

Vineyard Views
by Cliff Ohmart*
Farming is an unnatural act

Everywhere I go I hear or read never-ending arguments about conventional vs. organic farming, spray vs. no-spray, and farming vs. wildlife habitat. In most of these arguments there seems to be an underlying assumption that one side is better or more right than the other. However, right vs. wrong is not the best way to talk or think about farming, and people on both sides of the argument suffer from at least some confusion and arrogance. If we took the ultimate environmental view, we would have to admit that any kind of farming is an unnatural act and therefore causes ecological imbalances and disturbances. Looking at it from this perspective may help enlighten both sides of the arguments. Let me explain.

Humans began in this world as hunter-gatherers, living off the land just like all the other animals. As soon as we gave up this wandering life style to stay put and grow more food than we could consume in one sitting, we left what might be considered a more natural way of life and headed down the less than natural road of farming. From this perspective farming can be viewed as an unnatural act for several reasons. For one thing, virtually all of the crops we grow, whether organically or conventionally, are varieties that are exotic. That is they are not native to (did not evolve in) the area in which they are now grown. In some cases this has had dire consequences. Take winegrapes, for example. Virtually all of the varieties that are grown in the US evolved outside North America, primarily in Europe. It turns out that grape phylloxera, an aphid that evolved in North America on native grapes, devastates European grape varieties because they have no natural immunity, not having evolved in the presence of this insect. The only way to successfully grow European grapes in areas where phylloxera occurs is to grow them on North American grape rootstock. There are many other cases like this in agriculture throughout the world where a crop was imported and it proved to be susceptible to a local insect or disease.

Not only are we growing crops where they didn't grow before, but we have also altered plants as result of centuries of genetic selection so they provide the maximum amount of the plant part we desire, whether it is the root, flower, fruit, or leaf. This, too, is unnatural. The desired plant part is packed with many more nutrients than its ancestors had. This is true even for heirloom plant varieties. The consequences of this genetic selection have been dire. There are many plant-eating creatures besides us in the world, such as other mammals, insects and fungi. So we have not only improved the plants for our benefit but also for the benefit of these other species. We have created our own pest problems.

Another reason farming is an unnatural act is that no matter what size a farm is, whether it is a 10,000-acre corporate behemoth or a one-acre organic plot, natural habitat was destroyed when it was established. Land had to be cultivated, whether by hand or by

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machine, and pre-existing plants had to be removed. Furthermore, no matter how diversified is the resultant farm, it is still more ecologically simplistic (less bio-diverse) than the natural habitat it replaced. Superimpose upon this the fact that the human population is now in the billions, farming has radically changed most of the world's natural habitat.

Because farming is an unnatural act, it has caused many problems for us and for our environment. Individual people perceive these problems differently and therefore develop different ways of reacting to them. These differences result in the arguments that I mentioned earlier, such as organic vs. conventional farming, spray vs. no-spray for pests, and farming vs. wildlife habitat. If people engaged in these arguments would try to see both sides then it might be easier to find common ground, particularly if they were willing to admit that farming, no matter what kind, is an unnatural act. I would like to discuss two issues to illustrate my point: pests attacking crops and the effects of farming on wildlife habitat.

When is an organism defined as a crop pest? This appears to be a straightforward question, but ask several people to comment on a specific case and you will find that confusion reigns. The extremes are that some people think there is no such thing as a pest while others think one bug in a field is one too many. People in the first camp believe that if we farm naturally enough, we will not have pest problems because nature will take care of itself. People in the second camp go too far the other way disregarding ecological principals and acting as if nature needs to be beaten into submission. In most cases though, whether one considers there to be a pest problem or not is directly related to their level of tolerance of pest damage. Saying there is no such thing as a pest is denying the fact that farming, no matter how ecologically sound, causes ecological imbalances. Therefore we will always have pest problems. On the other hand, saying one bug in a field is one too many refuses to acknowledge that plants can tolerate a significant amount of damage before economic losses occur. There is no question that pests can cause real economic losses but the challenge is determining when that line is crossed. As the definition of integrated pest management states, this decision should be based on economic, environmental and health risks.

Another issue where tensions and confusion run high is the alteration of wildlife habitat by farming. This is a particularly hot issue in some winegrape-growing regions. I continually hear comments such as "winegrape growing destroys wildlife habitat," "vineyards have no habitat value," and "bio-diversity is low in vineyards." On one level the statement that farming destroys wildlife habitat is a no-brainer since even establishing a backyard garden destroys some kind of habitat. However, the important questions are how much habitat and what kind is destroyed or altered when a vineyard is established and what is left surrounding the vineyard. Obviously, vineyards have no habitat value for Sand Hill Cranes. However, morning doves love to nest in the canopy of many vineyards I visit regularly. Which is more valuable, a morning dove or Sandhill Crane? That is a difficult question and I am not sure who is best qualified to answer it. I do think we can do a better job of collecting data to help us with the arguments surrounding this issue.

Ecologists have developed several quantitative measures for assessing the bio-diversity of any habitat. To do this they tally all animals that are present, including invertebrates. A good measure of bio-diversity not only counts numbers of species of animals but also their biomass, which is literally how much each species weighs as a group in a particular habitat. Measuring the number of plant species present and their abundance should also be taken into consideration when discussing bio-diversity of a particular habitat. Even though there seems to be a lot of discussion about bio-diversity in relation to vineyards, there are few studies that actually use a bio-diversity index to compare the bio-diversity of a vineyard to that of any other habitat. Until more studies like these are done, it is hard for us to have a rational dialogue on this issue.

So where does this leave us? I think we all need to admit that no matter how naturally one farms, it is still a process that is disruptive to the environment in which it occurs. Nevertheless, it is subject to ecological processes and should be thought of and evaluated in ecological terms. Farming is not really natural or unnatural. It is something that we have to do to produce food and we should endeavor to practice it using strategies that are as sustainable as possible.