

Draft Guidance

Biodiversity Conservation in Organic Agriculture Systems

Yellow highlighting denotes wording or formatting that comes from various NOP Guidance Documents

(underlining was added for emphasis)

(excerpts are written in a small font in order to save space)

1. Purpose

This guidance document provides clarification on ways in which accredited certifying agents (ACAs) and certified operations can demonstrate compliance with requirements related to the conservation of biodiversity (biological diversity) including natural resources, in crop, livestock and handling operations that are certified as organic under the National Organic Program (NOP). This guidance also clarifies considerations regarding the practices used to optimize and support biodiversity conservation.

The above highlighted wording comes from Wild Crop Harvesting and Seed Guidance.

2. Scope

This guidance applies to all accredited organic certifying agents, certified and exempt organic operations.

The above highlighted wording comes from Wild Crop Harvesting, Commingling, Compost Guidance.

3. Background

The National Organic Program (NOP) is providing this guidance to clarify and ensure consistency in practices related to the conservation and enhancement of biodiversity, including the maintenance and improvement of natural resources by organic operations that are subject to NOP regulations and in response to recommendations from the National Organic Standards Board (NOSB).

The above highlighted wording comes from Chlorine Guidance.

The NOP regulations §205.200 state:

The producer or handler of a production or handling operation intending to sell, label, or represent agricultural products as “100 percent organic,” “organic,” or “made with organic (specified ingredients or food group(s))” must comply with the applicable provisions of this subpart. Production practices implemented in accordance with this subpart must maintain or improve the natural resources of the operation, including soil and water quality.

The above Indent style comes from Outdoor Access for Organic Poultry Guidance

The NOP regulations §205.2 defines:

Crop rotation. The practice of alternating the annual crops grown on a specific field in a planned pattern or sequence in successive crop years so that crops of the same species or family are not grown repeatedly without interruption on the same field. Perennial cropping systems employ means such as alley cropping, intercropping, and hedgerows to introduce biological diversity in lieu of crop rotation.

Natural resources of the operation. The physical, hydrological, and biological features of a production operation, including soil, water, wetlands, woodlands, and wildlife.

Organic production. A production system that is managed in accordance with the Act and regulations in this part to respond to site-specific conditions by integrating cultural, biological, and mechanical practices that foster cycling of resources, promote ecological balance, and conserve biodiversity.

Many other relevant NOP requirements related to biodiversity conservation are detailed in the reference section. They include: 205.203 Soil fertility; 205.205 Crop rotation 205.206 Crop pest, weed, and disease management; 205.707 Wild-crop harvesting; 205.238 Livestock health care; 205.239 Livestock living conditions; and 205.240 Pasture practice.

In 1990, the Organic Food Production Act pointed out the importance of environmental protection and resource conservation by requiring that three of the fifteen NOSB members shall have expertise in these areas. In addition, another member must be an expert in toxicology, ecology, or biochemistry.

In December 2000, the Preamble to the NOP Final Rule explains what is meant by Conservation of Biodiversity below and in further detail in Attachment 1:

(4) *Conservation of Biodiversity.* Many commenters recommended amending the definition of organic production to include the requirement that an organic production system must promote or enhance biological diversity (biodiversity). Commenters stated that the definitions for organic production developed by the NOSB and the Codex Commission include this requirement. We agree with these commenters and have amended the definition of organic production to require that a producer must conserve biodiversity on his or her operation. The use of “conserve” establishes that the producer must initiate practices to support biodiversity and avoid, to the extent practicable, any activities that would diminish it. Compliance with the requirement to conserve biodiversity requires that a producer incorporate practices in his or her organic system plan that are beneficial to biodiversity on his or her operation.

In October 2001, the NOSB’s *Principles of Organic Production and Handling* were adopted, stating:

1.1 Organic agriculture is an ecological production management system that promotes and enhances biodiversity, biological cycles, and soil biological activity (underlining was added for emphasis).

In August 2005, the NOSB approved a recommendation to amend the NOSB’s model Organic System Plan by adding a section to collect information about practices used to foster biodiversity. This recommendation emphasized the importance of maintaining and improving the natural resources of an operation. As stated, the model Organic System Plan is intended as a *template* for certifying agents to use when creating their own forms, as opposed to a requirement of the NOP. At that time, the National Center for Appropriate Technology, operating under a contract from the NOP, posted model Organic System Plan templates on their website, and they were instructed by the NOSB to include a set of biodiversity conservation questions into the model OSPs (see Attachment 2).

In March 2009, the NOSB approved a recommendation to comprehensively implement biodiversity conservation in organic agriculture systems. The NOSB emphasized that conserving biodiversity is a fundamental part of supporting a healthy, and productive organic system. Consumers have the belief that products carrying the organic label offer an assurance that they were produced in a way that protects our natural resources. The goal of this 2009 NOSB recommendation is to improve and increase biodiversity conservation implementation in organic agriculture systems as required in Section 205.200 of the Regulations, and as directed in the previous 2005 NOSB recommendation. The NOSB’s goals are to be achieved through: 1) consistent discussion and review of biodiversity protection and enhancement in the Organic System Plans of all NOP accredited certification agencies; 2) increased education and information for farmers, inspectors and certifiers; 3) uniformity of inspection and certification

procedures with regard to growers' implementation of biodiversity standards; 4) incorporation of biodiversity standards within the procedures for accreditation and audit of certification agents; and 5) use of materials evaluation criteria that foster consideration of biodiversity conservation when adding or deleting materials from the National List. Below is a summary of the recommendation. See Attachment 3 for the full 2009 NOSB recommendation.

V. NOSB 2009 GUIDANCE DOCUMENT RECOMMENDATION:

In order to ensure consistent application of biodiversity conservation requirements, the NOSB recommends general actions by two different vehicles as described below.

1) Materials Review by the NOSB: Add biodiversity considerations to the checklist used for the review of materials as shown below for specific categories and lines (see full materials recommendation in Attachment 3).

2) Development and Implementation of the Organic System Plan

Take the following actions with regard to the Organic System Plan:

a) Certified Grower/Producer

Producers shall incorporate biodiversity conservation into their OSPs. The questions on ATTRA's OSP templates (Pages 7&8 on the farm template) or guidance tools such as those developed by WFA, provide detailed information and direction. The producer shall be ever vigilant to biodiversity problems and conservation opportunities. Conversion of native habitat to crop production has consequences to biodiversity that must be considered and the producer should discuss such planned conversion with his or her Certifier before action is taken.

b) Inspectors

Inspectors shall receive training in biological diversity conservation such as is currently given by IOIA and include methods for verification of NOP biodiversity standards in all inspections of organic farms using appropriate checklists and other tools.

Other issues not explored by biodiversity verification methods, but that should be evaluated by inspectors include:

- Sustainable practices for incorporating new land into agriculture
- Practices which enhance soil biodiversity

c) Certifiers

Certifiers shall adopt an OSP and other certification documents that address the NOP biodiversity requirements. Certifiers may devise a format and content for these documents that is suitable to their own certification system.

Certifiers shall require all production operations to address biodiversity conservation in their OSPs. Conversion of native habitat to crop production has important consequences to biodiversity and normally should be discouraged.

Certifiers shall document the degree to which producers are addressing biodiversity when performing inspections and when making certification decision. Only severe violations would lead to suspension or revocation of a producer's certification, other violations would be cited as minor non-compliances by the certifiers and corrected by the operator within a specified timeframe.

d) National Organic Program

The NOP shall emphasize biodiversity in its training of NOP-accredited certification bodies. Trainings shall include such topics as indicators of compliance with biodiversity standards, differentiating major and minor non-compliances for violations of biodiversity standards, evaluating corrective actions taken to correct minor violations. The focus should be on education, teaching practices and the benefits of conservation.

The NOP shall also revise the checklist used to audit certifiers so that it includes questions about NOP's biodiversity standards in every audit.

Each of the above actions would require additional work for producers, certifiers, NOP and NOSB, but these tasks can be integrated into existing plans and operations.

In May 2011, the NOP updated the model OSP and included new versions of it in the Handbook Appendix. Of the three OSPs created, the Crops and Livestock overview includes two pages on natural resource conservation (see Attachment 4).

While many organic farmers have receive financial and technical support from USDA Natural Resources Conservation Service (NRCS) to implement biodiversity conservation, they will soon have even more assistance since the NRCS is in the process of streamlining its Conservation Practice Standards and Enhancements so they integrate more directly with organic production systems. Through an NRCS Conservation Innovation Grant, the National Center for Appropriate Technology is working in partnership with many other groups¹ to build a bridge between NOP regulations and NRCS programs.

When considered together, the various standards, NOSB recommendations, and NRCS' commitment to serving organic farmers, point to the need for direction of consistent implementation of regulations related to biodiversity conservation. This guidance clarifies existing NOP regulatory requirements and implements NOSB recommendations.

4. Policy

4.1 Definitions:

For the purpose of this instruction, the following definitions shall apply:

- Biodiversity, or biological diversity, is the diversity of life existing at three levels: genetic, species and ecosystem diversity. Therefore, biological diversity (biodiversity) includes variety in all forms of life, from bacteria and fungi to grasses, ferns, trees, insects, and mammals. It encompasses the diversity found at all levels of organization, from genetic differences between individuals and populations (groups of related individuals) to the types of natural communities (groups of interacting species) found in a particular area. Biodiversity also includes the full range of natural processes upon which life depends, such as nutrient cycling, carbon and nitrogen fixation, predation, symbiosis and natural succession.²
- Conserve as in “conserve biodiversity” means to protect, preserve, carefully manage and or restore biodiversity. Further, the Preamble to the NOP rule establishes that the use of “conserve” means that the producer must initiate practices to support biodiversity and avoid, to the extent practicable, any activities that would diminish it.
- Invasive species are non-native (or alien) to the ecosystem under consideration and whose introduction causes or is likely to cause economic or environmental harm or harm to human health. Invasive species can be plants, animals, and other organisms (e.g., microbes). Human actions are the primary means of invasive species introductions.³
- Native plants are ones that occur naturally in a particular region, state, ecosystem, and habitat without direct or indirect human actions.⁴
- Riparian habitat is characterized by vegetated areas along bodies of surface water, including streams, wetlands and lakes. Typically, riparian habitats are distinct from upland areas, demonstrating an obvious difference in vegetation types, densities, and structure.⁵

¹ Organic Farming Research Foundation, Midwest Organic and Sustainable Education Service, Center for Rural Affairs, National Sustainable Agriculture Coalition, Land Stewardship Program, Virginia Association for Biological Farming, Institute for Agriculture and Trade Policy, Florida Organic Growers, Wild Farm Alliance and Organic Agsystems Consulting, and Organic Independents.

² Definition from the May 2009 NOSB recommendation.

³ Definition from the National Invasive Species Information Center www.invasivespeciesinfo.gov/

⁴ Definition from the Federal Native Plant Conservation Committee, 1994.

⁵ Definition from the July 2011 farm standards of Salmon Safe; see website: www.salmonsafe.org.

- Wetlands are areas where the frequent and prolonged presence of water at or near the soil surface drives the natural system meaning the kind of soils that form, the plants that grow, and the fish and/or wildlife communities that use the habitat. Swamps, marshes, and bogs are well-recognized types of wetlands. However, many important specific wetland types have drier or more variable water systems than those familiar to the general public. Some examples of these are vernal pools (pools that form in the spring rains but are dry at other times of the year), playas (areas at the bottom of undrained desert basins that are sometimes covered with water), and prairie potholes.⁶
- Wildlife includes all native and naturalized animals⁷ (excluding non native invasive pests and pathogens) that are not domesticated.⁸

The above highlighted wording came from the liquid fertilizer guidance: "For the purpose of this instruction, the following definitions shall apply"

The style of including definitions in policy comes from draft guidance on chlorine

4.2 Accredited Certifying Agents

All ACAs are responsible for verifying that all certified operations have sufficient management practices in place to prevent the degradation of biodiversity, including the variety of all forms of life and processes associated with soil, water, wetlands, woodlands, and wildlife. In addition, they must verify that a producer is actively incorporating practices in his or her organic system plan that are beneficial to biodiversity. The OSP should specifically address: a) the operation's risk of degrading biodiversity, b) the preventative measures implemented to ensure that the decline of biodiversity and the damage to natural resources are avoided; and c) measures taken to initiate practices that conserve and enhance biodiversity. ACAs should include a natural resources management section in their OSP, which allows producers to summarize the risks and/or challenges to natural resources and biodiversity, and describe the preventative and beneficial practices used or to be used throughout their operation. This can include checklists and narrative questions that assist the producer in describing their biodiversity degradation risks and/or challenges, and explaining their prevention and progress towards beneficial practices, which conserve or enhance the natural resources of the operation.

Risks and/or challenges to biodiversity on organic farming and ranching operations include, but are not limited to: soil erosion; soil management that harms microbial biodiversity; water quality impairment; monoculture systems that lead to genetic exposure to pests and loss of genetic diversity in crops, degradation of riparian habitats, wetlands, woodlands and native plant communities; and harm to wildlife.

Risks and/or challenges to biodiversity in organic handling operations include, but are not limited to: water quality impairment; and unintended harm to wildlife from toxic pest control measures.

⁶ Definition from the EPA website, but it is not a legal definition: (<http://www.epa.gov/owow/wetlands/facts/fact11.html>). If instead we wanted to use the shorter, legal definition of wetlands that is from the US Army Corps of Engineers and US EPA, it is the following: "Wetlands are areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."

⁷ Naturalized animals, such as fish stocked in waters, and pheasants managed by wildlife agencies, were included.

⁸ The majority of conservation organizations in the US use this definition for "wildlife." European conservation organizations more often define "wildlife" as both plants and animals.

During inspection, ACAs should assess the risks and/or challenges and verify the accuracy, adequacy and implementation of the described practices to ensure preventive degradation activities and beneficial practices are carried out consistently.

The above highlighted wording comes from the draft guidance on commingling

4.3 Certified Operations

1. Applicants for crop, livestock and handling organic certification must complete basic organic producer application forms and certification criteria that address the conservation of biodiversity, including soil, water, wetland, woodlands and wildlife.

2. An operation's organic system plan (OSP) that addresses comprehensive biodiversity conservation planning and stewardship should, at minimum, include:

- a) A full map showing where planned and existing biodiversity areas occur, such as grassed ditches, contour buffer strips, and pollinator hedgerows; conserved areas such as scrub steppe, woodland, riparian habitat and wetlands; and those challenging areas where improvements should be made, such as eroded hillsides, decreased water quality, trampled wetlands, and the presence of invasive species.
- b) A recordkeeping system that, at a minimum, records what terrestrial and aquatic wildlife and native plants are present, especially noting any threatened or endangered species, whether they are negatively impacted by the operation, or whether they are being maintained and improved. The operation will do the best it can to document native species. (ACAs will make it a talking point if they find the list very lacking). When threatened and endangered species are present, consultation with USFWS should be obtained and the action documented. For information on the conservation status of area plants and animals, see at www.natureserve.org/explorer/ or the U.S. Fish and Wildlife Service at <http://endangered.fws.gov/wildlife.html#Species>
- c) A description of the monitoring system, including periodicity, types of observations, and documentation, that will be used to ensure the operation is conducting business in a sustainable manner so that biodiversity is being conserved and improved, without damage to the environment, including soil, water, wetlands, woodlands and wildlife.

3. The area(s) where planned and conserved biodiversity occurs, and those areas that need improvement, should be inspected to ensure compliance with requirements to maintain and improve the natural resources of the operation, as well as other requirements applicable to protection of biodiversity listed in the references. Consideration should be given for extreme climatic conditions that might cause some damage to the ecosystem beyond the control of the operator.

The above highlighted wording comes from the draft guidance on Wild Harvest

4. The following considerations are examples of acceptable actions for conserving biodiversity. Many of these actions are responsible for critical processes that influence plant productivity, soil fertility, water quality, atmospheric chemistry, all of which are vital to the well-being of human and wild communities.

1. Soil Considerations:

- a) Soil condition is improved with cover crops and compost which increases organic matter humus content, biological activity, diversity of soil organisms, and soil structure, thereby supporting processes and management strategies such as:

- i) Competitive exclusion of pathogens,
- ii) Water-holding and nutrient-holding capacity,
- iii) Maintenance of soil microorganism communities
- iv) Nutrient cycling and long term storage of carbon in the soil,
- v) Better adaption to extreme climatic conditions, and
- b) *Soil is conserved with plants by checking water and wind erosion.*
- c) Effort is made to maintain a vegetative (such as living mulch / cover crops etc.) or organic cover (such as organic mulch materials, crop stubble etc).

The above wording in italics comes from the NOP's new OSP.

2. Water Considerations:

- a) Water is conserved for the *benefit of domestic and native species and riparian ecosystems* by using suitable irrigation systems, scheduling irrigations, monitoring usage, and growing appropriate crops for the climate and landscape. Water bodies and waterways are not depleted to the point that species dependent on them are harmed. Water is also conserved by preserving vegetation in woodlands, and riparian habitat and wetland areas that acts as sponges to hold water for as long as possible, thereby supporting a critical aspect of a healthy water cycling process.
- b) Water quality is protected by using nutrient budgets, *grassed waterways*, and sediment basins, and keeping vegetative cover on soils.

The above wording in italics comes from the NOP's new OSP.

3. Riparian Habitat and Wetlands Considerations:

- a) *Riparian area and wetlands are protected*, conserved and restored. Grazing is closely monitored and managed to prevent damage to sensitive ecosystem. These riparian habitat and wetlands processes are encouraged:
 - i) filtering sediments, nutrients, pesticides, and pathogens,
 - ii) recycling nutrients,
 - iii) stabilizing banks, and
 - iv) recharging groundwater.
- b) In organic handling operations, constructed wetlands are used to improve wastewater.

The above wording in italics comes from the NOP's new OSP.

4. Woodlands and Other Native Plant Considerations:

- a) Woodlands and other native plant communities such as deserts, prairies, savannas, scrublands, riparian and upland forests are conserved, especially when a primary ecosystem has never been cleared. The International Federation of Organic Movements Draft Standard 2.1.2 states "Clearing or destruction of *High Conservation Value Areas* is prohibited. Organic certification shall be denied to farming areas installed on land that has been obtained by clearing of *High Conservation Value Areas* in the 5 years preceding their certification application."
- b) When degraded, *native habitat restoration* is conducted using species that are adapted to and historically present on the farm. NRCS PLANTS database <http://plants.usda.gov> provides information on native plants in each county of the country.

- c) If an operation is considering converting high conservation value land, the benefits of more farmable acreage is weighed against the loss of habitat functions that may provide pollinator and predatory insect food and cover, and water quality protections to the farm. If the decision to proceed in converting the land is made, the following steps are taken depending on certification status:
- i) When the land is certified organic:
 - (a) The operator submits for approval to the ACA a revision to the Organic System Plan (OSP) describing the proposed actions prior to implementing any conversion. This eliminates the possibility of loss of certification. The request includes photos and written evidence from a conservation organization such as USDA NRCS using their two page Environmental Evaluation Worksheet CPA 52 which documents any adverse effects that will occur to threatened, endangered, and rare species, or causes soil erosion, degradation of water quality and other biological and environmental effects. If any adverse affects are noted, mitigation measures are implemented elsewhere on the property or in the region to compensate for loss to biodiversity. An agreement between the operator and the ACA will be made where the ACA monitors the mitigation measures until success is achieved, or more mitigation efforts are required.
 - ii) When none of the land to be converted is certified organic:
 - (a) The operator is treated as above, if the operator first creates an OSP describing the proposed actions prior to conversion and seeks approval by the ACA.
 - (b) If the operator does not first seek approval by the ACA, she/he submits photos and written evidence of any past adverse effects caused by the conversion, as mentioned above. An agreement between the operator and the ACA will be made where the ACA possibly requires mitigation measures that are monitored until success is achieved or more mitigation efforts are required.
- d) In cases where continuous crops grown over a large acreage, such as dryland hay, corn, or soybeans, native plants adapted to the area's rainfall patterns are encouraged along fencerows and riparian edges of the farm, providing habitat for many beneficial species. Operators can also explore changing their production plans to having smaller fields that could then provide more biologically diverse field borders.
- e) In cases where dry-farmed or irrigated perennial crops are grown, such as winegrapes and olives, native grasses legumes and forbs are established in the crop rows, consistent with the NOP definition of "crop rotation."
- f) Planned habitat, such as *a diversity of annual flowering* native *plants* or perennial *hedgerows* are planted to provide *habitat and shelter* for wildlife, *including pollinators, insects, spiders, bats, raptors and other pest predators*.
- g) *Pastures are planted with diverse* native *species* to support domestic and wild animals.
- h) Native grasslands and woodlands are conserved and restored to especially support the process of carbon sequestration.
- i) *Non-native invasive species are monitored and controlled*.

The above wording in italics comes from the NOP's new OSP.

5. Wildlife Considerations:

- a) Natural system based solutions to pollination and pest problems that include wildlife are preferred over inputs used to “control” the pests. Beneficial invertebrate (such as insects) and vertebrate (such as mammals, birds, and reptiles) wildlife are conserved, especially those that are rare, thereby supporting the processes of pollination and predation.
 - i. Operators of farms increase pollination and pest control services when flowering habitat is provided. If the farmer is having issues with a pest insect, they provide habitat and food sources where beneficial insects and birds thrive. If they are having problems with pest rodents, they encourage birds of prey by conserving hunting perches and nest sites in live trees and dead snags, or provide nest boxes and platforms.
 - ii. Operators of handling facilities increase food safety when hawk and owl perches are located surrounding a grain cleaning plant, in order to control rodents, rather than the current extensive use of warfarin (allowed outside only) and other toxins that move up the food chain.
- b) Pest wildlife, whether invertebrates or vertebrates, are managed using actions that cause the least harm to the environment.
 - i. *Wildlife friendly fencing* is used.
 - ii. *Non-lethal livestock predator control* and other pest vertebrate control and attempts of control are documented in the organic system plan before lethal control is used.
 - iii. Diverse native landscapes that support natural prey for carnivorous animals are encouraged thereby reducing predation of livestock.
- c) Farms accommodate wildlife
 - i. Wildlife is conserved and supported in pastures and in natural areas adjacent to cropland that *fosters habitat*. This includes timing of hay harvests in accordance with ground bird nesting.
 - ii. *Wildlife migration corridors are maintained or restored*.

The above highlighted wording comes from the draft guidance on Seeds

The above wording in italics comes from the NOP's new OSP.

6. Crop Considerations:

- a) Growing a variety of crop types or several genetic strains of the same crop in a given field contributes to biodiversity. This can be expressed over time as a crop rotation, or in space such as intercropping, creating hedgerows, variety trials etc. Preserving locally adapted varieties and plant species and varieties well suited to site-specific conditions, as required by 205.206(a)(3) is important. Conserving genetic resources by planting some heirlooms or saving seed of desirable varieties is also to be encouraged. If possible, flowering crops should be mixed with vegetative crops to encourage pollinators and other beneficial insects. Choosing to obtain seed and planting stock from local and regional companies will help to preserve genetic resources worldwide.

7. Livestock Considerations:

- a) Managing grazing to encourage rejuvenation of pasture lands and diversity of pasture species.

- b). Choosing breeds that are appropriate to the environment with a sufficient amount of genetic variability to ensure healthy progeny.

5. References

Regulations Related to Biodiversity Conservation

§205.2 Terms Defined.

Crop rotation. The practice of alternating the annual crops grown on a specific field in a planned pattern or sequence in successive crop years so that crops of the same species or family are not grown repeatedly without interruption on the same field. Perennial cropping systems employ means such as alley cropping, intercropping, and hedgerows to introduce biological diversity in lieu of crop rotation.

Natural resources of the operation. The physical, hydrological, and biological features of a production operation, including soil, water, wetlands, woodlands, and wildlife.

Organic production. A production system that is managed in accordance with the Act and regulations in this part to respond to site-specific conditions by integrating cultural, biological, and mechanical practices that foster cycling of resources, promote ecological balance, and conserve biodiversity.

Pasture. Land used for livestock grazing that is managed to provide feed value and maintain or improve soil, water, and vegetative resources.

Soil and water quality. Observable indicators of the physical, chemical, or biological condition of soil and water, including the presence of environmental contaminants.

§ 205.200 General.

The producer or handler of a production or handling operation intending to sell, label, or represent agricultural products as “100 percent organic,” “organic,” or “made with organic (specified ingredients or food group(s))” must comply with the applicable provisions of this subpart. Production practices implemented in accordance with this subpart must maintain or improve the natural resources of the operation, including soil and water quality.

§ 205.203 Soil fertility and crop nutrient management practice standard.

(a) The producer must select and implement tillage and cultivation practices that maintain or improve the physical, chemical, and biological condition of soil and minimize soil erosion.

(c) The producer must manage plant and animal materials to maintain or improve soil organic matter content in a manner that does not contribute to contamination of crops, soil, or water by plant nutrients, pathogenic organisms, heavy metals, or residues of prohibited substances.

§ 205.205 Crop rotation practice standard.

(d) Provide erosion control.

§ 205.206 Crop pest, weed, and disease management practice standard.

(a)(2) The producer must use management practices to prevent crop pests, weeds, and diseases including but not limited to sanitation measures to remove disease vectors, weed seeds, and habitat for pest organisms.

(a)(3) Cultural practices that enhance crop health, including selection of plant species and varieties with regard to suitability to site-specific conditions and resistance to prevalent pests, weeds, and diseases.

(b)(2) Pest problems may be controlled through mechanical or physical methods including but not limited to development of habitat for natural enemies of pests.

§ 205.207 Wild-crop harvesting practice standard.

(b) A wild crop must be harvested in a manner that ensures that such harvesting or gathering will not be destructive to the environment and will sustain the growth and production of the wild crop.

§ 205.238 Livestock health care practice standard.

(a)(3) The producer must establish and maintain preventive livestock health care practices, including appropriate housing, pasture conditions, and sanitation practices to minimize the occurrence and spread of diseases and parasites.

§ 205.239 Livestock living conditions.

(b)(4) The producer of an organic livestock operation may provide temporary confinement or shelter for an animal because of risk to soil or water quality.

(e) The producer of an organic livestock operation must manage manure in a manner that does not contribute to contamination of crops, soil, or water by plant nutrients, heavy metals, or pathogenic organisms and optimizes recycling of nutrients and must manage pastures and other outdoor access areas in a manner that does not put soil or water quality at risk.

§ 205.240 Pasture practice standard.

205.240(c)(8) The pasture plan shall include a description of the erosion control and protection of natural wetlands and riparian areas practices.

ATTACHMENTS

Attachment 1

Preamble in the Final Published Rule (Federal Register/Vol. 65, 246/Thursday, December 21, 2000)

Definitions—Changes Based on Comments (p. 80550) [also on the NOP website: Resource Center: Preamble: Definitions]

(6) Many commenters stated that the final rule should include a definition of “organic production” that required that certified operations must preserve or protect biodiversity. These commenters stated that the preservation of biodiversity is a requirement in many existing organic certification standards, including the Codex guidelines. They also stated that the NOSB had included the requirement to preserve biodiversity in its definition of organic. We agree with the intent of these comments but prefer the term, “conserve,” to “preserve” because it reflects a more dynamic, interactive relationship between the operation and biodiversity over time. We included a definition for organic production as “a production system that is managed in accordance with the Act and regulations in this part to respond to site-specific conditions by integrating cultural, biological, and mechanical practices that foster cycling of resources, promote ecological balance, and conserve biodiversity.”

(14) Many commenters maintained that the final rule needed a definition of the term, “pasture,” to describe the relationship between ruminants and the land they graze. These commenters stated that a meaningful definition of “pasture” must incorporate the nutritional component that it provides livestock, as well as the necessity to manage the land in a manner that protects the natural resources of the operation. We agree with these commenters and have added a definition of “pasture” as “land used for livestock grazing that is managed to provide feed value and maintain or improve soil, water, and vegetative sources.”

General—Changes Based on Comments (p. 80563) [also on the NOP website: Resource Center: Preamble: Production and Handling]

(4) *Conservation of Biodiversity.* Many commenters recommended amending the definition of organic production to include the requirement that an organic production system must promote or enhance biological diversity (biodiversity). Commenters stated that the definitions for organic production developed by the NOSB and the Codex Commission include this requirement. We agree with these commenters and have amended the definition of organic production to require that a producer must conserve biodiversity on his or her operation. The use of “conserve” establishes that the producer must initiate practices to support biodiversity and avoid, to the extent practicable, any activities that would diminish it. Compliance with the requirement to conserve biodiversity requires that a producer incorporate practices in his or her organic system plan that are beneficial to biodiversity on his or her operation.

Attachment 2

August 2005 Final NOSB Recommendation: Maintaining or Improving Natural Resources Amendment to NOSB Organic System Plan Template

Maintaining or Improving Natural Resources Amendment to NOSB Organic System Plan Template Approved August 16, 2005

Introduction:

The NOSB Crops Committee, with assistance from the Wild Farm Alliance (WFA) and National Center for Appropriate Technology (NCAT), developed this recommendation to implement the existing biodiversity conservation requirements of the National Organic Program (NOP) rule by adding language to the Natural Resources section of the NOSB's existing model Organic System Plan.

Background:

The NOP rule definition of "organic production" includes requirements to "promote ecological balance and conserve biodiversity." The preamble to the Final Rule explicitly states, "The use of 'conserve' establishes that the producer must initiate practices to support biodiversity and avoid, to the extent practicable, any activities that would diminish it." In section 205.200, the rule states, "Production practices...must maintain or improve the natural resources of the operation, including soil, water, wetlands, woodlands and wildlife."

The Independent Organic Inspectors Association first called attention to the fact that biodiversity educational materials and criteria were needed for their inspector trainings and requested that the Wild Farm Alliance (WFA) assist them with this effort. Through support of the Organic Farming Research Foundation and others, WFA formed a broad-based working group of organic farmers, certifiers and conservationists to develop biodiversity criteria and supporting guides for farmers, inspectors, and certifiers.

At the NOSB's fall 2004 meeting, WFA requested that the Board approve biodiversity criteria into their model Organic System Plan. The request was sent to the Crops Committee and over the winter revisions were made. The Board then unanimously agreed to approve draft text on biodiversity conservation at their spring 2005 meeting. Further refinement occurred with assistance from the National Center for Appropriate Technology (NCAT). The recommended text below is the product of that collaboration.

Many certifiers have adopted the NOSB's model OSP forms, even though use of the forms is not required for accreditation. The existence and use of the model forms helps bring consistency to inspection, certification, and accreditation processes. Approval of the biodiversity amendment to the NOSB's model OSP will provide transparent and predictable guidance to farmers, inspectors, certifiers, and accreditation auditors.

D. NATURAL RESOURCES:

NOP Rule 205.2 defines Organic Production as a production system managed in accordance with the Act and its regulations to respond to site-specific/ conditions by integrating cultural, bio- logical, and mechanical practices that foster cycling of resources, promote ecological balance, and conserve biodiversity. NOP Rule 205.200 and 205.203(a) requires that production practices maintain or improve natural resources (soil and water quality, wetlands, woodlands and wildlife) of the operation.

BIODIVERSITY MANAGEMENT

Whole Farm Biodiversity Considerations:

Does your field map include features such as hedgerows, woodlands, wetlands, riparian zones, and special habitats? yes / no

List wildlife and dominant native plants present on the farm: (note priority species):

What steps do you take to plan/provide for biodiversity conservation? understand farm's location within watershed / ascertain what wildlife and dominant native plants existed on the land prior to farming / learn about regional natural areas and conservation priorities / work with neighbors/others to enhance biodiversity (connectivity, restoration, etc.) / other* describe/explain:

How do you manage water for the needs of crops/livestock, native species and riparian ecosystems? plant regionally appropriate crops / conserve water manage water for priority species / retain/restore vegetated riparian buffers/wetlands / protect/improve natural hydrology/eco- logical function of riparian area / other*

Uncultivated Area Biodiversity:

What actions do you take to provide habitat for pollinators, insect predators, birds and bats? bird/bat/bee boxes / hedgerows/windbreaks / maintain/provide natural roosting/nesting/ foraging sites / other*

How are you restoring and/or protecting natural areas? manage for native plants/wildlife specific/ to the site / preserve/restore wildlife corridors/ large blocks of habitat / establish legal conservation areas / native habitats not converted to farmland since certification / other*

List problem invasives:

What actions do you take to control invasive plant/animal species, especially those threatening natural areas? learn about invasives / use weed- and pest-free seed/planting stock/soil amendments/ mulches / monitor for new introductions and control immediately / suppress invasives using organic methods / other*

Cropland Area Biodiversity:

How do you conserve and provide habitat for wildlife? companion planting/intercropping / crop diversity / wildlife-friendly fences / manage fallow fields for wildlife / other*

Do you schedule farm practices to benefit wildlife? avoid nests during breeding season / stagger mowing/tilling practices / plan fields to leave food/cover for wildlife / other*

Biodiversity When Livestock are Involved:

How do you protect riparian areas and sensitive habitats? fence to minimize impacting wildlife / control sensitive area access / prevent bank erosion / animals fed away from water / other*

What are you doing to improve your pasture or rangeland? prevent overgrazing / reseed/protect trampled/eroded areas / plant native pasture / ecologically-sound grazing system / prescribed burning / other*

What wildlife-friendly management practices do you use? guard animals / grazing scheduled when predation pressure low / livestock spend night in protected area / circumstances of livestock death documented / other* / list problems with predators or other wildlife:

Have you assessed the farm for biodiversity problems and greatest opportunities, and developed goals a timeline for biodiversity conservation? yes / no describe/explain

How do you monitor farm biodiversity? visually / species counts / other*

Wild Harvest Enterprises Biodiversity:

How do you maintain or improve the sustainability of the harvested species? harvest from stable populations / minimize disruption of priority species/sensitive habitats avoid erosion / allow re-establishment / monitor wild crop sustainability / other*

*If you check other, please explain.

Add the following boxes under the Natural Resources: Water Use:

What practices are used to protect water quality? sediment basin / compost/fertilizer stored away from water

Attachment 3

March 2009 Final NOSB Recommendation on Guidance: Implementation of Biodiversity Conservation in Organic Agriculture Systems

National Organic Standards Board JOINT CROPS & COMPLIANCE, ACCREDITATION, AND CERTIFICATION COMMITTEE

Implementation of Biodiversity Conservation in Organic Agriculture Systems

March 5, 2009

I. INTRODUCTION:

Biological diversity is the diversity of life existing at three levels: genetic, species and ecosystem diversity. Therefore, biological diversity (biodiversity) includes variety in all forms of life, from bacteria and fungi to grasses, ferns, trees, insects, and mammals. It encompasses the diversity found at all levels of organization, from genetic differences between individuals and populations (groups of related individuals) to the types of natural communities (groups of interacting species) found in a particular area. Biodiversity also includes the full range of natural processes upon which life depends, such as nutrient cycling, carbon and nitrogen fixation, predation, symbiosis and natural succession.

Long held principles of organic farming commonly articulate values and goals that link organic farms with protection of biodiversity. Many organic production systems show a farmer's regard for the value of biodiversity as well as an understanding that agricultural systems innately function within and interact with the larger ecosystem. The value of biodiversity for healthy agriculture and for society at large is recognized in the NOP Rule in several regulations. In response, NOSB has issued guidance statements in 2004 and 2005 pertaining to the implementation of standards related to biodiversity conservation.

The organic community largely supports biodiversity conservation being incorporated into organic systems, but some have issues related to increased paper work, requirements that do not produce real on the ground results and added production and regulatory costs. A particularly controversial issue is how to deal with conversion of native forests or grasslands for organic crop cultivation.

The goal of this "guidance" is to improve and increase biodiversity conservation implementation in organic agriculture systems as required in Section 205.200 of the Regulations and as directed in previous NOSB Guidance statements. This is to be achieved through_ 1) increased education and information for farmers, inspectors and certifiers; uniformity of inspection and certification procedures with regard to growers' implementation of biodiversity standards 2) incorporation of biodiversity standards within the procedures for accreditation and audit of certification agents and 3) use of materials evaluation criteria that foster consideration of biodiversity conservation when adding or deleting materials from the National List.

The time is ripe to move forward with stronger, more consistent implementation of biodiversity conservation standards as substantial funding has recently been authorized in the 2008 farm bill that may be used in part for this purpose including: increased funding for NOP from 3.1 million to 11 million in 2012, inclusion of organic farming practices as conservation methods within USDA's Environmental Quality Incentive Program (EQIP), funding of data

collection about organic products (5 million annually in mandatory funding through 2012), grants for beginning organic farmers and ranchers and \$78 million in competitive grants to research institutions for organic initiatives. The Conservation Stewardship Program now has streamlined the application process so that it can be coordinated with organic certification.

II. BACKGROUND

A number of the organizations interested in the subjects of biodiversity conservation and sustainability in organic agriculture have produced work to advance these goals within organic agricultural practices. In particular, the Wild Farm Alliance (WFA) and the National Center for Appropriate Technology (NCAT) have worked with NOSB to develop systems for implementing the NOP the NOP biodiversity and conservation standards. The International Organic Inspectors Association (IOIA) has played an important role in filling the need for biodiversity educational materials and criteria and using them in their inspector training programs.

The WFA has published guides about biodiversity conservation, one each for farmers and certifiers, describing practices and actions farmers can take to conserve biodiversity. In 2006, WFA mailed a guide to all organic farmers and certifiers in the nation. In addition, ATTRA developed an Organic System Plan (OSP) template that includes a section intended to assist growers with documenting their efforts to address biodiversity conservation. Rodale Institute also provides electronic versions of the OSP that contain these conservation references. IOIA includes the ATTRA's OSP's and WFA guides on conserving biodiversity in their inspector training classes. In May 2008, WFA issued a new document "Biodiversity Compliance Assessment..." which offers a list of compliance indicators designed to allow both certifiers and growers to measure progress toward protecting biodiversity on organic farms.

A NOSB Guidance Document titled "Compatibility with a System of Sustainable Agriculture and Consistency with Organic Farming and Handling" was adopted April 29, 2004 . The Guidance stated in part:

"In order to determine if a substance, its use, and manufacture are compatible with a system of sustainable agriculture and consistent with organic farming and handling, and in consideration of the NOSB Principles of Organic Production and Handling, the following factors are to be considered:

L) Does use of the substance have a positive impact on biodiversity?"

The same guidance document stated that "There is strong support by all commenters for this position".

The NOSB Policy and Procedure Manual mentions biodiversity in the section called "NOSB Guidance on Compatibility with a System of Sustainable Agriculture and Consistency with Organic Farming and Handling", factor 12, "Does use of the substance have a positive impact on biodiversity?" However, this requirement has not been added to the materials checklist used by committees in evaluating petitions.

At the NOSB's fall 2004 meeting, WFA requested that the Board incorporate biodiversity criteria into their model Organic System Plan. The request was sent to the Crops Committee and subsequently the Board, at the spring 2005 meeting, approved a draft on biodiversity conservation. Further refinement in the draft was made with assistance from NCAT. On August 16, 2005, NOSB approved an Amendment to NOSB Organic System Plan Template

“Maintaining or Improving Natural Resources”, which added criteria to the OSP on biodiversity management. Although the use of the OSP forms is not mandatory, it was hoped the use of the model would help to bring consistency to inspection, certification, and accreditation.

The NOSB biodiversity criteria approved for the OSP is presented below and the detailed biodiversity management points are listed in Appendix A.

D. Natural Resources

NOP Rule 205.2 defines Organic Production as a production system managed in accordance with the Act and its regulations to respond to site-specific conditions by integrating cultural, biological, and mechanical practices that foster cycling of resources, promote ecological balance, and conserve biodiversity. NOP Rule 205.200 and 205.203(a) requires that production practices maintain or improve natural resources (soil and water quality, wetlands, woodlands and wildlife) of the operation.

The use of the WFA guides on biodiversity conservation in IOIA training has been largely well received and useful in calling attention to needs and opportunities. However, not all accredited certifiers have adopted the OSP templates that include the section on biodiversity management.

A recent survey by the WFA (see Appendix B) provides a detailed response by certifiers to a query about their implementation of NOP biodiversity standards. The NOP’s audit review compliance checklist does not include any requirement for auditors to verify whether accredited certifying agencies are implementing the natural resources standard in 205.200.

III. RELEVANT AREAS IN THE RULE

The Preamble to the Rule (Federal Register/Vol. 65, 246/Thursday, December 21, 2000/pg. 80563 (4) CONSERVATION of BIODIVERSITY states in part *“we agree with commenters and have amended the definition of organic production to require that a producer must conserve biodiversity on his or her operation. The use of “conserve” establishes that the producer must initiate practices to support biodiversity and avoid, to the extent practicable any activities that would diminish it. Compliance with the requirement to conserve biodiversity requires that a producer incorporate practices in his or her organic system plans that are beneficial to biodiversity on his or her operation.*

NOP Rule passages relevant to Biodiversity Conservation are as follows:

205.2 Terms defined:

Crop Rotation. Perennial cropping systems employ means such as alley cropping, intercropping and hedgerows to introduce biological diversity in lieu of crop rotation.

Natural resources of the operation. The physical, hydrological, and biological features of a production operation, including soil, water, wetlands, woodlands, and wildlife.

Organic production. A production system that is managed in accordance with the Act and regulations in this part to respond to site-specific conditions by integrating cultural, biological, and mechanical practices that foster cycling of resources, promote ecological balance, and conserve biodiversity.

Organic System Plan. A plan of management of an organic production or handling operation that has.....

Pasture. Land used for livestock grazing that is managed to provide feed value and maintain or improve soil, water, and vegetative resources.

Soil and water quality. Observable indicators of the physical, chemical, or biological condition of soil and water, including the presence of environmental contaminants.

205.200 General

Production practices....must maintain or improve the natural resources of the operation including soil and water quality.

See Also:

205.203 Soil fertility.....

205.205 Crop rotation

205.206 Crop pest, weed, and disease management practice

205.707 Wild-crop harvesting

205.237 Livestock feed

205.238 Livestock health care

205.239 Livestock living conditions

IV. DISCUSSION:

The value of biodiversity for healthy agriculture, and for society at large, is generally recognized. In addition, long held principles of organic farming commonly articulate values and goals that link organic farms with conservation of biodiversity. These tenets were accepted in the NOP Rule and subsequently in NOSB guidance statements issued in 2004 and 2005 pertaining to the implementation of standards related to biodiversity conservation.

Biodiversity conservation was a topic of discussion at the May 2008 NOSB meeting and resulted in the full Board directing a Joint Crops and Compliance, Accreditation, & Certification Committee to review implementation of standards and, as necessary, prepare further guidance for Board consideration. The Joint Committee determined that the biodiversity conservation requirements were not being implemented fully or consistently.

In October 2008, the Committee issued a discussion paper, "Implementation of Biodiversity Conservation in Organic Agriculture Systems". More than 60 written and oral comments were received from the public prior to and at the November 2008 NOSB Board. Most all the public comments strongly supported the need to improve and increase implementation of biodiversity conservation in organic agriculture systems, with many expressing a sense of urgency. No comments challenged the goal of the document, only a very few expressed concerns with the added work and costs. Public suggestions have been incorporated into this document.

V. GUIDANCE DOCUMENT RECOMMENDATION

1) Materials Review by the NOSB: Add biodiversity considerations to the checklist used for the review of materials as shown below for specific categories and lines:

Category 1. Adverse impacts on humans or the environment?

Question
3. Is the substance harmful to the environment AND BIODIVERSITY? [§6517c(1)(A)(i);6517(c)(2)(A)i]

5. Is there potential for detrimental chemical interaction with other materials used? [§6518 m.1]
6. Are there adverse biological and chemical interactions in agro-ecosystem? [§6518 m.5]
7. Are there detrimental physiological effects on soil organisms, crops, or livestock . [§6518 m.5]
9. Is there undesirable persistence or concentration of the material or breakdown products in environment?[§6518 m.2]
10. Is there any harmful effect on human health? [§6517 c (1)(A)(i) ; 6517 c(2)(A)i; §6518 m.4]

Category 2. Is the Substance Essential for Organic Production?

Question
1. Is the substance formulated or manufactured by a chemical process? [6502 (21)]
2. Is the substance formulated or manufactured by a process that chemically changes a substance extracted from naturally occurring plant, animal, or mineral, sources? [6502 (21)]
3. Is the substance created by naturally occurring biological processes? [6502 (21)]
4. Is there a natural source of the substance? [§205.600 b.1]
5. Is there an organic substitute? [§205.600 b.1]
6. Is the substance essential for handling of organically produced agricultural products? [§205.600 b.6]
7. Is there a wholly natural substitute product? [§6517 c (1)(A)(ii)]
8. Is the substance used in handling, not synthetic, but not organically produced? [§6517 c (1)(B)(iii)]
9. Is there any alternative substances? [§6518 m.6]
10. Is there another practice that would make the substance unnecessary? [§6518 m.6]

Category 3. Is the substance compatible with organic production practices?

Question
1. Is the substance compatible with organic handling? [§205.600 b.2]
2. Is the substance consistent with organic farming and handling AND BIODIVERSITY ? [§6517 c (1)(A)(iii); 6517 c (2)(A)(ii)]
3. Is the substance compatible with a system of sustainable agriculture? [§6518 m.7]

2) Development and Implementation of the Organic System Plan

Take the following actions with regard to the Organic System Plan:

a) Certified Grower/Producer

Producers shall incorporate biodiversity conservation into their OSPs. The questions on ATTRA's OSP templates (Pages 7&8 on the farm template) or guidance tools such as those developed by WFA, provide detailed information and direction. The producer shall be ever vigilant to biodiversity problems and conservation opportunities. Conversion of native habitat to crop production has consequences to biodiversity that must be considered and the producer should discuss such planned conversion with his or her Certifier before action is taken.

b) Inspectors

Inspectors shall receive training in biological diversity conservation such as is currently given by IOIA and include methods for verification of NOP biodiversity standards in all inspections of organic farms using appropriate checklists and other tools.

Other issues not explored by biodiversity verification methods, but that should be evaluated by inspectors include:

- Sustainable practices for incorporating new land into agriculture
- Practices which enhance soil biodiversity

c) Certifiers

Certifiers shall adopt an OSP and other certification documents that address the NOP biodiversity requirements. Certifiers may devise a format and content for these documents that is suitable to their own certification system.

Certifiers shall require all production operations to address biodiversity conservation in their OSPs. Conversion of native habitat to crop production has important consequences to biodiversity and normally should be discouraged.

Certifiers shall document the degree to which producers are addressing biodiversity when performing inspections and when making certification decision. Only severe violations would lead to suspension or revocation of a producer's certification, other violations would be cited as minor non-compliances by the certifiers and corrected by the operator within a specified timeframe.

d) National Organic Program

The NOP shall emphasize biodiversity in its training of NOP-accredited certification bodies. Trainings shall include such topics as indicators of compliance with biodiversity standards, differentiating major and minor non-compliances for violations of biodiversity standards, evaluating corrective actions taken to correct minor violations. The focus should be on education, teaching practices and the benefits of conservation.

The NOP shall also revise the checklist used to audit certifiers so that it includes questions about NOP's biodiversity standards in every audit.

Each of the above actions would require additional work for producers, certifiers, NOP and NOSB, but these tasks can be integrated into existing plans and operations.

Joint Committee vote:

Moved: Barry Flamm Second: Joe Smillie

Yes- 10 No- 0 Abstain- 1 Absent- 0

Appendix A: Biodiversity Criteria Approved for the OSP (NOSB 2005)

(see Attachment 2 "August 2005 Final NOSB Recommendation: Maintaining or Improving Natural Resources Amendment to NOSB Organic System Plan Template.")

Appendix B: Reports of Certifiers Implementation of NOP Biodiversity Standards

(Compiled by Wild Farm Alliance)

In 2006 almost all of the organic certifiers were contacted to see if they were aware of the 205.200 biodiversity/natural resources standard and if they were addressing or had plans to address it in their inspection process. The agencies that responded positively at that time were contacted in 2008 to determine their current status with regard to their implementation of the NOP biodiversity standard.

It is possible that more certifiers than noted are inspecting for the standard. Many had implemented biodiversity standards between the 2006 survey and the 2008 survey.

CERTIFIER	HOW THEY DETERMINE COMPLIANCE WITH 205.200	FIRST ESTIMATE OF FARMER MEMBERS	LATEST ESTIMATE OF FARMER MEMBERS MID SEPT 08
Certifier Checks for Compliance with 205.200			
California Certified Organic Farmers	Inspector asks CCOF questions	1100	1508
Global Culture	Farmer answers NOSB adopted biodiversity questions	50	65
Idaho Dept. of Agriculture	Farmer answers NOSB adopted biodiversity questions	90	190
Indiana Certified Organic	Farmer answers many of the NOSB questions	195	300
Nature's International Certification Services	Farmer answers ICS questions	230	100
Marin County Dept. of Agriculture in California	Farmer answers Marin Co questions	40	47
Midwest Organic Services Association	Farmer answers many of the NOSB questions	550	1000
MN Crop Improvement Assoc.	Farmer answers MCIA questions	45	30
Oregon Tilth	30 Farmer answers OTCO questions	800	640
Quality Certification Services in FL	Farmer answers most of the NOSB questions	220	241
Stellar/Demeter	Farmer answers Stellar biodiversity questions	100	109
Washington State Dept of Ag	Inspector looks for noncompliances	840	791
NM Organic Commodities Commission	Plan on addressing when they have time	100	120
TOTAL		4738	5236

Attachment 4

May 2011 NOP Organic System Plan Template for Crop and/or Livestock Production

Natural Resource Management

Key NOP standards related to natural resource management:

§ 205.2 definitions:

Organic production. A production system that is managed in accordance with the Act and regulations in this part to respond to site-specific conditions by integrating cultural, biological, and mechanical practices that foster cycling of resources, promote ecological balance, and conserve biodiversity.

Natural resources of the operation. The physical, hydrological, and biological features of a production operation, including soil, water, wetlands, woodlands, and wildlife.

§ 205.200: Production practices implemented in accordance with this subpart must maintain or improve the natural resources of the operation, including soil and water quality.

§ 205.203(a): The producer must select and implement tillage and cultivation practices that maintain or improve the physical, chemical, and biological condition of soil and minimize soil erosion.

§ 205.203(c): The producer must manage plant and animal materials to maintain or improve soil organic matter content in a manner that does not contribute to contamination of crops, soil, or water by plant nutrients, pathogenic organisms, heavy metals, or residues of prohibited substances.

§ 205.206(b)(2): Pest problems may be controlled through mechanical or physical methods including but not limited to the development of habitat for natural enemies of pests. [See also § 205.206(a)(2)]

§ 205.239(b)(4): The producer of an organic livestock operation may provide temporary confinement for an animal because of risk to soil or water quality. [See also § 205.239(a)(3)]

§ 205.239(e): The producer of an organic livestock operation must manage manure in a manner that does not contribute to contamination of crops, soil, or water by plant nutrients, heavy metals, or pathogenic organisms and optimizes recycling of nutrients and must manage pastures and other outdoor access areas in a manner that does not put soil or water quality at risk.

§ 205.240(c)(8): The pasture plan shall include a description of the erosion control and protection of natural wetlands and riparian areas practices.

Organic standards specifically address soil (conservation and health) and water (conservation and quality; contamination prevention). As quoted above, the standards also include a general requirement to maintain or improve natural resources (soil, water, wetlands, woodlands and wildlife) by integrating cultural, biological and mechanical practices to foster cycling of resources, promote ecological balance, and conserve biodiversity. Organic production practices must maintain or improve their natural resources.

While natural resource management is a core organic standard, producer strategies will be specific to each site and type of production. Each operation's practices are adapted to the features of the land and local conditions, especially related to: soil (soil types, slope, risks of

erosion, and overall health); water (position in the watershed, presence of water courses and riparian areas, and water availability or scarcity); and wetlands, woodlands and wildlife (ecosystem type, biological diversity and habitat on and around the farm).

Organic farming practices can conserve soil, increase soil health, protect water and contribute to biological diversity within—and often beyond—its boundaries. On-farm practices may include: soil building to increase organic matter, humus, biological activity and diversity of soil organisms; water conservation to benefit domestic/native species and riparian ecosystems; inclusion of a diversity of flowering plants, habitat or shelter for pollinators, insects, other arthropods, spiders, bats, raptors and other pest predators; planting diverse pastures; non-lethal livestock predator control; wildlife friendly fencing; monitoring and control of specific non-native invasive species; establishment of grassed waterways, hedgerows or other plantings to check erosion and foster habitat; wetland and riparian area protection; native habitat restoration; or efforts to promote wildlife migration corridors and conservation.

As you describe your natural resource management practices, please note that some of your answers to questions about natural resource management may be relevant to other sections of this OSP as they relate to crop rotation, nutrient and manure management. The following questions are intended to address general, whole-farm goals and approaches to organic natural resource management.

1. Please describe how your farming or ranching practices—crop and/or livestock production practices—maintain or improve natural resources, foster cycling of nutrients, promote ecological balance, and conserve biodiversity. Please list the specific strategies or practices you use that contribute to each general goal listed below, as applicable.
 - a. Conserve soil; Improve soil condition; Prevent soil erosion.
 - b. Prevent water contamination by plant nutrients; Protect water quality.
 - c. Conserve water
 - d. Conserve biodiversity (soil organisms, pollinators, natural enemies of pests, predators, native habitat, vegetation and wildlife).
 - e. Other practices that maintain or improve natural resources (soil, water, wetlands, woodlands and wildlife), foster cycling of nutrients, promote ecological balance, and conserve biodiversity.