



Voluntary Stewardship Program Whitman County Work Group Meeting



Presented by

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February 2, 2017

Presentation Overview

- Review Work Plan Comments
 - What we heard
 - Comments for additional WG discussion
- Goals and Benchmarks
 - Key practices
 - Calculating recidivism
- Round Table Discussions
 - Implementation Lead
 - Work Plan Framework
- Next Steps

Work Plan Comments

What we heard (this is not a complete list):

- Editorial comments (thank you!)
- Add FAQ that will encourage participation
- Expand characterization of riparian areas of channeled scablands within County
- Revise characterization of soil erosion potential to identify the cropped hill slope areas where much of the risk exists
- Improve presentation of crosswalk from:
Critical Areas à Functions à Conservation Practices
- Broaden discussion of fecal coliform to include inputs from non-ag related activities
- Add discussion of warm water fish, introduced fish species, and natural warm water temperature conditions in County streams
- De-emphasize “Fencing” in the Work Plan and focus on practices more likely to be voluntarily implemented by producers

Comments for additional discussion:

- Expand list of programs described in the Work Plan
 - Include programs available through other agencies outside of CDs, NRCS, or FSA
 - WCCA, WCFB, WCWGA
 - Others?
- Further WG discussion needed on Soil Health function – what should the Work Plan address?
 - Soil movement/processes/attributes?
 - Soil Loss vs. Soil Health
- Discuss implementation lead (on the agenda for today)
- Describe basis of 2021 and 2026 benchmarks (up next!)

Goals and Measurable Benchmarks





- Benchmarks
 - Countywide
 - Critical Area
 - Protection
 - Enhancement
- Goals
 - Based on our 4 Ecosystem Functions
 - Define our enhancement trajectory
- Objectives
 - Based on conservation practices
 - Define the focus of implementation

Benchmark: Protect/ Enhance Critical Areas functions and values



Goals: Protect and Improve – Enhance – Increase

Ag.
Viability



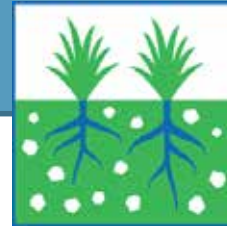
Water
Quality



Hydrology



Soil
Health



Habitat

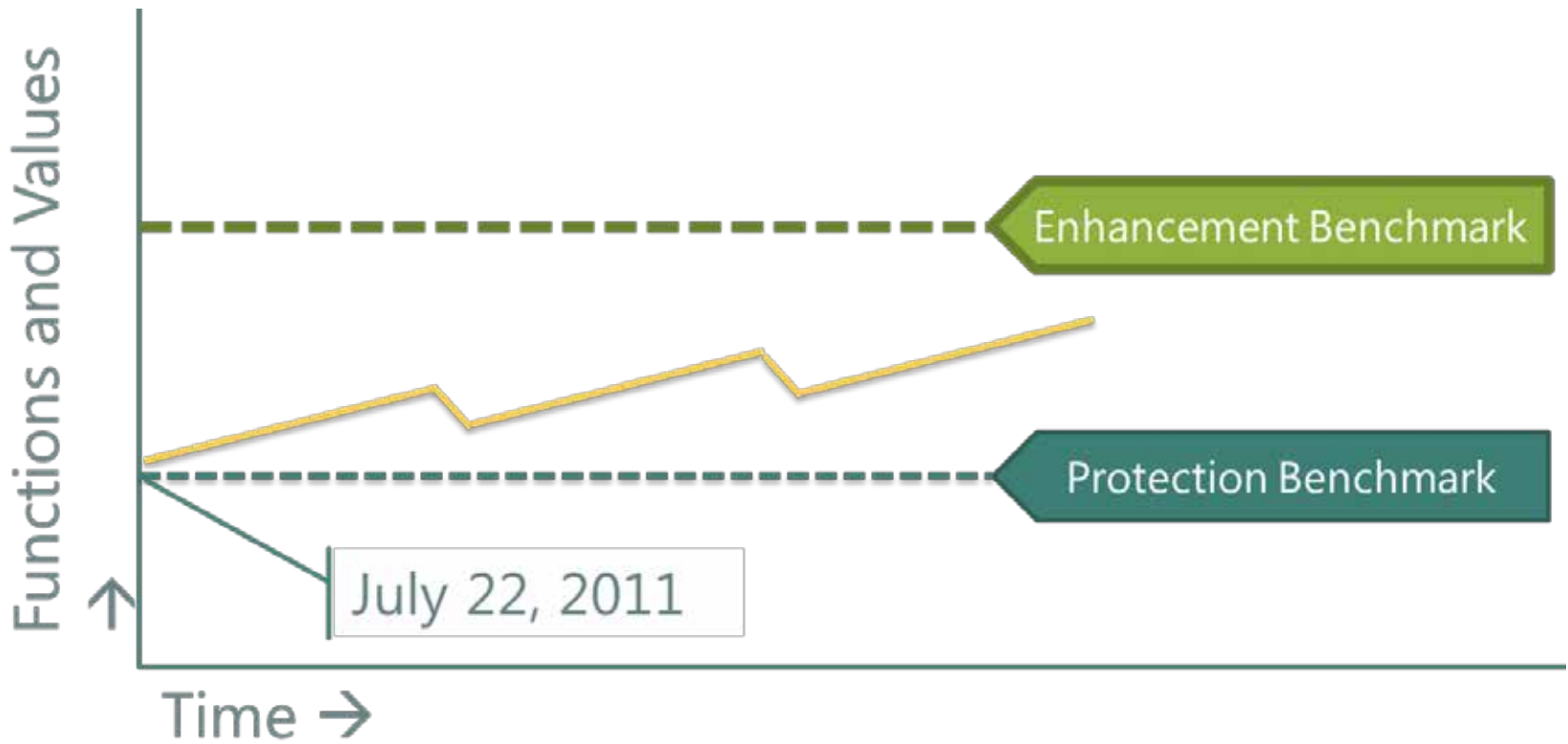


Objectives:

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



Recidivism



Understanding Voluntary Stewardship from the Producer Perspective to Account for Recidivism

Stewardship Investments

Versus

Stewardship Actions

Understanding how Different Agricultural Business Models Affect Recidivism

- 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 Recidivism for Conservation Practices

Recidivism Rate	Recidivism Category	Example Practices
No Recidivism	<ul style="list-style-type: none"> • Permanent Conservation Practices 	<ul style="list-style-type: none"> • Permanent Easements • Major Infrastructure
Lower Recidivism	<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 Recidivism	<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









Goals are based on our four Critical Area Functions and specify an enhancement trajectory

- Protect and...
 - ... Improve surface water quality
 - ... Improve groundwater quality
 - ... Increase hydrologic storage
 - ... Increase groundwater recharge
 - ... Increase soil moisture
 - ... Enhance soil quality
 - ... Enhance terrestrial habitat
 - ... Enhance aquatic habitat



Objectives: What are we doing/going to do?

Top NRCS Conservation Practices Implemented from 2011 to 2016

Conservation Practice ¹	Acres Affected	Projects Implemented
Nutrient Management	 37,326 acres	94
Pest Management	 34,921 acres	91
Direct Seed	 20,251 acres	49
Mulch Till	 14,069 acres	41
Range Watering ²	Not applicable	9
Prescribed Grazing	 9,033 acres	7
Fence	 6,011 acres	2
Cover Crop	 1,972 acres	2
Range Planting	 755 acres	2

1,000 Acres
 100 Acres

Notes:

1. Includes projects implemented under Environmental Quality Improvement Program, Wildlife Habitat Improvement Program, and Agricultural Water Enhancement Program.
2. Includes practices associated with providing an off-site water source to livestock, such as livestock pipelines, pumping plants, watering facilities, and water wells.

Source: NRCS data provided by Harold Crose with the Grant County Conservation District
 NRCS: Natural Resources Conservation Service

Critical Area Functions and Values

Ecosystem Functions

Critical Areas

	Water Quality 	Hydrology 	Soil Health 	Habitat 
Wetlands	Blue	Tan	White	Green
Fish and Wildlife Habitat Conservation Areas	Blue	Tan	Orange	Green
Critical Aquifer Recharge Areas	Blue	Tan	White	White
Geologically Hazardous Areas	Blue	White	Orange	Green
Frequently Flooded Areas	Blue	Tan	Orange	Green



Water Quality Function Goals

Water Quality Goal #1 – Surface Water Quality

Maintain or improve surface water quality through implementation of key conservation practices that reduce inputs to waterbodies including sediment, nutrients, heat, and other parameters.

- Protection and enhancement: Special emphasis on water courses that do not currently meet the State’s water quality standards (e.g., Cow and Rock creeks, Palouse River, and South and North Fork Palouse River).
- Agricultural viability: The surface water quality goal will be achieved while sustaining agriculture viability through:
 - Ancillary agriculture benefits from implemented practices (increased soil health/soil preservation, increased soil moisture, weed management, pollinator/beneficial organism, and increased fertility)
 - Reducing input costs associated with chemicals, irrigation
 - Financial incentives to offset start-up costs for new practices and associated equipment or other needs

Objectives	Key Conservation Practices Examples
Protect and enhance acres managed using techniques that limit water erosion of soil, or erosion due to unrestricted access of livestock	<ul style="list-style-type: none">• No Till/Direct Seed• Mulch Till/Reduced Till• Prescribed Grazing
Protect and enhance acres managed under chemical and nutrient input controls	<ul style="list-style-type: none">• Pest Management• Nutrient Management• Conservation Crop Rotation
Protect and enhance streams protected by riparian management and/ or filter strips	<ul style="list-style-type: none">• Fencing• Filter Strips• Prescribed Grazing



Water Quality Function Goals

Water Quality Goal #2 – Groundwater Quality

Maintain or improve groundwater quality through implementation of key conservation practices that reduce inputs to waterbodies including nutrients, and other contaminants.

- Protection and enhancement: Special emphasis on critical aquifer recharge areas.
- Agricultural viability: Groundwater quality goal will be achieved while sustaining agriculture viability through:
 - Ancillary agriculture benefits from implemented practices (increased soil health, increased soil moisture, weed management, pollinator/beneficial organism, increased fertility)
 - Reducing input costs associated with chemicals
 - Financial incentives to offset start-up costs for new practices and associated equipment or other needs.
 - Hazardous materials spill containment and clean up

Objectives

Key Conservation Practices Examples

Protect and enhance acres managed under chemical and nutrient input controls

- Pesticide Management
- Nutrient Management
- Conservation Crop Rotation

Protect and enhance acres managed under natural filtration practices

- Conservation Crop Rotation
- Filter Strip
- Range Planting

Water Quality



CPPE Scores for each Conservation Practice



Groundwater

- Harmful Levels of Pesticides in Groundwater
- Excessive Nutrients and Organics in Groundwater
- Excessive Salinity in Groundwater
- Harmful Levels of Heavy Metals in Groundwater
- Harmful Levels of Pathogens in Groundwater
- Harmful Levels of Petroleum in Groundwater

Surface Water

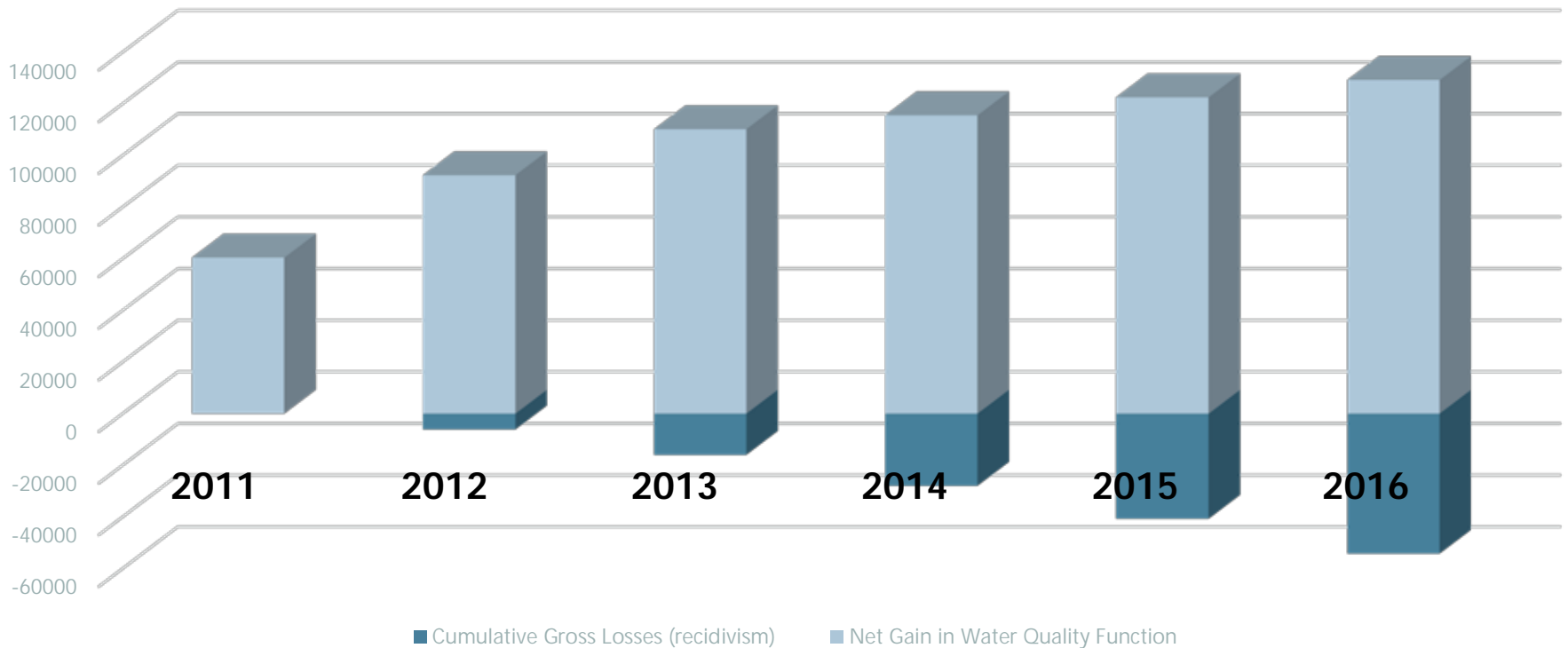
- Harmful Levels of Pesticides in Surface Water
- Excessive Nutrients and Organics in Surface Water
- Excessive Suspended Sediment and Turbidity in Surface Water
- Excessive Salinity in Surface Water
- Harmful Levels of Heavy Metals in Surface Water
- Harmful Temperatures of Surface Water
- Harmful Levels of Pathogens in Surface Water
- Harmful Levels of Petroleum in Surface Water
- Colorado River Excessive Salinity
- Harmful Levels of Heavy

Setting a Protection Benchmark

- Use CPPE functions that apply to the conditions and agriculture in the county
- Quantify the benefit of stewardship we know has been implemented (conservation practices under contract to NRDC)
- Evaluate if critical area functions are being protected by net changes in Agricultural land stewardship.

Surface Water Quality Function: Goal and Measurable Benchmarks 2011-2016

Water Quality Function Protection/Enhancement





Hydrology Function Goals

Hydrology Goal #1 – Storage Capacity

Protect or enhance natural hydrologic storage capacity.

- Protection and enhancement: Special emphasis on areas supporting wetlands or within frequently flooded areas.
- Agricultural viability: The hydrology goal will be achieved while sustaining agriculture viability through:
 - Ancillary agriculture benefits from implemented practices (maximize availability of surface withdrawals for irrigation, flood control benefits/soil preservation, increased soil moisture, weed management, pollinator/beneficial organism)
 - Reducing costs associated with flood management and flood cleanup
 - Financial incentives to offset start-up costs for new practices and associated equipment or other needs

Objectives	Key Conservation Practices Examples
Protect and enhance acres managed using techniques that limit soil compaction or trampling of habitat	<ul style="list-style-type: none"> • No Till/Direct Seed • Prescribed Grazing • Use Exclusion
Protect and enhance acres managed using techniques that promote soil water-holding capacity	<ul style="list-style-type: none"> • Residue and Tillage Management, No-till/Direct Seed • Mulch Till/Reduced Till
Protect and restore wetlands and floodplains	<ul style="list-style-type: none"> • Fencing (adjacent to wetland or floodplain) • Prescribed Grazing • Wetland Enhancement • Riparian Forest Buffer • Stream Habitat Improvement and Management



Hydrology Function Goals

Hydrology Goal #2 – Groundwater Recharge

Maintain or increase groundwater recharge levels and/or soil moisture available for agriculture.

- Protection and enhancement: Special emphasis on areas supporting agricultural irrigation, livestock watering, and drinking water.
- Agricultural viability: The water conservation goal will be achieved while sustaining agriculture viability through:
 - Ancillary agriculture benefits from implemented practices (soil preservation, increased soil moisture, weed management)
 - Reducing costs associated with irrigation and livestock watering
 - Financial incentives to offset start-up costs for new practices and associated equipment or other needs.

Objectives	Key Conservation Practices Examples
Protect and enhance acres managed using techniques for water conservation	<ul style="list-style-type: none"> • Residue and Tillage Management, No-till/Direct Seed • Residue and Tillage Management, Mulch Till, Reduced Till • Conservation crop rotation
Protect or increase acreage managed for control and potential beneficial reuse of irrigation and livestock water	<ul style="list-style-type: none"> • Livestock pipeline • Subsurface drain

Hydrology



CPPE Scores for each Conservation Practice



Water Quantity

- Excessive

- Rangeland Hydrologic Cycle
- Excessive Seepage
- Excessive Runoff, Flooding, or Ponding
- Excessive Subsurface Water
- Drifted Snow

Water Quantity

- Inadequate

- Inadequate Outlets
- Inefficient Water Use on Irrigated Land
- Inefficient Water Use on Nonirrigated Land
- Reduced Capacity of Conveyances by Sediment Deposition
- Reduced Storage of Water Bodies by Sediment Accumulation
- Aquifer Overdraft
- Insufficient Flows in Watercourses



Soil Health Function Goals

Soil Health Goal #1 – Soil Conservation

Protect or enhance available soil for agriculture within the County.

- Protection and enhancement: Special emphasis on areas with prime soil for agriculture and those at greatest risk of soil erosion.
- Agricultural viability: The soil conservation goal will be achieved while sustaining agriculture viability through:
 - Preserving land available for agriculture
 - Ancillary agriculture benefits from implemented practices (increased soil moisture, weed management, pollinator/beneficial organism)
 - Reducing costs associated with soil replenishment and flood cleanup
 - Financial incentives to offset start-up costs for new practices and associated equipment or other needs

Objectives

Protect and enhance acres managed using techniques that limit water erosion of soil, or erosion due to unrestricted access of livestock

Key Conservation Practices Examples

- No Till/Direct Seed
- Mulch Till/Reduced Till
- Prescribed Grazing



Soil Health Function Goals

Soil Health Goal #2 – Soil Fertility

Protect or enhance soil health and fertility within the County.

- Protection and enhancement: Special emphasis on areas supporting:
 - Agricultural uses
 - Wetlands or within frequently flooded areas
- Agricultural viability: The soil conservation goal will be achieved while sustaining agriculture viability through:
 - Ancillary agriculture benefits from implemented practices (soil moisture available for agriculture, weed management, pollinator/beneficial organism)
 - Reducing costs associated with inputs, irrigation, and tillage
 - Financial incentives to offset start-up costs for new practices and associated equipment or other needs

Objectives

Key Conservation Practices Examples

Protect and enhance acres managed for residue retention and through crop rotation strategies

- Residue and Tillage Management, No-till/Direct Seed/Mulch Till/Reduced Till
- Conservation Crop Rotation

Protect and enhance acres managed under chemical and nutrient input controls

- Pest Management
- Nutrient Management
- Conservation Crop Rotation

Protect and enhance acres managed under natural filtration practices

- Conservation Crop Rotation
- Filter Strip
- Range Planting

Soil Health



CPPE Scores for each
Conservation Practice



Soil Erosion

- Sheet and Rill
- Wind
- Ephemeral Gully
- Classic Gully
- Streambank
- Shoreline
- Irrigation Induced
- Mass Movement
- Road, roadside, and construction sites

Soil Condition

- Organic Matter Depletion
- Rangeland Site Stability
- Compaction
- Subsidence
- Contaminants: Animal Waste and Other Organics (N, P, K)
- Contaminants: Commercial Fertilizer (N, P, K)
- Contaminants: Residual Pesticides
- ~~Damage from Sediment Deposition~~



Habitat Function Goals

Habitat Goal #1 – Terrestrial

Preserve and enhance existing terrestrial habitat areas.

- Protection and enhancement: Special emphasis on declining and rare habitats, and those habitats that support threatened and endangered species.
- Agricultural viability: The habitat goal will be achieved while sustaining agriculture viability through:
 - Reducing regulation surprises associated with priority habitat degradation and species decline
 - Ancillary agriculture benefits from implemented practices (soil conservation, weed management, pollinator/beneficial organism)
 - Reducing costs associated with lost ecosystem services (e.g., flood control, and water filtration)
 - Financial incentives to offset start-up costs for new practices and associated equipment or other needs

Objectives	Key Conservation Practices Examples
Protect and enhance acres managed using techniques that limit soil compaction or trampling of habitat	<ul style="list-style-type: none"> • No Till/Direct Seed • Prescribed Grazing • Use Exclusion
Protect and enhance acres managed using techniques that promote water management to prevent unintentional conversion of shrub-steppe habitat	<ul style="list-style-type: none"> • Livestock pipeline • Subsurface drain
Protect and enhance small (farm-scale) habitat areas	<ul style="list-style-type: none"> • Pest Management • Hedgerow Planting • Filter Strip • Prescribed Grazing • Restoration and Management of Rare and Declining Habitats • Range Planting • Tree/Shrub Establishment • Fish and Wildlife Structure



Habitat Function Goals

Habitat Goal #2 – Aquatic

Preserve and enhance fish habitat in fish bearing streams of the County.

- Protection and enhancement: Special emphasis on habitat types and specific water courses that support threatened and endangered species.
- Agricultural viability: The habitat goal will be achieved while sustaining agriculture viability through:
 - Reducing regulation surprises associated with priority habitat degradation and species decline
 - Ancillary agriculture benefits from implemented practices (soil moisture available for agriculture, pollinator/beneficial organism)
 - Reducing costs associated with lost ecosystem services (e.g., flood control, and water filtration)
 - Financial incentives to offset start-up costs for new practices and associated equipment or other needs

Objectives

Protect and enhance acres managed using techniques that limit shoreline and watercourse degradation and enhance shoreline areas and watercourses

Key Conservation Practices Examples

- Pest Management
- Prescribed Grazing
- Watering Facility

Habitat



CPPE Scores for each Conservation Practice



Plant Condition

- ~~Plants not adapted or suited~~
 - ~~Productivity, Health, and Vigor~~
 - Plant Species: Listed or Proposed under ESA
 - Plant Species:
- Declining Species, Species of Concern
 - Noxious and Invasive Plants
 - Forage Quality and Palatability
 - ~~Wildlife Hazard~~

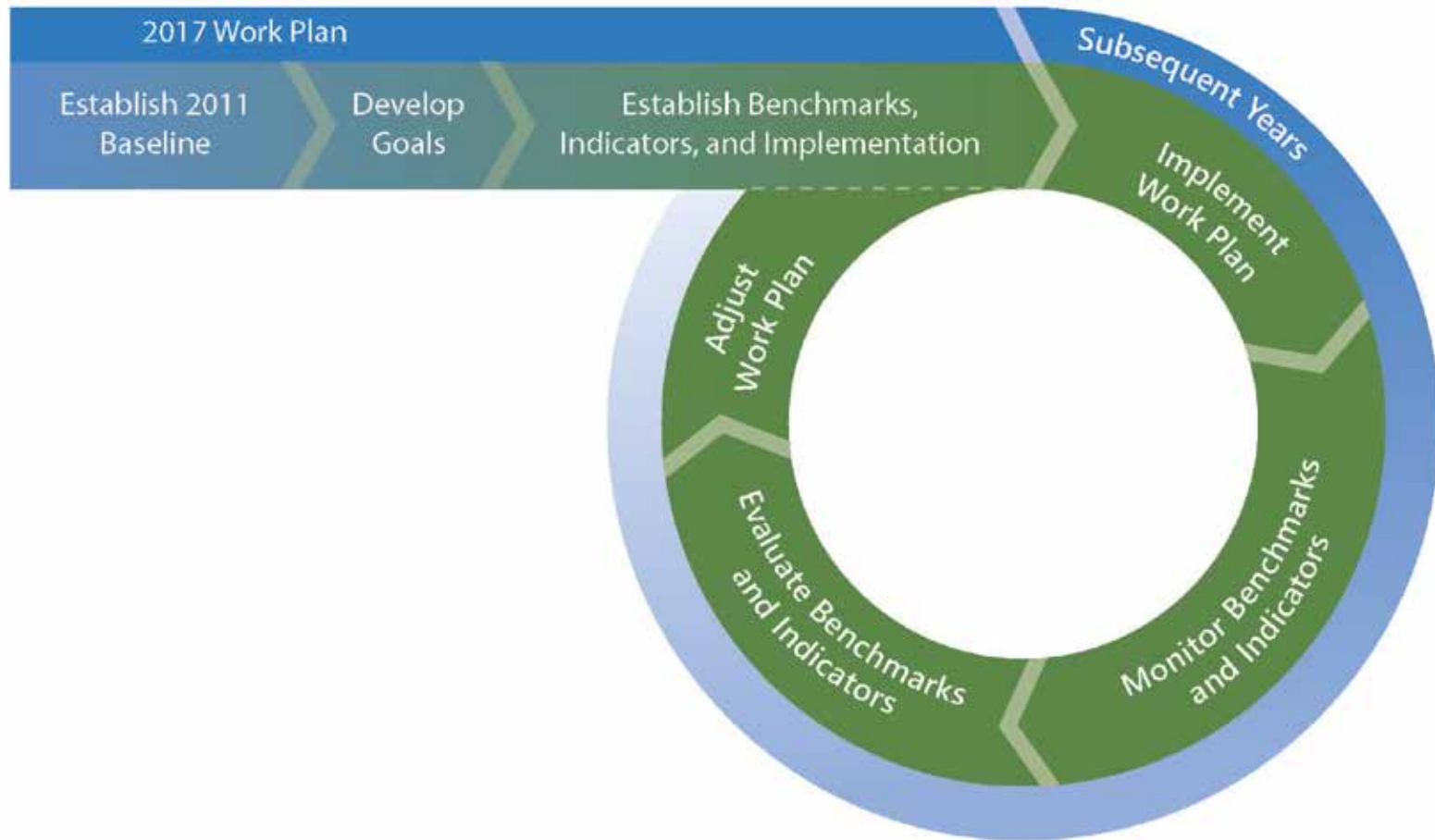
Fish and Wildlife

- Inadequate Food
 - Inadequate Cover/Shelter
 - Inadequate Water
 - Inadequate Space
 - Habitat Fragmentation
- Imbalance Among and Within Populations
 - Fish/Wildlife Species: Listed or Proposed under ESA
 - Fish/Wildlife Species: Declining Species, Species of Concern

How effective are these practices? How do we measure the effects of agriculture on critical area function?

- Monitoring and Analysis Programs
 - Use measurable indicators to understand if VSP is making the difference our data on participation is leading us to conclude
 - Environmental data can be complex and understanding the role of agriculture alone is neither easy nor straightforward
 - Indicators may not reflect stewardship effects for years or even decades

Adaptive Management



Round Table Discussion

Implementation Lead Entity

Lead Entity for Implementation and Outreach

Responsibilities:

- Conduct outreach in accordance with the Work Plan
- Provide technical assistance to agricultural producers
- Assist producers in developing Farm Stewardship Plans
- Conduct Work Plan performance tracking and reporting, adaptive management

Round Table Discussion

Work Plan Framework: Volumes One and Two

Work Plan Framework

- Is the level of detail included in Volume One appropriate for the “producer” facing document?
- Are there details we need to add?
- Are there details we need to move to Volume Two?
- What are we missing?

Next Steps

Next Steps

- Comment Response Matrix:
 - AQ will provide to WG for feedback on suggested revisions in response to comments
- Photographs needed of Conservation Practices
- Work Plan Schedule:
 - Work to completed before and after June 30th
- Outreach

Next Work Group Meetings:

March 2, 2017, 2:00 to 5:00 p.m.

April 6, 2017, 3:00 to 5:00 p.m.