Protecting Utah From Invasive Pests

2024 Calendar

Extension
UtahStateUniversity

Protect Utah and the U.S. From Invasive Species

Invasive species (insects, plant diseases, weeds, and more) threaten our agricultural and natural resources. Many thousands are established in the U.S., and new introductions occur regularly by unintentional or human-assisted means. You can help prevent introduction or spread of invasives by following a few simple steps.

Buy local.

Avoid transporting and shipping plant material or animals outside their area of origin. Buy local produce and firewood.

Learn.

Become familiar with the invasive species that occur in (or have potential be introduced into) your local area and areas where you travel.

Clean up.

When you travel, remove plants, soil, and animals from your personal belongings, pets, and vehicles.

Report suspects.

Contact your local county extension office or state department of agriculture if you suspect a new **invasive pest.**

Share knowledge.

Tell your family and friends about the environmental, economic, and health impacts of invasive species.

Oversight of Invasive Introductions

Federal and state agencies conduct surveys for invasive pests. The Utah Cooperative Agricultural Pest Survey (CAPS) program oversees much of the programs for invasive pests. It is led by the Utah Department of Agriculture and Food (UDAF) and is comprised of experts from the U.S. Department of Agriculture Animal and Plant Health Inspection Service (USDA APHIS), Utah State University, U.S. Forest Service, Utah Weed Supervisors Association, and other federal and state partners.

UDAF

The Utah Department of Agriculture and Food conducts statewide surveys of invasives and provides **regulatory** information.

USDA APHIS

The U.S. Department of Agriculture's Animal and Plant Health Inspection Service protects against the entry, establishment, and spread of invasives and provides national **regulatory, monitoring, and management** information.

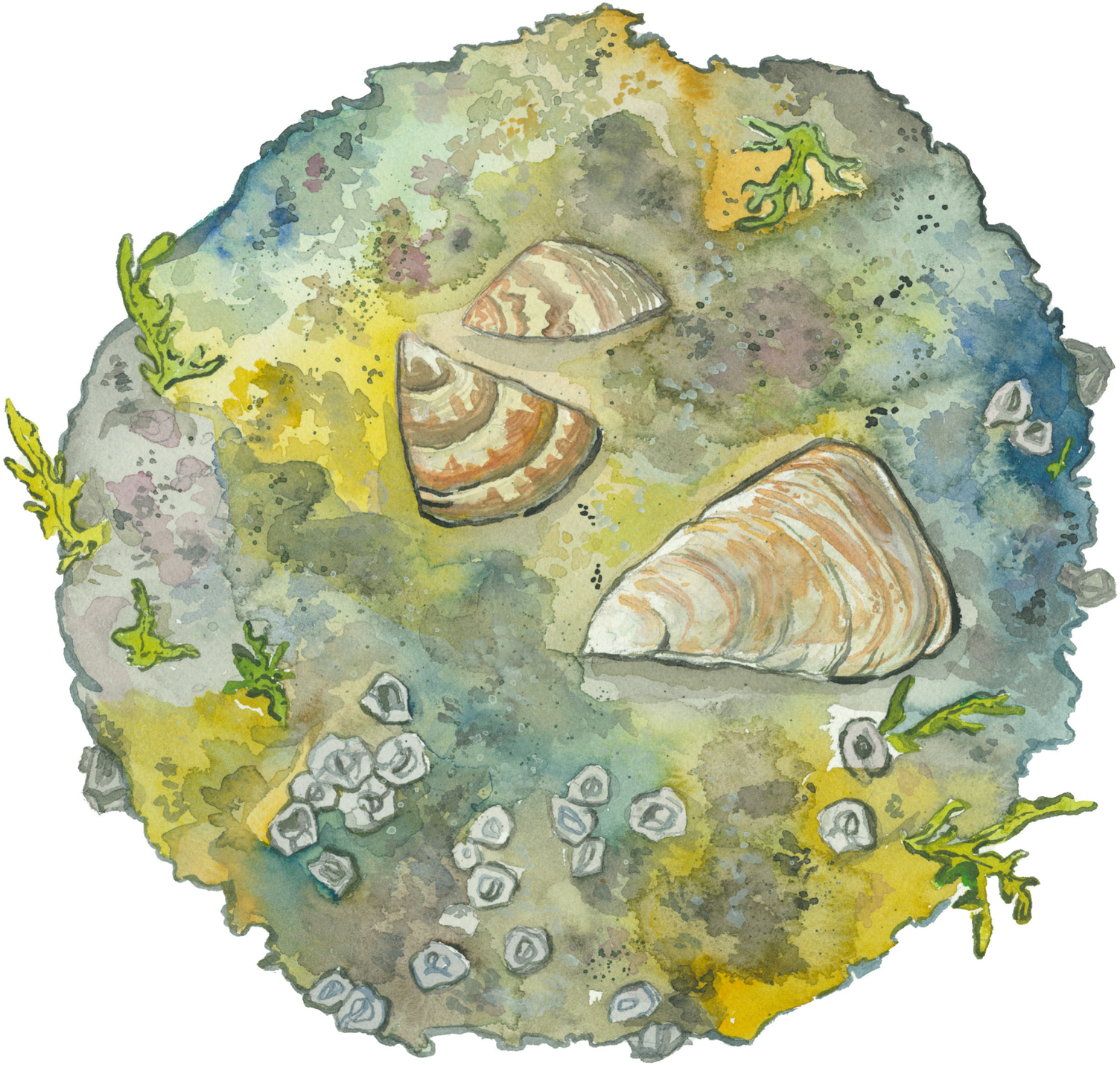
USU Extension

Utah State University Extension specialists conduct smaller statewide surveys of other invasive pests, perform research, and provide **educational** information about invasives.

Learn More

USU Extension offers Master Gardener Program training each spring in almost every county in the state. Certified master gardeners may elect to become a "first detector," with annual training of invasive pests provided by the Utah Pests group. Utah Pests is a group of USU Extension entomologists and plant pathologists who work to solve pest issues that concern all citizens of Utah. Learn more about invasive species and everyday pests at Utah Pests (utahpests.usu.edu), where you can access our newsletters, fact sheets, pest management guides, and more.

This calendar was made possible by funding from the U.S. Department of Agriculture - Animal and Plant Health Inspection Service - Plant Protection and Quarantine (under cooperative agreement AP22PPQFO000C145).



Quagga and Zebra Mussels (*Dreissena bugensis* and *D. polymorpha*)

Quagga and zebra mussels are freshwater mollusks that threaten western aquatic ecosystems. They outcompete native mussels and disrupt fisheries, hydropower operations, municipal water utilities, and endanger fish populations and wildlife habitat. They spread quickly and are difficult to eradicate. Adults are about the size of an adult human fingernail. Both species have two triangular shells and byssal threads (ropes) on the hinged edge, which are not found on native mussels. Color patterns vary in both species and shell stripes may be bold, faint, horizontal, vertical, or absent. Both quagga and zebra mussels can be transported to new areas via ballast water or hitchhiking on ships, trailered watercraft, aquarium moss balls, and more.

January

SUN	MON	TUE	WED	THU	FRI	SAT
31 New Year's Eve	1 New Year's Day	2	3	4	5	6
7	8	9	10	11	12	13
14	15 Martin Luther King, Jr. Day	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	1	2 Groundhog Day	3

Native to: Eurasia

Utah status: Quagga mussels have been detected in Utah but are now eradicated.

Top: Quagga (left) and zebra (right) mussels.

California Department of Fish and Game

Bottom: Invasive quagga mussels covering hydro dam equipment.

Washington Invasive Species Council

Plum Pox Virus (*Potyvirus* spp.)

Plum pox virus infects cultivated plum, peach, nectarine, apricot, almond, sweet and tart cherry, and ornamental and wild stone fruit trees. While plum pox virus does not typically kill trees, it reduces fruit yield and marketability, posing great threat to Utah's fruit production. Symptoms of plum pox virus vary and may not be visible until 3 or more years after infection. The foliage may have light green to yellow rings or blotches, yellow veins, or become crinkled, curled, or puckered. Fruit yield declines and individual fruits have pigmented rings or patterns, are deformed, and may turn brown. The virus is spread locally by aphid feeding and more widely by movement of nursery stock or propagative materials (e.g., budwood, rootstock, or seedlings).

February

SUN	MON	TUE	WED	THU	FRI	SAT
28	29	30	31	1	2 Groundhog Day	3
4	5	6	7	8	9	10
11	12	13	14 Valentine's Day Ash Wednesday	15	16	17
18	19 President's Day	20	21	22	23	24
25	26	27	28	29	1	2

Native to: Europe

Utah status: Not known to occur. Surveys for this pest occur every few years.

Top: Yellow rings on a peach caused by plum pox potyvirus.
European and Mediterranean Plant Protection Organization, Bugwood.org

Bottom: Symptoms of plum pox virus on plum leaves.
Biologische Bundesgnstalt fur Land, Bugwood.org

Plum Curculio (*Conotrachelus nenuphar*)

Plum curculio is a small brown weevil that is a major pest of pome and stone fruits. It thrives in environments where orchards are grown next to hardwood forests. It is an ongoing threat to Utah's fruit industry. Adults are ¼ inch long and are recognizable as a weevil by their long snout-like mouthparts. They have a brown to black body with light gray and brown markings and four dark humps along a rough back. Larvae are legless, grayish-white grubs with a curved body and small brown head. Plum curculio is currently a quarantine pest in western North America with restrictions on the export of food grown in infested countries. The quarantine also prevents exporting fresh fruit from Box Elder County to other western states as this is the main way the beetle infests new areas.

March

SUN	MON	TUE	WED	THU	FRI	SAT
25	26	27	28	29	1	2
3	4	5	6	7	8	9
10 Daylight Saving Time Starts Ramadan Begins	11	12	13	14	15	16
17 St. Patrick's Day	18	19 Spring Begins	20	21	22	23
24 Palm Sunday	25	26	27	28	29 Good Friday	30
31 Easter						

Native to: Eastern North America

Utah status: Occurs in Box Elder County as the only population in the western U.S.

Top: Plum curculio egg and oviposition (egg-laying) scar (left) and adult (right).
Peter Jentsch, Cornell University Hudson Valley Lab

Bottom: Plum curculio larva in a rotting cherry.
Thaddeus McCamant, Central Lakes College

Multicolored Asian Lady Beetle (*Harmonia axyridis*)

Multicolored Asian lady beetle was deliberately introduced in the U.S. as a biocontrol agent for soft-bodied prey such as aphids. However, it is now considered invasive both as a household nuisance pest during overwintering and a threat to native lady beetle species through cannibalism and competition. Adults can be pale yellow, orange, red, or even black. They may have up to 19 spots or no spots at all and are slighly larger than native lady beetles. To identify this species, look at the distinct black "M" on the cream-to-white head plate. The "M" may be broken or solid. Larvae are elongated, flattened, and a blueish-gray to black with yellow-orange markings.

april

SUN	MON	TUE	WED	THU	FRI	SAT
31 Easter	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15 Tax Day	16	17	18	19	20
21	22 Earth Day Passover	23	24	25	26 Arbor Day	27
28	29	30	1	2	3	4

Native to: Asia

Utah status: Widespread and common.

Top: Color variations of the multicolored Asian lady beetle adults.

Wikipedia

Bottom: Multicolored Asian lady beetle larva.

Joe Boggs, Ohio State University Extension

Walnut Twig Beetle (*Pityophthorus juglandis*) and Thousand Cankers Disease (*Geosmithia morbida*)

Thousand cankers is a disease of walnut trees caused by a fungus that the walnut twig beetle spreads. The fungus kills black walnut, English walnut, and hybrids of both. Trees often die within 3 years of visible symptoms. The main threat is walnut production areas and native walnut habitat. Symptoms begin as areas of wilting and yellowing foliage and thinning tree crown. As the disease progresses, larger branches die, and eventually, full tree mortality occurs. The bark will have dark stains at the tiny exit holes caused by the twig beetle. The beetle is about the size of a grain of rice and dark brown. They look very similar to other bark beetles.

May

SUN	MON	TUE	WED	THU	FRI	SAT
28	29	30	1	2	3	4
5 Cinco de Mayo	6	7	8	9	10	11
12 Mother's Day	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27 Memorial Day	28	29	30	31	1

Native to: Southwestern U.S. and Mexico

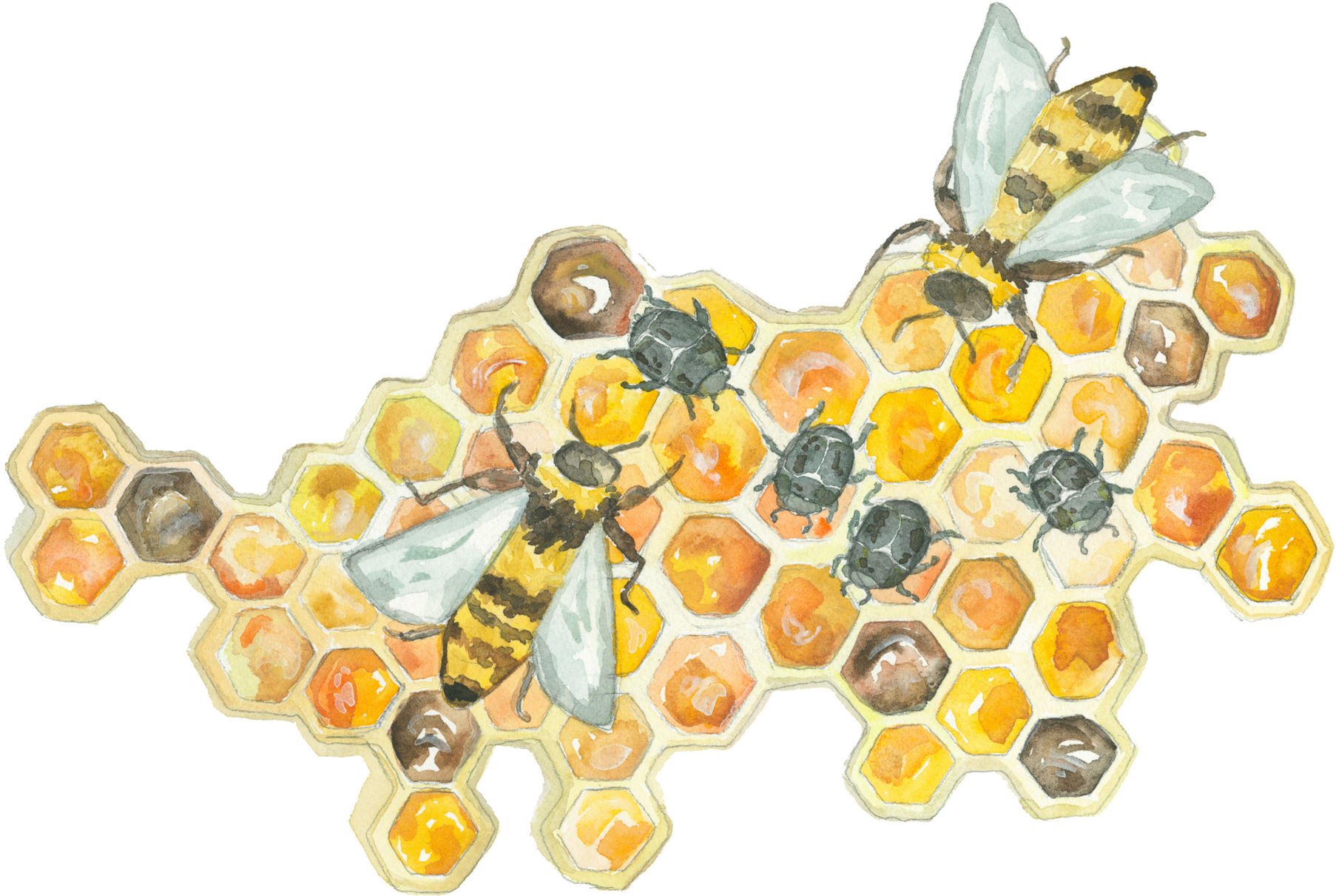
Utah status: Occurs throughout the state, and walnut mortality is now common.

Top: Walnut twig beetles and exit holes.

Kathy Keatley Garcey, University of California, Davis

Bottom: Walnut twig beetle galleries and cankers caused by *Geosmithia morbida*.

Mary Ann Hansen, Virginia Polytechnic Institute



Small Hive Beetle (*Aethina tumida*)

Small hive beetle is a pest of honey bees and bumble bees and can have a significant impact on apiculture and wild bee populations. The beetle adults and larvae feed on pollen and honey and kill bee brood and workers. Their feces cause honey to discolor, ferment, and froth. Infested hives can appear slimy, drip fermented honey, and have a rotten orange odor. Under heavy infestations, bee colonies can quickly collapse. Adults are small (1/4 inch long), flattened, and oblong-shaped, with clubbed antennae and shortened elytra (hard wing coverings). Their color varies from reddish-brown to dark brown. Mature larvae are 3/8 inch long, pearly white to beige, and have three pairs of legs near the head. Small hive beetle is largely spread through packaged bees, beekeeping equipment, and bee products. Adults are also strong fliers and can easily disperse to new hives.

June

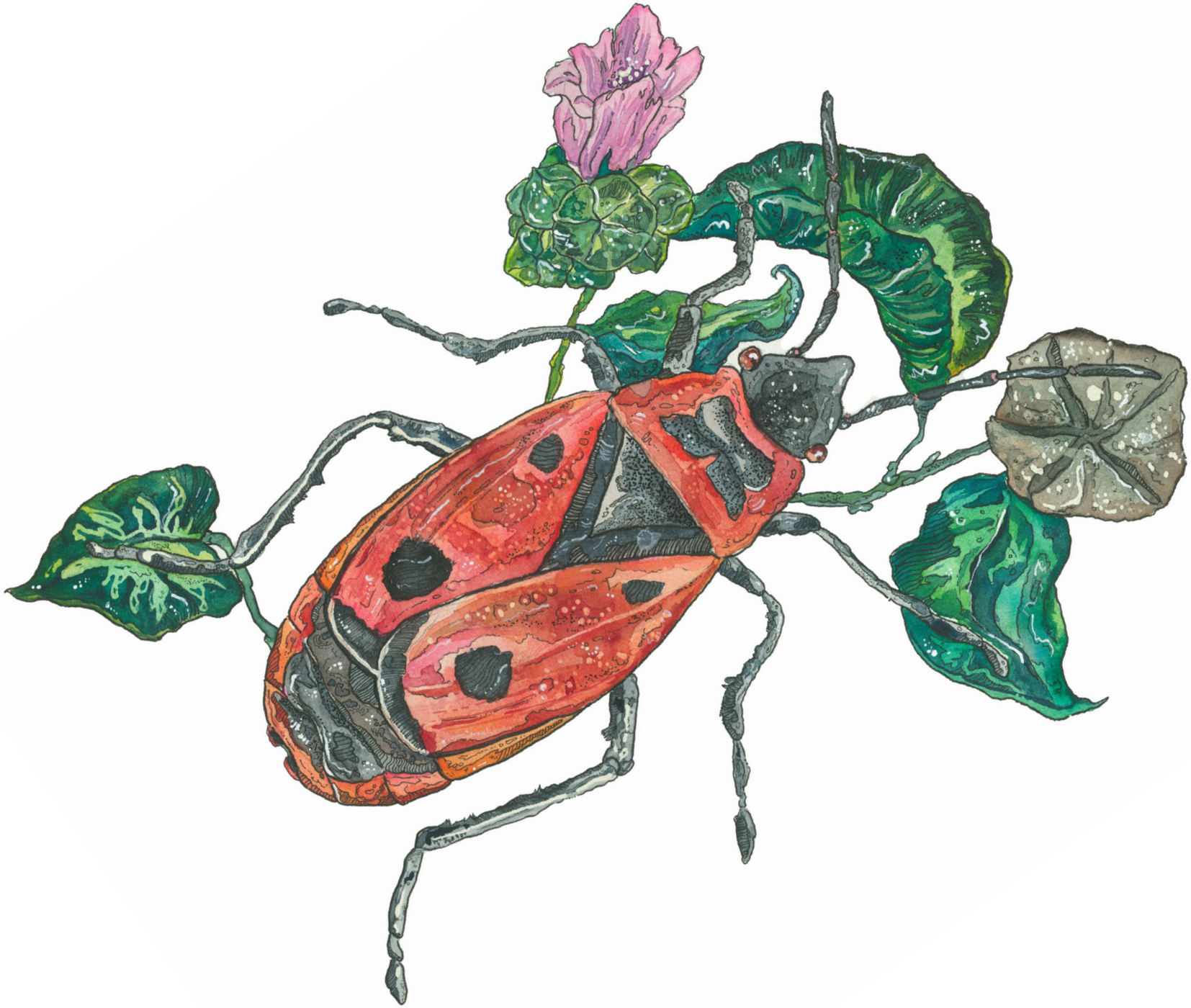
SUN	MON	TUE	WED	THU	FRI	SAT
26	27 Memorial Day	28	29	30	31	1
2	3	4	5	6	7	8
9	10	11	12	13	14 Flag Day	15
16 Father's Day	17	18	19 Juneteenth	20 Summer begins	21	22
23	24	25	26	27	28	29
30						

Native to: Africa

Utah status: Detected in 2016 in Washington and Davis counties. Unknown if established.

Top: Small hive beetle adult.
Humberto Boncristiani

Bottom: Small hive beetle larvae in a honey bee hive.
James D. Ellis, University of Florida, Bugwood.org



Red Firebug (*Pyrrhocoris apterus*)

Red firebug is a true bug that feeds on a wide range of dry, ripe seeds, but is most known for feeding on plants in the mallow family. While they are unlikely to cause significant plant damage, they have become a nuisance pest, forming large aggregations near homes and buildings. They frequently enter structures for overwintering and may release a foul odor if handled. Adults and nymphs have a vibrant red and black coloration. Adults are similar in size to boxelder bug. There are both winged and wingless forms of adults, but all have characteristic pairs of black spots. Nymphs are smaller and have a line of three small black dots down their abdomen. The assumption is that red firebug arrived to the U.S. on nursery stock. Fully-winged individuals are great fliers, and so far, this insect is showing a strong ability to spread and expand throughout the Intermountain West.

July

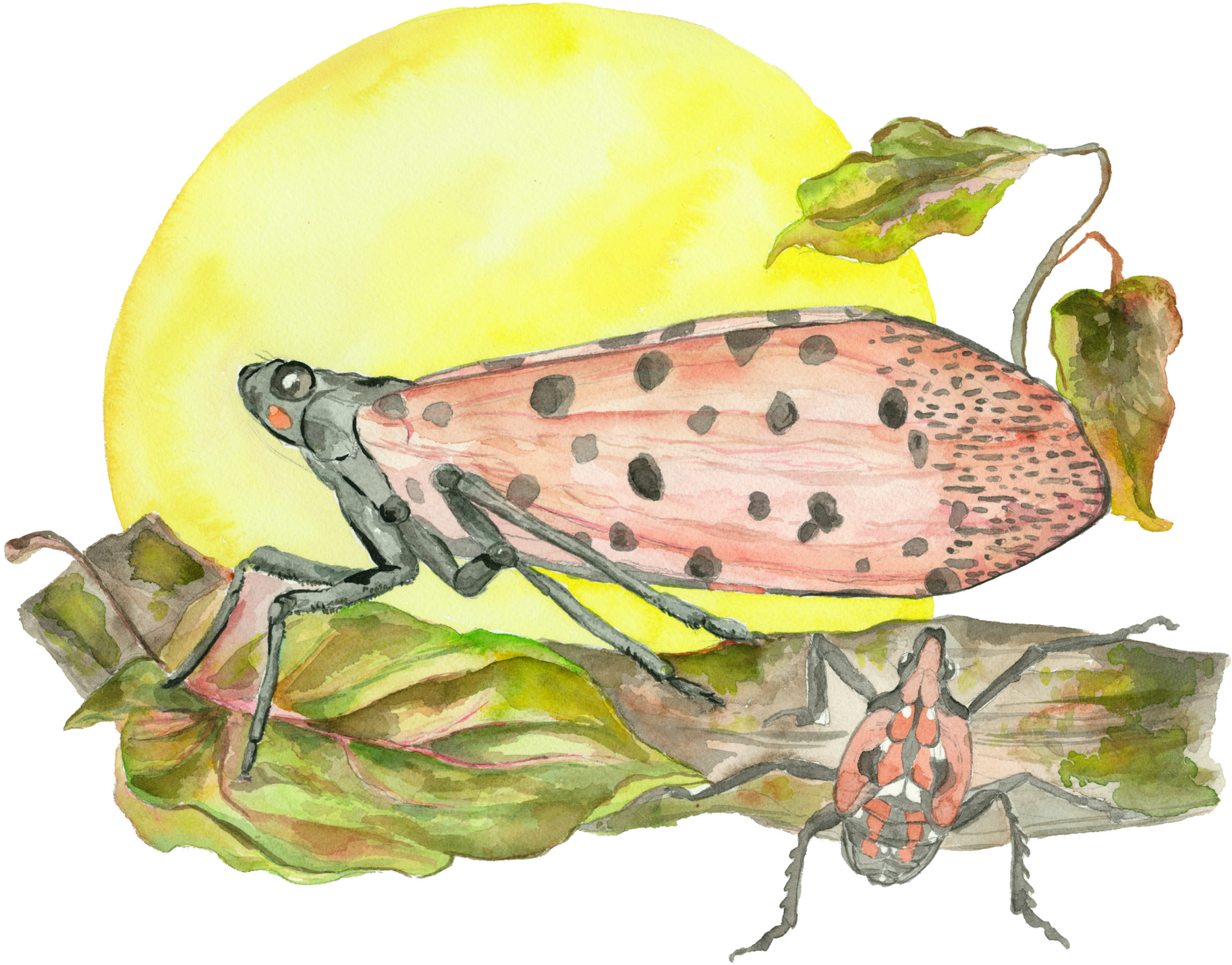
SUN	MON	TUE	WED	THU	FRI	SAT
30	1	2	3	4 Independence Day	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24 Pioneer Day	25	26	27
28	29	30	31	1	2	3

Native to: Central Europe

Utah status: First seen in 2008 in Salt Lake City, and now thriving and expanding populations throughout

Top: Aggregation showing various life stages of red firebug.
Henk Monster, Wikimedia Commons

Bottom: Red firebug nymph near adulthood.
Kate Richardson, USU Extension



Spotted Lanternfly (*Lycorma delicatula*)

Spotted lanternfly is an urban nuisance and agricultural pest that feeds with piercing-sucking mouthparts on the fruits and foliage of more than 100 deciduous plant species, including fruit and berry plants (especially grape) and ornamental trees. Adults are unique in their appearance. They are about 1 inch long with front wings that are gray overlaid with black spots in the center and dark speckled bands near the wing tips. The hind wings are red, black, and white. Nymphs (young) are initially black and white, later turning black, white, and red. The brown/tan, seed-like eggs are also unique. They occur in 1-inch-long rows and are often covered with a gray, waxy secretion. Females lay them on tree bark, outdoor furniture, cars, shipping containers, and other smooth surfaces. Spotted lanternfly spreads long distances due to the accidental transport of cryptic egg masses.

August

SUN	MON	TUE	WED	THU	FRI	SAT
28	29	30	31	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Native to: Southeast Asia

Utah status: Not known to occur. Shipments into Utah are carefully inspected.

Top: Aggregation of spotted lanternfly adults.
Emilie Swackhamer, Pennsylvania State University

Bottom: Late-stage spotted lanternfly nymph.
Lawrence Barringer, PA Dept. of Agriculture

Light Brown Apple Moth (*Epiphyas postvittana*)

Light brown apple moth is a major pest of apple, grape, orange, pear, and ornamental plants and threatens ecological and agricultural systems. Scientists predict that it can inhabit almost 80% of the continental U.S. Larvae feed on leaves and buds, reducing photosynthetic rate and deforming growth patterns, which leads to general plant weakness and disfigurement. In some cases, larvae will feed directly on fruit, making them unmarketable. Adults are light brown moths about ½ inch long with folded wings. Full-grown larvae reach ¾ inch long and are pale to medium green with a light yellow-tan head. Both adult and larval forms are difficult to distinguish from other related moth species. Light brown apple moth can be spread to new areas through infested fruits, vegetables, and nursery stock.

September

SUN	MON	TUE	WED	THU	FRI	SAT
1	2 Labor Day	3	4	5	6	7
8 Grandparent's Day	9	10	11 Patriot Day	12	13	14
15	16	17	18	19	20	21
22 Autumn Begins	23	24	25	26	27	28
29	30	1	2	3	4	5

Native to: Australia

Utah status: Not known to occur. An annual survey is conducted in Utah.

Top: Light brown apple moth larva (left) and adult (right).
Nick Mills, University of Berkeley

Bottom: Damage to apples caused by light brown apple moth.
Department of Primary Industries and Water

Bacterial Leaf Scorch (*Xylella fastidiosa*)

Bacterial leaf scorch is most commonly seen in oaks, but other hosts include elm, sycamore, mulberry, red maple, and sweetgum. Different strains of the bacterium attack blackberry, blueberry, and grape. The disease is systemic and potentially fatal to infected trees. The bacteria prevent water flow in the tree, resulting in browning (scorch) of the leaves, visible by mid-summer. Long-term symptoms reappear annually and include leaf drop, crown thinning, dieback, and decline. Bacterial leaf scorch is spread by piercing-sucking insects such as spittlebugs, treehoppers, and leafhoppers. During feeding, the insect may acquire or transmit the bacterium to the host. Once the insect has acquired the bacterium, it can continue to transmit the pathogen until its death.

October

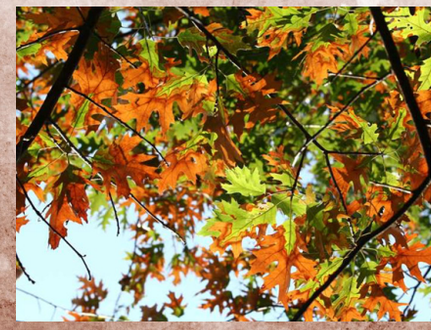
SUN	MON	TUE	WED	THU	FRI	SAT
29	30	1	2 Rosh Hashanah	3	4	5
6	7	8	9	10	11 Yom Kipper	12
13	14 Columbus Day Indigenous Peoples' Day	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31 Halloween Diwali	1	2

Native to: North America (California and Southeast) and South America

Utah status: Found in Washington County on chitalpa trees.

Top: Bacterial leaf scorch on oak.
Missouri Botanical Garden

Bottom: Oak tree affected by bacterial leaf scorch.
Gail E. Ruhl



Red Imported Fire Ant (*Solenopsis invicta*)

Red imported fire ant (RIFA) can cause agricultural, ecological, economical, nuisance, and public health problems. Stings can result in injury or death of livestock, wildlife, domestic animals, and, in rare instances, humans. If their nest is disturbed, the ants aggressively swarm and sting repeatedly. Adult workers are reddish to dark brown and up to 1/4 inch in size. Ants form wings to disperse and mate. Winged males are small and black, while winged females are large (3/8 inch) and red. RIFA spreads locally by flying and longer distances by movement of infested materials, such as baled hay and straw, nursery stock, potting media, grass sod, soil, honeybee hives, trains, vehicles, and equipment.

November

SUN	MON	TUE	WED	THU	FRI	SAT
27	28	29	30	31 Halloween	1	2
3 Daylight Saving Time Ends	4	5 Election Day	6	7	8	9
10	11 Veteran's Day	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28 Thanksgiving Day	29	30

Native to: South America

Utah status: Not known to occur. Parts of southern Utah are suitable for establishment.

Top: Winged red imported fire ant female and workers.
Johnny N. Dell, Bugwood.org

Bottom: Winged male red imported fire ant surrounded by workers.
Alex Wild

Velvet Longhorned Beetle (*Trichoferus campestris*)

Velvet longhorned beetle is an invasive wood-boring pest that infests fruit, forest, and ornamental trees, as well as green and dry wood, such as timber and lumber. It is not a tree-killing borer but causes reduced fruit yield, tree longevity, and lumber marketability. Adults have an elongated body up to ¾ inch long. They have long parallel wing covers that vary in color from dark brown to brownish-orange. The name "velvet" comes from the fine hairs that form light-colored patches along the body and wing covers. The yellow to white larvae are about 1 inch long, with a brown head and short, poorly developed legs. Adults fly short distances for local spread, and larvae are moved longer distances through transported firewood cut from infested trees and nursery stock.

December

SUN	MON	TUE	WED	THU	FRI	SAT
1	2	3	4	5	6	7 Hanukkah
8	9	10	11	12	13	14
15	16	17	18	19	20	21 Winter Begins
22	23	24 Christmas Eve	25 Christmas Day Hanukkah	26 Kwanzaa	27	28
29	30	31 New Year's Eve	1 New Year's Day	2	3	4

Native to: Asia and Russia

Utah status: Detected in 2010 and established in parts of Davis, Salt Lake, Tooele, and Utah counties.

Top: Velvet longhorned beetle adult.
Boris Loboda

Bottom: Velvet longhorned beetle exit holes are round and about 3/8 inch in diameter.
UDAF entomology staff

Extension
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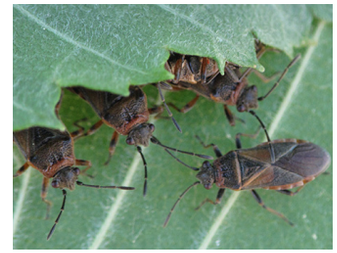
Top 5 Newly Established Invasives in Utah

Invasive species are organisms that are not native to the local area and harm the economy, environment, or human health. The term "invasive" is reserved for the most aggressive and destructive non-native species. Unfortunately, invasive species are a leading and growing threat to our nation's agricultural and natural resources, with an estimated cost exceeding $138 billion per year.

Brown Marmorated Stink Bug
(*Halyomorpha halys*)
Susan Ellis, Bugwood.org



Elm Seed Bug
(*Arocatus melanocephalus*)
Ryan Davis, Utah State University Extension

Walnut Twig Beetle
(*Pityophthorus juglandis*)
Kathy Keatley Garcey, University of California, Davis

Top 5 Invasives to Watch for in Utah

Japanese Beetle
(*Popillia japonica*)
Whiteney Cranshaw, Bugwood.org

Spotted Lanternfly
(*Lycorma delicatula*)
Eric Day, Virginia Polytech Institute

Balsam Woolly Adelgid
(*Adelges piceae*)
Giles San Martin, Wikimedia Commons

Plum Curculio
(*Conotrachelus nenuphar*)
Peter Jentsch, Cornell University

Asian Longhorned Beetle
(*Anoplophora glabripennis*)
Gillian Allard, Food and Agriculture Organization of the United Nations

Spongy Moth
(*Lymantria dispar dispar*)
John H. Ghent, Bugwood.org

Emerald Ash Borer
(*Agrilus planipennis*)
Debbie Miller, USDA Forest Service

Vicki Speck is the very talented artist that produced the illustrations for this calendar. She was born and raised in Santiago, Chile, and moved to Utah in 2018. She enjoys spending time hiking and exploring new places with her husband and puppy. When she is not enjoying the outdoors, she is painting in her studio and designing different products like apparel, accessories, and printable goods.