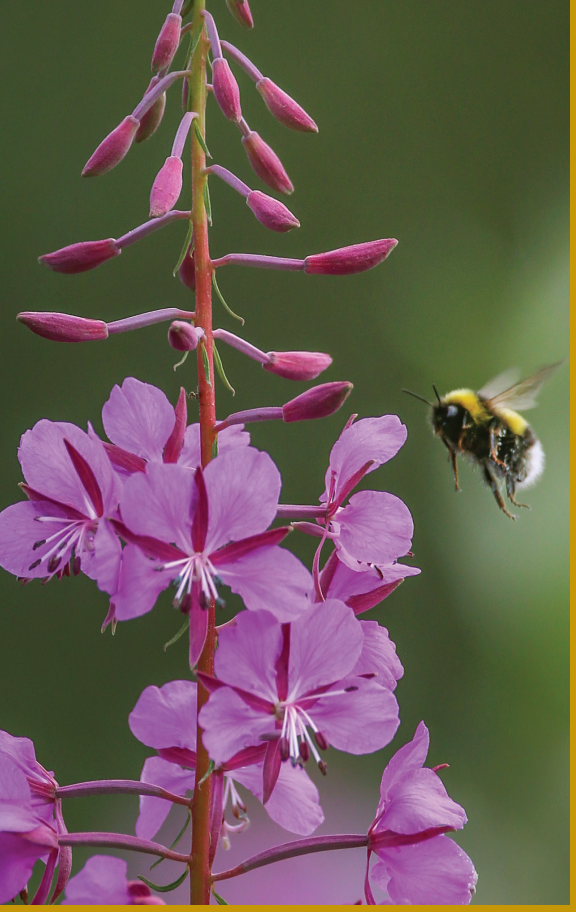

SELECTING PLANTS FOR POLLINATORS

A GUIDE FOR GARDENERS, FARMERS, AND LAND MANAGERS IN THE

ALASKA TEMPERATE CONTINENTAL REGION

INCLUDING THE CITIES OF

BADGER, COLLEGE,

COPPER CENTER, EAGLE,

FAIRBANKS, GLENNALLEN,

AND KENNY LAKE

FOREST SERVICE
US
DEPARTMENT OF AGRICULTURE

POLLINATOR PARTNERSHIP
Protect their lives. Preserve ours.

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This is one of several guides for different regions of North America. We welcome your feedback to assist us in making the future guides useful. Please contact us at

feedback@pollinator.org

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A NAPPC AND POLLINATOR PARTNERSHIP PUBLICATION

This guide was funded by the United States Forest Service with oversight by Pollinator Partnership (pollinator.org), in support of the North American Pollinator Protection Campaign (NAPPC) (NAPPC.org).

WHY SUPPORT POLLINATORS?

In their 1996 book, *The Forgotten Pollinators*, Buchmann and Nabhan estimated that animal pollinators are needed for the reproduction of 90% of flowering plants and one third of human food crops. Each of us depends on these industrious pollinators in a practical way to provide us with the wide range of foods we eat. In addition, pollinators are part of the intricate web that supports the biological diversity in natural ecosystems that helps sustain our quality of life.

Abundant and healthy populations of pollinators can improve fruit set and quality, and increase fruit size. In farming situations this increases production per hectare. In the wild, biodiversity increases and wildlife food sources increase. Carrots, potatoes, and cabbage are some of the crops raised in the Alaska Temperate Continental region that rely on honey bees and native bees for pollination. Domestic honey bees pollinate approximately $10 billion worth of crops in the U.S. each year.

Unfortunately, the numbers of many native pollinators are declining. They are threatened by habitat loss, disease, climate change, and the excessive and inappropriate use of pesticides. As a result research and conservation actions supporting native pollinators are increasingly active. Honey bee colony losses have significantly impacted beekeepers. Parasites, disease, pesticide use, insufficient nutrition, and transportation practices all impact honey bee health, and this in turn can impact the commercial pollination services honey bees provide. The efforts to understand the threats to commercial bees should help us understand other pollinators and their roles in the environment as well.

It is imperative that we take immediate steps to help pollinator populations thrive. The beauty of the situation is that by supporting pollinators' need for habitat, we support our own needs for food and support diversity in the natural world.

Thank you for taking time to consult this guide. By adding plants to your landscape that provide food and shelter for pollinators throughout their active seasons and by adopting pollinator friendly landscape practices, you can make a difference to both the pollinators and the people that rely on them.

Kelly Bills

Kelly Bills
Executive Director
Pollinator Partnership

"FARMING FEEDS THE WORLD, AND WE MUST REMEMBER THAT POLLINATORS ARE A CRITICAL LINK IN OUR FOOD SYSTEMS."

-- PAUL GROWALD,
CO-FOUNDER,
POLLINATOR PARTNERSHIP

GETTING STARTED

This Regional Guide is just one in a series of plant selection tools designed to provide you with information on how to plant local native plants for pollinators. Each of us can have a positive impact by providing the essential habitat requirements for pollinators including food, water, shelter, and enough space to raise their young.

Pollinators travel through the landscape without regard to property ownership or state boundaries. We've chosen to use the Unified Alaskan ecoregional classification system, a combination of the Bailey and Omernick approach to ecoregional mapping, to identify the geographic focus of this guide and to underscore the connections between climate and vegetation types that affect the diversity of pollinators in the environment.

Alaska's ecoregions were developed cooperatively by the United States Forest Service, the National Park Service, the United States Geological Survey, and The Nature Conservancy. These ecoregions are a management tool and are used to predict responses to land management practices throughout large areas. This guide addresses pollinator-friendly land management practices in what is known as the Alaska Temperate Continental region. This region in the interior of Alaska is a diverse area encompassing boreal forest, sometimes called the "taiga," a dense coniferous forest consisting primarily of black spruce, white spruce, and a thick understory of mosses, lichens, sedges, grasses, and berries. The Alaska Temperate Continental region is characterized by extreme temperature variability throughout the year, short summers, long, dry winters, and little precipitation. Forest fires also shape this forest region that is punctuated by marshes, lakes, and meadows. The permafrost in this region ranges from continuous in the north to non-continuous in the south. The thermal balance of this permafrost is at risk as the climate warms leading to concerns about disrupting the stability of the ground, and the lives of the plants and animals that live there. Agricultural production is limited in this ecoregion. Most of the land use is characterized by tourism, recreation, subsistence and recreational hunting, and the oil and gas industry.

Long before there were homes and development in this area, the natural vegetation provided continuous cover and adjacent feeding opportunities for wildlife, including pollinators. In choosing plants, aim to create habitat for pollinators that allow adequate food, shelter, and water sources. Most pollinators have very small home ranges. You can make a difference by understanding the vegetation patterns of the farm, forest, or neighbor's yard adjacent to you and by making planting choices that support the pollinators' need for food and shelter as they move through the landscape.

UNDERSTANDING THE ALASKA TEMPERATE CONTINENTAL REGION

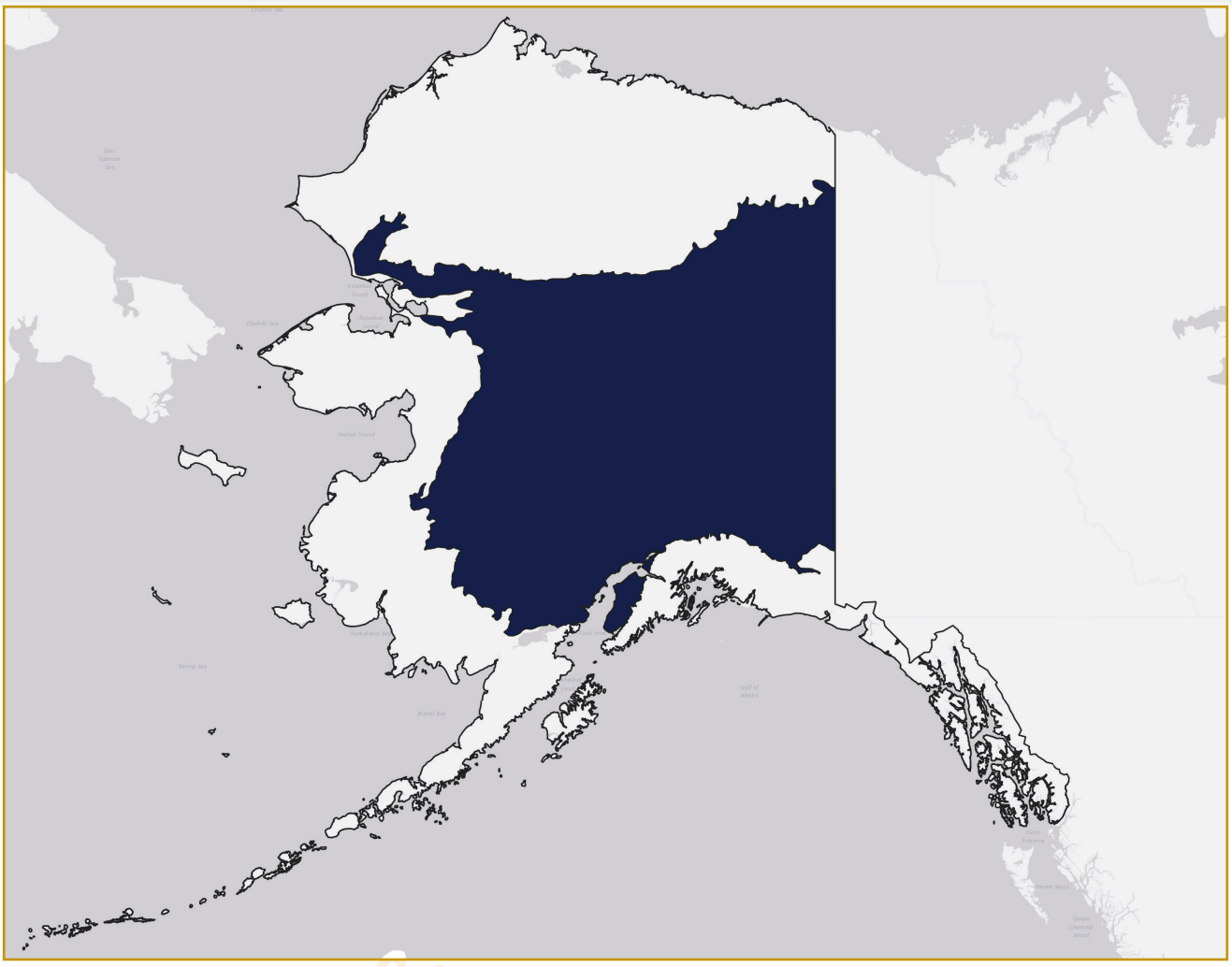
Forest Bumble Bee,
Bombus sylvicola

Red columbine,
Aquilegia formosa

- The Alaska Temperate Continental Region encompasses 15 distinct ecoregions from the Davidson Mountains in the north to the Alaska range, Lime Hills, and Wrangell Mountains in the south. It includes the North Ogilvie Mountains and the Yukon-Tanana uplands in the east of the region and the Kuskokwim Mountains in the west. It is primarily made up of boreal forests.
- Not sure about which region you live or work in? Go to **pollinator.org/guides** and click on **Find your Ecoregion** for help.
- Elevations ranging from 300 feet in the basins of the coastal mountains to Denali's 20,320 feet, North America's tallest mountain.
- There is extreme temperature variability throughout the year, with short summers and long, dry winters.
- Average annual precipitation is between 7 and 41 inches.
- Average annual temperature ranges from 5° to 64°F.
- USDA hardiness zones 1a to 5a.

CHARACTERISTICS

- Encompasses boreal, coniferous forests with black spruce, white spruce, poplar, birch, aspen, willow, and alder, and a thick understory of mosses, lichens, sedges, grasses and berries.
- Forest is punctuated by tree and shrub growth, marshes, lakes and meadows.
- There is little annual precipitation, low humidity, and forest fires are common.
- Permafrost is primarily non-continuous.



"ADDING NATIVE PLANTINGS IN RIPARIAN AREAS TO IMPROVE POLLINATOR HABITAT MAKES SENSE IN ADVANCING OUR FAMILY FARM'S CONSERVATION AND ECONOMIC OBJECTIVES, ENHANCING BENEFICIAL WILDLIFE AND IMPROVING POLLINATION IN OUR ORCHARD AND GARDEN."

– LEE MCDANIEL,
FARMER AND FORMER PRESIDENT,
NATIONAL ASSOCIATION OF CONSERVATION DISTRICTS

The Ecological Region of the Alaska Temperate Continental Region includes:

The cities of:

Badger, College, Copper Center, Eagle, Fairbanks, Glennallen, and Kenny Lake

Blacktailed Bumble Bee,
Bombus melanopygus

Canadian Tiger Swallowtail,
Papilio canadensis

WHO ARE THE POLLINATORS?

BEES

Bees are the best documented pollinators in natural landscapes. A wide range of native plants benefit from bee pollinators. Most of us are familiar with the colonies of honey bees that have been the workhorses of agricultural pollination for years in North America, but some folks might not know that they were imported from Europe almost 400 years ago and continue to be managed by people for honey production and pollination services.

There are over 100 species of native ground and twig nesting bees in Alaska that have coevolved with the local landscape. Most of these bee species live a solitary life.

Bees come in a variety of body shapes and sizes and visit the widest range of flowers of any pollinator group.

Bumble bees (*Bombus* spp.) form small colonies, usually underground making use of old rodent burrows or dense thatches. They are generalists, feeding on a wide range of plant types.

Sweat bees (family *Halictidae*) are medium to small-sized, slender bees that commonly nest underground. Various species are solitary while others form loose colonies, nesting side-by-side.

Other common solitary bees include mining bees, (*Andrena* spp.), which nest underground and are common in the spring; leafcutter bees (*Megachile* spp.), which prefer dead trees or branches for their nest sites, and mason bees (*Osmia* spp.), which utilize cavities they find in stems and dead wood that they fill with mud.

BUTTERFLIES

Butterflies prefer open and sunny areas such as meadows and along woodland edges that provide bright flowers, water sources, and specific host plants for their caterpillars.

Gardeners have been attracting butterflies to their gardens for some time. To encourage butterflies, place flowering plants where they have full sun and are protected from the wind. They usually look for flowers that provide a good landing platform. Butterflies need open areas (e.g., bare earth, large stones) where they can bask, and moist soil from which they wick needed minerals. Butterflies eat rotten fruit and even dung, so don't clean up all the messes in your garden!

By providing a safe place to eat and nest, gardeners can also support the pollination role that butterflies play in the landscape.

MOTHS

Moths are most easily distinguished from butterflies by their antennae. Butterfly antennae are simple with swelling at the end. Moth antennae differ from simple to featherlike but never have a swelling at the tip. Butterfly bodies are not very hairy, while moth bodies are quite hairy and much stouter.

In addition, butterflies typically are active during the day; moths at night. They are attracted to flowers that are strongly sweet smelling, open in late afternoon or night, and are typically white or pale colored.

BEETLES

Gardeners have yet to intentionally draw beetles to their gardens, possibly because beetle watching isn't as inspiring as butterfly or bird watching. Yet beetles do play an important role in pollination and pest control. Some have a bad reputation because they can leave a mess behind, damaging plant parts as they eat pollen.

Beetle pollinated plants tend to be large, strong scented flowers, and have the anthers and stigma exposed. Historically, beetles are known to pollinate magnolia, paw paws, and yellow pond lilies.

FLIES

It may be hard to imagine why one would want to attract flies to the garden, but flies are one of the major pollinators in Alaska. However, flies are one of the most diverse groups of pollinators. They include colorful flower flies and hover flies (*Syrphidae spp.*), active bee flies (*Bombyliidae spp.*), and tiny midges that visit many plant species.

Like bees, flies are hairy and can easily transport pollen from flower to flower. Flies primarily pollinate small flowers that bloom under shade and in seasonally moist habitats but are also economically important as pollinators for a range of ornamental and native flowers.

BIRDS

Hummingbirds are the primary birds that play a role in pollination in North America. Their long beaks and tongues draw nectar from tubular flowers. Pollen is carried on both their beaks and feathers. Regions closer to the tropics, with warmer climates, boast the largest number of hummingbird species and the greatest number of native plants to support their need for food.

There are only two hummingbird species found in Alaska; the Rufous hummingbird and Anna's hummingbird.

BATS

Though bat species in Alaska are not pollinators, bats in the southwestern United States and Mexico are important pollinators of agave and species of cactus. The head shape and long tongues of nectar bats allow them to delve into flower blossoms and extract both pollen and nectar; pollen covers their hairy bodies and is transferred as they move from plant to plant.

Orange-legged drone fly,
Eristalis flavipes

Bedstraw hawkmoth,
Hyles gallii

WHICH FLOWERS DO THE POLLINATORS PREFER?

Not all pollinators are found in each state, and some are more important in different parts of the United States. Use this page as a resource to understand the plants and pollinators where you live.

Plants can be grouped together based on the similar characteristics of their flowers. These floral characteristics can be useful to predict the type of pollination method or animal that is most effective for that group of plants. This association between floral characteristics and pollination method is called a pollination syndrome.

The interactions of animal pollinators and plants have influenced the evolution of both groups of organisms. A mutualistic relationship between the pollinator and the plant species helps the pollinator find necessary pollen and nectar sources and helps the plant reproduce by ensuring that pollen is carried from one flower to another.

This chart and more information on pollinator syndromes can be found at: fs.usda.gov/managing-land/wildflowers/pollinators/syndromes

Plant Trait	Pollinator		
	Bees	Beetles	Birds
Color	Bright white, yellow, blue, or UV	Dull white, yellow or green	Scarlet, blue, orange, red or white
Nectar Guides	Present	Absent	Absent
Odor	Fresh, mild, pleasant	None to strongly fruity or fetid	None
Nectar	Usually present	Sometimes present; not hidden	Ample; deeply hidden
Pollen	Limited; often sticky and scented	Ample	Modest
Flower Shape	Shallow; have landing platform; tubular	Large bowl-like, Magnolia	Large funnel like; cups, strong perch support

Plant Trait	Pollinator: Butterflies	Flies	Moths	Bats	Wind
Color	Bright, including red and purple	Pale and dull to dark brown or purple; flecked with translucent patches; yellow and white	Pale and Pale dull red, purple, pink or white	Dull white, green or purple	Dull green, brown, or colorless; petals absent or reduced
Nectar Guides	Present	Absent	Absent	Absent	Absent
Odor	Faint but fresh	Putrid	Strong sweet; emitted at night	Strong musty; emitted at night	None
Nectar	Ample; deeply hidden	Usually absent	Ample; deeply hidden	Abundant; somewhat hidden	None
Pollen	Limited	Modest in amount	Limited	Ample	Abundant; small, smooth, and not sticky
Flower Shape	Narrow tube with spur; wide landing pad	Shallow; funnel like or complex and trap-like	Regular; tubular without a lip	Regular; bowl-shaped; closed during day	Regular; small and stigmas exerted

DEVELOPING LANDSCAPE PLANTINGS THAT PROVIDE POLLINATOR HABITAT

Whether you are a land manager of many acres, farmer of a large tract of land, or a gardener with a small lot, you can increase the number of pollinators in your area by making conscious choices to include plants that provide essential habitat for bees, butterflies, moths, beetles, hummingbirds, and other pollinators.

FOOD:

Flowers provide nectar (high in sugar and necessary amino acids) and pollen (high in protein) to pollinators.

Fermenting fallen fruits also provide food for bees, beetles, and butterflies. Specific plants, known as host plants, are eaten by the larvae of pollinators such as butterflies.

- Plant in groups to increase pollination efficiency. If a pollinator can visit the same type of flower over and over, it doesn't have to relearn how to enter the flower and can transfer pollen to the same species, instead of squandering the pollen on unreceptive flowers.
- Plant with bloom season in mind, providing food from early spring to late fall.
- Plant a diversity of plants to support a variety of pollinators. Flowers of different color, fragrance, and season of bloom on plants of different heights will attract different pollinator species and provide pollen and nectar throughout the seasons.
- Many herbs and annuals, although not native, are very good for pollinators. Mint, oregano, garlic, chives, parsley and lavender are just a few herbs that can be planted. Old-fashioned zinnias, cosmos, and single sunflowers support bees and butterflies. Non-native crops, herbs, and ornamental flowers should not be planted in natural landscapes.
- Recognize weeds that might be a good source of food. For example, dandelions provide pollen in the early spring before other flowers bloom.
- Learn and utilize Integrated Pest Management (IPM) practices to address pest concerns. Minimize or eliminate the use of pesticides.

SHELTER:

Pollinators need protection from severe weather and from predators as well as sites for nesting and roosting.

- Incorporate different canopy layers in the landscape by planting trees, shrubs, and different-sized perennial plants.
- Leave dead snags for nesting sites of bees, and other dead plants and leaf litter for shelter.
- Avoid applying thick layers of mulch that are hard to dig through.
- Build bee boxes next to your garden to encourage solitary, non-aggressive bees to nest on your property.
- Ground nesting bees are also attracted to lawns and short grass areas, especially if there is a south facing slope.
- Leave some areas of soil uncovered to provide ground nesting insects easy access to underground tunnels.
- Group plantings so that pollinators can move safely through the landscape protected from predators.
- Include plants that are needed by butterflies and moths during their larval development.

WATER:

Some pollinators use and benefit from having a clean, fresh water source.

- Most pollinators receive their water needs through their food or by other means (e.g. butterflies wick their nutrients from muddied waters, or fermenting fruit) making clean water a non-essential component.
- If you do include a water source, ensure that the source has a shallow or sloping side so the pollinators can easily approach the water without drowning. Your current landscape probably includes many of these elements. Observe wildlife activity in your farm fields, woodlands, and gardens to determine what actions you can take to encourage other pollinators to feed and nest. Evaluate the placement of individual plants and water sources and use your knowledge of specific pollinator needs to guide your choice and placement of additional plants and other habitat elements. Minor changes by many individuals can positively impact the pollinator populations in your area. Watch for - and enjoy - the changes in your landscape!
- CAUTION LAND MANAGERS: Remember that many insecticides are largely toxic to pollinators. Extreme caution is warranted if you choose to use any insecticide. Strategically apply insecticides only for problematic target species.

INDIGENOUS STEWARDSHIP

The relationship between Native plant species, Indigenous communities, and modern land conservation is inextricably linked and central to Alaska's past, present, and future.

Alaska is home to at least eleven distinct Alaska Native cultural regions, comprising more than 229 federally recognized Tribes, with over 20 Indigenous languages spoken. These communities have long served as stewards of the land through cultural practices deeply rooted in oral history, lived experience, and intergenerational advocacy.

For over 14,000 (documented) years, long before Alaska became the 49th state, Indigenous Peoples thrived across this landscape with sophisticated governance systems, expansive trade networks, and regionally adapted technologies and lifeways. The Tlingit, Dena'ina, Iñupiat, Yup'ik, Unangax , Sugpiaq, and others practiced place-based stewardship rooted in respect, reciprocity, and ecosystem balance. These relationships were disrupted beginning in the mid-1700s with the arrival of Russian colonizers to the Aleutian Islands and escalated following the 1867 U.S. purchase of the right to occupy Alaska. These colonial regimes introduced catastrophic impacts: epidemics, violent displacement, the outlawing of Indigenous languages and ceremonies, and the extractive exploitation of land and waters.

Subsistence, or as Indigenous elders say, "Our Livelihood," remains the foundation of Indigenous economies, nutrition, and knowledge systems. Fishing, hunting, gathering, and tending—seasonal practices tied to deep ecological observation—support food sovereignty and cultural survival. Animals are harvested not only for meat but also for making tools, regalia, and shelter. Native plants are used in traditional medicine, ceremony, and healing. These practices rely on community values of cooperation, seasonal abundance, and mutual aid, ensuring collective survival amid Arctic and sub-Arctic conditions. Despite efforts to criminalize and erase these ways of life, Indigenous Peoples across Alaska continue to pass down and revitalize their knowledge.

Because the spiritual and cultural survival of Indigenous communities is intimately tied to land and water, traditional values emphasize "right relationship" with the natural world. Pollinators and plant kin are honored as vital relatives, sustaining food systems and biodiversity. In many Indigenous worldviews, humans are not separate from nature, but part of a shared web of responsibility and care.

Land conservation and community efforts can take much needed steps to recognize and restore Indigenous stewardship. This includes upholding Tribal sovereignty, recovering autonomy for aboriginal hunting and fishing practices, and recognizing traditional ecological knowledge (TEK) as science. Culturally grounded land management practices—such as controlled burns, salmon stewardship, and Indigenous-led monitoring—are essential tools for climate resilience and ecosystem restoration. Governments, conservation organizations, local communities, and individuals can build true partnerships with Tribes, co-develop governance frameworks, and move beyond performative gestures like land acknowledgements to actionable support.

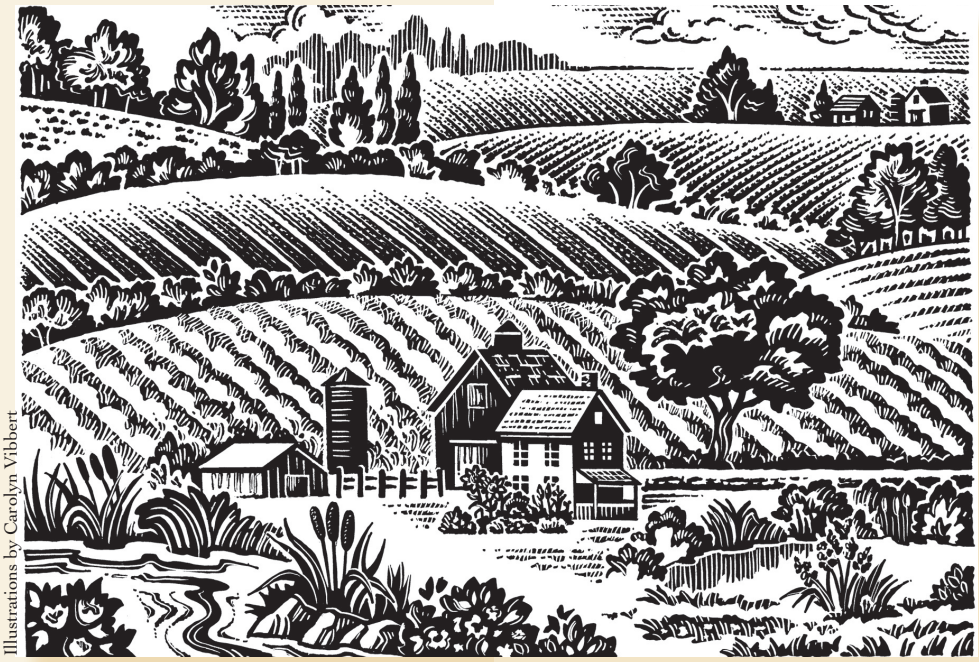
In honoring Indigenous leadership, we chart a course toward environmental justice, climate adaptation, and cultural survival. A restorative future is not possible without those who have been caring for these lands since time immemorial.

FARMS

Despite Alaska's relatively small farm economy, Alaska farmers still have many opportunities to incorporate pollinator-friendly land management practices on their land which will benefit the farmer in achieving their production goals.

The primary crops in Alaska are potatoes, carrots, lettuce, cabbage, barley, and hay. Due to the short growing season and steep terrain, farms in Alaska must optimize their agricultural sustainability efforts to maximize their yield. Farms can benefit from strong native bee populations that boost pollination efficiency. Many opportunities exist to incorporate different plants throughout the farm that provide food for native pollinator populations when targeted crops are not in flower.

- Minimize the use of insecticides to reduce the impact on native pollinators. Spray when bees aren't active (after dark or just before dawn) and choose targeted ingredients.
- Use of Integrated Pest Management (IPM) strategies for pest control is highly recommended. Use insecticides that cause the least harm to non-target organisms and only use when pests reach economic thresholds.
- Use herbicides only when essential to get a viable crop. Some weeds can provide needed food for pollinators.
- Till as little as possible to protect ground nesting pollinators.
- Whenever possible, create permanently untilled areas for ground nesting bees (e.g. such as along internal farm laneways).
- Choose a variety of native plants to act as windbreaks, riparian buffers, and field borders throughout the farm.
- Plant unused areas of the farm with temporary cover crops that can provide food or with a variety of trees, shrubs, and flowers that provide both food and shelter for pollinators.
- Check with local not-for-profit organizations or government agencies to see what technical support might be available to assist you in your effort to provide nectar, pollen, and larval food sources for pollinators on your farm.



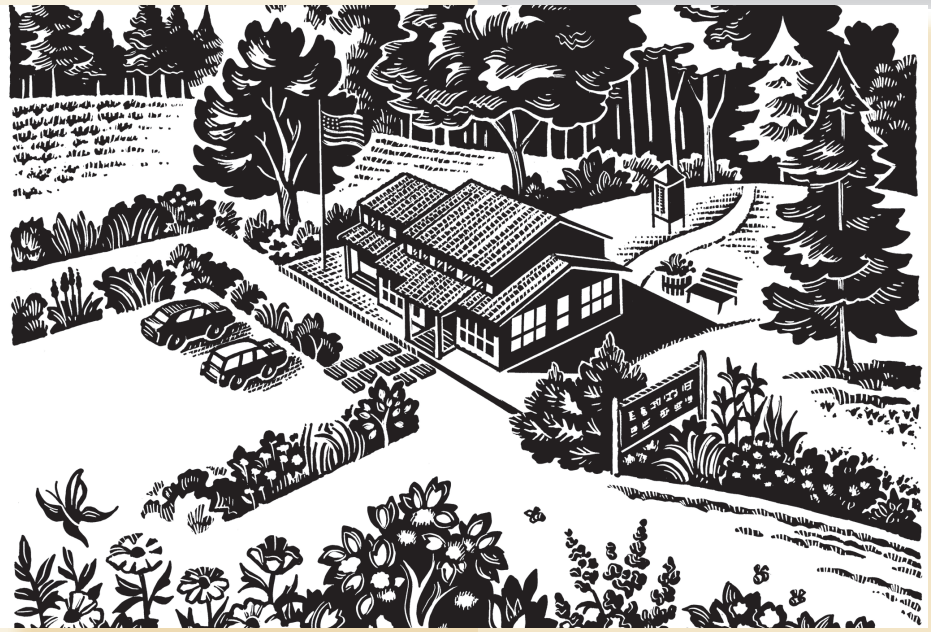
Illustrations by Carolyn Vibbert

FORESTRY

The state of Alaska contains more than 129 million acres of forest. With more than 20 million acres designated as National Forest in Alaska, it is vital that best management practices focusing on promoting pollinator health are incorporated onto the land. These Best Management Practices (BMPs) not only promote pollinator health but are also designed to maintain timber resources and preserve critical fish and wildlife habitat.

- Enhance foraging habitats by preserving and restoring areas rich in native flowering plants.
- When planting seeds, minimize tillage as much as possible to protect ground-nesting habitat.
- Protect and establish nesting areas such as bare ground or wood cavities.
- Use of Integrated Pest Management (IPM) strategies for pest control is highly recommended. Use insecticides that cause the least harm to non-target organisms and only use when pests reach economic thresholds.
- Use an adaptive management approach to regularly monitor and adjust practices to support pollinators.
- Reduce mowing of grasslands and encourage conversion to native prairies.
- Use of Integrated Vegetation Management (IVM) approaches to manage for the desired species through the focused use of control measures and plant-specific herbicides to control undesirable species.
- Evaluate stands for ecologically appropriate thinning and shrub control in some forested areas to promote open canopies that allow for sunlight to hit the forest floor. A combination of thinning overstory trees and shrubs allows for herbaceous plant growth and provides nesting habitat for ground-nesting bees.
- Reduce wetland draining and conversions that reduce the size and extent of riparian plant communities. Maintain vegetative structure in riparian areas for pollinator nesting and foraging resources.

PUBLIC LANDS



PUBLIC LANDS ARE MAINTAINED for reasons ranging from high impact recreation to conservation. With Alaska as the largest state in the United States, accounting for about 20% of the total U.S. size, this includes over 320 million acres of land that is publicly owned. In the Alaska Temperate Coastal region, habitats have been impacted by rapid warming, shifting animal and plant communities, disease spread, and development pressures such as oil and gas drilling, mining, and logging. In addition, increased population growth and increased access to remote areas, including recreation, has impacted pollinator habitat.

Pollinators can benefit from timed mowing, opening tree canopies, and planting native flowers. Less disturbed natural areas can be augmented with plantings of native plant species. Existing plantings around buildings and parking areas should be evaluated to determine if pollinator-friendly plants can be substituted or added to attract and support pollinators. Public land managers have a unique opportunity to use their plantings as an educational tool to help others understand the importance of pollinators in the environment through signs, brochures, and public programs.

In an effort to increase pollinator populations the land manager can:

- Inventory and become knowledgeable of local pollinators.
- Provide connectivity between vegetation areas by creating corridors of perennials, shrubs, and trees that provide pollinators shelter and food as they move through the landscape.
- Reduce the amount of lawn areas that support recreational needs.
- Restrict the use of pesticides (insecticides, herbicides, etc.).
- Provide water sources in large open areas.
- Maintain natural meadows and openings that provide habitats for sun-loving wildflowers and grasses.
- Remove invasive species and encroaching shrubs and trees.

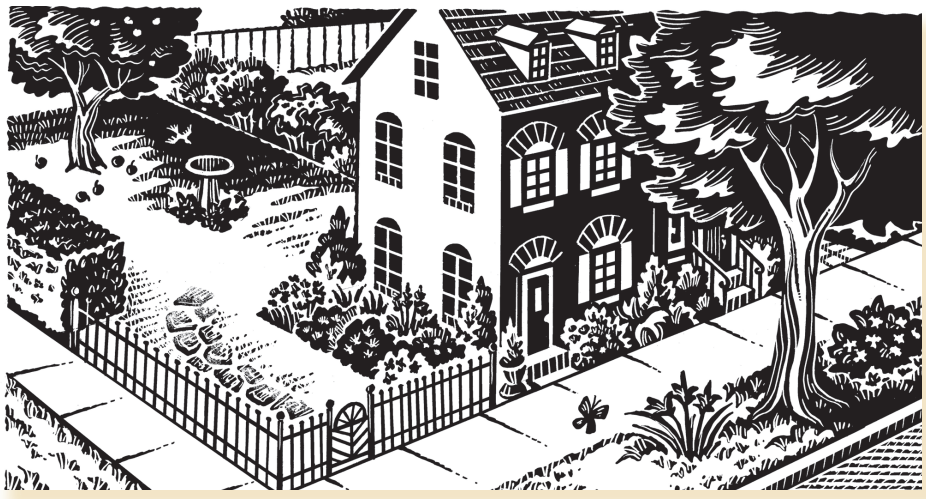
"FROM HUMMINGBIRDS TO BEETLES, TO BUTTERFLIES, NATURE'S POLLINATORS HELP KEEP MIDEWIN'S TALLGRASS PRAIRIE RESTORATIONS FULL OF DIVERSE FLOWERING PLANTS. INSECT MONITORING PROVIDES A KEY MEASURE OF OUR SUCCESS."

-- LOGAN LEE,
PRAIRIE SUPERVISOR, MIDEWIN
NATIONAL TALLGRASS PRAIRIE

HOME LANDSCAPES

Gardening in Alaska provides a great opportunity to support pollinators. One of the main factors for gardeners to consider is the variable weather and climatic condition depending on where in Alaska their garden will be planted. In the Temperate Continental region, the growing season tends to be shorter with extended hours of sunlight during long summer days. One of the special aspects of Alaska is that there are large, undisturbed areas of land with blooming wildflowers present, and the conservation and protection of these natural areas is important for pollinator health. The common native flowers that grow naturally in these areas of Alaska provide a good starting point for plant selection when gardening for pollinators. These plant species have co-evolved with the local pollinators, and are therefore excellent to plant in your garden, or maintain if you already have patches of these wildflowers on your property.

In Alaska, gardeners have a wide array of plants to use in their gardens, including a vast diversity of native plants that provide different colors, shapes, and bloom times to support pollinators. Choose a variety of plants that will provide nectar and pollen throughout the growing season, especially the shoulder seasons in the spring and fall when pollinators are especially in need of resources. Consider using the three-by-three rule – planting three species of native plants in the three seasons that pollinators are active. Resist the urge to have a totally manicured lawn and garden and embrace a bit of messiness by leaving leaves and bare ground for nesting bees to safely nest and overwinter. Leaving areas of dead wood and leaf litter can also provide safe areas for other beneficial insects and animals to nest and overwinter. If you need guidance to achieve your gardening goals, find local resources to help you in your efforts, or contact your local garden club or native plant society to help with the decision of selecting plants. You can also visit your regional botanic gardens and arboreta for guidance.



The scale of your plantings will vary but it is good to remember that any amount of habitat created for pollinators is important. When planting your garden, try to provide connectivity to the landscape adjacent to your property. This lets pollinators find the resources they need without having to fly too far. If your neighbor's property provides an essential element, such as water, which can be utilized by pollinators visiting your land, you may be able to devote more space to habitat elements that are missing nearby. It is best to use native plants which have evolved to support the needs of specific native pollinators. Some pollinators, however, are generalists such as bumble bees, and visit many different plants, both native and non-native. Be sure that any non-native plants you choose to use are not invasive. Remember that specialized cultivars sometimes aren't used by pollinators, as these flowers have often been drastically altered and can be completely different than the wild species. Some cultivars don't contain the same nectar and pollen resources that attract pollinators to the wild types.

CAUTION: Take time to evaluate the source of your plant material. You want to ensure you get plants that are healthy, correctly identified, and weed-free. Your local garden club or nursery can help you make informed decisions when searching for plants.

PLANTS THAT ATTRACT POLLINATORS
IN THE ALASKA TEMPERATE CONTINENTAL REGION

The following chart lists plants that attract pollinators. It is not exhaustive but provides guidance on where to start. Annuals, herbs, weeds, and cover crops provide food and shelter for pollinators, too.

Botanical Name	Common Name	Height (in)	Flower Color	Flower Season	Sun	Soil	Pollinators	Also a host
Tree / Shrub								
Cornus canadensis	Canadian bunchberry	10	White-cream-pink	May - September	Partial Sun to Partial Shade	moist	Bees, Flies	x
Cornus sericea	Red Osier Dogwood	144	White-cream-pink	May - October	Partial Sun to Partial Shade	moist	Bees, Butterflies, Flies	x
Dasiphora fruticosa	Shrubby Cinquefoil	48	Orange-yellow	June - November	Sun, Partial Sun to Partial Shade	dry, mesic, moist, wet	Bees, Butterflies, Flies	
Elaeagnus commutata	Silverberry	180	Orange-yellow	June - July	Shade,Partial Sun to Partial Shade, Sun	dry, mesic, moist	Bees, Insects	
Heracleum maximum	Cow Parsnip/ Pushki	144	White-cream-pink	February - July	Partial Sun to Partial Shade	moist	Bees, Hummingbirds, Beetles, Insects	
Ledum groenlandicum	Bog Labrador Tea	60	White-cream-pink	March - August	Partial Sun to Partial Shade	moist, wet	Bees, Butterflies	x
Myrica gale	Sweet Gale	72	Orange-yellow, Red, Green-brown-inconspicous	March - July	Sun, Partial Sun to Partial Shade	moist, wet	Bees, Butterflies, Birds	
Rhododendron lapponicum	Lapland Rosebay	24	White-cream-pink, Blue-purple	March - September	Partial Sun to Partial Shade	dry	Bees, Insects	x
Ribes triste	Red Currant	36	Red, Green-brown-inconspicous	May - July	Sun, Partial Sun to Partial Shade	moist	Bees, Hummingbirds, Beetles, Flies	
Rosa acicularis	Prickly Rose	96	White-cream-pink	May - July	Partial Sun to Partial Shade	dry, mesic, moist, wet	Bees, Butterflies	
Rosa nutkana	Nootka Rose	24 -144	White-cream-pink, Red	April - August	Shade,Partial Sun to Partial Shade, Sun	dry, mesic, moist	Bees, Butterflies, Hummingbirds	x
Rubus arcticus	Arctic Rasperry	12	Red, White-cream-pink	May- August	Sun, Partial Sun to Partial Shade	moist	Bees, Insects	
Rubus ideaus	Raspberry	96	White-cream-pink	May - July	Sun, Partial Sun to Partial Shade, Shade	dry, mesic, moist	Bees, Butterflies, Birds	x
Salix alaxensis	Fetleaf willow	240	Green-brown-inconspicuous	March - July	Sun,Partial Sun to Partial Shade	moist, wet	Bees, Buterflies, Moths	
Salix arctica	Arctic Willow	10	Red, Orange-yellow	June - August	Sun	moist	Bees	x
Salix bebbiana	Bebb's Willow	360	White-cream-pink, Green-brown-inconspicous	April - June	Shade,Partial Sun to Partial Shade, Sun	moist, wet	Bees, Butterflies, Insects	x
Salix reticulata	Netleaf Willow	6	Orange-yellow,Green-brown-inconspicous	June - August	Partial Sun to Partial Shade	moist	Bees, Insects	

Botanical Name	Common Name	Height (in)	Flower Color	Flower Season	Sun	Soil	Pollinators	Also a host
Tree / Shrub								
Salix scouleriana	Scouler's Willow	720	Orange-yellow	February - June	Shade,Partial Sun to Partial Shade, Sun	dry, mesic, moist	Bees, Butterflies, Hummingbirds, Insects	
Sambucus racemosa	Red-berried elder	240	White-cream-pink	May - August	Partial Sun to Partial Shade	moist	Butterflies, Hummingbirds	
Shepherdia canadensis	Soapberry	120	Orange-yellow	April - July	Sun, Partial Sun to Partial Shade, Shade	dry, mesic, moist	Bees	
Spiraea stevenii	Beuaverd's spirea	36	White-cream-pink	June - September	Partial Sun to Partial Shade	dry, mesic, moist	Bees, Butterflies, Moths, Beetles, Flies	x
Vaccinium uliginosum	Bog Blueberry	24	White-cream-pink	June - July	Sun, Partial Sun to Partial Shade, Shade	moist, wet	Bees, Butterflies	
Vaccinium vitis-idaea	Lingonberry	6	White-cream-pink	May - July	Partial Sun to Partial Shade	moist, wet	Bees, Insects	
Viburnum edule	Highbush Cranberry	144	White-cream-pink	May- August	Partial Sun to Partial Shade	moist	Bees, Flies, Butterflies	
Perennial Flower / Forb								
Achillea millefolium	Common Yarrow	8 to 40	White-cream-pink	March - October	Sun, Partial Sun to Partial Shade	dry, mesic	Bee, Beetles, Butterflies, Flies	x
Achillea sibirica	Siberian Yarrow	32	White-cream-pink, Orange-yellow	June - September	Sun, Partial Sun to Partial Shade	dry, mesic, moist	Bees, Flies	x
Aconitum delphiniifolium	Larkspurleaf Monkshood	40	Blue-purple	June - September	Partial Sun to Partial Shade	moist	Bees	
Actaea rubra	Red Baneberry	36	White-cream-pink	April - June	Sun, Partial Sun to Partial Shade	moist	Bees, Beetles, Flies	x
Allium schoenoprasum L. var. sibiricum	Wild Alium	20	Blue-purple	April - August	Sun, Partial Sun to Partial Shade	dry, mesic, moist	Bees, Butterflies, Insects	x
Anemone narcissiflora	Narcissus anemone	24	White-cream-pink	June - August	Partial Sun to Partial Shade	moist	Bees, flies	
Anemone richardsonii	Yellow Anemone	12	Orange-yellow, Red, green-borwn-inconspicous	June - August	Sun, Partial Sun to Partial Shade	dry, mesic, moist, wet	Bees	
Angelica lucida	Seacoast Angelica	60	White-cream-pink, Green-brown-inconspicous	May - September	Sun, Partial Sun to Partial Shade	moist, wet	Bees, Butterflies	x
Antennaria rosea	Rosy Pussytoes	12	White-cream-pink, Blue-purple	June - August	Sun	dry	Bees, Butterflies, Hummingbirds	
Arnica alpina	Alpine Arnica	16	Orange-yellow	May - September	Sun, Partial Sun to Partial Shade	moist	Bees, Butterflies, Moths, Insects	
Arnica angustifolia	Narrowleaf Arnica	16	Orange-yellow	May - September	Sun	dry	Bees, Butterflies, Moths, Insects	

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PLANTS THAT ATTRACT POLLINATORS IN THE ALASKA TEMPERATE CONTINENTAL REGION

Botanical Name	Common Name	Height (in)	Flower Color	Flower Season	Sun	Soil	Pollinators	Also a host
Arnica frigida	Snow Arnica	16	Orange-yellow	July - August	Sun	dry	Bees, Butterflies	
Arnica latifolia	Broadleaf Arnica	24	Orange-yellow	June - August	Sun, Partial Sun to Partial Shade	wet	Bees, Butterflies, Moths	
Arnica lessingii	Nodding arnica	14	Orange-yellow	June - September	Sun	moist	Bees, Butterflies, Moths, Insects	
Artemisia tilesii	Tilesius Wormwood	30	Orange-yellow	July - September	Sun	dry, mesic, moist	Insects	
Astragalus alpinus	Alpine Milkvetch	12	White-cream-pink, Blue-purple	May - August	Sun	moist	Insects, Butterflies	
Astragalus americanus	American milkvetch	36	White-cream-pink, Green-brown-inconspicous	June - August	Partial Sun to Partial Shade	moist	Bees, Butterflies	
Astragalus williamsii	Williams milkvetch	16	White-cream-pink	June - August	Sun, Partial Sun to Partial Shade	moist	Bees, Butterflies	
Bistorta plumosa	Meadow Bistort	48	White-cream-pink, Blue-purple	May - August	Sun, Partial Sun to Partial Shade	dry, mesic, moist	Insects	
Boykinia richardsonii	Bearflower	24	White-cream-pink	June - August	Sun	dry	Bees, Butterflies, Birds, Insects	
Campanula lasiocarpa	Mountain Harebell	6	Blue-purple	July - August	Sun	dry	Butterflies, Birds	
Castella caudata	Pale Indian Paintbrush	22	White-cream-pink, Green-brown-inconspicous	June - September	Sun	moist	Bees, Butterflies, Hummingbirds	
Castilleja elegans	Elegant Paintbrush	2 to 10	White-cream-pink, Blue-purple	June- August	Sun, Partial Sun to Partial Shade	dry, mesic, moist, wet	Hummingbirds, Insects	
Chamaenerion angustifolium	Fireweed	24	Blue-purple	June - September	Sun	moist	Bees, Butterflies, Hummingbirds, Moths	
Chamerion latifolium	River beauty/ Dwarf Fireweed	24	White-cream-pink, Blue-purple	June-September	Sun	moist	Bees, Hummingbirds, Moths	x
Cnidium cnidiifolium	Cnidium	60	White-cream-pink	June - August	Sun, Partial Sun to Partial Shade	dry, mesic, moist, wet	Butterflies, Insects	x
Corydalis pauciflora	Few-flower Corydalis	8	Blue-purple	June - July	Sun, Partial Sun to Partial Shade	moist, wet	Bees, Butterflies, Hummingbirds, Insects	
Delphinium glaucum	Delphinium	108	Blue-Purple	June - September	Partial Sun to Partial Shade	moist, wet	Bees, Butterflies, Hummingbirds	x
Dodecatheon frigidum	Northern Shootingstar	16	White-cream-pink, Blue-purple	May - August	Sun	dry	Bees, Beetles, Flies	
Dryas octopetala	Eight-petal Mountain-Avens	8	White-cream-pink	June - August	Sun	dry	Butterflies, Moths, Flies	
Erigeron glabellus	Smooth Fleabane	28	White-cream-pink, Blue-purple	May - August	Sun, Partial Sun to Partial Shade	dry	Bees, Butterflies, Flies	

Botanical Name	Common Name	Height (in)	Flower Color	Flower Season	Sun	Soil	Pollinators	Also a host
Erigeron peregrinus	Wandering Fleabane	28	Blue-purple	July - August	Partial Sun to Partial Shade	moist, wet	Bees, Butterflies, Hummingbirds	
Fritillaria camschatcensi	Black Lily	24	Blue-purple, Green-brown-inconspicous	May - July	Partial Sun to Partial Shade	moist	Flies	
Galium boreale	Northern Bedstraw	12 to 24	White-cream-pink	May - September	Sun, Partial Sun to Partial Shade	moist	Flies, Beetles	
Geranium erianthum	Woolly Cranesbill	32	Blue-purple	May - August	Partial Sun to Partial Shade	moist	Bees, Butterflies, Hummingbirds	
Geum Macrophyllum	Large-leaved Avens	40	Orange-yellow	March - August	Shade	moist	Butterflies, Flies	x
Hedysarum alpinum	Alpine Sweet-vetch	36	Blue-purple	June - July	Sun, Partial Sun to Partial Shade	moist	Bees, Butterflies	x
Hedysarum boreale ssp. mackenziei	Northern sweetvetch	15	Red	June - August	Sun, Partial Sun to Partial Shade	dry	Bees	x
Heuchera glabra	Alpine Alumroot	24	White-cream-pink, Green-brown-inconspicous	June - August	Shade	dry	Bees, Butterflies, Hummingbirds	
Iris setosa	Beach-head Iris	48	Blue-purple	May - August	Sun	mesic-wet	Bees, Butterflies	
Koenigia alaskana	Alaska Wild-Rhubarb	72	White-cream-pink	July - August	Sun, Partial Sun to Partial Shade	moist	Insects	
Linum lewisii	Wild Blue Flax	30	Blue-purple	March - September	Sun	dry, mesic	Bees, Butterflies	
Lagotis minor	Little weasel snout	12	Blue-purple	June - August	Sun,Partial Sun to Partial Shade	dry, mesic, moist	Bees, Butterflies, Moths, Flies	
Lupinus arcticus	Arctic Lupine	18	Blue-purple	May - July	Sun	mesic, moist	Bees, Hummingbirds, Butterflies	
Lupinus nootkatensis	Nootka Lupine	24	Blue-purple	May -June	Sun	dry	Bees	x
Mertensia paniculata	Tall Bluebell	60	Blue-purple	May - August	Shade	moist	Bees	
Oxytropis campestris	Locoweed	12	White-cream-pink, Orange-yellow	May - July	Sun	dry, mesic, moist	Bees	x
Oxytropis maydelliana	Maydell's Locoweed	12	Orange-yellow	June - August	Partial Sun to Partial Shade	dry	Bees, Insects	
Pedicularis verticillata	Whorled Lousewort	10	White-cream-pink, Blue-purple	June - September	Sun	moist	Bees	
Polemonium acutiflorum	Tall Jacobs-Ladder	24	White-cream-pink, Blue-purple	June - August	Sun, Partial Sun to Partial Shade	mesic	Bees, Butterflies	
Polemonium pulcherrimum	Jacob's-ladder	16	Blue-purple	May - August	Partial Sun to Partial Shade	dry, mesic, moist	Bees, Butterflies, Moths	x
Primula pauciflora	Dark-throated Shooting Star	24	White-cream-pink, Blue-purple, Orange-yellow	April - August	Partial Sun to Partial Shade	moist	Bees	

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PLANTS THAT ATTRACT POLLINATORS
IN THE ALASKA TEMPERATE CONTINENTAL REGION

Botanical Name	Common Name	Height (in)	Flower Color	Flower Season	Sun	Soil	Pollinators	Also a host
Pulsatilla nuttalliana	Prairie Pasqueflower	4 to 18	White-cream-pink, Blue-purple, Orange-yellow	March - July	Sun	dry	Bees, Flies	
Pulsatilla patens	Eastern Pasqueflower	24	White-cream-pink, Blue-purple	April - August	Sun, Partial Sun to Partial Shade	dry	Bees, flies	
Pyora grandiflora	Large-flowered wintergreen	10	White-cream-pink	April - June	Partial Sun to Partial Shade, Shade	dry, mesic, moist, wet	Flies, Insects	
Pyrola asarifolia	Bog wintergreen	24	White-cream-pink, Blue-purple	April - September	Partial Sun to Partial Shade	moist	Bees, Insects	x
Rhodiola integrifolia	Western Roseroot	20	Red	June - August	Sun	wet	Insects	
Rubus chamaemorus	Cloudberry	12	White-cream-pink	May - August	Sun	dry	Bees, Flies	
Sanguisorba officinalis	Great burnett	72	Green-brown-inconspicuous	June - September	Sun, Partial Sun to Partial Shade	moist	Butterflies, Insects	x
Silene acaulis	Moss Campion	6	Blue-purple, White-cream-pink	June - August	Sun	moist	Bees, Butterflies, Moths	
Solidago canadensis	Canada goldenrod	72	Orange-yellow	August - November	Sun, Partial Sun to Partial Shade	dry, mesic, moist	Bees, Butterflies, Moths	x
Solidago multiradiata	Northern Goldenrod	30	Orange-yellow	July - September	Partial Sun to Partial Shade	dry	Bees, Butterflies	x
Streptopus amplexifolius	White Twisted-stalk	48	White-cream-pink, Orange-yellow	May - July	Shade	moist	Bees, Hummingbirds	x
Swertia perennis	Felwort	24	White-cream-pink, Blue-purple	July - September	Sun, Partial Sun to Partial Shade	moist	Bees, Beetles, Butterflies, Flies	x
Tanacetum bipinnatum	Dune Tansy	32	Orange-yellow	May - September	Sun, Partial Sun to Partial Shade	moist	Bees, Flies, Beetles	
Valeriana capitata	Capitate Valerian	36	White-cream-pink	May - August	Sun, Partial Sun to Partial Shade	moist	Bees, Butterflies, Insects	
Valeriana sitchensis	Sitka Valerian	6 to 36	White-cream-pink	May - August	Partial Sun to Partial Shade	moist	Bees, Butterflies, Flies, Insects	
Veratrum viride	Green False Hellebore	26 - 75	Orange-yellow, Green-brown-inconspicous	May - July	Sun	wet	Bees, Butterflies, Moths, Flies	
Viola epipsila	Dwarf marsh violet	8	Blue-purple	May - August	Partial Sun to Partial Shade, Shade	moist, wet	Bees, Butterflies, Moths	x
Zigadenus elegans	Death camas	32	White-cream-pink, Orange-yellow	June - August	Shade, Partial Sun to Partial Shade	moist, wet	Bees, Flies	x
Annual Flower / Forb								
Rhinanthus minor	Rattlebox	20	Orange-yellow	June - August	Sun	dry, mesic, moist, wet	Bees, Butterflies, Moths, Flies	

HABITAT AND NESTING REQUIREMENTS

Honey Bees:

Honey bees are colonial cavity nesters. Occasionally in the spring and summer you might encounter a swarm of honey bees on the move to a new home. Beekeepers with commercial operations can have bee yards with tens to hundreds of hives commonly in agricultural, rural, and some natural habitats. In urban and garden settings, it is common to see a single or a handful of honey bee hives – usually wooden boxes painted white or other light colors. Give honey bees space and don't approach their hive. Even beekeepers minimize the amount of time they spend working bees. Honey bees have different feeding needs than native bees. Their colony can last multiple years, and they feed on flowers from the beginning of spring bloom to the fall. Honey bees visit crops when they are in bloom and forage on a diversity of wildflowers as well. Honey bees also need plants that produce a large amount of nectar to make honey, and also like to feed off of the pollen of trees and shrubs.

Bumble Bees:

Bumble bees nest in cavities such as abandoned mouse nests, other rodent burrows, upside down flower pots, under boards, and other human-made cavities. Colonies are founded by a queen in the spring. The number of workers in a colony can grow to 400 at the peak of summer bloom. Bumble bee colonies die out in the fall after producing new queens. New queens mate and then overwinter, hiding underground, in cracks, or small crevices. Bumble bees are usually active during the morning hours and forage at colder temperatures than honey bees, even flying in light rain.

Digger bees:

Digger bees can be found nesting in sandy, compacted soils, and along stream banksides. These bees are usually active in the morning hours but can be seen at other times of the day as well. To attract these bees, have some areas of exposed soil in your garden and avoid applying thick layers of mulch that are hard to dig through.

Leafcutter bees:

Leafcutter bees nest in pre-existing circular tunnels of various diameters in dead wood created by emerging beetles. Some also nest in the ground. Leafcutter bees line and cap their nests with leaves or flower petals. These bees can be seen foraging throughout the day even in very hot weather.

Mason bees:

Mason bees use pre-existing tunnels of various diameters in dead wood made by emerging beetles, or human-made nesting substrates such as drilled wood blocks or wooden tubes. These bees get their name from the fact that they cap their nests with mud. Mason bees are generally more active in the morning hours.

Sweat bees:

Sweat bees need bare ground in sunny areas not covered by vegetation for nesting. Some will nest in small pre-existing holes, much like leafcutter or mason bees. Like most bees, sweat bees forage for pollen earlier in the morning and then for nectar later in the day. To help these bees nest, keep some parts of your garden exposed and avoid applying thick layers of mulch that are hard to dig through.

Plasterer or cellophane bees:

Plasterer or cellophane bees get their name from the unique, clear waterproof lining they make around their nest. Similar to sweat bees, they prefer bare ground, stream banks or slopes. These bees can be active in the morning or later in the day.

Yellow-faced bees:

Yellow-faced bees are tiny, hairless bees that make their nesting by chewing into small dead stems. These bees are more active during morning hours.

Mining bees:

Mining bees prefer sunny, bare ground, and sandy soil. They are also known to nest under leaf litter or in the soil along banksides and cliffs. Mining bees are active in the spring and most commonly seen on flowers during the morning when pollen and nectar resources are abundant.

A BASIC CHECKLIST

BECOME FAMILIAR WITH POLLINATORS IN YOUR LANDSCAPE:

- Watch for activity throughout the day and the seasons.
- Keep a simple notebook of when and what comes to your garden. NOTE: It is not necessary to identify each species when you first get started. Simply note if it is a bee that likes the yellow flower that blooms in the fall.
- Consult a local field guide or web site when you are ready to learn more details.
- Join community science initiatives such as those on iNaturalist or the Alaska Bee Atlas.

ADD NATIVE PLANTS TO ATTRACT MORE NATIVE POLLINATORS

- List the plants you currently have in your landscape.
- Determine when you need additional flowers to provide nectar and pollen throughout the growing season.
- Add plants that provide additional seasons of bloom, create variable heights for shelter, and attract the types of pollinators you want.
- Don't forget to include host plants that provide food and shelter for larval development.
- Contact your local native plant society or extension agent for more help.

USE POLLINATOR FRIENDLY LANDSCAPE PRACTICES TO SUPPORT THE POLLINATORS YOU ATTRACT

- Use Integrated Pest Management Practices to address pest concerns.
- Tolerate a little mess – leave dead snags and leaf litter, keep areas bare for ground nesting insects, and leave some weeds that provide food for pollinators.
- Provide safe access to clean water.

CERTIFY YOUR LANDSCAPE

- Farmers can certify their habitat with Bee Friendly Farming. Visit pollinator.org/bff
- Individual gardeners can certify their Bee Friendly Gardening. Visit pollinator.org/bfg

NOTICE THE CHANGES THAT YOU HAVE HELPED TO CREATE!

RESOURCES AND FEEDBACK

Many books, websites, and people were consulted to gather information for this guide. Use this list as a starting point to learn more about pollinators and plants in your area.

ECOREGION PROFILE:

Alaska Department of Fish and Game
adfg.alaska.gov/index.cfm?adfg=ecosystems.ecoregions

National Park Service
nps.gov/subjects/aknatureandscience/akecoregions.htm

POLLINATION/POLLINATORS

Pollinator Partnership pollinator.org

North American Pollinator Protection Campaign nappc.org

Bee Friendly Gardening
pollinator.org/bfg

The Alaska Bee Atlas
accs.uaa.alaska.edu/wildlife/ak-bee-atlas/

Natural Resources Conservation Service nrcs.usda.gov

USDA Forest Service
fs.usda.gov/managing-land/wildflowers/pollinators

U.S. Fish and Wildlife Service:
fws.gov/initiative/pollinators

Xerces Society Pollinator Program
xerces.org

The Forgotten Pollinators
Buchmann, S.L. and G.P. Nabhan. 1997. Island Press: Washington, DC.

Status of Pollinators in North America 2007. The National Academies Press: Washington, DC.

NATIVE PLANTS

Pollinator Partnership Find Your Roots tool:
pollinator.org/find-your-roots-tool

Alaska Plant Materials Center
plants.alaska.gov

Plant Conservation Alliance:
plantconservationalliance.org

National Seed Strategy:
blm.gov/programs/natural-resources/native-plant-communities/national-seed-strategy

Lady Bird Johnson Wildflower Center wildflower.org

USDA Plant Hardiness Zone Map
planthardiness.ars.usda.gov

U.S. National Arboretum
usna.usda.gov

USDA, NRCS. 2007. The PLANTS Database plants.usda.gov

Wildflowers for Northern Gardens by P. Holloway and V. Gauss. 2021. A.F. Farmer, LLC. Fairbanks, AK.

NATIVE BEES

Bee Basics: An Introduction to Our Native Bees by Beatriz Moissett, Ph.D. and Stephen Buchmann, Ph.D. A USDA Forest Service and Pollinator Partnership Publication, published 2011:
pollinator.org/pollinator.org/assets/generalFiles/BeeBasicsBook.pdf

The Bees in Your Backyard:
beesinyourbackyard.com

BUTTERFLIES AND MOTHS

Butterflies and Moths of North America Opler, Paul A., Harry Pavulaan, Ray E. Stanford, Michael Pogue, coordinators. 2006.
butterfliesandmoths.org/butterfliesandmoths.org

Butterflies of Alaska: A Field Guide Kenelm W. Philip and Clifford D. Ferris. 2016. Alaska Entomological Society. Fairbanks, AK.

Butterflies of North America
Jim Brock and Kenn Kaufman. 2003. Houghton Mifflin. New York, NY.

FEEDBACK

We need your help to create better guides for other parts of North America. Please e-mail your input to **feedback@pollinator.org**

- How will you use this guide?
- Do you find the directions clear? If not, please tell us what is unclear.
- Is there any information you feel is missing from the guide?
- Any other comments?

THANK YOU FOR TAKING THE TIME TO HELP!

NOTES

NOTES

POLLINATOR PARTNERSHIP
Protect their lives. Preserve ours.

NAPPC

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USDA, Forest Service

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Pollinator Partnership/North American Pollinator Protection Campaign
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