Requirements to do Demeter Inspections

1) Be fully trained to the NOP in the scope of inspections you will be doing.

2) Read through the entire Demeter Farm/ Processing Standards and their revisions and always be fully aware of their current status. Revised annually.

3) Complete all training sections on the Demeter Standards and document this has been completed.

4) Adequate experience in the scope of inspections you will be doing.

USA Demeter Farm Standard
Necessary Elements of the Farm Organism

1. Biological Diversity
2. Generating Fertility on the Farm
3. On-farm water and waterway conservation
4. The Biodynamic preparations and wider connections
5. Generating disease, insect and weed control on the farm
6. Integration of livestock
7. Gentle post harvest handling

These 7 principles are *inter-connected* and aimed at supporting *self regulation* through out a farming system.

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Biodynamic Farming: Quote from US Demeter Standard

“Biodynamic farming involves managing a farm utilizing the principles of a living organism. A concise model of a living organism ideal would be a wilderness forest, where there is a high degree of self- sufficiency in all realms of biological survival.

Fertility and feed arise out of the recycling of the organic material the system generates. Avoidance of pest species is based on biological vigor and its intrinsic biological and genetic diversity. Water is efficiently cycled through the system.

While agriculture takes nature to a state that is one step removed from wilderness, the wisdom of the farmer that guides its course can reflect these ancient principles of sustainability. “

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Earth from Apollo 16

James Lovelock ***Gaia hypothesis: First formulated by Lovelock during the 1960s as a result of work for NASA concerned with detecting life on Mars,[13] the Gaia hypothesis proposes that living and non-living parts of the Earth form a complex interacting system that can be thought of as a single organism***

Inherent to the living dynamics of Earth herself are core processes that can be utilized as tools in the management of a regenerative farming system. A Biodynamic system aims to support these processes.

Biodynamic Agriculture is a well established form of

REGENERATIVE AGRICULTURE

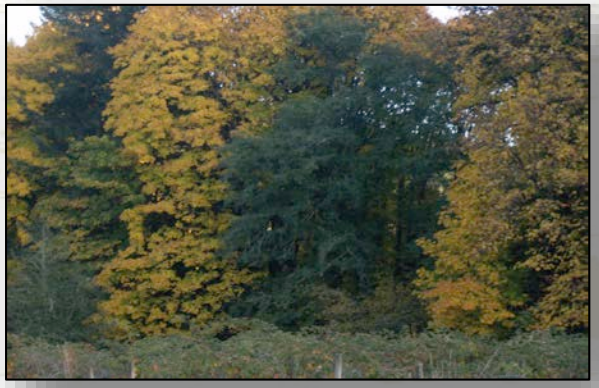
As a wild ecosystem generates its needs internally a Biodynamic farm aims to generate the inputs it needs for farm management out of the living dynamics of the farm system itself by amplifying the processes inherent.

The goal is to generate natural resource rather than deplete it. A farming system that is regenerative.

"A truly regenerative agriculture is one in which all the natural resources we use to produce food get renewed in the process of using them." - Fred Kirshenmann

Biological Diversity

Types of Biological Diversity



Preserved Wild Biodiversity Reserve Areas

Planted Biodiversity Reserve Areas

Genetic Diversity

Soil life

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Demeter Certified Farm

Figure 1.1 Aerial view from Google Earth®

Requirements

- Minimum 10% of total effective land base must be set aside as a biodiversity reserve.
- Documented clearly in a calculated acreage figure.
  (Figure 1.1)
- This information is verified at the time of the farm visit.

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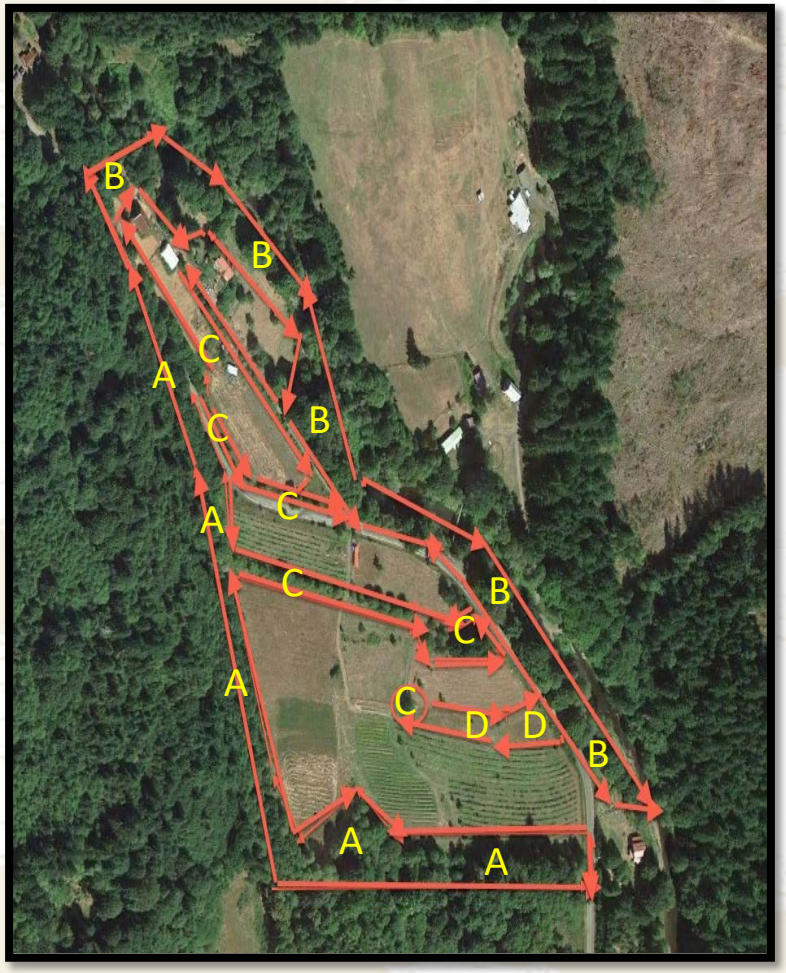
Calculating Biodiversity Reserve



Example

- 28 acre farm
- Crop acreage total = 18 acres
- Building sites etc. = 1 acre
- 2.8 acres (10% of 28) must be in reserve area.
- Biodiversity reserve = 9 acres
  (outlined in sections A-D)

A = Forested perimeter / fence row area

B = Forested river/creek riparian areas

C = Wild corridors/ islands

D = Planted insectary area

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Farm Wild Biodiversity Reserve

Examples

Riparian found along rivers, creeks, ponds, lakes and wetlands are included in the biodiversity reserve qualifications.

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Farm Wild Biodiversity Reserve

Examples

Forested areas, such as well established perimeter fences along irrigation mainlines, untilled areas etc. often grow to a beautifully diverse array of native species. These areas can create a perimeter of biodiversity as well as corridors and islands connecting the perimeter into the inner parts of the farm.

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Farm Biodiversity Reserve

Examples

When there is not wild area to establish the 10% it needs to be planted

Inter-cropping with insectary pants

Planted insectary gardens

Planted green manure crops

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Farm Biodiversity Reserve

When biodiversity is not present in wild form it needs to be planted. Some times this is done via inter-cropping. A vineyard that has no wild area (for example) can establish the 10% by growing a flowering insectary blend between the vine rows. For such areas to count towards the 10% they must be allowed to go fully through flowering and ideally be allowed to reseed.

At any given time this 10% needs to be in place. Thus for climates with a winter dormant period throughout the entirety of the growing season (Spring through Autumn), for climates with growth year round the 10% needs to be in place year round.

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Pesticide Effects on Organisms

Many producers do not realize that some of the materials approved for use in “organic” production have a negative effect on the beneficial organisms that provide the base of pest control and pollination on a Biodynamic farm. Use of such materials must be noted and avoided.

Biocides that are not selective to the pest species should be avoided.

When organically approved materials are used that have significant toxicity attention must be paid to re-generating the diversity inhibited by the use of these materials.

In application review, inspection reports and inspection report review focus on pesticides used and review in relation to toxicity to the farms ecology (i.e. pollinators and beneficial predator populations).

Exemptions may be necessary to use certain materials such as Spinosad, Pyrethrums etc.

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Effect of Commonly Used "Organic" Pesticides on Beneficial Organisms

THE XERCES SOCIETY
FOR INVERTEBRATE CONSERVATION
WWW.XERCES.ORG

PESTICIDE	NON-TOXIC	LOW TOXICITY	HIGHLY TOXIC
Insecticides/Repellants/Pest Barriers			
Bacillus thuringiensis (Bt)			
Beauveria bassiana			
Boric Acid			
Cydia pomonella granulosis			
Diatomaceous Earth			
Garlic			
Insecticidal Soap [a]			
Kaolin Clay			
Limonene [a]			
Neem [a]			
Horticultural Oil [a,b]			
Pyrethrins [c]			
Rotenone [c]			
Ryania/Ryanodine			
Sabadilla [c]			
Spinosad			
Herbicides/Plant Growth Regulators/Adjuvants			
Adjuvants			
Corn Gluten			
Gibberellic Acid			
Horticultural Vinegar			
Fungicides/Bactericides			
Copper			
Copper Sulfate			
Lime Sulfur [a], Sulfur [c,d]			

Locally Adapted Genetic Diversity

Seed and plant material produced on farm. Open pollinated seed varieties.

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Demeter on GMO Crops

- The Demeter Standard, within the US, has zero tolerance for contamination of crops with genetically engineered varieties.
- If the risk is high and a Biodynamic farm is growing crops that could easily be cross pollinated, for instance wind, insect, or via post harvest handling, the crop involved will be tested and the result needs to be none – detected or the crop can not be sold as Demeter. The farm can maintain its certification. The testing is done on products sold off the farm labeled as Biodynamic.
- The use of genetically engineered seed, transplants, or rootstock is prohibited.
- In regions where the possibility of genetic drift from neighboring GMO crop varieties is high close attention needs to be paid to timing of planting, flowering etc. so as to avoid the potential for drift as much as possible.

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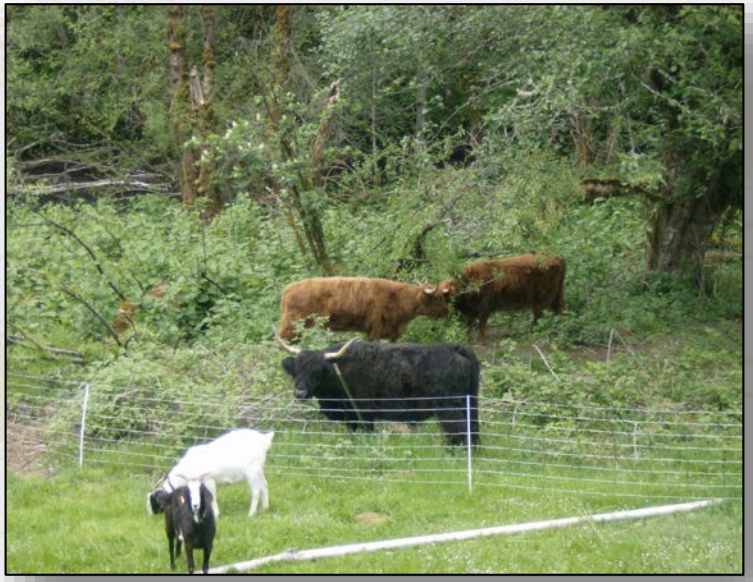
Control of Noxious Weeds

Environmentally beneficial grazing and low impact wild harvest can take place, but each situation will be handled on a case by case basis.



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Preservation Of High Ecological Value

Demeter standard:

The clearance of virgin forest for agricultural usage is forbidden. Other conservation areas of high ecological value must also be protected.

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Crop Rotation

Demeter standard:

In annual crop rotations a given harvested commodity cannot be planted in the same location for more than 2 years in succession.

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Vegetative Cover

Demeter Standard:

Bare tillage year round is prohibited. Land base needs to maintain adequate green cover. The primary objective of Demeter Biodynamic soil fertility management is the development of soil humus. Excessive tillage is contrary to this goal.

Demeter Farm Visit Check: Biological Indices

Hard Pan

- Hard pans caused by management practices (vs. geological.)
- Checked while visiting fields with a shovel or probe rod.

Soil Tilth/Structure

- Checked while visiting fields.
- Visual observation for aggregation, bulk density, aroma.
- Organic matter content- measure and track.

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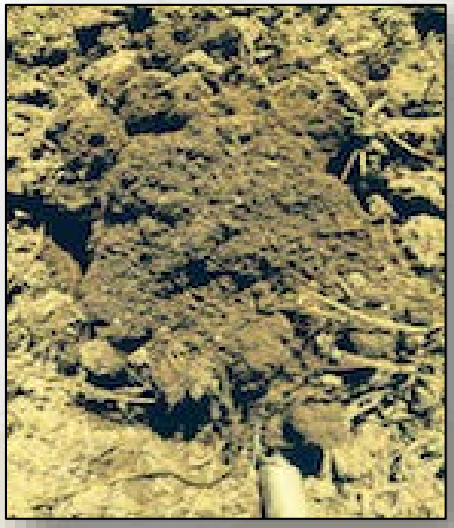
Demeter Farm Visit Check: Biological Indices

Diversity of Life Above Ground:
- Warm evening
- Facing sun

Digestion of Incorporated Organic Materials



Diversity of Soil Life:
- Earthworm, spiders, beetles, etc.

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Demeter Farm Visit Check: Biological Indices Measuring Carbon

Because the philosophy of Biodynamic agriculture is to build the organic, living fraction of a soil (Humus formation), and this is also a core foundation of crop fertility, biodiversity, pest control and water conservation on Biodynamic farms, it is an important metric of the Demeter Farm Standard that this organic, living fraction of the soil is maintained and developed via farm management practices.

Demeter USA aims to test for the agronomic contribution to carbon sequestration on Biodynamic farms. Due to their strong focus on agronomic soil carbon Biodynamic farms are ideal systems to investigate the agronomic influence of farming practice on carbon sequestration

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CARBON SAMPLING PROTOCOL

Choose a field in the farms crop rotation that is regularly used for crop production and deemed by the farmer to be one of the farm's most productive fields. This same field should be visited annually.

The area from which the sample is taken should not be more than 40 acres.

If a field chosen is more than 40 acres choose an area of the field not greater than 40 acres that is characteristic of the field and sample from it.


CARBON SAMPLING PROTOCOL
Identify 10 locations within the field area chosen that are representative of the field.
Space the10 locations across the majority of the field's square footage (for example with a square or rectangular area sample 20 ft inside the area from each of the 4 corners and 6 samples from the mid area).
Avoid irregular areas, such as low areas that would yield samples not characteristic to the field as a whole.
X= EXAMPLE OF SAMPLE LOCATIONS.
X
X
X
X
X
X
X
X
X
X

CARBON SAMPLING PROTOCOL

Use the soil auger to take samples at each of the 10 specified locations.

Each sample should be taken down to 18 inches in depth when possible. Take notes regarding any irregularities in sampling, such as inability to take a full 18 inch deep sample because the soil is not of sufficient depth, or because of many stones in the soil.

Follow instructions provided with testing lab paperwork.

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CARBON SAMPLING PROTOCOL

Place the samples in a bucket, or other appropriate container as they are collected. Once done mix the 10 samples thoroughly.

Take a 3-cup sample of the homogenized soil and place it in a ziplock plastic bag. Ship to lab as per instructions/ protocol

Resources

Pollinator habitat assessment guide:
http://www.xerces.org/wp-content/uploads/2009/11/PollinatorHabitatAssessment.pdf

Pollinator Conservation Resource Center (resources by region):
http://www.xerces.org/pollinator-resource-center/

Connecting to Farm Bill Conservation programs:
http://www.xerces.org/pollinator-conservation/agriculture/nrcs-gateway/

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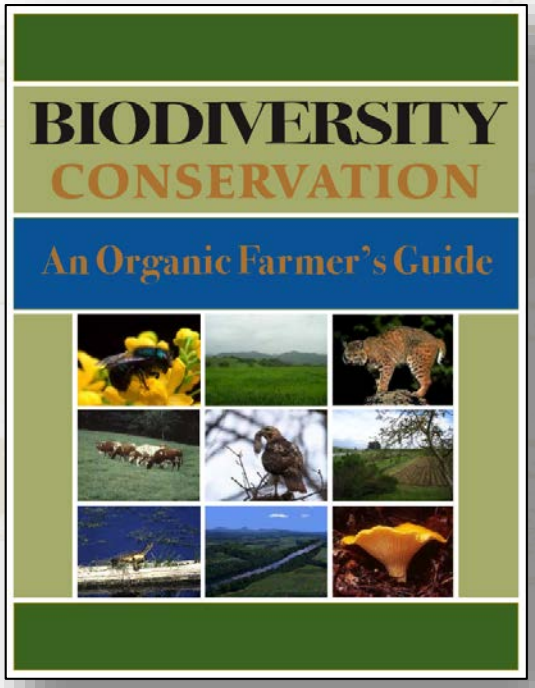
Resources

Biodiversity Conservation Guides for Organic Farmers and Certifiers:



Lays out a range of farm management possibilities for a variety of situations that maintain and enhance biodiversity at the farm level and contribute to biodiversity conservation outside of farm borders at the regional or watershed level.

- Download at www.wildfarmalliance.org

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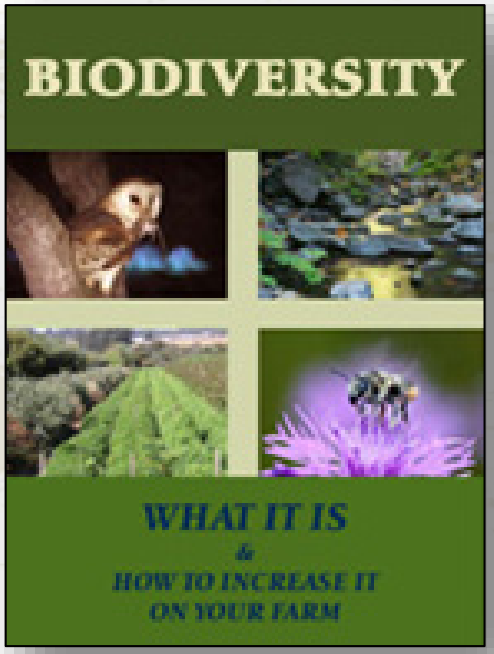
Resources

Biodiversity: What It Is and How to Increase It on Your Farm



Biodiversity is the variety of life. What does this have to do with a farm? Agriculture that provides natural habitat can support pollination and pest control, protect water quality, meet the needs of multiple species, and make a meaningful contribution to wild Nature.

Besides covering practices that benefit farms and nature, this brochure helps farmers learn about rare and endangered species in their area.

Download at www.wildfarmalliance.org

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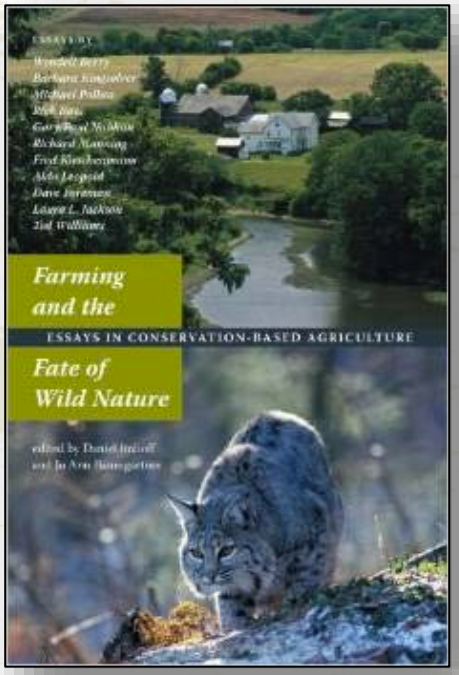
Resources

Farming and The Fate of Wild Nature
co-edited with Watershed Media



Farming and the Fate of Wild Nature is a collection of more than 20 essays by such leading ecological and agrarian voices as Wendell Berry, Michael Pollan, Barbara Kingsolver, Laura Jackson, Fred Kirschenmann, Dave Foreman, and Gary Paul Nabhan. With grace and insight, these essays analyze and vividly depict the urgent and complex issues facing communities and cultures throughout the world: the need for heightened land stewardship in an era of diminishing natural resources, amidst a profound extinction crisis.

Download at www.wildfarmalliance.org

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