website, checklist, etc.

Residue and Tillage Management



Chemical or Nutrient Management



Soil Management



Water Management and Filtration



Livestock Management



Habitat Creation or Management

Residue and Tillage Management

Chemical or Nutrient Management

- Pest Management
- Nutrient Management
- Agrichemical Handling Facility

Soil Management

Water Management and Filtration

- Irrigation Water Management
- Irrigation Systems

Livestock Management

Habitat Creation or Management



Residue and Tillage Management

- No-till/Strip Till/Direct Seed
- Mulch Till



Chemical or Nutrient Management



Soil Management

- Mulching
- Tree/Shrub Planting



Water Management and Filtration

- Channel Stabilization/Grassed Waterway
- Irrigation Water Management
- Cover Crop



Livestock Management

- Use Exclusion
- Prescribed Grazing

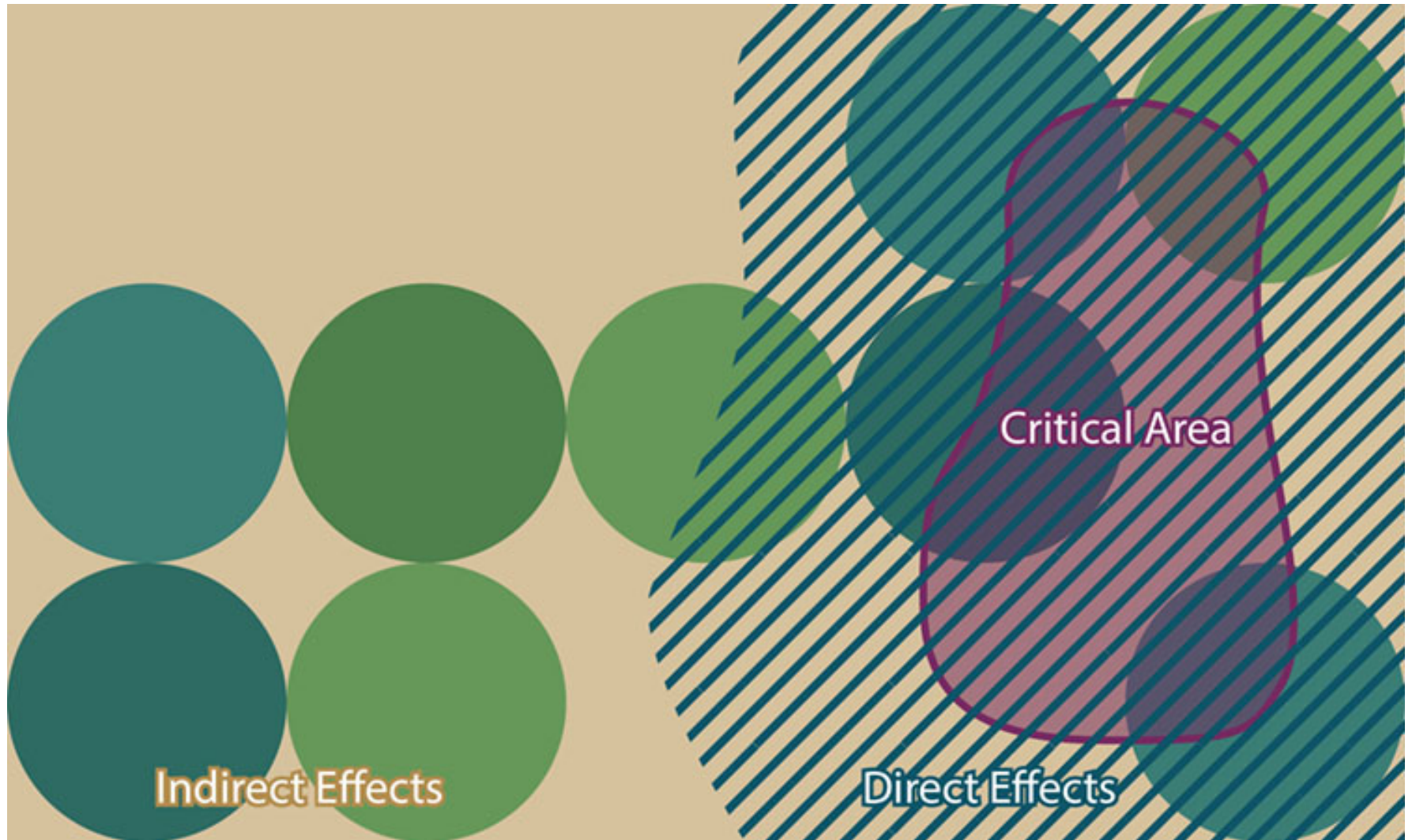


Habitat Creation or Management

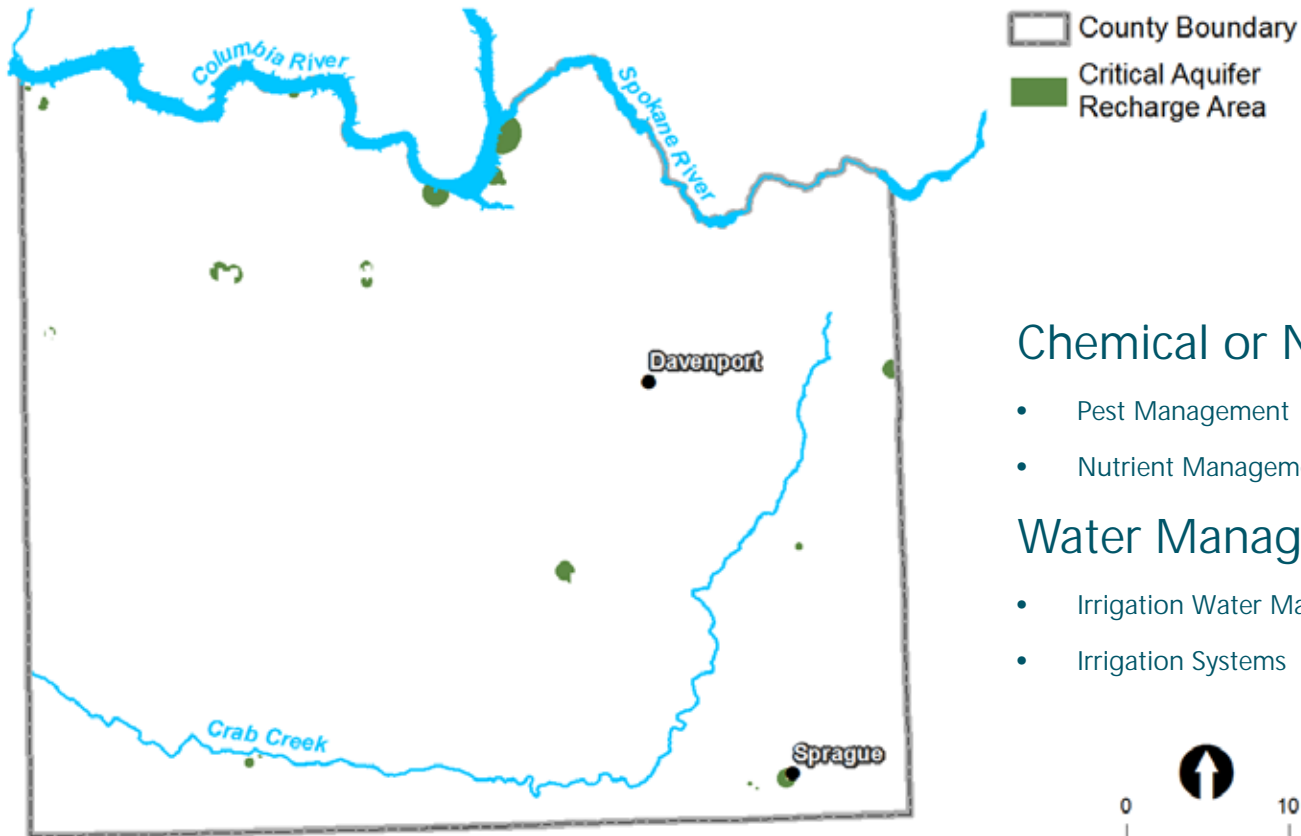
Conservation Practice Benefits – “where” matters

- Conservation practices with **direct** effects on critical areas
 - Use the conservation practices that are geographically related to critical areas
 - Riparian planting
 - Wetland restoration
- Conservation practices with **indirect** effects on critical areas
 - Reduced tillage
 - Irrigation water management

Direct and Indirect Effects



Critical Aquifer Recharge Areas (CARA)



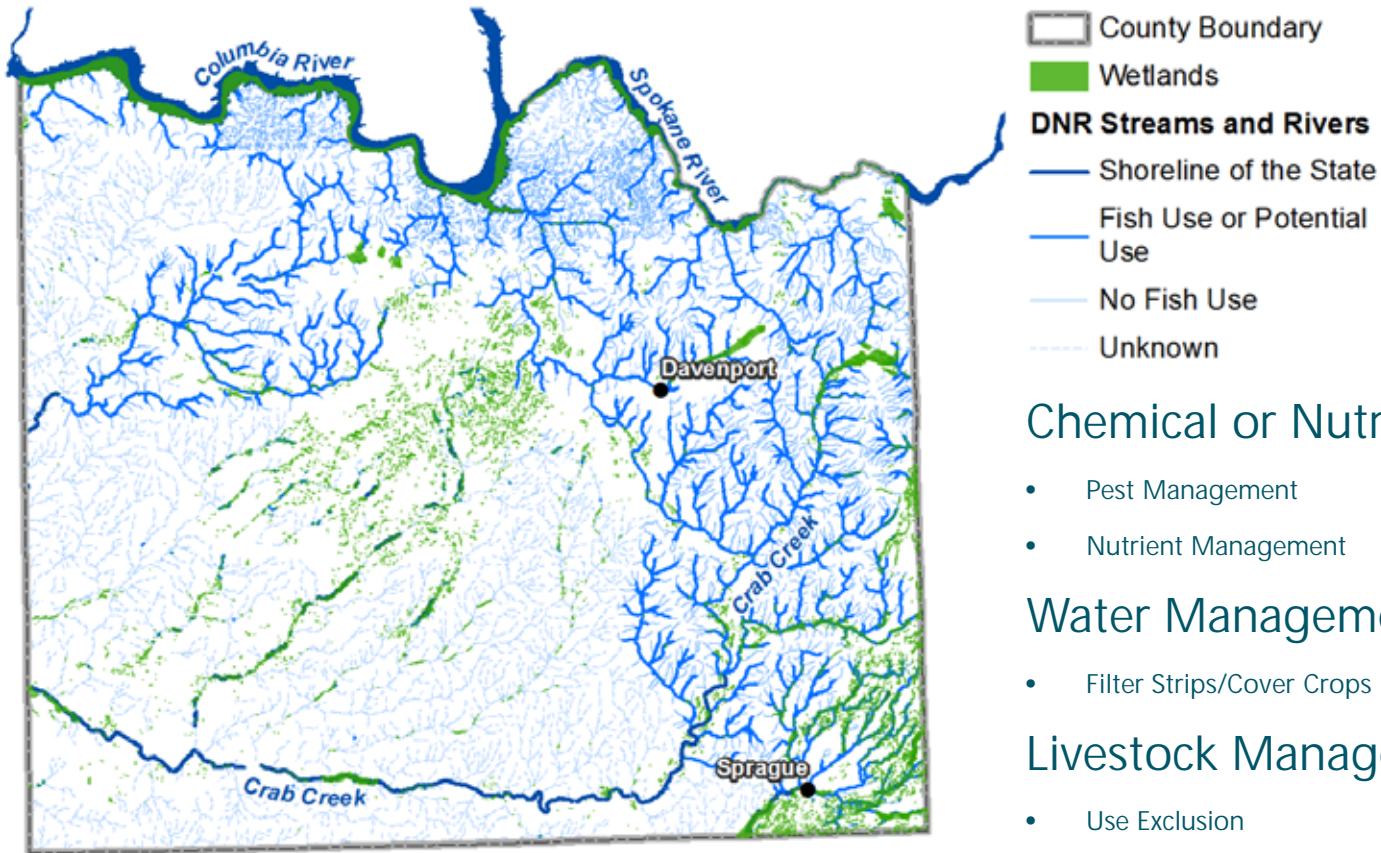
Chemical or Nutrient Management

- Pest Management
- Nutrient Management

Water Management and Filtration

- Irrigation Water Management
- Irrigation Systems

Wetlands



Chemical or Nutrient Management

- Pest Management
- Nutrient Management

Water Management and Filtration

- Filter Strips/Cover Crops

Livestock Management

- Use Exclusion
- Fencing

Habitat Management

- Wetland Enhancement
- Riparian Restoration

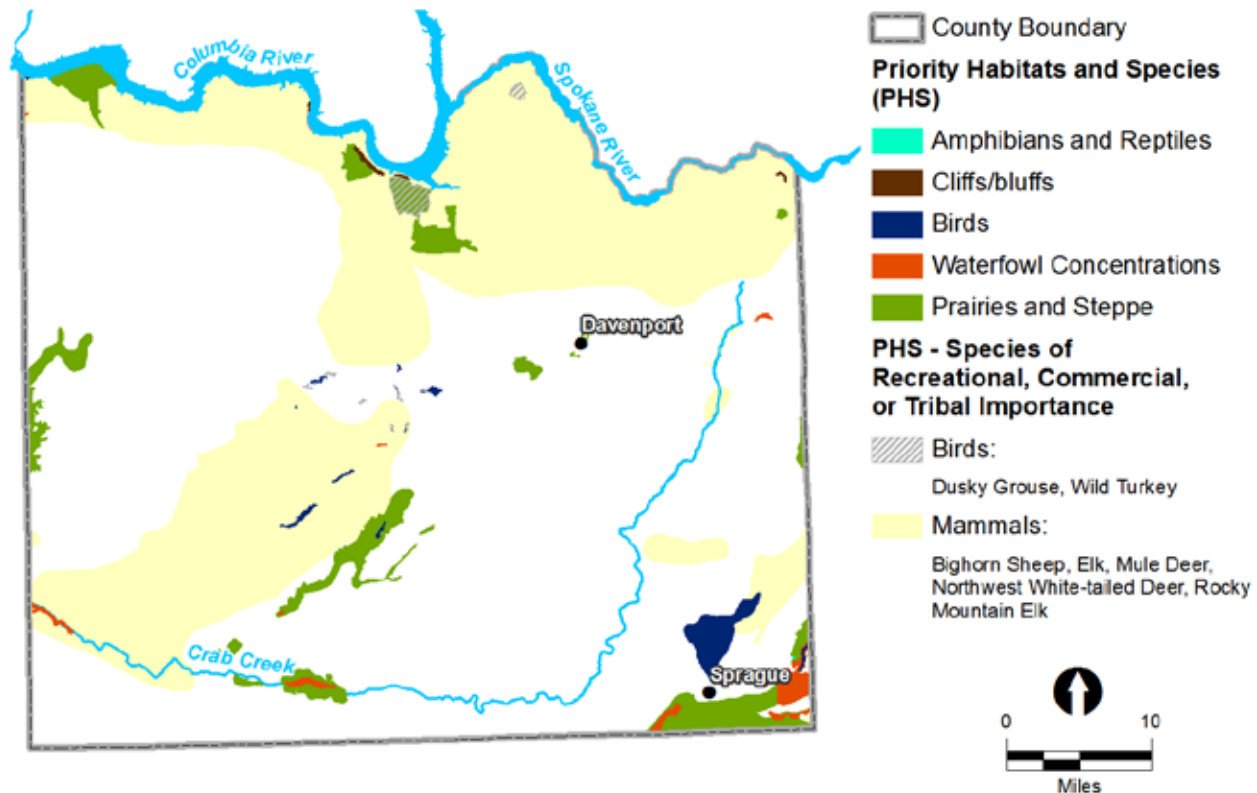
Fish and Wildlife Habitat Conservation Areas

Livestock Management

- Use Exclusion
- Fencing

Habitat Management

- Range Planting
- Wildlife Management
- Conservation Cover
- Hedgerow, Windbreak/Shelter break Creation



Account for Discontinuation of Practices

Understanding Voluntary Stewardship from the Producer Perspective to Account for Recidivism

Stewardship Investments

Versus

Stewardship Actions

Understanding how Different Business Models Affect Discontinuation of Practices

- Operators on their own land
- Operators who typically lease land annually
- Operators who typically lease land for several years
- Landowners who typically lease their land to operators



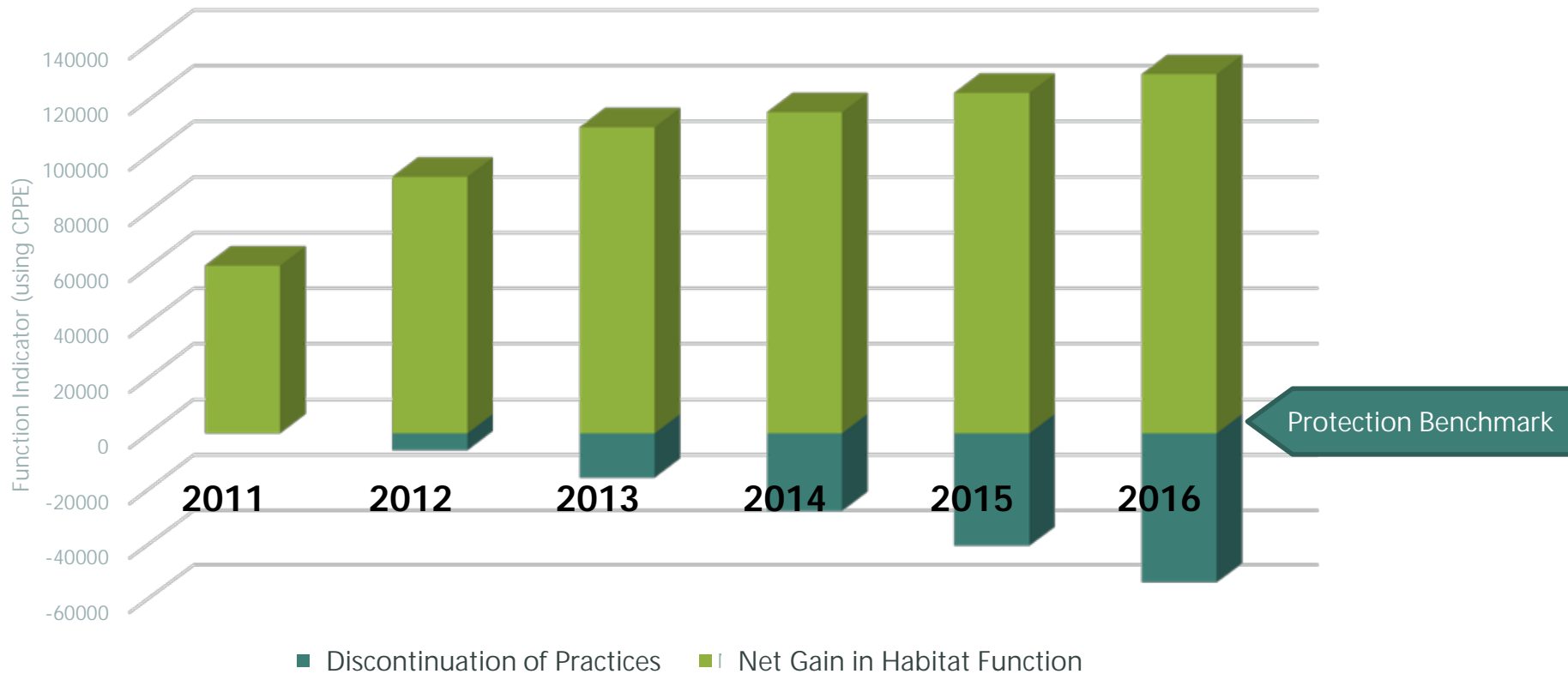
Calculating Discontinuation of Practices

Discontinuation Rate	Discontinuation Category	Example Practices
None (0%)	<ul style="list-style-type: none"> • Permanent Conservation Practices 	<ul style="list-style-type: none"> • Permanent Easements • Major Infrastructure
Lower (1-5%)	<ul style="list-style-type: none"> • High Barriers to Entry/Exit <ul style="list-style-type: none"> ○ Conservation investments ○ Maintenance cost ○ Effectiveness • Increases Land Productivity • Lowers Cost 	<ul style="list-style-type: none"> • Tillage Management • Pest Management • Nutrient Management • Irrigation Management • Fencing
Higher (6-10%)	<ul style="list-style-type: none"> • Low Barriers to Entry/Exit <ul style="list-style-type: none"> ○ Easily removed • Reduced land in production • Rotational use <ul style="list-style-type: none"> ○ Market driven rotation • Reliance on unstable conservation funding or incentives (e.g., CRP) 	<ul style="list-style-type: none"> • Habitat Restoration • Prescribed Grazing • Cover Crop • Range Planting

Relate Conservation Practices Benefits to Critical Areas Functions and Values

2011-2016

Habitat Function Protection/Enhancement Enrollment Acreages x CPPE Scores

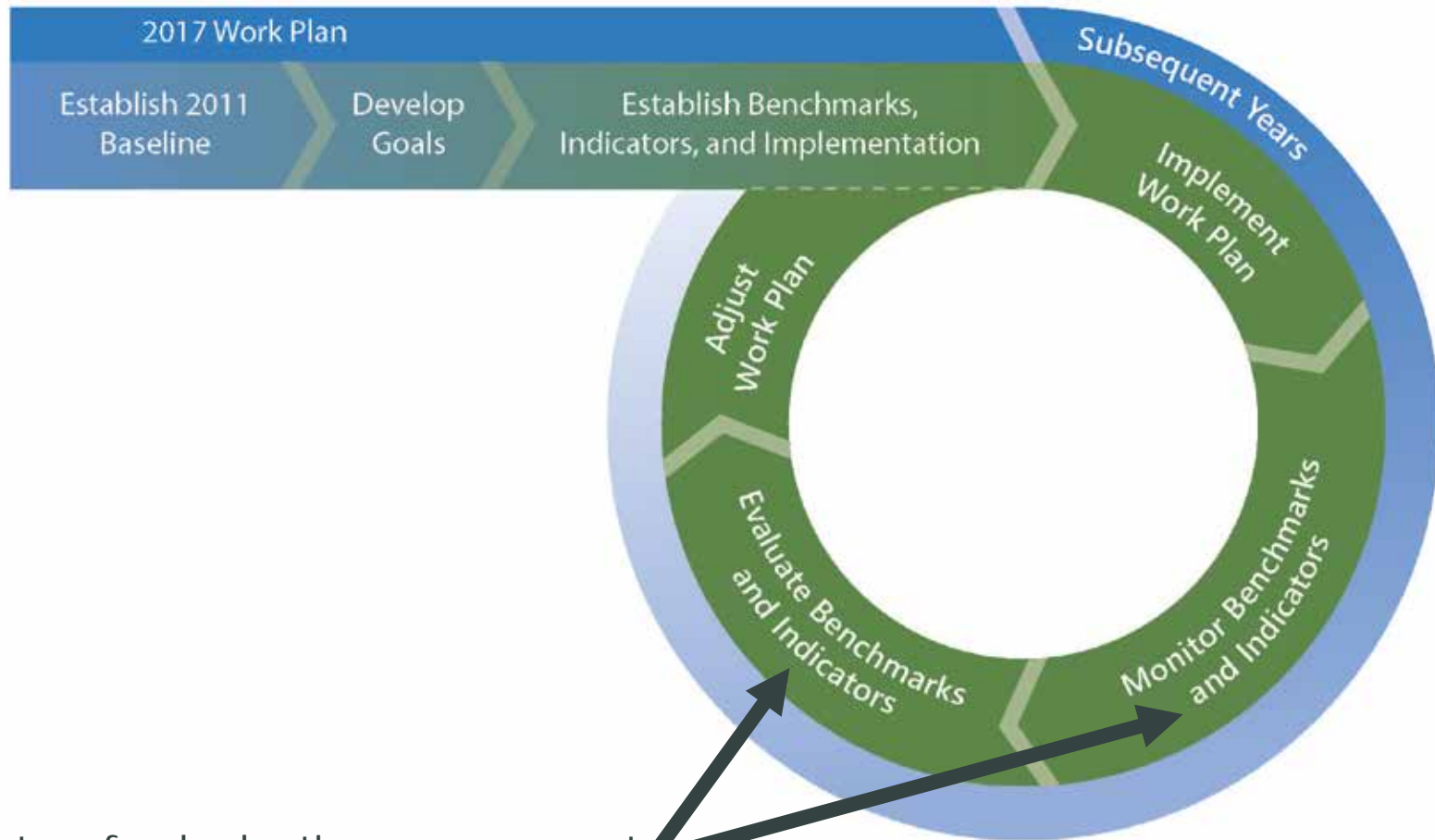


Indicators – Existing Data Collection Programs

- Indicators include info expected to be collected during implementation
 - Water quality monitoring
 - Flow data
 - Priority Habitat and Species data, etc.
- Help to understand if conservation practices are effecting physical indicators of functions and values
- Affect of agriculture on indicators is not easily distinguished
- Indicators may not reflect benefits from stewardship actions for many years or even decades

Adaptive Management

Adaptive Management



Indicators feed adaptive management

Next Steps

Next Steps

- Review Work Plan
 - Initial comments by Friday, March 3, 2017
 - Email comments to: lincolnvsp@conserveva.net
- Upcoming Work Group Meetings
 - March 7, 2:00 to 4:00 - Discuss/refine draft plan