

HOW DO I MANAGE MY VINEYARD AND SURROUNDING ECOSYSTEM FOR OPTIMAL LAND HEALTH, PRODUCTIVITY, AND PROFITABILITY?

The concept of land stewardship requires a whole systems approach to farming and goes beyond farm borders to encompass the agroecosystem. Emphasis is placed on the health of the ecosystem, with value placed on natural habitat and desire to work with nature instead of against it. By taking a whole systems approach to vineyard management, consideration is given to intended and unintended consequences of your actions, with steps taken to mitigate negative impacts. The vineyard is established and managed in ways to avoid later problems that could require additional farm inputs (i.e., planting vigorous variety in fertile soil on a trellis system that encouraged shading and mildew problems).

CHECKLIST OF QUESTIONS TO ANSWER:

I. What are the components of an agroecosystem?

- Soil- fertility, tilth, erosion control, soil conservation
- Water- quality and quantity
- Air- impacted by burning crop residue, air pollution from fossil fuel-burning equipment, greenhouse gas
- Plants- diverse species present, streamside buffers, plant hedgerows
- Animals- diverse species present
- Energy- using renewable source, reducing energy needs by using variable rate irrigation pump, switching from fossil fuel fertilizers, using energy efficient frost protection
- Humans- safe working environment

One way to think of the components of your agroecosystem is to consider the impact of their flows—how do your farming practices affect the flow of water (quality and quantity) on and off your farm? Is the soil healthier or less from your farming practices? Is the air quality degraded from burning prunings or improved from growing a perennial crop? Are the plant and animal species more or less diverse as a result of your practices? Consider your use of energy and energy-driven inputs and how they can be reduced or switched to renewal sources, such as moving from fossil fuel made fertilizer to compost.

2. What are the steps to improving the health of your agroecosystem and profitability?

- a. Inventory your farmscape, describing all aspects of your farm and mapping the area, including endangered species and consider the seven components—Soil, Water, Air, Plants, Animals, Energy and Humans (SWAPAEH)
- b. Develop agroecosystem goals for SWAPAEH
Address all areas of farming, such as pest control, soil conservation, wildlife enhancement, biodiversity, climate modification
- c. Develop plan to implement agroecosystem goals
Plan should:
 - Conserve and safeguard present species/habitat
 - Restore habitat
 - Improve biodiversity
 - Prevent/control invasive species
 - Mitigate or change farming practices that have negative effects on components of your agroecosystem
- d. Cooperate with local landowners
 - Work in conjunction with local farmers/landowners to enhance/conservate natural resources and local watershed
- e. Monitor and revise your whole farm ecosystem goals and plans periodically
 - Update your farmscape map every three years
 - Evaluate your progress



- Revise plan and priorities when needed
- f. Evaluate new farming practices before implementation for their impact on ecosystem, seeking practices that offer solutions to sustainable issues instead of practices that create new problems.

3. Consider incentives available for improving your farm ecosystem.

Programs like the Environmental Quality Incentives Program (EQIP) and Wildlife Habitat Incentive Program (WHIP), administered by USDA's Natural Resource Conservation Service, can provide up to 75% of the cost of implementing certain practices on qualifying farms.

Can value be added to your product through market-based certification and labeling programs (i.e. Food Alliance, Salmon Safe, LIVE, certified organic, etc.)?

Will educating consumers of your product about your ecosystem practices add value?

Growers can permanently protect farmland and habitat through conservation easements and cooperation with groups like American Farmland Trust and the Nature Conservancy.

CHECKLIST: BUILDING MY WHOLE FARM ECOSYSTEM TOOLBOX

- Have I changed my mindset to think of the whole farm and surroundings as a whole farm ecosystem and not individual vineyard?
- Am I taking a “whole” systems approach to my farming practices, considering the impact (negative or positive) my actions have on the ecosystem?
- Do I know what the components are of a healthy ecosystem?
- Have I inventoried my farmscape, mapping out everything from topography, drainage, and buildings to native plant species and wildlife corridors?
- Have I developed goals for my ecosystem?
- Have I developed a plan to implement these goals?
- Am I cooperating with local landowners to conserve and enhance natural resources and the local watershed?
- Am I periodically monitoring and revising my farm system goals and plans?
- Have I investigated financial incentives that can be realized for building a healthy ecosystem?

GLOSSARY:

Agroecosystem: A dynamic association of crops, pastures, livestock, other flora and fauna, atmosphere, soils, and water.

Agroecosystems are contained within larger landscapes that include uncultivated land, drainage networks, rural communities, and wildlife.

U.S. Environmental Protection Agency, Mid Atlantic Integrated Assessment

Functional biodiversity: Part of the biodiversity that can be of direct use or service to the farmer. Biodiversity operates at three levels—genetic diversity, diversity of species, and diversity in communities of organisms including the environment.

International Organization for Biological and Integrated Control of Noxious Animals and Plants (IOBC)



RESOURCES:

Boller, E.F., Hani F., and Poehling, H. 2004. Ecological Infrastructures: Ideabook on Functional Biodiversity at the Farm Level. Swiss Centre for Agricultural Extension and Rural Development, Lindau, Switzerland.

Wild Farm Alliance promotes ecological farming that protects and restores the natural environment through efforts of sustainable agriculture, conservation, biodiversity, and such. www.wildfarmalliance.org

USDA Natural Resources Conservation Service programs: www.nrcs.usda.gov/programs/

Dr. David Granatstein, Washington State University
Tree Fruit Research and Extension Center, Wenatchee, 509-662-8181



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