State of Hawaii
DEPARTMENT OF LAND AND NATURAL RESOURCES
Division of Forestry and Wildlife
Honolulu, Hawaii 96813

March 28, 2014

Chairperson and Members
Board of Land and Natural Resources
State of Hawaii
Honolulu, Hawaii

Land Board Members:

SUBJECT: REQUEST FOR DELEGATION OF AUTHORITY TO THE CHAIRPERSON TO NEGOTIATE, APPROVE, EXECUTE, AMEND, AND EXTEND MEMORANDA OF UNDERSTANDING (MOU) WITH THE KAUA'I ISLAND UTILITY COOPERATIVE (KIUC) FOR THE DIVISION OF FORESTRY AND WILDLIFE TO IMPLEMENT CONSERVATION ACTIONS, INCLUDING BUT NOT LIMITED TO SEABIRD MONITORING, PREDATOR CONTROL, AUDITORY SURVEYS, AND UNDERLINE MONITORING ON THE ISLAND OF KAUA'I

AND

REQUEST APPROVAL OF DECLARATION OF EXEMPTION TO CHAPTER 343, HRS ENVIRONMENTAL COMPLIANCE REQUIREMENTS FOR THE ACTIVITIES FUNDED BY THE SUBJECT MOU AGREEMENTS.

This submittal requests the Board to authorize the Chairperson to sign Memoranda of Understanding (Agreements) between the Department of Land and Natural Resources (DLNR) and the Kaua'i Island Utility Cooperative (KIUC) for the purpose of The Division of Forestry and Wildlife (DOFAW) receiving funding from KIUC in order to provide endangered seabird work on the island of Kaua'i as obligated under a federally-approved habitat conservation plan. Additionally, DOFAW requests approval of a declaration of exemption to Chapter 343, HRS requirements for the activities funded under these MOUs.

BACKGROUND:

DOFAW has been actively working on an endangered seabird island-wide Habitat Conservation Plan (KSHCP) for Kauai for several years. In 2011, KIUC obtained a federally approved Short-term Seabird HCP (KIUC HCP), and seeks to enter into agreements with DOFAW to fund important monitoring, research, and conservation measures for the endangered seabirds that are designed to inform the planning for the KSHCP. The KIUC HCP commits KIUC to fund a number of obligations for endangered seabird on the island of Kaua'i.

ITEM C-3

This submittal does not exempt DOFAW from compliance with Chapter 183C, Hawaii Revised Statutes or delegate authority to approve Conservation District Use Permits for activities conducted by DOFAW in the Conservation District.

DISCUSSION:

DOFAW and KIUC have prepared five draft MOUs (Exhibit A). These MOUs will allow DLNR-DOFAW and KIUC to enter into a mutually beneficial agreement for conservation measures on our endangered seabirds on the island of Kaua'i.

CHAPTER 343 – ENVIRONMENTAL ASSESSMENT:

The MOU is a mutually beneficial agreement between DLNR and KIUC for conservation measures on our endangered seabirds. These are activities which are exempt from the requirements for the preparation of an environmental assessment in accordance with the requirements of Chapter 343, HRS, and Chapter 11-200, Hawaii Administrative Rules, under the following exemptions:

Exemption Class: DLNR, Division of Forestry and Wildlife, Class 5

Exempt Item Description: Game and non-game wildlife surveys, inventory studies, new transect lines, photographing, recording, sampling, collection and captive propagation (involves walking, driving, and flying in the field (helicopters, light aircraft), use of nets and firearms, temporary traps including snares, mist nets, corral traps, drop door traps or leg hold traps.

Exempt Item Description: Wildlife management actions including predator control, insect control, snail control, non-native bird control, controlled grazing or burning as a management tool and use of toxicants or herbicides. All use of chemicals follow label instructions or restrictions.

RECOMMENDATIONS:

That the Board:

1. Authorize the Chairperson to negotiate and sign MOUs between the DLNR-DOFAW and KIUC for the purpose of conducting conservation measures on endangered seabirds on the island of Kaua'i, pursuant to the terms in Exhibit A, subject to review and approval by the Office of the Attorney General.

2. Approve a declaration of exemption to Chapter 343, HRS requirements for these MOUs.

Respectfully submitted,

Randy Kanuha
for Lisa J. Hadway, Administrator
Division of Forestry and Wildlife

APPROVED FOR SUBMITTAL:

William J. Aila, Jr., Chairperson
Board of Land and Natural Resources

Exhibit A: DLNR-DOFAW and KIUC MOUs

MEMORANDUM OF UNDERSTANDING

BETWEEN

KAUA'I ISLAND UTILITY COOPERATIVE

AND

THE STATE OF HAWAI'I
Department of Land and Natural Resources
Division of Forestry and Wildlife

(Upper Limahuli Preserve Seabird Monitoring:
Expand Long-term Monitoring of Seabirds Using Song Meters)

1. Preface.

This Memorandum of Understanding (Agreement) is made on _____, 2014 between the Kaua'i Island Utility Cooperative ("KIUC") and The State of Hawai'i, Department of Land and Natural Resources, Division of Forestry and Wildlife ("DOFAW").

WHEREAS, on May 13, 2011 the U.S. Fish and Wildlife Service ("USFWS") approved KIUC's Short-Term Seabird Habitat Conservation Plan ("HCP") and issued to KIUC a federal Incidental Take Permit ("ITP") pursuant to the federal Endangered Species Act ("ESA"), authorizing for purposes of the ESA the incidental take of the following Covered Species: Hawaiian Petrel (*Pterodroma sandwichensis*), the Newell's Shearwater (*Puffinus auricularis newelli*) and the Band-rumped Storm-Petrel (*Oceanodroma castro*);

WHEREAS, the HCP and ITP require that certain mitigation and monitoring tasks be implemented on Kaua'i, and provide that DOFAW or another qualified entity may implement certain of those mitigation and monitoring tasks using funds to be provided by KIUC;

WHEREAS, pursuant to the HCP, DOFAW, through its Kaua'i Endangered Species Recovery Project ("KESRP"), is already performing certain seabird monitoring in the Upper Limahuli Preserve on Kaua'i;

WHEREAS, the USFWS and DOFAW/KESRP have identified equipment and work that would enhance the effectiveness of this work but is above and beyond the scope of HCP mitigation work in the Upper Limahuli Preserve provided for in the HCP;

WHEREAS, KIUC and DOFAW, by mutual agreement, desire to establish a MOU pursuant to which DOFAW will conduct this supplemental work in the Upper Limahuli Preserve over the course of the 2014 seabird season, and KIUC will provide DOFAW with funds necessary to implement such work;

WHEREAS, the USFWS has approved the performance of this supplemental work under the HCP, and the reallocation of funds to pay for this supplemental work from other potential KIUC HCP funding obligations;

NOW, THEREFORE, KIUC and DOFAW mutually agree to the following:

2. Purpose.

The purpose of this Agreement is to establish a MOU whereby DOFAW agrees to implement during the 2014 seabird season certain avian monitoring activities in the Upper Limahuli Preserve which are considered above and beyond the scope of the mitigation measures in the HCP, and KIUC commits to providing DOFAW with the funds necessary to implement such activities. This Agreement does not negate or affect any other agreements in effect between KIUC and DOFAW.

3. Responsibilities.

DOFAW:

- Will implement the Scope of Work in Attachment 1 to this Agreement, which covers supplemental activities and equipment in 2014 only for avian monitoring in the Upper Limahuli Preserve. This Scope of Work has been reviewed and approved by KIUC, DOFAW and USFWS.
- Will begin implementation of the Scope of Work in April 2014.
- Will report to KIUC and USFWS as specified in the Scope of Work attached to this Agreement.
- Will deposit checks from KIUC, described below, in the state Endangered Species Trust Fund, and ensure that such deposits are specifically designated for use by DOFAW to implement the attached Scope of Work and any subsequent Updated Scopes of Work.
- Will maintain an ongoing accounting of the funds spent implementing the attached Scope of Work including expenditure reports and will provide these to KIUC upon request.

KIUC:

- Will, within 30 days of the execution of this MOU, purchase the equipment and directly fund the data analysis conducted by Conservation Metrics, Inc. as detailed in the attached Scope of Work. The total amount allocated for this purpose is $14,189.69. Additionally, KIUC will establish a contingency fund in the amount of $1,949.12; this amount will be held in reserve by KIUC and used if and when KESRP identifies additional items that are needed for the conduct of its agreed upon Scope of Work.
- Will, within 30 days of the execution of this MOU, deliver a check to DOFAW in the amount of $6,096.77, which constitutes supplemental funding in 2014 for a Biological Coordinator and KESRP staff (including overhead) as described in the attached Scope of Work.

4. Implementation

The parties agree that this MOU constitutes a commitment by KIUC to provide DOFAW with supplemental funds to be used to benefit the Covered Species as described in the HCP, and a commitment by DOFAW to utilize such funds to implement the actions described in the attached Scope of Work. Performance by DOFAW of the mitigation actions depends upon the timely receipt of funds from KIUC.

5. Availability and Use of Results and Data

DOFAW/KESRP will provide to KIUC, upon request, all results of and all data generated in the course of all aspects of KESRP's the Upper Limahuli Preserve Seabird Monitoring work conducted under this MOU. Further, should DOFAW/KESRP seek to publish or present any such data or results, it shall notify KIUC immediately of such intent and provide to KIUC a copy of any such proposed publication or presentation simultaneously with its submission to any outside publication or entity. This provision applies to the supplemental work specifically covered by this MOU, as well as to all aspects of the Upper Limahuli Preserve Seabird Monitoring being implemented by DOFAW/ KESRP, and is consistent with the long-standing mutual intent of KIUC and DOFAW/KESRP.

6. Termination

For any reason whatsoever, either party may terminate involvement in this Agreement by providing 90 days prior written notice to the other party. Any unused funds will be returned to KIUC.

7. Counterparts

This Agreement may be executed in several counterparts, each of which shall be an original and all of which shall constitute one and the same document.

IN WITNESS WHEREOF the **PARTIES** hereto have executed this, **MEMORANDUM OF UNDERSTANDING** by way of signature and date below.

Kauai Island Utility Cooperative:

_____ Date:_____

David J. Bissell
President and Chief Executive Officer

Division of Forestry and Wildlife:

_____ Date: _____

William J. Aila, Chairperson
Board of Land and Natural Resources

APPROVED AS TO FORM:

_____

Deputy Attorney General
State of Hawaii

SCOPE OF WORK

Continue and expand upon long-term monitoring of seabirds (HAPE and NESH) in Upper Limahuli Preserve using song meters.

Long-term monitoring of endangered seabirds in Upper Limahuli Preserve using song meters requires annual data gathering at static sites that the Kauai Endangered Seabird Recovery Project (KESRP) originally created within the Preserve in 2012. Funding from KIUC made it possible for data gathering to continue in 2013. KIUC's funding of this work will allow it to continue again in 2014. KESRP will use the data to assess trends in levels of calling rates (as a proxy for colony response to management).

To date, the data collected from song meters suggests that this technology will prove to be an effective tool for assessing long-term colony responses to management. Data collected in 2012 and 2013 has shown that the number of calls recorded on song meters for both HAPE and NESH do indeed relate to breeding density around the song meter. For example, areas around each song meter in Upper Limahuli were qualitatively assigned a low, medium and high breeding category (based on extensive knowledge of the site from numerous auditory surveys and intensive burrow searching in recent years). Song meters in 'high' categories consistently had higher rates of calling than those in medium and low categories. This was true in 2012 and 2013.

The next step is to analyse the relationship between calling rates and breeding density quantitatively. In 2013, KESRP staff undertook a series of auditory surveys adjacent to song meters to compare calling rates/hour recorded by human observers with those of the song meters. At the same time, these surveys also allowed the surveyors to assess how many of the calls they heard related to individual ground-calling birds (defined as birds calling from distinct locations on the ground over a sufficient period of time to infer that they were not simply circling birds). Ground-calling birds are a direct indication of breeding birds, rather than aerial calls that could simply be courting or transiting birds. These data are still to be analysed by KESRP (and will be done so at the end of 2014 after the 2014 data has been collected), and it is intended to build upon this database during the field season of 2014 with more auditory surveys paired with song meter locations.

As well as the above, a separate proposal to be initiated in 2014 (entitled "*Continuation of exploratory seabird surveying using song meters-roving units, validation*" – see separate Scope of Work) will involve revisiting sites in the Hono o Na Pali NAR identified by roving song meters in 2013 as having high calling rates of the target species. This field work will allow KESRP to ascertain the effectiveness of song meters in identifying areas of high breeding densities of target species, and address the issue of whether there are confounding variables with calling rates – such as transiting birds that may be calling but not breeding in the target area. It will be a further facet of the data required to assess the relationship between calls/hour on song meters and breeding density, and be used as part of the overall assessment of using this technology for long-term colony monitoring.

Finally, data collected by song meters deployed in three management areas within Hono o Na Pali NARS will also be used in conjunction with that collected from the Upper Limahuli Preserve and the roving units proposal to consider this analysis using the largest data set available (ie all song meter data will be considered as a larger data set, rather than separate data sets independent of one another).

At the end of the 2014 field season, it is expected that KESRP will be able to (i) describe its proposed methodology for quantitatively relating seabird calling rates on song meters to breeding density, (ii) outline how this methodology will be used for long-term colony management, particularly as it relates to KIUC's existing and future habitat conservation planning, (iii) ascertain the optimum number of song meters needed for the Upper Limahuli Preserve to effectively monitor both Hawaiian Petrel and Newell's Shearwater breeding within the site in a way that will allow biologists to evaluate the efficacy of different predator control actions, and (iv) ascertain the optimum number of months required to effectively monitor the two species in order to consider long-term population change. It should be noted that colony response to management efforts is likely to be a long-term trend change as opposed to immediate year on year responses, as it will take time for increased fledging success rates to translate into more birds returning to breed at the site. Therefore immediate changes in the trend line are not likely, and the process is, by biological necessity, a long-term one.

Currently there are 6 static sites for song meters within the Preserve, concentrated in the south-east and NESH ridge area. To provide more complete Preserve-level coverage, the number of song meters will be increased from 6 to 10 units, with the four additional units placed in areas currently not monitored by song meters. Data collected in 2014 from these ten units will then be used to assess the optimal number of song meters required within the overall management area. This will be done in conjunction with the Conservation Metrics analysis of the data and will be defined clearly at the end of the season when the 2014 data can be reviewed and assessed in relation to previous years.

In 2012 and 2013, song meters were deployed and operated for a total of 10 months throughout the season. In 2014, to ensure that the technology is as cost-effective as possible whilst ensuring that overall data collection was not negatively impacted, the total period of time that song meters will be deployed will be decreased from 10 months to 5 months, covering the most vocal period for the two species. Actual dates for deployment are yet to be determined but will probably be April to August inclusive. This will cover the Arrival/Courtship period through to Hatching and early Guard phase, which are the times when both Hawaiian Petrel and Newell's Shearwater are most vocal. Song meter coverage will not continue beyond the end of August, when calling rates taper off.

Seabird monitoring - Song Meters Static - Upper Limahuli

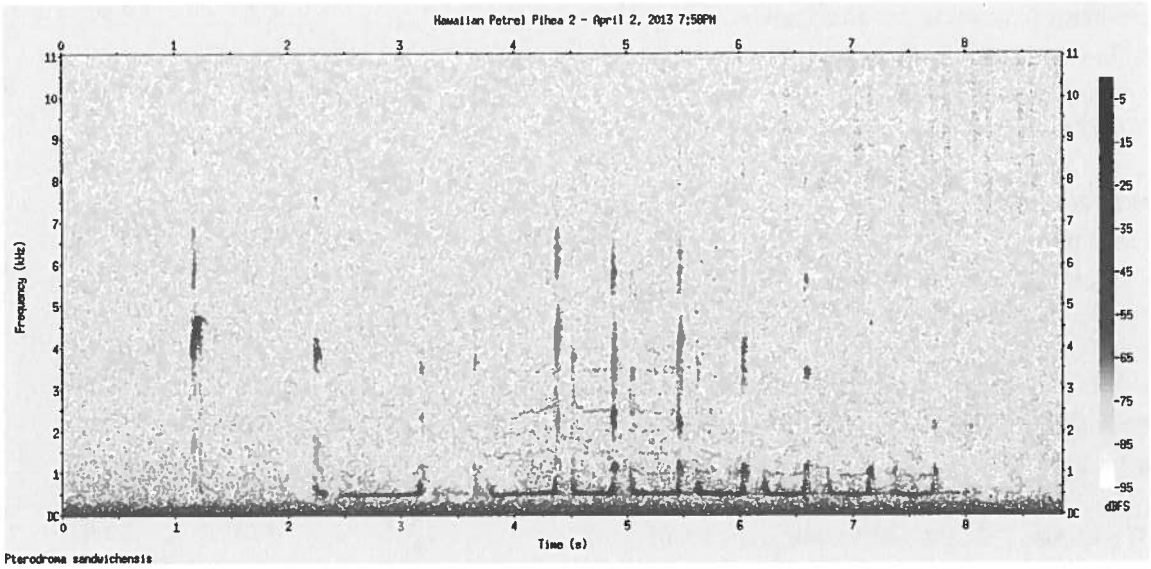
Item	Unit	Cost	Total Cost	
WAGES				
Seabird monitoring				
Biological co-ordinator (co-ordination and analysis)	0.5	$4,509	$2,254.67	2 w
Fringe Benefits for Biological coordinator			$901.87	
KESRP staff (mapping, planning, logistics)	0.5	$3,300	$1,650.00	2 w
Fringe Benefits for KESRP staff			$495.00	
SEABIRD MONITORING EQUIPMENT				
Song meters - SM2 (6)	6	$490.00	$0.00	*alre*
Song meters - SM2 (4)	4	$490.00	$1,960.00	
Microphone for SM2 (2 per unit)	12	$70.00	$0.00	*alre*
Microphone for SM2 (2 per unit)	8	$70.00	$560.00	
Microphone for SM2 (additional 6 to replace existing, plus spares)	10	$70.00	$700.00	
32GB SD cards for SM2 (2 per unit)	12	$20.69	$0.00	*alre*
32GB SD cards for SM2 (2 per unit)	8	$20.69	$165.52	
Song Meter - D batteries (10units*(4 per unit*5 months))	200	$0.92	$184.62	
Analysis of song meter data by Conservation Metrics*			$10,619.55	For mor
	SUB-TOTAL		**$19,491.22**	
Contingency (10%)			$1,949.12	
PCSU Overhead (15%) - For Wages Only			$795.23	
	GRAND TOTAL		**$22,235.58**	

KIUC Pays Directly to Vendor	$14,189.69
KIUC Pays DOFAW (for wages & PCSU overhead)	$6,096.77
Contingency held by KIUC payable to vendors	$1,949.12

*Proposal from Conservation Metrics is attached. Balance of $11,855.25 is allocated for song meters in Hono o Nā Pali under a s

Conservation Metrics

508 Buena Vista Ave.
Santa Cruz, CA 95062 USA
tel: +1.925.270.5456



Acoustic surveys for nocturnal seabirds in the Upper Limahuli Preserve, Hono o Na Pali NARS, and potential management sites – Preliminary budget estimates

January, 2014

For: Andre Raine, KESRP
From: Matthew McKown, Conservtaion Metrics
matthew.mckown@conservationmetrics.com

Project: Automated acoustic surveys for nocturnal seabirds in the Upper Limahuli Preserve, Hono o Na Pali NARS, and potentail management sites – Preliminary budget estimates

Personnel: Andre Raine, Ph.D. (Co-ordinator, Kauai Endangered Seabird Project)
Matthew McKown, Ph.D. (President, Conservation Metrics)

Species: 'Ua'u (Hawaiian Petrel, *Pterodroma sandwichensis,* HAPE)
'A'o (Newell's Shearwater, *Puffinus newelli*, NESH)

Goals: Data from the 2012 and 2013 pilot seasons have shown the value of acoustic surveys for monitoring relative acoustic activity rates at monitoring sites as well as the potential for detecting and monitoring breeding sites in inaccessible areas on Kaua'i. In light of these results, KESRP has proposed to continue acoustic monitoring work in 2014. Specifically:

Long-term monitoring sites

Upper Limahuli Preserve

- Mar. 1 – Aug. 1 (10 survey sites)

Hono o Na Pali NARS

- North Bog - Mar. 1 – Aug. 1 (4 survey sites)
- Pohakea - Mar. 1 – Aug. 1 (4 survey sites)
- Pihea Ridge – Mar. 1 – Aug. 1 (4 survey sites)

Deliverables:

- Collaboration with KESRP on survey design and refinement of deployment protocols.
- Interim memo – July, 2014
- Final report summarizing analysis of 2014 monitoring results – Jan 2015 (summary of survey effort, presence/absence per site, comparison to 2012 and 2013 data, discussion).
- Copy of raw detection data (In a CSV spreadsheet file).

Budget: **$ 22,474.80**

Timeline:

Mar. 2014	**Initial deployments**
Jul. 2014	**Interim memo**
Aug. 2014	**Retrieval**
Nov. 2014	**Processing**
Jan. 2015	**Final report (and copies of data)**

Budget estimates

Component	*Cost*
Acoustic analysis and reporting	
1. Fixed Costs (Management, tech. prep, tech infra., consultation)	5,138.12
2. Processing, Storage, QA/QC	
a) Upper Limahuli	6,178.49
b) Hono'onapali	7,414.19
3. Summary statistics & Analysis	1,664.00
4. Reports	2,080.00
TOTAL US$	**22,474.80**

Payment Schedule for Conservation Metrics Inc.

Payment to Conservation Metrics Inc. will be made in accordance with the following schedule:

Invoice 1	$7,491.60 within 30 days of signing (Feb. '14)
Invoice 2	$7,491.60 within 30 days of interim memo (Jul. '14)
Invoice 3	$7,491.60 within 30 days of final report (Jan. '15)

MEMORANDUM OF UNDERSTANDING

BETWEEN

KAUA'I ISLAND UTILITY COOPERATIVE

AND

THE STATE OF HAWAI'I
Department of Land and Natural Resources
Division of Forestry and Wildlife

(Auditory Surveys to Assess Potential Management Sites)

1. Preface.

This Memorandum of Understanding (Agreement) is made on _____, 2014 between the Kaua'i Island Utility Cooperative ("KIUC") and The State of Hawai'i, Department of Land and Natural Resources, Division of Forestry and Wildlife ("DOFAW").

WHEREAS, on May 13, 2011 the U.S. Fish and Wildlife Service ("USFWS") approved KIUC's Short-Term Seabird Habitat Conservation Plan ("HCP") and issued to KIUC a federal Incidental Take Permit ("ITP") pursuant to the federal Endangered Species Act ("ESA"), authorizing for purposes of the ESA the incidental take of the following Covered Species: Hawaiian Petrel (*Pterodroma sandwichensis*), the Newell's Shearwater (*Puffinus auricularis newelli*) and the Band-rumped Storm-Petrel (*Oceanodroma castro*);

WHEREAS, the HCP and ITP require that certain mitigation and monitoring tasks be implemented on Kaua'i, and provide that DOFAW or another qualified entity may implement certain of those mitigation and monitoring tasks using funds to be provided by KIUC;

WHEREAS, pursuant to the HCP, DOFAW, through its Kaua'i Endangered Species Recovery Project ("KESRP"), is already performing certain seabird monitoring on Kaua'i;

WHEREAS, the USFWS and DOFAW/KESRP have identified equipment and work that would enhance the effectiveness of this work but is above and beyond the scope of HCP mitigation work provided for in the HCP;

WHEREAS, KIUC and DOFAW, by mutual agreement, desire to establish a MOU pursuant to which DOFAW will conduct this supplemental work at specific sites on Kaua'i over the course of the 2014 seabird season, and KIUC will provide DOFAW with funds necessary to implement such work;

WHEREAS, the USFWS has approved the performance of this supplemental work under the HCP, and the reallocation of funds to pay for this supplemental work from other potential KIUC HCP funding obligations;

NOW, THEREFORE, KIUC and DOFAW mutually agree to the following:

2. Purpose.

The purpose of this Agreement is to establish a MOU whereby DOFAW agrees to implement during the 2014 seabird season certain avian monitoring activities at specific sites on Kaua'i which are considered above and beyond the scope of the mitigation measures in the HCP, and KIUC commits to providing DOFAW with the funds necessary to implement such activities. This Agreement does not negate or affect any other agreements in effect between KIUC and DOFAW.

3. Responsibilities.

DOFAW:

- Will implement the Scope of Work in Attachment 1 to this Agreement, which covers supplemental activities and equipment in 2014 only for avian monitoring at specific sites identified in the Scope of Work. This Scope of Work has been reviewed and approved by KIUC, DOFAW and USFWS.
- Will begin implementation of the Scope of Work in June 2014.
- Will report to KIUC and USFWS as specified in the Scope of Work attached to this Agreement.
- Will deposit checks from KIUC, described below, in the state Endangered Species Trust Fund, and ensure that such deposits are specifically designated for use by DOFAW to implement the attached Scope of Work and any subsequent Updated Scopes of Work.
- Will maintain an ongoing accounting of the funds spent implementing the attached Scope of Work including expenditure reports and will provide these to KIUC upon request.

KIUC:

- Will, within 30 days of the execution of this MOU, purchase the equipment and conclude arrangements to directly fund the helicopter trips as detailed in the attached Scope of Work. The total amount allocated for this purpose is $16,660.00. Additionally, KIUC will establish a contingency fund in the amount of $6,859.31; this amount will be held in reserve by KIUC and used if and when KESRP identifies additional items that the parties to this agreement determine are needed for the conduct of the agreed upon Scope of Work.
- Will, within 30 days of the execution of this MOU, deliver a check to DOFAW in the amount of $59,723.04, which constitutes supplemental funding in 2014 for a KESRP Coordinator, GIS Support, an Auditory Survey Coordinator and a Field Technician (including overhead) as described in the attached Scope of Work.

4. Implementation

The parties agree that this MOU constitutes a commitment by KIUC to provide DOFAW with supplemental funds to be used to benefit the Covered Species as described in the HCP, and a commitment by DOFAW to utilize such funds to implement the actions described in the attached Scope of Work. Performance by DOFAW of the mitigation actions depends upon the timely receipt of funds from KIUC.

5. Availability and Use of Results and Data

DOFAW/KESRP will provide to KIUC, upon request, all results of and all data generated in the course of all aspects of the KESRP activities conducted under this MOU. Further, should DOFAW/KESRP seek to publish or present any such data or results, it shall notify KIUC immediately of such intent and provide to KIUC a copy of any such proposed publication or presentation simultaneously with its submission to any outside publication or entity. This provision applies to the supplemental work specifically covered by this MOU, as well as to all aspects of the various seabird monitoring activities being implemented by DOFAW/ KESRP under the KIUC Short-term HCP, and is consistent with the long-standing mutual intent of KIUC and DOFAW/KESRP.

6. Termination

For any reason whatsoever, either party may terminate involvement in this Agreement by providing 90 days prior written notice to the other party. Any unused funds will be returned to KIUC.

7. Counterparts

This Agreement may be executed in several counterparts, each of which shall be an original and all of which shall constitute one and the same document.

IN WITNESS WHEREOF the **PARTIES** hereto have executed this, **MEMORANDUM OF UNDERSTANDING** by way of signature and date below.

Kauai Island Utility Cooperative:

_____ Date:_____

David J. Bissell
President and Chief Executive Officer

Division of Forestry and Wildlife:

_____ Date: _____

William J. Aila, Chairperson
Board of Land and Natural Resources

APPROVED AS TO FORM:

_____

Deputy Attorney General
State of Hawaii

SCOPE OF WORK

Continuation of island-wide auditory surveys on Kaua'i – assessing potential management sites

In 2012 and 2013, KESRP undertook 16 auditory survey trips under the KIUC Short-term HCP to identify new hotspots[1] of Hawaiian Petrel (*Pterodroma sandwichensis* – hereafter referred to as HAPE), Newell's Shearwater (*Puffinus newelli* – hereafter referred to as NESH) and Band-rumped Storm-petrel (*Oceanodroma castro* – hereafter referred to as BANP) breeding activity. These surveys helped to fill in gaps in the island-wide distribution maps created by the project for the three species and identified a number of important areas with management potential.

In 2014, a further 8 surveys will be undertaken using funds made available through unallocated Year 4 mitigation funds in the KIUC Short-Term HCP. The focus of the 2014 auditory surveys will shift to mapping the precise boundaries of manageable colonies of the target species in areas already known from previous surveys to hold large breeding concentrations. This information will then be used to assess the feasibility of undertaking site-specific management actions, including fencing and predator control, in those locations

Auditory surveys will be concentrated in (i) Wainiha Valley, (ii) Lumahai Valley, (iii) Upper Manoa Valley and (iv) possibly in areas of recently discovered high seabird activity in the Hono o Na Pali Natural Area Reserve (NAR). All of these sites have shown potential for future management options and all have land owners who currently have working relationships with KESRP related directly to the project's work with the KIUC Short-term HCP.

Methodology

In 2014, survey teams will focus their efforts within the above sites on areas where heavy hotspots and ground-calling of the target species have already been mapped by KESRP, using standard auditory survey techniques and ground searching. Sites will be surveyed during the peak of the breeding season, when calling rates of both species are at their highest (between June and August).

NESH, HAPE and BANP arrive at breeding colonies after dark and depart for the sea before sunrise. At colonies, breeding, prospecting and non-breeding birds regularly call as part of mate-establishment and pair-bonding, with peak calling activity at the colony occurring from early-June to mid-September on Kaua`i. After mid-September, calling rates drop off dramatically, and auditory surveys are no longer effective. The temporal and spatial pattern in calling behavior allows detection of colonies (to species level) from a distance, and is the basis for the point count technique developed by KESRP.

The methodology developed by KESRP for auditory surveys has been used by the project since 2006. This standardized methodology allows for inter-site and inter-annual comparisons and allows the project

[1] A standard term used in the KESRP database to indicate localized aerial activity of the target species.

to identify breeding distribution and relative population sizes. Field trips in 2014 to the target locations will be carried out over a four-day period and will involve a minimum of two KESRP staff.

Surveys are carried out both in the evening and early morning (which are the peak calling times for the target species). Surveys are not undertaken during the full moon period, as target species are predominantly silent in their breeding colonies during that time. Evening surveys start at sunset (sunset/sunrise times taken from USNO website - http://www.usno.navy.mil/USNO) and last for two hours. Morning surveys start 2 hours before sunrise and last for 1.5 hours. Weather permitting, each field trip results in at least 12 evening and morning surveys (depending on number of staff present).

Surveys are split into 30 minute sessions, with 5 minutes allotted for the collection of weather data, 25 minutes for auditory surveying, and 5-10 minutes for concurrent night vision observations. Each survey location is identified using a GPS unit and given a unique GPS ID. Surveyors record all calls[2] heard during the survey period and every bird actually seen during each period (either by naked-eye or through night-vision or infra-red equipment). For each record, data is collected on time of observation, species, direction from observer, distance to observer, behaviour of bird, direction of flight path (if possible) and elevation, along with any additional comments that the observer feels are relevant.

Data are recorded on standardized data sheets in the field. Survey teams also use printed maps to draw outlines encompassing the total area which they feel their surveys accurately covered along with identified hotspots of activity, ground calling locations, and any other signs of activity from the target species. All data is digitized after surveys have been completed and the teams are back in the office, with data being entered into a specially developed Access database. Data from field maps are also entered directly into mapping software (ArcGIS) throughout the season, with hotspots and auditory survey coverage added to ArcGIS maps. ArcGIS is also utilized to generate the total auditory survey coverage for each survey trip.

Outside of the auditory survey time periods outlined above, survey teams will also undertake burrow searches in areas that they identified during auditory surveys as having ground activity. When burrows are located, each will be marked with a unique identification tag (pale blue cattle tags with black numbering) and its location recorded using a handheld GPS (Garmin Rino530HCx). Wherever possible, each burrow will also be identified to species (unless the nest chambers are too long and convoluted to see the bird, in which case the species will be listed as 'UNPE-unidentified Procellarid'). KESRP maintains a complete Access database of all known endangered seabird burrows, and all data collected through this project will be added to the database. As none of these sites currently have predator control (except for Wainiha where pig control is occurring), a high level of care will be taken to prevent the creation of trails to located burrows or damage to surrounding vegetation. After a burrow is marked, it will not be visited again during the season to minimize the laying of scent trails.

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[2] A call is classified as a single unbroken note or series of notes

As with previous auditory surveys, data will also be collected by survey teams on the presence of predators, predation events and presence of invasive plants – all data relevant to long-term management for seabirds.

At the end of the project, detailed maps and site descriptions will be produced for each of the survey areas. These will follow the same format used in reports outlining the results of the previous auditory surveys that KESRP has prepared in support of KIUC's HCP. The format for standard colony site descriptions used in these auditory survey reports was originally created by KESRP for use in the Hawai'i inventory of endangered seabird colonies per the "*Newell's Shearwater and Hawaiian Petrel Recovery: Five Year Action Plan*" (currently in Draft form circulated within the Newell's Shearwater and Hawaiian Petrel Working Group). As soon as data is collected at each site, colony locations will be passed on immediately to the site fence assessment project that will also be underway to help guide that assessment effort.

2014 Auditory Surveys Budget

ITEM	Unit	Cost	Total Cost
Staff Wages			
1 x KESRP co-ordinator	1	$4,509.34	$4,509.34
Fringe			$1,803.74
1 x GIS support	1	$3,300.00	$3,300.00
Fringe			$990.00
1 x Auditory Survey Co-ordinator (6 months)	6	$3,000.00	$18,000.00
Fringe			$5,400.00
1 x Field technicians (fieldwork, 3 months)	3	$2,340.00	$7,020.00
Fringe			$2,106.00
1 x Field technicians (prep, digitising & analysing, 2 months)*	2	$2,340.00	$4,680.00
Fringe*			$1,404.00
Per diem - per site, (8 trips, 3 staff, 4 days @ $20/day pp)		$20.00	$1,920.00
Helicopter - 8 trips	8	$1,200.00	$9,600.00
Equipment			
Replacement field equipment	1	$3,500.00	$3,500.00
Flight Helmet (2)	2	$1,530.00	$3,060.00
Flight Suits (2)	2	$250.00	$500.00
Satellite telephone time for survey team	1	$800.00	$800.00
TOTAL			**$68,593.08**
Contingency (10%)			$6,859.31
PCSU/RCUH direct & indirect costs (15%)-wages & satellite phone time			$7,789.96
GRAND TOTAL			**$83,242.35**

KIUC Pays Directly to Vendor	$16,660.00
KIUC Pays DOFAW (for PCSU overhead, wages & satellite phone time)	$59,723.04
Contingency held by KIUC payable to vendors	$6,859.31

*This budget supports only 1 Field Technician but type of work is divided into two separate line items.

MEMORANDUM OF UNDERSTANDING

BETWEEN

KAUA'I ISLAND UTILITY COOPERATIVE

AND

THE STATE OF HAWAI'I
Department of Land and Natural Resources
Division of Forestry and Wildlife

(Hono o Nā Pali Natural Area Reserve Predator Control Work: Additional Staff and Equipment for Pōhākea Area)

1. Preface.
This Memorandum of Understanding (Agreement) is made on _____, 2014 between the Kaua'i Island Utility Cooperative ("KIUC") and The State of Hawai'i, Department of Land and Natural Resources, Division of Forestry and Wildlife ("DOFAW").

WHEREAS, on May 13, 2011 the U.S. Fish and Wildlife Service ("USFWS") approved KIUC's Short-Term Seabird Habitat Conservation Plan ("HCP") and issued to KIUC an Incidental Take Permit ("ITP") pursuant to the federal Endangered Species Act ("ESA"), authorizing for purposes of the ESA the incidental take of the following Covered Species: Hawaiian Petrel (*Pterodroma sandwichensis*), the Newell's Shearwater (*Puffinus auricularis newelli*) and the Band-rumped Storm-Petrel (*Oceanodroma castro*);

WHEREAS, the HCP and federal ITP require that certain mitigation and monitoring tasks be implemented on Kaua'i and provide that DOFAW or another qualified entity may implement certain of those mitigation and monitoring tasks using funds to be provided by KIUC;

WHEREAS, pursuant to the HCP, DOFAW, through its Natural Area Reserve System ("NARS"), is already performing certain predator control work on Kaua'i;

WHEREAS, the USFWS and DOFAW/KESRP have identified equipment and work that would enhance the effectiveness of this work but is above and beyond the scope of HCP mitigation work for seabird monitoring in the Hono o Nā Pali Natural Area Reserve provided for in the HCP;

WHEREAS, KIUC and DOFAW, by mutual agreement, desire to establish a MOU pursuant to which DOFAW will conduct this supplemental work in the Hono o Nā Pali Natural Area Reserve over the course of the 2014 seabird season and KIUC will provide DOFAW with funds necessary to implement such work;

WHEREAS, the USFWS has approved the performance of this supplemental work under the HCP and the reallocation of funds to pay for this supplemental work from other potential KIUC HCP funding obligations;

NOW, THEREFORE, KIUC and DOFAW mutually agree to the following:

2. Purpose.

The purpose of this Agreement is to establish a MOU whereby DOFAW agrees to implement during the 2014 seabird season certain predator control work for the Hono o Nā Pali Natural Area Reserve which are considered above and beyond the scope of the mitigation measures in the HCP, and KIUC commits to providing DOFAW with the funds necessary to implement such activities. This Agreement does not negate or affect any other agreements in effect between KIUC and DOFAW.

3. Responsibilities.

DOFAW:

- Will implement the Scope of Work contained in Attachment 1 to this Agreement. This Scope of Work covers supplemental activities and equipment in only calendar year 2014 for predator control work in the Hono o Nā Pali Natural Area Reserve. This Scope of Work has been reviewed and approved by KIUC, DOFAW and USFWS.
- Will begin implementation of the Scope of Work in January 2014.
- Will report to KIUC and USFWS as specified in the Scope of Work attached to this Agreement.
- Will deposit checks from KIUC, described below, in the state Endangered Species Trust Fund, and ensure that such deposits are specifically designated for use by DOFAW to implement the attached Scope of Work and any subsequent Updated Scopes of Work.
- Will maintain an ongoing accounting of the funds spent implementing the attached Scope of Work including expenditure reports and will provide these to KIUC upon request.

KIUC:

- Will, within 30 days of the execution of this MOU, purchase the equipment/services as detailed in the attached Scope of Work. The total amount allocated for this purpose is $30,562.75. Additionally, KIUC will establish a contingency fund in the amount of $9,603.28; this amount will be held in reserve by KIUC and used if and when NARS identifies additional items that are needed for the conduct of its agreed upon Scope of Work (see Table 2).
- Will, within 30 days of the execution of this MOU, deliver a check to DOFAW in the amount of $4,328.21, which constitutes supplemental funding in 2014.

4. Implementation

The parties agree that this MOU constitutes a commitment by KIUC to provide DOFAW with supplemental funds to be used to benefit the Covered Species as described in the HCP, and a commitment by DOFAW to utilize such funds to implement the actions described in the attached Scope of Work. Performance by DOFAW of the mitigation actions depends upon the timely receipt of funds from KIUC.

5. Availability and Use of Results and Data

DOFAW/KESRP will provide to KIUC, upon request, all results of and all data generated in the course of all aspects of KESRP's predator control work in the Hono o Nā Pali Natural Area Reserve conducted under this MOU. Further, should DOFAW/KESRP seek to publish or present any such data or results, it shall notify KIUC immediately of such intent and provide to KIUC a copy of any such proposed publication or presentation simultaneously with its submission to any outside publication or entity. This provision applies to the supplemental work specifically covered by this MOU, as well as to all aspects of the seabird monitoring and predator control work in the Hono o Nā Pali Natural Area Reserve being implemented by DOFAW/ KESRP under the KIUC

Short-term HCP, and is consistent with the long-standing mutual intent of KIUC and DOFAW/KESRP.

6. Termination

For any reason whatsoever, either party may terminate involvement in this Agreement by providing 90 days prior written notice to the other party. Any unused funds will be returned to KIUC.

7. Counterparts

This Agreement may be executed in several counterparts, each of which shall be an original and all of which shall constitute one and the same document.

IN WITNESS WHEREOF the **PARTIES** hereto have executed this, **MEMORANDUM OF UNDERSTANDING** by way of signature and date below.

Kaua'i Island Utility Cooperative:

_____ Date:_____

David J. Bissell
President and Chief Executive Officer

Division of Forestry and Wildlife:

_____ Date:_____

William J. Aila, Chairperson
Board of Land and Natural Resources

APPROVED AS TO FORM:

_____

Deputy Attorney General
State of Hawaii

Year 3 Updated Scope of Work for Predator Control in Hono o Nā Pali Natural Area Reserve - February 2014

Hono o Nā Pali Natural Area Reserve (HNP) is an important breeding site for ESA listed Newell's Shearwater and Hawaiian Petrel (Figure 1-3). While the area has not been completely surveyed it is known that both species, including the State listed and ESA Candidate for Listing, Band-rumped Storm-Petrel, breed in multiple sites across the 3,578 ha NAR (Figure 3).

Predation of endangered seabirds by non-native mammals exists throughout this region. Implementation of predator control actions in this area may be an important conservation measure for increasing breeding success rates and promoting the survival of these species. Feral cats, rats, Barn Owls and ungulates are all non-native predators that are limiting the success of the endangered seabird colonies. It has been documented that these predators exist in areas that are heavily visited by humans, such as Pihea vista, and also in more remote inaccessible areas, such as Pōhākea ridge line. This scope of work (SOW) addresses the need to reduce the range and over all predation of the documented and undocumented endangered seabird colonies in HNP. This KIUC funded project is undertaken as a contract through Pacific Cooperative Studies (PCSU) and would be administered by the Kaua'i Natural Area Reserves Program.

This proposal is part of a larger effort to undertake habitat restoration and management in HNP NAR. In addition to listed seabirds, HNP also contains 84 ESA listed plants, and an additional six ESA listed animals, plus ESA listed Critical Habitat for 34 listed plants and animals. This site is part of the Kaua`i Watershed Alliance (HAWP 2009), the KWA's current mandate includes habitat restoration via invasive plant control and ungulate removal, two actions vital to endangered seabird recovery. Watershed Partnerships are voluntary alliances of public and private landowners and other partners working collaboratively to protect forested watersheds for water recharge, conservation, and other ecosystem services. The Kaua`i Watershed Alliance includes 11 partners and encompasses 144,004 ac (HAWP 2009). Undertaking endangered seabird colony protection efforts at Hono o Nā Pali offers a significant opportunity to share the cost of logistics and overlay predator control in areas where Kaua`i Watershed Alliance Partners are conducting habitat restoration.

Long-term planned activities in HNP NAR include fencing for ungulate exclusion, predator control for listed seabirds, invasive plant control, baseline inventory to fill key knowledge gaps, and monitoring to determine the efficacy of management actions. This proposal has been updated to outline activities in the third year (2014) that will be utilized to enhance the protection of listed seabirds in HNP. These goals are:

- Cat trapping at major ingress points around Pihea ridge, North Bog and Pōhākea; plus additional cat trapping at Kilohana and Pihea vistas.
- Rat baiting and trapping near known colonies or near hotspots of calling activity at North Bog and assessment of rat abundance and threat at two other sites (Pōhākea and Pihea) to help guide future predator control work.

- Barn Owl control near known colonies or near hotspots of calling activity.

- Monitoring for presence of feral cats, rats, Barn Owls, and feral ungulates around breeding sites.

- Targeted removal of ungulates found to be predating on seabirds or habituating in and near known endangered seabird colonies.

Cat trapping will take place at 3 suspected high ingress locations (Figure 2) over 10 months during the seabird breeding and nesting season (February to December). These sites are (i) the area around Pihea peak, (ii) the area east of Pihea known as North Bog and (iii) the Pōhākea area. Staff will provide a total of up to 100 trapping days divided amongst Pihea, North Bog and Pōhākea. It should be noted that staff will begin feral cat trapping in late February in order to prepare for courting seabirds arriving in late February/early March. Staff will also implement live trapping for cats along Alaka'i Swamp and Pihea vista trails over the peak seabird period to assess the level of ingress these trails facilitate. Two additional staff members were acquired in late 2013 (the team now numbers 4 staff members), this enables the project to expand radius of work for each trap line that is located across the three different project sites. (Figure 2). The Staff intends to use the data collected in this third year to improve future trapping strategies so that the trapping becomes cost efficient and effective.

The team will implement cat trapping using a combination of cage traps and conibears; live traps will be checked every day and conibears once every other week. The Predator Control Specialist will determine the number of traps used at each site at the beginning of the season, but will likely range from 15-30 (combination of Conibear and Tomahawk live traps). All captures will be dispatched humanely in a manner consistent with ethics requirements and current best practices.

The main focus for Year 3 rat control, will be in North Bog. It will consist of a grid of 47 Goodnature traps previously installed at the end of August 2013. In conjunction with this effort, tracking tunnels will be used to monitor for the presence or the absence of rats within the trapping grid and at a control site in Pihea; chew track cards (unused during Year 2 2013) will be implemented at Pōhākea. NARS Predator Control Staff (NARSPCS) will continue to install Goodnature traps and tracking tunnels in North Bog as terrain, conditions and functioning resources allows for. For full details on the rat trapping methodology and approach, see the separate document entitled '*Protocol for rat trapping and control grids in Upper Limahuli and Hono*

o Na Pali NARS 2013'.

Owl control would consist of mapping all records of Barn Owl individuals and sign (i.e. pellets), followed by targeted shooting as well as trapping using Bal Chatri and other types of traps (adherent to permit guidelines). Barn Owl control will be attempted at Pihea, Pōhākea and North Bog although it will be a lower priority in HNP, due to the higher priority threats such as feral cats and feral pigs setting precedence.

Monitoring for predators would consist of using tracking tunnels (as previously mentioned for rodents) and remote cameras (all target species) around known burrows, traps and/or prominent terrain features.

Ungulates determined to be predating on endangered seabirds or habituating in or near seabird colonies will be removed by the predator control staff using a combination of State-approved and prescribed methods

Annual Reporting Requirements

By January 31, 2015, an annual report will be furnished which includes a) maps showing locations of all traps, predator kills, and other useful information including total number of trapping days per site, b) tabulation of predator control successes and identification of any observed mortality of endangered species; c) a progress report on fence and facilities maintenance, monitoring results, and other ongoing activities; d) copies of all databases produced during the course of the work; e) copies of logs of the field trips made and activities carried out; and f) a summary of budget expenditures over the previous year as described in the letter dated April 22, 2013 from the USFWS.

Interim Accounting of Expenditures

A pre-final accounting of expenditures for 2014 (in Excel format) will be provided to KIUC and the USFWS in advance of or with the submission of the Updated Scope of Work and proposed budget for 2015.

Budget for Year 3 (2014)

Table 1. Year 3 Budget for Hono o Nā Pali Predator Control – Excludes Pōhākea Site

ITEM	Unit	Cost	NARS Proposal	HCP Commitment[1]
Staff Wages				
1 x 100% FTE Predator control specialist	1	$43,200.00	$43,200.00	$28,800.00
Fringe	1	$19,460.00	$19,460.00	$12,973.33
3 x 100% FTE Predator control tech	1	$85,000.00	$85,000.00	$56,666.67
Fringe	1	$29,750.00	$29,750.00	$19,833.33
4 x Staff per diem totals (30 x 4 day remote camping trip at $20/day)	1	$9,600.00	$9,600.00	$6,400.00
Supplies				
Trap Building Supplies	1	$2,300.00	$2,300.00	$1,533.33
Flight Gear	1	$2,300.00	$2,300.00	$1,533.33
Office Equipment	1	$500.00	$500.00	$333.33
Helicopter Cargo Net/Bag	1	$1,000.00	$1,000.00	$666.67
Tracking Tunnel Cards	1	$2,000.00	$2,000.00	$1,333.33
Firearm Safe/Locker	1	$2,000.00	$2,000.00	$1,333.33
Bait and Ammunition	1	$1,500.00	$1,500.00	$1,000.00
Remote Cameras (13) 4x for weather monitoring and 9x for site predator monitoring	1	$8,738.26	$8,738.26	$5,825.51
Satellite Phone (phone + minutes)	1	$800.00	$800.00	$533.33
VHF Radios	2	$350.00	$700.00	$466.67
Handheld Computer/GPS Unit (high accuracy)	1	$1,200.00	$1,200.00	$800.00
4x staff camping supplies, footwear, other field gear as well as extra gear for potential volunteers	4	$1,200.00	$4,800.00	$3,200.00
Helicopter[1]				
Base Set Up and Break Down (5 trips/ year)	5	$1,000.00	$5,000.00	$2,500.00
Remote Site Trips (35 per year @ 1 hr. per trip)	35	$1,000.00	$35,000.00	$17,500.00
Vehicle				
Repair & Maintenance	1	$3,500.00	$3,500.00	$2,333.33
Staff Training				
Vertical Skills Training and/or other Staff Training (ArcGIS, ArcPad, etc.)	1	$4,350.00	$4,350.00	$2,900.00
Office Costs				
Rent	12	$400.00	$4,800.00	$3,200.00
Cellphone (minutes only)	1	$600.00	$600.00	$400.00
Subtotal			**$268,098.26**	**$172,065.51**
Contingency (10%)			$26,809.83	$17,206.55
PCSU/RCUH direct & indirect costs (15%) - Wages, Fringe, Vehicle & Cellphone Time Only			$29,461.50	$19,641.00
Total			**$324,369.59**	**$208,913.06**
2013 Rollover[2]			**-$122,130.72**	**-$51,168.43**
GRAND TOTAL[3]			**$202,238.87**	**$157,744.63**

Note 1: Fifty-percent of helicopter costs and one-third of all other costs for the Pōhākea site have been identified as above and beyond the scope of the KIUC Short-term HCP. As a result, those costs will be funded using unallocated Year 4 mitigation funds from the KIUC Short-term HCP (see Table 2).
Note 2: This amount is left over from KIUC's 2013 payments in accordance with HCP commitments.
Note 3: KIUC will pay $41,125.51 directly to vendors to purchase equipment/services. It will issue a check to DOFAW for $99,412.57 for wages, fringe, vehicle repair, and phone time. KIUC will hold the contingency of $17,206.55 for payment to vendors, if needed and supported by documentation.

Table 2. Items related to predator control at Pohakea site (one-time re-allocation from separate HCP mitigation funds.

Item	Total
1/3 of 100% FTE Predator Control Specialist	$14,400.00
1/3 of Fringe	$6,486.67
1/3 of 3 x 100% FTE Predator Control Tech	$28,333.33
1/3 of Fringe	$9,916.67
1/3 of 4 x Staff per diem totals (30 x 4 day remote camping trip at $20/day)	$3,200.00
1/3 Trap Building Supplies	$766.67
1/3 Flight Gear	$766.67
1/3 Office Equipment	$166.67
1/3 Helicopter Cargo Net/Bag	$333.33
1/3 Tracking Tunnel Cards	$666.67
1/3 Firearm Safe/Locker	$666.67
1/3 Bait and Ammunition	$500.00
1/3 "Remote Cameras (13) 4x for weather monitoring and 9x for site predator monitoring"	$2,912.75
1/3 Satellite Phone (phone + minutes)	$266.67
1/3 VHF Radios	$233.33
1/3 Handheld Computer/GPS Unit (high accuracy)	$400.00
1/3 of 4x staff camping supplies, footwear, other field gear as well as extra gear for potential volunteers	$1,600.00
1/2 Helicopter - Base Set Up and Break Down (5 trips/ year)	$2,500.00
1/2 Helicopter - Remote Site Trips (35 per year @ 1 hr. per trip)	$17,500.00
1/3 Vehicle Repair & Maintenance	$1,166.67
1/3 Vertical Skills Training and/or other Staff Training (ArcGIS, ArcPad, etc.)	$1,450.00
1/3 Rent	$1,600.00
1/3 Cellphone (minutes only)	$200.00
Subtotal	$96,032.75
Contingency (10%)	$9,603.28
PCSU/RCUH Direct & Indirect Costs (15% on Wages, Fringe, Vehicle & Cellphone Time Only)	$9,820.50
Total	$115,456.53
2013 Rollover[1]	-$70,962.29
GRAND TOTAL[2]	**$44,494.24**

Note 1: This amount is left over from the 2013 Pōhākea budget.
Note 2: KIUC will pay $30,562.75 directly to vendors to purchase equipment/services. It will issue a check to DOFAW for $4,328.21 for wages, fringe, vehicle repair, and phone time. KIUC will hold the contingency of $9,603.28 for payment to vendors, if needed and supported by documentation.

2014 Hono o Nā Pali NAR Predator Control (YEAR 3 Budget)

ITEM	Unit	Cost	Total Cost	Year 3 (2014) KIUC HCP Commitments	Year 3 (2014) Above & Beyond (Pōhākea-using Y4 mitigation funds)		
Staff Wages							
1 x 100% FTE Predator control specialist	1	$43,200.00	$43,200.00	$28,800.00	$14,400.00		
Fringe	1	$19,460.00	$19,460.00	$12,973.33	$6,486.67		
3 x 100% FTE Predator control tech	1	$85,000.00	$85,000.00	$56,666.67	$28,333.33		
Fringe	1	$29,750.00	$29,750.00	$19,833.33	$9,916.67		
4 x Staff per diem totals (30 x 4 day remote camping trip at $20/day)	1	$9,600.00	$9,600.00	$6,400.00	$3,200.00		
Supplies							
Trap Building Supplies	1	$2,300.00	$2,300.00	$1,533.33	$766.67		
Flight Gear	1	$2,300.00	$2,300.00	$1,533.33	$766.67		
Office Equipment	1	$500.00	$500.00	$333.33	$166.67		
Helicopter Cargo Net/Bag	1	$1,000.00	$1,000.00	$666.67	$333.33		
Tracking Tunnel Cards	1	$2,000.00	$2,000.00	$1,333.33	$666.67		
Firearm Safe/Locker	1	$2,000.00	$2,000.00	$1,333.33	$666.67		
Bait and Ammunition	1	$1,500.00	$1,500.00	$1,000.00	$500.00		
Remote Cameras (13) 4x for weather monitoring and 9x for site predator monitoring	1	$8,738.26	$8,738.26	$5,825.51	$2,912.75		
Satellite Phone (phone + minutes)	1	$800.00	$800.00	$533.33	$266.67		
VHF Radios	2	$350.00	$700.00	$466.67	$233.33		
Handheld Computer/GPS Unit (high accuracy)	1	$1,200.00	$1,200.00	$800.00	$400.00		
4x staff camping supplies, footwear, other field gear as well as extra gear for potential volunteers	4	$1,200.00	$4,800.00	$3,200.00	$1,600.00		
Helicopter							
Base Set Up and Break Down (5 trips/ year)	5	$1,000.00	$5,000.00	$2,500.00	$2,500.00		
Remote Site Trips (35 per year @ 1 hr. per trip)	35	$1,000.00	$35,000.00	$17,500.00	$17,500.00		
Vehicle							
Repair & Maintenance	1	$3,500.00	$3,500.00	$2,333.33	$1,166.67		
Staff Training							
Vertical Skills Training and/or other Staff Training (ArcGIS, ArcPad, etc.)	1	$4,350.00	$4,350.00	$2,900.00	$1,450.00		
Office Costs							
Rent	12	$400.00	$4,800.00	$3,200.00	$1,600.00		
Cellphone (minutes only)	1	$600.00	$600.00	$400.00	$200.00		
Subtotal			**$268,098.26**	**$172,065.51**	**$96,032.75**	*$268,098.26*	*check sum*
Contingency (10%)			$26,809.83	$17,206.55	$9,603.28	*$26,809.83*	
PCSU/RCUH direct & indirect costs (15%) - Wages, Fringe, Vehicle & Cellphone Time Only			$29,461.50	$19,641.00	$9,820.50	*$29,461.50*	
Total			**$324,369.59**	**$208,913.06**	**$115,456.53**	*$324,369.59*	
2013 Rollover			**-$122,130.72**	**-$51,168.43**	**-$70,962.29**	*-$122,130.72*	
GRAND TOTAL			**$202,238.87**	**$157,744.63**	**$44,494.24**	*$202,238.87*	

	2014 HNP HCP	Above & Beyond	Total
KIUC pays directly to vendors	$41,125.51	$30,562.75	$71,688.26
KIUC Check to DOFAW for wages/fringe/vehicle/phone time	$99,412.57	$4,328.21	$103,740.78
Contingency held by KIUC payable to vendors	$17,206.55	$9,603.28	$26,809.83
			$202,238.87 *checksum*

	To DOFAW	
	HCP Wages, etc.	Above HCP Wages, etc.
	$130,940.00	$65,470.00
PSCU	$19,641.00	$9,820.50
Subtotal	$150,581.00	$75,290.50
Rollover	-$51,168.43	-$70,962.29
Total	$99,412.57	$4,328.21

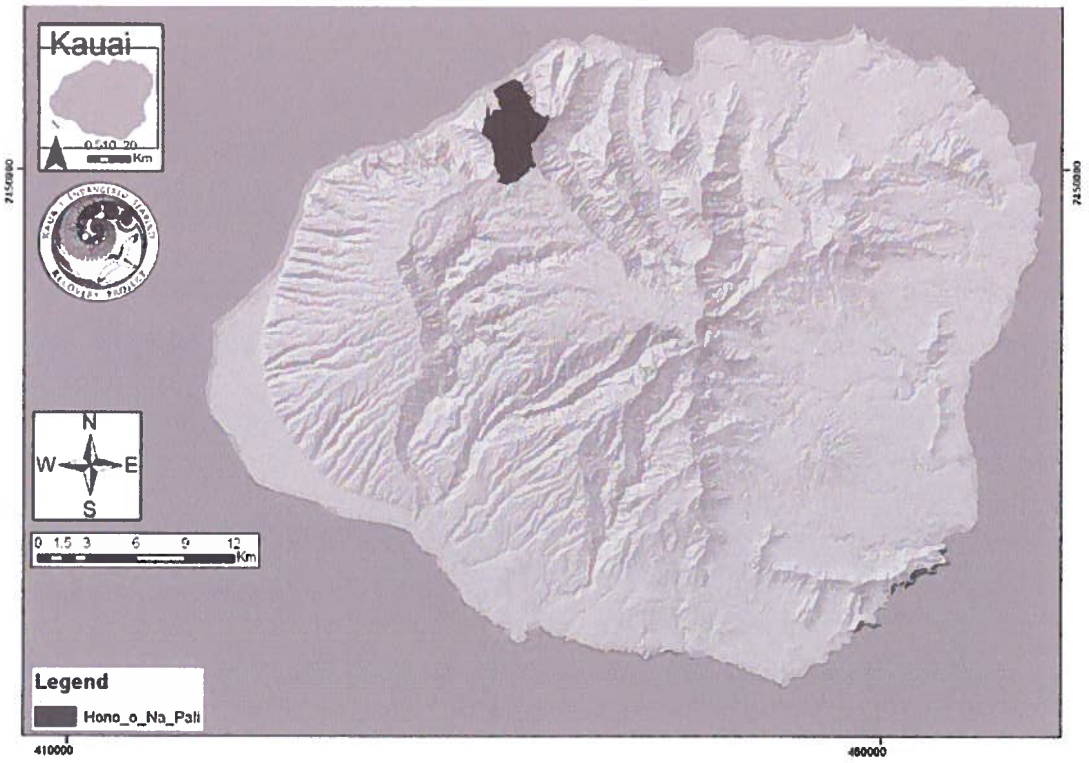

Figure 1: Hono o Na Pali NAR

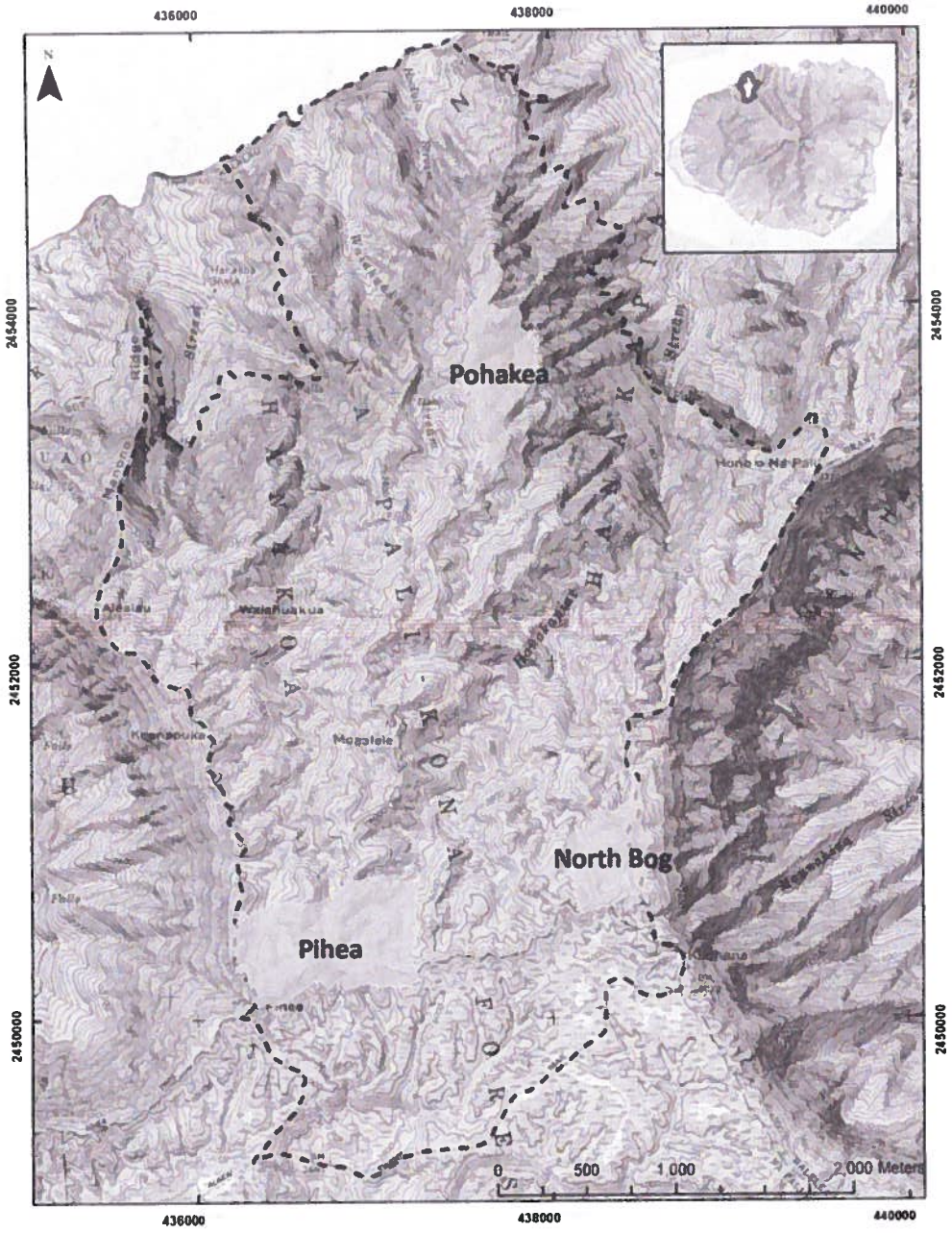

Figure 2: Map with shaded areas showing the three control sites in HNP for 2014.

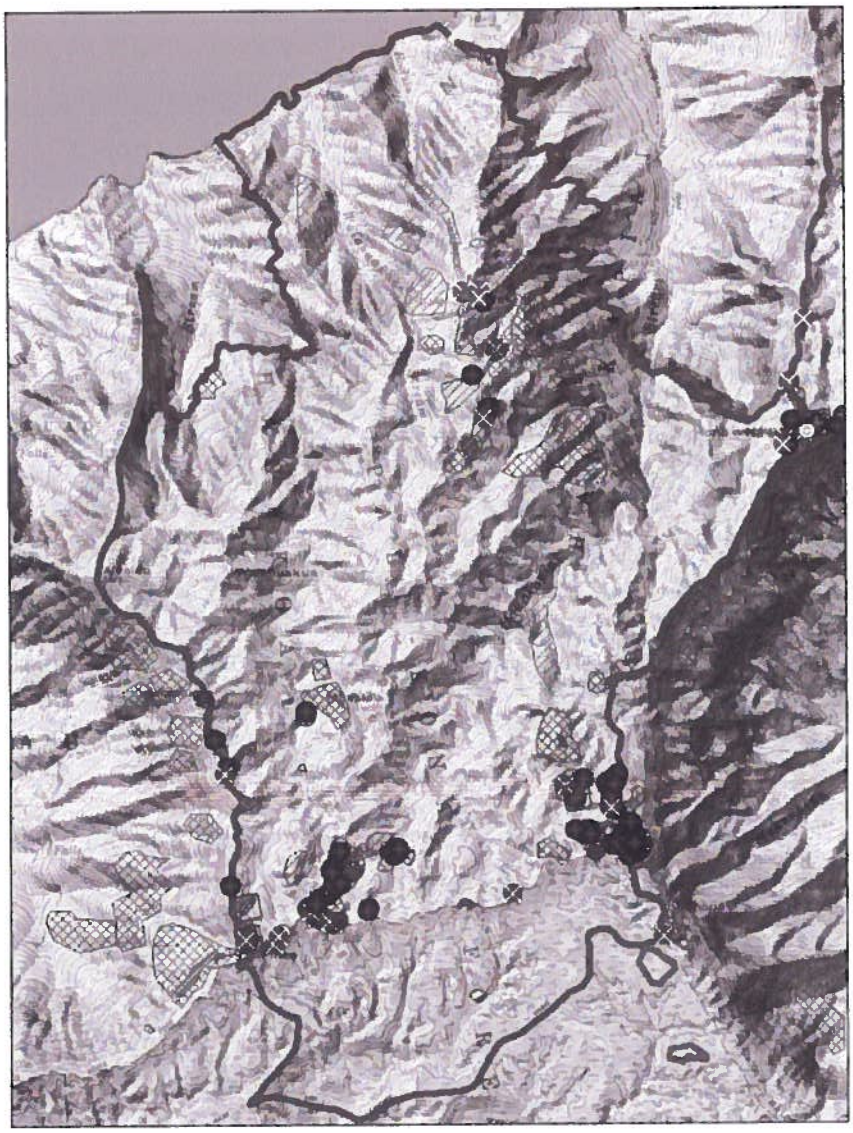

Figure 3: Map depicting 2013 KESRP known seabird burrows and "hot spots" of activity.

MEMORANDUM OF UNDERSTANDING

BETWEEN

KAUAI ISLAND UTILITY COOPERATIVE

AND

THE STATE OF HAWAII
Department of Land and Natural Resources
Division of Forestry and Wildlife

(Hono o Nā Pali Seabird Monitoring:
Continuation of Exploratory Seabird Surveying Using Roving Song Meters

1. Preface.
This Memorandum of Understanding (Agreement) is made on _____, 2014 between the Kaua'i Island Utility Cooperative ("KIUC") and The State of Hawaii, Department of Land and Natural Resources, Division of Forestry and Wildlife ("DOFAW").

WHEREAS, on May 13, 2011 the U.S. Fish and Wildlife Service ("USFWS") approved KIUC's Short-Term Seabird Habitat Conservation Plan ("HCP") and issued to KIUC an Incidental Take Permit ("ITP") pursuant to the federal Endangered Species Act ("ESA"), authorizing for purposes of the ESA the incidental take of the following Covered Species: Hawaiian Petrel (*Pterodroma sandwichensis*), the Newell's Shearwater (*Puffinus auricularis newelli*) and the Band-rumped Storm-Petrel (*Oceanodroma castro*);

WHEREAS, the HCP and federal ITP require that certain mitigation and monitoring tasks be implemented on Kaua'i, and provide that DOFAW or another qualified entity may implement certain of those mitigation and monitoring tasks using funds to be provided by KIUC;

WHEREAS, pursuant to the HCP, DOFAW, through its Kaua'i Endangered Species Recovery Project ("KESRP"), is already performing certain surveys and seabird monitoring on Kaua'i;

WHEREAS, the USFWS and DOFAW/KESRP have identified equipment and work that would enhance the effectiveness of this work but is above and beyond the scope of HCP mitigation work for the seabird monitoring at the Hono o Nā Pali Natural Area Reserve provided for in the HCP;

WHEREAS, KIUC and DOFAW, by mutual agreement, desire to establish a MOU pursuant to which DOFAW will conduct this supplemental work for the Hono o Nā Pali Natural Area Reserve over the course of the 2014 seabird season, and KIUC will provide DOFAW with funds necessary to implement such work;

WHEREAS, the USFWS has approved the performance of this supplemental work under the HCP, and the reallocation of funds to pay for this supplemental work from other potential KIUC HCP funding obligations;

NOW, THEREFORE, KIUC and DOFAW mutually agree to the following:

2. Purpose.

The purpose of this Agreement is to establish a MOU whereby DOFAW agrees to implement during the 2014 seabird season certain surveys and avian monitoring activities for the Hono o Nā Pali Natural Area Reserve which are considered above and beyond the scope of the mitigation measures in the HCP, and KIUC commits to providing DOFAW with the funds necessary to implement such activities. This Agreement does not negate or affect any other agreements in effect between KIUC and DOFAW.

3. Responsibilities.

DOFAW:

- Will implement the Scope of Work contained in Attachment 1 to this Agreement. This Scope of Work covers supplemental activities and equipment in only calendar year 2014 for survey work and avian monitoring in the Hono o Nā Pali Natural Area Reserve. This Scope of Work has been reviewed and approved by KIUC, DOFAW and USFWS.
- Will begin implementation of the Scope of Work in June 2014.
- Will report to KIUC and USFWS as specified in the Scope of Work attached to this Agreement.
- Will deposit checks from KIUC, described below, into the state Endangered Species Trust Fund, and ensure that such deposits are specifically designated for use by DOFAW to implement the attached Scope of Work and any subsequent Updated Scopes of Work.
- Will maintain an ongoing accounting of the funds spent implementing the attached Scope of Work including expenditure reports and will provide these to KIUC upon request.

KIUC:

- Will directly fund the helicopter trips in 2014 for an amount not to exceed $7,200.00 as detailed in the attached Scope of Work. Additionally, KIUC will establish a contingency fund in the amount of $1,993.68; this amount will be held in reserve by KIUC and used if and when KESRP identifies additional items that are needed for the conduct of its agreed upon Scope of Work.
- Will, within 30 days of the execution of this MOU, deliver a check to DOFAW in the amount of $14,647.28, which constitutes supplemental funding in 2014 for a temporary Biological Coordinator, for GIS Support, and for Field Technicians (including overhead) as described in the attached Scope of Work.

4. Implementation

The parties agree that this MOU constitutes a commitment by KIUC to provide DOFAW with supplemental funds to be used to benefit the Covered Species as described in the HCP and a commitment by DOFAW to utilize such funds to implement the actions described in the attached Scope of Work. Performance by DOFAW of the mitigation actions depends upon the timely receipt of funds from KIUC.

5. Availability and Use of Results and Data

DOFAW/KESRP will provide to KIUC, upon request, all results of and all data generated in the course of all aspects of KESRP's seabird monitoring in the Hono o Nā Pali Natural Area Reserve conducted under this MOU. Further, should DOFAW/KESRP seek to publish or present any such data or results, it shall notify KIUC immediately of such intent and provide to KIUC a copy of any such proposed publication or presentation simultaneously with its submission to any outside publication or entity. This provision applies to the supplemental work specifically covered by this

MOU, as well as to all aspects of the seabird monitoring and predator control work in the Hono o Nā Pali Natural Area Reserve being implemented by DOFAW/ KESRP under the KIUC Short-term HCP, and is consistent with the long-standing mutual intent of KIUC and DOFAW/KESRP.

6. Termination

For any reason whatsoever, either party may terminate involvement in this Agreement by providing 90 days prior written notice to the other party. Any unused funds will be returned to KIUC.

7. Counterparts

This Agreement may be executed in several counterparts, each of which shall be an original and all of which shall constitute one and the same document.

IN WITNESS WHEREOF the **PARTIES** hereto have executed this, **MEMORANDUM OF UNDERSTANDING** by way of signature and date below.

Kaua'i Island Utility Cooperative:

_____ Date:_____

David J. Bissell
President and Chief Executive Officer

Division of Forestry and Wildlife:

_____ Date:_____

William J. Aila, Chairperson
Board of Land and Natural Resources

APPROVED AS TO FORM:

_____

Deputy Attorney General
State of Hawaii

SCOPE OF WORK

Continuation of exploratory seabird surveying using song meters - roving units, validation

In 2013, 5 roving units were deployed for a month at a time (May-July) at 15 sites within the Hono o Na Pali NARS to assess whether song meters could be used for exploratory surveys in areas previously un-surveyed by KESRP.

Song Meters were powered by 4 D-cell alkaline batteries and stored recordings on a 32 GB SD memory card. All sensors were fitted with a single omni-direction microphone and recorded on one channel at a sampling rate of 22 kHz. Unlike static units deployed at permanent locations within management areas, roving units were deployed by helicopter using specially designed holding boxes lowered by a grappling hook from a hovering helicopter. Roving units were deployed within areas of Hono o Na Pali NARS not previously surveyed by KESRP, and were predominantly in the interior, the north-west and the eastern ridges of the NARS. Roving units were placed a minimum of 300m apart, and their location was taken using a hand-held GPS. Locations were chosen to ensure that a high level of auditory survey coverage was given to the NARS, and current management areas were avoided as intensive survey work is already being undertaken in these areas. Figure 1 shows the location of roving units deployed in the NARS in 2013, in relation to the location of existing static song meter points.

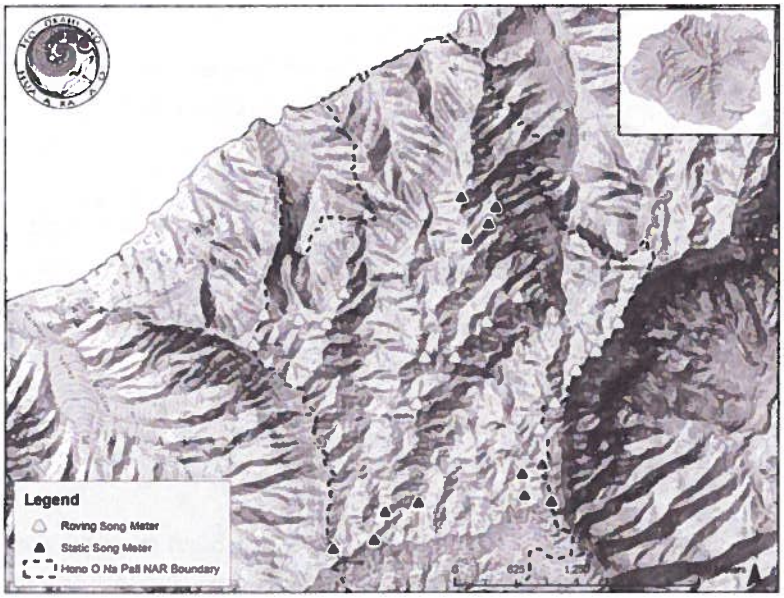

Figure 1. Song Meter (SM) locations (static and roving units) in Hono o Na Pali NARS in 2013.

While each SM sensor operates for approximately 3 months without needing new batteries or memory cards, roving units were only deployed in a specific area for a month before they were collected via

helicopter, batteries and SD cards were swapped out, and they were re-deployed in a new location. This was undertaken to ensure that all 15 survey points were surveyed during the peak calling period for the target species. Sensors were programmed to record 1 minute of every 10 minutes from 30 minutes before local sunset to 30 minutes after local sunrise. Programming was undertaken using the SMCONFIG software package.

Automated analysis of the recordings was carried out by Conservation Metrics Inc, using bioacoustic analysis software such as XBAT (www.xbat.org). This technique used an image processing technique - spectrogram cross-correlation - to detect sounds that match the spectral characteristics of vocalizations form species of interest. The software specifically searched for aerial vocalizations, but burrow calls, chick calls, and sounds of birds on the ground were also considered. All detections were reviewed (audited) to confirm the automated classifications. A random sample of recordings from each site was also audited manually to search for missed detections.

Data collected at these sites and analysed by Conservation Metrics has shown that many of these areas had high levels of calling rates for both Hawaiian Petrel (*Pterodroma sandwichensis* – hereafter referred to as HAPE) and Newell's Shearwater (*Puffinus newelli* – hereafter referred to as NESH), with some of them holding significantly more calling activity than the highest calling rates recorded at known colonies within existing management areas.

Methodology

In 2014, four sites with the highest levels of calling rates will be surveyed by KESRP staff (as long as they are safely accessible) using standard auditory survey techniques and ground searching. Sites will be surveyed during the peak of the breeding season, when calling rates of both species are at their highest (between June and August).

NESH, HAPE and Band-rumped Storm-Petrels (*Oceanodroma castro*) arrive at breeding colonies after dark, and depart for the sea before sunrise. At colonies, breeding, prospecting and non-breeding birds regularly call as part of mate-establishment and pair-bonding, with peak calling activity at the colony occurring from early-June to mid-September on Kaua`i. After mid-September, calling rates drop off dramatically, and auditory surveys are no longer effective. The temporal and spatial pattern in calling behavior allows detection of colonies (to species level) from a distance, and is the basis for the point count technique developed by KESRP.

The methodology developed by KESRP for auditory surveys has been used by the project since 2006. This standardized methodology allows for inter-site and inter-annual comparisons and allows the project to identify breeding distribution and relative population sizes. Field trips in 2014 to the target locations will be carried out over a four-day period and will involve a minimum of two KESRP staff.

Surveys are carried out both in the evening and early morning (which are the peak calling times for the target species). Surveys are not undertaken during the full moon period, as target species are predominantly silent in their breeding colonies during this period. Evening surveys start at sunset (sunset/sunrise times taken from USNO website - http://www.usno.navy.mil/USNO) and last for two hours. Morning surveys start 2 hours before sunrise and last for 1.5 hours. Weather permitting, each field trip results in at least 12 evening and morning surveys (depending on number of staff present).

Surveys are split into 30 minute sessions, with 5 minutes allotted for the collection of weather data, 25 minutes for auditory surveying, and 5-10 minutes for concurrent night vision. Each survey location is identified using a GPS and given a unique GPS ID. Surveyors record all calls[1] heard during the survey period and any bird actually seen during each period (either by naked-eye or through night-vision or infra-red equipment). For each record, data is collected on time of observation, species, direction from observer, distance to observer, behaviour of bird, direction of flight path (if possible) and elevation, along with any additional comments that the observer feels are relevant.

Data are recorded on standardized data sheets in the field, and survey teams also use printed maps to draw outlines encompassing the total area which they feel their surveys accurately covered along with identified hotspots of activity, ground calling locations, and any other signs of activity from the target species. All data is digitized after surveys have been completed and the teams are back in the office, with data being entered into a specially developed Access database. Data from field maps are also entered directly into mapping software (ArcGIS) throughout the season, with hotspots and auditory survey coverage added to ArcGIS maps. ArcGIS is also utilized to generate the total auditory survey coverage for each survey trip.

Incorporation of this project into overall song meter analysis

Data collected during the field work associated with this proposal will (i) help to validate the technique of using roving and static song meters to locate and quantify breeding seabird density, (ii) potentially locate large breeding pockets of the target species and (iii) potentially locate new areas for colony management.

To date, the data collected from static song meters deployed at four management sites (Upper Limahuli Preserve and three sites in Hono o Na Pali NARS – Pihea, Pohakea and North Bog) suggests that this technology will prove to be an effective tool for assessing long-term colony responses to management. Data collected in 2012 and 2013 has shown that the number of calls recorded on song meters for both HAPE and NESH do indeed relate to breeding density around the song meter. For example, areas around each song meter in Upper Limahuli Preserve were qualitatively assigned a low, medium and high breeding category. The assignments were made by looking at (i) all of the auditory surveys undertaken in the ULP area since 2006, (ii) the distribution maps KESRP has developed showing hot spots[2] and

[1] classified as a single unbroken note or series of notes

[2] A standard term used in the KESRP database to indicate localized aerial activity of the target species.

ground calling areas within each area, (iii) KESRP staff members' knowledge of the area based on their having spent a significant number of nights and early mornings conducting surveys in the area and (iv) all known burrows within 200 meters of the song meter. Song meters in areas that had been placed in the 'high' breeding category consistently had higher rates of calling than did those placed in areas that had been assigned to medium and low categories. This was true in 2012 and 2013. This exercise will also be repeated within the three management sites within Hono o Na Pali NARS (Pihea, Pohakea and North Bog) prior to the final analysis of 2013 data to assess whether it holds true for Hawaiian Petrels within the NARS as well. KESRP staff considers this an important first step in understanding how call rates relate to breeding bird density.

With the roving units, units have been deployed to locate new potential colony locations for the two target species. While many of these units detected high levels of calling activity (and all detected birds to some degree), it is not yet clear whether the calling levels recorded relate to breeding birds or birds in transit. By conducting auditory surveys at some of these high-level calling rate areas, we will be able to ascertain whether or not the calling rates are indicative of breeding birds. This will be an important step in understanding the applicability of this technology to identifying new breeding areas and relative densities of breeding birds. KESRP staff will assess the extent to which the results of the 2014 effort are sufficient to determine whether (a) the technology is suitable for identifying new breeding areas and relative densities of breeding birds or (b) must be studied further before reaching a decision on applicability. They will report their findings in their end-of-the-year report. If KESRP staff determine that additional work is needed to resolve this question, it will outline the outstanding questions and the effort needed to answer them in their end-of-the-year report. They will also identify other actions, if needed, required to make the data they are providing useful to decision-makers.

KESRP's year-end report will, through the field work conducted via this proposal and in conjunction with data collected from other song meter related proposals[3], (i) describe its proposed methodology for quantitatively relating seabird calling rates on song meters to breeding density, (ii) outline how this will be used for long-term colony management, particularly as it relates to KIUC's existing and future habitat conservation planning, and (iii) ascertain the applicability of using this technology for locating new breeding colonies of the target species.

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[3] The Scope of Work of other proposals using song meters are presented in separate documents – see *"Continue and expand upon long-term monitoring of seabirds (HAPE and NESH) in Upper Limahuli using song meters."* and *"Continue long-term monitoring of seabirds (HAPE and NESH) at 3 sites in Hono o Na Pali NARS using song meters"*

Seabird monitoring - validation of roving units

Item	Unit	Cost	Total Cost	
WAGES				
Seabird monitoring				
Biological co-ordinator (co-ordination and report writing)	0.25	$4,509.34	$1,127.34	1 wk of time
Fringe Benefits for Biological Coordinator			$450.93	
GIS support (mapping and planning)	0.25	$3,300.00	$825.00	1 wk of time
Fringe Benefits for			$247.50	
Field technicians (2) for validation work (1month ea)	2	$2,340.00	$4,680.00	1 month of time
Fringe Benefits for			$1,404.00	
Field technicians (2) for data digitising (2wks ea)	1	$2,340.00	$2,340.00	
Fringe Benefits for			$702.00	
Per diems for field work (@$20/day)			$960.00	
Helicopter time (4 validation trips)	4	$1,800.00	$7,200.00	approximation
SUB-TOTAL			**$19,936.77**	
Contingency (10%)			$1,993.68	
PCSU Overhead (15%) - For Wages Only			$1,910.52	
GRAND TOTAL			**$23,840.96**	

KIUC Pays Directly to Vendor	$7,200.00
KIUC Pays DOFAW (for wages & PCSU overhead)	$14,647.28
Contingency held by KIUC payable to vendors	$1,993.68

MEMORANDUM OF UNDERSTANDING

BETWEEN

KAUAI ISLAND UTILITY COOPERATIVE

AND

THE STATE OF HAWAII
Department of Land and Natural Resources
Division of Forestry and Wildlife

(Hono o Nā Pali Seabird Monitoring:
Continue Long-term Monitoring of Seabirds Using Song Meters)

1. Preface.
This Memorandum of Understanding (Agreement) is made on _____, 2014 between the Kaua'i Island Utility Cooperative ("KIUC") and The State of Hawaii, Department of Land and Natural Resources, Division of Forestry and Wildlife ("DOFAW").

WHEREAS, on May 13, 2011 the U.S. Fish and Wildlife Service ("USFWS") approved KIUC's Short-Term Seabird Habitat Conservation Plan ("HCP") and issued to KIUC an Incidental Take Permit ("ITP") pursuant to the federal Endangered Species Act ("ESA"), authorizing for purposes of the ESA the incidental take of the following Covered Species: Hawaiian Petrel (*Pterodroma sandwichensis*), the Newell's Shearwater (*Puffinus auricularis newelli*) and the Band-rumped Storm-Petrel (*Oceanodroma castro*);

WHEREAS, the HCP and federal ITP require that certain mitigation and monitoring tasks be implemented on Kaua'i, and provide that DOFAW or another qualified entity may implement certain of those mitigation and monitoring tasks using funds to be provided by KIUC;

WHEREAS, pursuant to the HCP, DOFAW, through its Kaua'i Endangered Species Recovery Project ("KESRP"), is already performing certain surveys and seabird monitoring on Kaua'i;

WHEREAS, the USFWS and DOFAW/KESRP have identified equipment and work that would enhance the effectiveness of this work but is above and beyond the scope of HCP mitigation work for seabird monitoring in the Hono o Nā Pali Natural Area Reserve provided for in the HCP;

WHEREAS, KIUC and DOFAW, by mutual agreement, desire to establish a MOU pursuant to which DOFAW will conduct this supplemental work for the Hono o Nā Pali Natural Area Reserve over the course of the 2014 seabird season and KIUC will provide DOFAW with funds necessary to implement such work;

WHEREAS, the USFWS has approved the performance of this supplemental work under the HCP and the reallocation of funds to pay for this supplemental work from other potential KIUC HCP funding obligations;

NOW, THEREFORE, KIUC and DOFAW mutually agree to the following:

2. Purpose.

The purpose of this Agreement is to establish a MOU whereby DOFAW agrees to implement during the 2014 seabird season certain surveys and avian monitoring activities for the Hono o Nā Pali Natural Area Reserve which are considered above and beyond the scope of the mitigation measures in the HCP, and KIUC commits to providing DOFAW with the funds necessary to implement such activities. This Agreement does not negate or affect any other agreements in effect between KIUC and DOFAW.

3. Responsibilities.

DOFAW:

- Will implement the Scope of Work contained in Attachment 1 to this Agreement. This Scope of Work covers supplemental activities and equipment in only calendar year 2014 for survey work and avian monitoring in the Hono o Nā Pali Natural Area Reserve. This Scope of Work has been reviewed and approved by KIUC, DOFAW and USFWS.
- Will begin implementation of the Scope of Work in April 2014.
- Will report to KIUC and USFWS as specified in the Scope of Work attached to this Agreement.
- Will deposit checks from KIUC, described below, in the state Endangered Species Trust Fund, and ensure that such deposits are specifically designated for use by DOFAW to implement the attached Scope of Work and any subsequent Updated Scopes of Work.
- Will maintain an ongoing accounting of the funds spent implementing the attached Scope of Work including expenditure reports and will provide these to KIUC upon request.

KIUC:

- Will, within 30 days of the execution of this MOU, purchase the equipment and directly fund the data analysis conducted by Conservation Metrics, Inc. as detailed in the attached Scope of Work. The total amount allocated for this purpose is $13,476.79. Additionally, KIUC will establish a contingency fund in the amount of $1,877.83; this amount will be held in reserve by KIUC and used if and when KESRP identifies additional items that are needed for the conduct of its agreed upon Scope of Work.
- Will, within 30 days of the execution of this MOU, deliver a check to DOFAW in the amount of $6,096.77, which constitutes supplemental funding in 2014 for a temporary Biological Coordinator and KESRP staff (including overhead) as described in the attached Scope of Work.

4. Implementation

The parties agree that this MOU constitutes a commitment by KIUC to provide DOFAW with supplemental funds to be used to benefit the Covered Species as described in the HCP, and a commitment by DOFAW to utilize such funds to implement the actions described in the attached Scope of Work. Performance by DOFAW of the mitigation actions depends upon the timely receipt of funds from KIUC.

5. Availability and Use of Results and Data

DOFAW/KESRP will provide to KIUC, upon request, all results of and all data generated in the course of all aspects of KESRP's seabird monitoring in the Hono o Nā Pali Natural Area Reserve conducted under this MOU. Further, should DOFAW/KESRP seek to publish or present any such data or results, it shall notify KIUC immediately of such intent and provide to KIUC a copy of any such proposed publication or presentation simultaneously with its submission to any outside publication or entity. This provision applies to the supplemental work specifically covered by this

MOU, as well as to all aspects of the seabird monitoring and predator control work in the Hono o Nā Pali Natural Area Reserve being implemented by DOFAW/ KESRP, and is consistent with the long-standing mutual intent of KIUC and DOFAW/KESRP.

6. Termination
For any reason whatsoever, either party may terminate involvement in this Agreement by providing 90 days prior written notice to the other party. Any unused funds will be returned to KIUC.

7. Counterparts
This Agreement may be executed in several counterparts, each of which shall be an original and all of which shall constitute one and the same document.

IN WITNESS WHEREOF the **PARTIES** hereto have executed this, **MEMORANDUM OF UNDERSTANDING** by way of signature and date below.

Kaua'i Island Utility Cooperative:

_____ Date:_____
David J. Bissell
President and Chief Executive Officer

Division of Forestry and Wildlife:

_____ Date:_____
William J. Aila, Chairperson
Board of Land and Natural Resources

APPROVED AS TO FORM:

_____
Deputy Attorney General
State of Hawaii

SCOPE OF WORK

Continue long-term monitoring of seabirds (HAPE and NESH) in Hono o Na Pali Natural Area Reserve using song meters.

Long-term monitoring of endangered seabirds at three management sites in Hono o Na Pali Natural Area Reserve (NAR) using song meters requires annual data gathering at static sites that Kauai Endangered Seabird Recovery Project (KESRP) originally created within the NARS in 2013. Funding from KIUC made it possible for data gathering to continue in 2013. KIUC's funding of this work will allow it to continue again in 2014. KESRP will use the data to assess trends in levels of calling rates (as a proxy for colony response to management).

To date, the data collected from song meters suggests that this technology will prove to be an effective tool for assessing long-term colony responses to management. Data collected in 2012 and 2013 has shown that the number of calls recorded on song meters for both HAPE and NESH do indeed relate to breeding density around the song meter. For example, areas around each song meter in Upper Limahuli Preserve were qualitatively assigned a low, medium and high breeding category (based on extensive knowledge of the site from numerous auditory surveys and intensive burrow searching in recent years). Song meters in 'high' categories consistently had higher rates of calling than those in medium and low categories. This was true in 2012 and 2013. This exercise will be repeated within the three management sites within Hono o Na Pali NAR (Pihea, Pohakea and North Bog) prior to the final analysis of 2013 data to assess whether it holds true for Hawaiian Petrels within the NARS as well.

The next step is to analyze the relationship between calling rates and breeding density quantitatively. In 2013, KESRP staff undertook a series of auditory surveys adjacent to song meters to compare calling rates/hour recorded by human observers with those of the song meters. At the same time, these surveys also allowed the surveyors to assess how many of the calls they heard related to individual ground-calling birds (defined as birds calling from distinct locations on the ground over a sufficient period of time to infer that they were not simply circling birds). Ground-calling birds are a direct indication of breeding birds, rather than aerial calls that could simply be courting or transiting birds. These data are still to be analyzed, and it is intended to build upon this database during the field season of 2014 with more auditory surveys paired with song meter locations.

As well as the above, a separate proposal to be initiated in 2014 (entitled "*Continuation of exploratory seabird surveying using song meters-roving units, validation*" – see separate Scope of Work) will involve revisiting sites in the Hono o Na Pali NARS identified by roving song meters in 2013 as having high calling rates of the target species. This field work will allow KESRP to ascertain the effectiveness of song meters in identifying areas of high breeding densities of target species, and address the issue of whether there are confounding variables with calling rates – such as transiting birds that may be calling but not

breeding in the target area. It will be a further facet of the data required to assess the relationship between calls/hour on song meters and breeding density, and be used as part of the overall assessment of using this technology for long-term colony monitoring. Finally, data collected by song meters deployed in Upper Limahuli Preserve will also be used in conjunction with that collected from Hono o Na Pali NAR and the roving units proposal to consider this analysis using the largest data set available (ie all song meter data will be considered as a larger data set, rather than separate data sets independent of one another).

At the end of the 2014 field season, it is expected that KESRP will be able to (i) describe its proposed methodology for quantitatively relating seabird calling rates on song meters to breeding density, (ii) outline how this methodology will be used for long-term colony management, particularly as it relates to the KIUC's existing and future habitat conservation planning, (iii) ascertain the optimum number of song meters needed for Hono o Na Pali NAR management sites to effectively monitor both Hawaiian Petrel and Newell's Shearwater breeding within the site in a way that will allow biologists to evaluate the efficacy of different predator control actions, and (iv) ascertain the optimum number of months required to effectively monitor the two species in order to consider long-term population change. It should be noted that colony response to management efforts is likely to be a long-term trend change as opposed to immediate year on year responses, as it will take time for increased fledging success rates to translate into more birds returning to breed at the site. Therefore immediate changes in the trend line are not likely and the process is, by biological necessity, a long-term one.

Currently there are 4 static sites for song meters within each of the three management sites (Pihea, Pohakea and North Bog) in the NARS. These sites will be used again in 2014, using the methodologies outlined in the Seabird Monitoring 2014 Work Plan.

In 2013 song meters were deployed and operated for a total of 10 months throughout the season. In 2014, to ensure that the technology is as cost-effective as possible whilst ensuring that overall data collection was not negatively impacted, the total period of time that song meters will be deployed will be decreased from 10 months to 5 months, covering the most vocal period for the two species. Units will be deployed from April to August inclusive. This will cover the Arrival/Courtship period through to Hatching and early Guard phase, which are the times when both Hawaiian Petrel and Newell's Shearwater are most vocal. Song meter coverage will not continue beyond the end of August, when calling rates taper off.

Seabird monitoring - Song Meters Static - Hono o Na Pali

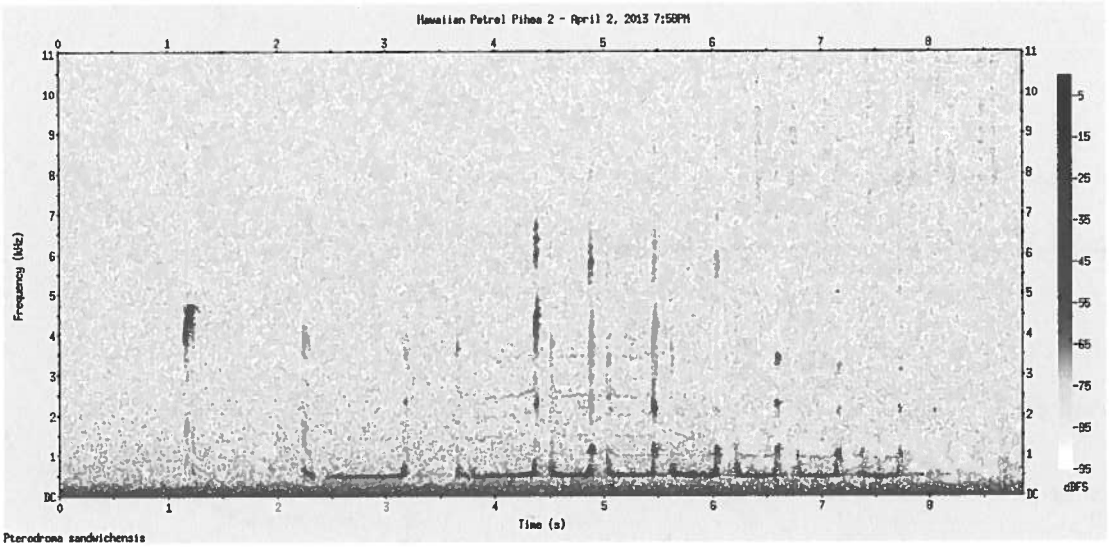
Item	Unit	Cost	Total Cost	
WAGES				
Seabird monitoring				
Biological co-ordinator (co-ordination and analysis)	0.5	$4,509.34	$2,254.67	2wks of time
Fringe Benefits for Biological Coordinator			$901.87	
KESRP staff (mapping, planning, logistics)	0.5	$3,300.00	$1,650.00	2wks of time
Fringe Benefits for KESRP staff			$495.00	
SEABIRD MONITORING EQUIPMENT				
Song meters - SM2 (12)	12	$490.00	$0.00	*already purchased*
Microphone for SM2 (2 per unit)	24	$70.00	$0.00	*already purchased*
Microphone for SM2 (1 replacement per unit plus spares)	20	$70.00	$1,400.00	
32GB SD cards for SM2 (2 per unit)	24	$20.69	$0.00	*already purchased*
Song Meter - D batteries (4 per unit*5 months)	240	$0.92	$221.54	
Analysis of song meter data by Conservation Metrics*			$11,855.25	For NESH and HAPE, 5 months
SUB-TOTAL			**$18,778.33**	
Contingency (10%)			$1,877.83	
PCSU Overhead (15%) - For Wages Only			$795.23	
GRAND TOTAL			**$21,451.39**	

KIUC Pays Directly to Vendor	$13,476.79
KIUC Pays DOFAW (for wages & PCSU overhead)	$6,096.77
Contingency held by KIUC payable to vendors	$1,877.83

*Proposal from Conservation Metrics is attached. Balance of $10,619.55 is allocated for song meters in Upper Limahuli Preserve under a separate proposal.

Conservation Metrics

508 Buena Vista Ave.
Santa Cruz, CA 95062 USA
tel: +1.925.270.5456



Acoustic surveys for nocturnal seabirds in the Upper Limahuli Preserve, Hono o Na Pali NARS, and potential management sites – Preliminary budget estimates

January, 2014

For: Andre Raine, KESRP
From: Matthew McKown, Conservtaion Metrics
matthew.mckown@conservationmetrics.com

Project: Automated acoustic surveys for nocturnal seabirds in the Upper Limahuli Preserve, Hono o Na Pali NARS, and potentail management sites – Preliminary budget estimates

Personnel: Andre Raine, Ph.D. (Co-ordinator, Kauai Endangered Seabird Project)
Matthew McKown, Ph.D. (President, Conservation Metrics)

Species: 'Ua'u (Hawaiian Petrel, *Pterodroma sandwichensis,* HAPE)
'A'o (Newell's Shearwater, *Puffinus newelli,* NESH)

Goals: Data from the 2012 and 2013 pilot seasons have shown the value of acoustic surveys for monitoring relative acoustic activity rates at monitoring sites as well as the potential for detecting and monitoring breeding sites in inaccessible areas on Kaua'i. In light of these results, KESRP has proposed to continue acoustic monitoring work in 2014. Specifically:

Long-term monitoring sites

Upper Limahuli Preserve

- Mar. 1 – Aug. 1 (10 survey sites)

Hono o Na Pali NARS

- North Bog - Mar. 1 – Aug. 1 (4 survey sites)
- Pohakea - Mar. 1 – Aug. 1 (4 survey sites)
- Pihea Ridge – Mar. 1 – Aug. 1 (4 survey sites)

Deliverables:

- Collaboration with KESRP on survey design and refinement of deployment protocols.
- Interim memo – July, 2014
- Final report summarizing analysis of 2014 monitoring results – Jan 2015 (summary of survey effort, presence/absence per site, comparison to 2012 and 2013 data, discussion).
- Copy of raw detection data (In a CSV spreadsheet file).

Budget: **$ 22,474.80**

Timeline:

Mar. 2014	**Initial deployments**
Jul. 2014	**Interim memo**
Aug. 2014	**Retrieval**
Nov. 2014	**Processing**
Jan. 2015	**Final report (and copies of data)**

Budget estimates

Component	*Cost*
Acoustic analysis and reporting	
1. Fixed Costs (Management, tech. prep, tech infra., consultation)	5,138.12
2. Processing, Storage, QA/QC	
a) Upper Limahuli	6,178.49
b) Hono'onapali	7,414.19
3. Summary statistics & Analysis	1,664.00
4. Reports	2,080.00
TOTAL US$	**22,474.80**

Payment Schedule for Conservation Metrics Inc.

Payment to Conservation Metrics Inc. will be made in accordance with the following schedule:

Invoice 1	$7,491.60 within 30 days of signing (Feb. '14)
Invoice 2	$7,491.60 within 30 days of interim memo (Jul. '14)
Invoice 3	$7,491.60 within 30 days of final report (Jan. '15)

NEIL ABERCROMBIE
GOVERNOR OF HAWAII

WILLIAM J. AILA, JR.
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

JESSE K. SOUKI
FIRST DEPUTY

WILLIAM M. TAM
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
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CONSERVATION AND COASTAL LANDS
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ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

DECLARATION OF EXEMPTION

from the preparation of an environmental assessment under the authority of Chapter 343, HRS and Chapter 11-200, HAR

Project Title: Kaua'i Seabird Monitoring and Protection

Project Description: This project will occur on the island of Kaua'i. The project will be funded through various State, and private sources. The proposed project is part of the Division of Forestry and Wildlife's seabird protection efforts through predator control and monitoring.

Exemption Class: DLNR, Division of Forestry and Wildlife, Class 5
Exempt Item Number: 2
Exempt Item Description: Game and non-game wildlife surveys, inventory studies, new transect lines, photographing, recording, sampling, collection and captive propagation (involves walking, driving, and flying in the field (helicopters, light aircraft), use of nets and firearms, temporary traps including snares, mist nets, corral traps, drop door traps or leg hold traps.
Exempt Item Number: 3
Exempt Item Description: Wildlife management actions including predator control, insect control, snail control, non-native bird control, controlled grazing or burning as a management tool and use of toxicants or herbicides. All use of chemicals follow label instructions or restrictions.
Date of Agency Exemption List: July 18, 2011

I have considered the potential effects of the above listed project as provided by Chapter 343, HRS and Chapter 11-200 HAR. I declare that this project will probably have minimal or no significant effect on the environment and is therefore exempt from the preparation of an environmental assessment under the above exemption classes.

_____
William J. Aila, Jr., Chairperson
Department of Land and Natural Resources

_____
Date

Original: Agency file
Copy: Project file