



NAPPC (North American Pollinator Protection Campaign)

Pollinator Friendly Practices

About Pollinator Friendly Practices (PFP)

The guidelines outlined in this document are to be used by organizations in support of land management practices in schools, private industry, public spaces, agriculture, forests and homes. The guidelines are meant to augment existing land use incentives and to be used by organizations, both those affiliated with NAPPC and others, in educating about and promoting pollinator friendly land use practices.

About NAPPC

The North American Pollinator Protection Campaign, NAPPC, is a tri-national coalition of over 60 scientific researchers, state and federal agencies, private industry, and conservation and environmental groups dedicated to ensuring sustainable populations of pollinating invertebrates, birds, and mammals throughout the United States, Canada, and Mexico.

The purpose of NAPPC is to:

- Promote awareness of pollinators
- Gather, organize and disseminate information about pollinators
- Provide education about pollinators
- Provide a forum to identify and discuss pollinator issues
- Promote projects, initiatives and activities that enhance pollinators

The guidelines contained in Pollinator Friendly Practices were compiled as a priority action identified by the Special Partnerships Committee of NAPPC in its 2002 Implementation Plan.

The Special Partnerships Committee includes:

Steve Walker, Chair; Bat Conservation International
Paul Growald, Co-Chair; Coevolution Institute
Richard Brusca, Arizona Sonora Desert Museum
Gabriela Chavarria, National Fish and Wildlife Foundation
Marcia Maslonek, Wildlife Habitat Council
Katie Distler, Turner Foundation
Rick Jacobs, PPG
Paige Ohliger, Dewberry and Davis
Michele Parlett, Mirant Corporation
Barry Thompson, Maryland Beekeepers Association

Marcia Maslonek and Paige Ohliger supervised the compilation of PFP, with help from Matthew Shepherd of The Xerces Society; the document was circulated to all NAPPC participants for their comment. The NAPPC Steering Committee endorsed the final Pollinator Friendly Practices in June 2002.

PFP Guidelines

The NAPPCC Pollinator Friendly Practices Guidelines consider six different areas of land use management: Foraging Habitat, Reproduction, Shelter, Invasive/Exotic Species, Chemical Use, and Monitoring. For each topic, there is a central question to be addressed followed by a detailed approach to the subject.

A. Foraging Habitat

Is there sufficient habitat for foraging for pollinators (i.e., native bees, butterflies, bats, hummingbirds, etc.), and are the species used of high value to them?

Beneficial plant species

- Which species are used?
- Are cultivars used, and why?
- Are the species used native to the locale? (see also guideline D)
- Is the color an attractant?
- Is the shape of the flower accessible to pollinators (deep or complex flowers may be suited to specific species, e.g., lupines and bumble bees, or open flowers like asters are easily accessible to a wide range of bees with short tongues or small size, as well as flies and beetles)?
- Is there continuous bloom through early spring through fall?
- Is the goal restoration or landscape?
- Are activity times for species matched with bloom time?
- Do they meet a minimum planting size?
- Are the plantings clustered en masse or scattered?

B. Reproduction

Reproduction considerations depend on the needs of the pollinating species for which the land is being managed. For specific butterfly and moth species, appropriate larval host plants should be used. For native bees, sufficient ground nesting areas, snags, or bee blocks, should be available. For hummingbirds and doves sufficient nesting habitat should be present, whereas bats will require sufficient roosting and maternity habitat.

Reproduction habitat requirements may vary. For example, specific nesting requirements are not well established for many species of native bees. For native bee conservation, general principles should be considered, such as:

- the range of hole diameters that wood nesting species are known to use,
- preferred nest site host plants as known,
- basic parameters for ground nesting conditions,
- provision of nesting materials as well as nesting sites. (leaves, petals, plant down, mud, water).

Habitat connectivity is another important concept in habitat planning that should be considered due to high fragmentation in many regions. For a bee, both nesting and foraging habitat should be close together to benefit the most species and provide optimum conditions.

C. Shelter

Is there shelter in the form of windbreaks , proper plantings, overwintering areas, and so forth ?

Shelter belts could provide nesting sites for hummingbirds as well as bees, such as snags, and additional nectar/pollen sources (maples, wild cherries, linden, and so on). Such areas will also provide cover for butterflies in windy conditions and adverse weather. Shelter is particularly important in urban areas, where lack of vegetation is common and wind tunnels may be severe.

Since foraging areas should be in the sun early in the season, the position of nesting sites needs to be planned carefully in relation to trees or shelter belts. Also, certain species may have specialized shelter needs that need to be considered. For example, exposure to sun at appropriate times of day ensures the success of bee nesting sites.

- For wood nesting species, the nesting blocks need sun on the holes in the morning and not in the afternoon.
- Bumblebees prefer partial shade for nesting.
- Most ground nesting sites should be south-facing, so they get the sun for more of the day.

D. Invasive/Exotic Plant Species

Do native plant species predominate the area and are invasive species actively discouraged?

Invasive species degrade native pollinator habitat, and in accordance with the guidelines of the National Invasive Species Plan, the following points should be in effect:

- Invasive plants on site must be monitored and triggers in place to prompt control measures* (must be 75% native *at least*)
- Is there an attempt to control or remove invasive plants?
- Are exotic species being intentionally planted** (a red flag—may be planted in landscaped areas)? No invasive plant species should be planted.

*Note: Many sites are degraded by invasives such as multiflora rose, garlic mustard, knotweed, etc. If the site is trying to control them and provides all other requirements, it shall be deemed pollinator friendly. However, if a site is overrun and no control activity is implemented, it will not be recognized as pollinator friendly.

**Natives should comprise over 75% of a habitat, preferably more, but with degraded conditions over many areas, a pristine condition may not be possible. Turf-grasses, for example, are not native. Furthermore, species native to one area are not native to adjacent areas, so discrepancies will be carefully evaluated. Many common garden annuals are not native but also not invasive (i.e. zinnias), and provide excellent nectar sources for gardens and backyards. This situation is acceptable, as long as adequate native perennials are also provided.

E. Chemical Use

Is Integrated Pest Management being used?

Integrated pest management is a critical component of safe habitat for pollinators. Pesticides should not be used. Pesticides will be looked at much more harshly than certain herbicides, depending on active ingredient.

Chemical use considerations:

- Is chemical use monitored?
- Is it reduced/eliminated when possible?
- Where is the chemical use (must not be near the habitat)?
- Why is it used?
- What is the active ingredient?
- Method of application (spot treatment vs. broad application, etc.)
- Weather conditions when applied?
- Timing of application?

Some chemicals can be used for the benefit of pollinators, such as in fire ant control and restoration projects; this use should be considered only when appropriate. Herbicides should only be used during the site preparation and establishment phase when there is no feasible alternative. Herbicides should not be used during management if there is an alternative, and if

used only for careful spot treatment. Emphasis must be on a thoughtful, educated approach to chemical use, and to a reduction and ultimate elimination of its use.

F. Monitoring/Length of time/Other

Is the site monitored over time with respect to pollinator inventories, other influences on the site such as grazing and pollution, and is the site used for educational and community outreach?

Monitoring

Are inventories of pollinators conducted on a regular basis (NABA counts, photos, etc.)? Though scientific counts are preferred, simple observation such as notes on the number of floral visitors to a patch per 10 minutes, monitored usage of bee blocks, etc., are acceptable and encouraged. Other influences on the site, such as grazing, pollution, construction and shade influences need to be monitored as well.

Length of time

- Has the project been ongoing for at least one year?

Other

- Is the site used for outreach to community or schools?
- Does the site provide interpretive tools such as a reference collection of insects native to the site?

Sample Site Analysis

If an application for Pollinator Friendly Status claimed to benefit solitary bees, here is an imaginary and simplified example of what would be noted in the application:

Example: solitary bees in PA

1. Foraging Habitat -- Native, high-nectar flowers planted for bloom from spring to fall. Examples, bluebells, coneflowers, asters planted in large drifts. Old apple orchard nearby and significant flowering shrubs in the forest. Also, pollen and nesting materials (leaf/petal pieces, plant pulp, downy hairs, etc.).
2. Reproduction -- Snag management, bee blocks, ground nesting areas
3. Shelter -- Same as reproduction, plus nearby edge habitat along forest
4. Invasive exotic plants -- No invasives used, honeysuckle being addressed
5. Chemical use -- Round-up was used in the planting of the meadow, applied at proper times and only for prep. Weeding by hand first used, except for the thistles. Used sponge to spot treat them with Round-up. No pesticides applied to site.
6. Monitoring/Length of time/Other. -- Seasonal surveys conducted of insects, NABA count with community participation, photo documentation of x number of species, school visits each fall, projects in ground for over 2 years, 10% of employees are involved.



**The mission of the North American Pollinator Protection Campaign (NAPPC)
is to encourage and support actions to benefit
the health of pollinating species in North America.**

Goals:

- Strengthen the network of associated organizations working to conserve and protect pollinator populations.
- Raise awareness and educate about pollinators' importance to the quality of life, and promote open dialogue about pollinator conservation among individuals, institutions, and groups.
- Encourage collaborative partnerships and actions to multiply success in pollinator protection programs.
- Promote conservation, protection, and restoration of pollinator habitats.
- Document and support scientific, economic, and policy research, spanning a wide range of disciplines, concerning pollinators and pollinator habitat.

The NAPPC Steering Committee includes:

Gabriela Chavarria, Co-Chair; National Fish and Wildlife Foundation

Paul Growald, Co-Chair; Coevolution Institute

Rick Jacobs, Vice-Chair: PPG

Kimberly Erusha, Secretary; United States Golf Association

Peter Kevan, University of Guelph

David Inouye, University of Maryland

Steve Buchmann, The BeeWorks, Inc.

Steve Walker, Bat Conservation International

Valerie Kelsey, National Gardening Association

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For a complete list of NAPPC partners, contact www.napcc.org.

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