

## Attachment Wildlife Resources

### 3.7 WILDLIFE RESOURCES

Several wildlife surveys of the Property have been conducted since 1988 (Bruner 1988, 1993, and 2004; SWCA 2010c). SWCA completed the most recent wildlife survey of the Honua'ula Property in 2009 (SWCA 2010c), which included the area of the Pi'ilani Highway extension ROW that traverses the Property (both the portion owned by the State and the portion owned by 'Ulupalakua Ranch), and the area of the Maui Electric substation. Specific objectives of the survey included: 1) documenting the presence and relative abundance of birds and mammals with the Property; and 2) determining the presence and abundance of any protected species within the Property, including migratory shorebirds, waterbirds, Federal and State of Hawaii listed endangered or threatened species, and "species of concern." Key findings of the SWCA survey are presented below. Appendix H contains the complete survey.

SWCA also completed wildlife surveys for the areas of: 1) the alternative wastewater transmission line alignments for possible connection to the Mākena Resort WWRF, which is located approximately one mile south of Honua'ula (Appendix H); 2) the off-site wells, waterline, and storage tank (Appendix E); 3) the widening of Pi'ilani Highway (Appendix D of the Pi'ilani Highway Widening Project Final EA contained in Appendix R of this EIS); and 4) the Wailea Ike Drive and Wailea Alanui Drive intersection improvements (Appendix B of the Wailea Ike Drive and Wailea Alanui Drive Intersection Improvements Final EA contained in Appendix S of this EIS).

Since the wildlife survey of the areas of the wastewater transmission line alignments was conducted, a decision has been made regarding which preferred alignment to use. For more information on the selected wastewater alignment for possible connection to the Mākena Resort WWRF see Section 4.8.2 (Wastewater System) and Figure 2. Appendix H contains the complete wildlife survey of the alternative wastewater transmission line alignments.

#### **Endangered Species**

Although not detected during previous surveys (Bruner 1988, 1993, and 2004), evidence of endangered Blackburn's sphinx moths (*Manduca blackburni*) was found within the Honua'ula Property during the SWCA (2010c) survey, including frass, cut stems and leaves, and live caterpillars. Evidence was limited to a single species of non-native weed: the tree tobacco (*Nicotiana glauca*). No adult Blackburn's sphinx moths were observed within the Property. Similarly, tree tobacco (*Nicotiana glauca*) plants were found along the Pi'ilani Highway widening corridor and the selected wastewater transmission line alignment for possible connection to the Mākena Resort WWRF. However, only tree tobacco (*Nicotiana glauca*) plants at one point along the selected alignment showed substantial leaf damage that could be possibly attributed to the Blackburn's sphinx moth caterpillar.

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A single endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*) was sighted flying seaward over the Property near the southern boundary. No other bats were observed during the survey. *Kiawe* trees, which are abundant on the Property, have been documented as roost trees for the Hawaiian hoary bat, thus, while not observed, it is possible that Hawaiian hoary bats roost within the Property.

No Federal or State of Hawai'i listed threatened, endangered, or candidate species were observed in the areas of: 1) the off-site wells, waterline, and storage tank; 2) the widening of Pi'ilani Highway; and 3) the Wailea Ike Drive and Wailea Alanui Drive intersection improvements.

### **Native Birds**

The endemic *pueo* (*Asio flammeus sandwichensis*) (short-eared owl) was the only native bird species observed within the Property. Six *pueo*, 12 barn owls, and six other unidentified owls were sighted in grassland habitat, but no owl nests were found. Grasslands present on the Property are likely to provide good foraging and nesting habitat for owls; however, ground nesting increases vulnerability to predation by rats (*Rattus* spp.), cats (*Felis catus*), and the small Indian mongoose (*Herpestes auropunctatus*), all of which are present in the area.

Native Indigenous seabirds that may fly over the Honua'ula area during the day include the greater frigate bird or 'iwa (*Fregata minor palmerstoni*) and tropic birds (*Phaethon* spp.). Native Endemic seabirds that may fly over the site at night include the endangered Hawaiian petrel (*Pterodroma sandwichensis*) and the threatened Newell's shearwater (*Puffinus auricularis newelli*). While seabirds may traverse the area at night during the breeding season (February 1 through December 15), ~~they do not~~ none are known to nest on within the Property.

A single *pueo* (*Asio flammeus sandwichensis*) and a single 'iwa bird (*Fregata minor*) was observed during the survey of the alternative wastewater transmission line alignments. The *pueo* sighting did not occur on the selected wastewater alignment but in the vicinity. For more information on the selected wastewater alignment for possible connection to the Mākena Resort WWRF see Section 4.8.2 (Wastewater System) and Figure 2.

No native birds were observed in the areas of: 1) the off-site wells, waterline, and storage tank; 2) the widening of Pi'ilani Highway; and 3) the Wailea Ike Drive and Wailea Alanui Drive intersection improvements.

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### Migratory Birds

A single non-native Northern harrier (*Circus cyaneus*) was observed flying over *wiliwili* trees in the southern portion of Honua'ula (SWCA 2010c). Pacific Golden-Plover or *Kōlea* (*Pluvialis fulva*) have been observed in the vicinity (Bruner 1988 and 2004); however, they were not seen during the course of the SWCA (2010c) survey.

No migratory birds were observed in the areas of the alternative wastewater transmission line alignments.

The Pacific Golden-Plover was observed in the areas of: 1) the off-site wells, waterline, and storage tank; and 2) the Wailea Ike Drive and Wailea Alanui Drive intersection improvements. While not observed during the survey of the alternative wastewater line alignments, the Pacific Golden Plover is expected to occur in these areas during the migratory season.

### Introduced Birds

SWCA biologists observed 16 species of introduced birds within the Property. The most abundant were: Japanese white-eye (*Zosterops japonicus*), nutmeg manikin (*Lonchura punctulata*), zebra dove (*Geopelia striata*) and northern cardinal (*Cardinalis cardinalis*). Also common were: African silverbills (*Lonchura cantans*) and red-crested cardinals (*Paroaria coronata*). Another survey (Bruner 2004) identified other common birds: house finch (*Carpodacus mexicanus*), black francolin (*Francolinus francolinus*), nutmeg mannikin (*Lonchura punctulata*), and northern cardinal (*Cardinalis cardinalis*).

A few cattle egrets (*Bulbulcus ibis*) were observed in the areas of: 1) the widening of Pi'ilani Highway; and 2) the Wailea Ike Drive and Wailea Alanui Drive intersection improvements.

Various other introduced bird species were observed in the areas of: 1) the alternative wastewater transmission line alignments; 2) the off-site wells, waterline, and storage tank; 3) the widening of Pi'ilani Highway; and 4) the Wailea Ike Drive and Wailea Alanui Drive intersection improvements. The most abundant species common to all areas were the zebra dove (*Geopelia striata*) and common myna (*Acridotheres tristis*).

### Mammals

The endangered Hawaiian Hoary Bat was the only native mammal observed during the SWCA (2010c) survey of the Property. Small herds of axis deer (*Axis axis*) were commonly seen. The small Indian mongoose (*Herpestes javanicus*) was observed, but was uncommon. Cats (*Felis catus*), rats (*Rattus spp.*) and mice (*Mus musculus*), while not observed, are expected to be present within the Property due to its proximity to the Maui Meadows subdivision and the Wailea Resort. While not present during the survey, domestic cattle (*Bos taurus*) are sometimes grazed in the northern portion of the Property.

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No Federal or State of Hawai'i listed threatened, endangered, or candidate mammal species were observed in the areas of: 1) the alternative wastewater transmission line alignments; 2) the off-site wells, waterline, and storage tank; 3) the widening of Pi'ilani Highway; and 4) the Wailea Ike Drive and Wailea Alanui Drive intersection improvements.

### **POTENTIAL IMPACTS AND MITIGATION MEASURES**

Honua'ula is not expected to significantly ~~impact~~ effect any listed or candidate endangered or threatened species insofar as extensive mitigation measures will be implemented to offset, avoid, and minimize impacts, leading to a net benefit as defined in Chapter 195D, HRS. ~~Evidence of the endangered Blackburn's sphinx moth (*Manduca blackburni*) was found within the Honua'ula Property and a single endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*) was sighted flying seaward over the Property. No other Federal or State of Hawai'i listed threatened or endangered animal species were identified on the Property. Several mitigation measures will be implemented to protect these endangered species and other animal species.~~

### **Endangered Species**

**Blackburn's Sphinx Moth** – ~~While evidence of the Live caterpillars and other sign of Blackburn's sphinx moths (*Manduca blackburni*) was have been found within the Honua'ula property (frass, cut stems and leaves, and live caterpillars), no adult Blackburn's sphinx moths were observed.~~

Based on the presence of the non-native tree tobacco (*Nicotiana glauca*) and native host plants for the endangered Blackburn's sphinx moth, the USFWS has expressed concern that "habitat loss within the project site could adversely impact Blackburn's sphinx moth populations within this region of Maui."

A discussed above in Section 3.6 (Botanical Resources) and below in the following sections, Honua'ula Partners, LLC proposes both on- and off-site measures to protect and enhance native plants and habitat for the Blackburn's sphinx moth.

To protect Blackburn's sphinx moths on-site, Honua'ula Partners, LLC will:

- ~~Provide~~ Protect habitat for Blackburn's sphinx moths within the 40-acre Native Plant Preservation Area (see Section 3.6, Botanical Resources). While a preserve for native plants, the only non-native species that will be allowed to remain in this area will be the tree tobacco (*Nicotiana glauca*) so as to provide food and habitat for the moths. However, because the intent of the Native Plant Preservation Area is to protect valuable native plant species, consideration is being given to propagating 'aiea (*Nothocestrum latifolium*) (a native Blackburn's sphinx moth host plant) in this area to replace the non-native tree tobacco. The ultimate outcome of this effort is unknown because the Property is at a lower elevation than the elevation where

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native 'aiea usually grows. If 'aiea becomes established within the Native Plant Preservation Area and is used by the Blackburn sphinx moth, then non-native tobacco trees ~~will~~ may be removed. Removal of non-native tree tobacco will only occur in the season when Blackburn sphinx moths are underground. Precautions will be taken to ensure pupae are not harmed;

- Remove non-native tree tobacco from the Property outside the Native Plant Preservation Area prior to construction. This will be done in consultation with biologists from DLNR and the USFWS to prevent accidental take of the Blackburn's sphinx moth caterpillar;
- Ensure against accidental take of Blackburn sphinx moths along the ~~alternative selected wastewater~~ transmission line alignments for possible connection to the Mākena Resort WWRF (see Section 4.8.2, Wastewater and Figure 2) by requiring a qualified wildlife biologist to screen any tree tobacco plants along the selected alignment for signs of moths (frass, cut stems or leaves, caterpillars, pupae, or adults). If any evidence of moths is found, trees will be identified and protected against disturbance, and USFWS and the Maui DLNR office will be consulted;
- Monitor construction operations to prevent accidental take of the various Blackburn's sphinx moth life stages. Should moths be found, host plants will be marked for protection and not removed until deemed appropriate by DLNR and USFWS biologists;
- Enact restrictions on landscaping and gardening within the completed Honua'ula community to prevent propagation of any plant in the Solenaceae (Night shade) family that may attract Blackburn's sphinx moths;
- Implement a translocation program in consultation with DLNR and the USFWS for Blackburn's sphinx moth caterpillars, particularly for caterpillars found in landscaped areas of Honua'ula; and
- Continue wildlife surveys from November to May during the Honua'ula construction period to look for signs of endangered Blackburn sphinx moths and protect individual moths from destruction.

For off-site mitigation, Honua'ula Partners, LLC will:

1. Acquire a perpetual conservation easement of approximately 224-acres on a currently unprotected portion of property owned by Ulupalakua Ranch adjacent to the eastern boundary of the State of Hawaii Kanaio Natural Area Reserve; and
2. Fund and implement the continuation and expansion of restoration efforts within the Auwahi Forest Restoration Project area, just north of the Kanaio Natural Area Reserve, including fencing of approximately 130 acres, ungulate removal, and plant restoration activities.

Figure 12a shows the proposed locations of the on- and off-site mitigation areas. The on- and off-site mitigation measures and areas are subject to the approval of the Habitat Conservation Plan by USFWS and DLNR.

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The Kanaio and Auwahi areas have been pinpointed by USFWS, USGS, Medeiros, Loope, and Chimera (1993), VanGelder and Conant (1998), Price et al (2007), and The Nature Conservancy to be of high value for Blackburn's sphinx moth habitat and native dryland forest and shrubland species including wiliwili and a number of threatened and endangered species.

The proposed approximately 224-acre perpetual conservation easement adjacent to the eastern boundary of the Kanaio Natural Area Reserve contains native dry land habitat and is considered to be particularly high quality habitat for the Blackburn's sphinx moth, due in large part to the presence of many native host plants for both adult and juvenile life stages of the Blackburn's sphinx moth.

As part of Honua'ula Partners, LLC's conservation efforts, the eight-foot ungulate fence that currently exists along the eastern and southern border of the approximately 224-acre area will be extended along the remaining borders of the parcel, and ungulates will be removed from the enclosure. A 10-foot wide fire break will be established along the inside perimeter of the fence to minimize the risk of fires started outside the parcel from entering the mitigation area. In addition, a cross fencing plan for adjacent ranch land is being developed in coordination with Ulupalakua Ranch. Cross fencing will be designed to facilitate cattle grazing in such a pattern to enhance fire control immediately adjacent to the protected area. The fence and fire breaks will be maintained in perpetuity.

At the Auwahi Forest Restoration Project, Honua'ula Partners, LLC will fund and implement a 15-year restoration program covering an area of approximately 130-acres. This will include: a) fencing of, and ungulate removal from, approximately 130 acres of Blackburn's sphinx moth conservation area; and b) dry forest restoration to benefit the Blackburn's sphinx moth, and native dry shrubland plant species. Restoration activities will include removal of invasive weeds and propagation and out-planting of native species, including many native host plants for both adult and juvenile life stages of the Blackburn's sphinx moth.

While an eight foot fence already exists around the entire 184-acre Auwahi Forest Restoration Project, some cattle grazing continues in most of the area within the enclosure. As part of the program funded and implemented by Honua'ula Partners, LLC, cattle fences will be moved or installed and cattle will be removed from restoration areas.

Restoration efforts at the Auwahi Forest Restoration Project started in 1997 have been very successful, with 28 native species naturally reproducing after only 10 years of restoration efforts. The mitigation program implemented by Honua'ula Partners, LLC will build on this success, and will include mechanical and chemical removal of invasive plant species and enhancement of the native vegetation through propagation. A 10-foot wide fire break will be established along the inside perimeter of the fence, and the cross-fencing plan described above will benefit the Auwahi mitigation area as well as the Kanaio conservation easement area. Honua'ula Partners, LLC will establish an endowment to ensure that fences, firebreaks, and restored areas will be maintained in perpetuity.

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The proposed on- and off-site measures to protect native plants and Blackburn's sphinx moth habitat proposed by Honua'ula Partners, LLC provide a net conservation benefit (as required under Chapter 195D, HRS) through:

1. The protection and propagation of additional native host plants for both larval and adult Blackburn's sphinx moth (including the native host species 'aiea (*Nothocestrum spp.*) and halapepe (*Pleomele spp.*)); and
2. Creation and protection of a higher number species of native host plants than currently exists on the Property.

The on- and off-site mitigation areas together provide approximately 394 acres of native dry shrublands for the perpetual protection and propagation of native dryland plants, including wiliwili. Through the perpetual protection and enhancement of these areas, a stable core habitat area will be secured for the moth, providing net benefit to this covered species, as well as a large number of additional native dryland species.

To implement the on- and off-site mitigation measures Honua'ula Partners, LLC, will finalize its draft Habitat Conservation Plan. The on- and off-site mitigation areas are subject to the approval of the Habitat Conservation Plan by USFWS and DLNR. The purpose of the Habitat Conservation Plan is to:

1. Offset the potential impact of Honua'ula on two Covered Species (Blackburn's sphinx moth and nēnē) with measures to protect and provide a net benefit to these species; and
2. Provide avoidance and minimization measures expected to avoid any negative impacts on five additional endangered species (the Hawaiian duck, Hawaiian silt, Hawaiian coot, Hawaiian petrel, and Hawaiian Hoary bat), one threatened species (Newell's shearwater), one candidate endangered species ('āwikiwiki), and the Hawaiian short-eared owl (pueo).

The Habitat Conservation Plan will be in support of an Incidental Take Permit (ITP) in accordance with Section 10(a)(1)(B) of the federal Endangered Species Act (ESA) of 1973, as amended, and an Incidental Take License (ITL) in accordance with Chapter 195D, HRS. The Habitat Conservation Plan will include: specific avoidance, minimization, and mitigation measures; measures of success, and implementation specifics, including details on administration, monitoring and reporting, and funding.

Honua'ula Partners, LLC will fund the initial 15-year period covered by the Habitat Conservation Plan and the ITP/ITL. To secure funding in perpetuity for the maintenance of the on- and off-site mitigation areas after the initial 15-year period, Honua'ula Partners, LLC will establish an endowment, which will be overseen by the Honua'ula Master Home Owners' Association with financial management provided by a licensed real property management company.

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**Hawaiian Hoary Bat** – A single endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*) was sighted flying seaward over the Property but no evidence of roosting or foraging was observed; however definitive conclusions about habitat use by bats cannot be made based on existing evidence.

Hawaiian hoary bats are known to roost in native and non-native trees greater than 15 feet tall. During the peak pup rearing season between June 1 and September 15 young Hawaiian hoary bat pups may be incapable of flight and harmed or killed if their roost site is disturbed. The removal of kiawe trees during construction may result in the loss of roosting habitat, but many large stature trees suitable for roosting will be preserved and others will be propagated for landscaping. To minimize the potential for harm to juveniles, removal and trimming of trees greater than 15 feet tall will be avoided during the peak pup rearing season between June 1 and September 15. To further protect Hawaiian hoary bats, and in conformance with County of Maui Ordinance No. 3554 Condition 9, Honua'ula Partners, LLC will:

- Provide a qualified wildlife biologist to monitor for bats during construction. Should bats be found, assistance will be requested from the USFWS;
- Conduct additional bat point count surveys before construction to document any changes in abundance of bats and determine habitat utilization during the wet and dry seasons;
- Monitor clearing of ~~habitat~~ trees 15 feet in height and taller during construction to reduce the potential take of nonvolent juvenile bats; and
- Propagate native tree species for landscaping to provide suitable bat roosting habitat and mitigate for the loss of possible roosting trees during construction.

In addition to the above ~~protection~~ avoidance and ~~mitigation~~ minimization measures, a ~~multi-species~~ the draft Habitat Conservation Plan (to include the candidate endangered ~~āwīkīwīkī~~) will be ~~prepared under~~ finalized in collaboration with USFWS and DLNR in accordance with Section 10(a)(1)(B) of the Endangered Species Act and ~~in collaboration with DLNR and USFWS~~ Chapter 195D, HRS. The final Habitat Conservation Plan will provide: 1) measures to offset the potential impact of Honua'ula on two Covered Species; and 2) avoidance and minimization measures expected to avoid any negative impacts on five additional endangered species (including the Hawaiian hoary bat), one threatened species, one candidate endangered species, and the Hawaiian short-eared owl (pueo). Because avoidance and minimization measures are expected to avoid any impacts to the Hawaiian hoary bat, an ITP/ITL will not be requested for the Hawaiian hoary bat.

**Nēnē** – Nēnē are currently not found at or near the Property (SWCA 2010c); however creation of golf greens and lawns may conceivably attract nēnē. As dicussed below, avoidance and minimization measures will be implemented in regard to native birds; however SWCA estimates that there may be direct or indirect take of nēnē as a result of golf course operations. The final Habitat Conservation Plan will include measures to offset the potential impact of Honua'ula on nēnē and provide a net benefit. In addition the



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HCP will be in support of an ITP/ITL for Blackburn's sphinx moth and nēnē in accordance with Section 10(a)(1)(B) of the federal Endangered Species Act (ESA) of 1973, as amended, and Chapter 195D, HRS.

**Other Endangered Species** – Avoidance and minimization measures expected to avoid any negative impacts on additional endangered species (the Hawaiian duck, Hawaiian silt, Hawaiian coot, and Hawaiian petrel) are discussed below. Similar to the nēnē these species are not currently found at the Property, but may be attracted to the Property after construction of the golf course. The final Habitat Conservation Plan will include avoidance and minimization measures to avoid any impacts to the Hawaiian duck, Hawaiian silt, Hawaiian coot, and Hawaiian petrel. Because these measures are expected to avoid any impacts to these species, an ITP/ITL for these species will not be requested.

### **Native Birds**

The endemic *pueo* (*Asio flammeus sandwichensis*) (short-eared owl) was the only native bird species observed within the Property, although no nests were found. Construction within what is currently grassland may potentially disturb roosting and nesting *pueo*. After construction, *pueo* may be permanently displaced from the Property due to the loss of grassland habitat. To minimize potential impacts to native *pueo*, and in conformance with County of Maui Ordinance No. 3554 Condition 9, Honua'ula Partners, LLC will:

- Conduct additional *pueo* surveys before construction to document any changes in abundance of *pueo* and habitat use during the wet and dry seasons; and
- Conduct nest searches when necessary ahead of construction activities, and ~~Delay~~ delay construction around any areas found to contain *pueo* nests until chicks have fledged.