



POSITIVE ORGANIC INDICATORS AND RED FLAGS

Inspecting for Natural Resources
and Biodiversity on Farms

A HANDBOOK BY
**WILD FARM
ALLIANCE**



2021
EDITION

POSITIVE ORGANIC INDICATORS AND RED FLAGS

Inspecting for Natural Resources and Biodiversity on Farms

TABLE OF CONTENTS

About this Document and Wild Farm Alliance	3
All Types of Operation	5
• Managing for Biodiversity	
• Maintaining and Protecting Natural Areas and Wildlife	
• Conserving Water	
Cropland	11
• Fostering Soil Biodiversity and Soil Conservation	
• Maintaining and Improving Water Quality	
• Incorporating Biodiversity in Annual and Perennial Cropping Systems	
• Co-Managing for Food Safety and Conservation	
Livestock	22
• Conserving Soil to Improve Pastures and Rangelands	
• Maintaining and Improving Water Quality in Riparian Areas and Wetlands	
• Incorporating Biodiversity in Livestock Operations	
• Employing Predator-Friendly Management Practices	
• Minimizing Transference of Diseases & Pathogens Between Livestock, People & Wildlife	
Wild Harvest	32
• Maintaining and Improving the Sustainability of the Harvested Species	
Handling Operations	34
• Promoting Biodiversity in Handling Operations	
Selected Resources	37



NATURAL RESOURCES AND BIODIVERSITY CONSERVATION IN ORGANIC OPERATIONS

Positive Indicators and Red Flags in Organic System Plans and Inspection Reports

ABOUT THIS DOCUMENT

Written by Jo Ann Baumgartner and Shelly Connor of Wild Farm Alliance and edited by Karen Van Epen. A special thanks to naturalist/geologist Tony Fleming and CCOF's Sean Feder for reviewing earlier versions of this document.

Organic certifiers and inspectors can use this handbook to assess how organic operations are meeting the National Organic Program (NOP) requirements to “maintain or improve the natural resources of the operation,” and “conserve biodiversity”. It contains examples of positive compliance indicators, and negative red flags with opportunities for improvement.

The objectives are geared towards but not necessarily limited to the five broad types of features (soil, water, wetlands, woodlands, wildlife) specifically mentioned in the NOP definition of natural resources. Many of the objectives, indicators, and red flags overlap two or more categories, and contribute to the broader goal of whole-farm biodiversity.

Organic certifiers may already “comprehensively” address the biodiversity and natural resources issues as the NOP requires in their Organic System Plans (OSPs) and Inspection Reports. Or they may only cover them partially or not at all and need to update them. As the OSPs are updated, the Inspection Reports should similarly be revised so that inspectors are prompted to report on comprehensive compliance.

Taking on increasing importance to all farmers, but not specifically mentioned in the NOP Rule, are the adaptations and mitigations necessary to continue farming successfully in a more variable and generally warmer climate. As it happens, many of the positive indicators presented provide multiple climate benefits that make the farm more resilient to extreme events, while also reducing the operation’s carbon footprint.





NATURAL RESOURCES AND BIODIVERSITY CONSERVATION IN ORGANIC OPERATIONS

Positive Indicators and Red Flags in Organic System Plans and Inspection Reports

It is important to keep in mind that the most intensive agricultural landscapes often need to make the biggest improvements; however, these are the areas with the most potential for biodiversity benefits. So while farmers in intensively managed farmscapes may need to be directed to resources on what is required of them, many more biodiversity benefits are to be gained.

As organic agriculture expands into intensively managed regions in the future, landscapes will be more friendly to wild pollinators, beneficial insects, frogs, lizards, birds, bats and mammals.

ABOUT WILD FARM ALLIANCE

Since 2000, Wild Farm Alliance has educated the agricultural community about on-farm biodiversity conservation, assisted them with its practical implementation, and initiated policies that support farm stewardship. Our mission is to promote a healthy, viable agriculture that protects and restores wild nature. Our work is centered on engaging and empowering those involved in the food and farming movement, including everyone from farmers and certifiers to consumers. We are Bringing Nature Back to the Farm.

To learn more, visit:

WildFarmAlliance.org

Additional Resources from Wild Farm Alliance:

- [Biodiversity Conservation: An Organic Farmer's and Certifier's Guide](#)
- [Biodiversity Continuum Chart](#)
- [Beneficial Birds Multimedia Story Platform](#)

Contact Wild Farm Alliance at:

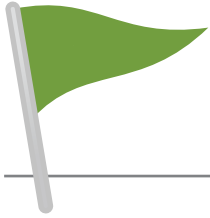
info@wildfarmalliance.org

831-761-8408



ALL TYPES OF OPERATIONS

Managing for Biodiversity



POSITIVE INDICATORS

- Farmer works with NRCS or other programs to enhance biodiversity.
- Conservation areas, practices, and plans appear on the farm map and are described in the OSP.
- Farm has a conservation easement in place.

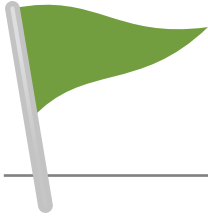


OSP Red Flags

- The operator does not map or otherwise indicate natural resources and biodiversity that are present on the farm.
- Practices for maintaining or improving natural resources and biodiversity are not described.

ALL TYPES OF OPERATIONS

Maintaining & Protecting Natural Areas & Wildlife



POSITIVE INDICATORS

- Property has some natural areas (woodlands, wetlands, grasslands) and semi-natural areas (hedgerows, alley plantings).
- Native plant community is present.
- Connectivity is present between habitat patches on the farm as well as links to natural areas off the farm.
- General abundance of wildlife species observed, such as pollinators, beneficial insects, amphibians, reptiles, birds, and mammals.
- RTE (rare-threatened-endangered) species are present and are recognized and protected by land owner.
- Non-native invasive plant and animal species are not abundant.
- Operator manages invasive species as needed.



ALL TYPES OF OPERATIONS

Maintaining & Protecting Natural Areas & Wildlife



RED FLAGS

On-the-Ground Red Flags



- Natural and semi-natural areas dominated by invasive species and operator lacks any awareness of the issue, or has not taken steps to manage it.



- Natural (woodlands, wetlands, grasslands) and semi-natural (hedgerows, alley plantings) areas or water bodies and features (riparian areas, lakes, ponds, wetlands) have been degraded or destroyed by the operation.



OSP Red Flags

- Farm plan does not describe practices for maintaining or improving natural areas and wildlife.
- Farm plan does not describe any practices for managing invasive species if they are present.

ALL TYPES OF OPERATIONS

Maintaining & Protecting Natural Areas & Wildlife



RED FLAGS

On-the-Ground Red Flags



- Wildlife habitat is only present for part of the year; annual alyssum or other habitat is not replanted with the next crop.



- No wildlife habitat is present anywhere on the parcel, or adjacent land managed by the operator.



- Intentional killing of protected wildlife. For example, the destroying occupied nests of migratory birds such as the Cliff Swallows featured in this photo.

ALL TYPES OF OPERATIONS

Conserving Water



POSITIVE INDICATORS

- Water is available for uses and users other than agriculture (wildlife, streamflow, groundwater recharge, etc.).
- Riparian buffers are present along shorelines, streambanks, ditches, wetlands.
- Water is used efficiently by the operation.
- Water usage is monitored and curtailed when appropriate (drought, etc).



Photo Credit: J. Baumgartner



Photo Credit: USDA NRCS

ALL TYPES OF OPERATIONS

Conserving Water



RED FLAGS

On-the-Ground Red Flags



- Excessive use of water, such as flood irrigating during a drought or where there is groundwater overdraft, or sprinkler irrigating when it is windy.



- No monitoring for soil moisture, water use or irrigation leaks.



- Water use by operation leaves little or no water in streams or ponds to maintain natural water level or streamflow to support wildlife needs.

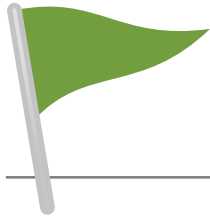


OSP Red Flags

- The operator doesn't describe their water conservation plans.

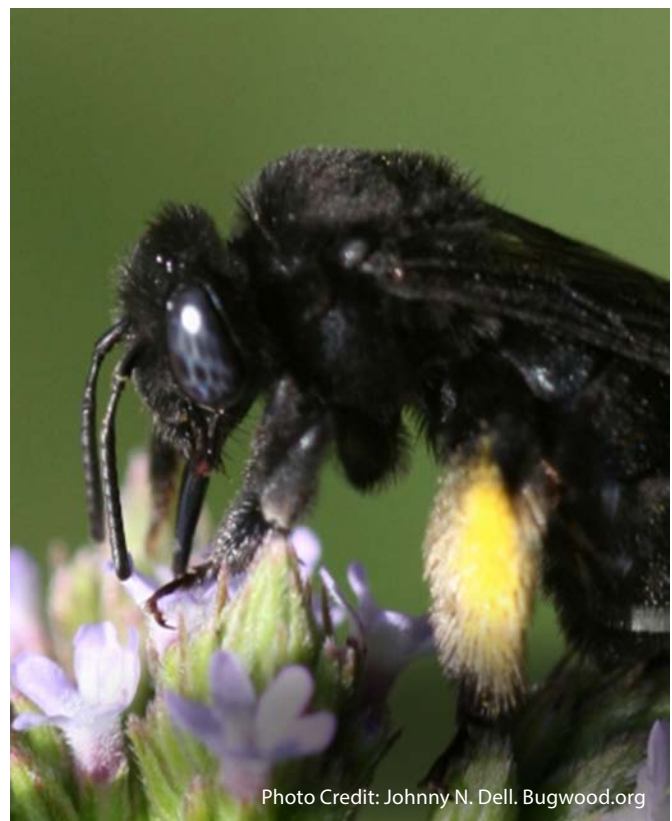
CROPLAND

Fostering Soil Biodiversity and Soil Conservation



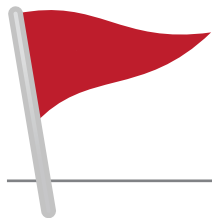
POSITIVE INDICATORS

- Evidence of effective soil-building practices such as: soil crumbles easily, and abundance of soil animals and microorganisms like ground-nesting bees, beetles, worms, fungi, etc.
- No physical evidence of soil erosion or compaction: no gullies, sediment fans, or deep ruts. A rigid probe passes through soil, and water infiltrates easily.
- Conservation practices utilizing grass waterways, conservation tillage, terraces and windbreaks.
- Soil covered with crop residues or cover crops during non-cropping periods.
- Leaf litter and other plant debris are present in untilled natural and semi-natural areas.



CROPLAND

Fostering Soil Biodiversity and Soil Conservation



RED FLAGS

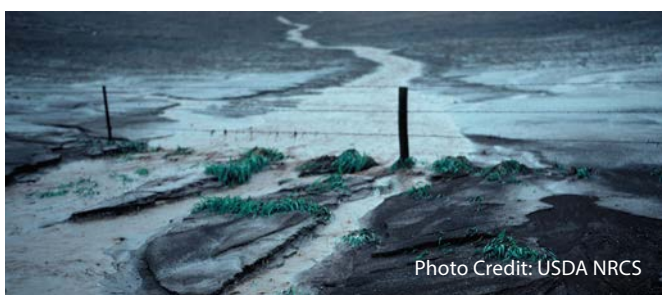
On-the-Ground Red Flags



- No compost, cover crops or crop rotations are used.



- There is visible evidence of compaction like deep ruts, resistance to penetration, or extended ponding of water.



- Soils in fields and pastures are poorly protected from wind and water erosion during non-crop seasons.

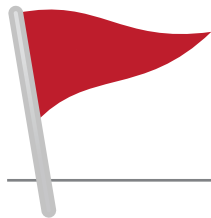


OSP Red Flags

- The operator does not describe practices for soil building and conservation.

CROPLAND

Fostering Soil Biodiversity and Soil Conservation



RED FLAGS

On-the-Ground Red Flags



- Soil lacks appreciable biological activity.



Photo Credit: USDA NRCS

- Visible evidence of erosion by wind or running water.



Photo Credit: M. Cahn

- Field edges lack runoff diversions shown at left, or vegetated buffers (not shown) to slow down runoff and trap sediment.

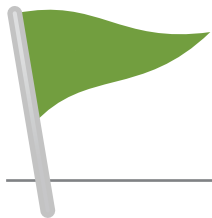


Photo Credit: USDA NRCS

- Riparian areas, including irrigation canals and drainage ditches, lack vegetated buffers, allowing soil and pollutants (fertilizers, pesticides, pathogens) to readily enter waterways.

CROPLAND

Maintaining and Improving Water Quality



POSITIVE INDICATORS

Same indicators noted under **Fostering Soil Biodiversity & Soil Conservation**, plus:

- Visible water quality appears good in on-farm or adjacent bodies of water.
- Field edges have substantial vegetative buffers or runoff diversions to slow down runoff and trap soil and pollutants during extreme rainfall events.
- Conservation practices oriented towards water quality are utilized.



Photo Credit: USDA NRCS

CROPLAND

Maintaining and Improving Water Quality



RED FLAGS

Same issues noted under Fostering Soil Biodiversity & Soil Conservation, plus:

On-the-Ground Red Flags



- Fertilizer or manure applied to soil surface immediately before a storm or irrigation event.



Photo Credit: USDA NRCS

- Visible evidence of water-quality degradation includes: murky, sediment-laden water in streams and ditches; gullies and rills in crop fields; soil deposited in waterways.



Photo Credit: The Open University

- Widespread algae blooms, or thick mats of aquatic weeds in bodies of water.



OSP Red Flags

- Farm plan doesn't describe practices for maintaining or improving water quality.



Photo Credit: S. Prose

- Handling or storage of manure, compost, or other inputs jeopardizes water sources or crop intended for human consumption.



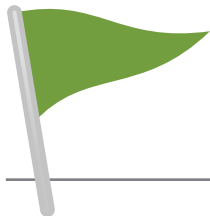
- Runoff from manure applied to frozen, biologically dormant soil is a leading cause of poor water quality.



- Poor water quality in an on-farm stream that enters a body of water.

CROPLAND

Incorporating Biodiversity in Annual & Perennial Cropping Systems



POSITIVE INDICATORS

- Flowering crop and noncrop plants are present.
- Multi-leveled crop plant structure, such as tall sunflowers are interspersed in vegetables.
- Diversity and abundance of adjacent or interplanted noncrop habitat like woodlands, wetlands, hedgerows, alleys or ground cover beneath orchards.
- Brush piles, decomposing logs, patches of bare soil (for ground-dwelling insects, especially bees) and healthy duff layer in adjacent non-crop habitat.
- Native plants dominant in non-crop habitat with sparse invasive non-native plants.
- Diversity of beneficial organisms such as predatory insects, wasp parasitoids, spiders and other arthropods, bats, birds and mammals.
- Appropriate selection and diversification of crops suitable to site-specific conditions and resistant to prevailing pests, diseases, and weed pressure.



CROPLAND

Incorporating Biodiversity in Annual & Perennial Cropping Systems



RED FLAGS

On-the-Ground Red Flags: ANNUAL CROPS



- Same species repeatedly grown without interruption on the same parcel.



- Rotation does not include any sod (grasses), cover crops, green manures, or catch crops, where site-specific environmental conditions would allow it.

On-the-Ground Red Flags: PERENNIAL CROPS



- Only weeds or non-native plants are present by default within perennial crop system.



- Cropping system does not include additional species besides the primary crop. For example no perennial ground covers, hedgerows or alley crops.



OSP Red Flags

- Farm plan does not describe practices for incorporating biodiversity in crop systems (e.g., crop rotation).
- Farm plan does not describe process for selecting crop types and varieties that are suitable to site-specific conditions and resistant to prevailing pests, diseases, etc.

CROPLAND

Incorporating Biodiversity in Annual & Perennial Cropping Systems



RED FLAGS

On-the-Ground Red Flags: BOTH ANNUAL AND PERENNIAL CROPS



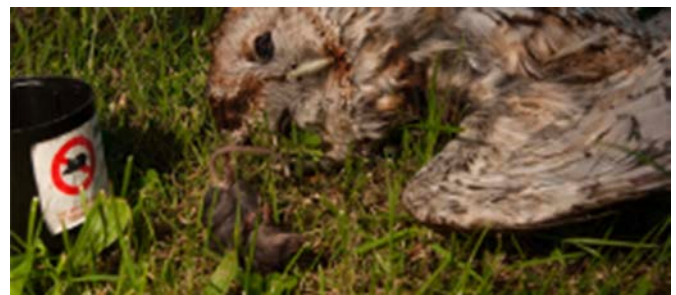
- Adjacent non-crop areas (woodlands, wetlands, hedgerows, etc.) are degraded by farming practices, lack diversity, and/or are infested with non-native invasive plants.



- Evident lack of diversity of beneficial and predatory organisms and their habitats.



- Tests indicate excessive copper accumulation in the soil.



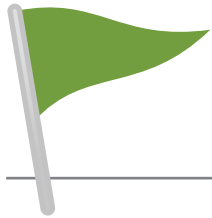
- Indiscriminate destruction of wildlife, beneficial organisms, or their habitat (e.g., strychnine-treated grain used to kill rodents also kills birds, shown above; or mowing without a bar extension kills nesting birds, not shown).



- Inappropriate selection or diversity of planting crop types and varieties: crops demonstrably susceptible to common pests, shown above, and diseases, or unable to compete with dominant weeds, leading to ongoing usage of inputs that damage local biodiversity (in soil and adjacent areas).

CROPLAND

Co-Managing for Food Safety & Conservation



POSITIVE INDICATORS

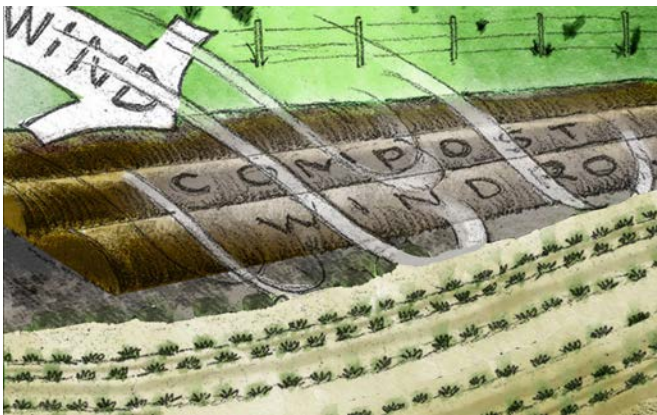
- Appropriate buffer zones are maintained against potential contamination sources. Diversion ditch(es) are maintained to prevent entry of contaminated water from external sources.
- Appropriate lag time is observed between application of manure (as defined by NOP rule) and harvest of crops intended for human consumption.
- Presence of above- and below-ground biodiversity excludes or outcompetes pathogens.
- Crop intended for human consumption is located away from contamination sources (e.g., manure and compost piles).
- Livestock is located away from all water sources and crops.
- Wildlife habitat is conserved.





RED FLAGS

On-the-Ground Red Flags



- Buffer zones are lacking or inadequate to prevent contamination of crops by runoff or aerial drift from neighboring land uses.



- Flooding or runoff from adjacent high-risk sources (e.g., a feedlot) causes waterborne contamination of crops intended for human consumption.



OSP Red Flags

- Farm plan does not describe practices for maintaining wildlife and preventing crop contamination (for edible crops).



RED FLAGS

On-the-Ground Red Flags



- Manure handling practices directly or indirectly contaminate crops intended for human consumption. Photo shows how stepping in manure could spread pathogens to greens or other crops eaten raw, or to a packing shed or similar crop handling area.



- In an effort to reduce wildlife presence in crops, food safety buyers suggest misguided practices that can cause wildlife death. For example, copper can be used in ponds to improve water quality, but they suggest its use because it also kills frogs.



Photo Credit: S. Earnshaw

- Misguided food safety practices demand the exclusion of all wildlife and their habitat, and recommend the use of barriers such as this plastic fence. While the fence is minimally effective at keeping out wildlife, removing habitat can increase erosion and pest damage and reduce pollination.

LIVESTOCK

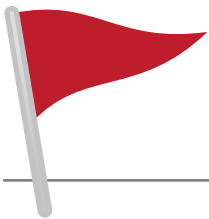
Conserving Soil to Improve Pastures & Rangelands



POSITIVE INDICATORS



- Same Soil Conservation indicators under Cropland, plus:
- Pasture contains diverse mix of forages.
- Healthy biomass and height and cover of forages.
- Good color of forage; large size of plant roots.
- Well-designed and executed rotational grazing system allows forages to recover between grazing episodes.



RED FLAGS

On-the-Ground Red Flags

Same Soil Conservation issues under Cropland, plus:



- Inappropriate application of manure or other inputs to pastures contributes to contamination of crops and soil by plant nutrients, heavy metals, or pathogenic organisms.



- Forages are overgrazed, thin, or degraded; soil erosion is visible.

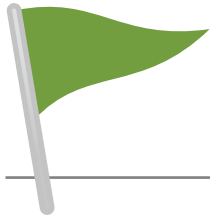


OSP Red Flags

- Farm plan does not describe practices for maintaining and improving pastures and rangelands.

LIVESTOCK

Maintaining & Improving Water Quality in Riparian Areas & Wetlands



POSITIVE INDICATORS

Same Water Quality indicators under Cropland, plus:

- Livestock is excluded from water sources and crops intended for human consumption.
- Forages include native plant species, with few invasive plant species.
- Healthy biomass and height and cover of forages.
- Good color of forage; large size of plant roots.
- Riparian buffers are present along shorelines, streambanks, ditches, wetlands. Livestock access to stream crossings and water sources is tightly controlled. Water sources for livestock are provided away from natural water bodies.
- Use of intensive rotational grazing that mimics the behavior of native grazing animals and encourages rapid regrowth of forages.



LIVESTOCK

Maintaining & Improving Water Quality in Riparian Areas & Wetlands



RED FLAGS

Same Water Quality issues under Cropland, plus:

On-the-Ground Red Flags



- Livestock allowed to access and potentially contaminate water sources and crops intended for human consumption.



- Riparian area shown above is overgrazed; eroded lakeshores and degraded wetlands (not shown).



- Visible runoff of manure (shown left) into bodies of water or crops intended for human consumption, or poor management of manure during storage, transport, or application (not shown).



OSP Red Flags

- Farm plan does not describe practices for managing livestock, manure, and containing runoff that may degrade water resources.
- If natural wetlands or riparian areas are present, the operator does not describe their plan for protecting them.

LIVESTOCK

Incorporating Biodiversity in Livestock Operations



POSITIVE INDICATORS

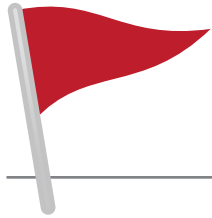
Same Biodiversity indicators under Cropland, plus:

- Forages include native plant species and have few or no invasive plant species.
- Operation coexists with wildlife (e.g., wild ungulates, prairie dogs, grassland birds).
- Migratory paths of wildlife are unimpeded by operation.
- Native trees and shrubs are used for shade.
- Appropriate selection or diversification of livestock suitable to site-specific conditions and resistance to prevailing diseases and other limitations.



LIVESTOCK

Incorporating Biodiversity in Livestock Operations



RED FLAGS

Same or similar Biodiversity issues under Cropland, plus:

On-the-Ground Red Flags



- Livestock is allowed to continuously graze in or otherwise degrade high-quality natural areas (woodlands, wetlands, etc).



- Intentional killing of animals such as Prairie Dogs that are an integral part of the food web upon which many species rely.



OSP Red Flags

- Farm plan does not describe practices for incorporating biodiversity and co-existing with wildlife.
- Farm plan does not describe process for selecting breeds of livestock suitable for site specific conditions and resistant to prevalent diseases and parasites.

LIVESTOCK

Incorporating Biodiversity in Livestock Operations



RED FLAGS

On-the-Ground Red Flags



- Careless killing of wildlife such as, wildlife entangled in barbed wire; or lack of escape ramps in water troughs, allowing small animals to drown (not shown).



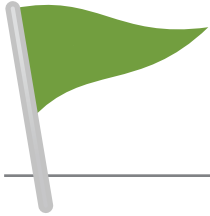
- Livestock have no shade during hot weather.



- Inappropriate selection and diversity of livestock: animals demonstrably susceptible to common diseases, parasites, climatic conditions, or other limitations of the site, resulting in ongoing usage of inputs that may, over time, damage either local natural resources or the livestock themselves.

LIVESTOCK

Employing Predator-Friendly Management Practices



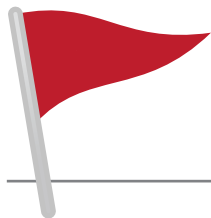
POSITIVE INDICATORS

- Operator employs appropriate deterrents and protective measures, such as guard animals, electric fencing, predator lights, or grazing small (vulnerable) livestock with larger ones.
- Diverse landscape supports natural prey for predators.
- A diverse and healthy population of predators is present.
- Rodents are present in low numbers due to healthy predator/prey relationship.
- Records are kept of livestock deaths and predator-friendly management practices.
- Livestock are savvy in presence of predators.



LIVESTOCK

Employing Predator-Friendly Management Practices



RED FLAGS

On-the-Ground Red Flags



- Intentional killing of predators without first using preventative co-existence methods.



- Lack of biologically diverse landscape reduces availability of prey other than livestock for predators.



- No records kept of livestock deaths in order to evaluate predator role; and no deterrent measures are documented.



OSP Red Flags

- The operator does not describe their plan for co-existing with predators.

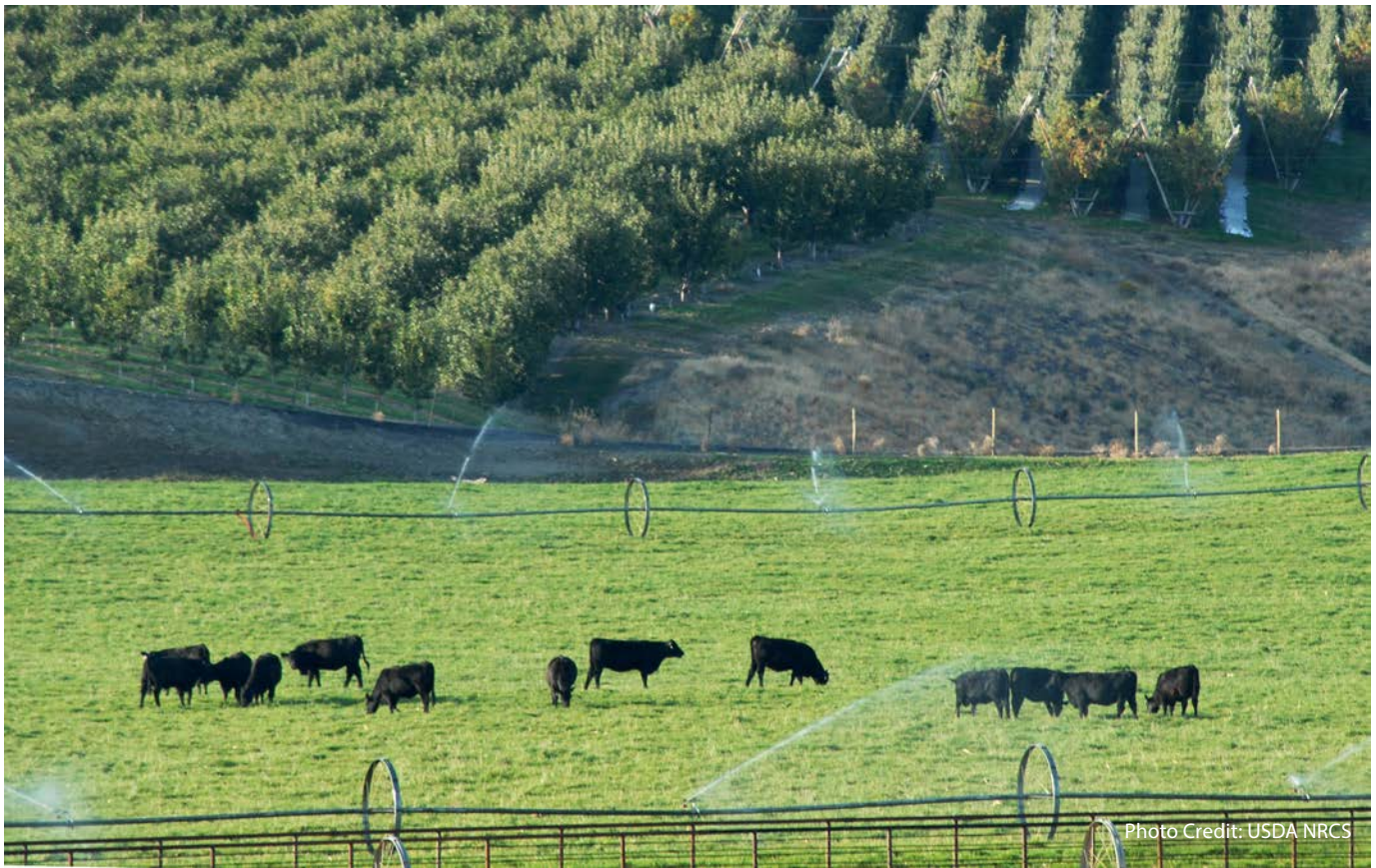
LIVESTOCK

Minimizing Transference of Diseases & Pathogens Between Livestock, People & Wildlife



POSITIVE INDICATORS

- Wildlife and livestock are not exposed to excessive manure in yards or pastures.
- Wildlife are not exposed to any livestock manure in their natural habitats.
- Manure dust and debris not carried beyond the livestock facility.
- Livestock are adapted or resistant to local diseases and parasites.
- Livestock are excluded from crops intended for human consumption.



LIVESTOCK

Minimizing Transference of Diseases & Pathogens Between Livestock, People & Wildlife



RED FLAGS

On-the-Ground Red Flags



- Manure runoff travels to surface water and off-site.



- Poorly drained yards, feeding pads, feedlots and lanes force animals to stand in excess water and manure.



- Songbirds are seen consuming grain in feedlots, possibly spreading parasites and pathogens off site.



OSP Red Flags

- Farm plan does not describe practices for managing manure.

WILD HARVEST

Maintaining & Improving the Sustainability of the Harvested Species



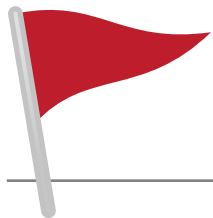
POSITIVE INDICATORS

- Populations are stable or growing.
- No evidence of soil erosion or loss of quality.
- No evident impacts on water quality.
- Invasive plant and animal species are absent or present in low numbers.
- Coordination is maintained with others who harvest in the same area.
- Approval to harvest is granted in areas not under the operator's control.



WILD HARVEST

Maintaining & Improving the Sustainability of the Harvested Species



RED FLAGS

On-the-Ground Red Flags



- Populations are declining or destroyed (ginseng shown here).



- Evident water quality issues, while harvesting wild mushrooms.



- Invasive species, like garlic mustard (shown left) can overrun wild harvest sites such as mushrooms.

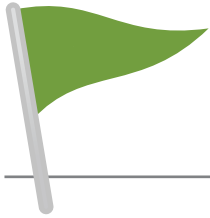


OSP Red Flags

- Farm plan does not describe practices that ensure harvesting or gathering do not degrade natural resources and will sustain the growth and production of the wild crop.

HANDLING OPERATIONS

Promoting Biodiversity



POSITIVE INDICATORS

- Water from impervious surfaces flows through a filter strip, rain garden, or wetland.
- Facility wastes are reused, recycled, or managed appropriately.
- Native plant landscaping occurs around facility.
- Rodenticides are not used prophylactically, i.e., in the absence of a documented rodent problem, and usage follows NOP pest-management hierarchy:
 - a. Cultural, biological and mechanical practices
 - b. Substances on the National List
 - c. Substances not on the National List



HANDLING OPERATIONS

Promoting Biodiversity



RED FLAGS

On-the-Ground Red Flags



- Runoff from facility is discharged directly into local bodies of water, where it can cause erosion, flooding, or pollution or processing waste is not adequately treated and pollutes water or harms wildlife.



- Emissions pollute air and/or air quality permits are not up to date.

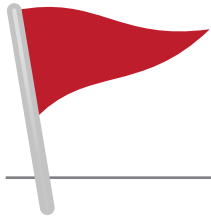


OSP Red Flags

- Farm plan does not describe practices for maintaining or improving natural resources and biodiversity.

HANDLING OPERATIONS

Promoting Biodiversity in Handling Operations



RED FLAGS

On-the-Ground Red Flags



- Premises are landscaped with invasive exotic plants such as Japanese Honeysuckle shown in photo.



- Ongoing, continuous use of rodenticides in the absence of a documented rodent problem, or failure to follow NOP pest management hierarchy.

SELECTED RESOURCES

For Further Reference

SELECTED RESOURCES:

- Bohan, H. [*Quick & easy habitat education activities: Wildlife sign walk*](#). Starflower Foundation.
- Cosgrove, D., D. Undersander and M. Davis. 1996. [*Determining pasture condition*](#). University of WI Extension, Wisconsin County Extension Office.
- Duiker, S. W., J. C. Myers, and L. C. Blazure. [*Soil health in field and forage crop production*](#). USDA Natural Resources Conservation Service (NRCS), Penn State University Extension, Capital Resource Conservation & Development, and Clinton County Conservation District, USDA NRCS.
- Faber, M. 2002. [*Soil quality and site assessment card*](#). Connecticut NRCS, USDA NRCS.
- Hall, T. 2014. [*Self-evaluation techniques: evaluating water quality*](#). University of California Agriculture & Natural Resources.
- Kirk, D. A., A. E. Martin, and K. E. Freemark Lindsay. 2020. [*Organic farming benefits birds most in regions with more intensive agriculture*](#). Journal of Applied Ecology.
- Letourneau, D. K., and S. G. Bothwell. 2008. [*Comparison of organic and conventional farms: Challenging ecologists to make biodiversity functional*](#). Frontiers in Ecology and the Environment 6:430-438.
- Muneret, L., V. Seufert, S. Aviron, J. Pétilion, M. Plantegenest, D. Thiéry, A. Rusch. 2018. [*Evidence that organic farming promotes pest control*](#). Nature Sustainability 1:361.
- NRCS. 2014. Idaho NRCS [*Soil Health Assessment Card*](#). Idaho NRCS, USDA NRCS.
- NRCS. 2013. California. [*Your farm and agricultural water quality*](#). USDA NRCS.
- Oregon Tilth. [*Natural Resources and Biodiversity. Organic Integrity Learning Center*](#)
- Smith, O. M., A. L. Cohen, J. P. Reganold, M. S. Jones, R. J. Orpet, J. M. Taylor, J. H. Thurman, K. A. Cornell, R. L. Olsson, and Y. Ge. 2020. [*Landscape context affects the sustainability of organic farming systems*](#). Proceedings of the National Academy of Sciences 117:2870-2878.
- Vacante, V. 2018. [*Handbook of pest management in organic farming*](#). CABI.

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