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Farm Water Quality Planning

*A Water Quality and
Technical Assistance Program
for California Agriculture*

This REFERENCE SHEET is part of the **Farm Water Quality Planning (FWQP)** series, developed for a short course that provides training for growers of irrigated crops who are interested in implementing water quality protection practices. The short course teaches the basic concepts of watersheds, nonpoint source pollution (NPS), self-assessment techniques, and evaluation techniques. Management goals and practices are presented for a variety of cropping systems.



Reference:

Guide to Resource Management Records for Farms

MARY BIANCHI is UC Cooperative Extension Farm Advisor, San Luis Obispo County.

INTRODUCTION

The development of a farm management plan that documents past and future operations is often the first step in addressing an environmental impact. As owners and managers become more involved in the development of management plans, they may soon discover that they do not have the backlog of data that state and federal agencies have. This *Guide to Resource Management Records for Farms* can be used to document past resource utilization and practices and to improve future documentation of farm operations.

The lack of sufficient data to document past use and impact is a major problem faced by farm and ranch owners and managers. The grower is at a disadvantage when he or she cannot document changes in ecological conditions, past production practices, improved practices and their long-term benefits, and other indicators of good management or stewardship. The landowner may be frustrated by his or her apparent inability to substantiate a claim that a proposed management system, if imposed, will create an economic hardship.

More and more growers are asking “What information do I need to prepare a farm plan?” and “What kinds of data should I record now in order to have documentation that will be useful later on?” Many growers do not realize that they already have an abundance of data captured on photographs or maps, documented on production or pesticide-use records, or stored in an undocumented form in their own minds. One advantage most growers have over government agency personnel is experience and a “feel” for their land.

TYPES OF RECORDS

This guide can help growers compile a database from materials they already have on hand, and compile it in a way that will make it useful in the management planning process. There are six basic kinds of records where you can find information on past and present resource use and the information needed to document land management in the future.

Historical records. Develop a history of the farm from existing historical records, including items such as these:

- journals or letters
- landscape or aerial photographs
- ownership and sale history
- reputation of the property
- tax records
- economic history
- business plans
- emergency response plans

- past hazards, disturbances, and disasters (insurance records)
- government agreements or county permits
- conservation projects
- water use records:
 - pump tests
 - power use (electric or propane bills)
 - meter readings
- pesticide use records
- employee records
- project records, with start and completion dates
- year-end reports to the Agricultural Commissioner

Physical and environmental records. Acquire maps, aerial photos, and surveys of topography, soils, vegetation types, and other physical features of the farm. Keep a diary of environmental conditions, problems, and activities, such as these:

- climatic records
- temperatures
- precipitation
- patterns of storms
- unusual freeze
- length of growing season
- prevailing seasonal winds
- water records:
 - availability
 - quantity
 - quality
 - problems
- trespass, vandalism, or theft
- poisonous plants
- insects, diseases, and vertebrate pests
- encroachment of undesirable vegetation
- inadequate water and fencing
- activities (alternative uses of the farm by persons other than owner; i.e., employees, hunters, fishers)

Vegetation records. Some information on vegetation may be available in the form of aerial photos or maps from your county planning department, the California Department of Forestry, or other government agencies. Obtain copies of all relevant records they may have.

The data recorded will be specific to each cropping system. For example, using a computer spreadsheet or database, the following information could be included in a vineyard block record:

- block identification and location
- rootstock and variety/clone
- vine and row spacing
- total number of plants
- type of trellis
- type of irrigation system(s)
- water source
- farm improvement records
- records of design and costs
- maintenance (roads, culverts, drainage ways, cover crops, filter strips, etc.)
- use dates (i.e., when wells are turned on or off)

Baseline records. Baseline records can provide documentation of existing conditions. Self-evaluation programs can be developed to document changes in vegetation (species composition, productivity, structure, undesirable plants, etc.) on uplands and in riparian areas.

The condition of the vegetation surrounding a growing operation can change seasonally and annually due to weather and management actions. Weather, fire, and management can result in immediate, easily perceived, and sometimes catastrophic change. Slow, imperceptible changes can only be documented through long-term observation.

Production records. Many forms, pocket diaries, and computer programs are available for keeping production records. The following records can be used to determine progress toward objectives (short-term, 1 to 2 years) and farm management goals (long-term):

- type of production
- crop quality performance and goals
- variety
- row spacing
- total production
- insect and disease incidence and controls
- nutritional program (soil and foliar fertilizers)
- amendments (soil and water)
- floor management program
- contract parameters
- marketing practices
- irrigation

Economic records. Perform a cost-benefit analysis. Commit your farm management objectives to paper, including:

- utilization objectives
- improvement objectives
- conservation objectives

Include records reporting the following:

- investments
- land investment
- improvement investment
- machinery and equipment
- plant materials investment
- cost
- production expenses
- labor expenses
- management costs
- property tax
- utility costs
- machinery and equipment
- other costs
- income
- crop sales
- outside income
- cost-benefit analysis
- management measures
- environmental quality plans

REFERENCE

George, M. 1993. Rangeland monitoring publications No. 2: Monitoring with ranch records. Davis: University of California, Rangelands Research and Information Center <http://agronomy.ucdavis.edu/calrng/monitor.htm>

FOR MORE INFORMATION

You'll find detailed information on many aspects of field crop production and resource conservation in these titles and in other publications, slide sets, and videos from UC ANR:

Nutrients and Water Quality, slide set 90/104

Protecting Groundwater Quality in Citrus Production, publication 21521

Sediments and Water Quality, slide set 91/102

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University of California
Agriculture and Natural Resources
Communication Services
6701 San Pablo Avenue, 2nd Floor
Oakland, California 94608-1239
Telephone: (800) 994-8849 or (510) 642-2431, FAX: (510) 643-5470
E-mail inquiries: danrcs@ucdavis.edu

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