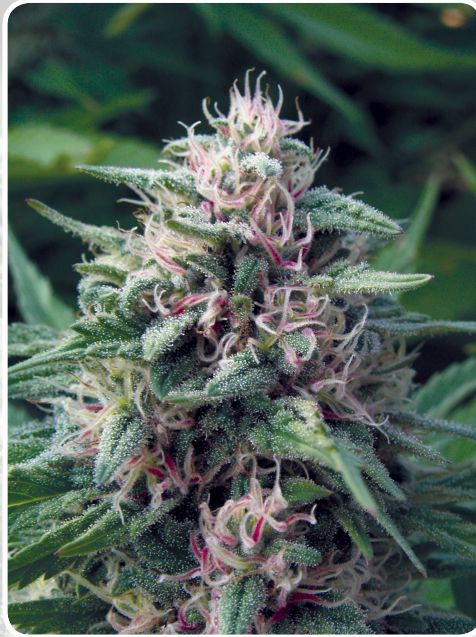


Quick Guide to Watershed Best Management Practices



Why this Guide?

This brochure is designed to help North Coast residents take an active role in stewarding their land and the natural resources that rural communities rely on. The brochure is adapted from the Mendocino County Resource Conservation District's *Watershed Best Management Practices (BMP) for Cannabis Growers and other Rural Gardeners* that outlines best management practices, or BMPs, for rural farming with an emphasis on cannabis cultivation. BMPs have a proven track record of protecting water, soil, land value, sensitive habitats, and endangered species. By practicing BMPs, you have the power to make an immediate difference to an important ecological resource, your own backyard!

What are BMPs?

BMPs are practical ideas to help you manage your land, protect water resources, and improve the value of your property. BMPs are also frequently required by regulations to ensure that land development and maintenance do not negatively impact water quality and quantity.

Land Self-Assessment Checklist

Note: This checklist is for your personal use and differs from that required by the NCRWQCB permit.

To start, locate your land on a USGS quad map. If you have an aerial photo of your property, have that available as well. Walk your property and bring a clipboard, a map, a camera, and a GPS if you have one.

Property Owner _____ Date _____

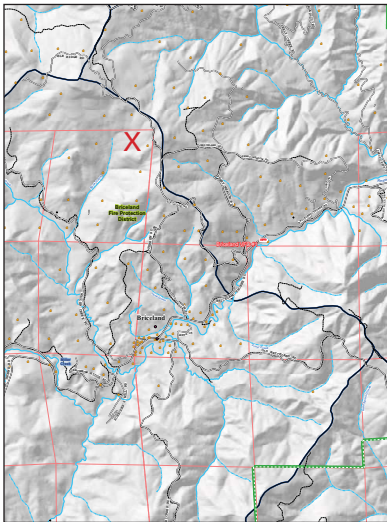
Property Acreage _____

Watershed _____ Stream name _____

Soil Type _____ Slope _____

Map and Written Summary of Your Property

A self-drawn map and written overview can serve as a powerful reference document for both business and conservation planning. Be sure to capture locations of all the constructed and biological features. Note any areas of obvious erosion, especially on areas impacted by poorly drained roads and streambanks.



Landowners can use an existing topo or fire district map to mark their water source, water storage, roads, landings, and developments.



Primary Water Sources (circle all that apply)

Rainwater

Stream/river

Spring

Well

Pond

Delivered

Water Available (Month) _____ to (Month) _____

For Stream Sources of Water

Tributary to:

Organisms Present: Fish Amphibians Invertebrates

Flow Rate at Diversion (where you pump from):

Today _____

Feb. 15 Median _____

July 15 Median _____

Type of diversion: Gravity Pump/Type: _____

Type of Storage: Bladder Tank Pond

Total Storage Volume:

General road condition _____

Stream Crossing? Yes No

Erosion or Gullies Present? Yes No

During a rain event, does the road wash out and send sediment into the stream?
Yes No

Do roads slope inward or outward? _____



References

Soil Type: A simple method for evaluating your soils is to use the “feel” test. See www.ext.colostate.edu/mg/gardennotes/214.html for instructions.

Slope: See www.ehow.com/how_6118577_calculate-slopeproperty.html for a simple method to estimate slopes. Smart phone users can download a clinometer app for easy measurement.

Measuring Flow Rate at Diversion: Page 2 of the UC ANR publication Low Cost Methods of Measuring Diverted Water <http://anrcatalog.ucanr.edu/pdf/8490.pdf> contains simple instructions for determining flow rate at diversion.

Adapted from High Tide Permaculture’s Land Assessment Checklist

BMP Checklist

Water System

- Registration for water storage
- Initial Statement of Water Diversion and Use with annual reporting
- Water meter on tank outlet
- No leaks in system
- Organism excluders: maximum 3/32" screen
- Prefiltration prior to storage to prevent sedimentation
- Automatic shutoff float valve
- Drip irrigation
- Self-adjusting irrigation controller
- Anti-backflow devices on water supply hoses
- Withdrawals limited to wet season months
- Pump screens are large enough that suction pressure is invisible.

Water Storage

- Available storage volume sufficient to provide water from May to November
- Rigid tank for storage
- Tank located a minimum of 100 feet from the edge of stream and at least 30 feet from the property line and county roads.
- Ponds are lined with an environmentally friendly material (bentonite, bento-mat, degradable geotextiles)
- Escape route in ponds for amphibians/wildlife
- Storage elevated relative to site to eliminate pumps

Herbivory Prevention and Pest Control

- Fencing
- Animal-friendly materials for wildlife excluders
- Traps for pests
- Crop diversity
- Integrated pest management

Chemical Storage

- Secured storage/locked shed
- Ventilated shed located in the shade
- Secondary containment capable of holding the maximum possible volume stored

Catch basin for petroleum-based products

- Storage located more than 100 feet from water source with no discharge path to water
- Proper storage instructions posted
- Supply of spill clean-up material near storage unit

Roads and Crossings

- Stream crossings and culverts sized for a 100 year flood flow plus debris
- Culverts consistent with NMFS's Guidelines for Salmonid Passage at Stream Crossings and CDFW's Criteria for Fish Passage
- Energy dissipaters downstream of culverts
- Cap material from natural sources (bare soil, vegetation) or aggregate (paved, crushed, other)
- Proper drainage (Inboard ditch, Relief culverts, Outsloped, Rolling dips, Hydrologically disconnected from surface water)
- Consultation with a licensed road contractor, engineer, or geologist.

Developed Sites (homes, sheds, greenhouses, cultivated areas, etc.)

- Natural vegetated buffer zone of 100 feet between developed site and water source
- Vegetated swales
- French drain

Soils

- Off-season cover crop
- Composting (of on-site soils only, so no spoils are generated or soil amendments imported)
- Livestock have no or limited access to stream corridors and erodible soils
- 2–3 inches of mulch around plants
- Spoils piles are away from waterways and compacted or revegetated

Stream banks

- Sloped to restore natural topography
- Adequate riparian buffer zone, planted with native vegetation

Waste Management

- Contained, covered area designated for waste and recycling
- Composting toilet located more than 100 feet from water source, sited, and constructed according to SWRCB OWTS policy

Habitat Enhancement and Protection

- Large trees in stream retained
- Ample riparian vegetation
- Bird habitat protected during construction and maintenance activities
- Large cavity trees and snags retained for birds
- Trees on site with a variety of heights and diameter classes
- Beaver ponds left in place to slow the release of water, trap sediments, and create habitat

Adapted from/Courtesy of High Tide Permaculture

Where to Find Help with BMPs

The North Coast Regional Water Quality Control Board maintains a list of approved third party certifiers for their water quality permit program. The list can be found at www.waterboards.ca.gov/northcoast/water_issues/programs/cannabis/#_Third_Party_Programs.

The Eel River Recovery Project is a non-profit group that works with cannabis cultivators and others to institute watershed-friendly practices. The organization has put together a list of recommended contractors for the Eel River watershed. Contact them at www.eelriverrecovery.org.

Property owners can also work with consultant(s) of their choice on BMPs. If you use a private contractor who is not on a pre-screened list, make sure they are a reputable operator with the appropriate license and they are able to meet the performance standards outlined in the permits.

Agencies Involved in Water Quality Issues (Partial List)

Federal

U.S. Environmental Protection Agency (USEPA) www3.epa.gov

U.S. Fish and Wildlife Service (USFW) www.fws.gov

Army Corps of Engineers (ACOE) www.usace.army.mil

National Oceanic and Atmospheric Administration (NOAA)
www.noaa.gov

State

State Water Resources Control Board (SWRCB) www.swrcb.ca.gov

California Department of Fish and Wildlife (CDFW) www.wildlife.ca.gov

California Department of Pesticide Regulation (CDPR) www.cdpr.ca.gov

Regional

North Coast Regional Water Quality Control Board
(NCRWQCB) www.waterboards.ca.gov/northcoast

Local

Salmonid Restoration Federation (SRF) www.calsalmon.org

Sanctuary Forest www.sanctuaryforest.org

Mendocino County Resource Conservation District www.mcrccd.org

Five Counties Salmonid Conservation Program www.5counties.org

Pacific Watershed Associates www.pacificwatershed.com

Do I Need a Permit?

A Quick Reference Guide

Activity	Applicable Permits	Agency
Movement of earthen materials in, or alteration of, the bed and/or banks of a watercourse	1602 lake and streambed alteration agreement (LSA)	California Department of Fish and Wildlife (CDFW)
	401 certification	North Coast Regional Water Quality Control Board (NCRWQCB)
	404 certification	US Army Corps of Engineers
Clearing, grading and/or conversion of land	3 acre conversion	CAL FIRE
	Construction Storm-water General Permit	NCRWQCB
	Grading Permit	Counties of Del Norte, Humboldt, Siskiyou, Modoc, Sonoma, Lake, Shasta
Structural development	Building Permit	Counties
Water diversion from hydrologically connected waters of the state and/or storage	1602 LSA (CDFW)	
	Statement of Use (SWRCB)	California Department of Fish and Wildlife
	Appropriative Water Right (SWRCB)	State Water Resources Control Board (SWRCB) Division of Water Rights
	Building permit if storage tank is over 5,000 gallons (Counties)	Counties
Waste Discharges resulting from Cannabis Cultivation or operations with similar environmental effects	General Waiver	NCRWQCB
Human Waste Facilities, including outhouses and composting toilets	Onsite Wastewater Treatment System (OWTS)	SWRCB
		Counties' Environmental Health Departments

Water Diversion and Storage

State water rights law requires any person diverting waters (springs, streams, and rivers) to file an initial statement of use and annual reporting with the Division of Water Rights for each point of diversion: http://www.swrcb.ca.gov/waterrights/water_issues/programs/diversion_use/index.shtml

As of January 2016, anyone who diverts water from rivers and streams is required to measure and report how much they use annually. More information can be found at www.waterboards.ca.gov/waterrights/water_issues/programs/measurement_regulation.

The seasonal storage of surface water requires an Appropriative Water Right to be filed with the Division of Water Rights. Information on the types of Appropriative Water Rights and Registrations can be found at: www.waterboards.ca.gov/waterrights/publications_forms/forms.

The Division of Water Rights notifies the California Department of Fish and Wildlife (CDFW) of diversion and storage registrations and CDFW may put additional terms and conditions on the water right.

Water Diversions or Water Storage may require a Lake and Streambed Alteration permit (CDFW 1600 permit).
www.wildlife.ca.gov/conservation/LSA



Adapted from the Mendocino County Resource Conservation District's Watershed Best Management Practices (BMP) for Cannabis Growers and other Rural Gardeners
http://mcrccd.org/wp-content/uploads/MCRCCDCannabisWatershedBMPGuide_low-res.pdf

The MCRCD guide is available for free download in English and in Spanish at
www.mcrccd.org/publications