
LANDSMART™ FOR RANGELANDS

RANCH PLAN

Prepared for: _____

Prepared by: _____

Date: _____

Version 1.0



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1.INTRODUCTION

This LandSmart™ for Rangelands template, in conjunction with workshops and one-on-one assistance (as needed), is intended to guide you through the process of inventorying property features such as paddocks, pastures, and waterways and roadways, documenting conservation practices that you currently use, and helping you to select additional conservation practices, when needed, to protect water quality, water quantity, and other natural resources. The resulting plan is intended to be a working document to record your decisions and your progress. The plan will help you to identify locations where photo monitoring should be conducted to document your use of conservation practices. These photos along with records you keep can help you evaluate how various conservation practices work within your ranch and, if needed, they can help you demonstrate to others the steps you have taken to protect and improve natural resources. Lastly, the plan will provide you with an easy to reference summary of conservation practices that you use and that you intend to implement.

The LandSmart™ for Rangelands Ranch Plan Template consists of several worksheets that you will complete. The top of each worksheet has information and/or directions, and as you work your way through the worksheet additional instructions may be provided based upon your responses to some questions. The questions and follow-up instructions are designed to help you identify which areas of your property could receive the most benefit from implementation of additional conservation practices. Potential conservation practices to implement reference the Natural Resource Conservation Service conservation practice standards. The worksheets also include tables to help you document existing and planned practices. You will be able to complete some of the worksheets quite easily. Other worksheets will take more time and will involve some field assessment, perhaps even some assistance from a resource professional (NRCS, RCD, or other professional).

This template purposefully covers topics of interest to most rangeland managers and has been developed with a focus on water quality. The LandSmart™ for Rangeland template builds upon the “Ranch Water Quality Plan, Compliance Monitoring & Annual Certification Templates” developed by the University of California Cooperative Extension (UCCE) for the Conditional Waiver of Waste Discharge Requirements for Grazing Operations in the Napa River & Sonoma Creek Watersheds. There are many sections where, if you have already completed the UCCE Plan, you can attach the completed plan and skip those sections here. An asterisk (*) will indicate which sections of this template are covered in the UCCE plan. Other sections of the LandSmart™ Plan are additional to the information in the UCCE Plan, and those should be completed here.

You may have additional conservation and land management interests beyond water quality regulations. The LandSmart™ for Rangelands program is intended to help you with those

interests as well. If you need assistance to meet your land management and conservation goals, whether or not the topic is covered in this ranch plan template, please do not hesitate to contact your local Resource Conservation District (RCD) office.

Contact Information

NRCS Napa Field Office: 707-252-4189
NRCS Petaluma Field Office: 707-794-1242

Napa County RCD: 707-252-4188
Sonoma RCD : 707-569-1448
Mendocino County RCD: 707-462-3664
Gold Ridge RCD: 707-823-5244

2. PROPERTY DESCRIPTION

PROPERTY INFORMATION

Basic Information*

Ranch/Farm Location			
Ranch/Farm Name:			
Mailing Address, or P.O. Box:		County:	
City, State, Zip Code:		What Water Board region(s) is the ranch/farm in? ☐ R1 (North Coast) ☐ R2 (San Francisco Bay) ☐ R3 (Central Coast) ☐ R4 (Los Angeles) ☐ R5 (Central Valley) ☐ R6 (Lahontan) ☐ R7 (Colorado River) ☐ R8 (Santa Ana) ☐ R9 (San Diego)	
Phone:	Size (acres):		
List all Assessor Parcel Numbers (APNs) or legal description (Township, Range, Sections) for each parcel, pasture, or silage field included in this plan:			
Owner			
Name(s):			
Mailing Address or P.O. Box:		☐ same as ranch address	
City, State and Zip Code:			
Phone:		E-mail (optional):	
Tenant/Manager (if not owner)			
Name(s):			

Mailing Address or P.O. Box: ☐ same as ranch address			
City, State and Zip Code:			
Phone:		E-mail (optional):	
Plans & Certifications*			
Check the box for the plans, certifications or other documents that exist for the ranch:			
☐ Conservation Easement	☐ Dairy Quality Assurance Program	☐ Erosion Control Plan	☐ Fire Mngt. Plan
☐ Fish Friendly Farming	☐ Grass-Fed Certification	☐ Grazing Mngt. Plan	☐ UCCE Ranch Plan
☐ Salmon Safe Certification	☐ NRCS Conservation Plan	☐ Dairy Nutrient Mngt.	☐ Dairy Waste Mngt. Plan
☐ Timber Harvest Plan	☐ Organic Certification	☐	☐
☐	☐	☐	☐

Operations and Land Use (this information is additional to the UCCE Plan)

<i>Land Use Activity</i>	<i>Area/Length</i>		<i>Notes</i>
Livestock (note type):		acres	How many?
Livestock (note type):		acres	How many?
Livestock (note type):		acres	How many?
Grazed/Rangeland		acres	
Roads (paved and unpaved)			
Other paved areas and buildings		Acres	
Forest/Woodland/Chaparral		Acres	
Open Space/Fallow/Undeveloped		Acres	
Reservoir/Pond (footprint)		Acres	

Stream/River/Creek/Riparian (USGS blue-line)			
Stream/River/Creek/Riparian (non USGS blue-line)		feet	
Drainage Ditch/Canal		feet	
Other Farming Facilities		acres	
Other Land uses (list type)			
Total Plan Acres			

RANCH GOALS* (OPTIONAL)

Ranch goals are divided into production, quality of life and natural resource goals. These goals should reflect what you are trying to accomplish on your property. They are used to identify management strategies and practices for accomplishing your goals as well as to help you identify goals that might conflict with each other. Check any goal statements below which reflect your plans, reword them if needed and/or write-in your own words.

Production/Business
☐ pass on the farm/ranch to the next generation
☐ reduce family/farm debt
☐ expand farm/ranch enterprises
☐ develop new enterprises
☐ increase farm/ranch profitability (is the ranch providing adequate income?_____)
☐ reduce operating costs
☐ purchase or lease more ranch/farm property
☐ other:
Quality of Life
☐ reduce energy consumption in the farm/ranch operation
☐ provide for our children's college education
☐ provide financial or other support for community organizations
☐ reduce household operating expenses
☐ build an emergency fund
☐ raise livestock or crops during retirement
☐ build a retirement fund
☐ other:
Natural Resources & Water Quality
☐ manage rangeland to protect soil from erosion
☐ manage cropland, pastureland or forestland to protect soil from erosion
☐ manage ranch roads to reduce movement of sediment into streams and other water bodies
☐ reduce erosion of streambanks and gullies
☐ manage to increase tree cover and/or ground cover in riparian areas or along streams
☐ reduce concentration of livestock in or near streams, wetlands, or other water bodies

☐ manage to reduce entry of sediment, nutrients and pathogens to streams or wetlands
☐ reduce wildfire hazard
☐ maintain or enhance oak woodland, native grass, or other plant communities
☐ maintain or enhance wildlife or fisheries habitat or other aquatic resources
☐ reduce/manage invasive weeds
☐ reduce/manage predator impacts on the ranching operation
☐ meet water quality regulations
☐ improve water holding capacity of your soil, increase forage production
☐ utilize alternative water storage, water conservation strategies

Off-site Conditions Outside of Landowner Control

If there are any upslope and/or upstream land uses or conditions within the watershed that are out of your control that may influence your ability to effectively implement conservation practices to protect water quality on your property, please describe them below.

Describe as needed:

RANCH MAP SUMMARY

Maps will be an important part of your LandSmart™ for Rangelands Plan and will serve as an easy reference for you. Maps should be prepared on a topographic map, an aerial photograph, or a Google Earth image (minimum 1" = 1,000' or 1:12,000 scales). More than one map may be used to display the information needed to complete your plan. A more detailed map (scale of 1" = 500' or 1:6,000' may be needed to accurately depict stream channels, riparian corridors, or other small scale features. Each map should have a legend and should clearly display the features that are identified in your plan.

You may already have maps of the property to meet the mapping needs identified below. In this case, you may wish to include (or reference) existing maps in your Ranch Plan and alleviate the need to prepare new maps.

If you need assistance with mapping, RCD staff is available to assist you.

The below tables provide a summary of features mapped for inclusion in your Ranch Plan. Please indicate below which features are displayed on your Ranch Plan map(s) by checking the boxes as indicated. Maps should be kept with the Ranch Plan.

Mapping
Watershed Assessment*
What types of stream(s) are on the ranch/farm? ☐ Seasonal (intermittent) ☐ Perennial ☐ Both
Name(s) of stream(s) on your ranch/farm (if named): _____
Name of sensitive river, waterbody or wetland downstream (lake, bay, etc.): _____
Is a municipal or domestic water supply source downstream? ☐ Yes ☐ No ☐ Not Sure

The below information is additional to the UCCE Plan.

Mark X if mapped, or N/A if not applicable		Notes
	Topography (identify area with slope <5% and areas with slope >30%)	
	Areas under consideration for future pasture	
	Non-livestock land uses	
Ranch Facilities – Give each area/feature a name or number for easy reference.		
	Livestock water (troughs) and feeding areas	
	Equipment yards and/or staging areas	
	Manure Storage Areas	
	Areas for manure spreading	
	Composting area	
Soils, Erosion Control, Management & Structures – Give each area/feature a name or number for easy reference.		
	Soil type(s) with erosion rating(s) (map from http://websoilsurvey.nrcs.usda.gov)	
	Drainage system (diversion ditches, storm drains, and underground outlets with inlets and outlets)	
	Sediment/attenuation/energy dissipation basin(s)	
	Vegetated buffer strips/filter strips	
	Erosion features on land associated w/ the ranch facility (i.e. gullies, rills, landslides, mudflows, rock falls)	
	Other:	
Waterways – Give each area/feature a name or number for easy reference.		
	Human-made Waterways (non-roadside ditches)	

	Swale(s)	
	Spring(s)	
	Wetland Area(s)	
	Reservoir/Pond/lake(s) (indicate pipe or open channel spillway location)	
	Known barriers to fish migration	
	In-stream structures that may affect stream morphology or cause erosion	
	Erosion features in waterways associated with the ranch facility and roads(i.e. streambank erosion, channel incision)	
Roads - Identify with a name and indicate if public, private and/or easements		
	Surfaced (paved, gravel, etc.) roads	
	Unsurfaced (dirt, vegetated etc) roads	
	Abandoned (tail or non-used) roads	
	Waterway crossings (indicate whether freespan bridge, culvert, ford, etc.)	
	Roadside ditches	
	Road drainage structures (ditch relief culverts, waterbars, rolling dips, etc.)	
	Erosion features on land associated with roads (i.e. gullies, rills, landslides, mudflows, rock falls)	
	Other:	
Other areas to map – Give each area/feature a name or number for easy reference.		
	Equipment storage areas	
	Agrichemical mixing areas	
	Agrichemical storage areas	
	Maintenance and repair locations	
	Refueling locations/storage	
	Motor oil recycling	

Monitoring Photo-points – Give each point a number for easy reference.		
	Photo-points for annual monitoring	
	Photo-points for management practice implementation and annual maintenance	
	Photopoints of points of discharge	
	Photo-points to demonstrate condition downstream of discharge points	
	Photo-points to track “areas to watch” – e.g. areas with erosion or invasive weeds that you want to track over time	

FIELD/PASTURE INVENTORY*

Describe each pasture, paddock and open rangeland on the ranch/farm with estimations of area, slope, and woody vegetation cover. Large or complex pastures may be subdivided into subsection units for management and/or mapping purposes. Estimate the minimum objective for Residual Dry Matter (RDM) monitoring using Tables 1-3 from <http://anrcatalog.ucdavis.edu/RangelandMonitoringSeries/8092.aspx>. Note the season(s) or months when livestock are moved in/out of the pasture each year and soil types(s) or series(s) if known.

Field #	Location (Name or #)	Season(s) of Use	Soil(s)	Size (acres)	Slope (%)	Woody Vegetation Cover (%)	RDM Minimum (lb/ac)

PASTURE AND WATER MANAGEMENT

Background: Pastures are areas where grass is grown for forage for livestock and maintained to prevent erosion and protecting a pasture's soil and vegetative cover will help to maintain pasture productivity. Soil erosion usually occurs when vegetative cover is removed and soil is left unprotected during the winter months. Soil erosion in pastures is usually the result of poor grazing management. Over stocking a pasture and allowing livestock to graze forage down to bare ground is probably the single fastest way to destroy the pasture and soil resource. Livestock can be very disruptive to soil in other ways as well. If animals are allowed to graze during periods of irrigation or heavy rainfall they can compact the soil and destroy plant cover. Livestock trails can also cause the soil to erode specially on steeper slopes where runoff water finds its way into the ruts that are formed by the animals. Areas along water courses such as streambanks are particularly susceptible to erosion caused by livestock, especially if alternate watering facilities are not adequate. Riparian areas are also prone to overuse by livestock seeking shade and riparian growth to browse on. If livestock are not well distributed over the pasture the likelihood of overgrazing and potential for soil erosion becomes greater. While adverse conditions in these areas may not be caused by current livestock grazing activities, it is important to describe all conditions accurately, regardless of cause.

There are a number of ways ranchers can improve water management on pastures through their irrigation delivery systems and crop and soil management. Improvements in irrigation scheduling, delivery and management, and matching water supply to crop needs can be utilized. Systems can be created that require less water or make better use of what's available via aquifers, streams, rivers, ponds or precipitation.

Purpose: Identify practices currently in use and that are intended for implementation to:

- ✓ Maintain grass cover on pastures (can be dry grass at the end of the season) to protect soil from erosion and to maintain plant vigor.
- ✓ Control livestock access to creeks and ponds when possible; provide other sources of drinking water.
- ✓ Provide extra protection in riparian areas to prevent erosion and over-use.
- ✓ Practice rotational grazing; divide up pastures and move livestock from one to another to allow pastures to rest and recover.
- ✓ Develop water sources, shade structures or other attractants to attract livestock to remote portions of pastures.
- ✓ Manage weeds for pasture health and animal health.
- ✓ Manage soil for water holding capacity. Applying practices that build soil quality, resulting in a porous, well-structured soil that allows water to infiltrate and holds it there for use by plants.
- ✓ Manage plants and livestock to maximize water availability. Selecting plants, such as drought-tolerant species and native varieties that maximize water availability in crop rotations or pastures.

- ✓ Manage water carefully. Treating water like a precious resource, capturing, conserving and recycling it, where appropriate, among farming enterprises.

Question	Potential Concern (Source)	Location (<i>pasture/field</i>) & Describe Condition	Cause ¹ (C, H, or N)
SEDIMENT *			
RANGELAND & PASTURE/CROP FIELDS			
PM1. Bare soil visible throughout the rainy season? <i>If potential concern noted, consider practices #1 and 2 listed in table PM1 below</i>	☐ Yes ☐ No ☐ Not Sure		
PM2. Rill or sheet erosion present? <i>If potential concern noted, consider practices #1, 2, and 3 listed in table PM1 below</i>	☐ Yes ☐ No ☐ Not Sure		
PM3. Gullies, slumps, or headcuts present? <i>If potential concern noted, consider practices #1, 2, 4, 6 and 7 listed in table PM1 below</i>	☐ Yes ☐ No ☐ Not Sure		
ROADS (see Roads & Crossings section later in this document)			
PATHOGENS AND NUTRIENTS*			
LIVESTOCK DISTRIBUTION (see Stormwater Management section later in this document for additional questions)			
PM4. Corrals used throughout the winter?	☐ Yes ☐ No ☐ Not Sure		

PM5. Feeding, salting, or watering areas near stream? <i>Please indicate these areas on your facility map. If potential concern noted, consider practices #5 and 6 listed in table PM1 below</i>	☐ Yes ☐ No ☐ Not Sure		
PM6. Do livestock congregate in the stream? <i>If potential concern noted, consider practices #5 through 8 listed in table PM1 below</i>	☐ Yes ☐ No ☐ Not Sure		
MANURE MANAGEMENT (see Manure Storage & Nutrient Management section later in this document)			

¹Current livestock management (C); a Historic legacy site (H); or Natural causes (N).

PM7. Do you monitor your pastures for Residual Dry Matter (RDM)?

RDM is the old plant material left standing or on the ground at the beginning of a new growing season. It indicates the combined effects of the previous season's forage production and its consumption by grazing animals of all types. RDM remaining in the fall will influence subsequent species composition and forage production. The purpose of RDM monitoring is to collect information in a practical manner that is adequate to assess grazing objectives and make management adjustments when needed.

☐ Yes, describe below.

☐ No (Consider practice # 1, listed in Table PM1 below and refer to the RDM resources provided in the **Additional Resources** section of this plan.)

PM8. Do you practice rotational grazing?

- ☐ Yes
☐ No (Consider practice #2 in Table PM1 below)

PM9. Does the livestock have direct, unlimited access to drainage ways, stream channels or ponds?

- ☐ Yes (Consider practices #5 through 7 in Table PM1 below) ☐ No

PM10. Is the livestock moved from the pastures when necessary to protect the pastures from erosion and damage to grass? (i.e. when the soil is saturated or when they have grazed it to 4 inches or lower.)

- ☐ Yes ☐ No (Consider practices# 2 and 3 in Table PM1 below)

PM11. Do you manage your pastures to limit or control weeds?

- ☐ Yes ☐ No (Consider practice #11 in Table PM1 below)

PM12. What type of shade is provided for livestock on pastures? How far is it located next to surface water? (Consider practice #5 in Table PM1 below)

--

Water Sources and Management (Optional)

PM13. Check all sources of water that are utilized.

- ☐ Surface Water
- ☐ Ground Water
- ☐ Municipal Water
- ☐ Reclaimed / Recycled Water (from off-site)
- ☐ Reclaimed / Recycled Water (from site)
- ☐ Harvested Rainwater
- ☐ Other (list)

Describe as needed:

PM14. What water sources are provided for livestock on pastures? How far are they located from surface water? Please indicate water sources on your facility map. (Consider practice # 6 in Table PM1 below)

Describe as needed:

PM15. Are pasture areas irrigated?

- ☐ Yes (Consider practice # 9 in Table PM1 below, and answer A through F below) ☐ No (Skip to Question PM17.)

A. Irrigation systems were designed by an agricultural engineer, irrigation consultant or other professional.

☐ Yes

☐ No (Consider practice #20 in Table PM1 below)

Describe as needed:

B. Irrigation is scheduled and applied according to plant needs as determined by water monitoring and management tools (e.g., soil moisture sensors, weather stations, etc.) and visual observations.

☐ Yes

☐ No (Consider practices # 10 and 11, in Table PM1 below)

Describe as needed:

C. Water management techniques such as delayed onset of irrigation or dry farming are considered and used to meet ranch conservation goals.

☐ Yes

☐ No (Consider practices # 10,11 and 12, listed in Table PM1 below)

Describe as needed:

D. Irrigation systems are monitored for leaks and performance, and maintained regularly.

☐ Yes

☐ No (Consider practices # 13, listed in Table PM1 below)

Describe as needed:

E. Water use is monitored with a flow meter and documented.

☐ Yes

☐ No (Consider practices # 14 and 15, listed in Table PM1 below)

Describe as needed:

F. Reclaimed, recycled and harvested water are utilized to the extent practicable with consideration of the areas where agricultural irrigation with recycled water is shown to be safe for humans and ecosystems.

☐ Yes

☐ No (Consider practice # 16 and 17, listed in Table PM1 below)

Describe as needed:

PM16. Do you plan early for determining your animals' forage needs?

☐ Yes

☐ No (Consider practice #18 in Table PM1 below)

Describe as needed:

PM17. Riparian buffers, filter strips, grassed waterways, or other types of conservation buffers near streams or other sources of water are established and maintained.

☐ Yes

☐ No (Consider practice # 19 in Table PM1 below)

Describe as needed:

Table PM1: Conservation Practices for Pasture and Water Management

The following table provides an assortment of management practices that are intended to protect water quality. Implementation of all practices is not necessary or required. Selection of practices must be done on a site-specific basis and an assortment of practices to protect water quality and to suit your circumstance should be selected. NRCS Practice Titles are provided for your reference.

Conservation Practice	NRCS Practice Title	Practice Implementation Date	Location
1. Monitor for RDM			
2. Divide pastures for rotational grazing	Fence (382) Animal Trails and Walkways (575)		
3. Provide a stable, non eroding surface for areas frequently used by animals	Heavy Use Area Protection (561)		
4. Stabilize active gullies	Grade Stabilization Structure (410)		
5. Provide additional salting and feeding and shade areas to animals to improve distribution			
6. Provide additional water sources to animals to improve distribution	Watering Facility (614) Livestock Pipeline (516)		
7. Install riparian fencing to control animal access to waterways	Fence (382)		
8. To provide protection against stream erosion	Range Planting (550)		

9. Conduct an irrigation audit and implement system improvements accordingly (every 3 years recommended)	Irrigation Water Management (449)		
10. Install and utilize soil moisture monitoring devices	Irrigation Water Management (449)		
11. Install and utilize a weather monitoring system or utilize a near-by CIMIS weather station.	Irrigation Water Management (449)		
12. Upon reseeding, consider more drought tolerant plant species			
13. Conduct periodic monitoring during the season of use and repair as necessary	Irrigation Water Management (449)		
14. Install and utilize flow meters to monitor and record water use	Irrigation Water Management (449)		
15. Inspect and calibrate flow meters			
16. Consider options for reclaimed / recycled water, including possibility of recycled water from local treatment plants that may be available for trucking			
17. Consider rainwater harvesting and storage, particularly if there are large buildings on-site			
18. Contract early to make sure you will have enough hay during dry			

times or find alternative feed sources			
19. Establish and maintain vegetation near stream for water storage for later use.			
20. Consult a professional			

STORMWATER DRAINAGE (IF APPLICABLE)

Background: Rainwater flowing across the land, or in channels or pipes is called Stormwater Runoff. If stormwater runoff is allowed to erode soil from bare areas or run through manured areas, it becomes polluted and must not be allowed to enter a stream. High use areas, such as buildings, corrals, holding facilities, etc., are areas that must be managed to keep clean water from becoming polluted. Diverting fresh water around high-use areas will keep the “clean water clean” and minimize the runoff from high-use areas. By keeping the size of high-use areas small, managing polluted water can be reduced. It is much easier to manage the clean water than treat the water once it becomes polluted.

Purpose: Identify practices currently in use and that are intended for implementation to:

- ✓ Keep clean water clean.
- ✓ Do not mix with waste water or allow it to run through any confinement areas.
- ✓ Convey stormwater drainage such that erosion and soil loss are prevented

Roof Drainage (if applicable)

* Note there are approximately 7.5 gallons of water in a cubic foot. Therefore a 100 square feet (10 foot x -10 foot) of impervious area, such as a roof, will capture, yield approximately 62.5 gallons of rainwater with each inch of rainfall. This statistic may prove helpful in evaluating your current runoff management from barn roofs.

SW1. Do you have gutters and down spouts on all barn roofs?

☐

Yes

☐

No (Consider practice #1 in Table SW1 below)

If yes, where do the gutter outlet?

SW2. Do the down spouts tie into a drainage system that keeps the clean water away from contaminants such as bare ground?

☐

Yes

☐

No (Consider practices # 2 and 3, listed in Table SW1 below)

SW3. If you do not have gutters on every building, is the clean water kept out of the contaminated areas (areas with manure or bare ground)?

☐

Yes (If so, how?)

☐

No (Consider practices # 1 and 4 listed in Table SW1 below)

Describe as needed:

Property Drainage

SW4. Do you have drainage systems installed on your property?

☐

Yes (Please indicate these systems on your site plan map)

☐

No

SW5. Do you have a back up plan in case of system failure? Please explain below.

☐

Yes

☐

No

Describe as needed:

SW6. Do all of the drainage systems that carry contaminated water outlet into a filter area? Please explain.

☐

Yes

☐

No (Consider practice #5 in Table SW1 below)

Describe as needed:

SW7. Do you combine your clean and contaminated water into the same outlet area? Please explain.

☐

Yes

☐

No

Describe as needed:

Where potential concerns are identified, please reference the conservation practice recommendations noted below.

Question	Potential Concern (Source)	Location (<i>pasture/field</i>) & Describe Condition	Cause ¹ (C, H, or N)
PATHOGENS AND NUTRIENTS*			
LIVESTOCK DISTRIBUTION			
SW8. Storm runoff from corrals connects to stream? <i>If potential concern noted, consider practices # 2 and 5, listed in Table SW1 below</i>	☐ Yes ☐ No ☐ Not Sure		

¹Current livestock management (C); a Historic legacy site (H); or Natural causes (N).

Table SW1: Conservation Practices for Management of Stormwater Drainage

The following table provides an assortment of management practices that are intended to protect water quality. Implementation of all practices is not necessary or required. Selection of practices must be done on a site-specific basis and an assortment of practices to protect water quality and to suit your circumstance should be selected. NRCS Practice Titles are provided for your reference.

	NRCS Practice Title	Practice Implementation Date	Location
1. Install roof gutters and down spouts	Roof Runoff Structure (558)		
2. Divert water away from contaminated areas	Diversion (362)		
3. Tie down spouts into a drainage system	Roof Runoff Structure (558)		
4. Install a roof or cover to divert clean water from animal management areas	Roof and Covers (367)		
5. Plant a vegetative filter strip	Filter Strip (393)		
Other:			

NATURAL WATERWAYS, DITCHES, AND SPILLWAYS

Waterways, channels and streams, swales, ditches, and riparian areas are sensitive to agricultural, forest, and other land use activities and practices. These waterways also may act as a conduit for sediment and other pollutants. Healthy riparian zones provide a number of environmental benefits and may protect streambanks from erosion. Riparian areas also buffer waterways from the effects of potential nutrient, pesticide, pathogen and sediment runoff.

Purpose: Describe the condition of natural stream channels, riparian areas, and human-made waterways (non-roadside ditches and pond/basin spillways) on the property including the rate of bed and/or bank erosion, channel incision, head-cutting and the condition of human-made structures in the channel. While adverse conditions in these areas may not be caused by current livestock grazing activities, it is important to describe all conditions accurately, regardless of cause. Describe the conservation practices being implemented to protect waterways from water quality degradation.

Managing Erosion and Water Quality in Natural Waterways

W1. Please mark the type(s) of waterways on the property that are on or adjacent to the ranch facility:

- ☐ Natural (Complete questions W2 through W15)
- ☐ Ditches (Complete Question W16)
- ☐ Spillways (Complete Questions W17 through W21)
- ☐ No Waterways (You do not have to complete this section of the template.)

W2. Waterways on the property regularly flow out of their banks and flood.

- ☐ Yes (Consider Practice #1, listed in table W1 below)
- ☐ No

Describe as needed:

W3. Ranch facilities are set back from waterways by the minimum distance required by County regulations (or greater).

- ☐ Yes
- ☐ Some waterways (Consider practice #9, listed in Table W1 below)
- ☐ No (Consider practice #9, listed in Table W1 below)

Describe as needed:

W4. Agricultural supplies (heaters, trellis parts, irrigation supplies, machinery, etc.) are stored outside of the required waterway setback during winter months.

- ☐ All supplies
- ☐ Some supplies
- ☐ No supplies (Consider practice #10, listed in Table W1 below)

Describe as needed:

Where potential concerns are identified, please reference the conservation practice recommendations noted below.

Question	Potential Concern	Location (<i>pasture/stream</i>) & Describe Condition	Cause ¹ (C, H, or N)
STREAM CHANNEL*			
W5. Bare soil along banks of stream? <i>If Potential Concern noted, consider practices # 1, 3, 4 and 5, listed in Table W1 below.</i>	☐ Yes ☐ No ☐ Not Sure		

W6. Unstable or eroding stream banks? <i>If Potential Concern noted, consider practices #1, 2, 4 and 5, listed in Table W1 below and refer to Sediment Delivery Inventory and Monitoring guidance located here:</i>	☐ Yes ☐ No ☐ Not Sure		
W7. Does the stream have the potential to support trees (look for remnant trees/shrubs along the channel)?	☐ Yes ☐ No ☐ Not Sure		
W8. Are crossings for livestock unstable? <i>If Potential Concern noted, consider practices # 1 and 6, listed in Table W1 below</i>	☐ Yes ☐ No ☐ Not Sure		
W9. Grazing in riparian areas takes place all season? <i>If Potential Concern noted, consider practices # 1, 7 and 8, listed in Table W1</i>	☐ Yes ☐ No ☐ Not Sure		
STREAM TEMPERATURE*			
W10. Is stream exposed to full sun? <i>If Potential Concern noted, consider practices # 1 and 3 through 5, listed in</i>	☐ Yes ☐ No ☐ Not Sure		
W11. Wide and shallow streams?	☐ Yes ☐ No ☐ Not Sure		
W12. Does stream flow appear inadequate, given stream channel size?	☐ Yes ☐ No ☐ Not Sure		
NUTRIENTS*			
W13. Algae growth excessive in stream? <i>If Potential Concern noted, consider practices # 1, 4, 5, 7, and 8, listed in Table W1 below</i>	☐ Yes ☐ No ☐ Not Sure		

¹Note any recorded problem conditions as caused by: **C**urrent livestock management (**C**); a **H**istoric legacy site (**H**); or **N**atural causes (**N**).

W14. Complete this data form for all natural waterways on or adjacent to the Ranch facility. If major streams have widely varying characteristics, break the stream out into reaches with consistent characteristics. Make additional copies if all waterways do not fit on one.

Waterway Name (As labeled on Map. Please break major streams into reaches based on varying conditions)	Channel width at top of bank (ft) 0-10, 11-25, 26-50, 51-100, 101-200, 200+	Channel Condition Stable, incising, head cutting, widening, aggrading	Slope of Banks Very steep (1:1), Moderate (2:1), Gentle (3:1 or less)	Bank Erosion Please note location and dimensions of any significant erosion features and whether erosion is already being treated/managed	Material on Waterway Bottom Silt; Silt w/ some sand/gravel; Gravel w/ lots of silt; Gravel w/ a little silt; Cobbles with sand/gravel; Big rocks with a little sand/silt/gravel	Riparian Corridor Width 0-10, 11-25, 26-50, 51-100, 101-200, 200+	Riparian Vegetation Condition Minimal, sparse vegetation, dense veg, overgrown	Riparian Shade Over Waterway Mostly shaded; Partially shaded; Sparsely shaded; Not shaded
		If channel condition is not stable, consider practices # 1 through 5 and 12 listed in Table W1 below	If banks are very steep, consider practices # 1, 2, 9 and 12 listed in Table W1 below	If erosion sites were noted that are not already being treated or managed, consider practices # 1 through 5, 9 and 12, listed in Table W1 below	Silt on the waterway bottom may indicate erosion nearby or upstream.	If riparian corridor width is less than county required setback for the waterway, consider practices # 4,5 and 12 in Table W1 below	If vegetation is minimal or sparse, consider practices # 4 and 5 in table W1 below If riparian vegetation is overgrown, consider practice # 3 in Table W1 below	If riparian shade is sparse or not present, consider practice #4 in Table W1 below

W15. (Optional Section) Complete this data form for each natural waterway where there is opportunity and landowner interest in enhancing native vegetation, fish and wildlife habitat. If you broke streams out into reaches above, use the same reaches here.

Waterway Name (As labeled on Map. Please break major streams into reaches based on varying conditions)	Variety of Native Vegetation (grasses, forbs, shrubs and trees) Yes/No	Non-native/Invasive Plants Yes/No Indicate percentage of vegetative cover that is non-native: 0 – 25%, 25 – 50%, 50 – 75%, or 75% - 100%	Structures Within Waterway Known to Cause Obstruction to Fish Passage Yes/No, note location	Creek Channel Features Deep (>5') pools; Shallow (<5') pools; Gravel bars; Riffles (shallow gravel areas where water moves fast); Bends; Straight, wide channel	In-stream Habitat Structure Wood; Boulders; Over- hanging Roots Classify complexity as High, Medium, Low or None
	If no, consider practices # 4 and 5 in Table W1 below	If non-native plant cover >50%, or if non-natives are a management concern, consider practice # 3 in table W1 below	If yes, consider practice #10 in Table W1 below		If low or none, consider practices # 1 and 11 in Table W1 below

Table W1: Conservation Practices to Reduce Erosion in Natural Waterways

The following table provides an assortment of management practices that are intended to protect water quality. Implementation of all practices is not necessary or required. Selection of practices must be done on a site-specific basis. An assortment of practices to protect water quality and to suit your circumstance should be selected. NRCS Practice Titles are provided for your reference and you may contact your local NRCS or RCD field office for technical and/or possible financial assistance.

	<i>NRCS Practice Title</i>	<i>Implementation Date</i>	<i>Location</i>
1. Consult a Professional			
2. Apply treatments to stabilize and protect streambanks	Streambank and Shoreline Protection (580)		
3. Remove invasive riparian plants and establish native riparian cover (permit may be needed)	Restoration & Management of Declining Habitats (643) Weed Control (315) Brush Management (314)		
4. Establish native riparian trees and shrubs	Riparian Forest Buffer (391)		
5. Establish native riparian grasses and forbs	Riparian Herbaceous Cover (390)		
6. Provide stable livestock crossings	Stream Crossing (578)		
7. Provide additional water sources to animals to improve distribution	Watering Facility (614) Livestock Pipeline (516)		
8. Install riparian fencing to control animal access to waterways	Fence (382)		
9. Promote natural restoration (let the bank erode and as it becomes stable encourage native vegetation)			

recruitment)			
10. Modify instream structures to improve fish passage	Stream Habitat Improvement and Management (395)		
11. Install in-stream structures to enhance habitat	Stream Habitat Improvement and Management (395)		
12. Provide more space to the stream by setting back structures and storage areas			
13. Establish a supply yard away from the waterway			
Other:			

MANAGING EROSION AND WATER QUALITY IN DITCHES

W16. Complete this inventory of ditches on or adjacent to the ranch facility

Waterway Name (As labeled on Map)	Ditch			Adjacent Buffer	
	Width at top of bank (ft)	Ditch Condition Stable, incising, head cutting, widening, aggrading	Vegetative Cover on Ditch Banks and Bottom Minimal, Sparse, Moderate, Full Cover	Buffer Width (ft)	Vegetation Condition Minimal, Sparse, Moderate, Full Cover
		If ditch condition is not stable, consider practices # 1 through 6 listed in Table W2 below	If vegetative cover is minimal or sparse, consider practices # 2 and 6 listed in Table W2 below	If buffer is not present, or if width is narrower than the ditch itself, consider practice # 3 listed in Table W2 below	If vegetation is minimal or sparse, consider practice # 2 listed in Table W2 below

Table W2: Conservation Practices to Reduce Erosion and Manage Stability and Conveyance in Non-Roadside Ditches

The following table provides an assortment of management practices that are intended to protect water quality. Implementation of all practices is not necessary or required. Selection of practices must be done on a site-specific basis. An assortment of practices to protect water quality and to suit your circumstance should be selected. NRCS Practice Titles are provided for your reference and you may contact your local NRCS or RCD field office for technical and/or possible financial assistance.

<i>Conservation Practice</i>	<i>NRCS Practice Title</i>	<i>Implementation Date</i>	<i>Location</i>
1. Consult a Professional			
2. Establish native grasses and forbs	Conservation Cover (327) Critical Area Planting (342)		
3. Provide more space to the ditch by setting back agricultural operations where feasible			
4. Line an eroding swale or diversion ditch – seek opportunities to disperse water and ensure that outlet is protected and well maintained	Lined Waterway or Outlet (468)		
5. Install rock check structures to dissipate hydraulic energy	Structure for Water Control (587)		
6. Plant a vegetative filter waterway	Grassed Waterway (412)		
Other:			

Managing Erosion from On-Farm Pond/Basin Spillways

W17. There is an on-farm pond or basin (including sediment and attenuation basins) on the ranch facility.

☐

Yes

☐

No

Describe as needed:

W18. Open channel spillways are stable (not eroding) and/or properly armored to prevent erosion.

☐

All Spillways

☐

Some spillways

☐

No spillways (Consider practices # 1 through 5, listed in Table W4 below)

☐

Not Applicable, all spillways are piped

Describe as needed:

W19. Piped and open channel spillways from on-farm ponds contain pond overflows.

☐

All Spillways

☐

Some spillways

☐

No spillways (Consider practices # 6 and 7, listed in Table W4 below)

☐

Not Applicable, all spillways are open channels.

Describe as needed:

W20. The alignments of spillway outlets, both piped and open channel, are in line with the downstream waterway.

☐

All Spillways

☐

Some spillways

☐

No spillways (Consider practice # 8, listed in Table W4 below)

☐

Not Applicable

Describe as needed:

W21. Spillways, pipe and open channel, from on-farm ponds have energy dissipaters prior to re-entering the downstream waterway.

☐

All Spillways

☐

Some spillways

☐

No spillways (Consider practices # 5 and 6, listed in Table W4 below)

☐

Not Applicable

Describe as needed:

Table W4: Conservation Practices to Manage Spillways

The following table provides an assortment of management practices that are intended to protect water quality. Implementation of all practices is not necessary or required. Selection of practices must be done on a site-specific basis and an assortment of practices to protect water quality and to suit your circumstance should be selected. NRCS Practice Titles are provided for your reference.

<i>Conservation Practice</i>	<i>NRCS Practice Title</i>	<i>Implementation Date</i>	<i>Location (if, applicable)</i>
1.Consult a Professional			
2.Install a rock weir to control in-channel flow	Grade Stabilization Structure (410)		
3.Widen/enlarge the spillway	Pond (378)		
4.Stabilize the open channel spillway	Pond (378)		
5.Plant a vegetative filter waterway	Grassed Waterway (412)		
6.Install a rock lined plunge basin	Structure for Water Control (587)		
7.Install bank protection at the spillway outlet	Streambank Protection (580)		

8. Realign the existing spillway with the downstream waterway	Pond (378)		
Other:			

ROADS AND CROSSINGS

Background: Roads that drain toward waterways can be major contributors of sediment. Roads must be safe to travel while having a minimal effect on waterways in the watershed. Practices to address erosion from roads aim to reduce the concentration of flow from roads, slowing the rate of water running off of the land and discharging accumulated waters more frequently to areas away from waterways.

Purpose: To identify practices currently in use and intended for implementation to slow, spread and sink runoff from the roads, particularly unpaved roads. Identify priority road reaches that may discharge directly to waterways so that no more than 25% of roads are connected in 20 years.

Where potential concerns are identified, please reference the conservation practice recommendations noted below.

Question	Potential Concern	Location (<i>pasture/field</i>) & Describe Condition	Cause ¹ (C, H, or N)
ROADS*			
R1. Surface erosion present on road(s) (rills, gullies)? <i>If potential concern noted, consider practices listed in Table R2 below</i>	☐ Yes ☐ No ☐ Not Sure		
R2. Culverts or ditches cause gullies or erosion? <i>If applicable, please complete the Road Stream Crossing Data Form as noted below. Make a copy of the data form for each crossing. Consider practices in Table R1 below, as appropriate.</i>	☐ Yes ☐ No ☐ Not Sure		
R3. Sediment fills drainage ditches after winter? <i>If potential concern noted, consider practices listed in Table R2 below</i>	☐ Yes ☐ No ☐ Not Sure		

¹: Note any recorded problem conditions as caused by: Current livestock management (C); a Historic legacy site (H); or Natural causes (N).

ROADS ON THE PROPERTY

R4. Roads on the property cross waterways.

- ☐ Yes (Please complete the **Road Stream Crossing Inventory Form** that follows. Consider practices in Table R1 below, as appropriate.)
- ☐ No

R5. All roads on the property are necessary and utilized.

- ☐ Yes
- ☐ No (Consider practice #14, listed in Table R2 below)

Data Form R1. Road Stream Crossing Inventory Form

Complete this data form for each place that roads cross a waterway.

ROAD STREAM CROSSING INVENTORY FORM										
Landowner/Property Name:			Date:		Road ID/Name:		Road Surface:		Road Use:	
Site #:	Crossing Type*	Site located up-stream of pond/reservoir (Y,N)	Site Stable?	Left Road Approach Length	Right Road Approach Length	Headwall Height (ft)	Diversion Potential (Y,N)	Comments**	Potential Treatment Options (Refer to tables R1 and R2 below)	
			If no, consider practice 2 in tables R1 and R2 below	If greater than 150 ft, consider, practices 3 or 4 in Table R2 below.	If greater than 150 ft, consider, practices 3 or 4 in Table R2 below.		If yes, consider practice 9 or 10 in Table R1 below			

Table R1: Treatment Options to Reduce Erosion and Manage Stability at Stream Crossings

The following table provides an assortment of management practices that are intended to protect water quality. Implementation of all practices is not necessary or required. Selection of practices must be done on a site-specific basis. An assortment of practices to protect water quality and to suit your circumstance should be selected. NRCS Practice Titles are provided for your reference and you may contact your local NRCS or RCD field office for technical and/or possible financial assistance.

<i>Practices (at stream crossing)</i>	<i>NRCS Practice Title</i>	<i>Implementation Date</i>	<i>Location Site#</i>
1. No treatment at site	--	--	
2. Consult a Professional			
3. Excavate soil	Earthfill (903)		
4. Install bridge	Stream Crossing (578)		
5. Construct Armored-fill crossing <i>(See typical drawings 5a, 5b, 6, 7)</i>	Stream Crossing (578)		
6. Construct a Ford crossing <i>(See typical drawing 5a)</i>	Stream Crossing (578)		
7. Repair culvert	Access Road (560)		
8. Install or replace culvert	Access Road (560)		

(See typical drawing 2, 4)			
9. Construct critical dip (See typical drawing 1c)	Access Road (560)		
10. Install critical culvert	Access Road (560)		
11. Remove screen from culvert inlet	Access Road (560)		
12. Install trash rack (SB, GP, I-B) (See typical drawing 3)	Access Road (560)		
13. Armor fill face (See typical drawing 1b, 4)	Lined Waterway or Outlet (468) and Rock Riprap (907)		
14. Armor below outlet (See typical drawing 1b)	Lined Waterway or Outlet (468) and Rock Riprap (907)		
15. Other			

Table R2: Treatment Options to Reduce Erosion from Road Surfaces

The following table provides an assortment of management practices that are intended to protect water quality. Implementation of all practices is not necessary or required. Selection of practices must be done on a site-specific basis. An assortment of practices to protect water quality and to suit your circumstance should be selected. NRCS Practice Titles are provided for your reference and you may contact your local NRCS or RCD field office for technical and/or possible financial assistance.

<i>Practices (along road lengths)</i>	<i>NRCS Practice Title</i>	<i>Implementation Date</i>	<i>Location Site#</i>
1. No treatment at site	--	--	
2. Consult a Professional			
3. Construct rolling dips (See typical drawings 10, 11, 19a-c.)	Access Road (560)		
4. Install Speed bumps on paved road	Access Road (560)		
5. Outslope road & remove ditch (See typical drawings 9a-c)	Access Road (560)		
6. Outslope road & retain ditch – ensure that outlet is located in a stable location (See typical drawings 9a-c)	Access Road (560)		
7. Inslope road – ensure that ditch outlets to a stable location (See typical drawings 9a-c)	Access Road (560)		
8. Crown road (See typical drawings 9a-c)	Access Road (560)		
9. Install/Replace ditch relief culvert – ensure that outlet is located in a stable location (See typical drawing 8)	Access Road (560)		
10. Cut/clean ditch	Diversion (362) and Access Road (560)		
11. Rock armor ditch – ensure that ditch outlets to a stable location	Lined Waterway or Outlet (468)		

12. Construct Water bars <i>(See typical drawing 20)</i>	Access Road (560)		
13. Construct cross road drains <i>(See typical drawing 17)</i>	Access Road (560)		
14. De-compact road surface <i>(See typical drawing 17)</i>	Road/Trail/Landing Closure and Treatment (654)		
15. Other			

MANURE STORAGE & NUTRIENT MANAGEMENT (IF APPLICABLE)

Background: Although animal waste are organic biodegradable materials, many of their biological and chemical properties can be detrimental to fish, insects and other aquatic life if those wastes get into local waterbodies. Ranch owners should develop a waste management plan to ensure clean and safe facilities, protect creeks and ground water, reduce odors and insect breeding opportunities. Effective manure management helps protect water quality.

Purpose: Identify practices currently in use and that are intended for implementation to:

- ✓ Keep surface runoff (stormwater) away from manure storage areas; divert clean water away from manured areas in a non-erosive manner.
- ✓ Keep manure storage areas away from drainages and water bodies.
- ✓ Keep drainage from manure from percolating down into soil- especially in areas where groundwater protection is a priority.
- ✓ Cover manure.
- ✓ Make access to storage areas convenient, size them adequately and have a contingency plan for when waste volume exceeds capacity.

Where potential concerns are identified, please reference the conservation practice recommendations noted below.

Question	Potential Concern	Location (<i>pasture/field</i>) & Describe Condition	Cause ¹ (C, H, or N)
PATHOGENS AND NUTRIENTS*			
MANURE MANAGEMENT			
M1. Manure stockpile runoff connects to stream? <i>If potential concern noted, consider practices #1 and 2 in table M1.</i>	☐ Yes ☐ No ☐ Not Sure		
M2. Manure applied to pasture less than 2 weeks before a runoff generating rain storm? <i>If potential concern noted, consider practice #5 in table M1.</i>	☐ Yes ☐ No ☐ Not Sure		
M3. Manure applied to pastures is stored (aged) less than one month? <i>If potential concern noted, consider practices #6 and 7 in table M1.</i>	☐ Yes ☐ No ☐ Not Sure		

¹: Current livestock management (C); a Historic legacy site (H); or Natural causes (N).

Manure Storage Areas (if applicable)

M4. Are manure storage areas located on high ground, above likely flood levels?

☐ Yes

☐ No (Consider practice #1, listed in table M1 below)

M5. Is your manure storage area covered by a roof?

☐ Yes

☐ No (Consider practice #3, listed in table M1 below)

M6. Is your manure storage area located near a drainage way, spring, pond, creek or other waterbody?

☐ Yes, (Please answer A and B below) ☐ No.

A. How far is the nearest waterway/waterbody? _____feet

B. Is there a vegetated (grass or other) filter strip between the storage area and the waterway/waterbody?

☐ Yes

☐ No (Consider practice # 2 in table M1 below)

M7. Is your manure storage area located near a water supply well? Make sure to identify the locations of wells on your site map.

☐ Yes, (Consider practice #1, listed in table M1 below) ☐ No.

M8. Please list other manure stockpiling/storage plans or strategies not identified above.

Describe as needed:

Nutrient Management

M9. Do you spread or plan to spread manure on site?

☐ Yes (Please answer A through H below and consider practice #5, listed in Table M1 below)

☐ No

A. Describe the location, frequency and method of spreading.

B. Is the manure being spread as fertilizer or soil conditioner or both? _____

C. Will it be disked? When? During the wet season or under what conditions?

D. What equipment is available to do this work? _____

E. What type of vegetation is present where and when the manure is to be spread?

F. How many years have you been spreading manure in the same location? _____

G. Describe your contingency plan if your storage capacity is exceeded before manure can be spread.

H. Is there a vegetative buffer strip or grass filter strip between the spreading area and drainage ways, wells, or water bodies to trap pollutants?

☐

Yes

☐

No (Consider practice #2, listed in Table M1 below)

M10. Do you apply nutrients/fertilizers other than manure/composted manure?

☐

Yes (List other sources)

☐

No

List:

M11. Fertilizer amount and application timing is prescribed based on crop needs, identified by inspection and/or testing.

☐

Yes

☐

No

(Consider practices # 4, listed in Table M1 below)

M12. Fertilizer(s) are applied with calibrated equipment.

☐

Yes

☐

No

(Consider practice #5, listed in Table M1 below)

Describe as needed:

Table M1: Conservation Practices for Manure Storage and Nutrient Management

The following table provides an assortment of management practices that are intended to protect water quality. Implementation of all practices is not necessary or required. Selection of practices must be done on a site-specific basis and an assortment of practices to protect water quality and to suit your circumstance should be selected. NRCS Practice Titles are provided for your reference.

<i>Practices</i>	<i>NRCS Practice Title</i>	<i>Implementation Date</i>	<i>Location</i>
1. Move manure storage areas to high ground and/or away from waterways and water supply wells			
2. Plant a vegetative filter strip	Filter Strip (393)		
3. Cover pile with tarp when saturated			
4. Consult and follow UCCE crop requirements	Nutrient Management (590)		
5. Time manure/fertilizer application to reduce runoff and leaching	Nutrient Management (590)		
6. Compost animal manure on a containment facility	Composting Facility (317)		
7. Monitor compost temperature	Composting Facility (317)		

AGRICHEMICALS (IF APPLICABLE)

Background: Agrichemicals (organic and/or synthetic nutrients and/or pesticides, including herbicides and sulfur) that move from the site of application into surface water can affect water quality by negatively impacting human, animal and/or non-target organism health. Nutrient sources associated with agricultural production practices may include organic and inorganic fertilizers, biodegraded crop residues, and agricultural wastes (grape pomace and waste directly generated by animals). Wind and water erosion of soil or aerial drift from agrichemical applications may contribute to pesticide movement away from the target area. Agrichemicals may enter surface waters during overland runoff and tile drainage either as water-soluble residuals or adsorbed to sediments. Nutrients from these sources become pollutants when they are transported off-site into nearby streams and lakes or percolate in excessive amounts of groundwater. Nitrates and phosphates in surface water bodies contribute to eutrophication, the increases in aquatic plants and algal blooms that deplete dissolved oxygen, impacting aquatic organisms. All shall be maintained free of toxic and biostimulatory substances in lethal or detrimental concentrations.

Purpose: To identify practices, currently in use or intended for implementation, ensure agrichemicals (fertilizers, soil nutrients, compost and pesticides) are stored, mixed and applied in a manner consistent with all applicable regulations, including those required by the California Department of Pesticide Regulation (DPR) and the County Agricultural Commissioner, and in a manner that prevents excess agrichemicals from reaching surface and groundwater.

A1. Agrichemicals are stored properly (per the label) on-site.

- ☐ Yes
- ☐ No (Consider practice # 1, listed in Table A1 below)
- ☐ No agrichemicals are stored on-site. Skip this section.

Describe as needed:

A2. Agrichemical mixing, loading, and rinsing are conducted on a containment facility.

- ☐ Yes
- ☐ No (Consider practices # 2 through 5, listed in Table A1 below)
- ☐ No mixing, loading, or rinsing on-site.

Describe as needed:

A3. Agrichemicals not handled on a containment facility are mixed, loaded and rinsed away from aquatic habitat and wells.

- ☐ Yes
- ☐ No (Consider practices # 2 through 5, listed in Table A1 below)

☐ No agrichemicals are stored on-site.

Describe as needed:

Table A1: Conservation Practices for Agrichemical Storage, Preparation and Disposal

The following table provides an assortment of management practices that are intended to protect water quality. Implementation of all practices is not necessary or required. Selection of practices must be done on a site-specific basis and an assortment of practices to protect water quality and to suit your circumstance should be selected. NRCS Practice Titles are provided for your reference.

<i>Conservation Practice</i>	<i>NRCS Practice Standard Title</i>	<i>Implementation Date</i>	<i>Location</i>
1. Consult a Professional			
2. Use an impervious containment pad for agrichemical handling	Agrichemical Handling Facility (309)		
3. Provide securable agrichemical handling	Agrichemical Handling Facility (309)		
4. Move agrichemical handling away from aquatic habitat and wells	Nutrient Management (590)		
5. Train employees on safe agrichemical handling	Nutrient Management (590)		
Other:			

Pest Management

P1. The facility operates under a current Pesticide Use Permit filed with the County Agricultural Commissioner.

☐ Yes, provide Pesticide Use Permit # and attach a copy of permit to this Ranch Plan.

☐ No (Consider practices # 1 and 2, listed in Table P1 below)

Describe as needed:

P2. UC-IPM guidelines are followed (<http://www.ipm.ucdavis.edu/PMG/selectnewpest.small-grains.html>)

☐

Yes, indicate current practices below.

☐

Some

☐

No (Consider practices # 3 through 6, listed in Table P1 below)

Describe as needed:

P3. Alternative, non-chemical pest control methods are used when and where practical.

☐

Yes, indicate practices below

☐

No

Describe as needed:

Table P1: Conservation Practices for Pest Management Practices

<i>Practice</i>	<i>NRCS Practice Standard Title</i>	<i>Implementation Date</i>	<i>Location</i>
1. Consult a Professional			
2. Apply pesticides under a Pesticide Use Permit			
3. UC-IPM: Implement appropriate guidelines for small grains	Integrated Pest Management (595)		
4. UC-IPM: Scout for pests	Integrated Pest Management (595)		
5. UC-IPM: Maintain pest management records	Integrated Pest Management (595)		

6.UC-IPM: Use chemicals that are lowest risk to water quality	Integrated Pest Management (595)		
7.Calibrate application equipment (sprayers and injectors) regularly	Integrated Pest Management (595)		
8.Dispose of containers properly	Integrated Pest Management (595)		
9.Train employees per OSHA & MSDS	Integrated Pest Management (595)		
Other:			

3. ADDITIONAL GOALS, INTERESTS OR CONCERNS

Please describe any other natural resource-related goals, interests or concerns identified during the planning process but not otherwise noted in this plan.

Describe as needed:

4. COMPLETED WATER QUALITY PROJECTS/CONSERVATION PRACTICES (OPTIONAL)*

List all past water quality concerns on the ranch/farm and describe the issue. A concern does not indicate that livestock grazing or current management caused it. Describe any previously implemented management practice(s) intended to fix the problem. This includes steps to plan or receive technical/financial assistance, actual implementation or management changes, and the maintenance of projects or ranch infrastructure (cleaning culverts, scraping corrals, weed removal, etc.). Evaluate if more work is needed to improve water quality for each listed concern. Attach any old photographs of the concern including work completed if available. Use additional sheets if needed.

Water Quality Concern		Location (pasture/ field)	Conservation Practice(s) Completed (with NRCS Practice Names and Numbers, if applicable)	Maintenance Needs	Evaluation (Is more work needed?)	Photo Avail.?
#	Describe					

5. FUTURE WATER QUALITY/CONSERVATION PROJECTS*

List all future potential water quality concerns on the ranch/farm with the expected pollutants from each. A concern does not indicate that livestock grazing or current management caused it. This includes locations where your current maintenance prevents problems such as maintaining ranch roads following winter storms. Consider multiple options for fixing water quality concerns such as implementing new practices, and changing management or maintenance routines. Estimate the approximate cost of each option as well as the amount of time needed to conduct maintenance. Give each project a priority, relative to other potential projects, indicating preferred order implementing the project. Assignment of priority recognizes that the availability of financial and technical assistance determines when work is done. List the steps taken to plan for the project including participation in technical & financial assistance programs (ranch visits, meetings, applications, expected contract dates, etc). Use additional sheets if needed.

Water Quality Concern		Location (<i>pasture/ field</i>)	Options for Maintenance, Management Changes, or Practice(s) to Implement (with NRCS Practice Names and Numbers, if applicable)	Estimate Cost of Each Option	Priority	Implementation Planning
#	Describe					

6. MAPS

7. ADDITIONAL RESOURCES

8. PHOTO MONITORING AND PHOTO PLATES

Purpose: To describe the methods and protocols that will be used to carry out visual monitoring and site inspections, including: annual monitoring, site readiness inspections, and management practice monitoring and evaluation. Monitoring is conducted to document that sediment control practices outlined in the LandSmart™ Plan are implemented, that the practices are effective and that they are properly maintained.

Label on Map	Indicate area type (Pasture management, roads and crossings, waterways, etc).	Date	Photo Taken? Y or N	Condition (performing properly, needs maintenance, needs consultation)	Actions taken