

Ankeny Hill Nature Center - Pollinator Node



Stewardship Birding Education
PO Box 2084, Salem, Oregon 97308
(503) 588-7340, salemaudubon.org/
Ankeny Hill Nature Center Native Pollinators
Education Node Funding Proposal

Tim Johnson, Board President, Salem Audubon Society, Samantha Bartling, Visitor Services Manager, Ankeny National Wildlife Refuge and Pat and Bobbie Allaire, Ankeny Hill Nature Center (AHNC) Volunteer Coordinators

Overview:

The Salem Audubon Society, with the support of the Ankeny Hill Nature Center team, proposes an award from the Marion Soil and Water Conservation District in the amount of \$4,500 to fund a Native Pollinators Interpretive/Education Node at the Ankeny Hill Nature Center. These funds would be supplemented with volunteer and staff in-kind contributions of site preparation, material development and visitor engagements. If MSWCD funds are granted, Salem Audubon will manage the funds at no cost.

Project summary timeline and funding request:

Components	Start Date-Completion Date	Funding Request
Native plants, planting supplies & interpretive signage, interactive outdoor display materials for 8 pollinator types/plots, printed materials with planting information, printed materials with activities	May 2022- February 2023	\$4500

The Center is part of the Ankeny National Wildlife Refuge which is wholly located within the Marion SWCD boundary. During the February 5-12, 2022 opening at the Center over half of the 1,150 visitors listed Salem as their home and another 30% reported having come within 25 miles or less of the Center.

The goal of the Pollinator Node is to provide educational opportunities for the community to understand how they can be stewards to nature and protect native pollinators in local ecosystems. Informational resources, and from time to time possibly plant resources, will be made available to the community to turn understanding into action.

When the community protects pollinators in local ecosystems by reducing the use of pesticides, planting native plants, and decreasing water use for lawns, the community advances the mission of the Marion SWCD “to protect, conserve and improve the quality of soil, air and water in Marion County.” These actions address water conservation and quality, soil quality and sustainable land use.

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According to the Xerces Society for Invertebrate Conservation “Pollinators are essential to our environment. The ecological service they provide is necessary for the reproduction of over 85% of the world’s flowering plants, including more than two-thirds of the world’s crop species. The United States alone grows more than 100 crops that either need or benefit from pollinators, and the economic value of these native pollinators is estimated at \$3 billion per year in the U.S. Beyond agriculture, pollinators are keystone species in most terrestrial ecosystems. Fruits and seeds derived from insect pollination are a major part of the diet of approximately 25% of all birds, and of mammals ranging from red-backed voles to grizzly bears.

Unfortunately, in many places, the essential service of pollination is at risk from habitat loss, pesticide use, and introduced diseases.”

Further, native pollinators are a prerequisite for not only healthy rural ecosystems but for healthy, resilient green spaces and urban ecosystems.

Objectives for the approximate 100’ x 40’ space in this node which would help visitors “discover the world of native pollinators” include:

- Create an educational site that raises public awareness about the importance of native pollinators to the ecology, the food chain and food webs.
- Explain the pollination process.
- Familiarize the public with various types of native pollinators such as mason bees, mining bees, bumblebees, butterflies, moths, hummingbirds and more for identification purposes.
- Demonstrate how native plants attract and sustain migratory and non-migratory native pollinators throughout the seasons and throughout the pollinator life cycle.
- Demonstrate representative mini-habitats for native pollinators that visitors can replicate outside the Center/Refuge.
- Explain threats to pollinators.

The mission statement of the Ankeny Hill Nature Center (AHNC), which is part of the Ankeny National Wildlife Refuge is:

“The Center provides educational and interpretive opportunities to connect people with nature and to instill a sense of environmental stewardship.”

The interpretive plan for AHNC states: “An Education Node is one of several overlooks or stations ... where both self-guided interpretation and guided programming can occur. Each node has a theme (e.g. oak savanna and upland prairie, emergent wetland, Native American life—past and present, wet prairie habitat, etc.) and encourages interactive learning.”

The planned Pollinator Node is next to the Gehlar Hall outdoor classroom on the Little Loop Trail. It has an assortment of widely planted native shrubs and a small selection of native forbs and some invasive species. The Pollinator Node is within a 23 acre plus area of restored upland prairie. Restoration of the adjacent wetland, Peregrine Marsh, started in 2015. Upland prairie restoration began in 2016. The upland prairie area has

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been seeded and planted with native trees, shrubs and forbs. Beyond that is the rest of the Refuge and surrounding farms and homes.

Options for the Pollinator Node include:

A demonstration of how to prepare land/soil for pollinator habitat. In this case and in many cases this involves dealing with existing native plants, plus non-native and invasive plants. This could include demonstration subplots (7-25 sq ft) within the node that demonstrate how someone might prepare a space in a yard or community space for native plants. Informational/educational signs and materials would explain what is taking place in each subplot. To inhibit and/or remove unwanted plants subplots would possibly demonstrate:

- The use of the same chemical fallow process used in the broader upland prairie restoration. The chemical fallow site preparation was 2 years of site preparation prior to seeding with one herbicide application each fall and spring.
- The use of black and/or clear plastic to reduce weeds. Black plastic reduces light and reduces weed growth. The weeds starve without sunlight. Clear plastic raises soil temperature which will kill weeds, pathogens and fungi.
- The use of an organic mulch of 2 to 4 inches of wood chips to keep weeds under control. They also improve soil as they break down.
- Hand weeding, with or without the use of hand tools such as a hoe, a small hand cultivator, a dandelion digger or Hori Hori gardening knives.

Demonstration pollinator subplots which contain food (native plants), habitat and representative nesting and overwintering sites for the following types of native pollinators:

- Bumblebees
- Sweat bees
- Mining bees and other ground nesting bees
- Mason bees and other tube nesting bees
- Monarch butterflies, other butterflies, moths, and other night time pollinators
- Hummingbirds

The area of two other subplots would have general information about native pollinators, differentiating them from the honeybee, introducing the wider pollinator population (wasps, flies, beetles, etc.) and how to tell them apart. One of these subplots would contain the oak stump and describe the value of snags to pollinators.

As much of the Pollinator Node as possible would be demonstration subplots, leaving enough room for wood-chip covered paths for visitors to explore, engage and learn about native pollinators. After leaving room for winding paths, interpretive signs, and interactive displays, each of the eight pollinator specific/general subplots could average approximately. 250-300 square ft.

The size of the subplots could vary. For example, because hummingbirds and bumblebees are strong fliers and can access resources for a great distance

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(bumblebees may commonly forage up to 5 km or 3 miles from their nest). The size of these plots may focus on behavior, habitat and nesting areas and have fewer immediate floral resources. This could be used to highlight resources in the areas surrounding the Pollinator Node and likewise make the point that even a small space in an urban environment can be part of a green corridor with food and nesting resources for native pollinators.

According to the Oregon State University Extension Service: “A great variety of pollinating insects make their homes in urban landscapes of the Pacific Northwest. These include hundreds of different species of bees, butterflies, moths and flies. In fact, the gardens and backyards of urban environments can be as rich in insect life as wildland outside the city limits.”

Initial informational/activity signs would be corrugated plastic. These would last 2-3 years and allow time for design modifications and to identify funding for more substantial ‘kiosk’ type information/activity stations. A prototype outdoor interactive interpretive/educational element will be developed for each pollinator type. Prototypes are expected to last 2-3 years and be replaced at the same time as the signage with more substantial materials. These self-guided elements may include:

- Oversized mason bee nest tubes that visitors can manipulate to see the progression of life stages.
- See through containers, some of which can be ‘discovered’ and lifted out of the ground to show replica ground nesting bees and their nests.
- A bumblebee station that includes a sound component to emphasize the importance of buzz pollination.

Self-guided elements may be supplemented with volunteer/staff led programs and activities.

The goal is to have at least 16-20 plant species throughout the Pollinator Node that have specific appeal for certain pollinators and are in bloom throughout the growing season. There are already many native shrubs in the Pollinator Node that are attractive to pollinators. Certain plant species, which may also provide food for adult pollinators, will be included as host plants for native butterflies and moths. An example is the showy milkweed, the host plant for the monarch butterfly.

Many plants attract multiple kinds of pollinators. The following list of native plants that are already acceptable at the Center show some pollinator preferences and are candidates for the Pollinator Node. Other plants may be identified and submitted to Refuge Management for approval.

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Plant Name	Mason bees	Bumble bees	Mining Bees	Butterflies	Sweat Bees	Hummingbird
Bleeding Heart		1		1		1
Globe gilia	1		1			
Wild geranium	1		1			
American Goldenrod		1	1			
Hall's Aster		1	1			
Gumweed					1	
Common Self heal		1				
Lupine (riverbank?)				1		
Oregon Geranium				1		
Showy Milkweed				1		
Sunflower (sp?)		1		1		
Penstemon				1		
Willow (pussy willow or?)			1			
Meadow Checkermallow				1		

This project includes:

- Preparing the 8 demonstration pollinator subplots with plant in pots and/or in the ground.
- Establishing demonstration soil preparation areas.
- Developing and installing interpretive/educational signage and outdoor interactive interpretive/education elements and relevant supplemental materials for each pollinator subplot.
- Creating full color informational flyers/brochures for planting (includes bloom time calendar).
- Creating full color activity flyers/booklets/brochures.

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Project Budget Summary

Description	Quantity	Cost per	Estimate*
Custom coroplast interpretive signs, double-sided (English and Spanish) 24"L x 18"W	12	40	\$480.00
Metal in ground sign holders	12	20	\$240.00
Full color informational flyers/brochures for planting (with bloom time calendar)	2000	0.4	\$800.00
Full color activity flyers/booklets/brochures	1000	0.4	\$400.00
GRELWT Greenhouse Film 6 mil Thickness, Covering Plastic, UV Resistant(12ft X 25ft) (Amazon)	1	41.99	\$50.00
Water source for pollinators- low trays placed throughout.	6	3.54	\$30.00
Gardzen 6-Pack 25 Gallon Grow Bags, Aeration Fabric Pots with Handles	4 (24 pots)	24.99	\$100.00
Soil for 24 pots – approx. 3 cu. ft per pot. Example: Kellogg Garden Organics, 1 cu. ft. All Natural Garden Soil for Flowers and Vegetables	72	5.47	\$400.00
Flower pot saucers. Example: 24" Round Prima Saucer - The HC Companies 21.22"x21.22"x2.52" Round Plastic Prima Saucer in Cappuccino (Amazon)	24	11.99	\$300.00
Approved plants or plugs of various sizes depending on availability	~200	Varies	\$700.00
8 plot/pollinator specific interactive interpretive/educ. elements with supplemental materials	8	125	\$1,000.00
Totals			\$4,500.00

***Estimates are rounded up**