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**Plan Developed By:**

Lincoln Soil and Water Conservation District  
Watershed Technical Specialist

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**Date**

**A. Oregon Mid Coast Agricultural Water Quality Management Area Rules and Plan Overview**

In Oregon, water is a public resource. Every Oregon watershed has an *Agricultural Water Quality Management Area and Plan*. Oregon is divided into multiple Basin Areas. Each Basin Area has an Area Plan which provides information about an Area’s water quality, Area rules, and a list of conservation practices that agricultural landowners can employ to help protect our shared public resources. Lincoln County falls within the Mid Coast Agricultural Water Quality Area (see map to the right).

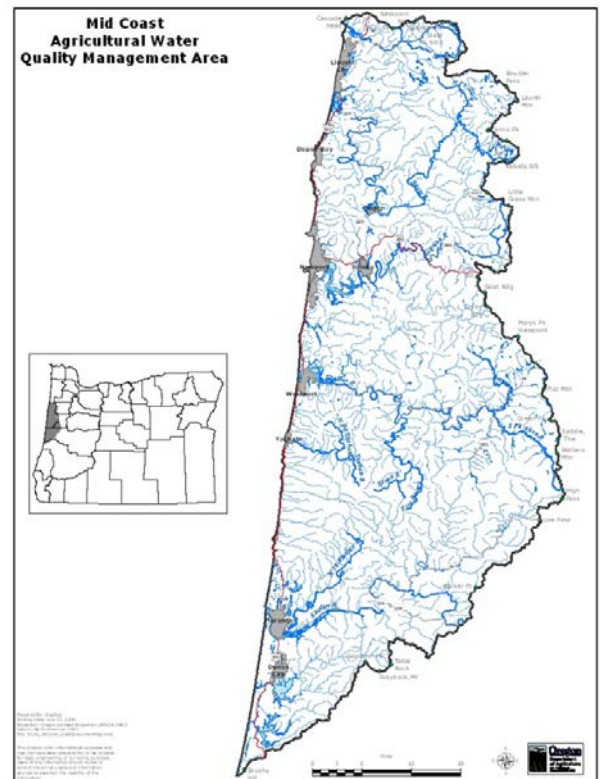
Major stream, lake and river water quality concerns identified for the Mid Coast Management Area are:

- Increased Temperature (from impacted riparian areas)
- Fecal Coliform (from livestock and human septic)
- Lower Dissolved Oxygen (from excess nutrient run off)
- Streambed Sedimentation (from stream bank and road erosion)
- Loss of biological diversity from aquatic weeds or algae

**Mid Coast Regulations require agricultural landowners to:**

- Establish and develop sufficient vegetation along stream banks for stream shading, bank stability, and filtration of potential pollutants from overland flows.
- Prevent pollution of ground or surface water from discharging (livestock or human) wastes or placing any wastes in a location where they are likely to enter groundwater, canals, ditches, or rivers.

The regulations allow landowners flexibility in how they protect water quality. They describe conditions that landowners must achieve and maintain on agricultural lands, rather than practices they must implement. Landowners choose practices that will work for them while complying with the law. Lincoln SWCD can provide technical and financial assistance to help landowners implement conservation on their property.



## B. Landowner Resource Inventory

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### 1. Landowner Information

Property owner	Jack and Maria Seed
Primary Contact	Jack Seed
Mailing Address	12345 Hilltop Rd
Site Address if Different	N/A
Home Phone	541-123-4567
Primary Contact Phone	same as above
Legal Taxlot(s)	xx-xx-xx-xx-xxxx-xx (North Pasture) xx-xx-xx-xx-xxxx-xx (South Pasture)

### 2. Landowner Management Objectives

Site Visit May 2<sup>nd</sup> 2013: Discussion with Jack and Maria Seed. They stated that maintaining pasture and cattle was important to family values and finances. Protecting natural resources like water quality was stated as important.

### 3. Water Resource Inventory

Water resources found within agricultural areas of your property:

Stream Name	Length (ft)	Water Quality/Quantity Concerns
Cold Creek	~ 2090ft	303(d) listed for Temperature and Sediment impaired
Unnamed seasonal creek North Pasture	~ 380 ft	Cattle impact; bacteria, sediment
Unnamed seasonal creek South Pasture	~ 740 ft	Cattle impact; bacteria, sediment
Wetlands North Pasture	~17,400 square feet	

### 4. Land Use Inventory

Total Acres Owned	73.5
# Acres in this Plan	19.9

Land Use in this Plan:

Location	Use	Acres	Resource Concerns
North Pasture	Pasture	4.70	
North Pasture	Riparian Forest	1.60	Cattle impact, sediment and bacteria source to Cold Creek
North Pasture	Woodland	0.40	
North Pasture	Wetland	0.40	Wildlife Protection
North Pasture	Seasonal Stream/Wetland	0.16	Cattle impact, sediment and bacteria source to Cold Creek
South Pasture	Pasture	10.15	

South Pasture	Riparian Forest	2.73	Cattle impact, sediment and bacteria source to Cold Creek
South Pasture	Woodland	1.24	
South Pasture	Seasonal Stream/Wetland	0.20	Cattle impact, sediment and bacteria source to Cold Creek

## 5. Pasture Inventory/Management

Location	Soil Type	Plants	General Condition
North Pasture	15B: deep, well drained silt loam; 16C: deep, well drained silt loam	Pasture grasses and alder woodlands within pasture	Not assessed
South Pasture	16C: deep, well drained silt loam	Pasture grasses and alder woodlands within pasture	Not assessed

Soil Type is derived from USDA Soil Survey of Lincoln County Area, Oregon, July 1997

### Soil Testing

Is there a recent soil test?  yes  no  N/A

Location	Date	Results (phosphorus, potassium, pH, nitrogen)

### Agricultural Amendments

Are fertilizers or pesticides used in land management?  yes  no  N/A

Location	Amendment	Rate/Acre	Purpose	Date Applied

## 6. Livestock Inventory and Management

Location	Type	Number	Days Annually Held	Management
North and South Pasture	Beef cattle	15-17	365	Twice annual rotation between North and South Pasture; no additional feed provided

Is the operation permitted as a Confined Animal Feeding Operation (CAFO)?  yes  no  
Notes:

Is there a livestock management or prescribed grazing system or plan?  yes  no  N/A  
Notes

Is there a manure management system or plan?  yes  no  N/A  
Notes

## 7. Woodland Inventory and Management

Woodland management is not applicable to this Plan

Location	Forest Type	Age	Management

## 8. Water Supply

Sources of livestock water supply: direct stream access

Source of irrigation water supply: N/A

## 9. Monitoring and Water Quality Limited Streams Along Property

Clean Water Act 303(d) listed stream(s) along property? \_yes \_no

Is there a TMDL\* issued on 303(d) listed stream(s) along property? \_yes \_no

Stream Name	Length (ft)	Water Quality/Quantity Concerns
Cold Creek	~ 2090ft	303(d) listed for Temperature and Sediment

\* **TMDL** (total maximum daily load) are regulatory defined reductions (quantitative or qualitative) of specified types of water pollution required on water bodies designated as impaired (not meeting Oregon State water quality standards), by the Oregon Department of Environmental Quality and mandated by the Federal Clean Water Act.

## 10. Natural Resources

Location	Resource	Condition	Management
North and South Pasture	Mature Riparian Forest	Good condition	Limited grazing, cattle water source access
North and South Pasture	Seasonal Stream Forest	Good condition	Limited grazing, cattle water source access
North Pasture	Wetland	degraded condition	Limited grazing, cattle water source access

## 11. Current Plans/Contracts

No known federal or state contracts/easements exist with landowner.

## C. Recommended Conservation Practices

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*Voluntary Water Quality Conservation Plans* (from here out Plan) provide landowners with a list of recommended conservation practices that will address specific impacts on water quality from their agricultural operation, meet their goals for a viable agricultural operation and meet the intent of Oregon Department of Agriculture water quality rules as described in the Mid Coast Agricultural Water Quality Management Area Plan (contact Lincoln SWCD for a copy of this plan). Conservation practices must meet technical standards acceptable to the Federal Natural Resource Conservation Service (NRCS), the US *Clean Water Act* and the Oregon Watershed Enhancement Board (OWEB).

Ultimately, if utilized throughout the Mid Coast area, these practices can address the leading causes of water quality impairments found in Lincoln County and the Mid Coast Basin agricultural lands which include temperature, sedimentation, bacteria, etc.

The following checked areas are conservation practices that were recommended to you within this plan:

### **Natural Resource Management (examples)**

- Riparian Forest Buffer Enhancement (plant trees and shrubs for shade and stabilization)
- In-stream Habitat Enhancement (log placement for salmon habitat enhancement)
- Livestock Use Exclusion Fence (fence off sensitive areas like wetlands and streams)
- Streambank Protection (wood structures, bank sloping and planting to stop erosion)
- Wildlife Wetland Habitat Enhancement
- Wetland Restoration
- Wetland Protection

### **Agricultural Resource Management (examples)**

- Animal Waste Management Plan (appropriate storage and field application of manure)
- Animal Waste Storage Facility (covered manure storage shed)
- Grazing Prescription (rotational grazing strategies)
- Pasture Management (best animal/pasture ratio and feeding requirements)
- Stormwater Runoff Management (gutters and diversions for barns and manure sheds)
- Offstream Livestock Watering (pumps and storage, wells)
- Instream Livestock Watering (gravel hardened stream bank)
- Heavy Use Protection Area (gravel hardened area)
- Filter Strip (grassed area to filter nutrient runoff)

### **Other Practices**

- Upland Wildlife Habitat Enhancement
- Alternative Energy Systems (increase farm efficiency)

## D. Detailed Conservation Plan and Alternatives

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**Recommended Plan:** please see Plan Maps for practice locations

Area	Practice	Resource Benefit
North Pasture; South Pasture	Seasonal Stream Exclusion Fence	1. Reduce mud/sediment, bacteria and nutrients from entering Cold Creek
North pasture	Riparian Exclusion Fence	1. Reduce mud/sediment, bacteria and nutrients from entering Cold Creek 2. Reduce chance of injury to cattle accessing Cold Creek
North pasture	Wetland Exclusion Fence	1. Protect wetland for wildlife and maintain as filtration for pasture nutrient overflow
North Pasture; South Pasture	Off Stream Water (pump directly from Cold Creek to watering troughs, using solar pump and buried water line or alternative system)	1. Provide clean source of water to cattle within the pasture 2. Increased grazing time/production 3. Reduce chance of injury to cattle accessing Cold Creek
North Pasture; South Pasture	Heavy Use Area – around water stations	1. Protect pasture area around water stations from mud accumulation

**Watershed Technical Specialist Comments:**

Maintenance of direct stream pumps requires seasonal maintenance and likely financial investment to:

1. Ensure pump intake is clear from stream material following high flow events,
2. Ensure pump is properly placed during low water events,
3. Maintain solar pump infrastructure from cattle damage and weathering,
4. Replacement or rebuild of pumps every 3-10 years depending upon usage and quality of pump.
5. Heavy use area gravel wears down over time with usage. Proper function requires fresh rock occasionally.

**Alternative Plan:** To reduce costs associated with fencing, the North Pasture riparian fence could be routed through wetland to cut out approximately 256 ft of fence line while still leaving 70ft buffer between pasture and Cold Creek. The total fence installation in the North Pasture would be 890 ft.

## E. Estimated Project Expense

The below cost estimates are meant to provide a landowner an idea of the financial scope of the recommended practices. **In most cases, Lincoln SWCD can secure grant funding to pay for most or all recommended project costs if the landowner is unable to contribute cash.** Landowner contributions are highly encouraged and can be in the form of providing skilled labor or equipment (an excavator or tractor) to install project practices, purchase or provide materials, provide actual cash or commit to maintenance of the installed project.

### *Estimated Cost of Practices:*

Practice	Estimated # Units	Estimated Rate/Unit	Total Estimated Cost
<b>North Pasture</b>			
Seasonal Stream Exclusion Fence	- 267 ft of 4 strand barbwire fence	\$4.50/ft	\$1201
Riparian and Wetland Exclusion Fence	- 896 ft of 4 strand barbwire fence (8 corners) - <i>ALTERNATE: 646 ft of 4 strand barbwire through wetland</i>	\$4.50/ft \$4.50/ft	\$4030 \$2907
Off Stream Water (pump directly from Cold Creek to watering troughs, using solar pump and buried water line)	- 190 ft trench 18" deep/place & backfill - 175 ft, 1" pvc pipe - 1, 690 gallon water trough - Solar Pump and array	TBD \$0.55/ft \$220 \$2500	TBD \$96 \$220 \$2500
Heavy Use Area – around water stations	- 400 square foot, crushed rock surface material - 400 square foot geotextile fabric	Lump sum Lump sum	\$375 \$250
<b>North Pasture Cost Estimate Approximately \$9,500</b> <b><i>Alternative North Pasture Cost Estimate Approximately \$7,550</i></b>			
<b>South Pasture</b>			
Seasonal Stream Exclusion Fence	- 640 ft of 4 strand barbwire fence	\$4.50/ft	\$2880
Off Stream Water (pump directly from Cold Creek to watering troughs, using solar pump and buried water line)	- 450 ft trench 18" deep - 450 ft, 1" pvc pipe - 1, 690 gallon water trough - Solar Pump and array	TBD \$0.55/ft \$220 \$2500	TBD \$248 \$220 \$2500
Heavy Use Area – around water stations	- 400 square foot, crushed rock surface material - 400 square foot geotextile fabric		\$375 \$250
<b>South Pasture Cost Estimate Approximately \$7,000</b>			

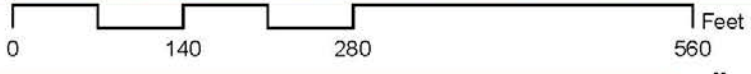
## **F. Timeline, Activity Plan and Financial Assistance**

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1. Timeline: To be determined
2. Activity Plan: To be determined
3. Financial Assistance: To be determined



# Jack Seed North Pasture - Conservation Plan Map

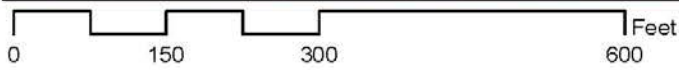


Legend	
	Existing Fenceline
	Proposed Fenceline
	Alternate Fenceline
	Proposed Underground Water Line
	Proposed Solar Pump trough with rocky area
	Property Boundary
	Roads
	Major Rivers

Map Created By



# Jack Seed South Pasture - Conservation Plan Map



Map Created By

Legend	
Property Boundary	Existing Fenceline
Roads	Proposed Fenceline
Major Rivers	Proposed Underground Water Line
	Proposed Solar Pump trough with rocky area

