

# Ranch Water Quality Planning Short Courses:

Napa River and Sonoma Creek Watersheds

Morgan Doran, David Lewis, Stephanie Larson and Michael Lennox  
UC Cooperative Extension

## RWQP Short Course Starting Point

RMAC & BOF

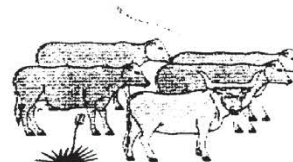


CARCD  
UCCE  
USDA-NRCS



Ranch Water Quality Planning  
(RWQP) Short Course

STATE WATER RESOURCES CONTROL BOARD  
DIVISION OF WATER QUALITY  
NONPOINT SOURCE PROGRAM



California Rangeland Water Quality Management Plan

July 1995

# SWRCB Tiered Regulatory Approach

## Non-Point Source Plan

Tier 1 Voluntary implementation of BMPs

Tier 2 Regulatory encouraged BMPs

Tier 3 Regulatory based BMPs



**SWRCB  
Tiered Regulatory  
Approach**

**Non-Point Source Plan**

Tier 1 Voluntary implementation of BMPs

Tier 2 Regulatory encouraged BMPs

Tier 3 Regulatory based BMPs



**SWRCB  
NPS Pollution Control  
Program (2004)**

**Permitting Authorities / Options**

Waste Discharge Requirements (Permits)

Conditional Waivers of WDR

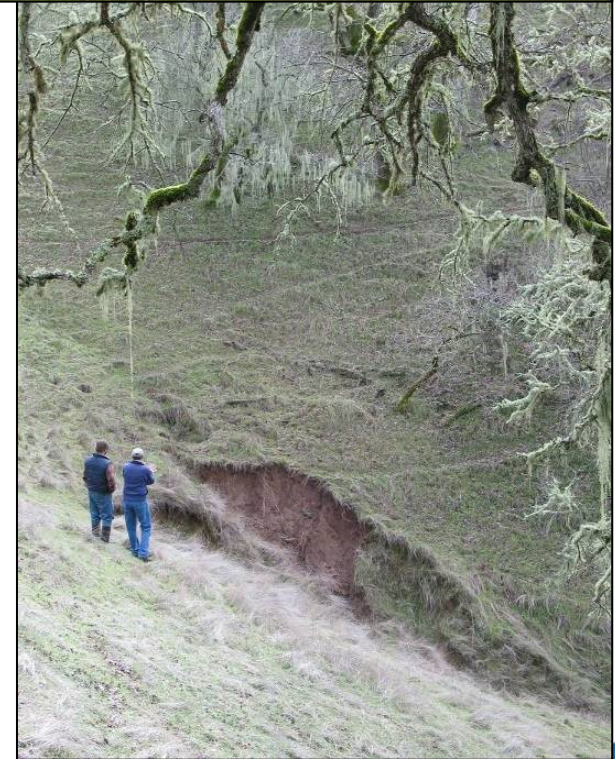
Basin Plan Prohibitions

# RWQP Short Course Driving Factors

Regulatory Compliance

Address WQ Issues / Problems

Ranch Water Quality Science



Elements of RWQP  
Short Course

# PRIZE TIME

# Elements of RWQP

## Short Course

### Indoor Sessions

Overview of WQ Regulations,  
Compliance and Short Course

Ranch Water Quality Science

Ranch Goals

Field / Pasture Inventory

Self-Assessment

Ranch Water Quality Practices  
(BMPs)

Ranch Mapping

# Elements of RWQP Short Course

Frustration Level

## Indoor Sessions

Overview of WQ Regulations,  
Compliance and Short Course

Ranch Water Quality Science

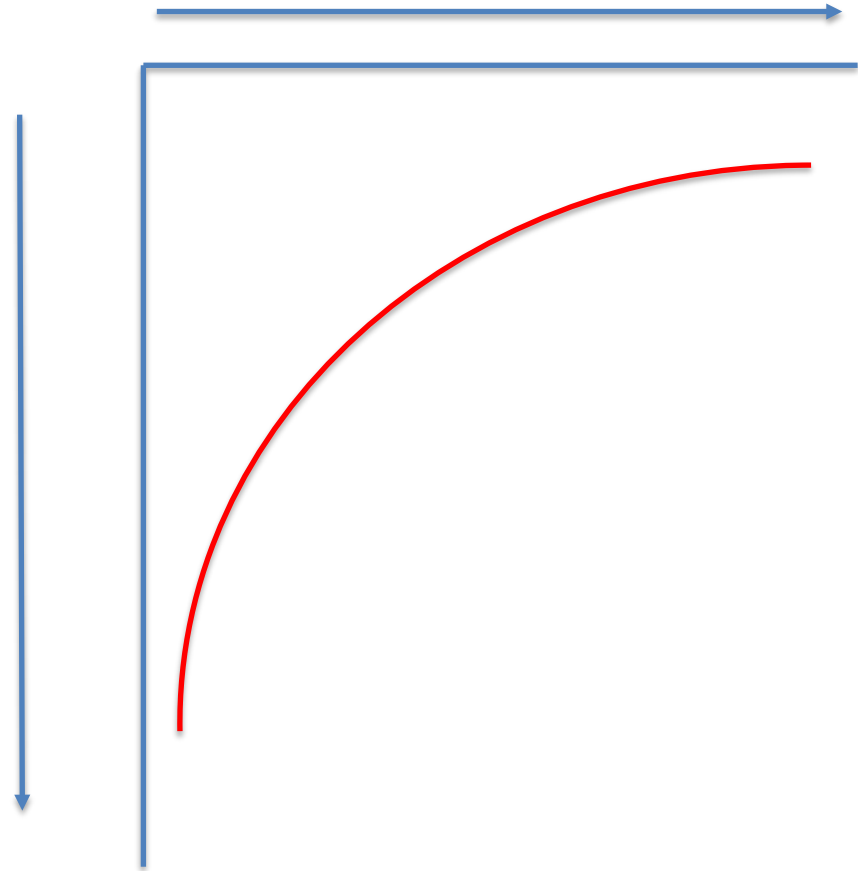
Ranch Goals

Field / Pasture Inventory

Self-Assessment

Ranch Water Quality Practices  
(BMPs)

Ranch Mapping





# Elements of RWQP Short Course

## Outdoor Sessions

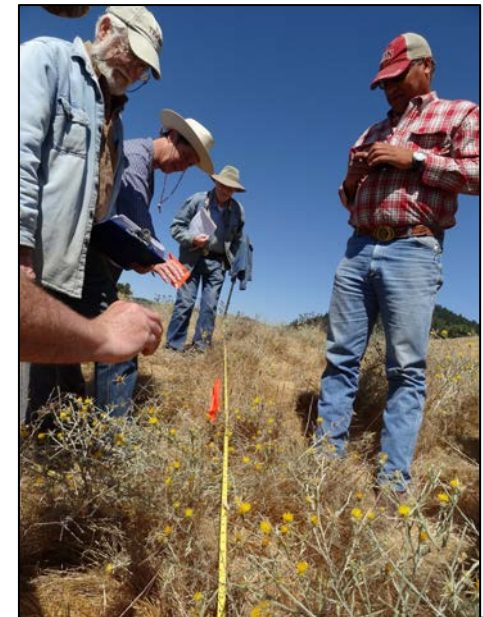
Ranch Roads

Self-Assessment

Ranch Water Quality Practices  
(BMPs)

Soil Properties

Monitoring



## Short Course Outcomes

# PRIZE TIME

## Short Course Outcomes

Completed RWQP



## Short Course Outcomes

Completed RWQP

Understanding of:

- Regulatory / Compliance Process
- Ranch Water Quality Science
- Merging WQ and Ranch Goals
- Team of People and Agencies



## Short Course Outcomes

Completed RWQP

Understanding of:

Regulatory / Compliance Process  
Ranch Water Quality Science  
Merging WQ and Ranch Goals  
Team of People and Agencies

Education

For Ranchers  
For Landowners  
For Regulators  
For Agencies



## Short Course Outcomes

Completed RWQP

Understanding of:

- Regulatory / Compliance Process
- Ranch Water Quality Science
- Merging WQ and Ranch Goals
- Team of People and Agencies

Education

- For Ranchers
- For Landowners
- For Regulators
- For Agencies

Resources for Project Implementation



Photos courtesy of Marin RCD

# Napa River and Sonoma Creek Conditional Waiver TMDL Programs

- **2012**
- **Conditional Waiver of WDR**

# Napa River and Sonoma Creek Conditional Waiver TMDL Programs, 2012

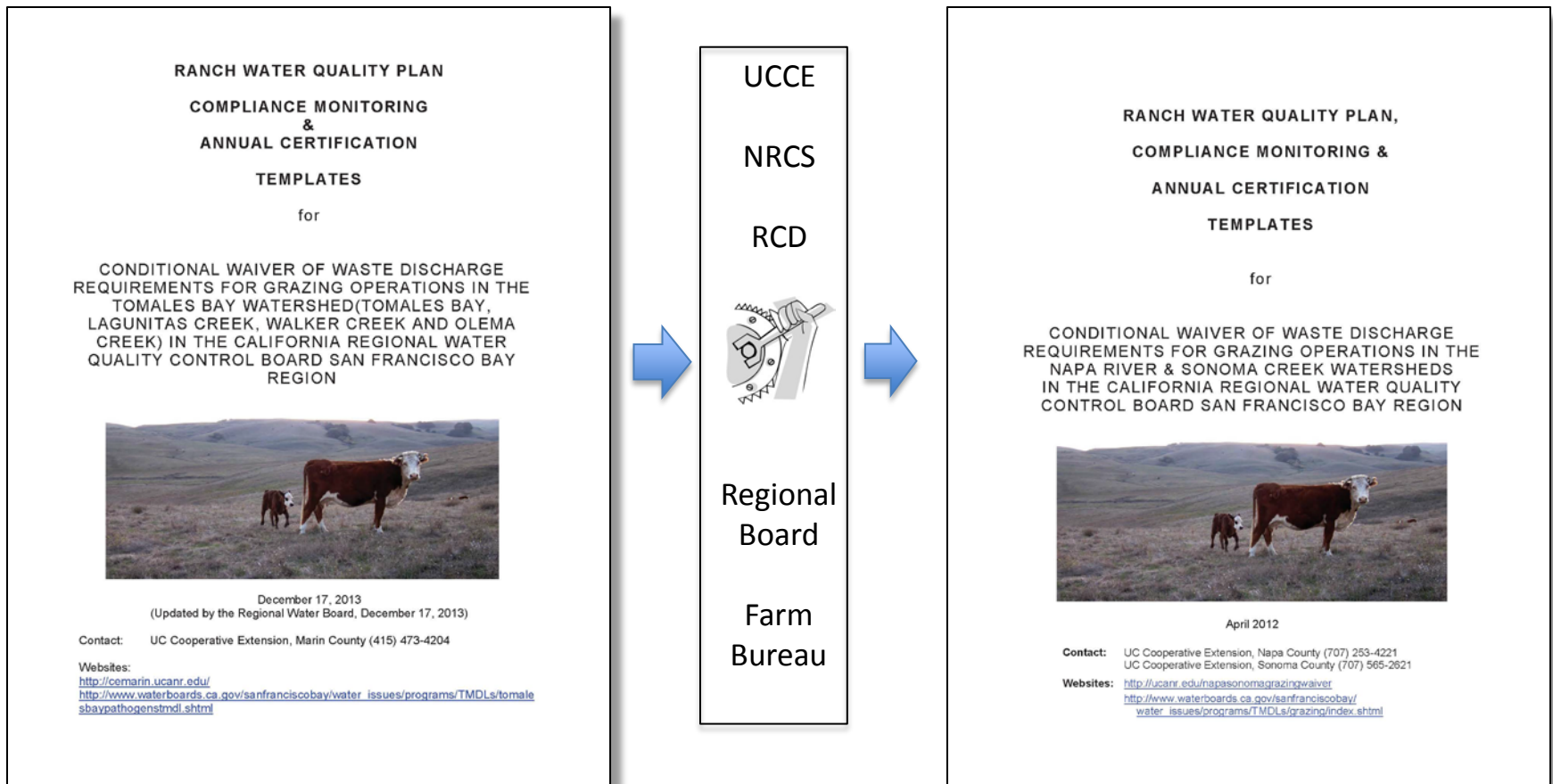
- **Elements of Compliance**
  - **Submit Notice of Intent (NOI) to comply**
    - Name and Property Information
  - **Completed RWQP**
    - Must be available upon inspection
  - **Submit Annual Certification**
    - Updates on monitoring and projects



# Napa River and Sonoma Creek Conditional Waiver TMDL Programs

- Elements of Compliance
  - Submit Notice of Intent (NOI) to comply
    - Name and Property Information
  - Completed RWQP
    - Must be available upon inspection
  - Submit Annual Certification
    - Updates on monitoring and projects
- **Direct Reporting to SF Bay Regional Board**

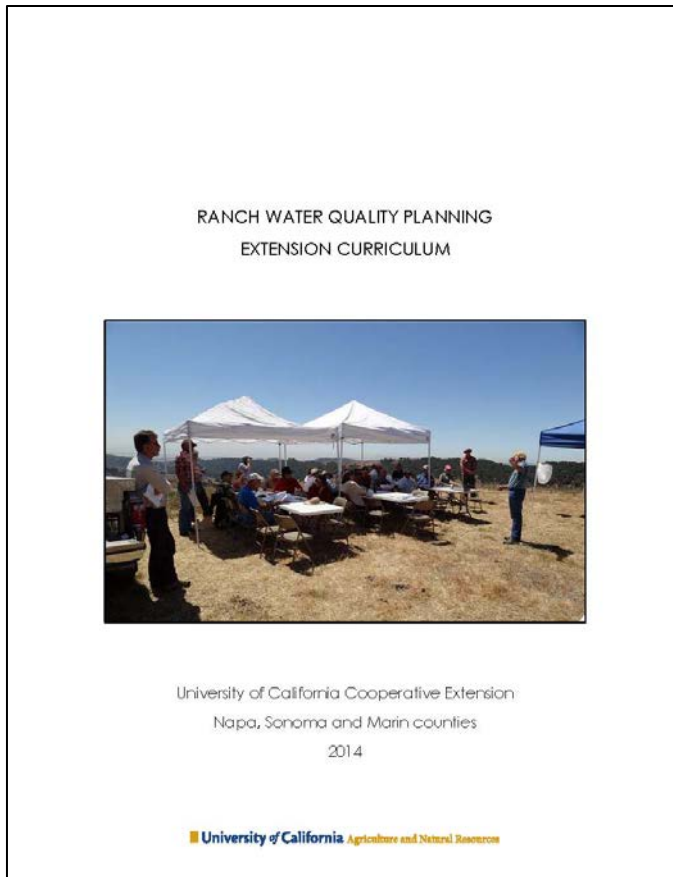
# Napa River and Sonoma Creek Ranch Water Quality Plan Template



# RWQP Upgrades



# Short Course Curriculum Update



Extension Curriculum for Ranch Water Quality Planning

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# Short Course Curriculum Update

RANCH WATER QUALITY PLANNING  
EXTENSION CURRICULUM



University of California Cooperative Extension  
Napa, Sonoma and Marin counties  
2014

University of California Agriculture and Natural Resources

Introduction to RWQP .....	
Lesson Plan 1. Where and when are Ranch Water Quality Plans (RWQP) needed? .....	
Module 2. Ranch Water Quality .....	
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# Short Course Curriculum Update

## Extension Curriculum for Ranch Water Quality Planning

### Lesson Plan 4. Soil Characteristics & Maps

**Goals/ Overview:** Understand rangeland soil health concepts and how they affect water quality. Practical applications of these concepts include the effect of organic matter on pasture production and water quality, soil texture and stability in rain events and water infiltration. Participants should be able to evaluate areas on a ranch with respect to infiltration and hydrologic connectivity from compacted soil areas.

#### Learning Objectives:

1. Understand the importance of soil to water quality management and pasture production.
2. Understand hydrologic connectivity resulting from compaction and rainfall-runoff relationships previously discussed.
3. Review the fate and transport of common rangeland pollutants and "hydrologic connectivity".
4. Ability to locate areas without infiltration and delineate where runoff goes.
5. Become comfortable using resources online and experts within conservation partnership to assist with assessing and evaluating individual ranch water quality challenges.
6. Ability to read the ranch maps provided to attendees who signed up at last meeting. Continue signups as needed.

#### Introduction/ Hook:

- Review any historic maps participants bring to share.
- Handout maps which include a soils map of individual ranches and discuss specific map units of interest for erodibility and/or tell stories of erosion and sedimentation during large storm event years and consider causes.
- Provide tools for learning about soil properties at individual ranches such as UC Davis Soils Web and USDA NRCS resources.

#### Materials/ Speakers:

- Consider the amount of detail to be covered in workshop portion compared to field day components and when that will occur. This topic may be completely covered during a field day if electronic resources are available.
- Have internet interface available for laptop to demonstrate online tools such as NRCS Web Soil Survey. Use GIS, Google Earth or other aerial photo with soil layers from UC Davis Soils Web application.
- Invited speaker is soils scientist(s) could be UCCE Soil Specialist and/or NRCS Soil Conservationist (Table 1).
- Water board staff invited to learn about program and continue to build relationships with landowners.
- Provide example of binder with RWQP from Tomales Bay or Napa/Sonoma watersheds – review maps produced for specific ranches and go over soils map details, scale and uses.
- Handouts to attendees of pertinent resources.

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## Extension Curriculum for Ranch Water Quality Planning

- Food and beverages – snacks and coffee/tea suffice during introductory meetings.

#### Time Allocated:

Allow 1-1.5 hours, Presentations = 40 min., questions = 30 min.

#### Procedures/ Activities/ Strategies/ Questions:

- Review any recent observations of attendees around their ranch following rainfall events.
- Discuss important soil properties using county soil survey with examples of specific map units common to participants' ranches.
- Measuring rainfall and connections to stream flow generation.
- Review geologic maps and landforms common to certain soil series within watershed.
- Discuss legacy soil erosion issues and expectations on handling legacy sites in RWQP.
- Describe how ranch maps were produced and explain components (20 min.).
- Has brush or other invasive plant species encroached into any pastures and when did this occur? Review historic aerial photos imagery from Google Earth, GIS or other source.
- Complete the Session Evaluation Form (Appendix A).

#### Conclusion/ Self-assessment:

- Do maps make sense to each attendee and are they accurate?
- Where and when did majority of erosion occur over last 50 years?
- Did vegetation cover and productivity passively heal in eroded areas adequately, or was active management needed?

#### Resources:

1. SoilWeb: An Online Soil Survey Browser from UC Davis Soils Lab  
<http://casoilresource.lawr.ucdavis.edu/soilweb/>
2. NRCS Web Soil Survey <http://websoilsurvey.nrcs.usda.gov/app/>
3. Erodibility of Agricultural Soils (#8194) <http://arcatalog.ucdavis.edu/pdf/8194.pdf>
4. Rangeland Soil Quality: Water Erosion  
<http://soils.usda.gov/sqi/management/files/RSQIS9.pdf>
5. Survey Identifies Sediment Sources in North Coast Rangelands (2001)  
<http://escholarship.ucop.edu/item/1nh5291b>

#### Next Steps/ Future Lessons:

- Consider effectiveness of previously completed conservation practices on your ranch? Consider how the practices changed sediment delivery, pasture productivity and/or ranch viability.

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# Short Course Curriculum Update

COMING SOON  
WITH ONLINE  
ACCESS AND  
PRESENTATIONS  
INCLUDED

Extension Curriculum for Ranch Water Quality Planning

Lesson Plan 4. Soil Characteristics & Maps

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- Review any historic maps participants bring to share.
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- Provide tools for learning about soil properties at individual ranches such as UC Davis Soils Web and USDA NRCS resources.

**Materials/ Speakers:**

- Consider the amount of detail to be covered in workshop session compared to 1 day components and when that will occur. Electronic maps completely covered during field day if electronic resources are available.
- Have internet interface available for laptop to demonstrate online resources at NRCS Web Soil Survey. Use GIS, Google Earth or other aerial photo with soil layers from UC Davis Soils Web application.
- Invited speaker is soils scientist(s) could be UCCE Soil Specialist and/or NRCS Soil Conservationist (Table 1).
- Water board staff invited to learn about program and continue to build relationships with landowners.
- Provide example of binder with RWQP from Tomales Bay or Napa/Sonoma watershed. Review maps produced for specific ranches and go over soils map details, sections and use.
- Handouts to attendees of pertinent resources.

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Extension Curriculum for Ranch Water Quality Planning

- Focus on beverages – ranch and other tea suffice during introductory meetings.

**Time allocated:**

Allow 1-1.5 hours, Presentations = 40 min., questions = 30 min.

**Procedures/ Activities/ Strategies/ Questions:**

- Review and record observations of attendees around their ranch following rainfall events.
- Discuss important soil characteristics using county soil survey with examples of specific map units common to participants ranches.
- Discussing rainfall and connections to stream flow generation.
- Review geologic maps and landforms common to certain soil series within watershed.
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2. NRCS Web Soil Survey <http://soils.nrcs.usda.gov/app/>
3. Erodibility of Agricultural Soils (#8-09) <http://arcatalog.ucdavis.edu/pdf/8194.pdf>
4. Rangeland Soils Quality: Water Erosion <http://soils.usda.gov/qa/instrument/files/01S9.pdf>
5. Soils of the Coast Rangelands (2001) <http://extension.ucop.edu/uc/item/1113291b>

**Next Steps/ Future Lessons:**

- Consider effectiveness of previously completed conservation practices on your ranch?
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# RWQP Short Course Summary

Collaborative

Adaptable

Current

Evolving

Accepted

It Works







**Morgan Doran**

**[mpdor@ucanr.edu](mailto:mpdor@ucanr.edu)**

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