

Mason Bees: Pollinating Dynamos

April 9, 2024

SDSU Extension is an equal opportunity provider and employer in accordance with the nondiscrimination policies of South Dakota State University, the South Dakota Board of Regents and the United States Department of Agriculture.

Learn more at extension.sdstate.edu.



SOUTH DAKOTA STATE
UNIVERSITY EXTENSION

Missouri Valley Extension Master Gardeners

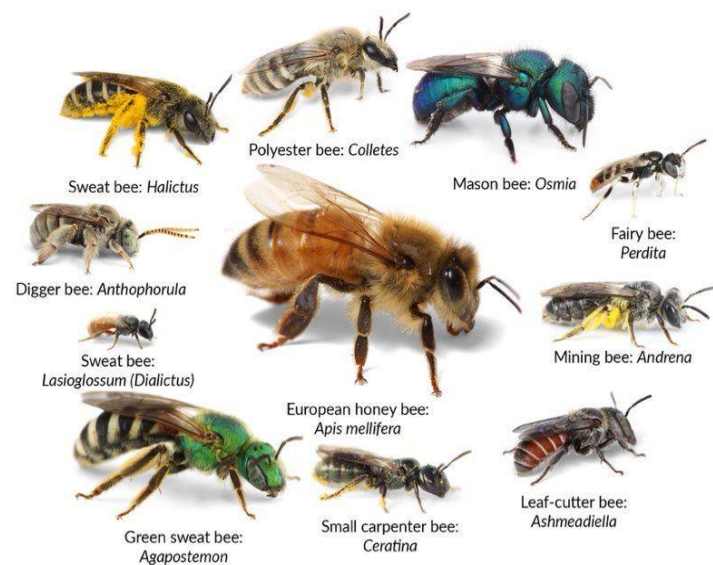


**Master Gardener
Volunteer**



Native Bees

- 4000 species native to North America
- 90% are solitary, several are pollen specialists
- Over 400 species in SD
- Excellent pollinators—pollinate about 80% of our food crops
- Without pollinators, we will lose most of our fruits and nuts, as well as cucurbits





Food Sources

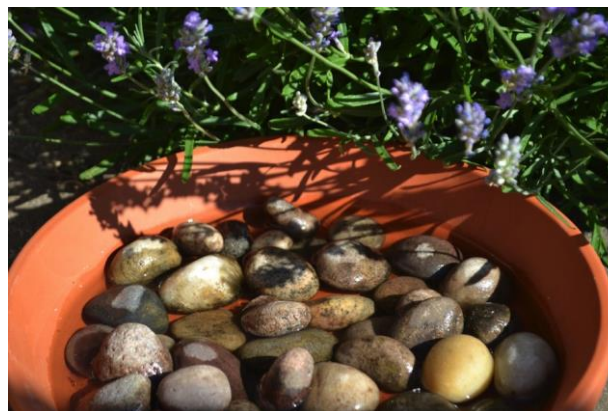


- Bees need both nectar and pollen
- Choose a range of flower shapes and colors
- Plant season-long blooms
- Choose non-hybrid natives
- Avoid “double” flowers
- Plant in masses; sunny areas are most attractive



Other Needs

- Water
- Nesting sites
 - Undisturbed ground
 - Vegetation; dry stems
- Muddy or sandy areas



**Master Gardener
Volunteer**



Poly-pollination



Honey bee (worker): $\frac{1}{2}$ - $\frac{3}{4}$ "

Yellow & brown striped bodies

Pollen baskets



Mason bee: $\frac{3}{8}$ to $\frac{5}{8}$ "

Metallic colored: blue, green, black

Hairy bodies

- Pollinators function best when several kinds work together throughout the year
- Honeybees—moderately effective, large range, active for several summer months. Not native
- Mason bees—very effective, range of about 300 feet, most active early spring



Mason Bee Life Cycle

- Winter: hibernates inside cocoons in nesting chambers
- Early spring (55° F): emerge as fully formed adults
- Spend 4-6 wks mating, building nests, collecting food, laying eggs
- Early summer: eggs hatch, larvae feed, spin cocoons
- Fall, winter: dormant





Unique Qualities: Mason Bees



- Over 150 different types
- Every female is a queen who “sorts” eggs for males & females
- Plugs nesting chambers with mud; each chamber has a lump of pollen and an egg
- Males emerge before females

**Master Gardener
Volunteer**



Caution

- Raise your own bees, rather than purchasing (keep it local)
- Pesticides can harm your bees--avoid





Types of mason bee houses



- Purchased
- Holes bored into lengths of tree limbs or wood blocks
- Hollow plant stems or paper tubes inserted into tin cans
- You will need to be able to remove the cocoons



Making a Mason Bee House

- Clean out aluminum can
- Punch a hole in can bottom about 1" from the edge (nail and hammer)
- Place small wood screw inside can with a few half turns





Making a Mason Bee House

Prepare tubes

- Cut brown paper bags or parchment paper (2" strips)
- Wrap tightly around a pencil diagonally; glue or tape
- Cut to length of can; squeeze one end shut
- Cut hollow stems to length of can





Making a Mason Bee House

- Fill can tightly with paper tubes or hollow stems; if you need to—pack pieces of moss to hold in place
- Position in a protected place facing south or east by screwing into a post
- Have an area of mud available for bees to collect





Protect Cocoons over Winter



- In June:
 - Remove tubes from bee house
 - Open tubes to harvest cocoons; check for predator problems
 - Put tubes or cocoons into mesh bags and store in cool place for winter
- Put out in sunny place when temperature reaches 50s in spring



**Master Gardener
Volunteer**



SOUTH DAKOTA STATE
UNIVERSITY EXTENSION

Bibliography

Books:

Holm, Heather. Pollinators of Native Plants. Pollination Press. 2014.

Hunter, Dave and Jill Lightner. Mason Bee Revolution. Skipstone Books. 2016.

E-resources:

“How to Build a Pollinator House”. 2015.

<https://rockies.audubon.org>

“How to Make an Orchard Mason Bee House”. 2020.

<https://tallcloverfarm.com/13423/how-to-make-an-orchard-mason-bee-house>

“Mason Bee Care and Cocoon Cleaning”. Youtube video. Oregon State U Master Gardeners

https://www.youtube.com/watch?v=5efwU_4BSHE

**Master Gardener
Volunteer**



United States Department of Agriculture

AND JUSTICE FOR ALL



In accordance with Federal law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, this institution is prohibited from discriminating on the basis of race, color, national origin, sex, age, disability, and reprisal or retaliation for prior civil rights activity. (Not all prohibited bases apply to all programs.)

Program information may be made available in languages other than English. Persons with disabilities who require alternative means of communication for program information (e.g., Braille, large print, audiotope, and American Sign Language) should contact the responsible State or local Agency that administers the program or USDA's TARGET Center at **(202) 720-2600** (voice and TTY) or contact USDA through the Federal Relay Service at **(800) 877-8339**.

To file a program discrimination complaint, a complainant should complete a Form AD-3027, USDA Program Discrimination Complaint Form, which can be obtained online, at www.usda.gov/sites/default/files/documents/usda-program-discrimination-complaint-form.pdf, from any USDA office, by calling **(866) 632-9992**, or by writing a letter addressed to USDA. The letter must contain the complainant's name, address, telephone number, and a written description of the alleged discriminatory action in sufficient detail to inform the Assistant Secretary for Civil Rights (ASCR) about the nature and date of an alleged civil rights violation. The completed AD-3027 form or letter must be submitted to USDA by:

mail:
U.S. Department of Agriculture
Office of the Assistant Secretary for Civil Rights
1400 Independence Avenue, SW
Washington, D.C. 20250-9410; or

fax:
(833) 256-1665 or (202) 690-7442;

email:
program.intake@usda.gov.

This institution is an equal opportunity provider.

SDSU Extension is an equal opportunity provider and employer in accordance with the non-discrimination policies of South Dakota State University, the South Dakota Board of Regents and the United States Department of Agriculture.

Learn more at extension.sdstate.edu.



United States Department of Agriculture

AND JUSTICE FOR ALL



Conforme a la ley federal y las políticas y regulaciones de derechos civiles del Departamento de Agricultura de los Estados Unidos (USDA), esta institución tiene prohibido discriminar por motivos de raza, color, origen nacional, sexo, edad, discapacidad, venganza o represalia por actividades realizadas en el pasado relacionadas con los derechos civiles (no todos los principios de prohibición aplican a todos los programas).

La información del programa puede estar disponible en otros idiomas además del inglés. Las personas con discapacidades que requieran medios de comunicación alternativos para obtener información sobre el programa (por ejemplo, Braille, letra agrandada, grabación de audio y lenguaje de señas americano) deben comunicarse con la agencia estatal o local responsable que administra el programa o con el TARGET Center del USDA al **(202) 720-2600** (voz y TTY) o comunicarse con el USDA a través del Servicio Federal de Transmisión de Información al **(800) 877-8339**.

Para presentar una queja por discriminación en el programa, el reclamante debe completar un formulario AD-3027, Formulario de queja por discriminación del programa del USDA, que se puede obtener en línea, en www.usda.gov/sites/default/files/documents/usda-program-discrimination-complaint-form.pdf, en cualquier oficina del USDA, llamando al **(866) 632-9992**, o escribiendo una carta dirigida al USDA. La carta debe contener el nombre, la dirección y el número de teléfono del reclamante, y una descripción escrita de la supuesta acción discriminatoria con suficiente detalle para informar al Subsecretario de Derechos Civiles (ASCR, por sus siglas en inglés) sobre la naturaleza y la fecha de la presunta violación de los derechos civiles. La carta o el formulario AD-3027 completado debe enviarse al USDA por medio de:

correo postal:
U.S. Department of Agriculture
Office of the Assistant Secretary for Civil Rights
1400 Independence Avenue, SW
Washington, D.C. 20250-9410; o´

fax:
(833) 256-1665 o´ (202) 690-7442;

correo electrónico:
program.intake@usda.gov.

Esta institución ofrece igualdad de oportunidades.

SDSU Extension is an equal opportunity provider and employer in accordance with the non-discrimination policies of South Dakota State University, the South Dakota Board of Regents and the United States Department of Agriculture.

Learn more at extension.sdstate.edu.