



W. M. KECK OBSERVATORY

THE MAUNAKEA INVASIVE SPECIES MANAGEMENT PLAN

Please be aware that the Office of Maunakea Management (OMKM) has published standard operating procedures (SOPs) for invasive species management for Maunakea. **WMKO fully supports the procedures, and all vendors, contractors or other service providers who travel to the summit will comply.** The SOPs seek to prevent the introduction of invasive plants and insects via inspection and cleaning procedures for vehicles and goods being transported to the summit.

Advanced planning is necessary for any large items that must be transported or delivered to the summit, as they must be inspected by a qualified inspector. Large is defined by OMKM as greater than 156" in girth and/or greater than 200lbs in weight.

FROM OMKM:

The Mauna Kea Invasive Species Management Plan was approved by the Maunakea Management Board on February 10, 2015. The plan and associated Standard Operating Procedures (SOPs) are available at <http://www.malamamaunakea.org/environment/invasive-species>. Please save this reference, and return to the site as it will be updated regularly. The plan and procedures are a form of adaptive management and will be revised as needed.

These documents identify personal gear, vehicle, and delivery cleaning requirements; inspection requirements (both vehicle operator-inspections and when DLNR requires an approved biologist); and penalties for non-compliance. The plan requirements apply to all those operating under a permit on University managed lands on Mauna Kea: observatories, support staff, contractors, vendors, commercial tour companies, utility providers, etc. Requests for inspection or questions regarding the plan should be directed to: inspections-grp@hawaii.edu or 808-933-0734. An online, web-based system for requesting and scheduling inspections is in preparation and will be available at www.omkm.org/inspections. Please contact us with questions or suggestions.

PDF files of the Maunakea Invasive Species Management Plan and appendices:

Maunakea Invasive Species Management Plan. 2015. PCSU Technical Report v191. Identifies guiding principles, policies, and procedures.

Standard Operating Procedures (SOPs): detail and instructions for all mountain users.

- SOP 01: Cleaning of Vehicles and Personal Belongings. v1.1. (copy attached and included)
- SOP 02: Inspection of Vehicles, Construction Materials, Scientific Equipment, & Supplies. v1.1. (copy attached and included)
 - List of carriers approved for regular deliveries w/o an inspection by a DLNR-approved biologist.
- SOP 03: Cafeteria Food Shipments (Receiving). v1.0.
- SOP 10: Invasive Invertebrate Early Detection Surveys of Facilities. v1.0.
- SOP C: Maunakea Invertebrate Threats, Identification, Collection, & Processing Guide. v1.0.

Additional, pending, SOPs are identified in the Plan and will be made available here as they are completed and approved.

Cleaning of Vehicles and Personal Belongings

Version 1.1, 2/10/2015, Jessica Kirkpatrick & Fritz Klasner

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1. Purpose and Scope

The 2009 Mauna Kea Comprehensive Management Plan (CMP) provides authority for and responsibility of protecting University of Hawai'i (UH) managed lands on Maunakea from resource threats such as invasive species. The purpose of this document is to describe the requirements for inspection and cleaning of vehicles, and identify the standards for personal belongings, for those traveling to or above the Halepōhaku area.

This standard operating procedure (SOP) applies to the passengers, vehicle operators, immediate personal possessions, and any vehicle or; operating under a permit (CDUP, Special Use, or other; including those permits issued to the University of Hawai'i for observatory purposes) on University managed lands on Maunakea (Halepōhaku, the summit access road above Halepōhaku, and the Mauna Kea Science Reserve). Examples include: astronomical observatories, commercial tours, facility maintenance (MKSS, HELCO, water, etc.), filming, scientific research, etc. Personal or private vehicles engaged in personal use (i.e.

sightseeing or general tourists) are not subject to the requirements below and are presently **exempt** from these standards. Hawai'i Administrative Rules may be adopted that address personal vehicle requirements.

All vehicles entering University of Hawai'i (UH) managed lands on Maunakea must be cleaned to ensure they are free of plant, animal, and earthen materials. Guidelines within this SOP include separate requirements for routine or regular use vehicles (i.e. staff, regular deliveries), single or first use vehicles, and vehicles with three or more axles. The load or delivery that a vehicle carries is also subject to inspection requirements. Vehicles with **three** or more axles and any other vehicle used to transport aggregate or biological material regardless of the number of axles (other than food for human consumption) must also use *SOP 02: Inspection of Construction, Scientific Equipment, & Supplies*. Inspection procedures for loads, deliveries, and equipment (including vehicles without license plates) are described in *SOP 02: Inspection of Construction, Scientific Equipment, & Supplies*.

2. Personal Belongings

Personal belongings are to be cleaned and inspected by the operator **prior to arrival at the Saddle Road / Maunakea Access Road junction**. The operator must remove any plant, animal, or earthen material (i.e. weed seeds, ants, soil, mud, food scraps), that might harbor invasive animals or plant seeds. Personal belongings (clothes, shoes, bags, laptops, etc.) and vehicle safety equipment must also be cleaned. Be sure to check pockets, cuffs, sleeves, bottoms of bags, etc. and pay special attention to the soles of shoes and boots. Cleaning **must** be done **prior** to arrival at the Saddle Road / Maunakea Access Road junction.

3. Cleaning (includes undercarriage wash)

All vehicles are to be cleaned and inspected by the operator, **prior to arrival at the Saddle Road / Maunakea Access Road junction**. Vehicles with three or more axles, and equipment (motor vehicles without a highway license plate), must be inspected by a DLNR-approved biologist. The objective is to remove any plant, animal, or earthen material (i.e. weed seeds, ants, soil, mud and food scraps), that might harbor invasive animals or plant seeds. The outside of the vehicle may be pressure washed, air cleaned (with compressed air), or cleaned in a standard car wash, with particular attention to the vehicle's undercarriage, crevices, fender wells, axles, springs, bumpers, wheels, grill, and recessed areas. The inside of the vehicle may be swept, air cleaned, or vacuumed, beneath floor mats and seats, and in all storage and tool compartments. All trash, plastic wrappers, and old food containers must be removed from the vehicle. Cleaning **must** be done **prior** to arrival at the Saddle Road / Maunakea Access Road junction.

On Maunakea, the typical accumulation of road dust and other materials acquired on *paved and maintained* roads is adequately addressed by monthly cleaning as outlined below. Concerns are often identified with vehicles parked in lots (paved and unpaved) with arthropod infestations or vegetation, with off-road or dirt-road use, and vehicles left unattended or not cleaned for extended periods. For more cleaning guidance please visit NOAA Fisheries Service-Preventing Invasive Species: Cleaning Land Vehicles, Equipment, and Personal Gear at

http://www.habitat.noaa.gov/pdf/best_management_practices/Cleaning%20of%20Land%20Vehicles%20and%20Equipment.pdf and [The Bureau of Recclamation's "Inspection and Cleaning Manual for Equipment and Vehicles to Prevent the Spread of Invasive Species"](http://www.usbr.gov/mussels/prevention/docs/EquipmentInspectionandCleaningManual2010.pdf)

<http://www.usbr.gov/mussels/prevention/docs/EquipmentInspectionandCleaningManual2010.pdf>.

3.1 Single or first visit

Any vehicle traveling onto UH managed lands for the first time, or on a single-visit basis, **must be thoroughly cleaned prior to arrival at the Saddle Road / Maunakea Access Road junction** in accordance with the specifications above. If a vehicle leaves the island of Hawai'i and returns to UH managed lands, it will be treated as a first-visit. Rental cars are generally cleaned and inspected with each use and can typically be assumed to have been cleaned for the purposes of this requirement.

3.2 Regular visitor

Vehicles that travel onto UH managed lands on a regular basis **must be externally cleaned at least monthly** as described above **and the interior maintained in a clean condition at all times, prior to arrival at the Saddle Road / Maunakea Access Road junction**. If a vehicle leaves the island of Hawai'i and returns to UH managed lands, it will be treated as a first-visit (see above).

3.3 Vehicles with three or more axles & Equipment

All vehicles with three or more axles and associated equipment **must be thoroughly cleaned prior to arrival at the Saddle Road / Maunakea Access Road junction** in accordance to the specifications above and **inspected by a DLNR-approved biologist** as defined in *SOP 02: Inspection of Construction, Scientific Equipment, & Supplies*. Once cleaned and inspected, if diverted to another job outside of UH managed lands, the vehicle must be re-cleaned and re-inspected prior to returning.

3.4 Vehicles & Equipment that do not leave UH managed lands for a contiguous 30-day period

- ② Equipment (i.e. road grader, trailers, etc.) and vehicles that **do not leave UH managed lands in a contiguous 30-day period shall still be washed monthly**. Washing may occur at Halepōhaku. Routine road dust from the Summit Access Road need not be washed off more frequently than monthly.
- ② All vehicles and equipment that leave UH managed lands and **travel below Halepōhaku** (staff vehicles, delivery trucks or trailers, etc.) in the course of a contiguous 30-day period **must be washed below the Saddle Road / Maunakea Access Road Junction**.
- ② Vehicles that do not leave the Maunakea Science Reserve (EEV, SMA transporter, etc.) do not need to be cleaned unless transported to Halepōhaku or below.
- ② For storing or staging of equipment at Halepōhaku destined for the summit, see *SOP 02: Inspection of Construction, Scientific Equipment, & Supplies*.

4. Inspections

Prior to commencement of *each* journey, the vehicle operator is to visually inspect the vehicle exterior and interior to ensure it is free of contaminants and other debris that might harbor plant, animal, or earthen materials. If the operator observes a build-up of these contaminants, (not including typical dust and other materials accumulated along paved, maintained, public roads), he/she must clean or arrange for the vehicle to be cleaned **prior to arrival at the Saddle Road / Maunakea Access Road junction**.

Inspections by a DLNR-approved biologist are not required for vehicles with 2 axles or less. All vehicles and equipment on UH managed lands may however, be inspected by Maunakea Rangers or other OMKM staff at any time. If plant, animal, or earthen materials are observed, including mud, plant seeds or live

animals (insects), the operator and vehicle may be liable for penalties as described in the following sections. Equipment stored at Halepōhaku or deposited there for staging purposes prior to transport to other locations on UH managed lands, vehicles with three or more axles, equipment, construction, scientific equipment, supplies and deliveries must be inspected by a DLNR-approved biologist. Inspections by a DLNR-approved biologist may be requested on-line at <http://www.malamamaunakea.org/inspections> or by calling 808-933-0734. See the *SOP 02: Inspection of Construction, Scientific Equipment, & Supplies* for details.

5. Reporting, Verification, & Penalties Associated with Non-Compliance

Should invasive species be found on vehicles or equipment within UH managed lands, the operator is to stop, confine the invasive species, and immediately leave UH managed lands and return to a location below the Saddle Road junction where remedial action can be taken.

5.1 No Concerns Identified

No reporting, record keeping, or verification documentation (of cleaning or operator inspections) is required.

5.2 Concerns Identified

On UH managed lands, if users identify foreign (not from Maunakea) plant, insect, or soil material(s) on equipment, vehicles, or deliveries; the operator is to stop, confine the material(s), remove the contaminated item(s) from UH managed lands. If it cannot be contained report any remedial actions taken to OMKM within 12 hours. (This requirement does not extend to typical road dust, etc. that accumulate while on UH managed lands). Containment of insect, soil, or plant material may be completed by placing it in a sealable plastic, glass, or similar container and share with OMKM for identification. Do not brush it off onto the ground, roadside, or into the trash. Reporting may be done by email or telephone. If unsure of remedial actions to take, and or immediate attention is needed (i.e. found a spider nest on vehicle while at Halepōhaku), report to a Maunakea Ranger.

5.3 Verification

OMKM Rangers and staff may conduct vehicle inspections on UH managed lands at any time to verify cleanliness; this includes unattended vehicles. These will be summarized in daily "Ranger Reports" and vehicle owners will be notified if any concerns are identified.

5.4 Penalties

Operators who fail to comply with cleaning and inspection guidelines will be subject to a penalty. Such penalty may be imposed immediately by the Ranger, or after the report has been reviewed by OMKM staff. For example a vehicle discovered with potted plants on the summit on a Tuesday may be directed to leave immediately or directed to leave the following day after the Ranger report is reviewed by OMKM staff. The following penalties are in addition to any applicable State of Hawai'i and other statute, rule, permit, or other requirement.

1st Incidence

Vehicle, operator, and cargo immediately leave UH managed lands. If the driver cannot be located, the vehicle may be towed, at owner's expense. Inspection by a DLNR-approved biologist is required prior to returning to UH managed lands.

2nd Incidence

Same as first incidence. In addition, vehicle, operator, and cargo will not be permitted to return to UH managed lands for 5 calendar days.

3rd Incidence

Same as first incidence. In addition, vehicle, operator, and cargo will be excluded from UH managed lands pending the outcome of a meeting between the entity operating under a permit and OMKM to determine if any additional actions applicable to the permit are warranted. Meetings will be between directors (i.e. Telescope director and OMKM director, substitutions permitted only at OMKM discretion).

5.5 Reporting

Reporting of vehicle cleaning or operator inspections is not required. A brief summary of DLNR-approved inspections and Ranger reports will be included in an Invasive Species Annual Report, prepared by OMKM staff. Users are encouraged to provide suggestions to OMKM, at any time, for potential improvement of invasive species protocols and means of enhancing resource protection and compliance.

If uncertain about the need for cleaning or inspecting vehicles, or about potential avenues for invasive species to 'hitchhike', please ask OMKM.

6. Contact Information

To contact OMKM with questions or concerns regarding this document:

Web: <http://www.omkm.org/inspections/>

Phone: 808-933-0734

Email: inspections-grp@hawaii.edu

7. Revision History Log

| Previous Version # | Version Date | Author | Changes Made | Reason for Change | New Version # |
|--|--------------|--------|---------------------|------------------------------------|---------------|
| 1.0 | May 2012 | FLK | Original Procedures | Consistent with comprehensive plan | 1.1 |
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| Add rows as needed for each change or set of changes associated with each version. | | | | | |

8. Recommended Citation

Kirkpatrick, J. and F.Klasner. 2015. *Standard Operating Procedure 01, Cleaning of Vehicles and Personal Belongings*. 5 pp. In: Vanderwoude, C., F. Klasner, J. Kirkpatrick and S. Kaye. 2015. Maunakea Invasive Species Management Plan. Technical Report No. 191. Pacific Cooperative Studies Unit, University of Hawai'i, Honolulu, Hawai'i.

Inspection of Vehicles, Construction Materials, Scientific Equipment, & Supplies

Version 1.1, 2/10/2015, Jessica Kirkpatrick & Fritz Klasner

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1. Purpose and Scope

This standard operating procedure (SOP) is designed to reduce the risks from the introduction of invasive species to University of Hawai'i (UH) managed lands. As outlined in the 2009 Maunakea Comprehensive Management Plan (CMP), inspection and cleaning of construction and scientific equipment is required prior to traveling beyond the Saddle Road / Maunakea Access Road junction. This SOP refers to loads, deliveries, packages, construction materials, scientific tools and equipment that will be used on Maunakea. This SOP only applies to UH Managed lands on Maunakea, regardless of destination (i.e. it applies to users accessing the Natural Area Reserve through UH Managed lands). Cleaning of vehicles with 2 axles or less are described in *SOP 01: Cleaning of Vehicles and Personal Belongings*. Guidelines within this SOP include separate requirements for small containers and packages, packages or containers stored outdoors or indoors on an unpaved surface including construction materials, aggregate, equipment, supplies, equipment stored or staged at Halepōhaku, and containers or packages stored indoors. These guidelines do not apply to private vehicles that are not engaged in an activity covered by a permit (CDUP, Special Use, etc.).

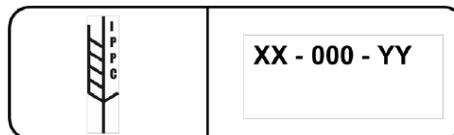
2. Preparation

Those shipping or traveling to University managed lands are **encouraged** to:

- ② Review International Standards for Phytosanitary Measures #23 “Guidelines For Inspection”, prepared by the Secretariat of the International Plant Protection Convention, <https://www.ippc.int/publications/guidelines-inspection>
- ② Self-inspect deliveries at point of origin. This does not alter inspection requirements below.
- ② Maintain clean storage, workshop, and shipping locations that are free of invasive plants, insects and other animals.
- ② Plan accordingly as an inspection by a DLNR-approved biologist may be required. Maintain a location for inspections that is free of plant, animal, or earthen material; regularly treated for invasive species; with suitable cleaning supplies (vacuums, running water, etc.) available to take remedial action when concerns are identified during inspections.

When shipping supplies and equipment to UH managed lands, operators are **required** to:

- ② Use **bark-free wood** as identified in International Standards for Phytosanitary Measures (ISPM) #15 “Regulation of Wood Packaging Material in International Trade”, prepared by the Secretariat of the International Plant Protection Convention (IPPC), <https://www.ippc.int/publications/regulation-wood-packaging-material-international-trade-0>.



Example mark (above) found on wood meeting the treated **and** bark-free requirement of ISPM #15. This mark is not required, but is encouraged (treatment to ISPM #15 standards is not available in the State of Hawai'i as of January 2015).

- ② **Minimize materials** and dunnage included to the minimum required for safe and secure delivery. If minimizing materials is not possible, then be prepared to remove packing materials for any inspection.
- ② **Clean vehicles and deliveries:** Cleaning includes removal of all plant, animal, and earthen materials on supplies and equipment prior to arrival on UH managed lands. See *SOP 01: Cleaning of Vehicles and Personal Belongings* for cleaning details.
- ② **Maintain vehicles and equipment:** Ensure that equipment and vehicles are in good working condition and are free of leaks (hydraulic, transmission, radiator, fuel, motor oil, etc.).
- o Once cleaned and inspected, if diverted to another job outside of UH managed lands, vehicle and cargo must be re-cleaned and re-inspected prior to returning to Maunakea. See *SOP 01: Cleaning of Vehicles and Personal Belongings* and this SOP for details.
- ② Schedule a re-inspection if **equipment is stored at Halepōhaku:** Those that plan on staging or storing equipment or supplies at Halepōhaku, destined for the summit, for 4 days or more are required to **schedule a re-inspection** of the staged item(s) before proceeding above Halepōhaku. Please plan accordingly.

3. Equipment, Materials, Supplies, & Load Guidelines

1) Aggregate materials:

- a) Aggregate and fill materials **must** be *inspected by a DLNR-approved biologist* for plant, animal, and earthen materials. The load itself **and** the site where aggregate and fill materials were extracted or stored must both be inspected. The vehicle carrying the aggregate or fill material and tools for handling/manipulating aggregate must follow vehicle procedures stated in *SOP 01*:

Cleaning of Vehicles and Personal Belongings, as well as this SOP, and be inspected by a DLNR-approved biologist. If plant, animal, or earthen materials are found in aggregate or fill materials, the vehicle and entire delivery are not allowed on UH managed lands until materials are re-inspected and approved for use on Maunakea. Aggregate and fill materials must be inspected within 4 days (96 hours) prior to arrival on University lands.

2) Items Stored Outdoors or Indoors on an Unpaved Surface (not including shipping and port holdings)

Items stored outdoors, or indoors on unpaved surfaces, have a greater chance of hosting invasive species. See *SOP 01: Cleaning of Vehicles and Personal Belongings* for cleaning details. An approved inspection certificate is required to proceed onto UH managed lands.

a) Construction Supplies and Materials (i.e. equipment, vehicles with three (3) or more axles, lumber, steel, wiring or cables, earth moving equipment, etc.):

i) **Cleaning:** All construction supplies and materials must be cleaned before arrival onto UH managed lands.

ii) **Inspection:** All construction supplies and materials stored outdoors or on unpaved surfaces must be *inspected by a DLNR-approved biologist* after cleaning. If plant, animal, or earthen materials are observed, then the cleaning and inspection process must be repeated. All construction supplies and materials must be free of plant, animal, and earthen materials before arrival on UH managed lands. Inspections must occur within 4 days (96 hours) prior to arrival on University lands.

b) All Other Containers or Packages stored outside or on an unpaved surface, regardless of size:

i) **Cleaning:** All items stored outside or indoors on an unpaved surface for at least 4 days must be cleaned before arrival on UH managed lands.

ii) **Inspection:** All items, regardless of size, stored outside or indoors on an unpaved surface must be *inspected by a DLNR-approved biologist* for plant, animal, and earthen materials. Large and small items must be inspected within 4 days (96 hours) prior to arrival on UH managed lands.

3) Stored Indoors (items stored outdoors or indoors on an unpaved surface must refer to #2 above):

a) Small containers/packages (maximum 4m (156") girth and not to exceed 90kg (200 lbs)):

i) **Cleaning:** All small containers or packages (less than or equal to 4m (156") girth, 90kg (200 lbs)) stored indoors should be cleaned before arrival on UH managed lands.

ii) **Inspection:** all small containers must be inspected for plant, animal, and earthen materials *by the carrier* no more than 4 days (96 hours) prior to arrival on University lands. Reporting is not necessary unless plant, animal, and or earthen materials are encountered.

b) Large containers / packages (shipping containers, open freight, and large packages (greater than 4m (156") girth and/or weighing more than 90kg (200 lbs)):

i) **Cleaning:** All large containers stored inside must be clean before proceeding above the Saddle Road junction and arrival on UH managed lands.

ii) **Inspection:** All large containers, packages, and materials must be *inspected by a DLNR-approved biologist* for plant, animal, and earthen materials. Items must be inspected within 4 days (96 hours) prior to arrival on UH managed lands.

4) Staged or stored outdoors at Halepōhaku for 4 days or more, and destined for the summit

The Halepōhaku area has multiple ant (*Cardiocondyla kagutsuchi*) populations, and staging or storing equipment outdoors at Halepōhaku for 4 days or more increases the threat of contaminating stored item(s). Therefore, items stored outdoors for 4 days or more must be re-inspected prior to proceeding above Halepōhaku, including storage on a vehicle.

- i) **Inspection:** Items destined for the summit that is staged or stored outdoors or on a vehicle at Halepōhaku for 4 days or more must be *inspected by a DLNR-approved biologist* for animal plant, and earthen materials. These items must be inspected within 4 days (96 hours) prior to proceeding above Halepōhaku.

5) Routine Deliveries and Equipment Use

Many deliveries (such as water, portable toilets, compressed gasses, Keck mirror segments, etc.) and equipment uses (such as MKSS utilities snow removal, road grading, etc.) occur regularly. OMKM will work with these routine entities to certify that equipment is stored in invasive species free sites and appropriately maintained. This invasive species maintenance at their storage site, including Halepōhaku, is the responsibility of the partner entity, not OMKM.

- i) **Cleaning:** All applicable cleaning criteria still apply. See *SOP 01: Cleaning of Vehicles and Personal Belongings* for details. Portable toilet contents may only include: hand cleaning solution that does not necessitate wiping dry (i.e. waterless hand sanitizer), toilet paper, and non-formaldehyde based deodorizing solution; and must be clean and unused with a secondary door retainer.
- ii) **Inspections with routine entities include 3 phases:**
 - (1) **Site Inspections:** After an initial meeting and program review with OMKM, all company-owned staging or storage sites used by the company will be *inspected by a DLNR-approved biologist* at least annually and without advance notice. Sites must be free of invasive plant species (plant and animal), and if species are present a treatment plan devised and implemented by the partner entity, approved by OMKM, and treatment records shared according to the treatment plan.
 - (2) **Vehicle Inspections:** Highway licensed vehicles will be inspected during the site inspection(s) and again at random times on UH managed lands, as opposed to concurrent with each entry onto UH managed lands. Those failing inspections on UH managed lands will be subject to penalties outlined in *SOP 01: Cleaning of Vehicles and Personal Belongings*.
 - (3) **Equipment & Cargo Inspections:** At present the only potential cargo suited for routine delivery is water, compressed gasses, portable toilets, and Keck mirror segments. The only equipment (unlicensed vehicles) suitable for routine delivery processes is MKSS road maintenance equipment permanently stored at Halepōhaku.
- iii) Anyone wishing to approve other vehicles, cargo, or equipment for routine delivery should contact OMKM.

4. Corrective Action

If plant, animals, or earthen materials are observed on vehicles, equipment, or supplies on UH managed lands at any time, the operator is to stop, confine the material(s), remove the contaminated item(s) from UH managed lands if they cannot be contained, and report any remedial actions taken to OMKM within 12 hours. (This requirement does not extend to typical road dust, etc. that accumulate while on UH managed lands). Containment of insect, soil, or plant material may be completed by placing it in a sealable plastic, glass, or similar container and share with OMKM for identification. Do not brush it off onto the ground, roadside, or into the trash. The contaminated package or delivery is not permitted to proceed to University lands, until re-inspected and *approved by a DLNR-approved biologist*.

5. Inspectors

As stipulated in the 2009 Maunakea Comprehensive Management Plan, inspectors must be a biologist, recommended by OMKM, and approved by the Department of Land & Natural Resources (DLNR). To be recommended by OMKM, a biologist must:

- 1) Attend Maunakea resource orientation,
- 2) Review the Maunakea Invasive Species Plan and all associated materials, including IPPC information.
- 3) Participate in one or more inspections with OMKM invasive species program staff for training purposes.
- 4) Demonstrate knowledge, training, and understanding of invasive species.
- 5) Be able to identify common invasive species threats.

DLNR-approved biologists for Maunakea invasive species inspections are:

| Name | Title | Affiliation | Date Approved |
|---------------------|---|----------------|---------------|
| All Inspectors | Hawai'i Dept. of Agriculture, Plant Quarantine Branch | | Nov. 5, 2013 |
| Jennifer Randall | NARS Specialist III | DLNR, DoFAW | Pending |
| Anya Tagawa | NARS | DLNR, DoFAW | Pending |
| Frederick Klasner | Natural Resource Manager | OMKM | Nov. 5, 2013 |
| Jessica Kirkpatrick | Resource Management Assistant | OMKM | Nov. 5, 2013 |
| Amber Stillman | Natural Resource & GIS Technician | OMKM | Nov. 5, 2013 |
| Darcy Yogi | Invasive Species Student Assistant | OMKM | Feb. 12, 2015 |
| Springer Kaye | Manager | BIISC | Nov. 5, 2013 |
| James Parker | Early Detection Specialist | BIISC | Nov. 5, 2013 |
| Robert Parsons | Early Detection Specialist | BIISC | Nov. 5, 2013 |
| Martha Kawasaki | Biologist | BIISC | Nov. 5, 2013 |
| Nelson Crabbe | Field Associate | BIISC | Feb. 12, 2015 |
| Gizelle Geronimo | Field Associate | BIISC | Feb. 12, 2015 |
| Casper Vanderwoude | Manager | Hawaii Ant Lab | Nov. 5, 2013 |
| Michelle Montgomery | Research Technician | Hawaii Ant Lab | Nov. 5, 2013 |
| Matt Kema | Research Associate | Hawaii Ant Lab | Feb. 12, 2015 |
| Trent Hanzawa | Research Associate | Hawaii Ant Lab | Feb. 12, 2015 |
| Ersel Hensley | Support Technician | Hawaii Ant Lab | Feb. 12, 2015 |

For more information on who may inspect or to schedule an inspection, visit <http://www.malamamaunakea.org/inspections>, email inspections-grp@hawaii.edu, or call 808-933-0734.

6. Inspection Process

Inspectors look for plant, animal, and earthen materials, as well as hydraulic, transmission, radiator, fuel, and oil leaks on the equipment or vehicle. Inspecting for these items help to ensure the protection of both natural and cultural resources on Maunakea. If the entire delivery can be visually observed and physically accessed by the inspector, then a visual inspection will typically be conducted. Inspectors may however, choose to use bait techniques with such a delivery. The entity requesting the inspection is responsible for identifying an inspection location that is free of plant, animal, or earthen material; regularly treated for invasive species; and has cleaning supplies (vacuums, running water, etc.) available to take remedial action when concerns are identified.

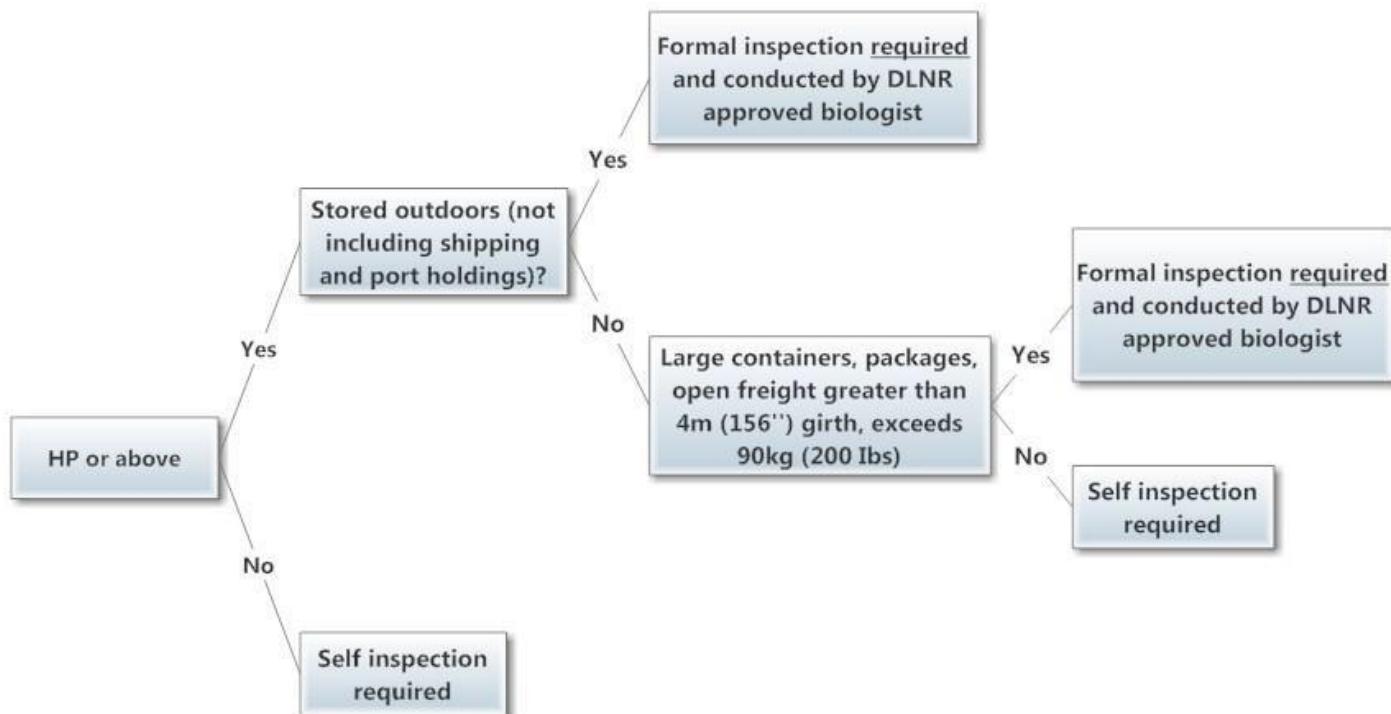
If the entire delivery cannot be visually observed or physically accessed by the inspector, or if the delivery was stored in a contaminated location, or stored for more than 3 months outside, baits will be used as an

attractant. Users should expect a typical inspection duration with baits of at least 1 hour. Baits will combine attractants (jam, spam, and peanut butter [carbohydrate, protein, lipid]) using vials or cards, with at least 5 samples/traps (each with all 3 baits) per delivery.

Inspections are a commercial activity and are not permitted on road shoulders or private property without landowner permission. Inspectors may deny delivery of loads, cargo, or vehicles when the inspection location is known to be contaminated (for example, Argentine Ants (*Linepithema humile*) are known to be present at the Saddle/ Access Road junction). Except for equipment and materials stored at Halepōhaku, inspections must occur below the Saddle Road Junction. Inspections will not occur on State or County road shoulders, State or County Parks, Department of Hawaiian Home Lands, etc. as permission has not been granted.

Items must be inspected within 4 days (96 hours) prior to arrival on UH managed lands.

7. Decision Tree for Inspections



8. Requesting Inspections and Reporting

Inspections are both requested by users with results of inspections by DLNR-approved biologists recorded at <http://www.malamamaunakea.org/inspections>. Each observatory has management access to generate reports of inspection requests and results of inspections conducted by DLNR-approved biologists. OMKM will prepare annual summaries to be included in the Invasive Species Annual Report. Users may review status of requested inspections and results for past inspections at this same location. Reporting of inspections conducted by anyone other than DLNR-approved biologists is not required.

Invasive Species Inspection Certificate

XXXX

Date Inspected:_____**Inspector:**_____**Delivery Must Occur by:**_____**Destination:**_____**Vehicle License (or description):**_____**Cargo Description:**_____**Cargo inspected at point of origin (Y/N/?):**_____ **Comments/Remediation:**_____**Delivery is** **Approved** **-----** **Rejected** **(circle one)****Inspections valid only for stated vehicle, cargo, destination, & time frame (96 hours/4 days).****Please provide this certificate to facility manager (Construction Site Manager).**For more information please visit: www.malamamaunakea.org/inspections/**Invasive Species Inspection Certificate**

XXXX

Date Inspected:_____**Inspector:**_____**Delivery Must Occur by:**_____**Destination:**_____**Vehicle License (or description):**_____**Cargo Description:**_____**Cargo inspected at point of origin (Y/N/?):**_____ **Comments/Remediation:**_____**Delivery is** **Approved** **-----** **Rejected** **(circle one)****Inspections valid only for stated vehicle, cargo, destination, & time frame (96 hours/4 days).****Please provide this certificate to facility manager (Construction Site Manager).**For more information please visit: www.malamamaunakea.org/inspections/

OMKM Invasive Species Inspection Data Sheet

| | | | |
|---|---|--|---|
| Inspector OMKM approved inspection biologist | Inspection Location Where was the inspection conducted? | Date/Time of Inspection When was inspection conducted? | Expiration Date/Time of Inspection Inspections are valid for 4 days (96 hours). |
| Destination Inspections are for a specific destination. | | Facility Affiliation Who is this inspection for (for example: TMT, even if the cargo is destined for Keck)? | |
| | | Facility Representative Who was present from the facility, contractor, etc.? | |
| | | Vehicle Owner Identify owner: examples: private, Subaru, Isemoto, Oahu AirConditioning, etc. | |
| Vehicle Lic. If applicable, identify License #. If unlicensed, describe. | | Cargo Description Briefly describe cargo, if any, applicable to inspection. | |
| | | Inspection @ Origin? Was the cargo inspected prior to shipping to Hawaii? | |
| | | Bait (Attractant) used? Identify baits used (i.e. Spam, Peanut Butter, Jam, Cat food, etc.), duration, & quantity | |
| Concerns Identified Identify if any concerns were identified in the inspection (vehicle, cargo, operator, inspection site, etc.). | | Remediation Taken Were any remedial efforts made during inspection to pass? If so, describe in detail. As opposed to a delivery rejected for treatment and subsequent re-inspection. | |
| | | Re-inspection Was this a re-inspection following up from a previously rejected delivery? Yes or No | |
| | | Approved for delivery Was the delivery approved or rejected? Approved or Rejected | |
| Certificate # | | Data Entered: _____ | |

9. Emergencies

In the event of an emergency, such as telescope instrument failure with delivery of replacement parts the same day/night, the entity operating under a permit must still *first* submit the inspection request in the online system: www.malamamaunakea.org/inspections and clearly state in the comment field the nature of the emergency, vehicle used in delivery, and describe the cargo delivered (or via email to inspections-grp@hawaii.edu if the online system is unavailable). OMKM may follow up with on-site inspections of the delivery or vehicle, and will summarize emergency deliveries in annual reporting.

Health and safety emergencies are exempt from all requirements and no reporting is necessary.

10. Revision History Log

| Previous Version # | Version Date | Author | Changes Made | Reason for Change | New Version # |
|--|--------------|--------|---------------------|------------------------------------|---------------|
| 1.0 | May 2012 | FLK | Original Procedures | Consistent with comprehensive plan | 1.1 |
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| Add rows as needed for each change or set of changes associated with each version. | | | | | |

11. Recommended Citation

Kirkpatrick, J. and F.Klasner. 2015. *Standard Operating Procedure 02, Inspection of Vehicles, Construction Materials, Scientific Equipment, & Supplies*. 9 pp. In: Vanderwoude, C., F. Klasner, J. Kirkpatrick and S. Kaye. 2015. Maunakea Invasive Species Management Plan. Technical Report No. 191. Pacific Cooperative Studies Unit, University of Hawai'i, Honolulu, Hawai'i.