

# Pesticides and Pollinators



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Our mission is to assure justice by advocating for environmental and community health.  
We believe in the right to clean air, clean water, and toxic-free food.

### Core Values

#### Community Right-to-Know

We believe everyone has the right to know about harmful chemicals presents in our air, water, soil, food, and bodies.

#### Environmental Justice

We recognize that people of color and the poor are disproportionately harmed by toxic releases from military and industrial facilities. We seek to remedy environmental injustices through community-based research and advocacy.

#### Precautionary Principle

If toxics are present and suspected to cause health problems, we believe that ways to limit and avoid unnecessary exposure to those chemicals must be taken. The precautionary principle means that it is “better to be safe than sorry.”

#### Elimination of the Production and Release of Toxics

Phase out chemicals that are harmful to health and the environment and replace them with safe alternatives.

#### Rights and Sovereignty of Indigenous People

#### Culture of Caring and Wellness

We care about the physical, emotional, and spiritual health of individuals, communities, and workers affected by environmental contaminants.

### Programs

- Rural: Alaska Rural Environmental Justice Program
- Policy: Environmental Health Policy and Social Change Program
- Education: Environmental Health Education Program
- Outreach: Alaska Youth and Community Outreach Program
- Wellness: Wellness and Healing Program

*ACAT is a dedicated team of diverse people. We are the only Alaska-based environmental health and justice group working on preventing environmental contamination at every level: local, state, national, and international. Find out more by visiting [www.akaction.org](http://www.akaction.org).*

<http://householdproducts.nlm.nih.gov/cgi-bin/household/prodtree?prodcats=Pesticides&purpose=dogs&type=Animal+Repellent>

<http://www.pesticides.org/educmaterials.html>

[http://www.nrcs.usda.gov/Internet/FSE\\_DOCUMENTS/nrcs142p2\\_035764.pdf](http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_035764.pdf)

To read more about pesticides in our food and their potential effect on our health, visit ACAT: [www.akaction.org](http://www.akaction.org)

Pesticide Control Program of the Alaska Department of Environmental Conservation, including a list of permit-holders for pesticide use  
<http://dec.alaska.gov/EH/pest/index.htm>

The Melibee project is a UAF/UAA scientific inquiry into the interactions between invasive plants and pollination success of local berry plants in Alaska. To learn more about their sometimes surprising results, go to  
<http://sites.google.com/a/alaska.edu/melibee-project/home>

This article describes a new spider venom pesticide and includes a link to the scientific article which introduces it: <http://newswatch.nationalgeographic.com/2014/06/06/spiders-honeybees-animals-pesticides-environment-science/>

More on planting pollinator gardens: [http://www.fws.gov/alaska/pollinator/pdf/pollinator\\_garden\\_factsheet.pdf](http://www.fws.gov/alaska/pollinator/pdf/pollinator_garden_factsheet.pdf)

### National Groups working on Pesticide issues, fact sheets and beyond:

Pesticide Action Network North America  
[www.panna.org](http://www.panna.org)

Beyond Pesticides  
[www.beyondpesticides.org](http://www.beyondpesticides.org)

Safer Chemicals Healthy Families  
[www.saferchemicals.org](http://www.saferchemicals.org)

Alaska House bill banning neonicotinoids (HB 224) was introduced in 2014 by Representative Harriet Drummond with support from Representative Les Gara. It was read and referred to the House Resources Committee.

## Must all Pesticides be Toxic?

By definition, pesticides aim to kill insects or fungi that harm crops or property. The vast majority are toxic to other species beyond their targeted pest, including humans. However, recent research suggests there may be promise in alternatives to synthetic pesticides. These include protein-based pesticides developed from spider venom. This pesticide could target pests, leave pollinators unharmed, and readily break down in the environment after application.

## But what can YOU do?

Plant a pollinator garden.

Pollinators appreciate the added habitat and food sources and your own garden benefits, too. Different pollinators require different habitat but consider leaving a patch of bare ground, dead leaves, stumps, or branches for ground nesting bumble bees and digger bees, and don't forget water! Water is important to those who build homes with mud and will attract some species of butterflies. Because native pollinators have evolved with native plants, it is important to include a variety of plants indigenous to Alaska to provide maximum benefit. Native flowers are also better suited to the climate and require less care than non-native species.

## Call your representatives

Call or email your Alaska State Legislators and United States congressional representatives and let them know you support the bills banning neonicotinoids. Enough heckling can create hope for committee-bound bills!

## Support those who have pledged to be pesticide-free

Eating organically is one simple way to protect pollinators. Nearly all conventionally-grown food is sprayed with pesticides known to harm pollinators and other wildlife. The residues remaining can harm us, too. Support those who are committed to pesticide-free workplaces and products by purchasing organic food and getting to know what is locally available at farmer's markets. Know your grower to know your food.

## Geek Out Here (Resources)

### For more information on native pollinators in Alaska:

Here are a few links to helpful websites:

[http://www.beyondpesticides.org/pollinators/documents/pesticide\\_list\\_final.pdf](http://www.beyondpesticides.org/pollinators/documents/pesticide_list_final.pdf)

<http://www.xerces.org/wings-magazine/neonicotinoids-in-your-garden/>

[http://api.ning.com/files/YaSLp-TIPk32KYraH-WO0YseH3fcIHTgT9K\\*txFX0lC0zMZu4MO7MHXmU7SNjWlhYBGJfVrLXKfUr-7SGNHnroainaz27rd7/NeonicotinoidstoAvoid.pdf](http://api.ning.com/files/YaSLp-TIPk32KYraH-WO0YseH3fcIHTgT9K*txFX0lC0zMZu4MO7MHXmU7SNjWlhYBGJfVrLXKfUr-7SGNHnroainaz27rd7/NeonicotinoidstoAvoid.pdf)

## Pollinators

Pollinators feed on the nectar or pollen of flowering plants. By visiting flower after flower they transfer pollen from plant to plant, enabling the plant to reproduce. Nearly all agricultural crops require pollinators to reproduce and approximately a third of agricultural pollination in the United States is accomplished by European honeybees. Honeybees are kept in Alaska for honey production and pollination but will generally die off- during the cold winter if no warm storage is provided. These are the pollinators most managed by humans, but they are not responsible for all pollination. Wild pollinators are crucial to the plant life-cycle in agriculture and in natural settings. In Alaska, the pollinators native to the region include bumble bees, adrenid bees, sweat bees, wasps, moths, butterflies, hummingbirds, and mosquitoes!

Because food production and the natural ecosystem depends on pollinators, it is important to understand human impacts on their health. So, what is threatening pollinators?

The documented decline of pollinator health nation-wide is likely a result of multiple factors, including habitat loss or fragmentation, pesticide use, and introduction of non-native pathogens or species. Pesticides are particularly damaging because they both directly and indirectly harm pollinators.

## How do Pesticides Affect Pollinators? Death, Damage, and Degradation

**Lethal:** Many pesticides are acutely toxic to pollinators, including bees, and result in death. These include carbamates, organophosphates, synthetic pyrethroids, chlorinated cycloienes and neonicotinoids. Because they are widely used in agriculture, residues of many of these pesticides are also found in our food.

**Sublethal:** Pesticide levels below those which result in death nonetheless have sub-lethal effects for pollinators which inhibit food collection, reproduction, and, for hive-dwelling bees and wasps, olfactory communication essential to hive life. The combination of multiple pesticides may have a combined effect and be more toxic than when used individually.

**Habitat & Food:** Herbicides, especially those which are used indiscriminately over large areas, harm pollinators by eliminating habitat and food sources.

## Neonicotinoids Neo-whaa?

This class of insecticides include some of the most widely used chemicals in agriculture in the world. Recent studies from have implicated them in Colony Collapse Syndrome of the honeybees used to pollinate our food. Because of their toxicity to bees even in sub-lethal doses, the European Union adopted a ban on three commonly used neonicotinoids in 2013. The European Environmental Agency, however, notes that the ban covers only three of seven pesticides in use and only bans them for use with crops attractive to bees. Efforts in the United States to ban neonicotinoids saw promise in the "Save Americas Pollinators Act" H.R. 2692 of 2013 but it was referred to the House Committee on Agriculture and stalled. Similarly,

\* check Resource page for links to spreadsheets that include yard and garden products containing these chemicals.

# Native Alaska Plants Supporting Native Pollinators

| (M) = medicinal (E) = edible (P) = poisonous |   |   |   |                |  |                      |                         |
|--|---|---|---|----------------|--|----------------------|-------------------------|
| Common Name                                  | Latin Name  | Habitat                                     | Growth Habit  | Bloom Timing   | Bloom Color  | Edible/Medicinal Use | Sun exposure            |
| Arnica                                       | Arnica angustifolia   | meadow                                      | runner  | July           | yellow   | M                    | Full Sun                |
| Artemesia-Wormwood                           | Artemisia frigida   | open, drought tolerant                      | clump   | July           | insignificant                                      | M                    | Full Sun                |
| Aster  |   | alpine meadow                               | spreads by runners                                    | July to August | pale purple with yellow centers                    |                      | Full Sun                |
| Baneberry                                    | Actea rubra   | meadow, moist soils okay                    | small herbacious shrub                                | June           | white flowers, red or white opaque berries         | P                    | Partial Sun to Shade    |
| Bedstraw                                     | Galium boreale; Galium triflorum; Galium trifidum                                   | forest floor                                | ground cover spreads by runners                       | June           | white  | EM                   | Full Sun to light Shade |
| Bluebells                                    | Vaccinium uliginosum; Vaccinium ovalifolium   | meadow, moist soils okay                    | seeds prolificly                                      | June           | blue   | E                    | Full sun to light Shade |
| Chocolate lilies                             | Fritillaria camschatcensis  | meadow, moist soils okay                    | small clumps, generates bulbs                         | June           | mahogany brown                                     | E                    | Full sun                |
| Columbine                                    | Aquilegia formosa (Western columbine); Aquilegia brevistyla (smallflower columbine) | drought tolerant, from poor soils to meadow | Tap root, seeds                                       | June to July   | orange-red   | M                    | Full sun to light Shade |
| Cow's parsnip (also Indian Celery, Pushki)   | Heracleum maximum   | meadow, moist soils okay                    | clump seeds   | July           | white  | EM                   | Full sun                |
| Death camus                                  | Anticlea elegans  | meadow, moist soils okay                    | clump   | June           | white-green  | P                    | Full to Partial sun     |
| Devil's club                                 | Oplopanax horridus  | needs moisture                              | woody shrub, spreads by runners                       | July           | white, red opaque berrie clusters                  | M                    | Partial sun to Shade    |
| Dogwood                                      | Camus sericea   | forest floor                                | ground cover spreads by runners                       | May to June    | white  | E                    | Full sun to Partial sun |
| Elderberry                                   | Sambucus racemosa   | open spaces, sun                            | Spreads once established- grows up to six feet a year | May to June    | white, red opaque berry clusters                   | EM                   | Full sun                |
| False hellabore                              | Veratrum viride   | meadow, moist soils okay                    | rhizomes, seeds                                       | May to June    | white to pink-white                                | P                    | Full sun to Partial sun |
| Geranium                                     | Geranium erianthum  | meadow                                      |   | June           | lavender   | EM                   | Full sun to Partial sun |
| Goatsbeard                                   | Aruncus dioicus   | meadow, moist soils okay                    | Forms large clump                                     | June           | creamy white                                       |                      | Full sun to Partial sun |
| Heuchera (also Alum root)                    | HuecheraT   | moist soils                                 | seeds prolificaly                                     | May to June    | white  |                      | Full sun to Partial sun |
| Iris (also Blue flag)                        | Iris setosa   | moist soils                                 | clump   | May to June    | purple   |                      | Full sun                |
| Jacobs ladder                                | Polemonium pulcherrimum   | dry, rocky soils to meadow                  | seeds prolificaly                                     | July           | lavender   |                      | Full sun                |
| Larkspur                                     | Delphinium glaucum  | meadow                                      | clump   | July           | dark purple  | P                    | Full sun                |
| Lupine                                       | Lupinus arcticus; Lupinus nootkatensis  | poor soils, drought tolerant                | Tap root  | May to June    | purple   | P                    | Full sun                |
| Monkshood                                    | Aconitum delphinifolium   | meadow                                      | spreads quickly                                       | July to August | dark purple  | P                    | Full sun to Light Shade |
| Pasque flower                                | Anemone patens  | poor, rocky soils                           | clump   | May            | pink-purple  |                      | Full sun                |
| Prickly rose                                 | Rosa acicularis   | sunny open spaces                           | spreads by runners                                    | June to July   | pale pink with yellow centers, orange-red rosehips | EM                   | Full sun                |
| Shooting star                                | Dodecathon frigidum   | poor, rocky soils                           | clump,  | May to June    | pink   |                      | Full sun                |
| Solomon seal (false)                         | polyganacium / Smilacina stellata   | meadow                                      | spreads by runners                                    | May to June    | white  |                      | Full sun to partial sun |
| Valerian                                     | Valeriana capitata; Valeriana dioica  | meadow                                      | spreads readibly                                      | July           | white to pink-white                                | M                    | Full sun to partial sun |
| Yarrow                                       | Achillea millefolium  | meadow, drought tolerant                    | spreads by runners                                    | July to August | white  | M                    | Full sun                |