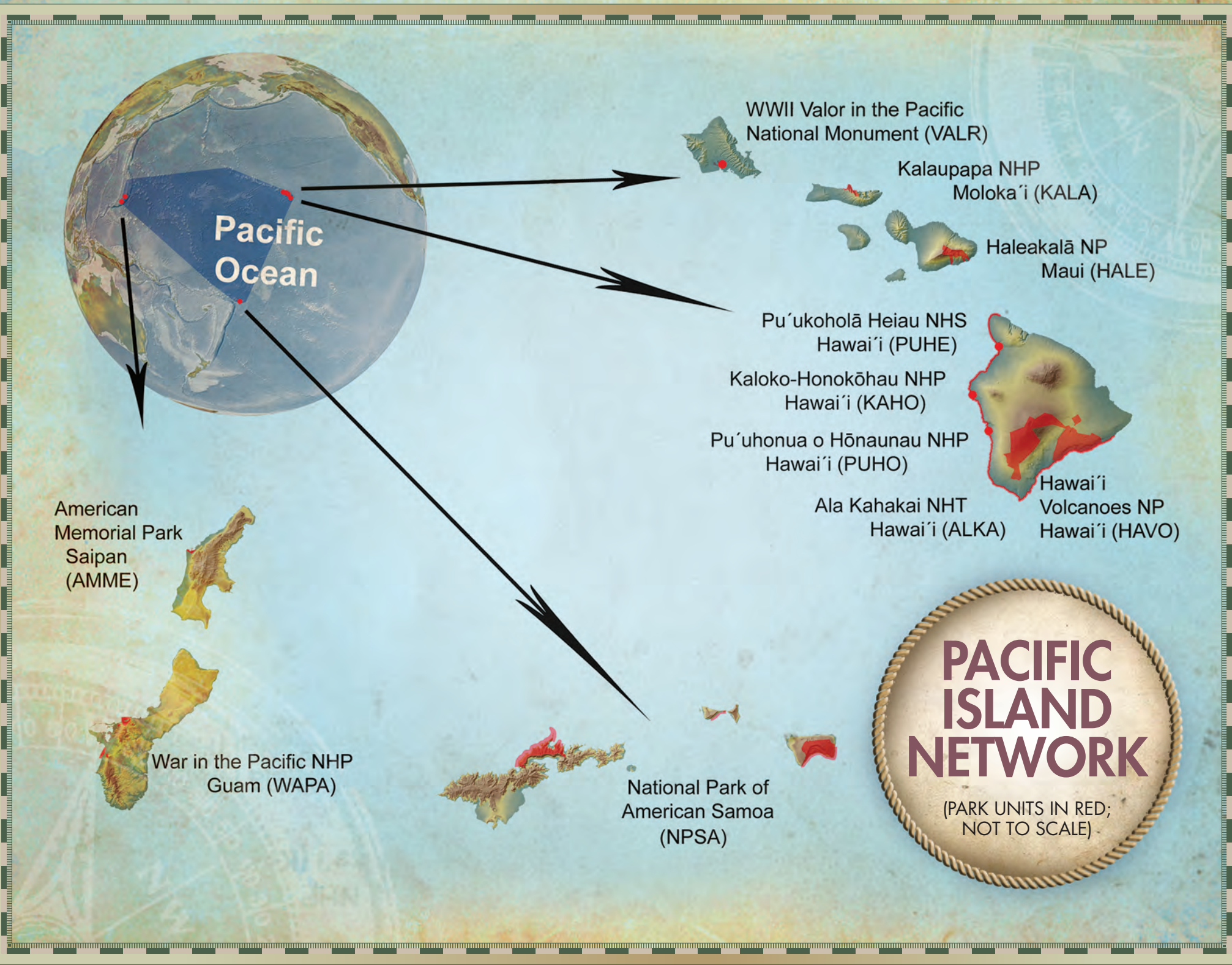
INVASIVE SPECIES

THREATS TO KALAUPAPA NATIONAL HISTORICAL PARK

National Park Service
U.S. Department of the Interior

MoMISC

2013 CALENDAR


Pacific Ocean
WWII Valor in the Pacific National Monument (VALR)
Kalaupapa NHP Moloka´i (KALA)
Haleakalā NP Maui (HALE)
Pu´ukoholā Heiau NHS Hawai´i (PUHE)
Kaloko-Honokōhau NHP Hawai´i (KAHO)
Pu´uhonua o Hōnaunau NHP Hawai´i (PUHO)
Ala Kahakai NHT Hawai´i (ALKA)
Hawai´i Volcanoes NP Hawai´i (HAVO)
American Memorial Park Saipan (AMME)
War in the Pacific NHP Guam (WAPA)
National Park of American Samoa (NPSA)
PACIFIC ISLAND NETWORK
(PARK UNITS IN RED; NOT TO SCALE)

Invasive Plant Species:
a Threat to Our Islands

ISLAND ECOSYSTEMS are vulnerable to invasion because of the unique species and habitats that evolved in isolation from the rest of the world. Most nonnative plants introduced by people pose no significant threat to native ecosystems, but some nonnative species can establish, spread and permanently alter our coastlines and forests. Plants that become established and spread into native habitats are called invasive.

Invasive plants may reduce native plant diversity and abundance, alter vegetation structure, and can lead to significant economic and cultural costs. In Hawaii alone, invasive species are estimated to have cost $500 million through lost agriculture and property damage. Once established, invasive plants are difficult to control, making prevention and early detection our best hope for protecting our parks.

This calendar features 12 invasive plants. These species are likely to severely impact the native plant communities if they become established. **You can help stop the spread of invasive species by:**

- **being vigilant with new and unusual plants that you do not recognize, start by learning these 12 invaders**
- **cleaning boots, gear and vehicles to stop the spread of invasive seeds, especially in native plant communities**
- **planting and restoring native species and habitats**
- **properly disposing of compost, agricultural, and garden waste that may contain nonnative seeds**
- **never planting or transporting invasive species**

Please use the information in this calendar to help spread the word on the problems invasive species present to the park. An engaged, informed and alert park staff and public remains one of the best ways to detect and prevent the spread of invasive species, and protect our island home.

The Pacific Island Network Inventory and Monitoring Program assists national parks in locating nonnative plants as part of its mission to monitor selected park resources.

TO REPORT AN INVASIVE SPECIES:

Within Kalaupapa National Historical Park:

Paul Hosten, Terrestrial Ecologist
Paul_Hosten@nps.gov
tel. 808-567-6802 x1501

Outside of the park on Moloka'i:

Moloka'i Invasive Species Committee
tel. 808-553-5236
Online Pest Reporting:
www.reportapest.org

Pacific Island Network
Inventory & Monitoring Program

PO Box 52
Hawaii National Park, HI 96718
(808) 985-6185 phone
(808) 985-6111 fax
http://science.nature.nps.gov/im/units/pacn/

FOR MORE INFORMATION ON INVASIVE SPECIES:

Hawaii Ecosystems at Risk Project
www.hear.org

Hawaii-Pacific Weed Risk Assessment
www.hpwra.org

Hawaii Invasive Species Council
www.hawaiiinvasivespecies.org

Hawaii Early Detection Network
www.reportapest.org

Front Cover Photo:
Forest & Kim Starr (UH)
Mexican creeper (*Antigonon leptopus*)

Back Cover Photo:
Sandy Austin
New Zealand flax (*Phormium tenax*)

bo tree

Ficus religiosa

Be on the lookout for this INVASIVE SPECIES

PHOTO: Jason Unbound

◄ Leaves have an elongated tip.

PHOTO: Ahmad Fuad Morad

▲ Small fig-like fruits.

BO TREE (BODHI TREE, SACRED FIG) is a fig tree capable of growing to 90' with distinctive heart-shaped leaves with elongated tips that grow in an alternate arrangement along the branches. It can grow as a strangling climber or single trunk tree depending on conditions. It forms small figs that grow in pairs.

PHOTO: Drew Avery

bo tree

Ficus religiosa

SPECIES TYPE & ORIGIN: Bo tree is a tree in the fig genus. It is native to India and Southeast Asia.

IMPACTS: The bo tree, like other fig trees, is capable of growing in other trees, eventually splitting their host trees from within. It is sometimes called the "tree splitter" for this reason. It can cause substantial damage to structures, establishing with very little substrate and posing a major threat to Hawaiian cultural and archaeological sites, including heiau and fish ponds. Individual trees can live for hundreds of years.

LOCAL DISTRIBUTION & HABITAT: The bo tree has been introduced throughout Hawaii. On Moloka'i, immature trees were found at the USDA Plant Materials Center and the Kaunakakai Waste Water Treatment Facility indicating that nearby intentional plantings were reproducing. It can grow in dry areas where it will have a single trunk or in wet areas where it will form aerial roots like the banyan tree.

DISPERSAL MECHANISM: The bo tree, like all fig trees, needs a specific wasp to be present for pollination. Its wasp pollinator has been found on Moloka'i. Trees may produce fruits that can be bird and animal (most likely deer and pig) dispersed. Bo trees can also reproduce vegetatively and via cuttings.

CULTIVATION: The bo tree is said to be the tree under which Buddha was born and reached enlightenment. For this reason it is sometimes planted near temples and as a specimen tree. It has been classified as "High Risk" by the Hawaii-Pacific Weed Risk Assessment and should not be cultivated. The Moloka'i Invasive Species Committee is controlling all known reproducing trees.

HOW TO HELP: Report potential sightings within Kalaupapa National Historical Park:

Paul Hosten Paul_Hosten@nps.gov
tel. 808-567-6802 x1501

January 2013

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1 *New Year's Day*	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21 *Martin Luther King, Jr. Day*	22	23	24	25	26
27	28	29	30	31		

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Mexican creeper

Antigonon leptopus

Be on the lookout for this INVASIVE SPECIES

MEXICAN CREEPER is a climbing herbaceous or sometimes woody vine with heart-shaped to triangular leaves and clusters of pink bell-shaped flowers (.5" long). Vines can grow to 25'.

PHOTO: Dan Clark, USDI National Park Service, Bugwood.org

PHOTO: Forest & Kim Starr (UH)

◀ Clusters of bell-shaped pink flowers.

PHOTO: John Tann

▲ Heart-shaped to triangular leaves (1-3" long).

Mexican creeper

Antigonon leptopus

SPECIES TYPE & ORIGIN: Mexican creeper is a perennial herbaceous or sometimes woody vine in the buckwheat family. It is native to Mexico.

IMPACTS: Mexican creeper is a smothering vine that can overgrow and eventually kill plants, shrubs, and small trees. It can also overgrow structures reducing access and causing damage. Leaves become dry during the dry season creating a fire hazard. It is recognized as invasive in Guam, Marquesas, Palau, Papua New Guinea, Australia, Tahiti, and the Virgin Islands.

LOCAL DISTRIBUTION & HABITAT: Mexican creeper has been introduced throughout the tropics and subtropics. It has become established on all Hawaiian Islands. On Moloka'i, it is common within the settlement of Kalaupapa and occurs in Kakahai'a and 'Ualapu'e. It thrives in dry to moist disturbed lowland areas and coral-based soils typically below 100'.

DISPERSAL MECHANISM: Mexican creeper primarily reproduces vegetatively through small pieces of underground tubers and small buried stem pieces. Seed production is rare but prolific when it occurs. Seeds are dispersed by pigs and birds and remain viable in the ground for a long time. Seeds can float on water.

CULTIVATION: Mexican creeper often escapes cultivation. The Hawaii Department of Land and Natural Resources considers it one of Hawaii's most invasive horticultural plants. The Hawaii Chapter of the American Society of Landscape Architects categorizes Mexican creeper as a "do not plant" species. It has been classified as "High Risk" by the Hawaii-Pacific Weed Risk Assessment and should not be cultivated.

HOW TO HELP: Report potential sightings within Kalaupapa National Historical Park:

Paul Hosten Paul_Hosten@nps.gov
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February 2013

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1	2 *Groundhog Day*
3	4	5	6	7	8	9
10	11	12	13 *Ash Wednesday*	14 *Valentine's Day*	15	16
17	18 *President's Day*	19	20	21	22	23
24	25	26	27	28		

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manuka

Leptospermum scoparium

Be on the lookout for this INVASIVE SPECIES

► Plants can have white to pink-colored flowers.

PHOTO: Brian Gratwicke

PHOTO: Forest & Kim Starr (UH)

▲ Plants produce an astringent "tea tree oil" smell.

MANUKA (NEW ZEALAND TEA TREE) is a compact shrub or small tree that grows to 20' with many erect thin branches and shredding bark. Lance-like narrow leaves (.5-1") are alternate in growth arrangement. Oil glands beneath the leaves produce an astringent "tea tree oil" smell. Small white to pink flowers (.5") grow at the end of small stems perpendicular to the main branches. It produces numerous tiny brown seed pods (.2").

PHOTO: Forest & Kim Starr (UH)

manuka

Leptospermum scoparium

SPECIES TYPE & ORIGIN: Manuka is a shrub native to New Zealand and Tasmania.

IMPACTS: Manuka produces chemicals that can inhibit the growth of other plants, resulting in thickets that can crowd out all other vegetation. It can invade intact rain forest.

LOCAL DISTRIBUTION & HABITAT: Manuka has been introduced throughout Hawaii as a garden plant and forestry planting. It has naturalized in moist forests and rain forests on O'ahu, Kaua'i, Lāna'i. On Moloka'i, it can be found in the Kala'e area and in the east end mountains.

DISPERSAL MECHANISM: Manuka produces prolific amounts of seeds that are wind dispersed and fire resistant.

CULTIVATION: Manuka is used in the production of manuka honey. It is sold as an ornamental and used in flower arrangements in Hawaii. The Hawaii Department of Land and Natural Resources considers manuka one of Hawaii's most invasive horticultural plants. The Hawaii Chapter of the American Society of Landscape Architects categorizes manuka as a "do not plant" species. It has been classified as "High Risk" by the Hawaii-Pacific Weed Risk Assessment and should not be cultivated.

HOW TO HELP: Report potential sightings within Kalaupapa National Historical Park:

Paul Hosten Paul_Hosten@nps.gov
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March 2013

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1	2
3	4	5	6	7	8	9
10 *Daylight Savings Time Begins*	11	12	13	14	15	16
17 *St. Patrick's Day*	18	19	20 *Spring Begins*	21	22	23
24 *Palm Sunday*	25	26	27	28	29 *Good Friday*	30
31 *Easter*						

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golden crownbeard

Verbesina encelioides

Be on the lookout for this
INVASIVE SPECIES

PHOTO: Jerry Oldenettel

◄ Flowers look like small sunflowers.

PHOTO: Forest & Kim Starr (UH)

▲ Triangular lower leaves and small sunflower seeds.

GOLDEN CROWNBEARD is a sunflower-like plant that grows 1-5'+ tall. It has two types of leaves. The lower leaves are triangular and grow in an opposite arrangement along the stem and the upper leaves are lance-shaped and grow in an alternate arrangement. Its sunflower-like flowers are yellow and 1-2" wide.

PHOTO: Forest & Kim Starr (UH)

golden crownbeard

Verbesina encelioides

SPECIES TYPE & ORIGIN: Golden crownbeard is an annual herb native to North and South America, most prolifically in the deserts of Mexico, Texas, and Arizona.

IMPACTS: Golden crownbeard can form dense stands and produces chemicals that can exclude all other plants, especially in coastal areas where it replaces naupaka (*Scaveola taccada*) and pōhuehue (*Ipomoea pes-caprae*). On Midway Island and Kure Atoll, it can grow so densely that it is considered the #1 plant preventing endangered native bird nesting. It is poisonous to cattle and sheep and its introduction can degrade pasture lands.

LOCAL DISTRIBUTION & HABITAT: Golden crownbeard has become established on all Hawaiian Islands, except Ni'ihau. On Moloka'i, is has been found on the west end and in Ho'olehua, and occurs in isolated populations within the Kalaupapa National Historic Park. It thrives in coastal, dry, and disturbed areas from sea level to 9,000'.

DISPERSAL MECHANISM: Golden crownbeard seeds are wind dispersed and seedlings often grow around the maternal plant. Each individual flower can produce 300-350 seeds over its lifetime. Seeds may be moved long distances on infested equipment.

CULTIVATION: Golden crownbeard has been classified as "High Risk" by the Hawaii-Pacific Weed Risk Assessment and should not be cultivated.

HOW TO HELP: Report potential sightings within Kalaupapa National Historical Park:

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April 2013

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22 *Earth Day*	23	24	25	26 *Arbor Day*	27
28	29	30				

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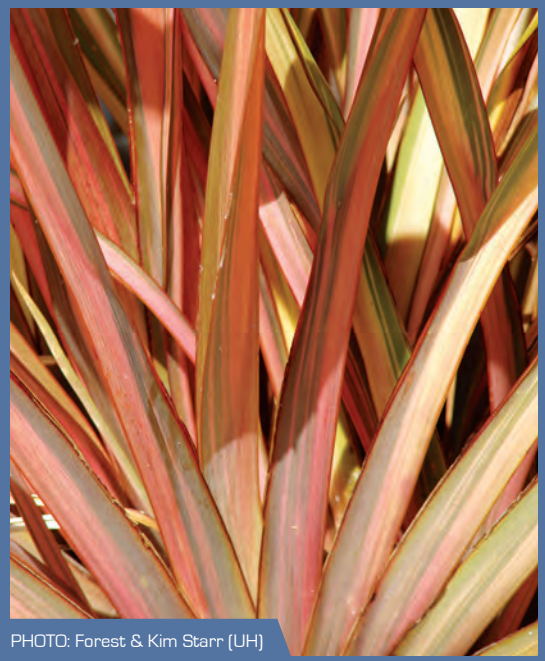
New Zealand flax

Phormium tenax

Be on the lookout for this
INVASIVE SPECIES



► Leaves have an orange-red midvein.

PHOTO: Forest & Kim Starr (UH)

PHOTO: Forest & Kim Starr (UH)

▲ Small red and orange-red flowers form on a stalk.

NEW ZEALAND FLAX has smooth, leathery, sword-shaped leaves (3-10' long by 2-5" wide) that form 2 rows of fan-like clusters and have a single orange-red midvein. The base of the leaf is keeled (v-shaped) and orange, while the edges are red. Plants have orange-yellow rhizomatous roots and small red and orange flowers that form on a stalk.

PHOTO: Sandy Austin

New Zealand flax

Phormium tenax

SPECIES TYPE & ORIGIN: New Zealand flax is a shrub native to New Zealand.

IMPACTS: New Zealand flax can form dense stands that crowd out other plants. Large plants can block sunlight from reaching native plants. It thrives in wet montane conditions, threatening native Hawaiian ʻōhiʻa-uluhe wet forests.

LOCAL DISTRIBUTION & HABITAT: New Zealand flax was introduced to Hawaii in the late 1800s. On Molokaʻi, it can be found in the Kalaʻe area and in the east end mountains. It can thrive in coastal areas, gullies, waterways, and wet forests.

DISPERSAL MECHANISM: New Zealand flax can spread via wind-dispersed winged seeds and clonally through new sprouts along root-like rhizomes, even in plants that have been uprooted. Each plant can produce thousands of wind-dispersed seeds every year.

CULTIVATION: New Zealand flax is planted in gardens as an ornamental, used in fiber production and as basket weaving material. The New Zealand Maori used this plant to make clothing, mats, baskets, and cord. The Hawaii Chapter of the American Society of Landscape Architects categorizes New Zealand flax as a "do not plant" species. It has been classified as "High Risk" by the Hawaii-Pacific Weed Risk Assessment and should not be cultivated.

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May 2013

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1 *May Day*	2	3	4
5	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	

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tumbleweed

Salsola tragus

Be on the lookout for this INVASIVE SPECIES

► Small inconspicuous flowers.

PHOTO: Forest & Kim Starr (UH)

PHOTO: Pablo Alberto Salguero Quiles

▲ Mature plants will break off at base to become "tumblers."

TUMBLEWEED (PRICKLY RUSSIAN THISTLE) is a small bush with intertwined branches that forms a round clump at maturity that can break away at ground level to become a tumbleweed (1.5-6' across). Young plants have leaves that are highly divided and resemble pine needles (1" long). As the plant matures, the leaves flatten and become sharp points. The small flowers (~.1") are 4-5 parted, lack a true flower petal (the features that look like petals are actually sepals), and are accompanied by spiny bracts.

PHOTO: Forest & Kim Starr (UH)

tumbleweed

Salsola tragus

SPECIES TYPE & ORIGIN: Tumbleweed is a shrub native to Africa, Europe, and temperate to tropical Asia.

IMPACTS: Tumbleweed can degrade agricultural and ranch lands by making harvest difficult and reducing forage area for cattle. Plants become entangled in fences and other structures, preventing access and creating fire hazards (as a dry, vegetative source of fuel). Large tumbleweeds can impede traffic and when tumbling across roads, surprise drivers and cause accidents. Plants can invade dry native forests where they catch in vegetation and compete with native plants.

LOCAL DISTRIBUTION & HABITAT: Tumbleweed has been introduced throughout the world. In Hawaii, it has been observed in the Waimea region on the Big Island, ʻŌmaʻopio area on Maui, on Kahoʻolawe, abandoned sugarcane fields on Oʻahu, and the dump and quarry on Molokaʻi. It is often found along roadsides, trails, abandoned fields, and on over-grazed ranges and pastures, but can thrive on sandy beaches and in dry forests.

DISPERSAL MECHANISM: Tumbleweed seeds are dispersed over great distances by the tumbling motion of the mature plant. A large plant can produce 100,000 seeds over its lifetime.

CULTIVATION: Tumbleweed is a Hawaii state noxious weed and is illegal to plant or transport across the state.

HOW TO HELP: Report potential sightings within Kalaupapa National Historical Park:

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tel. 808-567-6802 x1501

June 2013

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1
2	3	4	5	6	7	8
9	10	11	12	13	14 *Flag Day*	15
16 *Father's Day*	17	18	19	20	21 *Summer Begins*	22
23	24	25	26	27	28	29
30						

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creeping buttercup

Ranunculus repens

Be on the lookout for this INVASIVE SPECIES

PHOTO: Matt Lavin

◄ Small yellow flowers have a "cupped" shape.

PHOTO: Matt Lavin

▲ Leaves have 3 deep indentations and numerous smaller indentations. Leaves can be hairy.

CREEPING BUTTERCUP is a low-growing plant (up to 1') with small yellow flowers that have 5 (sometimes 10) petals. Plants have both short swollen stems and creeping stolons (horizontal stems or runners that take root at points to form new plants). Leaves are almost round, with 3 deep indentions, numerous smaller indentions, and light-colored patches. The leaves resemble geranium leaves. Leaves and stems can be hairy.

PHOTO: Ohio State Weed Lab Archive, The Ohio State University, Bugwood.org

creeping buttercup

Ranunculus repens

SPECIES TYPE & ORIGIN: Creeping buttercup is a perennial herb native to Europe.

IMPACTS: Creeping buttercup can grow rapidly. One plant can spread over a 40 ft^2 area in a year. Dense stands can eliminate native vegetation through both direct competition and by depleting soil potassium. Fresh buttercup is toxic to livestock, and can cause salivation, skin irritation, blisters, abdominal distress, inflammation, and diarrhea.

LOCAL DISTRIBUTION & HABITAT: In Hawaii, creeping buttercup has become established on the Big Island. It thrives in wet areas, but can also become established on beaches, fields, pastures, and along streams.

DISPERSAL MECHANISM: Creeping buttercup reproduces by seed, which are spread by horses, cattle, and birds. Seeds can remain viable for 20-80 years. Small pieces of the roots or stolons can form new plants. Contaminated garden waste spreads plants long distances.

CULTIVATION: Creeping buttercup was originally planted ornamentally, but is now considered a weed.

HOW TO HELP: Report potential sightings within Kalaupapa National Historical Park:

Paul Hosten Paul_Hosten@nps.gov
tel. 808-567-6802 x1501

July 2013

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	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	25	26	27
28	29	30	31			

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Mexican poppy

Argemone mexicana

Be on the lookout for this
INVASIVE SPECIES

PHOTO: Forest & Kim Starr (UH)

◀ Showy yellow flower and prickly leaves with white veins.

MEXICAN POPPY (MEXICAN PRICKLY POPPY) is a prickly plant with showy yellow flowers (1-2" wide) and blue-green thistle-like leaves with prominent white veins. Leaves are covered by a waxy residue that can rub off. Seeds are formed in a prickly spherical fruit. All parts of plant produce a yellow milky sap.

PHOTO: Forest & Kim Starr (UH)

▲ Prickly spherical fruit.

PHOTO: Forest & Kim Starr (UH)

Mexican poppy

Argemone mexicana

SPECIES TYPE & ORIGIN: Mexican poppy is a perennial herb in the poppy family. It is native to the tropical Americas.

IMPACTS: All parts of the Mexican poppy are poisonous. It is an agricultural pest in pastures and fields where it can reduce grazing area, compete with more desirable species, and make harvest painful due to skin irritants. It produces chemicals that can inhibit the growth of other plants. Mexican poppy might be able to crossbreed with the Hawaiian native poppy, potentially breeding the native pua kala out of existence.

LOCAL DISTRIBUTION & HABITAT: In Hawaii, Mexican poppy has naturalized in agricultural and waste areas on Kaua'i, O'ahu, and Maui. On Moloka'i, it is restricted to the Kalaupapa peninsula within the settlement and landfill sites.

DISPERSAL MECHANISM: Mexican poppy reproduces via small seeds. Seeds are moved long distances by infested mud adhered to livestock, boots, agricultural equipment, and vehicles.

CULTIVATION: Mexican poppy has been classified as "High Risk" by the Hawaii-Pacific Weed Risk Assessment and should not be cultivated.

HOW TO HELP: Report potential sightings within Kalaupapa National Historical Park:

Paul Hosten Paul_Hosten@nps.gov
tel. 808-567-6802 x1501

August 2013

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				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

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trumpet creeper

Campsis radicans

Be on the lookout for this
INVASIVE SPECIES

PHOTO: Shihmei Barger

► Orange to red trumpet-shaped flowers.

PHOTO: John Cardina, The Ohio State University, Bugwood.org

▲ Toothed leaflets.

TRUMPET CREEPER (COW ITCH VETCH) is a woody vine that uses aerial roots to climb plants and structures (40'). It produces clusters of orange to red trumpet-shaped flowers (1-4" long). Its leaves are 4-12" long, composed of smaller toothed leaves with a prominent point. The stalk is covered with u-shaped stem scars and root-like aerial stems. Seeds are produced in long narrow capsules containing many winged seeds.

PHOTO: Anneli Salo

trumpet creeper

Campsis radicans

SPECIES TYPE & ORIGIN: Trumpet creeper is a woody vine native to the eastern United States.

IMPACTS: Trumpet creeper is capable of smothering other plants, preventing sunlight from reaching the vegetation it covers. The leaves produce a skin irritant, which can cause burning and itching in some people. This vine is rated one of the 10 worst agricultural weeds of the Mississippi Delta region. Plants can be difficult to control with standard herbicides.

LOCAL DISTRIBUTION & HABITAT: Trumpet creeper has been introduced throughout the world. In Hawaii, Moloka'i is one of the few places it has been observed.

DISPERSAL MECHANISM: Trumpet creeper produces winged seeds that are carried in the wind. Vines have deep root systems that can produce new plants through root suckering. Plants can reproduce from pieces of root or stem as small as .8" long.

CULTIVATION: Trumpet creeper has been introduced to gardens throughout the world. Due to its invasive traits in Hawaii, it should not be cultivated.

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Paul Hosten Paul_Hosten@nps.gov
tel. 808-567-6802 x1501

September 2013

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2 *Labor Day*	3	4	5	6	7
8 *Grandparent's Day*	9	10	11	12	13	14
15	16	17	18	19	20	21
22 *Fall Begins*	23	24	25	26	27	28
29	30					

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Himalayan ginger

Hedychium gardnerianum

Be on the lookout for this INVASIVE SPECIES

► Strongly fragrant yellow flowers with elongated red stamen.

PHOTO: Jeff Kubina

PHOTO: Forest & Kim Starr (UH)

▲ Bright red fruits and seeds.

HIMALAYAN GINGER (KĀHILI GINGER) is a showy ginger plant that grows in wet habitats from thick rhizomes to a height of 3-7'. It has lance-shaped leaves, 8-12" long by 4-6" wide, arranged in 2 rows along the length of the stem. Flower heads grow in stalks (6-12") with numerous strongly fragrant yellow flowers with elongated red stamens. Flowers are produced midsummer through fall. Fruits are bright red and orange within.

PHOTO: John M. Randall, The Nature Conservancy, Bugwood.org

Himalayan ginger

Hedychium gardnerianum

SPECIES TYPE & ORIGIN: Himalayan ginger is a perennial herb in the ginger family. It is native to the Himalayan Mountain regions of India, Nepal, and Bhutan.

IMPACTS: Himalayan ginger can rapidly grow into dense thickets, potentially displacing all other undergrowth in the rain forest and preventing the regeneration of all plants including trees and ferns. Once established, it can be difficult to control often requiring many visits over years. Removal can produce large muddy holes in the ground that look like pig wallows. This ginger has invaded and endangers the biodiversity of some of the most pristine native rain forests in Hawaii, such as Kīpahulu Valley on Maui, Kōke'e on Kaua'i, and Kīlauea on the Big Island.

LOCAL DISTRIBUTION & HABITAT: Himalayan ginger has naturalized throughout Hawaii. On Moloka'i, naturalized plants can be found in the Kala'e area. Himalayan gingers thrive in higher elevation areas and in rain forests.

DISPERSAL MECHANISM: Himalayan ginger is a common garden planting in Hawaii. Fruit-eating birds spread the seeds of Himalayan ginger from the garden into the forest. Once established, it can spread vegetatively via densely growing rhizomes that sprout new stems. Even small root fragments can regrow.

CULTIVATION: The Hawaii Department of Land and Natural Resources considers Himalayan ginger one of Hawaii's most invasive horticultural plants. It has been classified as "High Risk" by the Hawaii-Pacific Weed Risk Assessment. The Moloka'i Invasive Species Committee is working with the community to discontinue plantings.

HOW TO HELP: Report potential sightings within Kalaupapa National Historical Park:

Paul Hosten Paul_Hosten@nps.gov
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October 2013

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1	2	3	4	5
6	7	8	9	10	11	12
13	14 *Columbus Day*	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31 *Halloween*		

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wood rose

Merremia tuberosa

Be on the lookout for this
INVASIVE SPECIES

PHOTO: Mauricio Mercadante

► Brown seed pods that look like a "wood rose."

PHOTO: Forest & Kim Starr (UH)

▲ Yellow, tubular, morning-glory-like flowers.

WOOD ROSE (HAWAIIAN WOOD ROSE) is a woody climbing vine with yellow, tubular, morning glory-like flowers and distinctive brown seed pods that look like wooden roses. The pods contain 4 large black seeds. It has deeply lobed leaves (up to 6.3" across).

PHOTO: Forest & Kim Starr (UH)

wood rose

Merremia tuberosa

SPECIES TYPE & ORIGIN: Wood rose is a woody vine native to the tropical Americas.

IMPACTS: Wood rose is fast-growing and has seeds that can remain viable in the soil for many years. This vine can overgrow and smother trees and shade out other plants. All parts of the plant are toxic to humans and animals.

LOCAL DISTRIBUTION & HABITAT: Wood rose was found naturalized in wilderness areas in Hawaii as early as 1932. On Moloka'i, it is spreading in areas adjacent to Kamakou where it threatens native forests. Plants can grow in a variety of habitats from sea level to almost 5,000'.

DISPERSAL MECHANISM: Wood rose produces an abundant amount of seeds in the winter, which can readily germinate. Small pieces of root fragments can reproduce. Seed pods can float short distances in fresh and salt water. Seeds and plants are moved long distances in infested garden waste and improperly disposed seed pods from floral arrangements.

CULTIVATION: Wood rose is planted as an ornamental and the dried seed pods are used in floral arrangements. The Hawaii Chapter of the American Society of Landscape Architects categorizes wood rose as a "do not plant" species. It has been classified as "High Risk" by the Hawaii-Pacific Weed Risk Assessment and should not be cultivated. The Moloka'i Invasive Species Committee is working to remove wild plants.

HOW TO HELP: Report potential sightings within Kalaupapa National Historical Park:

Paul Hosten Paul_Hosten@nps.gov
tel. 808-567-6802 x1501

November 2013

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1	2
3 *Daylight Saving Time Ends*	4	5	6	7	8	9
10	11 *Veteran's Day*	12	13	14	15	16
17	18	19	20	21 *Thanksgiving*	22	23
24	25	26	27	28 *Hanukkah Begins*	29	30

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fireweed

Senecio madagascariensis

Be on the lookout for this INVASIVE SPECIES

PHOTO: Forest & Kim Starr (UH)

◄ Yellow flowers, about the size of a nickel, have 13 petals and look like small daisies.

FIREWEED is a daisy-like herb that grows up to 2' high. The stem is upright and slender with bright green leaves. The leaves are smooth, very narrow (only .2-.3" wide), have serrated edges, and they reach about 5" long. The small yellow flowers have 13 petals and are about the size of a nickel. The mature flowers turn into white dandelion-like puff-balls.

PHOTO: Forest & Kim Starr (UH)

PHOTO: Forest & Kim Starr (UH)

▲ Seedling.

fireweed

Senecio madagascariensis

December 2013

SPECIES TYPE & ORIGIN: Fireweed is a short-lived herb (can be annual, biennial, or perennial). It is native to Madagascar and South Africa.

IMPACTS: Fireweed can invade pastures, disturbed areas, and roadsides. It is very toxic to cattle, horses and other livestock. When ingested, it can cause illness, slow overall growth, liver-malfunction and even death in severe cases. In Australia, fireweed costs over $2 million per year in losses and control.

LOCAL DISTRIBUTION & HABITAT: In Hawaii, fireweed was first discovered on the Big Island in the 1900s where it is now too widespread for control. This pest can also be found on Maui and Lāna'i and on the east end of Moloka'i. It thrives in disturbed grasslands, over-grazed pastures, and roadsides. Fireweed grows on a wide range of moist to wet soils.

DISPERSAL MECHANISM: Each fireweed plant can produce up to 30,000 seeds per year that are easily spread by wind, hiking boots, vehicles, and animals. Fireweed is also spread unintentionally as a contaminant seed in hydro-mulch and on equipment.

CULTIVATION: Fireweed is a Hawaii state noxious weed and is illegal to plant or transport across the state. The Hawaii Chapter of the American Society of Landscape Architects categorizes fireweed as a "do not plant" species. It has been classified as "High Risk" by the Hawaii-Pacific Weed Risk Assessment.

HOW TO HELP: Report potential sightings within Kalaupapa National Historical Park:

Paul Hosten Paul_Hosten@nps.gov
tel. 808-567-6802 x1501

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3	4	5 *Hanukkah*	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21 *Winter Begins*
22	23	24	25 *Christmas*	26	27	28
29	30	31				

U.S. Department of Interior - National Park Service
Pacific Island Network — Inventory & Monitoring Program
http://science.nature.nps.gov/im/units/pacn/

TO REPORT AN INVASIVE SPECIES:

Within Kalaupapa National Historical Park:

Paul Hosten, Terrestrial Ecologist
Paul_Hosten@nps.gov
tel. 808-567-6802 x1501

Outside of the park on Moloka'i:

Moloka'i Invasive Species Committee
tel. 808-553-5236
Online Pest Reporting:
www.reportapest.org

FOR MORE INFORMATION ON INVASIVE SPECIES:

Hawaii Ecosystems at Risk Project
www.hear.org

Hawaii-Pacific Weed Risk Assessment
www.hpwra.org

Hawaii Invasive Species Council
www.hawaiiinvasivespecies.org

Hawaii Early Detection Network
www.reportapest.org

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Calendar Design: Hagadone Printing

▸ BO TREE

▸ MEXICAN CREEPER

▸ MANUKA

▸ GOLDEN CROWNBEARD

▸ NEW ZEALAND FLAX

▸ TUMBLEWEED

▸ CREEPING BUTTERCUP

▸ MEXICAN POPPY

▸ TRUMPET CREEPER

▸ HIMALAYAN GINGER

▸ WOOD ROSE

▸ FIREWEED