U.S. Department of Homeland Security
Washington, DC 20528

Homeland Security

May 31, 2023

Craig Aubrey
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Ecological Services
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Re: Section 7 of the Endangered Species Act: Informal Consultation, Final Programmatic Environmental Assessment for the Nationwide Operation of Small Unmanned Aircraft Systems

On September 23, 2022, the Department of Homeland Security (DHS) requested a review pursuant to Section 7 of the Endangered Species Act for the Draft Programmatic Environmental Assessment (PEA) for the Nationwide Operation of Small Unmanned Aircraft Systems. On November 18, 2022, the U.S. Fish and Wildlife (USFWS) requested additional information based on the initial review of the Draft Biological Evaluation (BE) and Draft EA. The USFWS' request included clarity on DHS determinations on critical habitat and listed species other than insects, birds, and bats; provision of an accounting of individual listed species and critical habitat to which DHS' NLAA determinations apply; clarity on whether the *Best Management Practices Implementation Checklist* (BMP Checklist) would be voluntary or required; and additional clarification on various sUAS operations. In coordination with USFWS, DHS has revised the Draft BE to include the requested information and provides a revised effects determination. Pursuant to Section 7 of the Endangered Species Act, DHS submits to the USFWS the final Biological Evaluation of the Final PEA for review and concurrence on its *may affect, not likely to adversely affect* determinations.

DHS prepared a PEA to evaluate the potential environmental impacts resulting from conducting activities utilizing small unmanned aerial vehicles (sUAS). UAs are defined by the Federal Aviation Administration (FAA) in 14 CFR Part 107 as aircraft operated without the possibility of direct human intervention from within or on the aircraft; small UA are those that weigh less than 55 pounds on takeoff, including everything that is on board or otherwise attached to the aircraft. sUAS are defined as small UAs and associated elements (including communication links and the components that control the UA that are required for the safe and efficient operation of the small UA in the national airspace system (14 CFR Part 107)). Typical sUAS have two primary components: the small UA and the ground-based control station (GCS), which is the human interface used by the remote pilot to control the flight path. The sUAS that would be operated during the proposed action would be classified within three primary types of free-flying UAs that can be used as sUAS: fixed wing, rotary wing, and hybrid models.

The Department of Homeland Security (DHS of Department) Components include, among others, U.S. Customs and Border Protection (CBP), U.S. Immigration and Customs Enforcement (ICE), the Federal Emergency Management Agency (FEMA), the Federal Law Enforcement Training Centers (FLETC), U.S. Coast Guard (USCG), U.S. Citizenship and Immigration Services (USCIS), the Science and Technology Directorate (S&T), the Transportation Security Administration (TSA), and U.S. Secret Service (USSS). DHS conducts sUAS activities nationwide to meet mission requirements. This includes the training, operation, maintenance, and use of sUAS. Currently, sUAS activities are reviewed individually pursuant to the National Environmental Policy Act (NEPA), with the majority covered under an approved DHS categorical exclusion. Coordination with other environmental, natural resource, and cultural resource laws, regulations, and Executive Orders, including the Endangered Species Act (ESA), also occur on a project-by-project basis. Given the repetitive nature of the action, DHS prepared a programmatic environmental assessment (PEA) to evaluate the potential impacts to human health and the environment and recommended Best Management Practices (BMPs) to continue avoidance of significant impacts. BMPs, if followed, would ensure activities comply with the requirements of NEPA, but may still require additional review under other environmental and historic preservation statutes, regulations, and Executive Orders. Should these BMPs not be feasible for future related DHS and Component proposed actions, project-specific tiering of appropriate NEPA documentation would be required.

DHS prepared the PEA to evaluate the potential environmental impacts resulting from conducting activities that include research and testing, training, marine mammal protection and monitoring, emergency response, security and surveillance, navigational aid, search and rescue missions, law enforcement, disaster assessment and recovery, facility and site inspections. These operations are not all-encompassing or limited to any Component, but they serve to provide a baseline for DHS and Component use of sUAS. Different operations may require the use of different sUAS to complete the mission, and various sUAS types may also be used for similar operations; however, the majority of these operations would require the sUAS to be outfitted with camera, video, or some other sensory or imagery equipment.

The training, operation, maintenance, and use of sUAS may be performed by DHS in varying environments (e.g., city, suburban, rural, over water) at single or multiple locations during day or night, depending on testing or operational needs. DHS's utilization of sUAS may occur multiple times in the same location such as during training or testing activities, or at airports and transportation hubs, or may not operate repeatedly in a specific location. The general study area evaluated for potential impacts to the human and natural environment from sUAS is defined as the area surrounding sUAS support activities on the ground (i.e., the GCS), and the airspace in which UAs are flown. The PEA programmatically analyzed potential impacts from the sUAS activities nationwide, including all U.S. States and Territories; no specific geographic study area is identified, and potential environmental impacts were considered on a national scope. Flight time of UAs would be up to 120 minutes based on battery life; however, most are generally in operation for less than one hour.

The Fish and Wildlife Act of 1956 or Airborne Hunting Act (AHA) exempts state or federal employees, authorized agents, or persons acting under a license or permit who are authorized to administer or protect land, water, wildlife, livestock, domesticated animals, human life, or crops. Therefore, actions that fall within this purview is not considered within this request. However,

activities listed above that are not exempt under AHA, Section 7 of the Endangered Species Act (ESA) would be applicable.

Effects Determinations

DHS, through USFWS technical assistance and informal consultation, has identified the following federally listed and proposed taxa that have the potential to be impacted by the Proposed Action: terrestrial mammal species, plant species (which include flowering plants, ferns and allies, conifers and cycads), lichens, amphibians, reptiles, insects, birds, bats and critical habitat for the aforementioned species (See Attachment B for official species list). The Proposed Action has extremely limited potential to impact federally listed T&E species or proposed species through direct collision or by causing behavioral reactions as UAs pass in close proximity to ESA-listed plant, lichen, terrestrial mammal, bird, bat, reptile, amphibian, or insect species. Federally listed T&E species behavioral responses will vary depending on the species and the UA characteristics such as type of aircraft, flight pattern, proximity, and approach. Minimal disturbance to vegetated areas, which may include listed plants, lichens, and/or critical habitat, could occur due to the limited presence of sUAS personnel walking or driving within the range of listed plants, lichens, or in critical habitat. Permanent impacts to critical habitat within the operational area would be highly unlikely as no ground disturbance is proposed (including tree clearing or ground movement). Additionally potential impacts could occur if DHS utilizes launch and landing sites within critical habitat, the range of federally listed plant species, or the range of federally listed lichens. No substantial loss or degradation of terrestrial habitat is anticipated. sUAS operators would minimize impacts on critical habitat by utilizing the required BMP checklist and by utilizing existing roadways, trails, paved surfaces, vegetated open areas, or otherwise previously disturbed areas for launch and landing sites. If DHS determines it necessary to launch or utilize landing sites within naturally vegetated areas of terrestrial critical habitat or the range of federally listed plant or lichen species, DHS will coordinate with the appropriate USFWS Field Office to identify if alternate launch or landing sites are necessary or sensitive resources need avoidance.

Direct collision with federally listed or proposed species would be highly unlikely, as sUAS pilots are extensively trained in how to safely operate and avoid structures and hazards, and typically have visual line of sight of UAs. DHS operators would conduct a visual pre-flight check for migratory birds and federally listed species immediately prior to launch. DHS UAs are typically operated at slower speeds to provide ample opportunity for collision avoidance by both the remote pilot and more mobile federally listed species. DHS operators would comply with all FAA regulations in 14 CFR Part 107, Operation of Small Unmanned Aircraft Systems, as applicable, including visual line-of-sight and operating below the 100 miles per hour threshold. Training, testing events or security patrols may be repetitive in a specific geographical area; however, with the implementation of the required BMPs and their typical location in previously disturbed areas, the impacts and cumulative impacts of repetitive action associated with them would be discountable. The Proposed Action is not anticipated to result in any permanent displacement of species. Increased noise or physical encroachment has the potential to disturb listed species, including in areas typically inaccessible to humans. It is highly unlikely that UAs passing by nesting or molting birds would result in adverse response from the species. UAs operators would avoid conducting UAS operations within 200 feet (vertically and horizontally) of a known breeding or roosting colony, or other known high density nesting area, of federally

listed or proposed birds or migratory birds. When possible, UAS operations would conduct operations during seasons when federally listed, proposed, or migratory birds are not present in the operational area. In addition to the pre-flight check, if personnel encounter wildlife after launch, operators will maintain a safe distance (at least 200 feet recommended) and would avoid buzzing, animal-directed movements, hovering, landing, taking off, lingering, or taxiing near the observed wildlife. If despite these measures, wildlife, including migratory birds, listed animal species, and bald and golden eagles exhibit signs of distress, the UAS will be immediately moved beyond the 200 foot recommended distance from the animal (in non-emergency actions). Therefore, it is highly unlikely that UAs passing by nesting or molting birds would result in an adverse response from the species.

UA disturbance to insect species associated with the Proposed Action are not anticipated, and auditory and visual disturbances would be avoided and minimized with the required BMP Checklist. UA operators would maintain altitude of 65 feet above the ground, vegetation, or tree canopy if IPaC results indicate federally listed or proposed terrestrial insect species. No impacts on bats are anticipated during daytime operations. Nighttime operations may disrupt sleep or disturb nocturnal wildlife, such as bats, and noise emitted from UAs could interfere with low-frequency bat calls and cause bats to avoid UAs flying overhead. DHS would conduct sUAS operations predominately during daylight hours (one hour after sunrise to one hour before sunset) whenever possible. In addition, in non-emergency nighttime operations would maintain a minimum altitude of 98 feet above vegetation, tree canopy, or open water (including rivers, streams, lakes, reservoirs, etc.) thereby minimizing potential impacts on bats. UAs would not be flown in caves or abandoned mines. UA strikes on bats are not anticipated.

With implementation of the required BMPs listed in Appendix A and table 1, the Proposed Action impacts on ESA-listed plants, lichens, terrestrial mammals, birds, bats, reptiles, amphibians, insect species, and terrestrial critical habitat are discountable. DHS has determined the operational use of sUAS may affect but, is not likely to adversely affect federally listed or proposed plants, lichens, terrestrial mammals, birds, bats, reptiles, amphibians, insect species and critical habitat for the aforementioned species.

The Proposed Action would not operate under water or within 500 feet of all known haul-out locations and would avoid marine mammals at the water's surface (unless with prior authorization from the USFWS or NOAA); therefore, no impacts on marine mammals are anticipated. No disturbance or alterations to aquatic critical habitat are proposed or anticipated. Based on scientific literature research, little to no behavioral responses have been observed from various marine wildlife due to the presence of UAs at various altitude levels. Operators would avoid flying directly over or near marine mammals hauled out or at the water's surface. DHS would avoid marine mammals unless with prior authorization from USFWS or NOAA. Therefore, the Proposed Action would have no effect on federally listed or proposed marine mammals, fish, invertebrates (with the exception of insects), or aquatic critical habitat.

DHS would utilize required BMPs revised in coordination with USFWS and included in a BMP Implementation Checklist (Attachment A) to minimize and avoid impacts to federally listed or proposed species. Should the BMPs listed not be feasible for current or future related DHS and Component proposed actions, project-specific tiering of appropriate NEPA documentation and project-specific ESA section 7 consultation would be required. DHS will review species listed as endangered or threatened, in coordination with the USFWS, to determine if the Biological Resources measures in Attachment A: BMP Implementation Checklist are sufficiently protective

on an annual basis. If the BMP Implementation Checklist is not protective or requires additional mitigative measures, DHS would determine if re-initiation of Section 7 consultation would be required. At the time of the first check-in, DHS and USFWS would determine the necessity, frequency, and timing of future annual coordination efforts on this programmatic. DHS may choose to consult specifically for individual actions for newly listed species in lieu of annual coordination on this Programmatic consultation. In the event DHS would move forward with site-specific consultations in lieu of annual check-ins, DHS would notify USFWS in writing to address its path forward regarding newly listed species not covered under this programmatic.

On April 12, 2022, DHS submitted correspondence to the stakeholders, including USFWS and NOAA, to initiate scoping for the PEA analysis. Subsequently, the USFWS and NOAA were notified of the Draft PEA publication on August 11, 2022, to which the USFWS Southeast Region provided comments on October 12, 2022, regarding the NWRS; these comments have been addressed in the Final PEA. Finally, pursuant to Section 7 of the ESA, DHS submitted a Draft Biological Evaluation, Standard BMPs, and sUAS BMP Implementation Checklist to the USFWS on September 26, 2022, regarding potential effects on federally listed insect, bird, and bat species. The USFWS responded with a request for more information on November 18, 2022. In November 2022, DHS reached out to USFWS HQ staff to coordinate efforts on the request for information, additional BMPs, and address points of discussion regarding the programmatic consultation. Through a collaborative effort, DHS responded to and addressed USFWS comments and recommendations. DHS and USFWS consulted on the BMP Implementation Checklist and standard BMPs as part of the informal Section 7 of the ESA process. The updated sUAS BMP Implementation Checklist is included in the BA.

Attachment 1 includes the Final BE of the proposed Project which includes the required BMPs for implementation to avoid and minimize significant impacts on resources as a result of sUAS activities and alleviate the need for project-specific consultations. Attachment A of the BE includes the revised Best Management Practices Implementation Checklist to assist DHS and Component operators with ensuring that they comply with these required BMPs during sUAS activities and confirm the proposed Action is covered under the scope and review of the 2022 PEA. This checklist would be reviewed by an Environmental Professional. The checklist will also assist DHS and Component operators on whether additional project specific analysis would be required, or additional site-specific consultation under the Endangered Species Act or National Historic Preservation Act would be necessary. Attachment B of the BE includes the official species list for federally listed and proposed species included in the ***may affect but not likely to adversely affect*** determination.

The Final PEA was published digitally on the project website at Final Programmatic Environmental Assessment for the Nationwide Operation of Small Unmanned Aircraft Systems |

Homeland Security (dhs.gov). For additional information, please contact Kimberly Poli at kimberly.poli@hq.dhs.gov or (202) 316-8050.

Sincerely,

JENNIFER D HASS

Digitally signed by JENNIFER D HASS
Date: 2023.05.31 16:24:32 -04'00'

Jennifer Hass
Director Environmental Planning & Historic Preservation Program
Office of the Chief Readiness Support Officer
Department of Homeland Security

Attachments:
1. Biological Evaluation

Attachment 1. Final Biological Evaluation

FINAL BIOLOGICAL EVALUATION FOR SPECIES LISTED UNDER THE ENDANGERED SPECIES ACT UNDER UNITED STATES FISH AND WILDLIFE SERVICE JURISDICTION FOR THE OPERATION OF SMALL UNMANNED AERIAL SYSTEMS

Submitted to:
The United States Fish and Wildlife Service

Submitted by:
Department of Homeland Security

Introduction

Unmanned aircraft (UA) are defined by the Federal Aviation Administration (FAA) in 14 Code of Federal Regulations (CFR) Part 107 as aircraft operated without the possibility of direct human intervention from within or on the aircraft; small UA are those that weigh less than 55 pounds on takeoff, including everything that is on board or otherwise attached to the aircraft. Small unmanned aircraft systems (sUAS) are defined as small UAs and associated elements (including communication links and the required components that control the UA for the safe and efficient operation in the national airspace system (14 CFR Part 107)). Typical sUAS have two primary components: the small UA and the ground-based control station (GCS), which is the human interface used by the remote pilot to control the flight path.

UAs can be remotely operated in three ways: manual navigation (i.e., by a human pilot via controller), GPS navigation (i.e., by pre-programming the UA to fly to a specified location or in a specified pattern), and autonomous navigation (i.e., by the onboard computer determining flight controls using only onboard sensors, as opposed to signals from a controller or GPS system). UAs vary in size with at least one dimension ranging from 20 inches to about 6.5 feet. These systems may include built-in or attachable elements such as cameras or other types of sensors, and except for tethered UAs, are typically powered by an onboard rechargeable battery.

The Department of Homeland Security (DHS of Department) Components include, among others, U.S. Customs and Border Protection (CBP), U.S. Immigration and Customs Enforcement (ICE), the Federal Emergency Management Agency (FEMA), the Federal Law Enforcement Training Centers (FLETC), U.S. Coast Guard (USCG), U.S. Citizenship and Immigration Services (USCIS), the Science and Technology Directorate (S&T), the Transportation Security Administration (TSA), and U.S. Secret Service (USSS). DHS conducts sUAS activities nationwide to meet mission requirements. This includes the training, operation, maintenance, and use of sUAS. Currently, sUAS activities are reviewed individually pursuant to the National Environmental Policy Act (NEPA), with the majority covered under an approved DHS categorical exclusion. Coordination with other environmental, natural resource, and cultural resource laws, regulations, and Executive Orders, including the Endangered Species Act (ESA), also occur on a project-by-project basis. Given the repetitive nature of the action, DHS prepared a programmatic environmental assessment (PEA) to evaluate the potential impacts to human health and the environment and recommended Best Management Practices (BMPs) to continue avoidance of significant impacts. BMPs, if followed, would ensure activities comply with the requirements of NEPA, but may still require additional review under other environmental and historic preservation statutes, regulations, and Executive Orders. Should these BMPs not be feasible for future related DHS and Component proposed actions, project-specific tiering of appropriate NEPA documentation would be required.

This informal consultation package was prepared to support DHS operation of sUAS. This informal consultation package examines the potential impacts of sUAS operations on ESA-listed species and critical habitat under the purview of the United States Fish and Wildlife Service (USFWS). Section 7 of the ESA assures that, through consultation (or conferencing for proposed species and critical habitat) with USFWS, federal actions do not jeopardize the continued existence of any threatened, endangered, or proposed species, or result in the destruction or adverse modification of critical habitat.

Proposed Action

Within the DHS and its Components, sUAS are currently used and being considered for a variety of purposes within the U.S. They offer various benefits relevant to protecting and enhancing national security, such as border protection, support for law enforcement, assistance in search and rescue, evaluation of dangerous environments, monitoring of evacuation routes, and aviation and transportation security. The Proposed Action evaluated in the PEA is for DHS to continue to conduct sUAS activities nationwide to meet DHS mission requirements. This includes the training, operation, maintenance, and use of sUAS. The Proposed Action would allow DHS to continue its current use of sUAS and implement future uses given new technologies and mission requirements that would be situational by Component. The purpose of the Proposed Action is to provide DHS the ability to expand visual capability and gather information, surveillance, reconnaissance, and communications by employing remote controlled aerial reconnaissance equipped with cameras, sensors, and other data collecting equipment.

The utilization of sUAS by DHS supports, in part, research and testing, training, marine mammal protection and monitoring, emergency response, security and surveillance, navigational aid, search and rescue missions, law enforcement, disaster assessment and recovery, and facility and site inspections. These operations are not all-encompassing or limited to any Component, but they serve to provide a baseline for DHS and Component use of sUAS. Different operations may require the use of different sUAS to complete the mission, and various sUAS types may also be used for similar operations; however, most operations would require the sUAS to be outfitted with camera, video, or some other sensory or imagery equipment. Examples of DHS sUAS activities include, but are not limited to, the following:

- **Research, Development, Testing, and Evaluation (RDTE):** S&T would conduct basic and applied RDTE activities relevant to the overall DHS mission, including sUAS testing, evaluation, and training. Similarly, TSA may use "test" sUAS in order to evaluate 'detect, identify, monitor, and track' technologies at airport facilities.
- **Marine Resource Monitoring and Protection:** USCG would use sUAS to enforce domestic and international fisheries laws and aid in the monitoring and researching of living marine resources to protect the ocean environment and marine life.
- **Emergency Response:** Multiple DHS Components (including USCG, CBP, and FEMA) would utilize sUAS for land or water surveys to gather information before, during, and after natural disasters or emergency operations to aid in evaluation of resource distribution (i.e., staging of buses and supplies, checking flows along evacuation routes, overseeing rescue operations, etc.) during preparations or evacuations associated with anticipated natural disasters. sUAS would also be used for the collection of post-disaster aerial imagery to assess damage and prioritize emergency response actions, transportation routes, staging areas, and other activities that would aid in damage and resource assessments.
- **Security and Surveillance:** DHS would utilize sUAS to conduct security operations at numerous DHS facilities and locations to which DHS has an operational nexus, such as airports, seaports, and land ports along the US borders. The TSA Federal Air Marshal Service (FAMS) would use sUAS to conduct Joint Vulnerability and Threat assessments at airports to identify such risks and devise mitigation strategies to minimize these risks to the traveling public and airport operations. sUAS would also enhance FAMS' man-

portable air-defense systems (MANPADS) assessment procedures. Other DHS Components may also use sUAS for general land surveillance of geographically remote or inaccessible locations; air domain awareness, which monitors airspace around national borders; and detecting, identifying, monitoring, and tracking non-DHS drones within restricted airspace.

- **Aids to Navigation (AToN):** The USCG would use sUAS to conduct inspections on construction of new fixed AToN on land (e.g., beacons, lighthouses, and bridge lighting) and in water (e.g., buoys).
- **Search and Rescue:** DHS Components would utilize sUAS to collect survey data for potential use in search and rescue efforts, such as at sea or in the aftermath of a natural disaster. The use of long-range drones would allow such efforts to expand over-water and over-land search areas rapidly, and potentially reduce search times.
- **Law Enforcement:** DHS Components would utilize sUAS for law enforcement activities, such as providing airspace protection for Special Event Assessment Rating (SEAR) events and conducting threat and vulnerability assessments.
- **Facility and Site Inspections:** DHS Components would use sUAS to conduct routine inspections of DHS facilities and other facilities or sites of interest, both for security purposes and to assess potential infrastructure and property issues or damages.

The sUAS that would be operated during the proposed action would be classified within three primary types of free-flying UAs that can be used as sUAS: fixed wing, rotary wing, and hybrid models.

Figure 1 DHS representation of Fixed Wing and Rotocopter sUAS.

Fixed wing UAs have a motor and are propelled horizontally, while rotary wing UAs have one or more propellors that lift the UA in a vertical direction. Hybrid models have both fixed wings and rotors. Rotary wing UAs may also be tethered, relying on a permanent link to the ground. A cable connecting the UA to the ground-based control station supplies electrical power to the UA, and transfers data from the UA. Tethered UAs have a more limited flight range than free-flying UAs and are only viable in a small operational area. UAs typically include built-in imaging sensors or video cameras, and can carry additional payloads (i.e., detachable components) for enhanced or specialized operation. Cameras and sensor types include high definition (HD), laser night vision, thermal, infrared, and ultraviolet. Additional payloads could include items such as an air sniffer, or a sensor ball with electro-optic/infrared and laser range finder/designator capabilities. The mission determines which specific device is attached to the UAs, but DHS most commonly requires visual capabilities to capture still photographs, video recordings, or live

video feeds. This Proposed Action does not include any sUAS activities that include deployable modules/systems. In other words, the UAs would not be releasing anything into the environment, such as aerosols, first aid or survival supply kits, gear, or sustainment.

Operational Capabilities of UAs

While UAs come in varying sizes (not to exceed 55 pounds) and with varying flight and sensory capabilities, the physical operation of sUAS typically includes three general sub-categories of actions: mobilization and demobilization to/from the launch site; launch and landing of the UA; and operation of the UA in flight. This complete process may be modified as needed to accommodate specific existing and future DHS and Component operations.

UAs can be remotely operated in three ways: manual navigation (i.e., by a human pilot via controller), GPS navigation (i.e., by pre-programming the UA to fly to a specified location or in a specified pattern), and autonomous navigation (i.e., by the onboard computer determining flight controls using only onboard sensors, as opposed to signals from a controller or GPS system). UAs vary in size with at least one dimension ranging from 20 inches to about 6.5 feet. These systems, as mentioned, may include built-in or attachable elements such as cameras or other types of sensors, and except for tethered UAs, are typically powered by an onboard rechargeable battery.

Lighter free-flying UAs (e.g., weighing 20 pounds or less) are typically hand-launched, self-contained, portable systems that can provide local reconnaissance and surveillance, and thus are only deployed for a small geographic area. They often have a lower normal operating altitude (e.g., less than 1,200 feet above ground level [AGL]), and lower maximum speed (e.g., up to 115 miles per hour [mph]). Heavier free-flying sUAS (e.g., weighing between 21 and 55 pounds) may be hand-launched or launched via catapult, and can cover larger geographic areas. These UAs are used for larger-scale intelligence, surveillance, and reconnaissance requirements and activities. They have a normal operating altitude of less than 3,500 feet AGL, and can reach a speed of nearly 287 mph. The maximum flight time of UAs can be up to 120 minutes, with a maximum transmission range of up to 60 miles. Typically, lighter UAs are used by DHS in urban and rural environments, whereas heavier UAs cover larger areas such as borders, mountainous regions, large bodies of water, etc.

Tethered UAs are launched from the ground and remain connected to the GCS via cable. They generally hover over a particular location and can remain in the air for hours at a time (Elistair, 2020). Tethered sUAS, including the GCS, can be moved by vehicle or vessel transport, although due to limitations of the tether and difficulties maneuvering the UAs in flight, they are typically stationary. DHS does not routinely use tethered sUAS in an operational setting; potential future use of tethered UAs likely would occur around DHS and Component facilities or infrastructure, to which they would be affixed during flight.

Current DHS and Component sUAS operations are generally limited to a maximum groundspeed of 100 mph, a maximum altitude of 400 feet AGL, and a range within line of sight of the visual observer(s) in order to comply with 14 CFR Part 107. Most sUAS also operate currently for less than 60 minutes of airtime. However, there can be exceptions to this regulation. Components could obtain a Certificate of Waiver or Authorization (COA) from FAA for special operational circumstances. For example, CBP recently obtained an updated COA from the FAA for special operational circumstances. In accordance with this COA, CBP is permitted to fly up to 1,200 feet

AGL and may perform beyond visual line of sight (BVLOS) operations up to an altitude of 400 feet AGL in extreme emergency situations and to safeguard human life.

Future sUAS operations and limitations may change in conjunction with updated regulations, issuance of COAs, and advances in technology, especially related to energy sources (e.g., better batteries or hydrogen cells). Therefore, for this Proposed Action, DHS is analyzing free-flying sUAS based on their full technical capabilities as previously described (i.e., operating altitude up to 3,500 feet AGL, flight time up to 120 minutes, and groundspeed up to 287 mph) in order to account for potential future updates. Tethered sUAS are also analyzed based on their flight times and repeated operation in a single location.

Depending on the size of the sUAS, different modes of transport could be used to convey the sUAS and supporting equipment (e.g., launch catapult, recovery net) to the launch site. Possible transport methods for sUAS include vehicles, boats, or in the backpack of a motorcycle operator or horseback patrol rider. There are a variety of ways to launch and recover UAs, including from the ground, by hand, or by catapult (see **Figure 2**). For example, UAs could be recovered by using a static line tether that would be supported by an arm extension of the recovery equipment, the UAs could fly into a net that would be supported by two arm extensions, or land vertically onboard or on ground depending on the location of activities. The method used to launch and recover the UAs is dependent on the system, its size, and the environment in which it is being launched.

These systems are generally operated by two personnel (i.e., a Pilot in Command and a Visual Observer, as defined in 14 CFR Part 107). Certain current operations may require additional observers to ensure safe operations. Future sUAS operations may include Beyond Visual Line of Sight (BVLOS) capabilities, which would eliminate the need for a Visual Observer. In such instances, UAs would be equipped with detect-and-avoid systems or similar technology to avoid hazards and minimize the risk of collision (i.e., other aircraft, birds, vessels). Following completion of the flight, the UA is often returned to the launch site for landing/recovery. However, in some circumstances, the UA will land and subsequently be recovered by DHS personnel in a different location from the launch site. Launch and landing sites could include federal, private, and public property depending on the scenario.

Figure 2. sUAS Deployment by DHS Components

Operation Area

The training, operation, maintenance, and use of sUAS may be performed by DHS in varying environments (e.g., city, suburban, rural, over water) at single or multiple locations during day or night, depending on testing or operational needs. DHS's utilization of sUAS may occur multiple times in the same location such as during training or testing activities, or at airports and transportation hubs, or may not operate repeatedly in a specific location. The general study area evaluated for potential impacts to the human and natural environment from sUAS is defined as the area surrounding sUAS support activities on the ground (i.e., the GCS), and the airspace in which UAs are flown. The PEA programmatically analyzed potential impacts from the sUAS activities nationwide, including all U.S. States and Territories; no specific geographic study area is identified, and potential environmental impacts were considered on a national scope. Flight time of UAs would be up to 120 minutes based on battery life; however, most are generally in operation for less than one hour.

Best Management Practices

To avoid or minimize adverse environmental impacts to the extent practicable, DHS and its Components would adopt the required BMPs listed in Table 1 as standard procedure for its sUAS activities. The impact analysis assumed implementation of these required BMPs. Should these BMPs not be feasible for future related DHS and Component proposed actions, project-specific tiering of appropriate NEPA or site-specific NEPA analysis and ESA documentation may be required. DHS has prepared the sUAS BMP Implementation Checklist in Attachment A of the PEA to assist DHS and Component operators with ensuring that they comply with these BMPs during sUAS activities. This checklist should be saved as part of the NEPA, National Historic Preservation Act, and ESA administrative record for the proposed action and would be reviewed by an Environmental Professional.

These BMPs have been established in coordination with USFWS as part of the informal Section 7 ESA Consultation process. DHS received several comments on the Draft PEA from the USFWS Southeast (SE) Region on October 12, 2022. The USFWS SE Region comments included a request to disclose additional information on the units of the National Wildlife Refuge System in the PEA as well as the sUAS Best Management Practices Implementation Checklist; and a request to coordinate on mission efforts when applicable in the planning process (non-emergency) when it comes to missions taking place on the USFWS lands. Section 3.3. of the final PEA addresses information on biological resources. Appendix D of the Final PEA provides a description of comments and DHS responses.

Emergencies are defined within DHS Instruction Manual (023-01-001-01, Revision 01), *Implementation of the NEPA*, and include ensuring resiliency to disasters and effective emergency response. Examples of emergencies that may require immediate DHS action include responses to hurricanes, earthquakes, pandemics, nuclear strike, imminent threat of terrorist activity, or release or imminent release of oil, hazardous, biological or radiological substances. Emergency actions are covered under the Proposed Action and BE. As such, the BMPs should be followed during emergency response activities, when possible. However, if the BMPs cannot be implemented during an emergency response, operators should prioritize emergency response actions and follow established procedures for emergency situations including compliance under ESA. Under no circumstances should the emergency response action be delayed in order to implement the BMPs. Section 7 regulations recognize that an emergency (imminent loss of human life or property) may require expedited consultation. As soon as practicable after the emergency is under control, if listed species or critical habitat were affected by the emergency response and it was not possible to implement the BMPs, the USFWS should be contacted for discussion of potential after the fact consultation.

Table 1. Best Management Practices for sUAS Operations

Resource	Best Management Practices
Airspace and FAA Requirements	• Comply with all FAA regulations in 14 CFR Part 107, Operation of Small Unmanned Aircraft Systems, as applicable. (e.g. maintain line of sight, operate below 100 miles per hour) • Per FAA CFR Part 107 requirements, maintain visual observation of the UA within visual line-of-sight during flight operations, operate at or below 100 miles per hour. • Unless in an emergency, obtain approvals from FAA for airspace that is designated as Class A, B, C, D, or E. • Yield the right of way to manned aircraft.
Noise	• To the greatest extent possible, adhere to local noise ordinances.
Biological Resources	• Generate a U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPAC) species list for the project area not more than 90 days before the planned operation. Visit IPaC: Home (fws.gov) to generate the applicable list of species and critical habitat.[1] • Coordinate with appropriate land managers to identify potential wildlife concerns and avoidance or minimization measures if sUAS operations will occur on or over a unit of the National Wildlife Refuge System (NWRS), National Fish Hatchery, National Park Service lands or other Federal lands.[2] • When applicable, locate launch and landing sites on roads, trails, paved surfaces, and/or otherwise previously disturbed or developed areas if they are within terrestrial critical habitat or the

	range of a listed plant or lichen species (as indicated by a plant or lichen species or critical habitat appearing on your IPaC species list).[3] • Avoid conducting UAS operations within 200 feet (vertically and horizontally) of a known breeding or roosting colony, or other known high density nesting area, of federally listed or proposed birds or migratory birds (as indicated by one or more bird species appearing on your IPaC generated species list).[4] • When possible, conduct UAS operations during seasons when federally listed, proposed, or migratory birds are not present in the operational area (e.g., the bird species on your IPaC list is migratory and will not be present during a particular season).[5] • Conduct a visual pre-flight check for migratory birds and federally listed species (use your list generated through IPaC) immediately prior to launch.[6] • If personnel observe a federally listed terrestrial animal or migratory bird including federally listed bird nesting colonies during the pre-flight check (in non-emergency actions), delay operation until either the animal has moved away from the area of operation, or the sUAS flight path will be relocated to an area where the animal or nesting colonies will not be disturbed (at least 200 feet away both horizontally and vertically). [7] • If personnel encounter wildlife after launch, operators will maintain a safe distance (at least 200 feet is recommended) and will avoid buzzing, animal-directed movements, hovering, landing, taking off, lingering, or taxiing near the observed wildlife. • If, despite the measures directly above, wildlife, including migratory birds, listed animal species, and bald and golden eagles exhibit signs of distress (e.g. wing flapping, crouching, fleeing, or flushing), the UAS will be immediately moved beyond the 200 foot recommended distance from the animal. • Document and report to the USFWS, in a timely manner, any operation involving a collision with or harassment of a federally listed species (if species is clearly identifiable).[10] • Maintain a minimum altitude of 65 feet above the ground, vegetation, or tree canopy if your IPaC results include a federally listed or proposed terrestrial insect species. • If your IPaC results include federally listed or proposed bat species, operate UAS during daylight hours (one hour after

	sunrise to one hour before sunset) whenever possible. In addition, for non-emergency nighttime operations maintain a minimum altitude of 98 feet above vegetation, tree canopy, or open water (including rivers, streams, lakes, reservoirs, etc.). • Maintain a 330-foot primary buffer and/or a 660-foot secondary buffer around any known bald eagle nests in areas where human activities are considered detrimental to breeding pairs.[13] • Avoid launch or landing UAs from/on beaches that support nesting sea turtles during their breeding season. • Avoid flying UAs within 500 feet of known haul-out locations and marine mammals at the water's surface (unless in case of an emergency or with prior authorization from NOAA or USFWS).

Cultural and Historic Resources	• Coordinate with Federally Recognized Tribes to the maximum extent feasible when proposed operations would include flying over or deploying from tribal sensitive areas, tribal lands, above-ground historic properties, or culturally significant areas (e.g., to identify appropriate launch sites or sensitive resources to avoid). Consult, as necessary, with applicable State Historic Preservation Office (SHPO), Tribal Historic Preservation Officer (THPO), and/or Certified Local Governments.
	• Avoid flying within 100 feet of known historic properties, National Historic Landmarks, monuments, or cemeteries, unless:
	  • Necessitated by an emergency facility inspection or condition assessment; or
	  • Prior notification to the National Park Service (NPS) for National Historic Landmarks and appropriate State Historic Preservation Office (SHPO) or Tribal Historic Preservation Office (THPO) has been completed.

Socioeconomics and Environmental Justice (EJ)	• Where possible, sUAS operators would not fly within 200 feet of schools, daycare facilities, or similar locations with high concentrations of children.
Human Health and Safety	• Dispose of end-of-life batteries in accordance with all applicable laws and regulations. • Ensure personnel use all required personnel protective equipment based on site- and activity-specific conditions.

General/other Coordination	• Obtain all applicable permits, permissions, and authorizations from applicable landowners and federal, state, and local regulatory authorities prior to initiating utilization of sUAS. • When operating in the National Capital Region **only**, as necessary, coordinate with the National Park Service and National Capital Planning Commission (NCPC) to minimize impacts on the viewscape. • Operators should follow the BMPs. If the proposed action is outside the scope of the sUAS PEA, additional analysis for compliance with the National Environmental Policy Act, National Historic Preservation Act, Endangered Species Act, or other environmental statutes, regulations or Executive Orders is necessary.

Footnote:

1: USFWS Information for Planning and Consultation (IPaC) report (species list) is valid for 90 days following its date of creation. If past 90 days, please complete a new IPaC report online at https://ipac.ecosphere.fws.gov/

2: To minimize impacts to wildlife, units of the NWRS and other federal lands and waters managed for wildlife (e.g., national parks) should be identified before launch. Visit U.S. Fish & Wildlife Service website to determine locations of NWRS. Refuge Managers or other land/water managers should be contacted to identify site-specific wildlife use, potential responses to disturbance, and other information regarding cultural or sensitive sites, wildlife aggregation sites, and public use areas. For coordination efforts or activities (non-emergency) that occur on USFWS owned or managed lands contact the local USFWS site manager (such as a Refuge or Hatchery Manager). In emergency situations (imminent loss of life or property), if pre-planning or early coordination is not practicable, operators should prioritize emergency response actions.

3: If it is necessary to launch or utilize landing sites within naturally vegetated areas of terrestrial critical habitat or the range of federally listed plant or lichen species DHS will coordinate with the appropriate USFWS Field Office to identify if alternate launch or landing sites are necessary or sensitive resources need avoidance.

4/5: In areas that are known to contain migratory and federally listed bird nesting colonies, or areas that are known to contain listed avian species during their breeding season, as identified in the USFWS IPaC migratory bird frequency charts (using IPaC results obtained at least 90 days prior to a test event), implement seasonal restrictions, such as changing flight area or seasonally restricting flights, to reduce any potential impact to migratory and federally listed bird species. If IPaC does not indicate breeding season timeframes for non-migratory identified federally listed bird species, DHS environmental personnel would utilize best available information to identify federally listed bird breeding season timeframe for its Project area and implement recommended seasonal restrictions. DHS commits to conducting testing activities outside of the migratory and federally listed bird nesting season or breeding season areas, unless in the event of imminent loss of life or property (i.e., an emergency situation). In the event that unforeseen schedule changes result in testing to occur during the migratory and listed bird nesting season, DHS commits to consulting with USFWS on a project level (as necessary) and conducting a pedestrian nest survey of the project area to avoid and minimize potential impacts. If pedestrian nest surveys are required, surveys would be conducted by qualified environmental professionals in conformance with USFWS Regional Office methodologies or state-specific guidelines.

6/7: Conduct a visual pre-flight check for migratory birds, including bald and golden eagles, and any listed species in the IPaC species report, in the flight area immediately before launch. Should DHS personnel observe a migratory bird or bald or golden eagle or any listed species including federally listed bird nesting colonies within approximately 100 feet of the sUAS launch site or flight area, the sUAS flight should be delayed or relocated to another location until the animal leaves the area on its own accord. If the animal does not leave, and a different launch site cannot be utilized, the USFWS local Field Office should be contacted for advice. In emergency situations (imminent loss of life or property), if pre-planning or early coordination is not practicable, operators should prioritize emergency response actions.

13: To further avoid impacts to bald eagles, maintain a 330-foot "primary buffer" from eagle nests in areas where human activities are considered to be detrimental to breeding pairs (e.g., residential/commercial development), and a larger 660-foot "secondary buffer" where human activities are considered to impact the integrity of the "primary buffer" (e.g., construction, multi-story buildings, and new roadways).

10: In the event that an sUAS operation involves a collision with or harassment of a federally listed species, the incident must be reported within a timely manner. Reporting should be directed to the following parties: 1. USFWS Ecological Field Office. Determine the appropriate office for your location based on the U.S. Fish & Wildlife Service website. 2. DHS Headquarters, Environmental Planning and Historic Preservation at sepephp@hq.dhs.gov. DHS Headquarters will coordinate with USFWS Headquarters on reported collision and harassment of federally listed species received related to this BE.

Biological Resources Effects Analysis

Biological resources include plants, fish, wildlife, and the habitats in which they occur. The proposed use of sUAS has extremely limited potential to result in ground disturbance or vegetation removal. Most UAs are launched from developed areas (i.e., roads, disturbed lands, maintained rights-of-ways), vegetated open areas, and/or DHS vessels in open water. Additionally, while sUAS may be operated from existing DHS vessels, the Proposed Action would not occur under water. Discountable impacts are anticipated on plants, lichens, terrestrial mammals, birds, bats, reptiles, amphibians, insect species, and terrestrial critical habitat. No impacts are anticipated on marine mammals, wetlands, waterbodies, fisheries, invertebrates (not including insects) or aquatic critical habitat. As we are analyzing impacts on biological resources from the Proposed Action from a programmatic level, impacts on wildlife and threatened and endangered species are not disparate. Therefore, an impacts discussion on wildlife species is included in this biological evaluation.

There are approximately 1,600 federally listed T&E species in the U.S. The U.S. supports thousands of species of wildlife (birds, mammals, fish, reptiles, amphibians, and invertebrates), including both resident species and migratory species. The Migratory Bird Treaty Act of 1918, as amended, protects over 800 migratory birds from capture, pursuit, hunting, or removal from natural habitat. A total of 269 individual bird taxa were listed in the Birds of Conservation Concern (BCC) 2021 report, and USFWS recommends this list be consulted in accordance with migratory bird regulations in order to protect these taxa from proposed actions (USFWS, 2021). The Bald and Golden Eagle Protection Act of 1940 (BGEPA), as amended, prohibits taking or harming bald and golden eagles, their eggs, nests (both active and inactive), or young without a permit. Any actions that are likely to cause injury to an eagle, decrease its productivity, or cause nest abandonment are prohibited under the BGEPA. Additional guidance from USFWS, such as the National Bald Eagle Management Guidelines (USFWS 2007), identify measures to protect eagles and their nests, such as use-specific buffers around nests. Bald eagles can be found throughout the U.S., except for Hawaii, usually near large bodies of water, while golden eagles are typically found in western states and nest in cliffs (Wildlife Informer, 2021; The Cornell Lab of Ornithology, 2019).

Wildlife

The U.S. supports thousands of species of wildlife (birds, mammals, fish, reptiles, amphibians, and invertebrates), including both resident species and migratory species. Many of these species use a variety of riparian and upland habitats. Common mammals within the U.S. include deer, coyote, bobcat, and variety of bats and rodents. Reptiles and amphibians, such as lizards, snakes, toads, and frogs, are present in upland and riparian habitats. Insects, such as bees and beetles, are present nationwide.

The USFWS manages a network of public lands and waters known as the National Wildlife Refuge System (NWRS). The NWRS is comprised of over 560 refuges, or units, across the U.S. which have been established with the goal of conserving and managing native species. These

units are also managed based on their potential to provide public recreational opportunities (USFWS, 2016). Each unit of the NWRS is established to serve a statutory purpose that targets the conservation of native species dependent on its lands and water. Activities within these acres are reviewed for compatibility with this statutory purpose. The Refuge System deploys a host of scientifically sound management tools to address various biological challenges. Tools range from active water management to wilderness character monitoring and are aimed to ensure a balanced conservation approach that enables wildlife and people to thrive (USFWS, 2022).

The Fish and Wildlife Act of 1956 (16 USC 742j) or Airborne Hunting Act (AHA), protects wildlife by prohibiting the shooting or harassment from an aircraft. In special cases (i.e., activities that call for the protection or aiding in the administration of land, water, wildlife, livestock, domesticated animals, human life, or crops), federal or state agencies are authorized by exception under the AHA to harass wildlife.

UA activities generally have the potential to disturb wildlife due to temporary instances of increased noise and physical encroachment (e.g., visual), including in areas typically inaccessible to humans. Impacts on wildlife can occur from flying UAs near wildlife and the presence of motor vehicles used to transport sUAS near wildlife habitat. However, with avoidance and mitigation measures in place, in the form of required BMPs, impacts on wildlife from the Proposed Action would be avoided or minimized to the greatest extent practicable.

Wildlife responses vary depending on the species and UA characteristics such as type of aircraft, flight pattern, proximity, and approach (Ramos, Maloney, Magnasco, & Reiss, 2018). UAs may be able to get within a few meters of individuals without causing a behavioral response (Mulero-Pázmány, et al., 2017; Vas, Lescroel, Duriez, Boguszewski, & Grémillet, 2015). Noise from a UA would be comparable to other noise levels in urban environments, although it would be more distinguishable in rural areas where less ambient noise is present and could temporarily disturb species in those areas. Research has shown that noise from UAs operated at 328 feet AGL or higher is more likely to attenuate and minimize distress to wildlife (Mulero-Pazmany, et. al., 2017). DHS and Components would operate sUAS to avoid wildlife to the greatest extent practicable and maintain the highest possible allowable altitude to reduce interactions with species.

Generally, human presence at launch and landing sites of UAs could also disturb nearby wildlife. Mobile species disturbed by activities such as these would generally be expected to leave the area and return once the disruption ends. Less mobile species would likely take shelter while personnel are on-site. Impacts from UA activities are generally temporary and sporadic.

The Proposed Action would limit launch and landing sites to previously developed areas (i.e., roads, disturbed lands, maintained rights-of-way), vegetated open areas, and/or existing DHS vessels in open water that already operate under existing permits or authorities. Flight times of UAs for sUAS operations are no more than two hours given current battery life capability, with an average DHS UAs operation time of one hour. Training, testing events or security patrols may be repetitive in a specific geographical area; however, with the implementation of the required BMPs and their typical location in previously disturbed areas, the impacts and cumulative impacts of repetitive action associated with them would be discountable. The Proposed Action is not anticipated to result in any permanent displacement of species. sUAS operators will avoid buzzing, hovering, landing, taking off, or taxiing near animals as noise and proximity of sUAS may cause stress. Terrestrial and marine wildlife would be avoided by maintaining the highest

possible allowable altitude to reduce interactions with species; conducting visual pre-flight checklists to identify whether wildlife is present or forecasted to be present during sUAS operations; and avoiding animal-directed movements, vertical approaches, lingering or maneuvering near animals. Impacts on marine mammals are discussed in greater detail under the Marine Mammals section.

Given that sUAS operations will use best management practices to avoid or minimize impacts to terrestrial and marine wildlife, potential collisions of sUAS with airborne wildlife, and resultant injury or mortality, are anticipated to be exceedingly rare and therefore discountable. While sUAS have the potential to fly at high speeds and BVLOS, the majority of sUAS operations involve slower speeds within visual line of sight that provide ample opportunity for collision avoidance on the part of both the remote pilot and the flying species. Operators of UAs are required to abide by FAA regulations. Specifically, 14 CFR 107.31 requires the visual observer or operator of the UA to maintain sight of the unmanned aircraft throughout the entire flight and 14 CFR 107.51 requires operations to not exceed 100 miles per hour. If the operation of an sUAS is required to go beyond these parameters, additional permitting is required by FAA.

Operation of UAs may elicit anti-predator responses from birds, such that the UA may be attacked by a bird as a behavioral response; such reactions are more likely to occur for flight patterns that seemingly target individuals rather than those that just operate within the area (Mulero-Pázmány, et al., 2017). To minimize the potential for collision or attack, operators would conduct pre-flight readiness reviews and pre-flight checklists, which identify whether wildlife is currently present or forecasted to be present during the sUAS operation. If the presence of wildlife signifies a hazard, sUAS operators would stand down until the airspace and launch site is clear. Additionally, sUAS operators would coordinate with federal land managers (e.g., national wildlife refuges and national parks) to identify potential site-specific wildlife concerns should operations occur within or over jurisdictional areas.

DHS, in consultation with the USFWS, has prepared the sUAS BMP Implementation Checklist in Attachment A to assist DHS and Component operators with ensuring that they comply with these BMPs during sUAS activities. DHS would adhere to avoidance and minimization measures by sUAS operators prior to operations, such as, conducting visual pre-flight readiness reviews and pre-flight checklists to identify whether wildlife is present or forecasted to be present during sUAS operations; ensuring airspace and launch site is clear prior to beginning sUAS operations; maintaining the highest possible allowable altitude to reduce interactions with species; adhering to existing agreements, avoidance measures, or other practices put in place by USFWS, NOAA, or other experts with jurisdiction; avoiding known sensitive wildlife areas through coordination with federal land managers; avoiding animal-directed movements, vertical approaches, lingering or maneuvering near animals; abiding by the BMP Implementation Checklist in Attachment A; and abiding by the full list of required BMPs in Table 1. Therefore, DHS concludes that the Proposed Action would have discountable or insignificant impacts on wildlife species.

Federally Listed Species

Special status species are those species for which state or federal agencies provide an additional level of protection by law, regulation, or policy. Included in this category are federally listed species that are protected under the Endangered Species Act of 1973 (ESA), as amended, species considered as candidates for such listing by the USFWS, and those species that are state-listed as threatened, endangered, or of special concern, or otherwise protected by federal or state laws.

Special status species are broadly distributed throughout the U.S. and its territories. DHS in coordination with USFWS compiled a list of federally designated and proposed critical habitat within the action area (see Attachment B).

The ESA establishes a federal mandate to conserve, protect, and restore federally listed threatened and endangered (T&E) plants and animals and their habitats. Section 7 of the ESA mandates all federal agencies to consult with the USFWS and/or the NOAA National Marine Fisheries Service (NMFS) for proposed actions with the potential to affect T&E species or their critical habitat. In accordance with Section 7 of the ESA, DHS, in coordination with USFWS, must ensure that any federal action authorized, funded, or carried out by the agency does not jeopardize the continued existence of federally listed T&E species or result in destruction or adverse modification of designated critical habitat of federally listed species. The USFWS Information for Planning and Consultation (IPaC: Home (fws.gov)) database identifies federally protected species and critical habitat within, or affected by, the subject site under USFWS jurisdiction. There are approximately 1,600 federally listed T&E species in the U.S. (USFWS 2022). The Environmental Professional will review the IPaC list, and the BMP Checklist as part of the NEPA, National Historic Preservation Act, and ESA administrative record for the proposed action.

Potential impacts on special status species, including federally listed and state-listed T&E species, would be similar to impacts discussed under wildlife. Species proposed or listed in the future would be addressed with the BMPs as written in Attachment A. DHS will review species listed as endangered or threatened, in coordination with USFWS, to determine if the Biological Resources measures in Attachment A: BMP Implementation Checklist are sufficiently protective on an annual basis. If the BMP Implementation Checklist is not protective or requires additional mitigative measures, DHS would determine if re-initiation of Section 7 consultation would be required. At the time of the first check-in, DHS and USFWS would determine the necessity, frequency, and timing of future annual coordination efforts on this programmatic. DHS may choose to consult specifically for individual actions for newly listed species in lieu of annual coordination on this Programmatic consultation. In the event DHS would move forward with site-specific consultations in lieu of annual check-ins, DHS would notify USFWS in writing to address its path forward regarding newly listed species not covered under this programmatic. As stated previously under wildlife, human presence at launch and landing sites of UAs could disturb nearby wildlife and critical habitat, this includes potential federally listed mammals, plants, amphibians, reptiles, insects, and bird species. DHS in coordination with USFWS has identified the following federally listed and proposed species by taxa, which include: mammal species, plant species (which include flowering plants, ferns and allies, conifers and cycads, lichens), amphibian species, reptile species, insect species, and bird species (See Attachment B for a complete list of federally proposed and listed species). Noise and visual impacts are not anticipated on federally listed or proposed fish, invertebrates, or marine mammals as the Proposed Project does no propose underwater activities. Additionally, DHS would avoid flying directly over or near marine mammals hauled out or at the water's surface. Scientific literature (see Marine Mammal section) indicates little to no behavioral responses on various marine wildlife due to visual or noise impacts from use of similar sUAS devices proposed in the PEA. Operators would maintain visual line of sight to avoid marine mammals and DHS would implement the BMP Checklist. DHS would avoid marine mammals unless with prior authorization from USFWS or NOAA. The Proposed Action would not increase the frequency or intensity of marine operations. DHS would utilize existing marine vessels with existing

regulatory permits or authorities for use and operation of these vessels. DHS sUAs will not operate underwater and no ground disturbance is anticipated; therefore, the Proposed Action would have *no effect* on federally listed or proposed fish, invertebrates (with the exception of insects), and marine mammals. Additional discussion on marine mammals is found in the Marine Mammal Section below.

As stated previously, UA activities generally have the potential to disturb wildlife due to temporary instances of increased noise and physical encroachment (e.g., visual), including in areas typically inaccessible to humans. Impacts on federally listed or proposed species (listed in Attachment B) can occur from flying UAs near wildlife and the presence of motor vehicles used to transport sUAS near wildlife habitat. Additionally, impacts on federally listed or proposed species, could occur through direct collision or by causing behavioral reactions as UAs pass in close proximity.

Minimal disturbance to vegetation (including federally listed and proposed plant species and lichen) could occur due to the presence of sUAS personnel walking or driving within vegetated areas. However, as stated in the BMPs, sUAS operators would use existing roadways, trails, paved surfaces, vegetated open areas, or otherwise previously disturbed areas for launch and landing sites. Although human presence or sUAS operations has the potential to disturb federally listed or proposed species, the vast majority of operations are anticipated to have minimal to no ground disturbance. More mobile species that may be disturbed by activities would generally be expected to leave the area and return once the disruption ends. Less mobile species would likely take shelter while personnel are on-site. These disturbances would be temporary and sporadic. The Proposed Action is not anticipated to result in any permanent displacement of species. sUAS may be operated from existing DHS vessels; however, the Proposed Action would not occur under water and no impacts on marine mammals are anticipated (see Marine Mammal section below).

Noise impacts are discussed in greater detail in the general wildlife section above. Although noise or visual observation has the potential to disturb non-flying species from the air, sUAS operators will avoid buzzing, hovering, landing, taking off, or taxiing near animals as noise and close proximity of sUAS is likely to cause stress. Impacts on airborne species (birds, bats, and insect species) are discussed in greater detail below. Effects to non-flying species will be avoided or minimized by maintaining the highest possible allowable altitude to reduce interactions with species. To minimize the potential for collision with federally listed or proposed species, operators would conduct pre-flight readiness reviews and pre-flight checklists, which identify whether wildlife is currently present or forecasted to be present during the sUAS operation. Direct collisions are highly unlikely as sUAS pilots are extensively trained in how to safely operate and avoid structures and hazards, and typically have visual line of sight of UAs. The effects on sUAS on wildlife are under-reported in literature. sUAS have been known tools and effective methods for scientific researchers, emergency responders, and law enforcement official to collect data that supports the conservation and recovery of protected species if used responsibly by trained sUAS operators.

Given the avoidance and minimization measures sUAS operators will adhere to, such as, prior to sUAS operations, conduct pre-flight readiness reviews and pre-flight checklists to identify whether wildlife is present or forecasted to be present during sUAS operations; ensuring airspace is clear prior to beginning sUAS operations; maintaining the highest possible altitude to reduce interactions with species; adhering to existing agreements, avoidance measures, or other

practices put in place by USFWS, NOAA, or other experts with jurisdiction; avoiding known sensitive wildlife areas; avoiding animal-directed movements, vertical approaches, lingering or maneuvering near animals; abiding by the Best Management Practices Implementation Checklist in Attachment A and abiding by the full list of required BMPs on Table 1; DHS concludes that the Proposed Action ***may affect but, is not likely to adversely affect*** federally listed or proposed plants, lichen, mammals (including bats), birds, reptiles, insects, and amphibian species. Impacts discussed are anticipated to be minimized or avoided through implementation of these measures, and potential collisions of sUAS with federally listed or proposed species resulting in injury or mortality are anticipated to be exceedingly rare and therefore discountable or insignificant. As stated previously, sUAS may disturb airborne species, such as, federally listed or proposed birds, bats, and insects through direct collision with UAs and through species' behavioral reactions as UAs pass in close proximity to these species during flight or other daily behaviors, such as roosting, nesting, or feeding. Impacts on species impacted by the Proposed action area discussed in greater detail below. A complete list of federally listed or proposed plants, mammals, birds, bats, reptiles, insects, amphibian species and associated critical habitat with a ***may affect but, is not likely to adversely affect*** determination is included in Attachment B.

Critical Habitat and Vegetation

Critical habitat designations are specific areas typically within the species' range that contain the physical or biological features that are essential to the conservation and recovery of federally listed T&E species. For example, physical and biological features present in critical habitat may include vegetation, water, substrate, and aquatic invertebrate fauna, among others. These features will vary depending on the particular needs of a listed species. It is unlikely that these features would be affected by the operation of sUAS. No ground disturbance is proposed as part of the Proposed Action Alternative. Although there is potential for sUAS activities to occur in areas that include critical habitat and suitable habitat for federally listed T&E species, there is little to no potential for collision of the sUAS that would cause damage to the physical and biological features of critical habitat. Such collisions would be highly unlikely, as sUAS pilots are extensively trained in how to safely operate and avoid structures, hazards, and typically have visual line of sight of UAs. Minimal disturbance of critical habitat has the potential to occur due to the presence of sUAS personnel walking or driving within critical habitat. However, if sUAS activities occur within critical habitat and/or suitable habitat for federally listed T&E species, no substantial loss or degradation of terrestrial or aquatic habitat would occur as a result of the Proposed Action Alternative; sUAS operators would minimize impacts to critical habitat, listed plants, and lichens by utilizing existing roadways, trails, paved surfaces, vegetated open areas, or otherwise previously disturbed areas, for launch and landing sites. If DHS determines it necessary to launch or utilize landing sites within naturally vegetated areas of terrestrial critical habitat or the range of federally listed plant or lichen species, DHS will coordinate with the appropriate USFWS Field Office to identify if alternate launch or landing sites are necessary or sensitive resources need avoidance. Therefore, the Proposed Action Alternative impacts on terrestrial critical habitat, federally listed plants, and lichens would be insignificant or discountable. No impacts on aquatic critical habitat are anticipated from launching and use of UAs from DHS vessels. DHS would utilize existing marine vessels with existing regulatory permits or authorities for use and operation of these vessels and the operation of the vessels themselves is not a part of the proposed action. As UAs would not be operated in-water, they would not result in underwater disturbances to aquatic critical habitat. The Proposed Action ***may affect but is not likely to adversely affect*** terrestrial critical habitat for listed or proposed species,

federally listed plants, and lichens. The Proposed Action will have ***no effect on*** aquatic critical habitat for listed or proposed species.

Insects

In accordance with Section 7 of the ESA, DHS, in coordination with USFWS compiled a list of federally listed insect species with the potential to be impacted by the Proposed Action (see Attachment B for a complete list of federally listed insect species). If UAs were to fly near or over an insect, the insect may react to the physical movement or noise generated by the UA by changing flight direction, taking cover under vegetation, or otherwise changing its behavior. Insects would be expected to return to their natural behaviors shortly after a UA leaves the area. In the unlikely event that a UA collides with a flying insect, it would, in most cases, result in the death of the insect. However, many insects are able to avoid collisions with surrounding vegetation and are well adapted to flying in cluttered environments (Baird and Dacke, 2016) and would therefore be expected to avoid collisions with UAs. Some insects, for example the Hines Emerald Dragonfly, fly over herbaceous habitat and often near clusters of shrubs or forest edge. These insect species fly over open fields at a height of 1 to 3 meters (or 3 to 10 feet) and are active during the day. These flight altitudes are typical for the majority of federally listed and proposed insect species. UA operators would maintain altitude of 65 feet above the ground, vegetation, or tree canopy if IPaC results indicate federally listed or proposed terrestrial insect species, thus minimizing or avoiding impacts to insect species. Therefore, with implementation of the listed BMPs and mitigative measures, UA strikes to flying insect species associated with the Proposed Action are not anticipated, and auditory and visual disturbances are minimized and anticipated to be discountable or insignificant. Thus, the Proposed Action ***may affect, but is not likely to adversely affect*** federally listed and proposed insect species.

Birds

DHS, in coordination with USFWS identified federally-listed or proposed bird species (see attachment B for a complete list of federally listed species). Potential harm to birds through direct collision with UAs could occur; however, the altitudes at which birds fly can vary greatly based on the type of bird, where they are flying (over water or land), whether they're migrating, and other factors, such as weather. Bird species can be known to fly at altitudes below 3,000 feet, however most birds fly under 500 feet except during migration. Migration typically occurs at higher altitudes. UAs have a lower normal operating altitude (e.g., less than 1,200 feet AGL) and lower maximum speed (e.g., up to 115 mph). Despite the technical capabilities, current DHS and Component sUAS operations are generally limited to a groundspeed of 100 mph, an altitude of 400 feet AGL, and a range within line of sight of the Visual Observer(s) in order to comply with 14 CFR Part 107. Most UAs have a max operation time of 2 hours (based on battery life of the UA) and are generally in operation for less than 1 hour. Although, there can be exceptions to this regulation: some Components (e.g., CBP) have recently obtained an updated COA from the FAA for special operational circumstances. In accordance with the COA, CBP is permitted to fly up to 1,200 feet AGL and may perform BVLOS operations up to an altitude of 400 feet AGL in emergency situations and to safeguard human life.

The slowest flight speed recorded for ESA-listed birds is 15 mph for the Bermuda petrel, Hawaiian petrel, and roseate tern (Alerstam & Gudmundsson, 1999; Spear & Ainley, 1997); however, birds taking off from the water's surface or landing would be likely to fly at even slower speeds. The fastest flight speeds recorded for ESA-listed birds are 73 mph for Steller's

eiders (Alerstam & Gudmundsson, 1999), 79 mph for short-tailed albatrosses (Catry, Phillips, & Croxall, 2004), and 98 mph for marbled murrelets (Nelson, Marbled murrelet (Brachyramphus marmoratus), 1997). UAs generally move at slow speeds during operations, approximately 15 to 30 mph. Therefore, it is likely that birds could easily maneuver and avoid an approaching UA when they're traveling at low speeds, thus minimizing potential collisions. UA operators would adhere to the BMPs in **Table 1**, such as conducting pre-flight visual checklists to avoid and minimize impacts on airborne wildlife until airspace is clear, compliance with FAA regulations CFR Part 107 maintaining visual line of sight and operating below the 100 miles per hour threshold, thereby minimizing potential collision impacts on avian species.

Birds can be flightless while molting and may react more strongly towards UA flights overhead. However, the noise level of a UA at altitudes between 16 and 33 feet is expected to be close to ambient noise levels (Christiansen, Rojano-Donate, Madsen, & Bejder, 2016). UAs flying above 33 feet are expected to produce noise levels slightly less than ambient noise levels. sUAS operators would avoid conducting UAS operations within 200 feet (vertically and horizontally) of a known breeding or roosting colony, or other known high density nesting area, of federally listed or proposed birds or migratory birds. When possible, UAS operations would conduct operations during seasons when federally listed, proposed, or migratory birds are not present in the operational area. In addition to the pre-flight check, if personnel encounter wildlife after the launch, operators would maintain a safe distance (at least 200 feet recommended) and would avoid buzzing, animal-directed movements, hovering, landing, taking off, lingering, or taxiing near animals. If despite these measures, wildlife, including migratory birds, listed animal species, and bald and golden eagles exhibit signs of distress, the UAS will be immediately moved beyond the 200 foot recommended distance from the animal (in non-emergency actions). Therefore, it is highly unlikely that UAs passing by nesting or molting birds would result in an adverse response from the species. Thus, the effects to federally listed birds from the Proposed Action are anticipated to be discountable or insignificant. Therefore, the Proposed Action ***may affect, but is not likely to adversely affect***, federally listed bird species.

Bats

DHS, in coordination with the USFWS, compiled a list of bat species that are present nationwide (see a complete list of species in Attachment B). Although DHS personnel predominately operate sUAS during the daytime, there is the potential for sUAS nighttime operations. Bats are predominately nocturnal and temporary noise during UA operations could disturb roosting bats. Potential UA strikes could occur to bats in flight during nighttime operations. No ground disturbance or impacts on suitable bat habitats are anticipated from the Proposed Action. Bats utilize a diversity of forest habitats for roosting, foraging, and raising young. In general, any tree large enough to have a cavity or that has loose bark may be utilized by a bat for roosting or rearing young. There has been a dramatic population decline of certain federally listed bat species caused by white-nose syndrome, a disease caused by an invasive fungus that ultimately causes affected hibernating bats to starve to death over the winter. Legal protections afforded by the listing status of bats are focused on minimizing and avoiding direct loss of the remaining individuals by protecting the known hibernation sites and limiting forest management activities where certain bats (e.g., the northern long-eared bat [NLEB]) are most likely to be present in certain times of the year. Because the PEA is nationwide, there is potential suitable habitat present for federally listed bat species. Bats hibernate over the winter and some species hibernate in caves or abandoned mines which are typically reused by bats year after year; bats tend to use

the same hibernation site and can occur in very large numbers. It is highly unlikely that UA operations would fly close enough to impact bat species hibernacula within caves; however, as previously stated, bats can roost in forested habitats as well. Bats are often moving and are more active during the night. DHS would conduct sUAS operations predominately during daylight hours, thereby minimizing potential impacts on bats. UAs would not be flown in caves or abandoned mines; however, complete avoidance of adjacent caves or existing forested areas may not be practicable.

Noise associated with UAs would be temporary (i.e., UAs have a battery life of up to 2 hours) and have insignificant effects on bats. If in-flight collisions occur, UAs may harm the impacted bat. Operators would follow BMPs listed in Attachment A to avoid and minimize impacts on bat species. Additionally, sUAS operators would use their discretion when visibility is impeded to the point that collision with a bat may occur, thereby minimizing potential collision with bats during times of low visibility operations. All sUAS include detect-and-avoid systems or similar technology as part of the systems configuration of drones regardless of light conditions.

Based on scientific research, there are various onboard detect-and-avoid systems for use of sUAS BVLOS operations (Loffi, J.M., et.al 2022). Systems currently on the market include, but are not limited to, systems originally designed for manned aviation, such as traffic collision and avoidance (TCAS) systems or automatic dependent surveillance-broadcast, that periodically broadcast and receive identity and position (Loffi, J.M., et.al, 2022). There are various technologies available on the market that could be utilized to actively or passively detect non-cooperative traffic. DHS may utilize a combination or similar technology of sUAS with detect-and-avoid systems currently used on the market. However, the technology used would be project-specific and dependent on the DHS action being undertaken. Active systems include LiDAR or radar systems that omit energy and measures time of flight of the return of that energy back to the sensor to determine range to a target. Non-passive systems include acoustic sensors that can detect aircraft by sensing frequency but are limited in its capabilities as more electric platforms enter airspace. Another, non-passive system includes electro-optical and infrared sensors cameras. EO/IR cameras are by far one of the most popular on the market as it can provide primary or secondary source of information. A study, for example, using a standard CASIA system (mounted camera) showed data detecting non-cooperative traffic at greater than 1640 feet detection range (Loffi, J.M., et. al 2022). The FAA and various partners are conducting research activities such as flight tests, modeling and simulation, technology evaluations, risk assessments, and data gathering and analysis in areas that include detect-and-avoid, UAS communications, human factors, system safety, and certification to enable the agency to make informed decisions on drone integration (FAA, 2022). The FAA has not defined requirements for detect-and-avoid systems in regulations. For this reason, most UA flights are conducted within visual line of sight or within restricted airspace. Therefore, continued research on the topic of the most effective detect-and-avoid systems to utilize for sUAS operations still vary and is an ongoing process. The last line of defense in any manned air-to-air encounter is a sUAS operator.

The mission determines which specific device is attached to the UA, but DHS most commonly requires visual capabilities to capture still photographs, video recordings, or live video feeds. As stated in the PEA, the purpose of the Proposed Action is to provide DHS with the capability to expand visual capability and gather information, surveillance, reconnaissance, and communities by employing remote controlled aerial reconnaissance equipment equipped with cameras,

sensors, and other data collecting equipment. Different operations may require the use of different sUAS to complete the mission, and various sUAS types may also be used for similar operations; however, the majority of these operations would require the UA to be outfitted with camera, video, or some other sensory or imagery equipment. These systems would minimize the risk of collision on bats during nighttime operations. During daytime hours, DHS operators would generally operate UAs within line of sight, thereby minimizing potential collisions with bats. Nighttime operations may disrupt sleep or disturb nocturnal wildlife, such as bats and noise emitted from UAs may interfere with low-frequency bat calls and cause bats to avoid UAs flying overhead (Ednie, Bird, & Elliot, 2021). However, overall noise disturbance, is still anticipated to be insignificant because flight times are limited to between 1 and 2 hours, and most free-flying UAs would not linger in a particular location. Additionally, if federally listed or proposed bats are identified, DHS would implement BMPs, such as, operating sUAS during the daylight hours (one hour after sunrise to one hour before sunset) when possible and in non-emergency nighttime operations would maintain a minimum altitude of 98 feet above vegetation, tree canopy, or open water (including rivers, streams, lakes, reservoirs, etc.) thereby minimizing potential impacts on bats. If DHS operators cannot maintain this altitude during nighttime operations (non-emergency), DHS would consult with the USFWS Field Office as applicable. Additionally, UAs would not be flown in caves or abandoned mines. Therefore, significant impacts on bats are not anticipated.

With implementation of the BMPs identified in the BMP Checklist (Attachment A), impacts on bats would be discountable or insignificant. UAs have the potential to disturb bats during nighttime operations, therefore, the Proposed Action ***may affect, but is not likely to adversely affect*****,** federally listed bat species.

Migratory Birds and Bald Eagles

Impacts on bald eagles and migratory birds would be similar to impacts discussed above for general wildlife and ESA-listed birds. Noise associated with operation of UAs would be temporary (up to 2 hours). Although noise may temporarily disturb birds, there is an abundance of suitable habitat, and some species may become acclimated to the temporary disturbance. Bald eagles can be found throughout the U.S., except for Hawaii, usually near large bodies of water, while golden eagles are typically found in western states and nest in cliffs Wildlife Informer, 2021; The Cornell Lab of Ornithology, 2019). In the event that a known bald eagle is encountered, DHS personnel would conduct sUAS activities in compliance with the USFWS National Bald Eagle Management Guidelines. DHS would also abide by certain buffers for known bald eagle nests such a 330-foot "primary buffer" where human activities are considered to be detrimental to breeding pairs of bald eagles (e.g., residential/commercial development), and a larger 660-foot "secondary buffer" where human activities are considered to impact the integrity of the "primary buffer" (e.g., construction, multi-story buildings, new roadways). DHS and Components would avoid flying near eagles, eagle nests, and migratory bird nests when possible. Due to the temporary and sporadic nature of the Proposed Action, nest abandonment would not be anticipated.

Although there is potential to impact avian species, such as migratory birds and/or bald eagles, DHS concludes the Proposed Action would not significantly impact bald eagles given the likelihood of birds returning immediately following temporary disruption, and that DHS personnel would follow established guidelines when conducting sUAS operations in the presence of bald and golden eagles. BMPs associated with migratory birds, bald and golden eagles, and

federally listed and proposed birds are discussed in greater detail under the bird section and included in Attachment A BMP Checklist.

Similarly, given the likelihood of birds returning immediately following completion of sUAS activities, the lack of tree clearing or ground disturbance associated with the Proposed Action, and noise associated with operation of UAs not having population level impacts on migratory birds, DHS concludes that the Proposed Action would not have population level impacts on migratory birds and would not significantly impact migratory bird populations.

Marine Mammals

No impacts on aquatic habitat or marine mammals are anticipated from launching and use of UAs from DHS vessels. DHS would utilize existing marine vessels with existing regulatory permits or authorities for use and operation of these vessels and the operation of the vessels themselves is not a part of the proposed action. As UAs would not be operated in-water, they would not result in underwater vibrations or disturbances to marine mammals. Different marine mammals may present different behavioral responses to UAs in general, such as turning toward the UA, group dispersal, or fleeing from the UA flight path (Ramos, Maloney, Magnasco, & Reiss, 2018). One study found that two multi-rotor UAs produced broad-band in-air source levels of 80 decibels referenced at 20 microPascals with frequencies centered at 60 to 150 hertz (Hz). When flying at altitudes of 16 to 33 feet above the water's surface, the received levels of these UAs were considered to be close to ambient noise levels at the water's surface in many different types of shallow water habitats and below the hearing thresholds of most marine mammals (Christiansen, Rojano-Donate, Madsen, & Bejder, 2016).

Smith et al. conducted a study comparison of applicable behavioral resources from marine wildlife due to various UAS devices used in the presence of marine wildlife (2016). The models of UAs include both Vertical takeoff and landing (VTOL) and fixed-wing (FW) systems that are applicable examples of the kind of UAs that could be utilized in the Proposed Action. FW UAs have a motor and are propelled horizontally, while rotary wing UAs have one or more propellors that lift the UA in a vertical direction (Figure 1). Based on the results there were little to no behavioral responses observed for various marine wildlife taken at various altitude levels ranging from as low as 9 meters to 300 meters. No behavioral responses were noted for cetaceans (e.g. humpack whale, bowhead whale), Mysticetes and odontocetes (e.g. blue whale, humpback whale, gray whale, and sperm whale, beluga), Pinnipeds Ottariids (e.g. stellar sea lion), and sirenians sirenia (e.g. manatees). Little to no responses on Phocids (e.g. ice seals, bearded seals, ribbon seal, ringed seal, spotted seal, gray seal, harbor seal, stellar sea lion). Harbor seals on more remote haulout sites observed flushing with UAS at 50 meters and Gray seal (breeding seals) were alert, lifted heads with UAS at 30 meters, shuffling and changes in positions were observed when UAS were at 15 meters for molting seals. Gray seals were observed to flee from UAS at 5 meters.

DHS would follow FAA guidelines for sUAS operations and altitude limitations. UAs would not be flown directly over seal haulout locations and would avoid flying directly over or near marine mammals hauled out or at the water's surface (see **Table 1**). Additionally, DHS would follow NOAA general guidelines listed "Guidelines When Viewing from the Air" which lists mitigative avoidance measures, that include, avoid flying drones or sUAS, near animals as the noise and close proximity of drones can harass animals and cause stress; and avoid buzzing, hovering, landing, taking off, and taxiing near marine mammals on land or in the water as these activities

(NOAA 2023). NOAA Fisheries is currently developing national guidance for drone (or UAS) operations targeting marine mammals and sea turtles. The U.S. National Park Service also limits the use of drones in many National Parks, some of which provide habitat to marine mammals. sUAS operators when utilizing sUAS from a vessel will take appropriate measures to avoid marine mammals while conducting sUAS activities. This includes the described avoidance measures listed above.

Although there is potential for accidental marine mammal strikes from operational DHS vessels, these potential impacts could occur regardless of whether a sUAS was being operated and the USCG, for example, would follow its CGD17INST 16214.2A (2011), which outlines procedures for avoiding marine mammals and protected species; reporting whale and protected species sightings, strandings, and injuries; and enforcing the MMPA and ESA. The Proposed Action has no-in water impacts; operators would maintain visual line of sight to avoid marine wildlife; scientific literature indicates little to no behavioral responses due to visual or noise impacts from use of various similar sUAS devices proposed in the EA; DHS proposes to avoid impacts on marine mammals through measures such as avoiding flying within 500 feet of all known haul-out locations and avoidance of marine mammals at the water's surface (unless have prior authorization from the USFWS or NOAA); therefore, pursuant to the ESA the Proposed Action would have ***no effect*** on federally listed marine mammals. Pursuant to the MMPA, the Proposed Action is not likely to result in takes of marine mammals. DHS is not seeking an authorization under section 101(a)(5) of the MMPA because the Proposed Action would not affect marine mammals. Therefore, the use of existing DHS vessels already in operation to utilize sUAS would not result in an increase of accidental marine mammal strikes and would be similar to existing DHS operational hazards present on marine wildlife.

Conclusion

DHS, through USFWS technical assistance and informal consultation, has identified the following federally listed and proposed taxa that have the potential to be impacted by the Proposed Action: terrestrial mammal species, plant species (which include flowering plants, ferns and allies, conifers and cycads), lichens, amphibians, reptiles, insects, birds, bats and critical habitat for the aforementioned species (See Attachment B for official species list). The Proposed Action has extremely limited potential to impact federally listed T&E species or proposed species through direct collision or by causing behavioral reactions as UAs pass in close proximity to ESA-listed plant, lichen, terrestrial mammal, bird, bat, reptile, amphibian, or insect species. Federally listed T&E species behavioral responses will vary depending on the species and the UA characteristics such as type of aircraft, flight pattern, proximity, and approach. Minimal disturbance to vegetated areas, which may include listed plants, lichens, and/or critical habitat, could occur due to the limited presence of sUAS personnel walking or driving within the range of listed plants, lichens, or in critical habitat. Permanent impacts to critical habitat within the operational area would be highly unlikely as no ground disturbance is proposed (including tree clearing or ground movement). Additionally potential impacts could occur if DHS utilizes launch and landing sites within critical habitat, the range of federally listed plant species, or the range of federally listed lichens. No substantial loss or degradation of terrestrial habitat is anticipated. sUAS operators would minimize impacts on critical habitat by utilizing the required BMP checklist and by utilizing existing roadways, trails, paved surfaces, vegetated open areas, or otherwise previously disturbed areas for launch and landing sites. If DHS determines it necessary to launch or utilize landing sites within naturally vegetated areas of terrestrial critical

habitat or the range of federally listed plant or lichen species, DHS will coordinate with the appropriate USFWS Field Office to identify if alternate launch or landing sites are necessary or sensitive resources need avoidance.

Direct collision with federally listed or proposed species would be highly unlikely, as sUAS pilots are extensively trained in how to safely operate and avoid structures and hazards, and typically have visual line of sight of UAs. DHS operators would conduct a visual pre-flight check for migratory birds and federally listed species immediately prior to launch. DHS UAs are typically operated at slower speeds to provide ample opportunity for collision avoidance by both the remote pilot and more mobile federally listed species. DHS operators would comply with all FAA regulations in 14 CFR Part 107, Operation of Small Unmanned Aircraft Systems, as applicable, including visual line-of-sight and operating below the 100 miles per hour threshold. Training, testing events or security patrols may be repetitive in a specific geographical area; however, with the implementation of the required BMPs and their typical location in previously disturbed areas, the impacts and cumulative impacts of repetitive action associated with them would be discountable. The Proposed Action is not anticipated to result in any permanent displacement of species. Increased noise or physical encroachment has the potential to disturb listed species, including in areas typically inaccessible to humans. It is highly unlikely that UAs passing by nesting or molting birds would result in adverse response from the species. UAs operators would avoid conducting UAS operations within 200 feet (vertically and horizontally) of a known breeding or roosting colony, or other known high density nesting area, of federally listed or proposed birds or migratory birds. When possible, UAS operations would conduct operations during seasons when federally listed, proposed, or migratory birds are not present in the operational area. In addition to the pre-flight check, if personnel encounter wildlife after launch, operators will maintain a safe distance (at least 200 feet recommended) and would avoid buzzing, animal-directed movements, hovering, landing, taking off, lingering, or taxiing near the observed wildlife. If despite these measures, wildlife, including migratory birds, listed animal species, and bald and golden eagles exhibit signs of distress, the UAS will be immediately moved beyond the 200 foot recommended distance from the animal (in non-emergency actions). Therefore, it is highly unlikely that UAs passing by nesting or molting birds would result in an adverse response from the species.

UA disturbance to insect species associated with the Proposed Action are not anticipated, and auditory and visual disturbances would be avoided and minimized with the required BMP Checklist. UA operators would maintain altitude of 65 feet above the ground, vegetation, or tree canopy if IPaC results indicate federally listed or proposed terrestrial insect species. No impacts on bats are anticipated during daytime operations. Nighttime operations may disrupt sleep or disturb nocturnal wildlife, such as bats, and noise emitted from UAs could interfere with low-frequency bat calls and cause bats to avoid UAs flying overhead. DHS would conduct sUAS operations predominately during daylight hours (one hour after sunrise to one hour before sunset) whenever possible. In addition, in non-emergency nighttime operations would maintain a minimum altitude of 98 feet above vegetation, tree canopy, or open water (including rivers, streams, lakes, reservoirs, etc.) thereby minimizing potential impacts on bats. UAs would not be flown in caves or abandoned mines. UA strikes on bats are not anticipated.

With implementation of the required BMPs listed in Appendix A and table 1, the Proposed Action impacts on ESA-listed plants, lichens, terrestrial mammals, birds, bats, reptiles, amphibians, insect species, and terrestrial critical habitat are discountable. DHS has determined

the operational use of sUAS may affect but, is not likely to adversely affect federally listed or proposed plants, lichens, terrestrial mammals, birds, bats, reptiles, amphibians, insect species and critical habitat for the aforementioned species.

The Proposed Action would not operate under water or within 500 feet of all known haul-out locations and would avoid marine mammals at the water's surface (unless with prior authorization from the USFWS or NOAA); therefore, no impacts on marine mammals are anticipated. No disturbance or alterations to aquatic critical habitat are proposed or anticipated. Based on scientific literature research, little to no behavioral responses have been observed from various marine wildlife due to the presence of UAs at various altitude levels. Operators would avoid flying directly over or near marine mammals hauled out or at the water's surface. DHS would avoid marine mammals unless with prior authorization from USFWS or NOAA. Therefore, the Proposed Action would have no effect on federally listed or proposed marine mammals, fish, invertebrates (with the exception of insects), or aquatic critical habitat.

DHS would utilize required BMPs revised in coordination with USFWS and included in a BMP Implementation Checklist (Attachment A) to minimize and avoid impacts to federally listed or proposed species. Should the BMPs listed not be feasible for current or future related DHS and Component proposed actions, project-specific tiering of appropriate NEPA documentation and project-specific ESA section 7 consultation would be required. DHS will review species listed as endangered or threatened, in coordination with the USFWS, to determine if the Biological Resources measures in Attachment A: BMP Implementation Checklist are sufficiently protective on an annual basis. If the BMP Implementation Checklist is not protective or requires additional mitigative measures, DHS would determine if re-initiation of Section 7 consultation would be required. At the time of the first check-in, DHS and USFWS would determine the necessity, frequency, and timing of future annual coordination efforts on this programmatic. DHS may choose to consult specifically for individual actions for newly listed species in lieu of annual coordination on this Programmatic consultation. In the event DHS would move forward with site-specific consultations in lieu of annual check-ins, DHS would notify USFWS in writing to address its path forward regarding newly listed species not covered under this programmatic.

On April 12, 2022, DHS submitted correspondence to the stakeholders, including USFWS and NOAA, to initiate scoping for the PEA analysis. Subsequently, the USFWS and NOAA were notified of the Draft PEA publication on August 11, 2022, to which the USFWS Southeast Region provided comments on October 12, 2022, regarding the NWRS; these comments have been addressed in the Final PEA. Finally, pursuant to Section 7 of the ESA, DHS submitted a Draft Biological Evaluation, Standard BMPs, and sUAS BMP Implementation Checklist to the USFWS on September 26, 2022, regarding potential effects on federally listed insect, bird, and bat species. The USFWS responded with a request for more information on November 18, 2022. In November 2022, DHS reached out to USFWS HQ staff to coordinate efforts on the request for information, additional BMPs, and address points of discussion regarding the programmatic consultation. Through a collaborative effort, DHS responded to and addressed USFWS comments and recommendations. DHS and USFWS consulted on the BMP Implementation Checklist and standard BMPs as part of the informal Section 7 of the ESA process. The updated sUAS BMP Implementation Checklist is included in the BA.

Attachment A. Best Management Practices Implementation Checklist

DEPARTMENT OF HOMELAND SECURITY PROGRAMMATIC ENVIRONMENTAL ASSESSMENT FOR THE NATIONWIDE OPERATION OF SMALL UNMANNED AIRCRAFT SYSTEMS

Best Management Practices Implementation Checklist

The following checklist is to be utilized for confirming the proposed action is covered under the scope and review of the 2022 Programmatic Environmental Assessment (PEA) and that project-specific analysis is not necessary. With these best management practices in place, DHS continues to ensure that no significant adverse impacts to the environment or the public would occur as a result of the sUAS activities. Specific measures for environmental resource topics analyzed in the 2022 PEA are incorporated into this checklist, which is to be completed prior to sUAS use, to the maximum extent practicable. If Components have listed species or critical habitat in their project area (as determined by a species list from IPaC) and cannot implement the Biological Resources BMPs below, the Component should contact the local USFWS Ecological Services Field Office to determine if site specific ESA consultation is necessary.

Emergency actions are covered under the Proposed Action and BE. As such, the BMPs should be followed when possible during emergency response activities. However, in the event that the BMPs cannot be implemented during an emergency response, operators should prioritize emergency response actions and should follow established procedures for emergency situations including compliance under ESA. Under no circumstances should the emergency response action be delayed in order to implement the BMPs. Section 7 regulations recognize that an emergency (imminent loss of human life or property) may require expedited consultation. As soon as practicable after the emergency is under control, if listed species or critical habitat were affected by the emergency response and it was not possible to implement the BMPs, the FWS should be contacted for discussion of potential after the fact consultation.

This checklist should be saved as part of the National Environmental Policy Act, National Historic Preservation Act, and Endangered Species Act administrative record for the proposed action and would be reviewed by an Environmental Reviewer.

Date(s) of Use	
Location of Event	
Time of Event	
Point of Contact (POC) Completing this Checklist (name, phone number and email, organization)	

sUAS Project Manager (name, phone number and email, organization)	
Provide a short summary of the Proposed Action.	

FAA Coordination	**A) Complete/Will Implement BMP (Click the appropriate box)**	**B) Not Complete/Unable to Implement BMP (Are there any extenuating circumstances? If so, explain here)**
1. Comply with all FAA regulations including those outlined in FAA Title 14 CFR, Part 107, Operation and Certification of Small Unmanned Aircraft Systems, as applicable. (e.g. yield the right of way to manned aircraft, etc.).	☐ **Yes** – Go to next practice ☐ **No** – Explain in B)	
2. Per FAA CFR Part 107 requirements, maintain visual observation of the UA within visual line-of-sight during flight operations and operate at or below 100 miles per hour.	☐ **Yes** – Go to next practice ☐ **No** – Explain in B)	
3. Unless in an emergency, receive approval from FAA for airspace that is designated as Class A, B, C, D, or E.	☐ **Yes** – Go to next practice ☐ **No** – Explain in B)	
Noise	**A) Complete/Will Implement BMP (Click the appropriate box)**	**B) Not Complete/Unable to Implement BMP (Are there any extenuating circumstances? If so, explain here)**

4. To the greatest extent possible, adhere to local noise ordinances.	☐ **Yes** – Go to next practice ☐ **No** – Explain in B)	
Biological Resources	**A) Complete/Will Implement BMP (Click the appropriate box)**	**B) Not Complete/Unable to Implement BMP (Are there any extenuating circumstances? If so, explain here)**
5. Generate a U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPAC) species list for the project area not more than 90 days before the planned operation. Visit IPaC: Home (fws.gov) to generate the applicable list of species and critical habitat. **(See note [a] below).**	☐ **Yes or N/A** – Go to next practice ☐ **No** – Explain in B)	
6. Coordinate with appropriate land managers to identify potential wildlife concerns and avoidance or minimization measures if sUAS operations will occur on or over a unit of the National Wildlife Refuge System (NWRS), National Fish Hatchery, National Park Service lands or other Federal lands. **(See note [b] below).**	☐ **Yes** – Go to next practice ☐ **No** – Explain in B)	
7. When applicable, locate launch and landing sites on roads, trails, paved surfaces, and/or otherwise previously disturbed or developed areas if they are within terrestrial critical habitat or the range of a listed plant or lichen species (as indicated by a plant or lichen species or critical habitat appearing on your IPaC species list). **(See note [c] below).**	☐ **Yes-** Go to next practice ☐ **No-** Explain in B) **(See note [c] below for applicability)**	
8. Avoid conducting UAS operations within 200 feet (vertically and horizontally) of a known breeding or roosting colony, or other known high density nesting area, of federally listed or proposed birds or migratory birds (as indicated by one or more bird species appearing on your IPaC generated species list). **(See note [d] for specific instructions**).	☐ **Yes –** Go to the next practice ☐ **No –** Explain in B)	

9. When possible, conduct UAS operations during seasons when federally listed, proposed, or migratory birds are not present in the operational area (e.g., the bird species on your IPaC list is migratory and will not be present during a particular season). **(See note [d]).**	☐ **Yes or N/A** – Go to next practice ☐ **No**–Explain in B)	
10. Conduct a visual pre-flight check for migratory birds and federally listed species (use your list generated through IPaC) immediately prior to launch. **(See note [e] below).**	☐ **Yes or N/A** – Go to next practice ☐ **No** – Explain in B)	
11. If personnel observe a federally listed terrestrial animal or migratory bird including federally listed bird nesting colonies during the pre-flight check (in non-emergency actions), delay operation until either the animal has moved away from the area of operation, or the sUAS flight path will be relocated to an area where the animal or nesting colonies will not be disturbed (at least 200 feet away both horizontally and vertically). **(See note [e] below)**.	☐ **Yes or N/A** – Go to next practice ☐ **No** – Explain in B)	
12. If personnel encounter wildlife after launch, operators will maintain a safe distance (at least 200 feet is recommended) and will avoid buzzing, animal-directed movements, hovering, landing, taking off, lingering, or taxiing near the observed wildlife.	☐ **Yes or N/A** – Go to next practice ☐ **No** – Explain in B)	
13. If, despite the measures in #12, wildlife, including migratory birds, listed animal species, and bald and golden eagles exhibit signs of distress (e.g. wing flapping, crouching, fleeing, or flushing), the UAS will be immediately moved beyond the 200 foot recommended distance from the animal.	☐ **Yes or N/A** – Go to next practice ☐ **No** – Explain in B)	

14. Document and report to the USFWS, in a timely manner, any operation involving a collision with or harassment of a federally listed species (if species is clearly identifiable). (**See note [g]**)	☐ **Yes or N/A** – Go to next practice ☐ **No** – Explain in B)	
15. Maintain a minimum altitude of 65 feet above the ground, vegetation, or tree canopy if your IPaC results include a federally listed or proposed terrestrial insect species.	☐ **Yes or N/A** – Go to next practice ☐ **No** – Explain in B)	
16. If your IPaC results include federally listed or proposed bat species, operate UAS during daylight hours (one hour after sunrise to one hour before sunset) whenever possible. In addition, for non-emergency nighttime operations maintain a minimum altitude of 98 feet above vegetation, tree canopy, or open water (including rivers, streams, lakes, reservoirs, etc.).	☐ **Yes or N/A** – Go to next practice ☐ **No** – Explain in B)	
17. Maintain a 330-foot primary buffer and/or a 660-foot secondary buffer around any known bald eagle nests in areas where human activities are considered detrimental to breeding pairs. **(See note [f] below).**	☐ **Yes or N/A –** Go to next practice ☐ **No –** Explain in B)	
18. Avoid launch or landing UAs from/on beaches that support nesting sea turtles during their breeding season.	☐ **Yes or N/A –** Go to next practice ☐ **No –** Explain in B)	
19. Avoid flying UAs within 500 feet of known haul-out locations and marine mammals at the water's surface (unless in case of an emergency or with prior authorization from NOAA or USFWS).	☐ **Yes or N/A –** Go to next practice ☐ **No –** Explain in B)	
Cultural and Historic Resources	**A) Complete/Will Implement BMP (Click the appropriate box)**	**B) Not Complete/Unable to Implement BMP (Are there any extenuating circumstances? If so, explain here)**

20. Coordinate with Federally Recognized Tribes to the maximum extent feasible when proposed operations would include flying over or deploying from tribal sensitive areas, above-ground historic properties, or culturally significant areas (e.g. to identify appropriate launch sites or sensitive resources to avoid). Consult, as necessary, with applicable State Historic Preservation Office (SHPO), Tribal Historic Preservation Officer (THPO), and/or Certified Local Governments.	☐ **Yes or N/A –** Go to next practice ☐ **No –** Explain in B)	
21. Avoid flying within 100 feet vertically and/or horizontally from Tribal sensitive areas or historically or culturally significant areas (i.e. known historic properties, National Historic Landmarks, monuments, or cemeteries, unless: necessitated by an emergency facility inspection or condition assessment; or prior notification to the NPS for National Historic Landmarks and appropriate SHPO or THPO has been completed. **(see note [h] below)**	☐ **Yes or N/A** – Go to next practice ☐ **No** – Explain in B)	
Socioeconomics and Environmental Justice	**A) Complete/Will Implement BMP (Click the appropriate box)**	**B) Not Complete/Unable to Implement BMP (Are there any extenuating circumstances? If so, explain here)**
22. Where possible, sUAS operators would not fly within 200 feet of schools, daycare facilities, or similar locations with high concentrations of children.	☐ **Yes** – Go to next practice ☐ **No** – Explain in B)	
Human Health and Safety	**A) Complete/Will Implement BMP (Click the appropriate box)**	**B) Not Complete/Unable to Implement BMP (Are there any extenuating circumstances? If so, explain here)**
23. Dispose of end-of-life batteries in accordance with all applicable laws and regulations.	☐ **Yes or N/A –** Go to next practice ☐ **No –** Explain in B)	

24. Ensure personnel use all required personnel protective equipment based on site- and activity- specific conditions.	☐ **Yes** – Go to next practice ☐ **No** – Explain in B)	
Other Coordination	**A) Complete/Will Implement BMP (Click the appropriate box)**	**B) Not Complete/Unable to Implement BMP (Are there any extenuating circumstances? If so, explain here)**
25. Obtain all applicable permits, permissions, and authorizations from applicable landowners and federal, state, and local regulatory authorities prior to initiating utilization of sUAS.	☐ **Yes** – Go to next practice ☐ **No** – Explain in B)	
26. When operating in the National Capital Region **only**, as necessary, coordinate with the National Park Service and National Capital Planning Commission (NCPC) to minimize impacts on the viewscape.	☐ **Yes or N/A** – Go to next practice ☐ **No** – Explain in B)	

To be completed by Environmental Reviewer.

Name:

Date:

Final Determination

☐ The proposed action is covered by the scope of the 2022 sUAS PEA and no further environmental analysis is required.

☐ The proposed action is outside of the sUAS PEA and BE scope, or will not comply with the required BMPs; therefore, additional analysis for compliance with the National Environmental Policy Act, National Historic Preservation Act, Endangered Species Act, or other environmental statutes, regulations or Executive Orders is necessary. If the Biological Resources BMPs cannot be implemented, and listed species and/or critical habitat are on your IPaC species list, the USFWS local Field Office must be contacted to discuss whether further consultation is necessary.

Notes:

Biological Resources

[a] Practice 5: USFWS Information for Planning and Consultation (IPaC) report (species list) is valid for 90 days following its date of creation. If past 90 days, please complete a new IPaC report online at https://ipac.ecosphere.fws.gov/.

[b] Practice 6: To minimize impacts to wildlife, units of the NWRS and other federal lands and waters managed for wildlife (e.g., national parks) should be identified before launch. Visit U.S. Fish & Wildlife Service website to determine locations of NWRS. Refuge Managers or other land/water managers should be contacted to identify site-specific wildlife use, potential responses to disturbance, and other information regarding cultural or sensitive sites, wildlife aggregation sites, and public use areas. For coordination efforts or activities (non-emergency) that occur on USFWS owned or managed lands contact the local USFWS site manager (such as a Refuge or Hatchery Manager). In emergency situations (imminent loss of life or property), if pre-planning or early coordination is not practicable, operators should prioritize emergency response actions.

[c] Practice 7: If it is necessary to launch or utilize landing sites within naturally vegetated areas of terrestrial critical habitat or the range of federally listed plant or lichen species DHS will coordinate with the appropriate USFWS Field Office to identify if alternate launch or landing sites are necessary or sensitive resources need avoidance.

[d] Practice 8/9: In areas that are known to contain migratory and federally listed bird nesting colonies, or areas that are known to contain listed avian species during their breeding season, as identified in the USFWS IPaC migratory bird frequency charts (using IPaC results obtained at least 90 days prior to a test event), implement seasonal restrictions, such as changing flight area or seasonally restricting flights, to reduce any potential impact to migratory and federally listed bird species. If IPaC does not indicate breeding season timeframes for non-migratory identified federally listed bird species, DHS environmental would utilize best available information to identify federally listed bird breeding season timeframe for its Project area and implement recommended seasonal restrictions. DHS commits to conducting testing activities outside of the migratory and federally listed bird nesting season or breeding season areas, unless in the event of imminent loss of life or property (i.e., an emergency situation). In the event that unforeseen schedule changes result in testing to occur during the migratory and listed bird nesting season, DHS commits to consulting with USFWS on a project level (as necessary) and conducting a pedestrian nest survey of the project area to avoid and minimize potential impacts. If pedestrian nest surveys are required, surveys would be conducted by qualified environmental professionals in conformance with USFWS Regional Office methodologies or state-specific guidelines.

[e] Practice 10/11: Conduct a visual pre-flight check for migratory birds, including bald and golden eagles, and any listed species in the IPaC species report, in the flight area immediately before launch. Should DHS professional observe a migratory bird or bald or golden eagle or any listed species including federally listed bird nesting colonies within approximately 100 feet of the sUAS launch site or flight area, the sUAS flight should be delayed or relocated to another location until the animal leaves the area on its own accord. If the animal does not leave, and a different launch site cannot be utilized, the USFWS local Field Office should be contacted for

advice. In emergency situations (imminent loss of life or property), if pre-planning or early coordination is not practicable, operators should prioritize emergency response actions.

[f] Practice 17: To further avoid impacts to bald eagles, maintain a 330-foot "primary buffer" from eagle nests in areas where human activities are considered to be detrimental to breeding pairs (e.g., residential/commercial development), and a larger 660-foot "secondary buffer" where human activities are considered to impact the integrity of the "primary buffer" (e.g., construction, multi-story buildings, and new roadways).

[g] Practice 14: In the event that an sUAS operation involves a collision with or harassment of a federally listed species, the incident must be reported within a timely manner. Reporting should be directed to the following parties:

1. USFWS Ecological Field Office. Determine the appropriate office for your location based on the U.S. Fish & Wildlife Service website.

2. DHS Headquarters, Environmental Planning and Historic Preservation at sep-ephp@hq.dhs.gov. DHS Headquarters will coordinate with USFWS Headquarters on reported collision and harassment of federally listed species received related to this BE.

Cultural Resources

[h] Practice 21: This practice refers to Tribal sensitive areas, above-ground historic properties, and culturally significant areas including historic buildings, districts, cemeteries, parks, monuments, or any other culturally significant areas, historic properties, sacred sites, or traditional cultural properties.

Attachment B. Official Species List

Species List and Critical Habitat

Common Name	Scientific Name	Taxa	ESA Listing Status	Geographic limitations	Critical Habitat Status
Reticulated flatwoods salamander	*Ambystoma bishopi*	Amphibians	Endangered	Wherever found	Final
California tiger Salamander	*Ambystoma californiense*	Amphibians	Threatened	U.S.A. (CA - Central California)	Final
California tiger Salamander	*Ambystoma californiense*	Amphibians	Endangered	U.S.A. (CA - Sonoma County)	Final
California tiger Salamander	*Ambystoma californiense*	Amphibians	Endangered	U.S.A. (CA - Santa Barbara County)	Final
Frosted Flatwoods salamander	*Ambystoma cingulatum*	Amphibians	Threatened	Wherever found	Final
Santa Cruz long-toed salamander	*Ambystoma macrodactylum croceum*	Amphibians	Endangered	Wherever found	Proposed
Sonoran tiger salamander	*Ambystoma mavortium stebbinsi*	Amphibians	Endangered	Wherever found	
Wyoming Toad	*Anaxyrus baxteri*	Amphibians	Endangered	Wherever found	
Arroyo (=arroyo southwestern) toad	*Anaxyrus californicus*	Amphibians	Endangered	Wherever found	Final
Yosemite toad	*Anaxyrus canorus*	Amphibians	Threatened	Wherever found	Final
Dixie Valley Toad	*Anaxyrus williamsi*	Amphibians	Endangered		
Desert slender salamander	*Batrachoseps aridus*	Amphibians	Endangered	Wherever found	
Relictual slender salamander	*Batrachoseps relictus*	Amphibians	Proposed Endangered	Wherever found	Proposed
Kern Canyon slender salamander	*Batrachoseps simatus*	Amphibians	Proposed Threatened	Wherever found	Proposed
Houston toad	*Bufo houstonensis*	Amphibians	Endangered	Wherever found	Final
Eastern Hellbender	*Cryptobranchus alleganiensis alleganiensis*	Amphibians	Endangered	Missouri DPS	
Ozark Hellbender	*Cryptobranchus alleganiensis bishopi*	Amphibians	Endangered	Wherever found	

Guajon	*Eleutherodactylus cooki*	Amphibians	Threatened	Wherever found	Final
Golden coqui	*Eleutherodactylus jasperi*	Amphibians	Threatened	Wherever found	Final
Llanero Coqui	*Eleutherodactylus juanariveroi*	Amphibians	Endangered	Wherever found	Final
Salado Salamander	*Eurycea chisholmensis*	Amphibians	Threatened	Wherever found	Final
San Marcos salamander	*Eurycea nana*	Amphibians	Threatened	Wherever found	Final
Georgetown Salamander	*Eurycea naufragia*	Amphibians	Threatened	Wherever found	Final
Texas blind salamander	*Eurycea rathbuni*	Amphibians	Endangered	Wherever found	
Barton Springs salamander	*Eurycea sosorum*	Amphibians	Endangered	Wherever found	
Jollyville Plateau Salamander	*Eurycea tonkawae*	Amphibians	Threatened	Wherever found	Final
Austin blind Salamander	*Eurycea waterlooensis*	Amphibians	Endangered	Wherever found	Final
Black warrior (=Sipsey Fork) Waterdog	*Necturus alabamensis*	Amphibians	Endangered	Wherever found	Final
Neuse River waterdog	*Necturus lewisi*	Amphibians	Threatened	Wherever found	Final
Puerto Rican crested toad	*Peltophryne lemur*	Amphibians	Threatened	Wherever found	
Red Hills salamander	*Phaeognathus hubrichti*	Amphibians	Threatened	Wherever found	
Jemez Mountains salamander	*Plethodon neomexicanus*	Amphibians	Endangered	Wherever found	Final
Cheat Mountain salamander	*Plethodon nettingi*	Amphibians	Threatened	Wherever found	
Shenandoah salamander	*Plethodon shenandoah*	Amphibians	Endangered	Wherever found	
Foothill yellow-legged frog	*Rana boylii*	Amphibians	Proposed Endangered	California, Sierra Nevada Mountains south of American River sub-basin south to Transverse Range, Kern County	
Foothill yellow-legged frog	*Rana boylii*	Amphibians	Proposed Threatened	California, Central Coast Range south of	

				San Francisco Bay to San Benito and Fresno Counties	
				Butte Counties	
Foothill yellow-legged frog	*Rana boylii*	Amphibians	Proposed Endangered	California, Coast Range from Monterey County south to Los Angeles County	
leopard frog	*Rana chiricahuensis*				
California red-legged frog	*Rana draytonii*	Amphibians	Threatened	Wherever found	Final
	Rana muscosa				
Mountain yellow-legged frog	*Rana muscosa*	Amphibians	Endangered	U.S.A., northern California	Final
Oregon spotted	*Rana pretiosa*				
dusky gopher frog	*Rana sevosa*	Amphibians	Endangered	Wherever found	Final
Sierra Nevada	*Rana sierrae*				
Puerto Rican sharp-shinned hawk	*Accipiter striatus venator*	Birds	Endangered	Wherever found	
Nihoa millerbird	*Acrocephalus familiaris*				
Nightingale reed warbler (old world warbler)	*Acrocephalus luscinia*	Birds	Endangered	Wherever found	
Mariana gray swiftlet	*Aerodramus vanikorensis bartschi*	Birds	Endangered	Wherever found	

Yellow-shouldered blackbird	*Agelaius xanthomus*	Birds	Endangered	Wherever found	Final
Kauai akialoa (honeycreeper)	*Akialoa stejnegeri*	Birds	Endangered	Wherever found	
Puerto Rican parrot	*Amazona vittata*	Birds	Endangered	Wherever found	
Cape Sable seaside sparrow	*Ammodramus maritimus mirabilis*	Birds	Endangered	Wherever found	Final
Florida grasshopper sparrow	*Ammodramus savannarum floridanus*	Birds	Endangered	Wherever found	
Laysan duck	*Anas laysanensis*	Birds	Endangered	Wherever found	
Hawaiian (=koloa) Duck	*Anas wyvilliana*	Birds	Endangered	Wherever found	
Florida scrub-jay	*Aphelocoma coerulescens*	Birds	Threatened	Wherever found	
Marbled murrelet	*Brachyramphus marmoratus*	Birds	Threatened	U.S.A. (CA, OR, WA)	Final
Hawaiian goose	*Branta (=Nesochen) sandvicensis*	Birds	Threatened	Wherever found	
Puerto Rican broad-winged hawk	*Buteo platypterus brunnescens*	Birds	Endangered	Wherever found	
Red knot	*Calidris canutus rufa*	Birds	Threatened	Wherever found	Proposed
Ivory-billed woodpecker	*Campephilus principalis*	Birds	Endangered	Wherever found	
Puerto Rican nightjar	*Caprimulgus noctitherus*	Birds	Endangered	Wherever found	
Gunnison sage-grouse	*Centrocercus minimus*	Birds	Threatened	Wherever found	Final
Greater sage-grouse	*Centrocercus urophasianus*	Birds	Proposed Threatened	Bi-State	Proposed
Piping Plover	*Charadrius melodus*	Birds	Endangered	[Great Lakes watershed DPS] - Great Lakes, watershed in States of IL, IN, MI, MN, NY, OH, PA, and WI and Canada (Ont.)	Final
Piping Plover	*Charadrius melodus*	Birds	Threatened	[Atlantic Coast and Northern Great Plains populations] -	Final

				Wherever found, except those areas where listed as endangered.	
Western snowy plover	*Charadrius nivosus nivosus*	Birds	Threatened	Pacific Coast population DPS-U.S.A. (CA, OR, WA), Mexico (within 50 miles of Pacific coast)	Final
Oahu elepaio	*Chasiempis ibidis*	Birds	Endangered	Wherever found	Final
Yellow-billed Cuckoo	*Coccyzus americanus*	Birds	Threatened	Western DPS: U.S.A. (AZ, CA, CO (western), ID, MT (western), NM (western), NV, OR, TX (western), UT, WA, WY (western)); Canada (British Columbia (southwestern); Mexico (Baja California, Baja California Sur, Chihuahua, Durango (western), Sinaloa, Sonora)	Final
Masked bobwhite (quail)	*Colinus virginianus ridgwayi*	Birds	Endangered	Wherever found	
Puerto Rican plain Pigeon	*Columba inornata wetmorei*	Birds	Endangered	Wherever found	
Hawaiian (='alala) Crow	*Corvus hawaiiensis*	Birds	Endangered	Wherever found	
Mariana (=aga) Crow	*Corvus kubaryi*	Birds	Endangered	Wherever found	Final
White-necked crow	*Corvus leucognaphalus*	Birds	Endangered	Wherever found	
`I`iwi	*Drepanis coccinea*	Birds	Threatened	Wherever found	Proposed

Southwestern willow flycatcher	*Empidonax traillii extimus*	Birds	Endangered	Wherever found	Final
Streaked Horned lark	*Eremophila alpestris strigata*	Birds	Threatened	Wherever found	Final
Northern Aplomado Falcon	*Falco femoralis septentrionalis*	Birds	Endangered	Wherever found, except where listed as an experimental population	
Hawaiian coot	*Fulica americana alai*	Birds	Endangered	Wherever found	
Friendly Ground-Dove	*Gallicolumba stairi*	Birds	Endangered	American Samoa DPS	
Mariana common moorhen	*Gallinula chloropus guami*	Birds	Endangered	Wherever found	
Hawaiian common gallinule	*Gallinula galeata sandvicensis*	Birds	Endangered	Wherever found	
Cactus ferruginous pygmy-owl	*Glaucidium brasilianum cactorum*	Birds	Proposed Threatened	Wherever found	Proposed
Whooping crane	*Grus americana*	Birds	Endangered	Wherever found, except where listed as an experimental population	Final
Mississippi sandhill crane	*Grus canadensis pulla*	Birds	Endangered	Wherever found	Final
California condor	*Gymnogyps californianus*	Birds	Endangered	U.S.A. only, except where listed as an experimental population	Final
Mao (= maomao) (honeyeater)	*Gymnomyza samoensis*	Birds	Endangered	Wherever found	
Guam Micronesian kingfisher	*Halcyon cinnamomina cinnamomina*	Birds	Endangered	Wherever found	Final
Maui nukupuu	*Hemignathus affinis*	Birds	Endangered	Wherever found	
Kauai nukupuu	*Hemignathus hanapepe*	Birds	Endangered	Wherever found	

akiapolaau	*Hemignathus wilsoni*	Birds	Endangered	Wherever found	
Hawaiian stilt	*Himantopus mexicanus knudseni*	Birds	Endangered	Wherever found	
Mt. Rainier white-tailed ptarmigan	*Lagopus leucura rainierensis*	Birds	Proposed Threatened	Wherever found	
San Clemente loggerhead shrike	*Lanius ludovicianus mearnsi*	Birds	Endangered	Wherever found	
Eastern Black rail	*Laterallus jamaicensis ssp. jamaicensis*	Birds	Threatened	Wherever found	
Palila (honeycreeper)	*Loxioides bailleui*	Birds	Endangered	Wherever found	Final
Akekee	*Loxops caeruleirostris*	Birds	Endangered	Wherever found	Final
Hawaii akepa	*Loxops coccineus*	Birds	Endangered	Wherever found	
Maui akepa	*Loxops ochraceus*	Birds	Endangered	Wherever found	
Micronesian megapode	*Megapodius laperouse*	Birds	Endangered	Wherever found	
Po`ouli (honeycreeper)	*Melamprosops phaeosoma*	Birds	Endangered	Wherever found	
Kauai `o`o (honeyeater)	*Moho braccatus*	Birds	Endangered	Wherever found	
Molokai thrush	*Myadestes lanaiensis rutha*	Birds	Endangered	Wherever found	
Large Kauai (=kamao) Thrush	*Myadestes myadestinus*	Birds	Endangered	Wherever found	
Small Kauai (=puaiohi) Thrush	*Myadestes palmeri*	Birds	Endangered	Wherever found	
Wood stork	*Mycteria americana*	Birds	Threatened	U.S.A. (AL, FL, GA, MS, NC, SC)	
Eskimo curlew	*Numenius borealis*	Birds	Endangered	Wherever found	
Band-rumped storm-petrel	*Oceanodroma castro*	Birds	Endangered	USA (HI)	
Akikiki	*Oreomystis bairdi*	Birds	Endangered	Wherever found	Final
Hawaii creeper	*Oreomystis mana*	Birds	Endangered	Wherever found	
crested honeycreeper (Akohekohe)	*Palmeria dolei*	Birds	Endangered	Wherever found	Final

Molokai creeper	*Paroreomyza flammea*	Birds	Endangered	Wherever found	
Oahu creeper	*Paroreomyza maculata*	Birds	Endangered	Wherever found	
Short-tailed albatross	*Phoebastria (=Diomedea) albatrus*	Birds	Endangered	Wherever found	
Red-cockaded woodpecker	*Picoides borealis*	Birds	Endangered	Wherever found	
Inyo California towhee	*Pipilo crissalis eremophilus*	Birds	Threatened	Wherever found	Final
Coastal California gnatcatcher	*Polioptila californica californica*	Birds	Threatened	Wherever found	Final
Audubon's crested caracara	*Polyborus plancus audubonii*	Birds	Threatened	U.S.A. (FL)	
Steller's Eider	*Polysticta stelleri*	Birds	Threatened	U.S. Alaska breeding population only	Final
Maui parrotbill (Kiwikiu)	*Pseudonestor xanthophrys*	Birds	Endangered	Wherever found	Final
`O`u (honeycreeper)	*Psittirostra psittacea*	Birds	Endangered	Wherever found	
Bermuda petrel	*Pterodroma cahow*	Birds	Endangered	Wherever found	
Black-capped petrel	*Pterodroma hasitata*	Birds	Proposed Threatened	Wherever found	Not Prudent
Hawaiian petrel	*Pterodroma sandwichensis*	Birds	Endangered	Wherever found	
Newell's Townsend's shearwater	*Puffinus auricularis newelli*	Birds	Threatened	Wherever found	
Light-footed clapper rail	*Rallus longirostris levipes*	Birds	Endangered	Wherever found	
California clapper rail	*Rallus longirostris obsoletus*	Birds	Endangered	Wherever found	
Yuma Ridgway's rail	*Rallus obsoletus yumanensis*	Birds	Endangered	Wherever found	
Guam rail	*Rallus owstoni*	Birds	Endangered	Wherever found, except where listed as an experimental population	
Thick-billed parrot	*Rhynchopsitta pachyrhyncha*	Birds	Endangered	Wherever found	
Everglade snail kite	*Rostrhamus sociabilis plumbeus*	Birds	Endangered	Wherever found	Final

Elfin-woods warbler	*Setophaga angelae*	Birds	Threatened	Wherever found	Final
golden-cheeked warbler	*Setophaga chrysoparia*	Birds	Endangered	Wherever found	
Spectacled eider	*Somateria fischeri*	Birds	Threatened	Wherever found	Final
California least tern	*Sterna antillarum browni*	Birds	Endangered	Wherever found	
Roseate tern	*Sterna dougallii dougallii*	Birds	Endangered	U.S.A. (Atlantic Coast south to NC), Canada (Newf., N.S, Que.), Bermuda	
Roseate tern	*Sterna dougallii dougallii*	Birds	Threatened	Western Hemisphere and adjacent oceans, incl. U.S.A. (FL, PR, VI), where not listed as endangered	
Northern spotted owl	*Strix occidentalis caurina*	Birds	Threatened	Wherever found	Final
Mexican spotted owl	*Strix occidentalis lucida*	Birds	Threatened	Wherever found	Final
California spotted Owl	*Strix occidentalis occidentalis*	Birds	Proposed Endangered	All California spotted owls in the vicinity of the Coast, Transverse, and Peninsular mountain ranges from Monterey County in the north to San Diego County in the south, and south of the Tehachapi Pass within Kern County.	
California spotted Owl	*Strix occidentalis occidentalis*	Birds	Proposed Threatened	(All California spotted owls in the vicinity of the Sierra Nevada mountain	

				range and the Sierra Nevada foothills from Shasta and Lassen Counties in the north, but north of the Tehachapi Pass, Kern County to the south, and east to Carson City, Douglas, and Washoe Counties in Nevada.
Laysan finch (honeycreeper)	*Telespyza cantans*	Birds	Endangered	Wherever found
Nihoa finch (honeycreeper)	*Telespyza ultima*	Birds	Endangered	Wherever found
Attwater's greater prairie-chicken	*Tympanuchus cupido attwateri*	Birds	Endangered	Wherever found
Lesser prairie-chicken	*Tympanuchus pallidicinctus*	Birds	Endangered	Southern DPS: All lesser prairie-chickens south of a line starting at 37.9868 N, 105.0133 W, and ending at 31.7351 N, 98.3773 W, NAD83
Lesser prairie-chicken	*Tympanuchus pallidicinctus*	Birds	Threatened	Northern DPS: All lesser prairie-chickens north of a line starting at 37.9868 N, 105.0133 W, and ending at 31.7351 N, 98.3773 W, NAD83
Bachman's warbler (=wood)	*Vermivora bachmanii*	Birds	Endangered	Wherever found

Least Bell's vireo	*Vireo bellii pusillus*	Birds	Endangered	Wherever found	Final
Bridled white-eye	*Zosterops conspicillatus conspicillatus*	Birds	Endangered	Wherever found	Not Prudent
Rota bridled White-eye	*Zosterops rotensis*	Birds	Endangered	Wherever found	Final
Santa Cruz cypress	*Cupressus abramsiana*	Conifers and Cycads	Threatened	Wherever found	
Gowen cypress	*Cupressus goveniana ssp. goveniana*	Conifers and Cycads	Threatened	Wherever found	
Fadang	*Cycas micronesica*	Conifers and Cycads	Threatened	Wherever found	
Whitebark pine	*Pinus albicaulis*	Conifers and Cycads	Threatened	Wherever found	Not Prudent
Florida torreya	*Torreya taxifolia*	Conifers and Cycads	Endangered		
Pendant kihi fern	*Adenophorus periens*	Ferns and Allies	Endangered	Wherever found	Final
Asplenium-leaved diellia	*Asplenium dielerectum*	Ferns and Allies	Endangered	Wherever found	Final
No common name	*Asplenium dielfalcatum*	Ferns and Allies	Endangered	Wherever found	Final
No common name	*Asplenium diellaciniatum*	Ferns and Allies	Endangered	Wherever found	
No common name	*Asplenium dielmannii*	Ferns and Allies	Endangered	Wherever found	Final
No common name	*Asplenium dielpallidum*	Ferns and Allies	Endangered	Wherever found	Final
No common name	*Asplenium peruvianum var. insulare*	Ferns and Allies	Endangered	Wherever found	Final
American hart's-tongue fern	*Asplenium scolopendrium var. americanum*	Ferns and Allies	Threatened	Wherever found	
No common name	*Asplenium unisorum*	Ferns and Allies	Endangered	Wherever found	Final
Pauoa	*Ctenitis squamigera*	Ferns and Allies	Endangered	Wherever found	Final
Elfin tree fern	*Cyathea dryopteroides*	Ferns and Allies	Endangered	Wherever found	
Kupukupu makalii	*Cyclosorus boydiae*	Ferns and Allies	Endangered	Wherever found	
No common name	*Deparia kaalaana*	Ferns and Allies	Endangered	Wherever found	
No common name	*Diplazium molokaiense*	Ferns and Allies	Endangered	Wherever found	Final
No common name	*Doryopteris angelica*	Ferns and Allies	Endangered	Wherever found	Final

No common name	*Doryopteris takeuchii*	Ferns and Allies	Endangered	Wherever found	Final
Palapalai aumakua	*Dryopteris crinalis var. podosorus*	Ferns and Allies	Endangered	Wherever found	Final
Hohiu	*Dryopteris glabra var. pusilla*	Ferns and Allies	Endangered	Wherever found	
No common name	*Elaphoglossum serpens*	Ferns and Allies	Endangered	Wherever found	
Wawae`iole	*Huperzia mannii*	Ferns and Allies	Endangered	Wherever found	Final
Wawae`iole	*Huperzia nutans*	Ferns and Allies	Endangered	Wherever found	Final
No common name	*Huperzia stemmermanniae*	Ferns and Allies	Endangered	Wherever found	
olua	*Hypolepis hawaiiensis var. mauiensis*	Ferns and Allies	Endangered	Wherever found	
Louisiana quillwort	*Isoetes louisianensis*	Ferns and Allies	Endangered	Wherever found	
Black spored quillwort	*Isoetes melanospora*	Ferns and Allies	Endangered	Wherever found	
Mat-forming quillwort	*Isoetes tegetiformans*	Ferns and Allies	Endangered	Wherever found	
Ihi`ihi	*Marsilea villosa*	Ferns and Allies	Endangered	Wherever found	Final
No common name	*Microlepia strigosa var. mauiensis*	Ferns and Allies	Endangered	Wherever found	
Aleutian shield fern	*Polystichum aleuticum*	Ferns and Allies	Endangered	Wherever found	
No common name	*Polystichum calderonense*	Ferns and Allies	Endangered	Wherever found	
No common name	*Pteris lidgatei*	Ferns and Allies	Endangered	Wherever found	Final
No common name	*Tectaria estremerana*	Ferns and Allies	Endangered	Wherever found	
No common name	*Thelypteris inabonensis*	Ferns and Allies	Endangered	Wherever found	
Alabama streak-sorus fern	*Thelypteris pilosa var. alabamensis*	Ferns and Allies	Threatened	Wherever found	
No common name	*Thelypteris verecunda*	Ferns and Allies	Endangered	Wherever found	
No common name	*Thelypteris yaucoensis*	Ferns and Allies	Endangered	Wherever found	
Florida bristle fern	*Trichomanes punctatum ssp. floridanum*	Ferns and Allies	Endangered		Final
Large-fruited sand-verbena	*Abronia macrocarpa*	Flowering Plants	Endangered	Wherever found	
No common name	*Abutilon eremitopetalum*	Flowering Plants	Endangered	Wherever found	Final

Ko`oloa`ula	*Abutilon menziesii*	Flowering Plants	Endangered	Wherever found	
No common name	*Abutilon sandwicense*	Flowering Plants	Endangered	Wherever found	Final
Liliwai	*Acaena exigua*	Flowering Plants	Endangered	Wherever found	Final
San Diego thornmint	*Acanthomintha ilicifolia*	Flowering Plants	Threatened	Wherever found	Final
San Mateo thornmint	*Acanthomintha obovata ssp. duttonii*	Flowering Plants	Endangered	Wherever found	
No common name	*Achyranthes mutica*	Flowering Plants	Endangered	Wherever found	Final
Round-leaved chaff-flower	*Achyranthes splendens var. rotundata*	Flowering Plants	Endangered	Wherever found	Final
Northern wild monkshood	*Aconitum noveboracense*	Flowering Plants	Threatened	Wherever found	
Sensitive joint-vetch	*Aeschynomene virginica*	Flowering Plants	Threatened	Wherever found	
Sandplain gerardia	*Agalinis acuta*	Flowering Plants	Endangered	Wherever found	
No common name	*Agave eggersiana*	Flowering Plants	Endangered	Wherever found	Final
Mahoe	*Alectryon macrococcus*	Flowering Plants	Endangered	Wherever found	Final
Munz's onion	*Allium munzii*	Flowering Plants	Endangered	Wherever found	Final
Sonoma alopecurus	*Alopecurus aequalis var. sonomensis*	Flowering Plants	Endangered	Wherever found	
No common name	*Amaranthus brownii*	Flowering Plants	Endangered	Wherever found	Final
Seabeach amaranth	*Amaranthus pumilus*	Flowering Plants	Threatened	Wherever found	
South Texas ambrosia	*Ambrosia cheiranthifolia*	Flowering Plants	Endangered	Wherever found	
San Diego ambrosia	*Ambrosia pumila*	Flowering Plants	Endangered	Wherever found	Final
Crenulate lead-plant	*Amorpha crenulata*	Flowering Plants	Endangered		
Little amphianthus	*Amphianthus pusillus*	Flowering Plants	Threatened	Wherever found	
Large-flowered fiddleneck	*Amsinckia grandiflora*	Flowering Plants	Endangered	Wherever found	Final
Kearney's blue-star	*Amsonia kearneyana*	Flowering Plants	Endangered	Wherever found	
Price''s potato-bean	*Apios priceana*	Flowering Plants	Threatened		
Georgia rockcress	*Arabis georgiana*	Flowering Plants	Threatened	Wherever found	Final

Hoffmann's rock-cress	*Arabis hoffmannii*	Flowering Plants	Endangered	Wherever found	
McDonald's rock-cress	*Arabis macdonaldiana*	Flowering Plants	Endangered	Wherever found	
Braun's rock-cress	*Arabis perstellata*	Flowering Plants	Endangered	Wherever found	Final
Dwarf Bear-poppy	*Arctomecon humilis*	Flowering Plants	Endangered	Wherever found	
Santa Rosa Island manzanita	*Arctostaphylos confertiflora*	Flowering Plants	Endangered	Wherever found	
Franciscan manzanita	*Arctostaphylos franciscana*	Flowering Plants	Endangered	Wherever found	Final
Del Mar manzanita	*Arctostaphylos glandulosa ssp. crassifolia*	Flowering Plants	Endangered	Wherever found	
Presidio Manzanita	*Arctostaphylos hookeri var. ravenii*	Flowering Plants	Endangered	Wherever found	
Morro manzanita	*Arctostaphylos morroensis*	Flowering Plants	Threatened	Wherever found	
Ione manzanita	*Arctostaphylos myrtifolia*	Flowering Plants	Threatened	Wherever found	
Pallid manzanita	*Arctostaphylos pallida*	Flowering Plants	Threatened	Wherever found	
Marsh Sandwort	*Arenaria paludicola*	Flowering Plants	Endangered	Wherever found	
Bear Valley sandwort	*Arenaria ursina*	Flowering Plants	Threatened	Wherever found	Final
Sacramento prickly poppy	*Argemone pleiacantha ssp. pinnatisecta*	Flowering Plants	Endangered	Wherever found	
Mauna Loa (=Ka'u) silversword	*Argyroxiphium kauense*	Flowering Plants	Endangered	Wherever found	Final
`Ahinahina	*Argyroxiphium sandwicense ssp. macrocephalum*	Flowering Plants	Threatened	Wherever found	Final
`Ahinahina	*Argyroxiphium sandwicense ssp. sandwicense*	Flowering Plants	Endangered	Wherever found	
Blodgett's silverbush	*Argythamnia blodgettii*	Flowering Plants	Threatened		Proposed
No common name	*Aristida chaseae*	Flowering Plants	Endangered	Wherever found	
Pelos del diablo	*Aristida portoricensis*	Flowering Plants	Endangered	Wherever found	
Mead's milkweed	*Asclepias meadii*	Flowering Plants	Threatened	Wherever found	

Prostrate milkweed	*Asclepias prostrata*	Flowering Plants	Endangered		Final
Welsh's milkweed	*Asclepias welshii*	Flowering Plants	Threatened	Wherever found	Final
Four-petal pawpaw	*Asimina tetramera*	Flowering Plants	Endangered		
Pa`iniu	*Astelia waialealae*	Flowering Plants	Endangered	Wherever found	Final
Cushenbury milk-vetch	*Astragalus albens*	Flowering Plants	Endangered	Wherever found	Final
Shivwits milk-vetch	*Astragalus ampullarioides*	Flowering Plants	Endangered	Wherever found	Final
Applegate's milk-vetch	*Astragalus applegatei*	Flowering Plants	Endangered	Wherever found	
Guthrie's (=Pyne's) ground-plum	*Astragalus bibullatus*	Flowering Plants	Endangered	Wherever found	
Braunton's milk-vetch	*Astragalus brauntonii*	Flowering Plants	Endangered	Wherever found	Final
Clara Hunt's milk-vetch	*Astragalus clarianus*	Flowering Plants	Endangered	Wherever found	
Sentry milk-vetch	*Astragalus cremnophylax var. cremnophylax*	Flowering Plants	Endangered	Wherever found	
Holmgren milk-vetch	*Astragalus holmgreniorum*	Flowering Plants	Endangered	Wherever found	Final
Mancos milk-vetch	*Astragalus humillimus*	Flowering Plants	Endangered	Wherever found	
Lane Mountain milk-vetch	*Astragalus jaegerianus*	Flowering Plants	Endangered	Wherever found	Final
Coachella Valley milk-vetch	*Astragalus lentiginosus var. coachellae*	Flowering Plants	Endangered	Wherever found	Final
Fish Slough milk-vetch	*Astragalus lentiginosus var. piscinensis*	Flowering Plants	Threatened	Wherever found	Final
Peirson's milk-vetch	*Astragalus magdalenae var. peirsonii*	Flowering Plants	Threatened	Wherever found	Final
Heliotrope milk-vetch	*Astragalus montii*	Flowering Plants	Threatened	Wherever found	Final
Osterhout milkvetch	*Astragalus osterhoutii*	Flowering Plants	Endangered	Wherever found	
Ash meadows milk-vetch	*Astragalus phoenix*	Flowering Plants	Threatened	Wherever found	Final
Ventura Marsh Milk-vetch	*Astragalus pycnostachyus var. lanosissimus*	Flowering Plants	Endangered	Wherever found	Final
Jesup''s milk-vetch	*Astragalus robbinsii var. jesupii*	Flowering Plants	Endangered	Wherever found	

Coastal dunes milk-vetch	*Astragalus tener var. titi*	Flowering Plants	Endangered	Wherever found	
Triple-ribbed milk-vetch	*Astragalus tricarinatus*	Flowering Plants	Endangered	Wherever found	
Star cactus	*Astrophytum asterias*	Flowering Plants	Endangered	Wherever found	
San Jacinto Valley crownscale	*Atriplex coronata var. notatior*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Auerodendron pauciflorum*	Flowering Plants	Endangered	Wherever found	
Texas ayenia	*Ayenia limitaris*	Flowering Plants	Endangered	Wherever found	
Encinitas baccharis	*Baccharis vanessae*	Flowering Plants	Threatened	Wherever found	
Palo de ramon	*Banara vanderbiltii*	Flowering Plants	Endangered	Wherever found	
Hairy rattleweed	*Baptisia arachnifera*	Flowering Plants	Endangered	Wherever found	
Nevin's barberry	*Berberis nevinii*	Flowering Plants	Endangered	Wherever found	Final
Island Barberry	*Berberis pinnata ssp. insularis*	Flowering Plants	Endangered	Wherever found	
Virginia round-leaf birch	*Betula uber*	Flowering Plants	Threatened	Wherever found	
Ko`oko`olau	*Bidens amplectens*	Flowering Plants	Endangered	Wherever found	Final
Ko`oko`olau	*Bidens campylotheca ssp. pentamera*	Flowering Plants	Endangered	Wherever found	Final
Ko`oko`olau	*Bidens campylotheca ssp. waihoiensis*	Flowering Plants	Endangered	Wherever found	Final
Ko`oko`olau	*Bidens conjuncta*	Flowering Plants	Endangered	Wherever found	Final
kookoolau	*Bidens hillebrandiana ssp. hillebrandiana*	Flowering Plants	Endangered	Wherever found	
Ko`oko`olau	*Bidens micrantha ssp. ctenophylla*	Flowering Plants	Endangered	Wherever found	Final
Ko`oko`olau	*Bidens micrantha ssp. kalealaha*	Flowering Plants	Endangered	Wherever found	Final
Ko`oko`olau	*Bidens wiebkei*	Flowering Plants	Endangered	Wherever found	Final
Sonoma sunshine	*Blennosperma bakeri*	Flowering Plants	Endangered	Wherever found	
Shale barren rock cress	*Boechera serotina*	Flowering Plants	Endangered	Wherever found	
Decurrent false aster	*Boltonia decurrens*	Flowering Plants	Threatened	Wherever found	

Florida bonamia	*Bonamia grandiflora*	Flowering Plants	Threatened		
No common name	*Bonamia menziesii*	Flowering Plants	Endangered	Wherever found	Final
Florida brickell-bush	*Brickellia mosieri*	Flowering Plants	Endangered		Final
Olulu	*Brighamia insignis*	Flowering Plants	Endangered	Wherever found	Final
Pua `ala	*Brighamia rockii*	Flowering Plants	Endangered	Wherever found	Final
Thread-leaved brodiaea	*Brodiaea filifolia*	Flowering Plants	Threatened	Wherever found	Final
Chinese Camp brodiaea	*Brodiaea pallida*	Flowering Plants	Threatened	Wherever found	
Cebello halumtano	*Bulbophyllum guamense*	Flowering Plants	Threatened	Wherever found	
Vahl's boxwood	*Buxus vahlii*	Flowering Plants	Endangered	Wherever found	
Maui reedgrass	*Calamagrostis expansa*	Flowering Plants	Endangered	Wherever found	
Hillebrand's reedgrass	*Calamagrostis hillebrandii*	Flowering Plants	Endangered	Wherever found	Final
Capa rosa	*Callicarpa ampla*	Flowering Plants	Endangered	Wherever found	
Texas poppy-mallow	*Callirhoe scabriuscula*	Flowering Plants	Endangered	Wherever found	
Tiburon mariposa lily	*Calochortus tiburonensis*	Flowering Plants	Threatened	Wherever found	
No common name	*Calyptranthes thomasiana*	Flowering Plants	Endangered	Wherever found	
Mariposa pussypaws	*Calyptridium pulchellum*	Flowering Plants	Threatened	Wherever found	
Palma de manaca	*Calyptronoma rivalis*	Flowering Plants	Threatened	Wherever found	
Stebbins' morning-glory	*Calystegia stebbinsii*	Flowering Plants	Endangered	Wherever found	
Brooksville bellflower	*Campanula robinsiae*	Flowering Plants	Endangered		
`Awikiwiki	*Canavalia molokaiensis*	Flowering Plants	Endangered	Wherever found	Final
`Awikiwiki	*Canavalia napaliensis*	Flowering Plants	Endangered	Wherever found	Final
`Awikiwiki	*Canavalia pubescens*	Flowering Plants	Endangered	Wherever found	Final
Small-anthered bittercress	*Cardamine micranthera*	Flowering Plants	Endangered	Wherever found	
White sedge	*Carex albida*	Flowering Plants	Endangered	Wherever found	

Golden sedge	*Carex lutea*	Flowering Plants	Endangered	Wherever found	Final
Navajo sedge	*Carex specuicola*	Flowering Plants	Threatened	Wherever found	Final
Tiburon paintbrush	*Castilleja affinis ssp. neglecta*	Flowering Plants	Endangered	Wherever found	
Fleshy owl's-clover	*Castilleja campestris ssp. succulenta*	Flowering Plants	Threatened	Wherever found	Final
Ash-grey paintbrush	*Castilleja cinerea*	Flowering Plants	Threatened	Wherever found	Final
golden paintbrush	*Castilleja levisecta*	Flowering Plants	Threatened	Wherever found	
Soft-leaved paintbrush	*Castilleja mollis*	Flowering Plants	Endangered	Wherever found	
No common name	*Catesbaea melanocarpa*	Flowering Plants	Endangered	Wherever found	Final
California jewelflower	*Caulanthus californicus*	Flowering Plants	Endangered	Wherever found	
Coyote ceanothus	*Ceanothus ferrisae*	Flowering Plants	Endangered	Wherever found	
Vail Lake ceanothus	*Ceanothus ophiochilus*	Flowering Plants	Threatened	Wherever found	Final
Pine Hill ceanothus	*Ceanothus roderickii*	Flowering Plants	Endangered	Wherever found	
Kamanomano	*Cenchrus agrimonioides*	Flowering Plants	Endangered	Wherever found	Final
Spring-loving centaury	*Centaurium namophilum*	Flowering Plants	Threatened	Wherever found	Final
Catalina Island mountain-mahogany	*Cercocarpus traskiae*	Flowering Plants	Endangered	Wherever found	
Fragrant prickly-apple	*Cereus eriophorus var. fragrans*	Flowering Plants	Endangered		
No common name	*Chamaecrista glandulosa var. mirabilis*	Flowering Plants	Endangered	Wherever found	
Big Pine partridge pea	*Chamaecrista lineata keyensis*	Flowering Plants	Endangered		Proposed
Pineland sandmat	*Chamaesyce deltoidea pinetorum*	Flowering Plants	Threatened		Proposed
Wedge spurge	*Chamaesyce deltoidea serpyllum*	Flowering Plants	Endangered		Proposed
Deltoid spurge	*Chamaesyce deltoidea ssp. deltoidea*	Flowering Plants	Endangered		
Garber's spurge	*Chamaesyce garberi*	Flowering Plants	Threatened		
Hoover's spurge	*Chamaesyce hooveri*	Flowering Plants	Threatened	Wherever found	Final

Papala	*Charpentiera densiflora*	Flowering Plants	Endangered	Wherever found	Final
Pygmy fringe-tree	*Chionanthus pygmaeus*	Flowering Plants	Endangered		
Purple amole	*Chlorogalum purpureum*	Flowering Plants	Threatened	Wherever found	Final
Howell's spineflower	*Chorizanthe howellii*	Flowering Plants	Endangered	Wherever found	
Orcutt's spineflower	*Chorizanthe orcuttiana*	Flowering Plants	Endangered	Wherever found	
Ben Lomond spineflower	*Chorizanthe pungens var. hartwegiana*	Flowering Plants	Endangered	Wherever found	
Monterey spineflower	*Chorizanthe pungens var. pungens*	Flowering Plants	Threatened	Wherever found	Final
Scotts Valley spineflower	*Chorizanthe robusta var. hartwegii*	Flowering Plants	Endangered	Wherever found	Final
Robust spineflower	*Chorizanthe robusta var. robusta*	Flowering Plants	Endangered	Wherever found	Final
Sonoma spineflower	*Chorizanthe valida*	Flowering Plants	Endangered	Wherever found	
Cape Sable Thoroughwort	*Chromolaena frustrata*	Flowering Plants	Endangered		Final
Florida golden aster	*Chrysopsis floridana*	Flowering Plants	Endangered		
Fountain thistle	*Cirsium fontinale var. fontinale*	Flowering Plants	Endangered	Wherever found	
Chorro Creek bog thistle	*Cirsium fontinale var. obispoense*	Flowering Plants	Endangered	Wherever found	
Suisun thistle	*Cirsium hydrophilum var. hydrophilum*	Flowering Plants	Endangered	Wherever found	Final
La Graciosa thistle	*Cirsium loncholepis*	Flowering Plants	Endangered	Wherever found	Final
Pitcher's thistle	*Cirsium pitcheri*	Flowering Plants	Threatened	Wherever found	
Sacramento Mountains thistle	*Cirsium vinaceum*	Flowering Plants	Threatened	Wherever found	
Wright's marsh	*Cirsium wrightii*	Flowering Plants	Proposed Threatened	Proposed	
Presidio clarkia	*Clarkia franciscana*	Flowering Plants	Endangered	Wherever found	
Vine Hill clarkia	*Clarkia imbricata*	Flowering Plants	Endangered	Wherever found	
Pismo clarkia	*Clarkia speciosa ssp. immaculata*	Flowering Plants	Endangered	Wherever found	
Springville clarkia	*Clarkia springvillensis*	Flowering Plants	Threatened	Wherever found	

Morefield''s leather flower	*Clematis morefieldii*	Flowering Plants	Endangered		
Alabama leather flower	*Clematis socialis*	Flowering Plants	Endangered	Wherever found	
`Oha wai	*Clermontia drepanomorpha*	Flowering Plants	Endangered	Wherever found	Final
`Oha wai	*Clermontia lindseyana*	Flowering Plants	Endangered	Wherever found	Final
`Oha wai	*Clermontia oblongifolia ssp. brevipes*	Flowering Plants	Endangered	Wherever found	Final
`Oha wai	*Clermontia oblongifolia ssp. mauiensis*	Flowering Plants	Endangered	Wherever found	Final
`Oha wai	*Clermontia peleana*	Flowering Plants	Endangered	Wherever found	Final
`Oha wai	*Clermontia pyrularia*	Flowering Plants	Endangered	Wherever found	Final
`Oha wai	*Clermontia samuelii*	Flowering Plants	Endangered	Wherever found	Final
Pigeon wings	*Clitoria fragrans*	Flowering Plants	Threatened		
Kauila	*Colubrina oppositifolia*	Flowering Plants	Endangered	Wherever found	Final
Short-leaved rosemary	*Conradina brevifolia*	Flowering Plants	Endangered		
Etonia rosemary	*Conradina etonia*	Flowering Plants	Endangered		
Apalachicola rosemary	*Conradina glabra*	Flowering Plants	Endangered		
Cumberland rosemary	*Conradina verticillata*	Flowering Plants	Threatened	Wherever found	
Florida semaphore Cactus	*Consolea corallicola*	Flowering Plants	Endangered		Final
No common name	*Cordia bellonis*	Flowering Plants	Endangered	Wherever found	
Salt marsh bird's-beak	*Cordylanthus maritimus ssp. maritimus*	Flowering Plants	Endangered	Wherever found	
Soft bird's-beak	*Cordylanthus mollis ssp. mollis*	Flowering Plants	Endangered	Wherever found	Final
Palmate-bracted bird's beak	*Cordylanthus palmatus*	Flowering Plants	Endangered	Wherever found	
Pennell's bird's-beak	*Cordylanthus tenuis ssp. capillaris*	Flowering Plants	Endangered	Wherever found	
Palo de nigua	*Cornutia obovata*	Flowering Plants	Endangered	Wherever found	
Bunched cory cactus	*Coryphantha ramillosa*	Flowering Plants	Threatened	Wherever found	

Cochise pincushion cactus	*Coryphantha robbinsorum*	Flowering Plants	Threatened	Wherever found	
Pima pineapple cactus	*Coryphantha scheeri var. robustispina*	Flowering Plants	Endangered	Wherever found	
Lee pincushion cactus	*Coryphantha sneedii var. leei*	Flowering Plants	Threatened	Wherever found	
Sneed pincushion cactus	*Coryphantha sneedii var. sneedii*	Flowering Plants	Endangered	Wherever found	
No common name	*Cranichis ricartii*	Flowering Plants	Endangered	Wherever found	
Higuero de sierra	*Crescentia portoricensis*	Flowering Plants	Endangered	Wherever found	
Avon Park harebells	*Crotalaria avonensis*	Flowering Plants	Endangered		
Terlingua Creek cat's-eye	*Cryptantha crassipes*	Flowering Plants	Endangered	Wherever found	
Okeechobee gourd	*Cucurbita okeechobeensis ssp. okeechobeensis*	Flowering Plants	Endangered		
Haha	*Cyanea acuminata*	Flowering Plants	Endangered	Wherever found	Final
Haha	*Cyanea asarifolia*	Flowering Plants	Endangered	Wherever found	Final
Haha	*Cyanea asplenifolia*	Flowering Plants	Endangered	Wherever found	Final
Haha	*Cyanea calycina*	Flowering Plants	Endangered	Wherever found	Final
Haha	*Cyanea copelandii ssp. copelandii*	Flowering Plants	Endangered	Wherever found	Not Prudent
Haha	*Cyanea copelandii ssp. haleakalaensis*	Flowering Plants	Endangered	Wherever found	Final
haha	*Cyanea crispa*	Flowering Plants	Endangered	Wherever found	Final
Haha	*Cyanea dolichopoda*	Flowering Plants	Endangered	Wherever found	Final
haha	*Cyanea dunbariae*	Flowering Plants	Endangered	Wherever found	Final
haha	*Cyanea duvalliorum*	Flowering Plants	Endangered	Wherever found	Final
Haha	*Cyanea eleeleensis*	Flowering Plants	Endangered	Wherever found	Final
haha	*Cyanea gibsonii*	Flowering Plants	Endangered	Wherever found	Final
Haha	*Cyanea glabra*	Flowering Plants	Endangered	Wherever found	Final

Haha	*Cyanea grimesiana ssp. grimesiana*	Flowering Plants	Endangered	Wherever found	Final
Haha	*Cyanea grimesiana ssp. obatae*	Flowering Plants	Endangered	Wherever found	Final
Haha	*Cyanea hamatiflora ssp. carlsonii*	Flowering Plants	Endangered	Wherever found	Final
Haha	*Cyanea hamatiflora ssp. hamatiflora*	Flowering Plants	Endangered	Wherever found	Final
haha nui	*Cyanea horrida*	Flowering Plants	Endangered	Wherever found	Final
Haha	*Cyanea humboldtiana*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Cyanea kauaulaensis*	Flowering Plants	Endangered	Wherever found	
Haha	*Cyanea kolekoleensis*	Flowering Plants	Endangered	Wherever found	Final
Haha	*Cyanea koolauensis*	Flowering Plants	Endangered	Wherever found	Final
Haha	*Cyanea kuhihewa*	Flowering Plants	Endangered	Wherever found	Final
Haha	*Cyanea kunthiana*	Flowering Plants	Endangered	Wherever found	Final
Haha	*Cyanea lanceolata*	Flowering Plants	Endangered	Wherever found	Final
Haha	*Cyanea lobata*	Flowering Plants	Endangered	Wherever found	Final
Haha	*Cyanea longiflora*	Flowering Plants	Endangered	Wherever found	Final
haha	*Cyanea magnicalyx*	Flowering Plants	Endangered	Wherever found	Final
Haha	*Cyanea mannii*	Flowering Plants	Endangered	Wherever found	Final
haha	*Cyanea maritae*	Flowering Plants	Endangered	Wherever found	Final
Haha	*Cyanea marksii*	Flowering Plants	Endangered	Wherever found	
haha	*Cyanea mauiensis*	Flowering Plants	Endangered	Wherever found	Final
Haha	*Cyanea mceldowneyi*	Flowering Plants	Endangered	Wherever found	Final
haha	*Cyanea munroi*	Flowering Plants	Endangered	Wherever found	Final
Haha	*Cyanea obtusa*	Flowering Plants	Endangered	Wherever found	Final
Haha	*Cyanea pinnatifida*	Flowering Plants	Endangered	Wherever found	Final
`aku`aku	*Cyanea platyphylla*	Flowering Plants	Endangered	Wherever found	Final

Haha	*Cyanea procera*	Flowering Plants	Endangered	Wherever found	Final
Haha	*Cyanea profuga*	Flowering Plants	Endangered	Wherever found	Final
Haha	*Cyanea purpurellifolia*	Flowering Plants	Endangered	Wherever found	Final
Haha	*Cyanea recta*	Flowering Plants	Threatened	Wherever found	Final
Haha	*Cyanea remyi*	Flowering Plants	Endangered	Wherever found	Final
Haha	*Cyanea rivularis*	Flowering Plants	Endangered	Wherever found	Final
Haha	*Cyanea shipmanii*	Flowering Plants	Endangered	Wherever found	Final
Popolo	*Cyanea solanacea*	Flowering Plants	Endangered	Wherever found	Final
Haha	*Cyanea st.-johnii*	Flowering Plants	Endangered	Wherever found	Final
Haha	*Cyanea stictophylla*	Flowering Plants	Endangered	Wherever found	Final
Haha	*Cyanea superba*	Flowering Plants	Endangered	Wherever found	Final
`aku	*Cyanea tritomantha*	Flowering Plants	Endangered	Wherever found	
Haha	*Cyanea truncata*	Flowering Plants	Endangered	Wherever found	Final
Haha	*Cyanea undulata*	Flowering Plants	Endangered	Wherever found	Final
Jones Cycladenia	*Cycladenia humilis var. jonesii*	Flowering Plants	Threatened	Wherever found	
No common name	*Cyperus fauriei*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Cyperus neokunthianus*	Flowering Plants	Endangered	Wherever found	
No common name	*Cyperus pennatiformis*	Flowering Plants	Endangered	Wherever found	Final
Pu`uka`a	*Cyperus trachysanthos*	Flowering Plants	Endangered	Wherever found	Final
Ha`iwale	*Cyrtandra crenata*	Flowering Plants	Endangered	Wherever found	Not Prudent
Mapele	*Cyrtandra cyaneoides*	Flowering Plants	Endangered	Wherever found	Final
Ha`iwale	*Cyrtandra dentata*	Flowering Plants	Endangered	Wherever found	Final
haiwale	*Cyrtandra ferripilosa*	Flowering Plants	Endangered	Wherever found	Final
Ha`iwale	*Cyrtandra filipes*	Flowering Plants	Endangered	Wherever found	Final

Ha`iwale	*Cyrtandra giffardii*	Flowering Plants	Endangered	Wherever found	Final
Haiwale	*Cyrtandra gracilis*	Flowering Plants	Endangered	Wherever found	Final
Ha`iwale	*Cyrtandra hematos*	Flowering Plants	Endangered	Wherever found	
Ha`iwale	*Cyrtandra kaulantha*	Flowering Plants	Endangered	Wherever found	Final
Ha`iwale	*Cyrtandra limahuliensis*	Flowering Plants	Threatened	Wherever found	Final
Ha`iwale	*Cyrtandra munroi*	Flowering Plants	Endangered	Wherever found	Final
haiwale	*Cyrtandra nanawaleensis*	Flowering Plants	Endangered	Wherever found	
Ha`iwale	*Cyrtandra oenobarba*	Flowering Plants	Endangered	Wherever found	Final
Ha`iwale	*Cyrtandra oxybapha*	Flowering Plants	Endangered	Wherever found	Final
Haiwale	*Cyrtandra paliku*	Flowering Plants	Endangered	Wherever found	Final
Ha`iwale	*Cyrtandra polyantha*	Flowering Plants	Endangered	Wherever found	Final
Ha`iwale	*Cyrtandra sessilis*	Flowering Plants	Endangered	Wherever found	Final
Ha`iwale	*Cyrtandra subumbellata*	Flowering Plants	Endangered	Wherever found	Final
Ha`iwale	*Cyrtandra tintinnabula*	Flowering Plants	Endangered	Wherever found	Final
Ha`iwale	*Cyrtandra viridiflora*	Flowering Plants	Endangered	Wherever found	Final
haiwale	*Cyrtandra wagneri*	Flowering Plants	Endangered	Wherever found	
Haiwale	*Cyrtandra waiolani*	Flowering Plants	Endangered	Wherever found	Final
Florida prairie-clover	*Dalea carthagenensis floridana*	Flowering Plants	Endangered		Proposed
Leafy prairie-clover	*Dalea foliosa*	Flowering Plants	Endangered		
No common name	*Daphnopsis helleriana*	Flowering Plants	Endangered	Wherever found	
Beautiful pawpaw	*Deeringothamnus pulchellus*	Flowering Plants	Endangered		
Rugel's pawpaw	*Deeringothamnus rugelii*	Flowering Plants	Endangered		
Otay tarplant	*Deinandra (=Hemizonia) conjugens*	Flowering Plants	Threatened	Wherever found	Final
Gaviota Tarplant	*Deinandra increscens ssp. villosa*	Flowering Plants	Endangered	Wherever found	Final

No common name	*Delissea rhytidosperma*	Flowering Plants	Endangered	Wherever found	Final
Oha	*Delissea subcordata*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Delissea undulata*	Flowering Plants	Endangered	Wherever found	Final
Baker's larkspur	*Delphinium bakeri*	Flowering Plants	Endangered	Wherever found	Final
Yellow larkspur	*Delphinium luteum*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Dendrobium guamense*	Flowering Plants	Threatened	Wherever found	
Garrett's mint	*Dicerandra christmanii*	Flowering Plants	Endangered		
Longspurred mint	*Dicerandra cornutissima*	Flowering Plants	Endangered		
Scrub mint	*Dicerandra frutescens*	Flowering Plants	Endangered		
Lakela's mint	*Dicerandra immaculata*	Flowering Plants	Endangered		
Florida pineland crabgrass	*Digitaria pauciflora*	Flowering Plants	Threatened		Proposed
Vandenberg monkeyflower	*Diplacus vandenbergensis*	Flowering Plants	Endangered	Wherever found	Final
Slender-horned spineflower	*Dodecahema leptoceras*	Flowering Plants	Endangered	Wherever found	
Na`ena`e	*Dubautia herbstobatae*	Flowering Plants	Endangered	Wherever found	Final
Na`ena`e	*Dubautia imbricata ssp. imbricata*	Flowering Plants	Endangered	Wherever found	Final
Naenae	*Dubautia kalalauensis*	Flowering Plants	Endangered	Wherever found	Final
Naenae	*Dubautia kenwoodii*	Flowering Plants	Endangered	Wherever found	Final
Koholapehu	*Dubautia latifolia*	Flowering Plants	Endangered	Wherever found	Final
Na`ena`e	*Dubautia pauciflorula*	Flowering Plants	Endangered	Wherever found	Final
Na`ena`e	*Dubautia plantaginea ssp. humilis*	Flowering Plants	Endangered	Wherever found	Final
Na`ena`e	*Dubautia plantaginea ssp. magnifolia*	Flowering Plants	Endangered	Wherever found	Final
Na`ena`e	*Dubautia waialealae*	Flowering Plants	Endangered	Wherever found	Final
Conejo dudleya	*Dudleya abramsii ssp. parva*	Flowering Plants	Threatened	Wherever found	
Marcescent dudleya	*Dudleya cymosa ssp. marcescens*	Flowering Plants	Threatened	Wherever found	

Santa Monica Mountains dudleyea	*Dudleya cymosa ssp. ovatifolia*	Flowering Plants	Threatened	Wherever found	
Santa Cruz Island dudleya	*Dudleya nesiotica*	Flowering Plants	Threatened	Wherever found	
Santa Clara Valley dudleya	*Dudleya setchellii*	Flowering Plants	Endangered	Wherever found	
Laguna Beach liveforever	*Dudleya stolonifera*	Flowering Plants	Threatened	Wherever found	
Santa Barbara Island liveforever	*Dudleya traskiae*	Flowering Plants	Endangered	Wherever found	
Verity's dudleya	*Dudleya verityi*	Flowering Plants	Threatened	Wherever found	
Smooth coneflower	*Echinacea laevigata*	Flowering Plants	Threatened	Wherever found	
Nichol's Turk's head cactus	*Echinocactus horizonthalonius var. nicholii*	Flowering Plants	Endangered	Wherever found	
Arizona hedgehog cactus	*Echinocereus arizonicus ssp. arizonicus*	Flowering Plants	Endangered	Wherever found	
Chisos Mountain hedgehog Cactus	*Echinocereus chisoensis var. chisoensis*	Flowering Plants	Threatened	Wherever found	
Kuenzler hedgehog cactus	*Echinocereus fendleri var. kuenzleri*	Flowering Plants	Threatened	Wherever found	
Black lace cactus	*Echinocereus reichenbachii var. albertii*	Flowering Plants	Endangered	Wherever found	
Davis' green pitaya	*Echinocereus viridiflorus var. davisii*	Flowering Plants	Endangered	Wherever found	
Acuna Cactus	*Echinomastus erectocentrus var. acunensis*	Flowering Plants	Endangered	Wherever found	Final
Ash Meadows sunray	*Enceliopsis nudicaulis var. corrugata*	Flowering Plants	Threatened	Wherever found	Final
Fosberg's love grass	*Eragrostis fosbergii*	Flowering Plants	Endangered	Wherever found	Final
Kern mallow	*Eremalche kernensis*	Flowering Plants	Endangered	Wherever found	
Santa Ana River woolly-star	*Eriastrum densifolium ssp. sanctorum*	Flowering Plants	Endangered	Wherever found	
Willamette daisy	*Erigeron decumbens*	Flowering Plants	Endangered	Wherever found	Final
Parish's daisy	*Erigeron parishii*	Flowering Plants	Threatened	Wherever found	Final

Zuni fleabane	*Erigeron rhizomatus*	Flowering Plants	Threatened	Wherever found	
Indian Knob mountainbalm	*Eriodictyon altissimum*	Flowering Plants	Endangered	Wherever found	
Lompoc yerba santa	*Eriodictyon capitatum*	Flowering Plants	Endangered	Wherever found	Final
Ione (incl. Irish Hill) buckwheat	*Eriogonum apricum (incl. var. prostratum)*	Flowering Plants	Endangered	Wherever found	
Umtanum desert buckwheat	*Eriogonum codium*	Flowering Plants	Threatened	Wherever found	Final
Gypsum wild-buckwheat	*Eriogonum gypsophilum*	Flowering Plants	Threatened	Wherever found	Final
Southern mountain wild-buckwheat	*Eriogonum kennedyi var. austromontanum*	Flowering Plants	Threatened	Wherever found	Final
Scrub buckwheat	*Eriogonum longifolium var. gnaphalifolium*	Flowering Plants	Threatened		
Cushenbury buckwheat	*Eriogonum ovalifolium var. vineum*	Flowering Plants	Endangered	Wherever found	Final
Steamboat buckwheat	*Eriogonum ovalifolium var. williamsiae*	Flowering Plants	Endangered	Wherever found	
Clay-Loving wild buckwheat	*Eriogonum pelinophilum*	Flowering Plants	Endangered	Wherever found	Final
Tiehm's buckwheat	*Eriogonum tiehmii*	Flowering Plants	Endangered		Proposed
San Mateo woolly sunflower	*Eriophyllum latilobum*	Flowering Plants	Endangered	Wherever found	
San Diego button-celery	*Eryngium aristulatum var. parishii*	Flowering Plants	Endangered	Wherever found	
Loch Lomond coyote thistle	*Eryngium constancei*	Flowering Plants	Endangered	Wherever found	
Snakeroot	*Eryngium cuneifolium*	Flowering Plants	Endangered		
Arizona eryngo	*Eryngium sparganophyllum*	Flowering Plants	Endangered		Final
Contra Costa wallflower	*Erysimum capitatum var. angustatum*	Flowering Plants	Endangered	Wherever found	Final
Menzies' wallflower	*Erysimum menziesii*	Flowering Plants	Endangered	Wherever found	
Ben Lomond wallflower	*Erysimum teretifolium*	Flowering Plants	Endangered	Wherever found	
Minnesota dwarf trout lily	*Erythronium propullans*	Flowering Plants	Endangered	Wherever found	
Nellie''s cory cactus	*Escobaria minima*	Flowering Plants	Endangered	Wherever found	

No common name	*Eugenia bryanii*	Flowering Plants	Endangered	Wherever found	
Uvillo	*Eugenia haematocarpa*	Flowering Plants	Endangered	Wherever found	
Nioi	*Eugenia koolauensis*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Eugenia woodburyana*	Flowering Plants	Threatened	Wherever found	
`Akoko	*Euphorbia celastroides var. kaenana*	Flowering Plants	Endangered	Wherever found	Final
`Akoko	*Euphorbia deppeana*	Flowering Plants	Endangered	Wherever found	Final
`Akoko	*Euphorbia eleanoriae*	Flowering Plants	Endangered	Wherever found	Final
`Akoko	*Euphorbia haeleeleana*	Flowering Plants	Endangered	Wherever found	Final
''Akoko	*Euphorbia halemanui*	Flowering Plants	Endangered	Wherever found	Final
`Akoko	*Euphorbia herbstii*	Flowering Plants	Endangered	Wherever found	Final
`Akoko	*Euphorbia kuwaleana*	Flowering Plants	Endangered	Wherever found	Final
`Akoko	*Euphorbia remyi var. kauaiensis*	Flowering Plants	Endangered	Wherever found	Final
`Akoko	*Euphorbia remyi var. remyi*	Flowering Plants	Endangered	Wherever found	Final
`Akoko	*Euphorbia rockii*	Flowering Plants	Endangered	Wherever found	Final
Ewa Plains `akoko	*Euphorbia skottsbergii var. skottsbergii*	Flowering Plants	Endangered	Wherever found	Final
Telephus spurge	*Euphorbia telephioides*	Flowering Plants	Threatened		
Penland alpine fen mustard	*Eutrema penlandii*	Flowering Plants	Threatened	Wherever found	
Heau	*Exocarpos luteolus*	Flowering Plants	Endangered	Wherever found	Final
Heau	*Exocarpos menziesii*	Flowering Plants	Endangered		
No common name	*Festuca hawaiiensis*	Flowering Plants	Endangered	Wherever found	
Guadalupe fescue	*Festuca ligulata*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Festuca molokaiensis*	Flowering Plants	Endangered	Wherever found	Final
Mehamehame	*Flueggea neowawraea*	Flowering Plants	Endangered	Wherever found	Final

Pine Hill flannelbush	*Fremontodendron californicum ssp. decumbens*	Flowering Plants	Endangered	Wherever found	
Mexican flannelbush	*Fremontodendron mexicanum*	Flowering Plants	Endangered	Wherever found	Final
Gentner's Fritillary	*Fritillaria gentneri*	Flowering Plants	Endangered	Wherever found	
Small's milkpea	*Galactia smallii*	Flowering Plants	Endangered		
Island bedstraw	*Galium buxifolium*	Flowering Plants	Endangered	Wherever found	
El Dorado bedstraw	*Galium californicum ssp. sierrae*	Flowering Plants	Endangered	Wherever found	
Hawaiian gardenia (=Na`u)	*Gardenia brighamii*	Flowering Plants	Endangered	Wherever found	
Nanu	*Gardenia mannii*	Flowering Plants	Endangered	Wherever found	Final
Nanu	*Gardenia remyi*	Flowering Plants	Endangered	Wherever found	
No common name	*Geocarpon minimum*	Flowering Plants	Threatened	Wherever found	
Nohoanu	*Geranium arboreum*	Flowering Plants	Endangered	Wherever found	Final
Nohoanu	*Geranium hanaense*	Flowering Plants	Endangered	Wherever found	Final
Nohoanu	*Geranium hillebrandii*	Flowering Plants	Endangered	Wherever found	Final
Nohoanu	*Geranium kauaiense*	Flowering Plants	Endangered	Wherever found	Final
Nohoanu	*Geranium multiflorum*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Gesneria pauciflora*	Flowering Plants	Threatened	Wherever found	
Spreading avens	*Geum radiatum*	Flowering Plants	Endangered	Wherever found	
Monterey gilia	*Gilia tenuiflora ssp. arenaria*	Flowering Plants	Endangered	Wherever found	
Hoffmann's slender-flowered gilia	*Gilia tenuiflora ssp. hoffmannii*	Flowering Plants	Endangered	Wherever found	
Beautiful goetzea	*Goetzea elegans*	Flowering Plants	Endangered	Wherever found	
No common name	*Gonocalyx concolor*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Gouania hillebrandii*	Flowering Plants	Endangered	Wherever found	Final

No common name	*Gouania meyenii*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Gouania vitifolia*	Flowering Plants	Endangered	Wherever found	Final
Bartram's stonecrop	*Graptopetalum bartramii*	Flowering Plants	Threatened	Wherever found	Proposed
Ash Meadows gumplant	*Grindelia fraxinipratensis*	Flowering Plants	Threatened	Wherever found	Final
Showy stickseed	*Hackelia venusta*	Flowering Plants	Endangered	Wherever found	
Honohono	*Haplostachys haplostachya*	Flowering Plants	Endangered	Wherever found	
Harper's beauty	*Harperocallis flava*	Flowering Plants	Endangered		
Aboriginal Prickly-apple	*Harrisia (=Cereus) aboriginum (=gracilis)*	Flowering Plants	Endangered		Final
Higo Chumbo	*Harrisia portoricensis*	Flowering Plants	Threatened	Wherever found	
Todsen's pennyroyal	*Hedeoma todsenii*	Flowering Plants	Endangered	Wherever found	Final
Paudedo	*Hedyotis megalantha*	Flowering Plants	Endangered	Wherever found	
Roan Mountain bluet	*Hedyotis purpurea var. montana*	Flowering Plants	Endangered	Wherever found	
Virginia sneezeweed	*Helenium virginicum*	Flowering Plants	Threatened	Wherever found	
Island rush-rose	*Helianthemum greenei*	Flowering Plants	Threatened	Wherever found	
Pecos (=puzzle, =paradox) sunflower	*Helianthus paradoxus*	Flowering Plants	Threatened	Wherever found	Final
Schweinitz's sunflower	*Helianthus schweinitzii*	Flowering Plants	Endangered	Wherever found	
Whorled Sunflower	*Helianthus verticillatus*	Flowering Plants	Endangered		Final
Swamp pink	*Helonias bullata*	Flowering Plants	Threatened		
Ufa-halomtano	*Heritiera longipetiolata*	Flowering Plants	Endangered	Wherever found	
Marin dwarf-flax	*Hesperolinon congestum*	Flowering Plants	Threatened	Wherever found	
No common name	*Hesperomannia arborescens*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Hesperomannia arbuscula*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Hesperomannia lydgatei*	Flowering Plants	Endangered	Wherever found	Final

Dwarf-flowered heartleaf	*Hexastylis naniflora*	Flowering Plants	Threatened	Wherever found	
Kauai hau kuahiwi	*Hibiscadelphus distans*	Flowering Plants	Endangered	Wherever found	
Hau kuahiwi	*Hibiscadelphus giffardianus*	Flowering Plants	Endangered	Wherever found	Final
Hau kuahiwi	*Hibiscadelphus hualalaiensis*	Flowering Plants	Endangered	Wherever found	Final
Hau kuahiwi	*Hibiscadelphus woodii*	Flowering Plants	Endangered	Wherever found	Final
Koki`o ke`oke`o	*Hibiscus arnottianus ssp. immaculatus*	Flowering Plants	Endangered	Wherever found	Final
(=Native yellow hibiscus) ma`o hau hele	*Hibiscus brackenridgei*	Flowering Plants	Endangered	Wherever found	Final
Clay's hibiscus	*Hibiscus clayi*	Flowering Plants	Endangered	Wherever found	Final
Neches River rose-mallow	*Hibiscus dasycalyx*	Flowering Plants	Threatened	Wherever found	Final
Koki`o ke`oke`o	*Hibiscus waimeae ssp. hannerae*	Flowering Plants	Endangered	Wherever found	Final
Slender rush-pea	*Hoffmannseggia tenella*	Flowering Plants	Endangered	Wherever found	
Santa Cruz tarplant	*Holocarpha macradenia*	Flowering Plants	Threatened	Wherever found	Final
Mountain golden heather	*Hudsonia montana*	Flowering Plants	Threatened	Wherever found	Final
Lakeside daisy	*Hymenoxys herbacea*	Flowering Plants	Threatened	Wherever found	
Texas prairie dawn-flower	*Hymenoxys texana*	Flowering Plants	Endangered	Wherever found	
Highlands scrub hypericum	*Hypericum cumulicola*	Flowering Plants	Endangered		
Cook's holly	*Ilex cookii*	Flowering Plants	Endangered	Wherever found	
No common name	*Ilex sintenisii*	Flowering Plants	Endangered	Wherever found	
Peter's Mountain mallow	*Iliamna corei*	Flowering Plants	Endangered	Wherever found	
Pagosa skyrocket	*Ipomopsis polyantha*	Flowering Plants	Endangered	Wherever found	Final
Holy Ghost ipomopsis	*Ipomopsis sancti-spiritus*	Flowering Plants	Endangered	Wherever found	
Dwarf lake iris	*Iris lacustris*	Flowering Plants	Threatened	Wherever found	
Hilo ischaemum	*Ischaemum byrone*	Flowering Plants	Endangered	Wherever found	Final

Aupaka	*Isodendrion hosakae*	Flowering Plants	Endangered	Wherever found	Final
Aupaka	*Isodendrion laurifolium*	Flowering Plants	Endangered	Wherever found	Final
Aupaka	*Isodendrion longifolium*	Flowering Plants	Threatened	Wherever found	Final
wahine noho Kula	*Isodendrion pyrifolium*	Flowering Plants	Endangered	Wherever found	Final
Small whorled pogonia	*Isotria medeoloides*	Flowering Plants	Threatened		
Ash Meadows ivesia	*Ivesia kingii var. eremica*	Flowering Plants	Threatened	Wherever found	Final
Webber's ivesia	*Ivesia webberi*	Flowering Plants	Threatened	Wherever found	Final
Beach jacquemontia	*Jacquemontia reclinata*	Flowering Plants	Endangered		
`Ohe	*Joinvillea ascendens ascendens*	Flowering Plants	Endangered	Wherever found	
West Indian Walnut (=Nogal)	*Juglans jamaicensis*	Flowering Plants	Endangered	Wherever found	
Cooley's water-willow	*Justicia cooleyi*	Flowering Plants	Endangered		
'Awiwi	*Kadua cookiana*	Flowering Plants	Endangered	Wherever found	Final
kopa	*Kadua cordata remyi*	Flowering Plants	Endangered	Wherever found	Final
Kio`ele	*Kadua coriacea*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Kadua degeneri*	Flowering Plants	Endangered	Wherever found	Final
Kamapua`a	*Kadua fluviatilis*	Flowering Plants	Endangered	Wherever found	
No common name	*Kadua haupuensis*	Flowering Plants	Endangered	Wherever found	
pilo	*Kadua laxiflora*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Kadua parvula*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Kadua st.-johnii*	Flowering Plants	Endangered	Wherever found	Final
Kohe malama malama o kanaloa	*Kanaloa kahoolawensis*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Keysseria (=Lagenifera) erici*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Keysseria (=Lagenifera) helenae*	Flowering Plants	Endangered	Wherever found	Final

Cooke's koki`o	*Kokia cookei*	Flowering Plants	Endangered	Wherever found	Final
Koki`o	*Kokia drynarioides*	Flowering Plants	Endangered	Wherever found	Final
Koki`o	*Kokia kauaiensis*	Flowering Plants	Endangered	Wherever found	Final
Hulumoa	*Korthalsella degeneri*	Flowering Plants	Endangered	Wherever found	Final
Kamakahala	*Labordia cyrtandrae*	Flowering Plants	Endangered	Wherever found	Final
Kamakahala	*Labordia helleri*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Labordia lorenciana*	Flowering Plants	Endangered	Wherever found	
Kamakahala	*Labordia lydgatei*	Flowering Plants	Endangered	Wherever found	Final
Kamakahala	*Labordia pumila*	Flowering Plants	Endangered	Wherever found	Final
Kamakahala	*Labordia tinifolia var. lanaiensis*	Flowering Plants	Endangered	Wherever found	Final
Kamakahala	*Labordia tinifolia var. wahiawaensis*	Flowering Plants	Endangered	Wherever found	Final
Kamakahala	*Labordia triflora*	Flowering Plants	Endangered	Wherever found	Final
Burke's goldfields	*Lasthenia burkei*	Flowering Plants	Endangered	Wherever found	
Contra Costa goldfields	*Lasthenia conjugens*	Flowering Plants	Endangered	Wherever found	Final
Beach layia	*Layia carnosa*	Flowering Plants	Threatened	Wherever found	
Fleshy-fruit gladecress	*Leavenworthia crassa*	Flowering Plants	Endangered	Wherever found	Final
Kentucky glade cress	*Leavenworthia exigua laciniata*	Flowering Plants	Threatened	Wherever found	Final
Texas golden Gladecress	*Leavenworthia texana*	Flowering Plants	Endangered	Wherever found	Final
`Anaunau	*Lepidium arbuscula*	Flowering Plants	Endangered	Wherever found	Final
Barneby ridge-cress	*Lepidium barnebyanum*	Flowering Plants	Endangered	Wherever found	
No common name	*Lepidium orbiculare*	Flowering Plants	Endangered	Wherever found	
Slickspot peppergrass	*Lepidium papilliferum*	Flowering Plants	Threatened		Proposed
No common name	*Leptocereus grantianus*	Flowering Plants	Endangered	Wherever found	
Prairie bush-clover	*Lespedeza leptostachya*	Flowering Plants	Threatened	Wherever found	

Dudley Bluffs bladderpod	*Lesquerella congesta*	Flowering Plants	Threatened	Wherever found	
San Bernardino Mountains bladderpod	*Lesquerella kingii ssp. bernardina*	Flowering Plants	Endangered	Wherever found	Final
Lyrate bladderpod	*Lesquerella lyrata*	Flowering Plants	Threatened	Wherever found	
Spring Creek bladderpod	*Lesquerella perforata*	Flowering Plants	Endangered	Wherever found	
Kodachrome bladderpod	*Lesquerella tumulosa*	Flowering Plants	Endangered	Wherever found	
San Francisco lessingia	*Lessingia germanorum (=L.g. var. germanorum)*	Flowering Plants	Endangered	Wherever found	
Heller's blazingstar	*Liatris helleri*	Flowering Plants	Threatened	Wherever found	
Scrub blazingstar	*Liatris ohlingerae*	Flowering Plants	Endangered		
Huachuca water-umbel	*Lilaeopsis schaffneriana var. recurva*	Flowering Plants	Endangered	Wherever found	Final
Western lily	*Lilium occidentale*	Flowering Plants	Endangered	Wherever found	
Pitkin Marsh lily	*Lilium pardalinum ssp. pitkinense*	Flowering Plants	Endangered	Wherever found	
Butte County meadowfoam	*Limnanthes floccosa ssp. californica*	Flowering Plants	Endangered	Wherever found	Final
Large-flowered woolly meadowfoam	*Limnanthes pumila ssp. grandiflora*	Flowering Plants	Endangered	Wherever found	Final
Sebastopol meadowfoam	*Limnanthes vinculans*	Flowering Plants	Endangered	Wherever found	
Pondberry	*Lindera melissifolia*	Flowering Plants	Endangered	Wherever found	
Sand flax	*Linum arenicola*	Flowering Plants	Endangered		Proposed
Carter's small-flowered flax	*Linum carteri carteri*	Flowering Plants	Endangered		Final
nehe	*Lipochaeta fauriei*	Flowering Plants	Endangered	Wherever found	Final
nehe	*Lipochaeta lobata var. leptophylla*	Flowering Plants	Endangered	Wherever found	Final
nehe	*Lipochaeta micrantha*	Flowering Plants	Endangered	Wherever found	Final
nehe	*Lipochaeta venosa*	Flowering Plants	Endangered	Wherever found	
nehe	*Lipochaeta waimeaensis*	Flowering Plants	Endangered	Wherever found	Final

San Clemente Island woodland-star	*Lithophragma maximum*	Flowering Plants	Endangered	Wherever found	
No common name	*Lobelia koolauensis*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Lobelia monostachya*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Lobelia niihauensis*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Lobelia oahuensis*	Flowering Plants	Endangered	Wherever found	Final
Cook's lomatium	*Lomatium cookii*	Flowering Plants	Endangered	Wherever found	Final
Scrub lupine	*Lupinus aridorum*	Flowering Plants	Endangered		
Lassics lupine	*Lupinus constancei*	Flowering Plants	Proposed Endangered	Proposed	
Nipomo Mesa lupine	*Lupinus nipomensis*	Flowering Plants	Endangered	Wherever found	
Kincaid's Lupine	*Lupinus sulphureus ssp. kincaidii*	Flowering Plants	Threatened	Wherever found	Final
Clover (Tidestrom''s) lupine	*Lupinus tidestromii*	Flowering Plants	Endangered	Wherever found	
No common name	*Lyonia truncata var. proctorii*	Flowering Plants	Endangered	Wherever found	
Rough-leaved loosestrife	*Lysimachia asperulaefolia*	Flowering Plants	Endangered	Wherever found	
lehua makanoe	*Lysimachia daphnoides*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Lysimachia filifolia*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Lysimachia iniki*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Lysimachia lydgatei*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Lysimachia maxima*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Lysimachia pendens*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Lysimachia scopulensis*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Lysimachia venosa*	Flowering Plants	Endangered	Wherever found	Final
White birds-in-a-nest	*Macbridea alba*	Flowering Plants	Threatened		
No common name	*Maesa walkeri*	Flowering Plants	Threatened	Wherever found	

Santa Cruz Island bush-mallow	*Malacothamnus fasciculatus var. nesioticus*	Flowering Plants	Endangered	Wherever found	
Santa Cruz Island malacothrix	*Malacothrix indecora*	Flowering Plants	Endangered	Wherever found	
Island malacothrix	*Malacothrix squalida*	Flowering Plants	Endangered	Wherever found	
Walker's manioc	*Manihot walkerae*	Flowering Plants	Endangered	Wherever found	
Mohr's Barbara's buttons	*Marshallia mohrii*	Flowering Plants	Threatened	Wherever found	
nehe	*Melanthera kamolensis*	Flowering Plants	Endangered	Wherever found	Final
nehe	*Melanthera tenuifolia*	Flowering Plants	Endangered	Wherever found	Final
Alani	*Melicope adscendens*	Flowering Plants	Endangered	Wherever found	Final
Alani	*Melicope balloui*	Flowering Plants	Endangered	Wherever found	Final
Alani	*Melicope christophersenii*	Flowering Plants	Endangered	Wherever found	Final
Alani	*Melicope degeneri*	Flowering Plants	Endangered	Wherever found	Final
Alani	*Melicope haupuensis*	Flowering Plants	Endangered	Wherever found	Final
Alani	*Melicope hiiakae*	Flowering Plants	Endangered	Wherever found	Final
Alani	*Melicope knudsenii*	Flowering Plants	Endangered	Wherever found	Final
Alani	*Melicope lydgatei*	Flowering Plants	Endangered	Wherever found	Final
Alani	*Melicope makahae*	Flowering Plants	Endangered	Wherever found	Final
Alani	*Melicope mucronulata*	Flowering Plants	Endangered	Wherever found	Final
Alani	*Melicope munroi*	Flowering Plants	Endangered	Wherever found	Final
Alani	*Melicope ovalis*	Flowering Plants	Endangered	Wherever found	Final
Alani	*Melicope pallida*	Flowering Plants	Endangered	Wherever found	Final
Alani	*Melicope paniculata*	Flowering Plants	Endangered	Wherever found	Final
Alani	*Melicope puberula*	Flowering Plants	Endangered	Wherever found	Final

Alani	*Melicope quadrangularis*	Flowering Plants	Endangered	Wherever found	Not Prudent
Alani	*Melicope reflexa*	Flowering Plants	Endangered	Wherever found	Final
Alani	*Melicope saint-johnii*	Flowering Plants	Endangered	Wherever found	Final
Alani	*Melicope zahlbruckneri*	Flowering Plants	Endangered	Wherever found	Final
Ash Meadows blazingstar	*Mentzelia leucophylla*	Flowering Plants	Threatened	Wherever found	Final
Uhi uhi	*Mezoneuron kavaiense*	Flowering Plants	Endangered	Wherever found	Final
Michigan monkey-flower	*Mimulus michiganensis*	Flowering Plants	Endangered	Wherever found	
MacFarlane's four-o'clock	*Mirabilis macfarlanei*	Flowering Plants	Threatened	Wherever found	
No common name	*Mitracarpus maxwelliae*	Flowering Plants	Endangered	Wherever found	
No common name	*Mitracarpus polycladus*	Flowering Plants	Endangered	Wherever found	
Willowy monardella	*Monardella viminea*	Flowering Plants	Endangered	Wherever found	Final
San Joaquin wooly-threads	*Monolopia (=Lembertia) congdonii*	Flowering Plants	Endangered	Wherever found	
sea bean	*Mucuna sloanei var. persericea*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Myrcia paganii*	Flowering Plants	Endangered	Wherever found	
Kolea	*Myrsine fosbergii*	Flowering Plants	Endangered	Wherever found	
Kolea	*Myrsine juddii*	Flowering Plants	Endangered	Wherever found	Final
Kolea	*Myrsine knudsenii*	Flowering Plants	Endangered	Wherever found	Final
Kolea	*Myrsine linearifolia*	Flowering Plants	Threatened	Wherever found	Final
Kolea	*Myrsine mezii*	Flowering Plants	Endangered	Wherever found	Final
Kolea	*Myrsine vaccinioides*	Flowering Plants	Endangered	Wherever found	Final
Spreading navarretia	*Navarretia fossalis*	Flowering Plants	Threatened	Wherever found	Final
Few-flowered navarretia	*Navarretia leucocephala ssp. pauciflora (=N. pauciflora)*	Flowering Plants	Endangered	Wherever found	

Many-flowered navarretia	*Navarretia leucocephala ssp. plieantha*	Flowering Plants	Endangered	Wherever found	
Colusa grass	*Neostapfia colusana*	Flowering Plants	Threatened	Wherever found	Final
No common name	*Neraudia angulata*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Neraudia ovata*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Neraudia sericea*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Nervilia jacksoniae*	Flowering Plants	Threatened	Wherever found	
No common name	*Nesogenes rotensis*	Flowering Plants	Endangered	Wherever found	
Amargosa niterwort	*Nitrophila mohavensis*	Flowering Plants	Endangered	Wherever found	Final
Britton's beargrass	*Nolina brittoniana*	Flowering Plants	Endangered		
`Aiea	*Nothocestrum breviflorum*	Flowering Plants	Endangered	Wherever found	Final
`Aiea	*Nothocestrum latifolium*	Flowering Plants	Endangered	Wherever found	
`Aiea	*Nothocestrum peltatum*	Flowering Plants	Endangered	Wherever found	Final
Kulu`i	*Nototrichium humile*	Flowering Plants	Endangered	Wherever found	Final
Holei	*Ochrosia haleakalae*	Flowering Plants	Endangered	Wherever found	
Holei	*Ochrosia kilaueaensis*	Flowering Plants	Endangered	Wherever found	Not Prudent
Antioch Dunes evening-primrose	*Oenothera deltoides ssp. howellii*	Flowering Plants	Endangered	Wherever found	Final
Bakersfield cactus	*Opuntia treleasei*	Flowering Plants	Endangered	Wherever found	
California Orcutt grass	*Orcuttia californica*	Flowering Plants	Endangered	Wherever found	
San Joaquin Valley Orcutt grass	*Orcuttia inaequalis*	Flowering Plants	Threatened	Wherever found	Final
Hairy Orcutt grass	*Orcuttia pilosa*	Flowering Plants	Endangered	Wherever found	Final
Slender Orcutt grass	*Orcuttia tenuis*	Flowering Plants	Threatened	Wherever found	Final
Sacramento Orcutt grass	*Orcuttia viscida*	Flowering Plants	Endangered	Wherever found	Final

No common name	*Osmoxylon mariannense*	Flowering Plants	Endangered	Wherever found	
Palo de rosa	*Ottoschulzia rhodoxylon*	Flowering Plants	Threatened	Wherever found	
Canby's dropwort	*Oxypolis canbyi*	Flowering Plants	Endangered	Wherever found	
Cushenbury oxytheca	*Oxytheca parishii var. goodmaniana*	Flowering Plants	Endangered	Wherever found	Final
Fassett's locoweed	*Oxytropis campestris var. chartacea*	Flowering Plants	Threatened	Wherever found	
San Francisco Peaks ragwort	*Packera franciscana*	Flowering Plants	Threatened	Wherever found	Final
Carter's panicgrass	*Panicum fauriei var. carteri*	Flowering Plants	Endangered	Wherever found	Final
Lau `ehu	*Panicum niihauense*	Flowering Plants	Endangered	Wherever found	Final
Papery whitlow-wort	*Paronychia chartacea*	Flowering Plants	Threatened		
Lake County stonecrop	*Parvisedum leiocarpum*	Flowering Plants	Endangered	Wherever found	
beardless chinchweed	*Pectis imberbis*	Flowering Plants	Endangered	Wherever found	Final
Furbish lousewort	*Pedicularis furbishiae*	Flowering Plants	Endangered	Wherever found	
Siler pincushion cactus	*Pediocactus (=Echinocactus,=Utahia) sileri*	Flowering Plants	Threatened	Wherever found	
Brady pincushion cactus	*Pediocactus bradyi*	Flowering Plants	Endangered	Wherever found	
San Rafael cactus	*Pediocactus despainii*	Flowering Plants	Endangered	Wherever found	
Knowlton's cactus	*Pediocactus knowltonii*	Flowering Plants	Endangered	Wherever found	
Fickeisen plains cactus	*Pediocactus peeblesianus ssp. fickeiseniae*	Flowering Plants	Endangered	Wherever found	Final
Peebles Navajo cactus	*Pediocactus peeblesianus ssp. peeblesianus*	Flowering Plants	Endangered	Wherever found	
Winkler cactus	*Pediocactus winkleri*	Flowering Plants	Threatened	Wherever found	
Parachute beardtongue	*Penstemon debilis*	Flowering Plants	Threatened	Wherever found	Final
Blowout penstemon	*Penstemon haydenii*	Flowering Plants	Endangered	Wherever found	
Penland beardtongue	*Penstemon penlandii*	Flowering Plants	Endangered	Wherever found	

White-rayed pentachaeta	*Pentachaeta bellidiflora*	Flowering Plants	Endangered	Wherever found	
Lyon's pentachaeta	*Pentachaeta lyonii*	Flowering Plants	Endangered	Wherever found	Final
`Ala `ala wai nui	*Peperomia subpetiolata*	Flowering Plants	Endangered	Wherever found	Final
Wheeler's peperomia	*Peperomia wheeleri*	Flowering Plants	Endangered	Wherever found	
Makou	*Peucedanum sandwicense*	Flowering Plants	Threatened	Wherever found	Final
Sand dune phacelia	*Phacelia argentea*	Flowering Plants	Proposed Threatened	Proposed	
Clay phacelia	*Phacelia argillacea*	Flowering Plants	Endangered	Wherever found	
North Park phacelia	*Phacelia formosula*	Flowering Plants	Endangered	Wherever found	
Island phacelia	*Phacelia insularis ssp. insularis*	Flowering Plants	Endangered	Wherever found	
DeBeque phacelia	*Phacelia submutica*	Flowering Plants	Threatened	Wherever found	Final
Yreka phlox	*Phlox hirsuta*	Flowering Plants	Endangered	Wherever found	
Texas trailing phlox	*Phlox nivalis ssp. texensis*	Flowering Plants	Endangered	Wherever found	
No common name	*Phyllanthus saffordii*	Flowering Plants	Endangered	Wherever found	
No common name	*Phyllostegia bracteata*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Phyllostegia brevidens*	Flowering Plants	Endangered	Wherever found	
No common name	*Phyllostegia floribunda*	Flowering Plants	Endangered	Wherever found	
No common name	*Phyllostegia glabra var. lanaiensis*	Flowering Plants	Endangered	Wherever found	Not Prudent
No common name	*Phyllostegia haliakalae*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Phyllostegia helleri*	Flowering Plants	Endangered		
No common name	*Phyllostegia hirsuta*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Phyllostegia hispida*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Phyllostegia kaalaensis*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Phyllostegia knudsenii*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Phyllostegia mannii*	Flowering Plants	Endangered	Wherever found	Final

No common name	*Phyllostegia mollis*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Phyllostegia parviflora*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Phyllostegia pilosa*	Flowering Plants	Endangered	Wherever found	Final
Kiponapona	*Phyllostegia racemosa*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Phyllostegia renovans*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Phyllostegia stachyoides*	Flowering Plants	Endangered	Wherever found	
No common name	*Phyllostegia velutina*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Phyllostegia waimeae*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Phyllostegia warshaueri*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Phyllostegia wawrana*	Flowering Plants	Endangered	Wherever found	Final
White Bluffs bladderpod	*Physaria douglasii ssp. tuplashensis*	Flowering Plants	Threatened	Wherever found	Final
Missouri bladderpod	*Physaria filiformis*	Flowering Plants	Threatened	Wherever found	
Short's bladderpod	*Physaria globosa*	Flowering Plants	Endangered	Wherever found	Final
Dudley Bluffs twinpod	*Physaria obcordata*	Flowering Plants	Threatened	Wherever found	
White bladderpod	*Physaria pallida*	Flowering Plants	Endangered	Wherever found	
Zapata bladderpod	*Physaria thamnophila*	Flowering Plants	Endangered	Wherever found	Final
Key tree cactus	*Pilosocereus robinii*	Flowering Plants	Endangered		
Godfrey's butterwort	*Pinguicula ionantha*	Flowering Plants	Threatened		
Yadon's piperia	*Piperia yadonii*	Flowering Plants	Endangered	Wherever found	Final
Hoawa	*Pittosporum halophilum*	Flowering Plants	Endangered	Wherever found	Final
Hoawa	*Pittosporum hawaiiense*	Flowering Plants	Endangered	Wherever found	
Ho`awa	*Pittosporum napaliense*	Flowering Plants	Endangered	Wherever found	Final
Ruth's golden aster	*Pityopsis ruthii*	Flowering Plants	Endangered	Wherever found	
rough popcornflower	*Plagiobothrys hirtus*	Flowering Plants	Endangered	Wherever found	

Calistoga allocarya	*Plagiobothrys strictus*	Flowering Plants	Endangered	Wherever found	
Kuahiwi laukahi	*Plantago hawaiensis*	Flowering Plants	Endangered	Wherever found	Final
Kuahiwi laukahi	*Plantago princeps*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Platanthera holochila*	Flowering Plants	Endangered	Wherever found	Final
White fringeless orchid	*Platanthera integrilabia*	Flowering Plants	Threatened		
Eastern prairie fringed orchid	*Platanthera leucophaea*	Flowering Plants	Threatened	Wherever found	
Western prairie fringed Orchid	*Platanthera praeclara*	Flowering Plants	Threatened	Wherever found	
No common name	*Platydesma cornuta var. cornuta*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Platydesma cornuta var. decurrens*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Platydesma remyi*	Flowering Plants	Endangered	Wherever found	
Pilo kea lau li`i	*Platydesma rostrata*	Flowering Plants	Endangered	Wherever found	Final
Chupacallos	*Pleodendron macranthum*	Flowering Plants	Endangered	Wherever found	
Hala pepe	*Pleomele fernaldii*	Flowering Plants	Endangered	Wherever found	Final
Hala pepe	*Pleomele forbesii*	Flowering Plants	Endangered	Wherever found	Final
Hala pepe	*Pleomele hawaiiensis*	Flowering Plants	Endangered	Wherever found	Final
San Bernardino bluegrass	*Poa atropurpurea*	Flowering Plants	Endangered	Wherever found	Final
Mann's bluegrass	*Poa mannii*	Flowering Plants	Endangered	Wherever found	Final
Napa bluegrass	*Poa napensis*	Flowering Plants	Endangered	Wherever found	
Hawaiian bluegrass	*Poa sandvicensis*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Poa siphonoglossa*	Flowering Plants	Endangered	Wherever found	Final
San Diego mesa-mint	*Pogogyne abramsii*	Flowering Plants	Endangered	Wherever found	
Otay mesa-mint	*Pogogyne nudiuscula*	Flowering Plants	Endangered	Wherever found	
Lewton's polygala	*Polygala lewtonii*	Flowering Plants	Endangered		
Tiny polygala	*Polygala smallii*	Flowering Plants	Endangered		

Wireweed	*Polygonella basiramia*	Flowering Plants	Endangered		
Sandlace	*Polygonella myriophylla*	Flowering Plants	Endangered		
Scotts Valley Polygonum	*Polygonum hickmanii*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Polyscias bisattenuata*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Polyscias flynnii*	Flowering Plants	Endangered	Wherever found	Final
`Ohe`ohe	*Polyscias gymnocarpa*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Polyscias lydgatei*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Polyscias racemosa*	Flowering Plants	Endangered	Wherever found	Final
Po`e	*Portulaca sclerocarpa*	Flowering Plants	Endangered	Wherever found	Final
Ihi	*Portulaca villosa*	Flowering Plants	Endangered	Wherever found	
Little Aguja (=Creek) Pondweed	*Potamogeton clystocarpus*	Flowering Plants	Endangered	Wherever found	
Hickman's potentilla	*Potentilla hickmanii*	Flowering Plants	Endangered	Wherever found	
Maguire primrose	*Primula maguirei*	Flowering Plants	Threatened	Wherever found	
loulu	*Pritchardia aylmer-robinsonii*	Flowering Plants	Endangered	Wherever found	Not Prudent
loulu	*Pritchardia bakeri*	Flowering Plants	Endangered	Wherever found	
loulu	*Pritchardia hardyi*	Flowering Plants	Endangered	Wherever found	
loulu	*Pritchardia kaalae*	Flowering Plants	Endangered	Wherever found	Not Prudent
loulu	*Pritchardia lanigera*	Flowering Plants	Endangered	Wherever found	
loulu	*Pritchardia maideniana*	Flowering Plants	Endangered	Wherever found	Not Prudent
loulu	*Pritchardia munroi*	Flowering Plants	Endangered	Wherever found	Not Prudent
loulu	*Pritchardia napaliensis*	Flowering Plants	Endangered	Wherever found	Final
loulu	*Pritchardia remota*	Flowering Plants	Endangered	Wherever found	Final
loulu	*Pritchardia schattaueri*	Flowering Plants	Endangered	Wherever found	Not Prudent

loulu	*Pritchardia viscosa*	Flowering Plants	Endangered	Wherever found	Final
Scrub plum	*Prunus geniculata*	Flowering Plants	Endangered		
Hartweg's golden sunburst	*Pseudobahia bahiifolia*	Flowering Plants	Endangered	Wherever found	
San Joaquin adobe sunburst	*Pseudobahia peirsonii*	Flowering Plants	Threatened	Wherever found	
`Ena`ena	*Pseudognaphalium sandwicensium var. molokaiense*	Flowering Plants	Endangered	Wherever found	
Kopiko	*Psychotria grandiflora*	Flowering Plants	Endangered	Wherever found	Final
Kopiko	*Psychotria hexandra ssp. oahuensis*	Flowering Plants	Endangered	Wherever found	Final
Kopiko	*Psychotria hobdyi*	Flowering Plants	Endangered	Wherever found	Final
Aplokating-palaoan	*Psychotria malaspinae*	Flowering Plants	Endangered	Wherever found	
Kaulu	*Pteralyxia kauaiensis*	Flowering Plants	Endangered	Wherever found	Final
Kaulu	*Pteralyxia macrocarpa*	Flowering Plants	Endangered	Wherever found	Final
Harperella	*Ptilimnium nodosum*	Flowering Plants	Endangered	Wherever found	
Arizona Cliffrose	*Purshia (=Cowania) subintegra*	Flowering Plants	Endangered	Wherever found	
Hinckley oak	*Quercus hinckleyi*	Flowering Plants	Threatened	Wherever found	
Autumn Buttercup	*Ranunculus aestivalis (=acriformis)*	Flowering Plants	Endangered	Wherever found	
Makou	*Ranunculus hawaiensis*	Flowering Plants	Endangered	Wherever found	
Makou	*Ranunculus mauiensis*	Flowering Plants	Endangered	Wherever found	
No common name	*Remya kauaiensis*	Flowering Plants	Endangered	Wherever found	Final
Maui remya	*Remya mauiensis*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Remya montgomeryi*	Flowering Plants	Endangered	Wherever found	Final
Leedy's roseroot	*Rhodiola integrifolia ssp. leedyi*	Flowering Plants	Threatened	Wherever found	
Chapman rhododendron	*Rhododendron chapmanii*	Flowering Plants	Endangered		
Michaux's sumac	*Rhus michauxii*	Flowering Plants	Endangered	Wherever found	

Knieskern's Beaked-rush	*Rhynchospora knieskernii*	Flowering Plants	Threatened	Wherever found	
Miccosukee gooseberry	*Ribes echinellum*	Flowering Plants	Threatened		
Gambel's watercress	*Rorippa gambellii*	Flowering Plants	Endangered	Wherever found	
Bunched arrowhead	*Sagittaria fasciculata*	Flowering Plants	Endangered	Wherever found	
Kral's water-plantain	*Sagittaria secundifolia*	Flowering Plants	Threatened	Wherever found	
No common name	*Sanicula mariversa*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Sanicula purpurea*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Sanicula sandwicensis*	Flowering Plants	Endangered	Wherever found	
Lanai sandalwood (=`iliahi)	*Santalum haleakalae var. lanaiense*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Santalum involutum*	Flowering Plants	Endangered	Wherever found	
Green pitcher-plant	*Sarracenia oreophila*	Flowering Plants	Endangered	Wherever found	
Alabama canebrake pitcher-plant	*Sarracenia rubra ssp. alabamensis*	Flowering Plants	Endangered	Wherever found	
Mountain sweet pitcher-plant	*Sarracenia rubra ssp. jonesii*	Flowering Plants	Endangered	Wherever found	
Dwarf naupaka	*Scaevola coriacea*	Flowering Plants	Endangered	Wherever found	
Awiwi	*Schenkia sebaeoides*	Flowering Plants	Endangered	Wherever found	Final
Diamond Head schiedea	*Schiedea adamantis*	Flowering Plants	Endangered	Wherever found	
Ma`oli`oli	*Schiedea apokremnos*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Schiedea attenuata*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Schiedea diffusa ssp. macraei*	Flowering Plants	Endangered	Wherever found	
No common name	*Schiedea diffusa subsp. diffusa*	Flowering Plants	Endangered	Wherever found	
No common name	*Schiedea haleakalensis*	Flowering Plants	Endangered	Wherever found	Final
Ma`oli`oli	*Schiedea hawaiiensis*	Flowering Plants	Endangered	Wherever found	
No common name	*Schiedea helleri*	Flowering Plants	Endangered	Wherever found	Final

No common name	*Schiedea hookeri*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Schiedea jacobii*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Schiedea kaalae*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Schiedea kauaiensis*	Flowering Plants	Endangered	Wherever found	Final
Ma`oli`oli	*Schiedea kealiae*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Schiedea laui*	Flowering Plants	Endangered	Wherever found	Final
Kuawawaenohu	*Schiedea lychnoides*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Schiedea lydgatei*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Schiedea membranacea*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Schiedea nuttallii*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Schiedea obovata*	Flowering Plants	Endangered	Wherever found	Final
Ma`oli`oli	*Schiedea pubescens*	Flowering Plants	Endangered	Wherever found	
No common name	*Schiedea salicaria*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Schiedea sarmentosa*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Schiedea spergulina var. leiopoda*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Schiedea spergulina var. spergulina*	Flowering Plants	Threatened	Wherever found	Final
Laulihilihi	*Schiedea stellarioides*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Schiedea trinervis*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Schiedea verticillata*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Schiedea viscosa*	Flowering Plants	Endangered	Wherever found	Final
Clay reed-mustard	*Schoenocrambe argillacea*	Flowering Plants	Threatened	Wherever found	
Barneby reed-mustard	*Schoenocrambe barnebyi*	Flowering Plants	Endangered	Wherever found	
Shrubby reed-mustard	*Schoenocrambe suffrutescens*	Flowering Plants	Endangered	Wherever found	Proposed
No common name	*Schoepfia arenaria*	Flowering Plants	Threatened	Wherever found	

American chaffseed	*Schwalbea americana*	Flowering Plants	Endangered	Wherever found	
Northeastern bulrush	*Scirpus ancistrochaetus*	Flowering Plants	Endangered		
Tobusch fishhook cactus	*Sclerocactus brevihamatus ssp. tobuschii*	Flowering Plants	Threatened	Wherever found	
Pariette cactus	*Sclerocactus brevispinus*	Flowering Plants	Threatened	Wherever found	
Colorado hookless Cactus	*Sclerocactus glaucus*	Flowering Plants	Threatened	Wherever found	
Lloyd''s Mariposa cactus	*Sclerocactus mariposensis*	Flowering Plants	Threatened	Wherever found	
Mesa Verde cactus	*Sclerocactus mesae-verdae*	Flowering Plants	Threatened	Wherever found	
Uinta Basin hookless cactus	*Sclerocactus wetlandicus*	Flowering Plants	Threatened	Wherever found	
Wright fishhook cactus	*Sclerocactus wrightiae*	Flowering Plants	Endangered	Wherever found	
Florida skullcap	*Scutellaria floridana*	Flowering Plants	Threatened		
Large-flowered skullcap	*Scutellaria montana*	Flowering Plants	Threatened	Wherever found	
Ocmulgee skullcap	*Scutellaria ocmulgee*	Flowering Plants	Proposed Threatened	Wherever found	Proposed
Layne's butterweed	*Senecio layneae*	Flowering Plants	Threatened	Wherever found	
Hayun Iagu (=(Guam), Tronkon guafi (Rota))	*Serianthes nelsonii*	Flowering Plants	Endangered	Wherever found	
Ohai	*Sesbania tomentosa*	Flowering Plants	Endangered	Wherever found	Final
Santa Cruz Island rockcress	*Sibara filifolia*	Flowering Plants	Endangered	Wherever found	
`Anunu	*Sicyos albus*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Sicyos lanceoloideus*	Flowering Plants	Endangered	Wherever found	
`Anunu	*Sicyos macrophyllus*	Flowering Plants	Endangered	Wherever found	
Keck's Checker-mallow	*Sidalcea keckii*	Flowering Plants	Endangered	Wherever found	Final
Nelson's checker-mallow	*Sidalcea nelsoniana*	Flowering Plants	Threatened	Wherever found	
Kenwood Marsh checker-mallow	*Sidalcea oregana ssp. valida*	Flowering Plants	Endangered	Wherever found	

Wenatchee Mountains checkermallow	*Sidalcea oregana var. calva*	Flowering Plants	Endangered	Wherever found	Final
Pedate checker-mallow	*Sidalcea pedata*	Flowering Plants	Endangered	Wherever found	
Everglades bully	*Sideroxylon reclinatum ssp. austrofloridense*	Flowering Plants	Threatened		Proposed
No common name	*Silene alexandri*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Silene hawaiiensis*	Flowering Plants	Threatened	Wherever found	Final
No common name	*Silene lanceolata*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Silene perlmanii*	Flowering Plants	Endangered	Wherever found	Final
Fringed campion	*Silene polypetala*	Flowering Plants	Endangered	Wherever found	
Spalding's Catchfly	*Silene spaldingii*	Flowering Plants	Threatened	Wherever found	Proposed
White irisette	*Sisyrinchium dichotomum*	Flowering Plants	Endangered	Wherever found	
Marron bacora	*Solanum conocarpum*	Flowering Plants	Endangered		Final
Erubia	*Solanum drymophilum*	Flowering Plants	Endangered	Wherever found	
Berenghenas halomtano	*Solanum guamense*	Flowering Plants	Endangered	Wherever found	
Popolo ku mai	*Solanum incompletum*	Flowering Plants	Endangered	Wherever found	Final
Popolo	*Solanum nelsonii*	Flowering Plants	Endangered	Wherever found	
`Aiakeakua, popolo	*Solanum sandwicense*	Flowering Plants	Endangered	Wherever found	Final
Houghton's goldenrod	*Solidago houghtonii*	Flowering Plants	Threatened	Wherever found	
Short's goldenrod	*Solidago shortii*	Flowering Plants	Endangered	Wherever found	
Blue Ridge goldenrod	*Solidago spithamaea*	Flowering Plants	Threatened	Wherever found	
No common name	*Spermolepis hawaiiensis*	Flowering Plants	Endangered	Wherever found	Final
Gierisch mallow	*Sphaeralcea gierischii*	Flowering Plants	Endangered	Wherever found	Final
Gentian pinkroot	*Spigelia gentianoides*	Flowering Plants	Endangered		
Virginia spiraea	*Spiraea virginiana*	Flowering Plants	Threatened	Wherever found	

Canelo Hills ladies'-tresses	*Spiranthes delitescens*	Flowering Plants	Endangered	Wherever found	
Ute ladies'-tresses	*Spiranthes diluvialis*	Flowering Plants	Threatened	Wherever found	
Navasota ladies-tresses	*Spiranthes parksii*	Flowering Plants	Endangered	Wherever found	
Cobana negra	*Stahlia monosperma*	Flowering Plants	Threatened	Wherever found	
No common name	*Stenogyne angustifolia var. angustifolia*	Flowering Plants	Endangered	Wherever found	
No common name	*Stenogyne bifida*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Stenogyne campanulata*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Stenogyne cranwelliae*	Flowering Plants	Endangered	Wherever found	
No common name	*Stenogyne kaalae ssp. sherffii*	Flowering Plants	Endangered	Wherever found	
No common name	*Stenogyne kanehoana*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Stenogyne kauaulaensis*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Stenogyne kealiae*	Flowering Plants	Endangered	Wherever found	Final
Malheur wire-lettuce	*Stephanomeria malheurensis*	Flowering Plants	Endangered	Wherever found	Final
Metcalf Canyon jewelflower	*Streptanthus albidus ssp. albidus*	Flowering Plants	Endangered	Wherever found	
Bracted twistflower	*Streptanthus bracteatus*	Flowering Plants	Threatened	Wherever found	Final
Tiburon jewelflower	*Streptanthus niger*	Flowering Plants	Endangered	Wherever found	
Texas snowbells	*Styrax platanifolius ssp. texanus*	Flowering Plants	Endangered	Wherever found	
Palo de jazmin	*Styrax portoricensis*	Flowering Plants	Endangered	Wherever found	
California seablite	*Suaeda californica*	Flowering Plants	Endangered		
Eureka Dune grass	*Swallenia alexandrae*	Flowering Plants	Threatened		
No common name	*Tabernaemontana rotensis*	Flowering Plants	Threatened	Wherever found	
California taraxacum	*Taraxacum californicum*	Flowering Plants	Endangered	Wherever found	Final
Palo colorado	*Ternstroemia luquillensis*	Flowering Plants	Endangered	Wherever found	
No common name	*Ternstroemia subsessilis*	Flowering Plants	Endangered	Wherever found	

No common name	*Tetramolopium arenarium*	Flowering Plants	Endangered	Wherever found	Proposed
Pamakani	*Tetramolopium capillare*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Tetramolopium filiforme*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Tetramolopium lepidotum ssp. lepidotum*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Tetramolopium remyi*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Tetramolopium rockii*	Flowering Plants	Threatened	Wherever found	Final
Cooley's meadowrue	*Thalictrum cooleyi*	Flowering Plants	Endangered	Wherever found	
Howell''s spectacular thelypody	*Thelypodium howellii ssp. spectabilis*	Flowering Plants	Threatened	Wherever found	
Slender-petaled mustard	*Thelypodium stenopetalum*	Flowering Plants	Endangered	Wherever found	
Kneeland Prairie penny-cress	*Thlaspi californicum*	Flowering Plants	Endangered	Wherever found	Final
Ashy dogweed	*Thymophylla tephroleuca*	Flowering Plants	Endangered	Wherever found	
Santa Cruz Island fringepod	*Thysanocarpus conchuliferus*	Flowering Plants	Endangered	Wherever found	
No common name	*Tinospora homosepala*	Flowering Plants	Endangered	Wherever found	
Last Chance townsendia	*Townsendia aprica*	Flowering Plants	Threatened	Wherever found	
No common name	*Trematolobelia singularis*	Flowering Plants	Endangered	Wherever found	Final
Bariaco	*Trichilia triacantha*	Flowering Plants	Endangered	Wherever found	
Showy Indian clover	*Trifolium amoenum*	Flowering Plants	Endangered	Wherever found	
Monterey clover	*Trifolium trichocalyx*	Flowering Plants	Endangered	Wherever found	
Persistent trillium	*Trillium persistens*	Flowering Plants	Endangered	Wherever found	
Relict trillium	*Trillium reliquum*	Flowering Plants	Endangered	Wherever found	
No common name	*Tuberolabium guamense*	Flowering Plants	Threatened	Wherever found	
Greene's tuctoria	*Tuctoria greenei*	Flowering Plants	Endangered	Wherever found	Final
Solano grass	*Tuctoria mucronata*	Flowering Plants	Endangered	Wherever found	Final

Opuhe	*Urera kaalae*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Varronia rupicola*	Flowering Plants	Threatened	Wherever found	Final
Red Hills vervain	*Verbena californica*	Flowering Plants	Threatened	Wherever found	
Big-leaved crownbeard	*Verbesina dissita*	Flowering Plants	Threatened	Wherever found	
No common name	*Vernonia proctorii*	Flowering Plants	Endangered	Wherever found	
Hawaiian vetch	*Vicia menziesii*	Flowering Plants	Endangered	Wherever found	
No common name	*Vigna o-wahuensis*	Flowering Plants	Endangered	Wherever found	Final
Pamakani	*Viola chamissoniana ssp. chamissoniana*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Viola helenae*	Flowering Plants	Endangered	Wherever found	Final
Nani wai`ale`ale	*Viola kauaiensis var. wahiawaensis*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Viola lanaiensis*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Viola oahuensis*	Flowering Plants	Endangered	Wherever found	Final
Wide-leaf warea	*Warea amplexifolia*	Flowering Plants	Endangered		
Carter's mustard	*Warea carteri*	Flowering Plants	Endangered		
No common name	*Wikstroemia skottsbergiana*	Flowering Plants	Endangered		
No common name	*Wikstroemia villosa*	Flowering Plants	Endangered	Wherever found	Final
Dwarf iliau	*Wilkesia hobdyi*	Flowering Plants	Endangered	Wherever found	Final
No common name	*Xylosma crenatum*	Flowering Plants	Endangered	Wherever found	Final
Tennessee yellow-eyed grass	*Xyris tennesseensis*	Flowering Plants	Endangered	Wherever found	
Desert yellowhead	*Yermo xanthocephalus*	Flowering Plants	Threatened	Wherever found	Final
A`e	*Zanthoxylum dipetalum var. tomentosum*	Flowering Plants	Endangered	Wherever found	Final
A`e	*Zanthoxylum hawaiiense*	Flowering Plants	Endangered	Wherever found	Final
A`e	*Zanthoxylum oahuense*	Flowering Plants	Endangered	Wherever found	Final

St. Thomas prickly-ash	*Zanthoxylum thomasianum*	Flowering Plants	Endangered	Wherever found	
Texas wild-rice	*Zizania texana*	Flowering Plants	Endangered	Wherever found	Final
Florida ziziphus	*Ziziphus celata*	Flowering Plants	Endangered		
Ash Meadows naucorid	*Ambrysus amargosus*	Insects	Threatened	Wherever found	Final
Florida leafwing Butterfly	*Anaea troglodyta floridalis*	Insects	Endangered	Wherever found	Final
Lange's metalmark butterfly	*Apodemia mormo langei*	Insects	Endangered	Wherever found	Proposed
Puerto Rican harlequin butterfly	*Atlantea tulita*	Insects	Threatened	Wherever found	Final
Coffin Cave mold beetle	*Batrisodes texanus*	Insects	Endangered	Wherever found	
Helotes mold beetle	*Batrisodes venyivi*	Insects	Endangered	Wherever found	Final
Uncompahgre fritillary butterfly	*Boloria acrocnema*	Insects	Endangered	Wherever found	
Rusty patched bumble bee	*Bombus affinis*	Insects	Endangered	Wherever found	Not Prudent
Franklin's bumble bee	*Bombus franklini*	Insects	Endangered	Wherever found	
Hungerford's crawling water Beetle	*Brychius hungerfordi*	Insects	Endangered	Wherever found	
San Bruno elfin butterfly	*Callophrys mossii bayensis*	Insects	Endangered	Wherever found	Proposed
Salt Creek Tiger beetle	*Cicindela nevadica lincolniana*	Insects	Endangered	Wherever found	Final
Ohlone tiger beetle	*Cicindela ohlone*	Insects	Endangered	Wherever found	
Miami tiger beetle	*Cicindelidia floridana*	Insects	Endangered	Wherever found	Proposed
Miami Blue Butterfly	*Cyclargus (=Hemiargus) thomasi bethunebakeri*	Insects	Endangered	Wherever found	Not Prudent
Monarch butterfly	*Danaus plexippus*	Insects	Candidate	Wherever found	
Valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	Insects	Threatened	Wherever found	Final
Casey's June Beetle	*Dinacoma caseyi*	Insects	Endangered	Wherever found	Final

Hawaiian picture-wing fly	*Drosophila aglaia*	Insects	Endangered	Wherever found	Final
Hawaiian picture-wing fly	*Drosophila differens*	Insects	Endangered	Wherever found	Final
Hawaiian picture-wing fly	*Drosophila digressa*	Insects	Endangered	Wherever found	
Hawaiian picture-wing fly	*Drosophila hemipeza*	Insects	Endangered	Wherever found	Final
Hawaiian picture-wing fly	*Drosophila heteroneura*	Insects	Endangered	Wherever found	Final
Hawaiian picture-wing fly	*Drosophila montgomeryi*	Insects	Endangered	Wherever found	Final
Hawaiian picture-wing fly	*Drosophila mulli*	Insects	Threatened	Wherever found	Final
Hawaiian picture-wing fly	*Drosophila musaphilia*	Insects	Endangered	Wherever found	Final
Hawaiian picture-wing fly	*Drosophila neoclavisetae*	Insects	Endangered	Wherever found	Final
Hawaiian picture-wing fly	*Drosophila obatai*	Insects	Endangered	Wherever found	Final
Hawaiian picture-wing fly	*Drosophila ochrobasis*	Insects	Endangered	Wherever found	Final
Hawaiian picture-wing fly	*Drosophila sharpi*	Insects	Endangered	Wherever found	Final
Hawaiian picture-wing fly	*Drosophila substenoptera*	Insects	Endangered	Wherever found	Final
Hawaiian picture-wing fly	*Drosophila tarphytrichia*	Insects	Endangered	Wherever found	Final
Delta green ground beetle	*Elaphrus viridis*	Insects	Threatened	Wherever found	Final
Puritan tiger beetle	*Ellipsoptera puritana*	Insects	Threatened	Wherever found	
Island marble Butterfly	*Euchloe ausonides insulanus*	Insects	Endangered	Wherever found	Final
El Segundo blue butterfly	*Euphilotes battoides allyni*	Insects	Endangered	Wherever found	Proposed
Smith's blue butterfly	*Euphilotes enoptes smithi*	Insects	Endangered	Wherever found	Proposed
Sacramento Mountains checkerspot Butterfly	*Euphydryas anicia cloudcrofti*	Insects	Endangered	Wherever found	
Bay checkerspot butterfly	*Euphydryas editha bayensis*	Insects	Threatened	Wherever found	Final
Quino checkerspot butterfly	*Euphydryas editha quino (=E. e. wrighti)*	Insects	Endangered	Wherever found	Final

Taylor's (=whulge) Checkerspot	*Euphydryas editha taylori*	Insects	Endangered	Wherever found	Final
Kern primrose sphinx moth	*Euproserpinus euterpe*	Insects	Threatened	Wherever found	Proposed
Palos Verdes blue butterfly	*Glaucopsyche lygdamus palosverdesensis*	Insects	Endangered	Wherever found	Final
Northeastern beach tiger beetle	*Habroscelimorpha dorsalis dorsalis*	Insects	Threatened	Wherever found	
bog buck moth	*Hemileuca maia menyanthevora*	Insects	Proposed Endangered	Wherever found	
Schaus swallowtail butterfly	*Heraclides aristodemus ponceanus*	Insects	Endangered	Wherever found	
Dakota Skipper	*Hesperia dacotae*	Insects	Threatened	Wherever found	Final
Pawnee montane skipper	*Hesperia leonardus montana*	Insects	Threatened	Wherever found	Proposed
Comal Springs riffle beetle	*Heterelmis comalensis*	Insects	Endangered	Wherever found	Final
Anthricinan yellow-faced bee	*Hylaeus anthracinus*	Insects	Endangered	Wherever found	
Assimulans yellow-faced bee	*Hylaeus assimulans*	Insects	Endangered	Wherever found	
Easy yellow-faced bee	*Hylaeus facilis*	Insects	Endangered	Wherever found	
Hilaris yellow-faced bee	*Hylaeus hilaris*	Insects	Endangered	Wherever found	
Hawaiian yellow-faced bee	*Hylaeus kuakea*	Insects	Endangered	Wherever found	
Hawaiian yellow-faced bee	*Hylaeus longiceps*	Insects	Endangered	Wherever found	
Hawaiian yellow-faced bee	*Hylaeus mana*	Insects	Endangered	Wherever found	
Mariana eight-spot butterfly	*Hypolimnas octocula marianensis*	Insects	Endangered	Wherever found	
Mount Charleston blue butterfly	*Icaricia (Plebejus) shasta charlestonensis*	Insects	Endangered	Wherever found	Final
Fender's blue butterfly	*Icaricia icarioides fenderi*	Insects	Threatened	Wherever found	Final

Mission blue butterfly	*Icaricia icarioides missionensis*	Insects	Endangered	Wherever found	Proposed
Rota blue damselfly	*Ischnura luta*	Insects	Endangered	Wherever found	
Meltwater lednian stonefly	*Lednia tumana*	Insects	Threatened	Wherever found	
Lotis blue butterfly	*Lycaeides argyrognomon lotis*	Insects	Endangered	Wherever found	Proposed
Karner blue butterfly	*Lycaeides melissa samuelis*	Insects	Endangered	Wherever found	Proposed
Hermes copper butterfly	*Lycaena hermes*	Insects	Threatened	Wherever found	Final
Blackburn's sphinx moth	*Manduca blackburni*	Insects	Endangered	Wherever found	Final
Crimson Hawaiian damselfly	*Megalagrion leptodemas*	Insects	Endangered	Wherever found	Final
Flying earwig Hawaiian damselfly	*Megalagrion nesiotes*	Insects	Endangered	Wherever found	
Blackline Hawaiian damselfly	*Megalagrion nigrohamatum nigrolineatum*	Insects	Endangered	Wherever found	Final
Oceanic Hawaiian damselfly	*Megalagrion oceanicum*	Insects	Endangered	Wherever found	Final
Pacific Hawaiian damselfly	*Megalagrion pacificum*	Insects	Endangered	Wherever found	
Orangeblack Hawaiian damselfly	*Megalagrion xanthomelas*	Insects	Endangered	Wherever found	
Saint Francis' satyr butterfly	*Neonympha mitchellii francisci*	Insects	Endangered	Wherever found	
Mitchell's satyr Butterfly	*Neonympha mitchellii mitchellii*	Insects	Endangered	Wherever found	
American burying beetle	*Nicrophorus americanus*	Insects	Threatened	Wherever found, except where listed as an experimental population	
Poweshiek skipperling	*Oarisma poweshiek*	Insects	Endangered	Wherever found	Final
Mount Hermon June beetle	*Polyphylla barbata*	Insects	Endangered	Wherever found	
Carson wandering skipper	*Pseudocopaeodes eunus obscurus*	Insects	Endangered	Wherever found	

Laguna Mountains skipper	*Pyrgus ruralis lagunae*	Insects	Endangered	Wherever found	Final
[no common name] Beetle	*Rhadine exilis*	Insects	Endangered	Wherever found	Final
[no common name] Beetle	*Rhadine infernalis*	Insects	Endangered	Wherever found	Final
Tooth Cave ground beetle	*Rhadine persephone*	Insects	Endangered	Wherever found	
Delhi Sands flower-loving fly	*Rhaphiomidas terminatus abdominalis*	Insects	Endangered	Wherever found	
Hine's emerald dragonfly	*Somatochlora hineana*	Insects	Endangered	Wherever found	Final
Callippe silverspot butterfly	*Speyeria callippe callippe*	Insects	Endangered	Wherever found	Proposed
Silverspot	*Speyeria nokomis nokomis*	Insects	Proposed Threatened	Wherever found	Not Prudent
Behren's silverspot butterfly	*Speyeria zerene behrensii*	Insects	Endangered	Wherever found	
Oregon silverspot butterfly	*Speyeria zerene hippolyta*	Insects	Threatened	Wherever found	Final
Myrtle's silverspot butterfly	*Speyeria zerene myrtleae*	Insects	Endangered	Wherever found	
Bartram's hairstreak Butterfly	*Strymon acis bartrami*	Insects	Endangered	Wherever found	Final
Comal Springs dryopid beetle	*Stygoparnus comalensis*	Insects	Endangered	Wherever found	Final
Kretschmarr Cave mold beetle	*Texamaurops reddelli*	Insects	Endangered	Wherever found	
Zayante band-winged grasshopper	*Trimerotropis infantilis*	Insects	Endangered	Wherever found	Final
Mariana wandering butterfly	*Vagrans egistina*	Insects	Endangered	Wherever found	
Western glacier stonefly	*Zapada glacier*	Insects	Threatened	Wherever found	
Florida perforate cladonia	*Cladonia perforata*	Lichens	Endangered		
South Llano Springs moss	*Donrichardsia macroneuron*	Lichens	Proposed Endangered	Wherever found	Proposed

Rock gnome lichen	*Gymnoderma lineare*	Lichens	Endangered	Wherever found	Not Prudent
Sonoran pronghorn	*Antilocapra americana sonoriensis*	Mammals	Endangered	Wherever found, except where listed as an experimental population	
Point Arena mountain beaver	*Aplodontia rufa nigra*	Mammals	Endangered	Wherever found	
red tree vole	*Arborimus longicaudus*	Mammals	Candidate	North Oregon Coast population	
Wood Bison	*Bison bison athabascae*	Mammals	Threatened	Wherever found	
Pygmy Rabbit	*Brachylagus idahoensis*	Mammals	Endangered	Columbia Basin DPS (WA-Douglas, Grant, Lincoln, Adams, Benton Counties)	
Gray wolf	*Canis lupus*	Mammals	Endangered	U.S.A.: All of AL, AR, CA, CO, CT, DE, FL, GA, IA, IN, IL, KS, KY, LA, MA, MD, ME, MI, MO, MS, NC, ND, NE, NH, NJ, NV, NY, OH, OK, PA, RI, SC, SD, TN, TX, VA, VT, WI, and WV; and portions of AZ, NM, OR, UT, and WA as follows: (1) Northern AZ (that portion north of the centerline of Interstate Highway 40); (2) Northern NM (that portion north of the	Final

				centerline of Interstate Highway 40); (3) Western OR (that portion of OR west of the centerline of Highway 395 and Highway 78 north of Burns Junction and that portion of OR west of the centerline of Highway 95 south of Burns Junction); (4) Most of Utah (that portion of UT south and west of the centerline of Highway 84 and that portion of UT south of Highway 80 from Echo to the UT/WY Stateline); and (5) Western WA (that portion of WA west of the centerline of Highway 97 and Highway 17 north of Mesa and that portion of WA west of the centerline of Highway 395 south of Mesa). Mexico.	
Gray wolf	*Canis lupus*	Mammals	Threatened	U.S.A. (MN)	Final
Mexican wolf	*Canis lupus baileyi*	Mammals	Endangered	Wherever found, except where included	

				in an experimental population as set forth in 17.84(k)	
Red wolf	*Canis rufus*	Mammals	Endangered	Wherever found, except where listed as an experimental population	
Ozark big-eared bat	*Corynorhinus (=Plecotus) townsendii ingens*	Mammals	Endangered	Wherever found	
Virginia big-eared bat	*Corynorhinus (=Plecotus) townsendii virginianus*	Mammals	Endangered	Wherever found	Final
Utah prairie dog	*Cynomys parvidens*	Mammals	Threatened	Wherever found	
Morro Bay kangaroo rat	*Dipodomys heermanni morroensis*	Mammals	Endangered	Wherever found	Final
Giant kangaroo rat	*Dipodomys ingens*	Mammals	Endangered	Wherever found	
San Bernardino Merriam's kangaroo rat	*Dipodomys merriami parvus*	Mammals	Endangered	Wherever found	Final
Fresno kangaroo rat	*Dipodomys nitratoides exilis*	Mammals	Endangered	Wherever found	Final
Tipton kangaroo rat	*Dipodomys nitratoides nitratoides*	Mammals	Endangered	Wherever found	
Stephens' kangaroo rat	*Dipodomys stephensi (incl. D. cascus)*	Mammals	Threatened	Wherever found	
Pacific sheath-tailed Bat	*Emballonura semicaudata rotensis*	Mammals	Endangered	Wherever found	
Pacific sheath-tailed Bat	*Emballonura semicaudata semicaudata*	Mammals	Endangered	American Samoa	
Northern Sea Otter	*Enhydra lutris kenyoni*	Mammals	Threatened	Southwest Alaska, from Attu Island to Western Cook Inlet, including Bristol Bay, the Kodiak Archipelago, and the Barren Islands	Final

Southern sea otter	*Enhydra lutris nereis*	Mammals	Threatened	Wherever found	
Florida bonneted bat	*Eumops floridanus*	Mammals	Endangered	Wherever found	Proposed
Carolina northern flying squirrel	*Glaucomys sabrinus coloratus*	Mammals	Endangered	Wherever found	
North American wolverine	*Gulo gulo luscus*	Mammals	Proposed Threatened	Wherever found	
Hawaiian hoary bat	*Lasiurus cinereus semotus*	Mammals	Endangered	Wherever found	
Ocelot	*Leopardus (=Felis) pardalis*	Mammals	Endangered	wherever found	
Mexican long-nosed bat	*Leptonycteris nivalis*	Mammals	Endangered	Wherever found	
Canada Lynx	*Lynx canadensis*	Mammals	Threatened	Wherever Found in Contiguous U.S.	Final
Pacific Marten, Coastal Distinct Population Segment	*Martes caurina*	Mammals	Threatened	Wherever found	Proposed
Amargosa vole	*Microtus californicus scirpensis*	Mammals	Endangered	Wherever found	Final
Florida salt marsh vole	*Microtus pennsylvanicus dukecampbelli*	Mammals	Endangered	Wherever found	
Black-footed ferret	*Mustela nigripes*	Mammals	Endangered	Wherever found, except where listed as an experimental population	
Gray bat	*Myotis grisescens*	Mammals	Endangered	Wherever found	
Northern Long-Eared Bat	*Myotis septentrionalis*	Mammals	Endangered	Wherever found	Not Prudent
Indiana bat	*Myotis sodalis*	Mammals	Endangered	Wherever found	Final
Key Largo woodrat	*Neotoma floridana smalli*	Mammals	Endangered	Wherever found	
Riparian woodrat (=San Joaquin Valley)	*Neotoma fuscipes riparia*	Mammals	Endangered	Wherever found	
Key deer	*Odocoileus virginianus clavium*	Mammals	Endangered	Wherever found	

Columbian white-tailed deer	*Odocoileus virginianus leucurus*	Mammals	Threatened	Columbia River (Clark, Cowliz, Pacific, Skamania, and Wahkiakum Counties, WA., and Clatsop, Columbia, and Multnomah Counties, OR.)	
Silver rice rat	*Oryzomys palustris natator*	Mammals	Endangered	Lower FL Keys (west of Seven Mile Bridge)	Final
Peninsular bighorn sheep	*Ovis canadensis nelsoni*	Mammals	Endangered	U.S.A. (CA) Peninsular Ranges	Final
Sierra Nevada bighorn sheep	*Ovis canadensis sierrae*	Mammals	Endangered	U.S.A. (CA) Sierra Nevada	Final
Jaguar	*Panthera onca*	Mammals	Endangered	Wherever found	Final
Fisher	*Pekania pennanti*	Mammals	Endangered	Southern Sierra Nevada Distinct Population Segment	Proposed
Tricolored bat	*Perimyotis subflavus*	Mammals	Proposed Endangered	Wherever found	
Pacific pocket mouse	*Perognathus longimembris pacificus*	Mammals	Endangered	Wherever found	
Key Largo cotton mouse	*Peromyscus gossypinus allapaticola*	Mammals	Endangered	Wherever found	Proposed
Choctawhatchee beach mouse	*Peromyscus polionotus allophrys*	Mammals	Endangered	Wherever found	Final
Alabama beach mouse	*Peromyscus polionotus ammobates*	Mammals	Endangered	Wherever found	Final
Southeastern beach mouse	*Peromyscus polionotus niveiventris*	Mammals	Threatened	wherever found	
St. Andrew beach mouse	*Peromyscus polionotus peninsularis*	Mammals	Endangered	Wherever found	Final
Anastasia Island beach mouse	*Peromyscus polionotus phasma*	Mammals	Endangered	Wherever found	
Perdido Key beach mouse	*Peromyscus polionotus trissyllepsis*	Mammals	Endangered	Wherever found	Final
Mariana fruit Bat (=Mariana flying fox)	*Pteropus mariannus mariannus*	Mammals	Threatened	Wherever found	Final
Little Mariana fruit Bat	*Pteropus tokudae*	Mammals	Endangered	Wherever found	Not Prudent

Florida panther	*Puma (=Felis) concolor coryi*	Mammals	Endangered	Wherever found	
Gulf Coast jaguarundi	*Puma yagouaroundi cacomitli*	Mammals	Endangered	Wherever found	
Southern Mountain Caribou DPS	*Rangifer tarandus ssp. caribou*	Mammals	Endangered	U.S.A. (wherever found), Canada (southeastern British Columbia)	Final
Salt marsh harvest mouse	*Reithrodontomys raviventris*	Mammals	Endangered	wherever found	
Buena Vista Lake ornate Shrew	*Sorex ornatus relictus*	Mammals	Endangered	Wherever found	Final
Riparian brush rabbit	*Sylvilagus bachmani riparius*	Mammals	Endangered	Wherever found	
Lower Keys marsh rabbit	*Sylvilagus palustris hefneri*	Mammals	Endangered	Wherever found	
Penasco least chipmunk	*Tamias minimus atristriatus*	Mammals	Proposed Endangered	Wherever found	Proposed
Mount Graham red squirrel	*Tamiasciurus fremonti grahamensis*	Mammals	Endangered	Wherever found	Final
Roy Prairie pocket gopher	*Thomomys mazama glacialis*	Mammals	Threatened	Wherever found	Final
Olympia pocket gopher	*Thomomys mazama pugetensis*	Mammals	Threatened	Wherever found	Final
Tenino pocket gopher	*Thomomys mazama tumuli*	Mammals	Threatened	Wherever found	Final
Yelm pocket gopher	*Thomomys mazama yelmensis*	Mammals	Threatened	Wherever found	Final
West Indian Manatee	*Trichechus manatus*	Mammals	Threatened	Wherever found	Final
Northern Idaho Ground Squirrel	*Urocitellus brunneus*	Mammals	Threatened	Wherever found	
Santa Catalina Island Fox	*Urocyon littoralis catalinae*	Mammals	Threatened	Wherever found	Final
Grizzly bear	*Ursus arctos horribilis*	Mammals	Threatened	U.S.A., conterminous (lower 48) States, except where listed as an experimental population	Proposed
Polar bear	*Ursus maritimus*	Mammals	Threatened	Wherever found	Final

San Joaquin kit fox	*Vulpes macrotis mutica*	Mammals	Endangered	wherever found	
Sierra Nevada red fox	*Vulpes vulpes necator*	Mammals	Endangered	Sierra Nevada DPS	
New Mexico meadow jumping mouse	*Zapus hudsonius luteus*	Mammals	Endangered	Wherever found	Final
Preble's meadow jumping mouse	*Zapus hudsonius preblei*	Mammals	Threatened	wherever found	Final
St. Croix ground lizard	*Ameiva polops*	Reptiles	Endangered	Wherever found	Final
Culebra Island giant anole	*Anolis roosevelti*	Reptiles	Endangered	Wherever found	Final
Virgin Islands tree boa	*Chilabothrus granti*	Reptiles	Endangered	Wherever found	
Puerto Rican boa	*Chilabothrus inornatus*	Reptiles	Endangered	Wherever found	
American crocodile	*Crocodylus acutus*	Reptiles	Threatened	U.S.A. (FL)	Final
New Mexican ridge-nosed rattlesnake	*Crotalus willardi obscurus*	Reptiles	Threatened	Wherever found	Final
Mona ground Iguana	*Cyclura stejnegeri*	Reptiles	Threatened	Wherever found	Final
Key ring-necked snake	*Diadophis punctatus acricus*	Reptiles	Proposed Endangered	Wherever found	Proposed
Eastern indigo snake	*Drymarchon couperi*	Reptiles	Threatened	Wherever found	
Slevin's skink	*Emoia slevini*	Reptiles	Endangered	Wherever found	
Mona boa	*Epicrates monensis monensis*	Reptiles	Threatened	Wherever found	Final
blue-tailed mole skink	*Eumeces egregius lividus*	Reptiles	Threatened	Wherever found	
Blunt-nosed leopard lizard	*Gambelia silus*	Reptiles	Endangered	Wherever found	
bog turtle	*Glyptemys muhlenbergii*	Reptiles	Threatened	Wherever found, except GA, NC, SC, TN, VA	
Desert tortoise	*Gopherus agassizii*	Reptiles	Threatened	Wherever found, except AZ south and east of Colorado R., and Mexico	Final

Bolson tortoise	*Gopherus flavomarginatus*	Reptiles	Endangered	Wherever found	
Gopher tortoise	*Gopherus polyphemus*	Reptiles	Threatened	Western DPS	
Yellow-blotched map turtle	*Graptemys flavimaculata*	Reptiles	Threatened	Wherever found	
Ringed map turtle	*Graptemys oculifera*	Reptiles	Threatened	Wherever found	
Pearl River Map Turtle	*Graptemys pearlensis*	Reptiles	Proposed Threatened		
Sonoyta mud turtle	*Kinosternon sonoriense longifemorale*	Reptiles	Endangered	Wherever found	Final
Suwannee alligator snapping turtle	*Macrochelys suwanniensis*	Reptiles	Proposed Threatened		
Alligator snapping turtle	*Macrochelys temminckii*	Reptiles	Proposed Threatened	Wherever found	
Alameda whipsnake (=striped racer)	*Masticophis lateralis euryxanthus*	Reptiles	Threatened	Wherever found	Final
Sand skink	*Neoseps reynoldsi*	Reptiles	Threatened	Wherever found	
Atlantic salt marsh snake	*Nerodia clarkii taeniata*	Reptiles	Threatened	Wherever found	
Copperbelly water snake	*Nerodia erythrogaster neglecta*	Reptiles	Threatened	Indiana north of 40 degrees north latitude, Michigan, Ohio	
Black pinesnake	*Pituophis melanoleucus lodingi*	Reptiles	Threatened	Wherever found	Final
Louisiana pinesnake	*Pituophis ruthveni*	Reptiles	Threatened	Wherever found	Proposed
Florida Keys mole skink	*Plestiodon egregius egregius*	Reptiles	Proposed Threatened	Wherever found	Proposed
Alabama red-bellied turtle	*Pseudemys alabamensis*	Reptiles	Endangered	Wherever found	
Plymouth Redbelly Turtle	*Pseudemys rubriventris bangsi*	Reptiles	Endangered	Wherever found	Final
Eastern Massasauga (=rattlesnake)	*Sistrurus catenatus*	Reptiles	Threatened	Wherever found	Not Prudent
Flattened musk turtle	*Sternotherus depressus*	Reptiles	Threatened	Black Warrior R. system upstream from Bankhead Dam	
rim rock crowned snake	*Tantilla oolitica*	Reptiles	Proposed Endangered	Wherever found	Proposed

Northern Mexican gartersnake	*Thamnophis eques megalops*	Reptiles	Threatened	Wherever found	Final
Giant garter snake	*Thamnophis gigas*	Reptiles	Threatened	Wherever found	
Narrow-headed gartersnake	*Thamnophis rufipunctatus*	Reptiles	Threatened	Wherever found	Final
San Francisco garter snake	*Thamnophis sirtalis tetrataenia*	Reptiles	Endangered	Wherever found	
Coachella Valley fringe-toed lizard	*Uma inornata*	Reptiles	Threatened	Wherever found	Final

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