A Programmatic Safe Harbor Agreement Covering Hawaiian Goose, Duck, Moorhen, Coot, and Stilt for Participants of USDA Farm Bill Conservation Programs

DRAFT September 29, 2006

1. INTRODUCTION

This Safe Harbor Agreement (Agreement) is entered into on [date] by and among Garden Island Resource Conservation & Development, O`ahu Resource Conservation & Development, Tri-Isle Resource Conservation & Development, Big Island Resource Conservation & Development (collectively "RC&D"), the U.S. Department of the Interior, Fish and Wildlife Service (Service), the State of Hawai`i, Department of Land and Natural Resources (DLNR), by its Board of Land and Natural Resources (BLNR), hereinafter collectively called the "Parties." This Agreement will serve as a programmatic safe harbor agreement under which individual landowners (Cooperators) will be enrolled through Cooperative Agreements. This Agreement follows the Service's Safe Harbor Policy (64 FR 32717) and regulations (64 FR 32706) and implements the intent of the Parties to follow the procedural and substantive requirements of section 10(a)(1)(A) of the Endangered Species Act (ESA) and Hawaii Revised Statutes (HRS) §195D-22.

The purpose of this Agreement is to facilitate proactive conservation efforts by private and other non-Federal landowners in the State of Hawai`i while providing them certainty that future land use requirements under the State and Federal ESA will not be imposed if those efforts attract endangered Hawaiian goose (nene), Hawaiian duck (koloa), Hawaiian moorhen, Hawaiian coot, or Hawaiian stilt (collectively referred to as "covered species") to their enrolled properties or result in increased numbers or distributions of species already present. In return for voluntary conservation measures, this Agreement will extend to Cooperators assurances allowing future alteration or modification of their enrolled properties back to the original baseline conditions. Without this cooperative government-private effort, landowners are much less likely to manage habitat for the covered species in the foreseeable future. This Agreement, on the other hand, offers a way to secure the willingness of landowners to undertake such activities, or to allow others to undertake them on their land. Thus, it offers a means of improving the status quo.

Landowners must be enrolled in a USDA Natural Resources Conservation Service (NRCS) Farm Bill Conservation Program and operating under an NRCS Conservation Plan and contract to qualify for this Agreement. Cooperators who, through their management activities, intend to provide a net conservation benefit to one or more of these species will receive the option to enroll in the safe harbor program through their local RC&D. The biological goal of this Agreement is to aid in the restoration of the covered species by increasing the species and/or habitat baseline of enrolled properties through habitat restoration and management practices on those properties. This will be accomplished by: (1) providing technical assistance to Cooperators to restore and manage habitat for the covered species through NRCS, the Service, and DLNR, (2) providing financial assistance through NRCS Farm Bill Programs, and (3) offering optional safe harbor assurances through RC&D.

When signed, this Agreement will serve as the basis for the Service to issue an ESA section 10(a)(1)(A) Enhancement of Survival Permit and DLNR to issue an HRS §195D-4 Incidental Take License (collectively referred to as "permits") for the incidental taking of the species covered under this Agreement on enrolled lands. The permits will authorize RC&D and Cooperators to incidentally take individuals of the covered species, provided that baseline

conditions specified in their Cooperative Agreements are maintained. Although the permits will authorize incidental take of individuals above the baseline, the Parties anticipate that the maximum level of take under the permits will never be realized. Permit issuance will not preclude the need for RC&D and Cooperators to abide by all other applicable Federal, State, and local laws and regulations that may apply.

2. BACKGROUND

The recovery plans for each species recommend expanding partnerships with private landowners to restore and manage habitats through safe harbor agreements and NRCS Farm Bill Programs to meet criteria for initial downlisting and to support eventual delisting (USFWS 2004, 2005). Within the past 200 years, the State of Hawai`i has lost more than 31 percent of its coastal wetlands (Dahl 1990). Of the wetlands that remain, the majority are degraded by altered hydrology and invasive species. All five covered species are limited by lack of suitable habitat. Most of the opportunities to establish new partnerships to improve habitats occur on private lands. With 51 percent of the Hawaiian Islands held in private ownership which includes cropland, pastureland, and rangeland and 1 million of the state's 4.1 million acres in grazing land, garnering the support of private landowners on a broad scale is critically important to achievement of species recovery objectives. However, landowners may be reluctant to improve habitats that attract endangered species due to potential land use restrictions. In addition, most landowners of working landscapes do not have the time or inclination to get involved in the single-landowner, safe harbor agreement process, and technical assistance with biological surveys and habitat management is limited. This Agreement offers a new direction for safe harbors in the State of Hawai`i.

NRCS Farm Bill Conservation Programs offer landowners both technical and financial assistance to protect, restore, and enhance wetlands, grasslands, and other habitats through cost-sharing, rental payments, and conservation easements (Appendix A). NRCS will administer the Farm Bill portion of this Agreement in coordination with RC&D. Applicants will be screened and ranked under the NRCS State ranking system which is based on priority resource concerns and environmental and socioeconomic benefits. For example, extra ranking points may be given to projects that restore habitat for the covered species, are located in high priority watersheds, are compatible with agriculture, or protect open space. Each Cooperator will receive an NRCS Conservation Plan that promotes a holistic approach to resource management. NRCS will evaluate the soil, water, air, plant, and animal resources of each property to identify problems (e.g., sedimentation, pest species) and opportunities (e.g., fallow rotation, restore wildlife habitat) and formulate alternative treatments within the context of NRCS and Cooperator production and conservation goals (USDA 2005a). Site characteristics limiting habitat potential for the covered species will be addressed through a suite of conservation practices that meet NRCS standards and specifications (USDA 2005b) (see Appendix B). These practices will be the management activities specified in the Cooperative Agreement. The NRCS responsibilities under this Agreement are specified in the RC&D and NRCS Memorandum of Understanding (MOU; Exhibit 1). In addition to providing safe harbor assurances, this programmatic multi-species Agreement is expected to streamline the safe harbor agreement process, complement current and future recovery actions, and leverage the financial and technical resources of Farm Bill Programs with the regulatory assurances of the safe harbor program. These aspects have been associated with successful conservation programs across the country due their usefulness at

meeting varying landowner needs (Wilcove and Lee 2004). According the Service's Safe Harbor Policy (64 FR 32717), programmatic safe harbor agreements are expected to provide significant conservation benefits on a landscape scale.

3. COVERED SPECIES

This Agreement covers the following species. Background information on each species is provided in Appendix C.

Species	Population estimate*	Current distribution*
Hawaiian goose, nene (*Branta sandvicensis*)	1300	Kaua`i, Moloka`i, Maui, Hawai`i
Hawaiian duck, koloa maoli (*Anas wyvilliana*)	2200	Ni`ihau, Kaua`i, O`ahu?, Maui?, Hawai`i
Hawaiian moorhen, `alae `ula (*Gallinula chloropus sandvicensis*)	Unknown	Kaua`i, O`ahu
Hawaiian coot, `alae ke`oke`o (*Fulica alai*)	1500-3000	Ni`ihau, Kaua`i, O`ahu, Moloka`i, Lana`i, Maui, Hawai`i
Hawaiian stilt, ae`o (*Himantopus mexicanus knudseni*)	1200-1500	Ni`ihau, Kaua`i, O`ahu, Moloka`i, Lana`i, Maui, Hawai`i

*USFWS 2004, 2005

4. GEOGRAPHIC SCOPE

Non-Federal lands within the current and future range of the five covered species in the State of Hawai`i will be eligible for this Agreement. The land area where habitat work could occur is approximately 5,450 square miles (Exhibit 2). The Agreement will focus on properties that have suitable or potentially suitable habitat including open pasture, shrubland, wetland-associated uplands, riparian, and agricultural or natural wetlands from sea level to 9,800 feet elevation. Each RC&D will be responsible for its respective County (Garden Island RC&D – Kaua`i; O`ahu RC&D – O`ahu; Tri-Isle RC&D – Moloka`i, Lana`i, Kaho`olawe, Maui; Big Island RC&D – Hawai`i). Each Cooperative Agreement will include a map of the property with the enrolled area, tax map key number, description of enrolled area and habitat types, documentation of any surveys conducted to determine baseline, the survey results, management activities, and current land uses (Exhibit 3).

5. BASELINE DETERMINATION & MONITORING PROTOCOLS

The baseline conditions, undertaken by a person with qualifications satisfactory to the Service and DLNR, will be determined by surveys of the enrolled property. The baseline surveys will be conducted by NRCS or its representative with the assistance of the Cooperator and possibly the Service or DLNR or a person chosen by the Cooperator. For nene, the baseline will be a species baseline (number of birds). For koloa, moorhen, coot, and stilt, the baseline will be a habitat baseline (amount and condition of occupied habitat). In order to receive the assurances regarding take of the covered species, the Cooperator must maintain, on the enrolled property, at least as many birds (nene) or as much habitat of equal or better quality (koloa, moorhen, coot, stilt) as was determined when the Cooperator signed the Cooperative Agreement. The Cooperator, NRCS, and RC&D will monitor the improved conditions relative to the baseline conditions through surveys of the enrolled property. For details on the baseline determination and monitoring protocols, see Appendix D and E, respectively.

Due to the mobility and wide ranges of the covered species, a species baseline will not represent a resident population in most cases. All five species exhibit seasonal and/or daily intra-island movements and are known to make inter-island movements. The number of birds on a given property is expected to vary depending on external factors such as regional drought, local rainfall, productivity of feeding areas, availability of nesting sites, and the relative suitability of habitats on other parts of the island. Thus, the Cooperator is not responsible for any natural fluctuations in the number of birds occurring on the enrolled property as long as the Cooperator is meeting the terms of the Cooperative Agreement.

Baseline survey and monitoring protocols are not well developed for the covered species, particularly protocols that serve the purposes of this Agreement. Due to the variation likely to be encountered in size, topography, vegetation, and other features of enrolled lands, the protocols are designed to fit a broad range of properties. These protocols may be improved upon based on new information resulting from the Agreement or other scientific research. Changes would be agreed to by the Parties and NRCS in accordance with Section 11(a) Agreement Modifications below.

6. RESPONSIBILITIES OF PARTIES

The responsibilities of the Cooperators will be detailed in each Cooperative Agreement and, at a minimum, include those in the Cooperative Agreement Template (Exhibit 3). Specific responsibilities of Parties to this Agreement are as follows:

<u>RC&D</u>:

a. Hold Federal and State permits and enroll interested landowners into the program who have potentially suitable habitat for the covered species on their land;

b. Complete Cooperative Agreements (Exhibit 3) and issue Certificates of Inclusion (Exhibit 4) in coordination with NRCS as described in the RC&D and NRCS MOU (Exhibit 1);

c. Complete Neighboring Landowner Agreements (Exhibit 5) and assist with outreach.

d. Provide draft Cooperative Agreements to NRCS. NRCS will forward draft Cooperative Agreements to the Service and DLNR for review, Upon address of comments from the Service and DLNR, RC&D will finalize Cooperative Agreements and provide the Service, DLNR, and NRCS with copies of finalized Cooperative Agreements and Certificates of Inclusion;

e. Provide and discuss with Cooperators a handout on handling injured birds or bird carcasses (Appendix F);

f. Facilitate the flow of information between Cooperators and agencies;

g. Notify the Service and DLNR immediately when receiving notice from a Cooperator about an activity that is likely to result in the incidental taking of a covered species, to give DLNR,

possibly with the assistance of the Service, the opportunity to relocate the potentially affected species;

h. Notify the Service and DLNR immediately of any known mortalities or injuries of the covered species when receiving notice from a Cooperator;

i. Notify the Service and DLNR of any transfer of ownership of the enrolled lands so the Service, DLNR, and/or RC&D can attempt to contact the new owner, explain the baseline responsibilities, and seek to interest the new owner in the existing or a new Cooperative Agreement to benefit the covered species;

j. Monitor and assist Cooperators in remaining in compliance with the terms of the Cooperative Agreements; consult with the Service and DLNR if Cooperators are not in compliance; work with the Service and DLNR to evaluate and resolve non-compliance cases;

k. Participate in NRCS annual Status Review on site, as time permits; and

l. Prepare an annual report that covers the period from October 1 to September 30 and is due October 31 of the following period. The report will include a summary of the activities (outreach, status of Cooperative Agreements, monitoring results, and status reviews), any incidental take, program recommendations, and list of Cooperators; provide the Service, DLNR, and NRCS with copies of the report (Appendix G).

DLNR:

a. Upon execution of this Agreement and satisfaction of all other applicable legal requirements, issue a license to RC&D in accordance with HRS §195D-22 authorizing incidental take of the covered species, as a result of lawful activities within the enrolled property;

b. Conduct training in conjunction with the Service and NRCS for RC&D and NRCS staff who will be working with Cooperators enrolled in this Agreement;

c. Provide technical assistance, to the extent practicable, when requested throughout the term of the Agreement; and provide information on State funding programs;

d. Upon receipt of draft Cooperative Agreements, review for consistency with safe harbor program and provide comments to RC&D. Within 30 days, approve, comment, or request additional information.

e. Assist with monitoring, management activities, and removal of feral waterbirds (e.g., domestic mallards that have escaped and are living in the wild), to the extent practicable, when requested by the Cooperator;

f. Attempt to relocate birds that are in unsuitable or unprotected locations; collect carcasses for necropsy (Appendix F);

g. Review annual reports for compliance with terms of this Agreement including the biological monitoring results relative to baseline conditions and any authorized take of the covered species;

h. Work with RC&D and the Service to evaluate non-compliance cases and make recommendations to resolve issues or revoke Certificates of Inclusion;

i. Ensure RC&D is implementing the terms of the Agreement.

Service:

a. Upon execution of the Agreement and satisfaction of all other applicable legal requirements, issue an Enhancement of Survival Permit to RC&D in accordance with ESA section 10(a)(1)(A) authorizing incidental take of the covered species as a result of lawful activities within enrolled properties;

b. Conduct training in conjunction with DLNR and NRCS for RC&D and NRCS staff who will be working with Cooperators enrolled in this Agreement.

c. Provide technical assistance, to the extent practicable, when requested throughout the term of the Agreement; and provide information on Federal funding programs;

d. Upon receipt of draft Cooperative Agreements, review for consistency with safe harbor program and provide comments to RC&D. Within 30 days, approve, comment, or request additional information.

e. Assist with monitoring and management activities, to the extent practicable, when requested by the Cooperator;

f. Review annual reports for compliance with terms of this Agreement including the biological monitoring results relative to baseline conditions and any authorized take of the covered species;

g. Work with RC&D and DLNR to evaluate non-compliance cases and make recommendations to resolve issues or revoke Certificates of Inclusion;

h. Ensure RC&D is implementing the terms of the Agreement.

7. DURATION OF AGREEMENT AND PERMITS

This Agreement, including obligations of the Parties and any commitments related to funding, becomes effective upon issuance of the permits described in Section 6 above, and will be in effect for 50 years following the date of its signing by the Parties. Except as otherwise provided by this Agreement, the permits authorizing incidental take of the covered species will also have durations of 50 years from their effective dates. The Agreement may be renewed prior

to expiration, and the permits may be extended through amendment without renegotiating the terms of the Agreement and with concurrence of the Parties.

RC&D may enroll Cooperators under Cooperative Agreements from the date this Agreement is signed until 10 years before it expires. The durations of Cooperative Agreements will vary depending on the expected net conservation benefits and desire of the Cooperator, but the minimum duration will be 10 years (15 years on public land). The duration of the Cooperative Agreement will also be related to the service life of the NRCS conservation practices (determined nationally by NRCS as the time it will take for the practice to achieve its intended purpose) and/or duration of the Farm Bill contract. The life of a structural practice (e.g., installing fencing or herbaceous buffers) is generally 10 to 15 years, whereas, a management practice (e.g., pest control or wildlife habitat management) will match the duration of the Farm Bill contract, typically 10 years. Exceptions to the 10-year minimum for Cooperative Agreements may be approved by the NRCS Biologist and the Parties to this Agreement.

Upon the signing of a Cooperative Agreement, RC&D will issue a Certificate of Inclusion to the Cooperator authorizing incidental take of the covered species on the enrolled lands for the total number of years remaining on the permits. The rights and obligations under this Agreement and Cooperative Agreements shall run with the ownership of the enrolled lands and are transferable to subsequent property owners in accordance with Code of Federal Regulations (CFR) 50 CFR 13.25 and HRS §195D-22(d).

8. NET CONSERVATION BENEFIT

Implementation of this Agreement is expected to provide a net conservation benefit to the five covered species because of the collective conservation activities of multiple Cooperators across the state over a 50-year period. This Agreement provides a mechanism to protect, restore, and manage the covered species and their habitats on private lands as recommended in species' recovery plans (USFWS 2004, 2005) and strategies (Mitchell et al. 2005) and is expected to increase the probability that the five covered species will survive, establish new breeding populations, and expand their ranges beyond current distributions (see Appendix H for further discussion).

9. ASSURANCES TO RC&D AND COOPERATORS REGARDING TAKE OF COVERED SPECIES

Provided that take is consistent with maintaining the baseline conditions described in Section 5 of this Agreement and Section D of the Cooperative Agreements, the permits referenced in Section 6 of this Agreement shall authorize RC&D and respective Cooperators to take the covered species and/or their habitat incidental to otherwise lawful activities in the following circumstances:

a. Implementing the management activities identified in the Cooperative Agreement;

b. Carrying out any lawful activity on the enrolled property after management activities identified in the Cooperative Agreement have been initiated; and

c. Returning the enrolled property to baseline conditions after the terms of the agreements have been fully implemented and prior to expiration of the permits.

Without any limitation on the general nature of the incidental take authorized under this Agreement, RC&D and Cooperators shall not be held responsible for any death or injury of the covered species resulting from a *force majeure* event. *Force majeure* means events that are beyond the reasonable control of, and did not occur through the fault of or negligence of, RC&D or Cooperator, including but not limited to: "Acts of God" or sudden actions of the elements including fire, excessive rainfall, and drought. Should a *force majeure* event occur that results in injury or death of the covered species on the enrolled lands and the Cooperator has knowledge of the event, then the Cooperator shall report such an event to RC&D (or RC&D, the Service, DLNR) who will report the event to the Service and DLNR within 10 days of the occurrence.

10. ADAPTIVE MANAGEMENT

Cooperative Agreements and NRCS Conservation Plans will incorporate adaptive management strategies to allow for mutually agreed-to changes to conservation measures in response to changing conditions or new information. If conservation measures appear ineffective, management activities can be changed or new activities undertaken to achieve desired results. Adaptive management recommendations can be made at any time by the Parties, NRCS, or Cooperator. A summary of this Agreement will be made after the 5th annual report to monitor progress toward conservation goals. Decisions related to adaptive management will be based on the monitoring results and other information in annual reports.

11. MODIFICATIONS

After execution of this Agreement, the Parties may not impose any new requirements or conditions on, or modify any existing requirements or conditions applicable to, a Cooperator or successor in interest to the Cooperator, except as stipulated in 50 CFR 17.22(c)(5) and 17.32(c)(5) and HRS §195D-22(c) and §195D-23(a).

a. Agreement Modification. Any Party may propose modifications or amendments to this Agreement as provided by 50 CFR 13.23 and HRS §195D-23, by providing written notice to the other Parties. Such notice shall include a statement of the proposed modification, the reason for it, and its expected results. If management activities need to be modified to improve benefits to the covered species, in the Agreement, the modifications will affect future, not existing, Cooperative Agreements, unless existing Cooperators concur with modifications. The Parties will make their best efforts to respond to proposed modifications within 30 days of receiving the notice. Proposed modifications will become effective upon the other Parties' written concurrence.

b. Agreement Termination. As provided for in Part 12 of the Service's Safe Harbor Policy (64 FR 32717) and HRS §195D-22(b)(3) and §195D-22(d), RC&D may terminate the Agreement after five years and before its expiration date for circumstances beyond their control. Termination may occur upon 180 days prior written notice to the other Parties including all Cooperators with Cooperative Agreements. As long as Cooperators carry out their

responsibilities in their Cooperative Agreements, termination of this Agreement will not affect the Cooperators' authorization to take the covered species above baseline for the duration of the permits.

c. Permit Amendment. The permits may be amended to accommodate changed circumstances in accordance with all applicable legal requirements, including but not limited to the ESA, the National Environmental Policy Act, the Service's permit regulations at 50 CFR 13 and 17, and the State of Hawaii's regulations at HRS §195D-23. Any Party may propose amendments to the permits by providing written notice to the other Parties. Such notice shall include a statement of the proposed amendment, the reason for it, and its expected results. The Parties will make their best efforts to respond to proposed modifications within 30 days of receiving the notice. Proposed amendments will become effective upon fulfillment of the legal requirements stated above.

d. Permit Suspension or Revocation. The Service may suspend or revoke the Federal permit for cause in accordance with the laws and regulations in force at the time of such suspension or revocation. The Service also, as a last resort, may revoke the Federal permit if continuation of permitted activities would likely result in jeopardy to covered species under 50 CFR 13.28(a). In such circumstances, the Service will exercise all possible measures to remedy the situation. The BLNR may suspend or revoke the State license for cause pursuant to HRS §195D-4(h).

e. Cooperative Agreement Modification. RC&D or Cooperators may propose modifications or amendments to Cooperative Agreements by providing written notice to the other party. Such notice shall include a statement of the proposed modification, reasons, and expected results. RC&D and the Cooperator will make their best efforts to respond to the proposed modifications within 30 days of receiving the notice. Proposed modifications will become effective upon the other party's written concurrence.

f. Cooperative Agreement Succession and Transfer. The rights and obligations under the Cooperative Agreement shall run with the ownership of the enrolled property and are transferable to subsequent private property owners pursuant to 50 CFR 13.25 and HRS §195D-22(d). By becoming a party to the original Cooperative Agreement and Certificate of Inclusion, the new owner will have the same rights and obligations with respect to the enrolled property as the original owner at the original baseline. The Cooperator shall notify RC&D (or RC&D, Service and DLNR) of any transfer of ownership at least 60 days prior to the intended transfer, so that RC&D can notify the Service and DLNR and attempt to contact the new owner, explain the terms of the agreement, and seek to interest the new owner in signing the existing Cooperative Agreement to benefit the covered species.

g. Cooperative Agreement Termination. As provided for in Part 12 of the Service's Safe Harbor Policy (64 FR 32717), Cooperators may terminate their Cooperative Agreements at any time, for circumstances beyond their control, upon written notification to RC&D. In such circumstances, Cooperators may return enrolled properties to baseline conditions in accordance with Section 12(c) of this Agreement even if the expected net conservation benefits have not been realized. Cooperators also may terminate their Cooperative

Agreements at any time for any other reason, upon written notification to RC&D; however, termination for reasons other than circumstances beyond their control shall extinguish the Cooperator's authority to incidentally take the covered species or their habitats under the permits and the Cooperator must relinquish the Certificate of Inclusion to RC&D.

h. Certificate of Inclusion Suspension or Revocation. RC&D, the Service, or DLNR may suspend or revoke the Certificate of Inclusion if a Cooperator has breached the obligations under the Cooperative Agreement, has failed to cure the breach in a timely manner, and the effect of the breach is to diminish the likelihood that the Cooperative Agreement will achieve its goals.

i. Inability of RC&D to Continue. If prior to the expiration of the permits, RC&D should cease to exist or cease to be able to continue administering the Agreement and no other entity satisfactory to the Service and DLNR is willing to assume responsibilities, RC&D will relinquish its permits to the Service and DLNR. The Service and DLNR will convert the Certificates of Inclusion previously issued by RC&D to Cooperators into freestanding permits that authorize the same actions by the Cooperators as had been authorized by the Certificates of Inclusion, provided the Cooperators agree to fulfill the management activities for their properties, as well as the administrative, monitoring, and reporting requirements, for the enrolled properties, as outlined in this Agreement.

j. Other Listed or Candidate Species. The possibility exists that other listed, proposed, or candidate species may occur in the future on an enrolled property as a result of voluntary conservation measures specified in Cooperative Agreements. If that occurs, as determined through biological surveys, the Parties may agree to amend the agreements and permits to cover additional species, at RC&D's request. If biological surveys determine that the species was not present prior to conservation measures, then the baseline may be set at zero. The Service and DLNR will recommend measures for providing net conservation benefits to such species. If candidate species should occur on the enrolled property, the Service will recommend measures for including them in a joint Candidate Conservation Agreement with Assurances.

12. OTHER MEASURES

a. Privacy. The Parties and NRCS agree to share information on Cooperators to the extent necessary for implementing this Agreement. Disclosure of Cooperator information outside the purposes of this Agreement will be released in accordance with Section 2004.1244(b) (Privacy of Personal Information Relating to NRCS Programs) of the Farm Security and Rural Investment Act of 2002, the Privacy Act of 1974, Freedom of Information Act, 5 USC 552, and HRS §92F. The Parties agree to inform a Cooperator within three days, if a third party requests information pertaining to that Cooperator that is outside of routine use.

b. Neighboring Landowners. Cooperators will be highly encouraged to include their neighbors in early discussions regarding habitat improvements and development of Cooperative Agreements. If voluntary conservation measures under this Agreement result in the covered species occupying adjacent or nearby properties, the Service and DLNR will use the

maximum flexibility allowed under the laws to address neighboring properties under this Agreement and permits. The implications to neighboring landowners and the potential need to actively address these implications will be determined on a case-by-case basis. The Parties will strive to provide assurances to neighboring landowners who may be affected by the covered species through Cooperative Agreements or Neighboring Landowner Agreements (Exhibit 5).

c. Restrictions on Taking Property Back to Baseline. The covered species may not be captured, killed, or otherwise directly taken. Cooperators will notify RC&D (or RC&D, the Service, and DLNR) at least 60 days prior to the activity that would return an enrolled property to baseline conditions. The Service and DLNR will be given the opportunity to relocate the covered species (those above baseline), if appropriate. The activities will be carried out during the nonbreeding season of the covered species when possible (see Appendix C for breeding information) and prior to the expiration of permits.

d. Remedies. Each party shall have all remedies otherwise available to enforce the terms of the Agreement and permits, except that no party shall be liable in damages for any breach of this Agreement, any performance or failure to perform an obligation under this Agreement, or any other cause of action arising from this Agreement.

e. Dispute Resolution. The Parties agree to work together in good faith to resolve any disputes, using dispute resolution procedures agreed upon by all Parties.

f. Availability of Funding. The responsibilities of RC&D will be funded in part by NRCS during the first 1 to 2 years of this Agreement. RC&D will seek funding from Federal, State, and private grants for subsequent years. The responsibilities of DLNR under this Agreement will be funded by DLNR using existing or new Federal grants and the State of Hawai`i General Fund LNR 402 Appropriations. Management activities undertaken by Cooperators will be cost-shared by the appropriate NRCS Farm Bill Program, Cooperators, and possibly other partners.

   Implementation of this Agreement is subject to the funding availability for RC&D, the requirements of the Federal Anti-Deficiency Act, and the availability of appropriated funds. Nothing in this Agreement will be construed by the Parties to require the obligation, appropriation, or expenditure of any funds from the U.S. or State Treasury. The Parties acknowledge that the Service, DLNR, and NRCS will not be required under this Agreement to expend any Federal or State agency's appropriated funds unless and until an authorized official of that agency affirmatively acts to commit to such expenditures as evidenced in writing.

g. Relationship to Other Agreements. The responsibilities of NRCS, under this Agreement, are described in the RC&D and NRCS MOU (Exhibit 1). Each Cooperator's conservation practices are described in the NRCS Conservation Plan and contract. The means for interagency collaboration on Farm Bill Programs between NRCS and the Service are described in the 2002 USDA and USDOI MOU and the Service's policy on WRP (504 FW 3).

h. No Third-party Beneficiaries. This Agreement does not create any new right or interest in any member of the public as a third-party beneficiary, nor shall it authorize anyone not a party to this Agreement to maintain a suit for personal injuries, damages, injunctive or other relief pursuant to the provisions of this Agreement. The duties, obligations, and responsibilities of the Parties to this Agreement with respect to third parties shall remain as imposed under existing law.

i. Liability. RC&D assumes no liability for injury to any employee or representative of the Cooperator, the Service, DLNR, or other mutually agreed upon party in the course of any visit to a Cooperator's property, except in those circumstances in which injury is due to negligence of RC&D. RC&D, the Service, DLNR, or other mutually agreed upon party shall not be liable for any damage to a Cooperator's property arising from any visit to the property, except if damage is the result of RCD's, the Service's DLNR's, or other party's negligence, respectively.

j. Notices and Reports. Any notices and reports, including monitoring and annual reports, required by this Agreement shall be delivered to the persons listed below, as appropriate. Names and addresses may be changed by written notice to all Parties.

President
Garden Island RC&D Council
3083 `Aikahi Street, Suite 204
Lihu`e, Hawai`i 96766

President
O`ahu RC&D Council
R.L. Cushing Building
99-193 Aiea Heights Drive, Suite 207
`Aiea, Hawai`i 96701

President
Tri-Isle RC&D Council
210 Imi Kala Street, Suite 208
Wailuku, Hawai`i 96793

President
Big Island RC&D
Hilo Lagoon Center
101 Aupuni Street, Suite 229A
Hilo, Hawai`i 96720

Administrator
Hawai`i Department of Land and Natural Resources
Division of Forestry and Wildlife
1151 Punchbowl Street, Room 325
Honolulu, Hawai`i 96813

Field Supervisor
Pacific Islands Fish and Wildlife Office
U.S. Fish and Wildlife Service
300 Ala Moana Boulevard, Room 3-108
P.O. Box 50088
Honolulu, Hawai`i 96850

13. REFERENCES

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USDA Natural Resources Conservation Service. 2005a. National Planning Procedures Handbook, Amendment 4, no. 180-600, parts 600.1 and 600.2. Found at: http://policy.nrcs.usda.gov/scripts/lpsiis.dll/H/H_180_600.htm

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U.S. Fish and Wildlife Service. 2005. Draft Revised Recovery Plan for the Hawaiian Waterbirds, 2nd Draft of 2nd Rev. U.S. Fish and Wildlife Service, Portland, OR. 155 pp.

Wilcove, D.S. and J. Lee. 2004. Using economic and regulatory incentives to restore endangered species: Lessons learned from three new programs. Conservation Biology 18(3):639-645.

IN WITNESS WHEREOF, THE PARTIES HERETO have executed this Safe Harbor Agreement to be in effect as of the date last signed below.

_____ _____
Gilbert Peter Kea, President Date
Garden Island RC&D Council

_____ _____
David Bremer, President Date
O`ahu RC&D Council

_____ _____
Gilbert S. Keith-Agaran, President Date
Tri-Isle RC&D Council

_____ _____
Larry Komata, President Date
Big Island RC&D Council

_____ _____
Peter T. Young, Chairperson Date
Board of Land and Natural Resources
State of Hawai`i, Department of Land and Natural Resources

_____ _____
Patrick Leonard, Field Supervisor Date
U.S. Department of the Interior, Fish and Wildlife Service
Honolulu, Hawai`i

APPROVED AS TO FORM

_____
Deputy Attorney General
State of Hawai`i

EXHIBITS

Exhibit 1	RC&D and NRCS MOU
Exhibit 2	Map of Area Covered by this Agreement, State of Hawai`i
Exhibit 3	Cooperative Agreement Template
Exhibit 4	Certificate of Inclusion Template
Exhibit 5	Neighboring Landowner Agreement Template

Exhibit 1 RC&D and NRCS MOU

Memorandum of Understanding between the Resource Conservation & Development Councils (Hawai`i) and the Natural Resources Conservation Service United States Department of Agriculture (Hawai`i)

This Memorandum of Understanding (MOU) is entered into by and between the Garden Island, O`ahu, Tri-Isle, and Big Island Resource Conservation & Development Councils, hereinafter referred as "the Councils," and the Natural Resources Conservation Service, United States Department of Agriculture (Hawai`i), hereinafter referred as "NRCS."

Authority:

For NRCS. Agriculture and Food Act of 1981 (P.L. 97-98), 16 U.S.C. 3451-3461, as amended by the Food, Agriculture, Conservation, and Trade Act of 1990 (P.L. 101-624), Section 1452, and Farm Security and Rural Investment Act of 2002 (P.L. 107-171), Title II, Section 1530.

For the Councils. Food and Agricultural Act of 1962 (P.L. 87-703), Section 102; Agriculture and Food Act of 1981 (P.L. 97-98), Sections 1528-1538; Federal Agricultural Improvement and Reform Act of 1996 (P.L. 104-127), Section 383; and Farm Security and Rural Investment Act of 2002 (P.L. 107-171), Title II, Sections 1528-1537.

Purpose

The purpose of this MOU is to set forth the terms and conditions of a cooperative effort between the Councils and NRCS for the mutual sharing of expertise and facilities to begin the cooperative work of the Programmatic Safe Harbor Agreement Covering Hawaiian Goose, Duck, Moorhen, Coot, and Stilt for Participants of USDA Farm Bill Conservation Programs (SHA). This MOU is a supplement to the SHA.

Background:

On [date], the Councils, the U.S. Fish and Wildlife Service (Service), and the State Department of Land and Natural Resources (DLNR) signed the SHA to facilitate habitat restoration and management for the endangered Hawaiian goose, Hawaiian duck, Hawaiian moorhen, Hawaiian coot, and Hawaiian stilt in the State of Hawai`i, combining NRCS Farm Bill Programs with safe harbor assurances. The SHA is intended to ensure NRCS Cooperators (landowners) that their beneficial stewardship activities will not result in additional regulatory restrictions under the Endangered Species Act (ESA).

In accordance with the Department of Agriculture, Resource Conservation & Development, and Policy Advisory Board Member Agencies (including NRCS) MOU, NRCS 67-3A75-0-69, signed October 2001, the parties intend to (1) Conserve natural resources, (2) Increase awareness and utilization by communities of USDA programs and outreach resources, (3) Find effective

ways to deliver an integrated package of USDA services that are responsive to identified community needs, and (4) Maximize efficiency and effectiveness in use of the limited resources of both USDA agencies and the Councils.

The most important functions and activities of the MOU are to:

- Coordinate the implementation of the SHA.
- Outline the responsibilities of the parties and provide guidance on how the parties will interface with each other, the Service, DLNR, and Cooperators under the SHA.
- Provide a mechanism for technical support services that streamline the SHA process for Cooperators.
- Facilitate habitat restoration and management for declining species and increase conservation of natural resources through NRCS Farm Bill Programs.

Specifics

A. NRCS agrees to:

1. Designate an NRCS contact for the Councils on matters related to the SHA (State Office).
2. Conduct SHA training, in conjunction with the Service and DLNR, for Council members or staff who will be directly involved with NRCS Cooperators enrolling in the SHA (State Office).
3. Be familiar with the SHA terms. Inform Cooperators who plan to improve habitat for one or more of the five endangered birds about the SHA enrollment options. Refer interested Cooperators to the Council (Field Offices).
4. Do conservation planning for Farm Bill Programs (Field Offices).
    a. Assist Cooperators in applying for financial assistance through Farm Bill Programs, as appropriate, to complete the habitat improvements.
    b. Complete all conservation planning and technical assistance activities per Farm Bill Program requirements for Cooperators enrolled in this SHA.
    c. Ensure that National Environmental Policy Act, National Historic Preservation Act, and section 7 of ESA requirements are met.
    d. When necessary, coordinate the restoration planning with the Service and DLNR biologists to ensure that maximum wildlife benefits and/or wetland functions and values will be achieved taking into consideration the cost of such restoration.
    e. Ensure that conservation practices meet standards and specifications contained in the NRCS Hawai`i Field Office Technical Guide.

5. Conduct baseline determinations, when requested, during the inventory stage of planning as described in the SHA (State Office/Field Offices).

6. Assist Cooperator in monitoring the success of the project relative to baseline determination as described in the SHA (Field Offices).

7. Complete annual Status Review for active Farm Bill contracts. Invite Cooperator and Council representative to participate (Field Offices).

8. Provide pertinent information from the Conservation Plan to the Councils to complete the Cooperative Agreements (i.e., baseline determination, conservation practices, project map), Neighboring Landowner Agreements, and annual reports (i.e., results of monitoring, status reviews), and assist the Councils in drafting these agreements as described in the SHA (Field Offices).

9. Review fact sheets and brochures developed by the Councils (State Office).

10. Provide information to the Councils and Cooperators on additional funding sources (State Office).

B. The Councils agree to:

1. Designate a contact for each Council on matters related to the SHA.

2. Participate in SHA training for Council members or staff who will be directly involved with NRCS Cooperators enrolling in the SHA.

3. Conduct outreach on the SHA. Prepare fact sheets and brochures for distribution to landowners.

4. Serve as primary contact for the SHA. Provide information to Cooperators interested in the SHA. Complete Cooperative Agreements and issue Certificates of Inclusion, complete Neighboring Landowner Agreements, and facilitate the flow of information between Cooperators, NRCS, the Service, and DLNR as described in the SHA.

5. Participate in annual Status Review on site with NRCS, as time permits, to see status of project and evaluate program. Summarize yearly activities and submit a report to NRCS, the Service, and DLNR. Include the results of the annual Status Review and monitoring as described in the SHA.

6. Maintain files on each Cooperator enrolled in the SHA.

7. Apply for grants or develop program to support the SHA, as appropriate, and assist Cooperators with matching grants for habitat restoration and management, to the extent practicable.

8. Provide adequate office space and appropriate support services for Council members or staff to carry out the tasks of the SHA.

C. It is mutually understood and agreed:

1. This MOU shall be effective on [date] and will remain in force until terminated.

2. Each Council is a separate entity. Each Council participates in this MOU independently of the other Councils. There are no shared responsibilities among the Councils under this MOU.

3. This MOU is not to be construed as an instrument to exchange funds for any purpose. The Councils and NRCS may develop supplemental instruments to the MOU to affect the exchange of funds.

4. The participation of NRCS, as a Federal agency, is not intended to place it or the Councils in a position incurring liability for any claims that might arise as a result of the activities carried out under this MOU. Each party has complete responsibility for acts of and injury to, or injury and damage caused by its own personnel and its own property.

5. All equipment purchased for the office shall be property of the contributing agency (either NRCS or the Councils) in the event of dissolution of this MOU unless otherwise agreed upon. An equipment inventory indicating ownership, costs, and condition of each item under the auspices of the office shall be maintained and made available to the parties.

6. Implementation of this MOU is subject to the availability of funding for RC&D and NRCS to effectively carry out the responsibilities outlined in this MOU.

7. All questions and contacts regarding this MOU shall be directed to the Pacific Islands Area Director, or their designated representative, on behalf of NRCS, or to the President of the appropriate Council, or their designated representative, on behalf of that Council.

8. This MOU may be amended or modified by the authorizing officials of the Councils and NRCS, with agreement from both parties.

9. This MOU may be terminated by an authorized official of the Councils or NRCS, upon written notification to the other party at least 60 calendar days prior to the effective date of the termination.

10. By signing this MOU, the Councils assure the Department of Agriculture that the program or activities provided for under this MOU will be conducted in compliance with all applicable Federal civil rights laws, rules, regulations, and policies.

RESOURCE CONSERVATION & DEVELOPMENT

By: _____
GILBERT PETER KEA
Title: President, Garden Island RC&D Council

Date: _____

By: _____
DAVID BREMER
Title: President, O`ahu RC&D Council

Date: _____

By: _____
GILBERT S. KEITH-AGARAN
Title: President, Tri-Isle RC&D Council

Date: _____

By: _____
LARRY M. KOMATA
Title: President, Big Island RC&D Council

Date: _____

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

By: _____
LAWRENCE T. YAMAMOTO
Title: Director, Pacific Islands Area

Date: _____

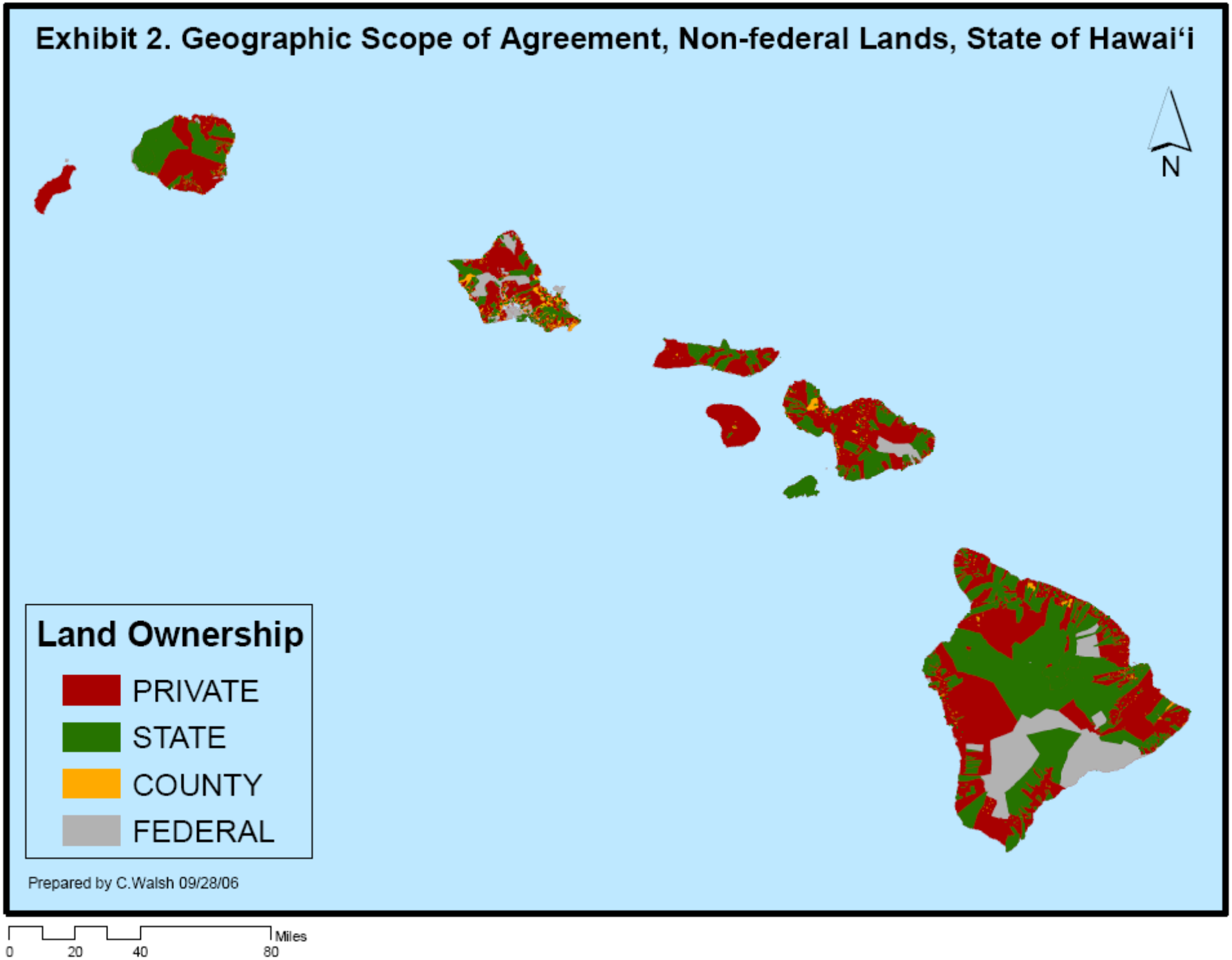
Exhibit 2. Geographic Scope of Agreement, Non-federal Lands, State of Hawai'i
N
Land Ownership
PRIVATE
STATE
COUNTY
FEDERAL
Prepared by C.Walsh 09/28/06
Miles
0
20
40
80

Exhibit 3 Cooperative Agreement Template

COOPERATIVE AGREEMENT
HABITAT FOR HAWAIIAN BIRDS

This Cooperative Agreement #[reference number] between [island] Resource Conservation and Development Council (RC&D) and [landowner] (Cooperator) is intended to (1) promote good land stewardship through Farm Bill Programs to benefit endangered Hawaiian goose (nene), duck (koloa), moorhen, coot, and stilt (collectively "covered species") and (2) provide assurances to the Cooperator that no additional requirements under the Endangered Species Act (ESA) will be imposed on the enrolled property as a result of their voluntary conservation activities. This Cooperative Agreement is a prerequisite for obtaining a Certificate of Inclusion under the RC&D safe harbor permits (Programmatic Agreement) with the U.S. Fish and Wildlife Service (Service) and State Department of Land and Natural Resources (DLNR).

A. **Enrolled Property**. The Cooperator owns or leases property at TMK [#] in the [District] District on the Island of [island] that contains suitable or potentially suitable habitat for the covered species. The Cooperator will enroll [#] acres of this property under the safe harbor program (see attached map).

B. **Access to Enrolled Property**. The Cooperator agrees to allow RC&D or its representative reasonable access to their property for the purposes of monitoring and preparing annual reports. The Cooperator agrees to allow DLNR, the Service, or its representatives reasonable access to their property to assess habitats, monitor, and handle birds as necessary. Site visits will occur, whenever possible, in coordination with NRCS and at times convenient to the Cooperator to minimize the Cooperator's time commitment. RC&D and agencies will provide reasonable advance notice for access requests.

C. **Liability**. The Cooperator assumes no liability for injury to any employee or representatives of RC&D, the Service, DLNR, or other mutually agreed upon party in the course of any visit to the property, except in those circumstances in which injury is due to negligence of the Cooperator. RC&D, the Service, DLNR, or other mutually agreed upon party shall not be liable for any damage to the property of the Cooperator arising from any visit to the property, except if damage is the result of RC&D's, the Service's, DLNR's, or other party's negligence, respectively.

D. **Baseline determination**. Based on the survey conducted on the Cooperator's property on [dates] by [name, title, organization] the following has been determined.

i. Species Status.

Species	Currently occupies property?	If yes, what is status? Occurrence	Breeding	Range
Nene	☐ Y ☐ N	_____	_____	
Koloa	☐ Y ☐ N	_____	_____	_____
Hawaiian moorhen	☐ Y ☐ N	_____	_____	_____
Hawaiian coot	☐ Y ☐ N	_____	_____	_____
Hawaiian stilt	☐ Y ☐ N	_____	_____	_____

Occurrence: Common - regular visitor, likely to be seen; Regular - regular visitor, but not certain to be seen; Occasional - seen only a few times in the past year. Breeding: Breeding – evidence of reproduction (egg, nests, chicks); Nonbreeding - no evidence of reproduction; Unknown. Range: Est. low – high count of birds currently occupying the enrolled property.

ii. Baseline Determination.

Species	Covered by agreement?	Habitat amount (ac or mi) and type	No. of birds
Nene	☐ Y ☐ N		_____
Koloa	☐ Y ☐ N	_____	
Hawaiian Moorhen	☐ Y ☐ N	_____	
Hawaiian Coot	☐ Y ☐ N	_____	
Hawaiian Stilt	☐ Y ☐ N	_____	

E. **Management Activities**.

i. Standard Activities

The Cooperator agrees to implement conservation measures to improve one or more of the following habitat types:

- ☐ Wetlands – Restore, enhance, or create wetlands habitat (primarily for koloa, moorhen, coot, or stilt); protect and enhance associated uplands.
- ☐ Uplands (nonwetland or nonriverine lands at any elevation) – Protect and enhance uplands habitat by improving vegetation structure, composition, and dynamics (primarily for nene or koloa).

- ☐ Riparian – Protect, maintain, and/or restore the physical, chemical, and biological functions of the riparian zone and associated habitats (one or more of the covered species present and/or likely to benefit).
- ☐ Other – Describe (NRCS Biologist approval required).

_____

_____

_____

In addition, the Cooperator agrees to include the following management activities:

- ☐ Minimize human activity in habitat areas, particularly when birds are breeding; for example, use alternate roads during the breeding season and schedule burns or major construction projects, that may affect habitat areas, during the nonbreeding season.
- ☐ Conduct a predator/feral ungulate assessment; control predators/feral ungulates as needed in habitat areas through habitat modification, exclusion (e.g., fencing), or control (e.g., trapping, baiting, hunting, bio-control).
- ☐ Disallow introduction of nonnative waterfowl (e.g., mallards) and remove any feral waterfowl from habitat areas. Contact the local Division of Forestry and Wildlife (DOFAW) office for technical assistance on removal.
- ☐ Refrain from directly feeding or interacting with nene and other native birds to keep them wild.
- ☐ If applicable, control access by livestock and other domestic animals to habitat areas through various means such as fencing, prescribed grazing, penning, and providing alternate water sources.

ii. Optional Activities

The Cooperator may also elect to include one or more of the following management activities:

- ☐ Control or eradicate one or more noxious plant species that directly or indirectly threaten the covered species.
- ☐ Develop a nutrient management plan that minimizes nonpoint sources pollution and effects of nutrients and soil amendments on habitats of the covered species.
- ☐ Develop a pest management plan that minimizes any negative effects of pest management practices (e.g., mowing, burning, herbicides) on water resources and native birds yet maintains adequate food, cover, and nesting materials during bird breeding seasons.
- ☐ Flood fallow fields with shallow water to supplement habitat for breeding or migrating waterbirds.
- ☐ Develop a livestock grazing plan that includes rotational grazing to improve watershed functions.

- ☐ Establish a reasonable buffer zone around habitat areas to further reduce impacts of day-to-day activities and prevent incidental take.
- ☐ Participate in bi-annual State waterbird surveys using the guidelines and forms found at http://www.dofaw.net/. The information will entered into a statewide database for trend analysis:
  - ☐ With the proper training, I am willing to conduct the survey and submit forms to the local DOFAW office; OR
  - ☐ With reasonable notice, I am willing to allow a DOFAW representative to conduct the survey on my land.
- ☐ Participate in State nene surveys conducted every few years. The information will be entered into a statewide database for trend analysis:
  - ☐ With the proper training, I am willing to conduct the survey and submit forms to the local DOFAW office; OR
  - ☐ With reasonable notice, I am willing to allow a DOFAW representative to conduct the survey on my land.;
  - ☐ I am willing to record and submit nene bands to the State banding coordinator.

F. **Responsibilities of the Cooperator.**

i. The Cooperator agrees to carry out the project with intent to provide a net conservation benefit to the covered species using NRCS standards and specifications as described in their NRCS Conservation Plan.

ii. The Cooperator agrees to maintain any species baseline established and avoid negative impacts to the covered species to the extent practicable.

iii. The Cooperator agrees to provide a 30-day advance notice to RC&D (or RC&D, the Service, and DLNR) regarding an activity that is likely to result in the incidental taking of a covered species to allow RC&D to inform the Service and DLNR and provide DLNR, possibly with the assistance of the Service, the opportunity to relocate the potentially affected species.

iv. Follow guidelines provided by RC&D for handling injured birds or bird carcasses. The Cooperator agrees to inform RC&D (or RC&D, the Service, and DLNR) within three days of finding any injured or dead birds throughout the term of the Certificate of Inclusion.

v. Perform biological monitoring at least twice per year (Appendix E) and provide results to RC&D. Monitoring can also be conducted by a qualified individual of the Cooperator's choice.

vi. Assist RC&D in compiling an annual report on activities related the Cooperative Agreement.

G. **Responsibilities of RC&D**.

i. Serve as primary contact for Cooperator and facilitate the flow of information between Cooperator and agencies; provide information on funding programs.

ii. Notify the Service and DLNR immediately when receiving notice from the Cooperator about an activity that is likely to result in incidental take, injured or dead birds, or ownership change in the enrolled lands.

iii. Monitor and assist Cooperators in remaining in compliance with the terms of the Cooperative Agreement.

iv. Compile an annual report with assistance from the Cooperator on activities related to the Cooperative Agreement.

v. Implement other RC&D responsibilities described in the Programmatic Agreement.

H. **Expected Net Conservation Benefits to the Covered Species**.

☐ Reduction of habitat fragmentation rates
☐ Maintenance, restoration, or enhancement of habitats
☐ Increase in habitat connectivity
☐ Maintenance or increase of population numbers or distribution
☐ Reduction of the effects of catastrophic events
☐ Establishment of buffers for protected areas
☐ Establishment of areas to test and develop new and innovative conservation strategies
☐ Contribution to research knowledge, management techniques, and/or conservation strategies
☐ Other (please explain): _____
_____
_____

I. **Assurances to Landowner Regarding Incidental Take of Covered Species**.

Provided that the baseline conditions are maintained and the terms of this agreement are honored, the Certificate of Inclusion authorizes the Cooperator to take the covered species and/or their habitat incidental to otherwise lawful activities on the enrolled property when: (1) Implementing the management activities identified in the Cooperative Agreement; (2) Carrying out any lawful activity on the enrolled property after management activities identified in the Cooperative Agreement have been initiated. The Cooperator may continue current land use practices, undertake new ones, or make any other lawful use of the property, even if such use incidentally results in the loss of the covered species or their habitat covered under this agreement; and (3) Returning the enrolled property to baseline conditions after the terms of this agreement have been

fully implemented and prior to expiration of permits. The Cooperator will not be held responsible for take of the covered species resulting from a *force majeure* event. *Force majeure* means events that are beyond the reasonable control of, and did not occur through the fault of negligence of the Cooperator, including but not limited to: "Acts of God" or sudden actions of the elements, including fire, excessive rainfall, and drought.

As used in this Cooperative Agreement, “incidental take” refers to the unintentional or unavoidable killing, injuring, or harassing of the covered species in the course of carrying out otherwise lawful activities. Nothing in this agreement authorizes the Cooperator to capture, collect, or deliberately kill, injure, or harass any such species.

J. **Adaptive Management**.

Adaptive management allows for mutually agreed-to changes to the management activities in response to changing conditions or new information. If the conservation measures appear ineffective, management activities can be changed or new activities undertaken to achieve desired results. Decisions related to adaptive management will be based on the monitoring results and other information in annual reports.

K. **Terms and Conditions**.

i. **Cooperative Agreement Modification**. RC&D or Cooperators may propose modifications or amendments to this agreement by providing written notice to the other party. Such notice shall include a statement of the proposed modification, the reason for it, and its expected results. RC&D and Cooperator will make their best efforts to respond to the proposed modifications within 30 days of receiving the notice. Proposed modifications will become effective upon the other party’s written concurrence.

ii. **Cooperative Agreement Succession and Transfer**. The terms of this agreement shall run with the ownership of the enrolled property and are transferable to subsequent private property owners. By becoming a party to the original Cooperative Agreement and Certificate of Inclusion, the new owner will have the same rights and obligations with respect to the enrolled property as the original owner at the original baseline. The Cooperator shall notify RC&D (or RC&D, Service, and DLNR) of any transfer of ownership at least 60 days prior to the intended transfer, so that RC&D can notify the Service and DLNR and attempt to contact the new owner, explain the terms, and seek to interest the new owner in signing the existing Cooperative Agreement to benefit the covered species.

iii. **Cooperative Agreement Termination**. Cooperators may terminate their Cooperative Agreements at any time for circumstances beyond their control, upon written notification to RC&D. In such circumstances, Cooperators may return enrolled properties to baseline conditions in accordance with item viii below even if the expected net conservation benefits have not been realized.

Cooperators also may terminate their Cooperative Agreements at any time for any other reason, upon written notification to RC&D; however, termination for reasons other than circumstances beyond their control shall extinguish the Cooperator's authority to incidentally take the covered species or their habitats under the permits and the Cooperator must relinquish the Certificate of Inclusion to RC&D.

iv. **Certificate of Inclusion Suspension or Revocation**. RC&D may suspend or revoke the Certificate of Inclusion if a Cooperator has breached obligations under the Cooperative Agreement, has failed to cure the breach in a timely manner, and the effect of the breach will diminish the likelihood that the agreement will achieve its goals.

v. **Privacy**. RC&D, the Service, DLNR, and NRCS agree to share information on Cooperators to the extent necessary for implementing the Programmatic Agreement and Cooperative Agreements. Disclosure of Cooperator information outside the purposes of these agreements will be released in accordance with Section 2004.1244(b) (Privacy of Personal Information Relating to NRCS Programs) of the Farm Security and Rural Investment Act of 2002, the Privacy Act of 1974, Freedom of Information Act, 5 USC 552, and HRS §92F. The Service, DLNR, and RC&D agree to inform a Cooperator within three days, if a third party requests information pertaining to that Cooperator that is outside of routine use.

vi. **Neighboring Landowners**. Cooperators are highly encouraged to include their neighbors in early discussions regarding habitat improvements and development of Cooperative Agreements. If voluntary conservation measures under this Cooperative Agreement result in listed species occupying properties adjacent or nearby, the Service and DLNR will use the maximum flexibility allowed under the laws to address neighboring properties. The implications to neighboring landowners and the potential need to actively address these implications will be determined on a case-by-case basis. RC&D, the Service, and DLNR will strive to provide assurances to neighboring landowners who may be affected by listed species through Cooperative Agreements or Neighboring Landowner Agreements.

vii. **Other Listed or Candidate Species**. The possibility exists that other listed, proposed, or candidate species may occur in the future on an enrolled property as a direct result of voluntary conservation measures specified in Cooperative Agreements. If that occurs, as determined through biological surveys, RC&D, the Service, and DLNR may agree to amend the agreements and permits to cover additional species at RC&D's request. If biological surveys determine that the species was not present prior to conservation measures, then the baseline may be set at zero. The Service and DLNR will recommend measures for providing net conservation benefits to such species. If candidate species should occur on the enrolled property, the Service will recommend

measures for including them in a joint Candidate Conservation Agreement with Assurances.

viii. **Restrictions on Taking Property Back to Baseline**. The covered species may not be captured, killed, or otherwise directly taken; RC&D (or RC&D, the Service, and DLNR) will be notified at least 60 days prior to the activity and the Service and DLNR given the opportunity to relocate the covered species, if appropriate. The activities will be carried out during the nonbreeding season of the covered species when possible and prior to the expiration of the Certificate of Inclusion.

NRCS to attach for agency 30-day review:

- ☐ Baseline determination report
- ☐ NRCS Conservation Plan (conservation practices and schedule)
- ☐ Map of property with enrolled acres clearly marked

RC&D to attach and review with Cooperator when signed:

- ☐ Cooperator monitoring guidelines and form (Appendix E)
- ☐ Guidelines for handling injured birds or carcasses (Appendix F)

This Cooperative Agreement will be effective for [#] years from the date of the last signature on this page.

AGREED TO BY:

COOPERATOR	[Island] RC&D
_____	_____
Name, Title	Name, Title
_____	_____
Company	Organization
_____	_____
Address	Address
_____	_____
_____	_____
Phone	Phone
_____	_____
Signature	Signature
_____	_____
Date	Date

Exhibit 4 Certificate of Inclusion Template

CERTIFICATE OF INCLUSION

This certifies that the property described as follows [description of portion of property covered by the Safe Harbor Permit] owned by [Cooperator], is included within the scope of the section 10(a)(1)(A) permit issued by the U.S. Fish and Wildlife Service expiring on [date] under the authority of section 10(a)(1)(A) of the Endangered Species Act [permit reference number] and the incidental take license issued by the Department of Land and Natural Resources on [date] expiring on [date] under the authority of HRS§195D sections 4 and 22 [permit reference number]. The permits authorize certain activities by the [Cooperator] as part of the Safe Harbor program to restore and manage habitat for endangered Hawaiian goose, Hawaiian duck, Hawaiian moorhen, Hawaiian coot, and Hawaiian stilt in the State of Hawai`i. The holder of this Certificate is authorized to engage in any otherwise lawful activity on the above described property that may result in the incidental taking of [list species] or their habitat above baseline subject to the terms and conditions of the permits. This Certificate is only valid as long as the Cooperator fulfills the responsibilities as described in the Cooperative Agreement [reference number] entered into by RC&D and [Cooperator] on [date].

_____
[Name, Title, RC&D Council]

_____
Date

Exhibit 5 Neighboring Landowner Agreement Template

Landowners with suitable habitat that are adjacent to or near properties enrolled under the Resource Conservation & Development Council's (RC&D) Programmatic Safe Harbor Agreement (Programmatic Agreement) with the U.S. Fish and Wildlife Service (Service) and State Department of Land and Natural Resources (DLNR) may, without committing to undertake any management activities described Cooperative Agreements on their land, secure the incidental take authority conferred by the Programmatic Agreement, provided: (1) the neighboring landowner specifies the baseline conditions on their property, (2) activities resulting in incidental take are consistent with maintaining the baseline conditions on their property, and (3) the neighboring landowner provides notice and allows DLNR and/or the Service reasonable access to relocate affected species. To establish baseline conditions, the neighboring landowner may request technical assistance from USDA Natural Resources Conservation Service (NRCS) or undertake a baseline determination survey at their own expense. The determination of baseline conditions shall be made by a person with qualifications satisfactory to the Service and DLNR.

1. [Owner] owns land in [County] County, Hawai`i, that is designated on the attached map and is adjacent to or nearby land enrolled in Cooperative Agreement [#] of the Programmatic Agreement dated [date]. The Programmatic Agreement, and the permits issued by the Service and DLNR to RC&D, authorizes Cooperators who enter into Cooperative Agreements to restore habitat and to take endangered Hawaiian goose, Hawaiian duck, Hawaiian moorhen, Hawaiian coot, and/or Hawaiian stilt (covered species) incidental to farming, ranching, and other lawful activities on the enrolled land, provided that baseline conditions as specified in Cooperative Agreements are maintained.

2. RC&D serves as the administrator of the Programmatic Agreement and is authorized to enter into both Cooperative Agreements with Cooperators, who enroll land in the Programmatic Agreement, and similar Neighboring Landowner Agreements with landowners, who own land adjacent to or near land enrolled in the Programmatic Agreement. Neighboring Landowner Agreements give neighboring landowners the same rights to take endangered species incidental to lawful activities on neighboring land, subject to requirements of the Neighboring Landowner Agreement, as Cooperative Agreements give Cooperators who enroll land in the Programmatic Agreement.

3. [Name, organization of person who determined baseline] has determined that the baseline conditions applicable to the neighboring lands are as follows: [number of birds of each species to be covered] occur on the neighboring property at the general locations indicated on the attached map. So long as at least the number of birds of each species designated is maintained on the neighboring lands, [owner] may incidentally take [species], above the baseline, in the course of any lawful use of the property, subject to number 4 below. "Incidental take" refers to the unintentional or unavoidable killing or injuring of [species] in the course of carrying out otherwise lawful

activities. Nothing in this agreement authorizes [Owner] to capture, collect, or deliberately kill or injure [species].

4. [Owner] agrees to give the RC&D at least 60 days notice (except when precluded by emergency situations) prior to beginning any change in land use likely to reduce the number of birds of each species described above and allow DLNR or the Service the opportunity to rescue and relocate any individual [species] from the neighboring property to avoid their loss.

5. This Neighboring Landowner Agreement remains in effect until the expiration of the Programmatic Agreement between the RC&D, the Service, and DLNR [date].

[Owner]	Date
RC&D	Date

APPENDICES

Appendix A NRCS Farm Bill Conservation Programs

Appendix B NRCS Conservation Practices Used for Habitat Improvements

Appendix C Species Accounts

Appendix D Baseline Determination Protocols

Appendix E Monitoring Guidelines

Appendix F Guidelines for Handling Injured Birds and Bird Carcasses

Appendix G RC&D Annual Report Template

Appendix H Net Conservation Benefit

Appendix A NRCS Farm Bill Conservation Programs

The term "Farm Bill Programs" in this Agreement refers to voluntary conservation programs, reauthorized under the Farm Security and Rural Investment Act of 2002 and administered by NRCS, that assist landowners in addressing resource concerns, including habitat improvements for at-risk species. The programs include but are not limited to:

(1) The **Wetlands Reserve Program (WRP)** offers landowners the opportunity to protect, restore, and enhance wetlands on their property. WRP is generally applied to restorable and prior converted wetlands, wetlands degraded by agricultural practices, and riparian and upland areas associated with restored and protected wetlands. Landowners can address wetland, wildlife habitat, soil, water, and related natural resource concerns in an environmentally beneficial and cost-effective manner.

Enrollment options: Landowners can receive technical and financial assistance to improve wetland functions and values.

- Permanent easement – easement payments up to 100 percent of the agricultural value of the land or an established area cap. USDA will pay for legal fees to establish an easement and 100 percent of the restoration costs in exchange for retiring marginal land from agriculture;
- 30-year easement – easement payments up to 75 percent of the agricultural value of the land or an established area cap. USDA will pay for legal fees to establish an easement and 75 percent of the restoration costs;
- 10-year cost-share agreements – USDA will reimburse the landowner 75 percent of the restoration costs.

State ranking priorities:

- Wetlands restored for threatened and endangered species, migratory birds, and other wildlife;
- Wetlands that restore hydrology and are easily maintained on >75 percent of the area;
- Wetlands that drain into protected areas;
- Streams that support native species;
- Wetlands that protect open space, enhance aesthetic values, and provide educational or scientific benefits;
- Wetlands that continue providing wetland functions and values beyond 10 years;
- Partnership contributions totaling >50 percent of the overall cost of the restoration.

For more information: http://www.nrcs.usda.gov/programs/wrp

(2) The **Wildlife Habitat Incentives Program (WHIP)** is a voluntary program that encourages creation of high quality wildlife habitats that support wildlife populations of National, State, and local significance.

Enrollment options: Through WHIP, USDA provides technical and financial assistance for development and protection of upland, wetland, riparian, and aquatic habitats. USDA will reimburse the landowner up to 75 percent of the cost of eligible practices. Contracts are generally for 5 to 10 years.

State ranking priorities:

- Projects that benefit habitat for threatened, endangered, and other native species including plants;
- Projects that benefit native ecosystems such as anchialine pools, native forest, and riparian areas adjacent to protected and managed wildlife areas;
- Projects that benefit nearshore environments such as estuaries and coral reefs.

For more information: http://www.nrcs.usda.gov/programs/whip

(3) The **Environmental Quality Incentives Program (EQIP)** provides assistance to farmers and ranchers who face threats to soil, water, air, at-risk species, and related natural resources on their land. Through EQIP, NRCS provides technical and financial assistance to agricultural producers in a manner that will promote agricultural production and environmental quality as compatible goals, optimize environmental benefits, and help farmers and ranchers meet Federal, State, and local environmental requirements.

Enrollment options: Applications are ranked based on the environmental benefits and the cost-effectiveness of the planned conservation practices. USDA may reimburse landowners up to 75 percent of the cost of the practice. The length of the contract varies from 2 to 10 years.

National priorities:

- Promotion of at-risk species habitat conservation;
- Reduction of non-point source pollution, such as nutrients, sediment, pesticides, or excess salinity in impaired watersheds, consistent with Total Maximum Daily Loads (TMDLs) where available, as well as reduction of groundwater contamination and conservation of ground and surface water resources;
- Reduction of emissions, such as particulate matter, nitrogen oxides, volatile organic compounds, and ozone precursors and depleters that contribute to air quality impairment violations of National Ambient Air Quality Standards; and
- Reduction in soil erosion and sedimentation from unacceptable levels on agricultural land.

State priorities: Local work groups assess the needs of the communities, identify priority natural resources concerns, and make programmatic recommendations on EQIP to the NRCS State Conservationist. Hawaii's state priority resource concerns are:

- At-risk species habitat
- Invasive species (e.g., coqui frog, little fire ant, nettle caterpillar)
- Ground and surface water conservation
- Sedimentation from accelerated erosion

- Pesticide or nutrient contamination of ground or surface waters
- Animal waste from confined livestock operations
- Insufficient water supply for livestock or irrigation
- Noxious weeds

For more information: http://www.nrcs.usda.gov/programs/eqip

The **Conservation Security Program (CSP)** supports ongoing stewardship of private agricultural lands by providing payments for maintaining and enhancing natural resources. CSP identifies and rewards farmers and ranchers who meet the highest standards of conservation and environmental management in their operations.

Each year, CSP is offered to selected watersheds throughout the United States on a rotational basis. In Fiscal Year 2006, CSP was offered in the North Shore, O`ahu Watershed.

Enrollment options: CSP offers three tiers of participation, depending on the amount of the farm enrolled and the current level of documented conservation. Payments will be made based on the tier level and the producer's agreement to do additional practices to further enhance the environment.

- Tier I – producer has met minimum soil and water quality criteria on part of the agricultural operation. Contracts run for five years. Maximum payment is $20,000 annually;
- Tier II - producer has met minimum soil and water quality criteria on the entire agricultural operation, and agrees to address one additional resource concern by the end of the contract. Contracts run for 5 to 10 years. Maximum payment is $35,000 annually.
- Tier III – producer has addressed all applicable resource concerns on all eligible land uses on the entire agricultural operation. Contacts run for 5 to 10 years. Maximum payment is $45,000 annually.

For more information: http://www.nrcs.usda.gov/programs/csp

Appendix B Examples of NRCS conservation practice suites used for habitat improvements

1. **Wetlands habitat**. Practices for wetlands restoration, enhancement, and creation may include removal of invasive vegetation and sediment and sculpting of basins to restore microtopography and attain appropriate water depths for the covered species; dike installation or removal to restore hydrologic features; water delivery and water control structures to manage water levels and maintain the wetland; import of an adequate substrate for plant reestablishment; seeding and/or planting to enhance food, cover, and nesting substrate for the covered species, fencing to exclude large mammals and/or control livestock grazing. Practices for maintenance may include water level manipulation to obtain desired cover and plant communities; exclusion of new aquatic invasive species (e.g., fish, amphibians); predator control; removal of feral waterfowl; hunting of feral mammals; and prescribed grazing per compatible use permits.

2. **Uplands habitat**. Practices for grasslands and shrublands habitat improvements may include control of invasive woody vegetation; fencing and prescribed grazing; planting native species beneficial to Hawaiian waterfowl to increase diversity of food, cover, and nesting materials for breeding birds; controlling predators of native birds through fencing, trapping, or Diphacinone bait stations; restraining domestic animals (i.e., cats and dogs); removing or penning domestic waterfowl to avoid possible interactions with wild birds (e.g., competition, aggression during the breeding season, transmission of diseases or parasites); hunting feral mammals; enhancing the watershed to improve moisture regimes; and minimizing disturbance by people, pets, and machinery in breeding areas (e.g., posting signs, using alternate routes).

3. **Riparian habitat**. Watershed analyses are commonly used to identify and halt or control, if possible, human activities that may be contributing to habitat degradation and address sources of instability (e.g., causes of accelerated bank erosion). The practices for riparian improvements may include resting pastures (i.e., rotational grazing); planting on disturbed, bare areas of the watershed; installing water bars that divert storm runoff to vegetated flats (instead of streams); reducing feral ungulate populations in riparian zones and watershed; controlling access of livestock to riparian zones by fencing, prescribed grazing, or providing water sources and travel lanes away from the channel; selectively controlling invasive riparian plants; reestablishing native plant communities adapted to riparian conditions; and establishing riparian buffers.

For detailed descriptions of the practices above and other practice standards and specifications see NRCS Hawai`i Field Office Technical Guide (eFOTG), Section IV:
http://efotg.nrcs.usda.gov/treemenuFS.aspx?Fips=15001&MenuName=menuHI.zip

Appendix C Species Accounts
(1) Nene

Description. The nene, or Hawaiian goose (*Branta sandvicensis*), is a medium-sized goose that is closely related to the Canada goose (*B. canadensis*) (Quinn et al. 1991). It is the only remaining native resident goose in the Hawaiian Islands (Olson and James 1991, Banko et al. 1999). The plumage of both sexes is similar, though it is possible to distinguish between males and females, in part because females are smaller than males (Kear and Berger 1980). The nene is one of the most threatened and isolated and also one of the most sedentary and terrestrial of waterfowl species in the world (Weller 1980, Banko et al. 1999). This endemic goose is the State bird of Hawai`i.

Status and Distribution. Fossil evidence indicates that before and during Polynesian colonization (around 1,600 years before present), nene occurred on all of the main Hawaiian Islands, with the exceptions of O`ahu and possibly Ni`ihau (Kirch 1985, Olson and James 1991, Banko et al. 1999). At the time of the arrival of Europeans in 1778, nene were known with certainty only from the island of Hawai`i, though they may have still occurred on Maui and Kaua`i (Wilson and Evans 1893, Henshaw 1902, Baldwin 1945). A decline of the species on the island of Hawai`i was noted by observers in the early 1800s as birds were extirpated from lowland habitats (Baldwin 1945, Fisher et al. 1969) and by 1952, the wild population was estimated to be 30 birds (Smith 1952). Populations on the higher islands (>5,250 feet in elevation) probably persisted longer than on lower islands because of the availability of larger tracts of habitat and remote rugged upland areas that made hunting and predation by introduced species less intense (Olson and James 1991, Banko et al. 1999).

Conservation measures emphasizing captive breeding were begun around 1949 and birds have been released into the wild since 1960 (Banko et al. 1999). Early release efforts were not very successful due to high mortality rates and low nesting success of the released nene (Banko 1992, Black et al. 1997). Since then, efforts to manage habitat at release and breeding sites, including predator control, supplemental food in drought years, native habitat restoration, etc., in addition to public education and continued releases, have aided the nene recovery program (Banko et al. 1999). Populations of nene currently exist on the islands of Hawai`i, Kaua`i, and Maui with an estimated statewide population of 1,300, with around 525 found on Kaua`i, 315 on Maui, 400 on Hawaii, and 55 on Moloka`i (DOFAW, unpublished data 2003.) All nene populations have been supplemented by captive-bred birds.

On Maui, nene probably were extirpated by the end of the nineteenth century and today are found primarily within the boundaries of Haleakala National Park at elevations of 6,300 to 7,700 feet (Henshaw 1902, Banko et al. 1999, USFWS 2004). Captive-bred birds were first released on East Maui in 1962, and the Haleakala population has apparently been stable at about 200 to 250 birds for the last 8 to 10 years; the total population on Maui is about 270 to 320 birds (USFWS 2004). Wild nene populations outside of the park have been observed in the Kula, Olinda, Wailuku, Kihei, and Kahikinui areas on the outer slopes of Haleakala Crater. The State of Hawai`i, DOFAW, is attempting to establish a second nene population on West Maui by releasing captive-bred birds at Hana`ula. Today, nene on West Maui number about 70, and nene

are occasionally observed in areas around Lahaina and Wailuku (DOFAW, unpublished data 2003).

According to the Service's draft nene recovery plan (USFWS 2004), actions needed for recovery include predator control, identification and protection of habitat within the species' historic range, management of existing populations, and establishment and management of new populations for maximum productivity, survival, and behavioral and genetic diversity. Self-sustaining populations will be needed on Hawai`i Island, Maui Nui (including the islands of Maui, Moloka`i, and Lana`i), and Kaua`i. To downlist nene to threatened status, Service objectives include establishing a population of 600 to 800 on Maui Nui, with one large population of about 300 on East Maui and subsidiary populations on Moloka`i, Lana`i, and West Maui. The recovery plan recognizes some of these populations will need to be established and managed on private lands.

Threats. The nene was listed as a Federally endangered species in 1967 (32 FR 4001) and is considered one of the most endangered goose species in the world (Green 1994, Black 1998). Critical habitat was not designated for this species. A nene restoration program was initiated in 1949 and captive-bred birds have been released into the wild since 1960 (Kear and Berger 1980, USFWS 2004). The Zoological Society of San Diego currently manages the nene captive propagation program in Hawai`i. All current populations of nene are partly maintained through releases of captive-bred birds (Black and Banko 1994).

Human activity has impacted nene since settlers first landed on the Hawaiian islands. Hunting nene for food probably caused a substantial decline of birds in lowland habitats while extensive burning and agricultural activities changed habitat conditions for nene, introduced plants and nonnative ungulates altered and often degraded the habitat, and introduced mammalian predators (mongooses, dogs, cats, rats, and pigs) preyed on nene, their eggs or goslings (Wilson and Evans 1893, Henshaw 1902, Baldwin 1945, Banko and Elder 1990). These activities also had indirect negative effects including driving nene to marginal areas and changing migration patterns, flocking behaviors, and utilization of food items. Currently, the primary threats to nene are introduced predators, lack of lowland habitats, and degraded habitat.

Habitat Types. Nene are reported to utilize a variety of habitats from sea level to 8,000 feet above mean sea level including coastal dunes and non-native grasslands (such as golf courses, pastures and rural areas), sparsely vegetated low and high elevation lava flows, cinder deserts, native alpine grasslands and shrublands, open native and nonnative alpine shrubland-woodland, as well as mid-elevation native and nonnative shrublands and early successional cinderfall (USFWS 2004). However, their present distribution was highly influenced by the location of release sites for captive-bred nene and nesting generally occurs in areas associated with release sites (Banko 1988, Banko et al. 1999, USFWS 2004). It is unlikely that nene used native grasslands, grassy shrublands and dryland forest prehistorically (Banko et al. 1999).

Little is known about the vegetation structure, dynamics, and composition of Hawaiian habitats, especially in the lowlands, prior to human contact. However, more recent archaeological work is improving our understanding of the environmental history of Hawai`i, including species composition and this is likely to aid in habitat restoration efforts for all native species, including

nene (Cuddihy and Stone 1990, Banko et al. 1999, Burney et al. 2001). Nene have shown flexibility in the utilization of alien plants and readily forage on introduced grasses and other plant species, however, low productivity is believed a problem in nene populations due to insufficient protein intake in their diet and there are also concerns about whether adequate nutrition is available for goslings (Black et al. 1994, Baker and Baker 1995, Banko et al. 1999). Recent studies of habitat use and on the nutritional value of various food items eaten by nene, including native and nonnative plants, will aid in determining methods for converting predominantly nonnative plant communities into habitats dominated by native plants that are capable of sustaining nene populations in appropriate areas agreed on by nene managers and stakeholders (Black et al. 1994, Banko et al. 1999, Hu 2000, Woog 2000, USFWS 2004).

Breeding Habitat. Early accounts of nene biology suggest that they nested primarily in highlands (Peale 1848, Dole 1869, 1879). More recent interpretations indicate nene nested primarily in leeward lowland habitats (<2,300 feet) during the rainy season when winter rains caused new growth of food plants and it is thought that the warmer low elevation areas improved nesting success and gosling survival (Henshaw 1902, Perkins 1903, Munro 1944, Baldwin 1947, Banko 1988).

Nesting typically occurs between October and March although eggs have been laid from August to April (USFWS 2004). Nene nests are constructed on the ground and are typically a shallow scrape, lined with a variety of plant material and feather down, and are well hidden under vegetation. Mostly native species are available and used to nest under on Maui and Hawai`i, but on Kaua`i mostly nonnative species are available and used (Banko et al. 1999). The presence of open or flowing water is not necessary for successful breeding, although nene will readily utilize water when available (USFWS 2004).

Diet. Although nene don't migrate long distances as many other geese do, historically, they exhibited altitudinal migration in response to seasonal changes in food availability. As noted above, nene nested in lowland areas during the rainy season. In the summer, after the goslings had fledged and could fly, nene moved to higher elevations around the time when some foods (berries and some grasses) were more abundant there than in the lowlands (Henshaw 1902, Baldwin 1947, Banko et al. 1999).

Nene are browsing grazers and forage on a variety of over 50 native and introduced plants. The majority of food items nene graze on include various fruits of several species of shrub, leaves and seeds of grasses and sedges, and leaves and flowers of various herbaceous composites (Baldwin 1947, Black et al. 1994, Banko et al. 1999, USFWS 2004). Nene are opportunistic in their choice of food plants and the composition of their diet depends largely on the composition of the vegetation in the habitat and since most habitats in Hawai`i are highly altered, there is a high proportion of nonnative foods to which nene have apparently adapted to foraging on (Black et al. 1994, Banko et al. 1999, Woog 2000, USFWS 2004). It seems apparent that this adaptability has allowed nene to survive in marginal habitats to which they were pushed as their traditional habitats were lost (Black et al. 1994, Banko et al. 1999). However, observers have expressed concern regarding whether the modified habitats are truly providing adequate nutrition for breeding females and for goslings and it is hoped that work on a nene food database and other research efforts will be useful in developing habitat restoration techniques and management

efforts for nene recovery work (Banko 1992, Black et al. 1994, Baker and Baker 1995, Banko et al. 1999, Hu 2000, Woog 2000, USFWS 2004).

Some native foods that have been shown to have a high occurrence in nene droppings include `ohelo (*Vaccinium reticulatum*) and pukiawe (*Styphelia tameiameiae*) berries, and hair grass (*Deschampsia nubigena*) (Baldwin 1947, Black et al. 1994). Some nonnative plants that are frequently used as forage by nene include Kikuyu grass (*Pennisetum clandestinum*), Yorkshire fog or mesquite grass (*Holcus lanatus*), rattail grass (*Sporobolus africanus*), and gosmore (*Hypochoeris radicata*) (Black et al. 1994).

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Appendix C Species Accounts
(2) Koloa maoli

Description. The endangered koloa maoli or Hawaiian duck (*Anas wyvilliana*) is the only endemic duck species that remains in the main Hawaiian Islands. The koloa is a dabbling duck closely related to the North American mallard (*A. platyrhynchos*), but is distinct from mallard at the species level (Rhymer 2001). Both koloa sexes resemble a mallard hen but are deeper brown and more petite, agile, and secretive. The male koloa is slightly larger (than female) with brighter emerald green, teal, or bluish wing patches and red-orange feet. Bills are dark with variable fleshy markings in both sexes or have an orange tip on the female. Some breeding males have a buff-yellowish bill with greenish-olive splotches. Some hatching-year male koloa exhibit greenish tints on the crown, grayish flanks, and black and white tail similar to a male mallard in nonbreeding plumage or hybrid mallard x koloa (Engilis et al. 2002).

Status and Distribution. In the early 1900s, koloa were common in the coastal marshes of all the main islands, except Lana`i and Kaho`olawe (Munro 1944). By the mid-1900s, the species had been reduced to 500 birds on Kaua`i and a few isolated pairs on other islands (Schwartz and Schwartz 1953). In the mid-1950s, the State of Hawai`i began a captive propagation and release program for koloa. Between 1958 and 1990, 757 captive-bred koloa were released on O`ahu (326), Maui (12), and Hawai`i (419) to reestablish the species within its former range (Giffin 1983). The status and distribution of koloa is complicated by the problem of interbreeding with feral mallards (ornamental or farm ducks that have escaped into the wild). O`ahu and Maui populations are believed to be hopelessly hybridized with feral mallards. Population estimates suggest 2,000 genetically-pure koloa on Kaua`i and seasonally on Ni`ihau and 200 on parts of Hawai`i (Engilis and Pratt 1993, Engilis et al. 2002).

Threats. The future of koloa is questionable due to the combined effects of depredation by introduced predators, wetlands loss, and hybridization with feral mallards (USFWS 2005). Human-induced changes, that decrease the amount of suitable habitat and bring previously isolated species in contact, increase opportunities for hybridization (Rhymer and Simberloff 1996). Thus, wetlands loss and degradation worsens the problem of hybridization as koloa and feral mallards are forced to occupy smaller areas. Koloa are sensitive to human development and regular activity near wetlands appears to alter daily use patterns. Breeding and molting koloa are particularly susceptible to predation by introduced mongooses (*Herpestes auropunctatus*), rats (*Rattus* spp.), and feral and domestic cats (*Felis catus*) and dogs (*Canis familiaris*). Ducklings are also predated by bullfrogs (*Rana catesbeiana*) and largemouth bass (*Micropterus salmoides*) and possibly black-crowned night-heron (*Nycticorax nycticorax*) and cattle egret (*Bulbulcus ibis*). Genetically-pure koloa were believed to be isolated from feral mallards on Kaua`i and Hawai`i; however, mallard x koloa hybrids have been observed within these populations (Engilis et al. 2002).

Habitat Types. Koloa exploit a wide range of geographically distinct habitat types such as coastal marshes, lowland agricultural fields, stream plunge pools, ephemerally-flooded pasture, stock ponds, and montane bogs ranging from sea level to 9,800 feet elevation (Perkins 1903, Engilis et al. 2002). The koloa are widely distributed on Kaua`i. Habitats include the seasonal wetlands of the Mana Plain, manmade ponds of Lihue, taro patches and floodplain wetlands of

river valleys such as Hanalei, and Alaka`i Swamp (USFWS 2005). Several authors have suggested a greater dependency on stream habitats. Kauai's streams have been estimated to support 50 percent (Schwartz and Schwartz 1953) to 96 percent (Swedberg 1967) of the island's population. Some koloa, presumably from Kaua`i, disperse to Ni`ihau in response to the flooding of ephemeral lakes (Engilis and Pratt 1993). On Hawai`i, koloa are distributed from sea level to 6,400 ft elevation from Hawi to Pu`u `o`o (saddle between Mauna Kea and Mauna Loa) in the north windward areas and observed most often in the mid- to upper-elevation stock ponds and streams of the Kohala-Mauna Kea region (Giffin 1983, Engilis and Pratt 1993).

Breeding Habitat. Koloa breed year-round with a peak in breeding December to May on Kaua`i (Swedberg 1967) and April to June on Hawai`i. The majority of ducklings are observed from March to June (Perkins 1903, Giffin 1983). On Kaua`i, koloa nests and young have been found in a wide range dry to wet plant communities and elevations in windward and leeward zones (Swedberg 1967). On Hawai`i koloa nests and young have been found in the mid-elevations of the windward slopes of Kohala and Mauna Kea (Giffin 1983).

The few nests found in the wild have been located in herbaceous upland vegetation (e.g., grasses, ferns) near wetlands or waterways (Schwartz and Schwartz 1953, Swedberg 1967, Engilis et al. 2002). On average, koloa lay eight eggs (range 6 to 10), incubate for 28 days (range 26 to 30), and ducklings attain flight after 65 to 70 days. Ducklings have been recorded in emergent wetlands, reservoirs, stock ponds, seasonal depressions, taro patches, irrigation ditches, and stream pools (Swedberg 1967, Giffin 1983). Koloa hens are known to move ducklings or abandon nests at the first sign or regular signs of disturbance (e.g., vehicles, dogs); thus, it is best to minimize disturbance in areas where koloa breed or restore wetlands in areas remote from human activity (Giffin 1983).

Diet. Koloa appear to be opportunistic feeders. Few feeding studies have been conducted on koloa. However, observations indicate that the koloa diet consists of the seeds of grasses (e.g., *Echinochloa*, *Oryza*, *Paspalum*), sedges (e.g., *Cyperus*, *Schoenoplectus*), and leafy herbaceous plants (e.g., *Polygonum*, *Ludwigia*) and submerged aquatic plants (e.g., *Potamogeton*, *Ruppia*, algae). Invertebrates are generally an important part of the diet, particularly for breeding hens and ducklings. Invertebrates eaten by koloa include aquatic insect larvae (e.g., midges, damselflies, dragonflies), earthworms, crustaceans (e.g., small crayfish, shrimp), and snails (Swedberg 1967, Engilis et al. 2002).

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Appendix C Species Accounts
(3) Hawaiian moorhen

Description. The Hawaiian moorhen (*Gallinula chloropus sandvicensis*) is an endemic subspecies of the common moorhen (*G. chloropus*). The Hawaiian moorhen is black above and slaty blue below with white side stripes and patch under the tail. It is similar to the Hawaiian coot (*Fulica alai*) in its chicken-like appearance, but is slightly smaller and sleeker. Its frontal shield and bill are crimson red with a yellow tip on the bill. Its legs and feet are yellow to greenish with a bright red "garter" at the top. The red blush on the lower legs is unique to the Hawaiian race. Both sexes are similar (Munro 1944). Juvenile birds are olive brown to grayish brown with a pale yellow or brown bill (Taylor 1998). It is also known as the, gallinule, mudhen, or `alae `ula – the bird that showed the Hawaiian people how to make fire (Pukui and Curtis 1960).

Status and Distribution. The Hawaiian moorhen was once common in lowland marshes and taro patches and distributed on all islands except Lana`i, and possibly Kaho`olawe and Ni`ihau (Munro 1944). Population declines were first noted in the early 1900s in Hilo, Hawai`i due in part to over-hunting (Henshaw 1902). By the mid 1900s, moorhen were considered rare, particularly on O`ahu, Maui, and Moloka`i (Schwartz and Schwartz 1949). Between 1959 and 1983, the State of Hawai`i released small numbers of pairs on Moloka`i, Mau`i, and Hawai`i, apparently without successful reestablishment (Banko 1987). There have been no confirmed sightings of moorhen on Moloka`i since 1985, but a handful of unsubstantiated and substantiated observations on Maui and Hawai`i suggest sporadic interisland movements (Shallenberger 1977). Today, moorhen are known to be distributed only on O`ahu and Kaua`i. From 1999 to 2003 the moorhen population trend indicates bird numbers to be stable but low, with average totals of 314 birds (DOFAW unpublished data); however, this number represents only a fraction of the moorhen population because current census methods are inadequate to estimate population size (USFWS 2005).

Threats. The primary threats to Hawaiian moorhen are introduced predators and loss of wetland habitat through altered hydrology, environmental contaminants, and invasive species such as California grass (*Urochloa mutica*) and marsh fleabane (*Pluchea carolinensis*) (USFWS 2005). Moorhen are susceptible to predation by mongooses (*Herpestes auropunctatus*), rats *(Rattus* spp.), and feral and domestic cats (*Felis catus*) and dogs (*Canis familiaris*). Predators of moorhen chicks or eggs include bullfrogs (*Rana catesbeiana*), common mynah (*Acridotheres tristis*), largemouth bass (*Micropterus salmoides*), black-crowned night-heron (*Nycticorax nycticorax*), and cattle egret (*Bulbulcus ibis*) (Bannor and Kiviat 2002). Other potential factors limiting Hawaiian moorhen include competition with tilapia (*Oreochromis mossambicus*), a nonnative freshwater fish, avian botulism, and nest loss due to flooding (Byrd and Zeillemaker 1981, Nagata 1983, USFWS 2005).

Habitat Types. Hawaiian moorhen inhabit freshwater marshes, cultivated wetlands, reservoirs, wet pastures, and the vegetated margins of streams and irrigation ditches typically below 410 feet elevation. Moorhen do not frequent brackish or saline wetlands. A high degree of interspersion of emergent vegetation patches (e.g., bulrushes, grasses) with open water is favorable because moorhen typically forage at the edges of vegetation and nest within seven feet

of open water (Chang 1990). Other features of moorhen habitats include patches of robust emergent vegetation interspersed with open water, floating mats of vegetation, and water depth less than 3.3 feet, optimally with a ratio of 50:50 to 25:75 of open water to emergent cover (USFWS 2005).

Breeding Habitat. Hawaiian moorhen breed year-round with a peak in activity March to August. Nests are usually placed inconspicuously in emergent vegetation over shallow water less than two feet deep. The emergent stalks are folded over to make a platform nest. If emergent plants are insufficient, nests are placed on the ground (USFWS 2005). Moorhen also nest in emergent or on floating mats of vegetation along narrow interconnected waterways (Nagata 1983, Chang 1990). In taro patches, moorhen nest where taro plants are >4 months old (when canopy starts to close) and where there are patches of other emergent plants (Byrd and Zeillemaker 1981). In lotus fields, nests were placed on the ground under lotus leaves (Nagata 1983). Plants with good structure for nesting include taller sedges (*Cyperus* spp.) and bulrushes (*Schoenoplectus* spp.). On average, moorhen lay 5 to 6 eggs, incubate for 19 to 22 days, and chicks attain flight at 40 to 50 days old (Byrd and Zeillemaker 1981, Chang 1990, Bannor and Kiviat 2002).

Diet. Information is limited on Hawaiian moorhen diets, but foods are likely to be similar to common moorhen and influenced by availability. Plant foods predominate but invertebrate foods increase during the spring and summer breeding months. The main foods taken for moorhen are seeds of grasses and sedges, forbs, legumes (Telfer and Woodside 1977), algae, aquatic insects, and snails (Schwartz and Schwartz 1949, Bannor and Kiviat 2002). Moorhen may sporadically feed on the young shoots of taro (Byrd and Zeillemaker 1981) and lotus (Nagata 1983).

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Appendix C Species Accounts
(4) Hawaiian coot

Description. The Hawaiian coot or `alae ke`oke`o (*Fulica alai*) is an endemic species of coot (AOU 1993) commonly recognized by its white bulbous frontal shield or, in a small percentage of the population, red shield and dark spots near bill tip. Coots have long legs with large, distinctly lobed toes. Males and females are similar in plumage with dark slate-gray body and wing feathers and white undertail feathers (Brisbin et al. 2002).

Status and Distribution. Hawaiian coots were historically found on Kaua`i, Ni`ihau, O`ahu, Moloka`i, Maui, and Hawai`i. Currently, they are found on all the main islands except Kaho`olawe with 80 percent of the birds on Kaua`i, O`ahu, and Maui. The statewide coot population is estimated to range between 2,000 and 4,000 birds. On Kaua`i, coots are most often found in lowland valleys such as Hanalei, Lumaha`i, and Opaeka`a and in reservoirs. There is some evidence that Kaua`i birds fly to Ni`ihau when rains fill ephemeral lakes on that island (Engilis and Pratt 1993).

Threats. The primary cause of the decline of Hawaiian waterbirds is loss of wetland habitat (USFWS 2005). The factors that have lead to a significant loss of wetland habitat include filling and modification, altered hydrology, and invasion of habitats by alien plants. Predation by dogs (*Canis familiaris*), cats (*Felis catus*), mongooses (*Herpestes auropunctatus*), and rats (*Rattus* spp.) is a major threat to coots (Tomich 1969) and probably the most important factor currently limiting recovery of all waterbirds. Other threats include diseases and environmental contaminants (USFWS 2005). It is also believed that introduced fish, such as tilapia (*Oreochromis mossambicus*), compete with waterbirds for food (Marshall and Worthington 1996, Stinson et al. 1991).

Habitat Types. Coots are usually found on the coastal plains below 1,320 feet where wetlands are more common. They prefer habitat with a suitable mix of open water and emergent plant growth and are usually found in fresh or brackish water. Coots have been observed in montane plunge pools above 4,950 feet elevation on Kaua`i (USFWS 2005).

Breeding Habitat. The optimum nesting habitat is in wetlands with a 50:50 to 75:25 mix of dense emergent vegetation and open water (USFWS 2005). Coots nest on open water and in small openings in marsh vegetation (Udvardy 1960, Shallenberger 1977). Taro patches provide good foraging habitat because of shallowness, presence of vegetation, and constant water levels. Coots usually construct floating nests of aquatic vegetation or semi-floating nests anchored to emergent vegetation such as bulrushes (*Schoenoplectus* spp.) (Byrd et al. 1985). Nesting occurs year-round in suitable habitat with peaks in breeding varying by location (Brisbin et al. 2002). On average, Hawaiian coots lay five eggs (range 1 to 10) (Byrd et al. 1985) and incubate for 25 days (range 23 to 27) (Shallenberger 1977). The age at fledging is undocumented for Hawaiian coot, but probably comparable to American coot (*F. americana*) at 75 days old (Gullion 1954).

Diet. Coots usually forage in water that is less than 12 inches deep although they can dive up to 4 feet deep. Coots prefer more open habitat than the Hawaiian subspecies of the common moorhen (*Gallinula chloropus sandvicensis*). Coots are generalists and utilize food

sources on the water surface by diving, foraging in mud or sand, and also by feeding in upland grassy areas near wetlands, including golf courses (USFWS 2005). Diet items include seeds and leaves of aquatic plants, invertebrates including snails, insects, and crustaceans, tadpoles, and small fish (Schwartz and Schwartz 1949).

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Appendix C Species Accounts
(5) Hawaiian stilt

Description. The ae`o or Hawaiian stilt (*Himantopus mexicanus knudseni*) is a slender wading bird, black above (except for the forehead), white below, and with distinctive long, pink legs. The Hawaiian stilt differs from the black-necked stilt by having black extending lower on the forehead as well as around to the sides of the neck a longer bill, tarsus (leg), and tail (Coleman 1981, Robinson et al. 1999). Sexes are distinguished by the color of the back feathers (brownish female, black male) as well as by voice (females having a lower voice). Downy chicks are well camouflaged, tan with black speckling. Immatures have a brownish back, and white feathers extend to cheeks as in the black-necked stilt (Pratt et al. 1987). The total length of an adult Hawaiian stilt is about 16 inches.

Status and Distribution. Stilts were historically known from all of the major islands except Lana`i and Kaho`olawe (Paton and Scott 1985). Prior to 1961, records of Hawaiian stilt on the Island of Hawai`i were limited to three collected by S.B. Wilson in the late 1800s and possibly one collected by Collett prior to 1893 (Banko 1979). Estimates of statewide historic numbers are undocumented. However, extensive wetlands and aquatic agricultural lands provided a sizable amount of habitat. Loss of this habitat undoubtedly caused a decrease in stilt numbers. It has been suggested that the statewide population had declined to approximately 200 birds by the early 1940s (Munro 1960). This number, however, may have been an underestimation of the population, as other estimates form the late 1940s place the population approximately 1,000 birds (Schwartz and Schwartz 1949). This number may still be a low estimate, as a sizable number of stilts can seasonally be found on Ni`ihau, which was not surveyed in the 1940s. The Hawaiian stilt was a popular game bird, and hunting contributed to local population declines until waterbird hunting was prohibited in 1939 (Schwartz and Schwartz 1949).

Stilts are now found on all of the main Hawaiian Islands except Kaho`olawe. The first stilts on Lana`i were documented in 1989 at the Lana`i City wastewater treatment ponds (M. Ueoka, pers. comm. 1993). Long term census date indicate that statewide populations have been relatively stable or slightly increasing for the last 30 years (Reed and Oring 1993). From 1983 to 1996, statewide surveys documented a minimum of 1,000 stilts in the State (DOFAW waterbird surveys 1983 to 1996). Recent estimates place the population at approximately 1,200 to 1,600 birds (Griffin et al. 1989, Engilis and Pratt 1993). As with coots, census data show high year-to-year variability in the number of stilts observed. This variability can be partially explained by rainfall patterns and reproductive success (Engilis and Pratt 1993). Hawaiian stilts readily disperse between islands and constitute a homogenous metapopulation (Reed et al. 1994, Reed et al. 1998).

Threats. Threats to the species include the loss of wetland habitat, predation by introduced mammals, invasion of wetlands by alien plants and fish, disease, and environmental contaminants. Predation by introduced mammals is currently the most important factor limiting recovery for stilts. Predators on Hawaiian stilts include the short-eared owl (*Asio flammeus sandwichensis*), black-crowned night heron (*Nycticorax nycticorax*), laughing gull (*Larus atricilla*), ruddy turnstone (*Arenaria interpres*), cattle egret (*Bubulcus ibis*), common mynah (*Acridotheres tristis*), mongoose (*Herpestes auropunctatus*), black rat (*Rattus rattus*), domestic

cat (*Felis catus*), domestic dog (*Canis familiaris*), and bullfrog (*Rana catesbeiana*) (Robinson et al. 1999).

Habitat Types. Stilts use a variety of coastal fresh, brackish, and saltwater habitats but prefer early successional wetlands with shallow open water (<6 inches deep) interspersed with sparse low-growing vegetation and areas of mudflat. Stilts use exposed tidal mudflats, silted in fishponds, anchialine pools, and agricultural wetlands. Native wetland plants associated with stilt nesting areas include water hyssop (*Bacopa monnieri*), sea purslane (*Sesuvium portulacastrum*), makaloa (*Cyperus laevigatus*) and kaluha (*Bolboschoenus maritimus*) (Robinson et al. 1999). Taro (*Colocasia esculenta*) patches in the early growth stage (mostly open water) can provide good foraging habitats for stilts. Stilts are rarely found in wetlands above 660 feet elevation.

Ephemeral lakes on Moloka`i, Maui, and Ni`ihau are important for stilts. Management techniques that mimic seasonal inundation and evaporation of freshwater mudflats would be beneficial to nesting silts and provide invertebrate forage for their young. Prawn farms, which have numerous ponds in perpetual drawdown and flood-up, provide good foraging habitat for adult birds. Stilts generally forage and nest in different wetland sites, moving between areas daily.

Breeding Habitat. Stilts are semi-colonial. Higher nesting densities are found on large mudflat expanses interspersed with sparse, low-growing vegetation (USFWS 1983) and an abundance of invertebrates. Nests are usually placed on mudflats near shallow water and adjacent to or on low-relief islands within water bodies. Nests are found in both natural and man-made wetlands including seasonal playas, silted fishponds, irrigation reservoirs, settling basins, and taro patches. Though mudflat islands may deter some terrestrial predators, nests and young are still susceptible to bullfrog and avian predation.

The nest is a simple depression on the ground. Often, grass stems and pebbles are used for nesting material (Coleman 1981). Stilts defend an area 66 to 99 feet around the nest. The nesting season normally extends from mid February through August. Peak nesting varies among years. Stilts usually lay 3 to 4 eggs that are incubated for approximately 24 days (Coleman 1981, Chang 1990). Chicks are precocial, leaving the nest within 24 hours of hatching. Chicks fledge from 4 to 6 weeks of hatching. Young may remain with both parents for several months after fledging (Coleman 1981). Parental care involves brooding, protection from predators, and selection and aggressive defense of foraging territories which includes dive-bombing predators and people that are seen as a threat to the young (Robinson et al. 1999).

Diet. Stilts are opportunistic feeders. They eat a wide variety of invertebrates and other aquatic organisms as they are available in shallow water and mudflats. Specific organisms taken include water boatmen (bugs in the family Corixidae), beetles (insects in the order Coleoptera), brine fly (*Ephydra* spp.) larvae, polycheaete worms, small crabs, Mozambique tilapia (*Oreochromis mossambica*), mosquito fish (*Gambusia affinis*), and tadpoles (*Bufo marinus*), with the aquatic insects being the most important part of the diet (Robinson et al. 1999, Shallenberger 1977).

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Appendix D Baseline Determination Protocols

(1) Habitat Baseline for Koloa, Hawaiian Moorhen, Hawaiian Coot, and Hawaiian Stilt

I. Zero baseline

The baseline for each species covered in the Cooperative Agreement will be determined by surveys of the enrolled property. If the Cooperator and NRCS have not seen the species on the property, the species is not known from adjacent properties, and the Service and DLNR concur that the species is unlikely to be seasonally or permanently occupying the property at the present time, the baseline will be set at zero for that enrolled property.

II. Non-zero baseline

If the Cooperator has seen the covered species on the enrolled property or NRCS and Cooperator, in consultation with the Service and DLNR, agree the species is likely to be present, NRCS and Cooperator will: (1) describe the amount and condition of occupied habitat including habitat type, acreage or linear miles, hydrology, and major plant communities, (2) estimate the abundance, occurrence, and breeding status of each species, (3) establish photopoints for photomonitoring, and (4) delineate the baseline habitat on a map of the property.

1. Survey guidelines:
    a. Scope out enrolled property beforehand to determine logistics and methods that will maximize accuracy but minimize time, effort, and disturbance to birds.
    b. Survey all habitat areas within one wet season or season when the species is likely to be using the habitat. All occupied habitats should be quantified, but on large properties it may not be possible to characterize all areas. In this case, the surveyor should work with the NRCS Biologist to develop appropriate sampling methods (see suggestions below).
    c. The number of acres or linear miles will be used to calculate the baseline.
    d. The survey will be conducted by a person with qualifications satisfactory to the Service and DLNR.
2. Habitat types
    a. Upland
        i. Estimate total upland area.
        ii. Describe habitat conditions (e.g., vegetation cover, dominant species, height of herbaceous cover).
    b. Wetland
        i. Estimate total wetland area.
        ii. Describe habitat conditions that are related to the occurrence of the covered species (e.g., wetland type, water depth, vegetation cover).
        iii. For enrolled properties with large amounts of discrete wetlands (e.g., >50 acres) and multiple wetland types, stratify by wetland type, and describe habitat conditions on at least 20 percent of each wetland type.

iv. For enrolled properties where it is not possible to determine "occupied habitat" without extensive surveys, "suitable habitat" can be used to estimate baseline conditions using wetlands habitat modeling.[1]

c. Riparian
   i. Estimate total length of riparian zone.
   ii. Describe habitat conditions that are believed to be related to the occurrence of the covered species (e.g., water quality, riparian conditions, microhabitat diversity).
   iii. For enrolled properties with extensive riverine habitats, stratify by river/stream type, and describe habitat conditions of a 100-yard reach of each type.

d. Establish photopoints for photomonitoring.

e. Delineate each habitat type on a map of the property.

3. Estimate the abundance, occurrence, and breeding status of each species:
   a. Abundance
      i. Estimate the range (high and low counts) in the numbers of each species currently occurring on the enrolled property. Note, but do not include unusually high or low numbers.
   b. Occurrence
      i. Common - regular visitor, likely to be seen in suitable habitat
      ii. Regular - regular visitor, but not certain to be seen in suitable habitat
      iii. Occasional - seen only a few times in the past year
   c. Breeding
      i. Breeding - evidence of reproduction (nests, eggs, chicks)
      ii. Nonbreeding - no evidence of reproduction
      iii. Unknown - unable to determine breeding status

[1] Reed, J.M., N. Fefferman, C. Elphick, and M. Silbernagle. 2006. MESHH: Managing Endangered Species Habitat in Hawaii, Vers. 0.9. Medford (MA):Tufts University.

Appendix D Baseline Determination Protocols

(2) Species Baseline for Nene

I. Zero baseline

The baseline for nene in the Cooperative Agreement will be determined by surveys of the enrolled property. If the Cooperator and NRCS have not seen nene on the property, nene is not known from adjacent properties, and the Service and DLNR concur that the species is unlikely to be seasonally or permanently occupying the property at the present time, the baseline will be set at zero for that enrolled property.

II. Non-zero baseline for the covered species

If the Cooperator has seen nene on the property or NRCS and Cooperator, in consultation with the Service and DLNR, expect nene might be present, NRCS or its representative, in consultation with and possibly with the assistance of the Service and DLNR, will conduct surveys to determine the baseline for nene. The number and specific protocol for surveys will be determined based on the size of the enrolled area, landscape, vegetation, and other variables. Use the following as general guidelines:

1. Survey guidelines:[2]
    a. Scope out enrolled property beforehand to determine logistics, best census points, and methods to maximize accuracy but minimize time, effort, and disturbance to birds.
    b. Survey all habitat areas on the enrolled lands on one or two consecutive days when possible.
    c. Do not conduct surveys when there is sustained rain or fog or high winds.
    d. Conduct surveys by foot or from a vehicle (mobile blind) depending on what is practical and necessary.
    e. The number of adult and subadult birds observed will be used to calculate the baseline. Cooperator sightings or historical data may be used to support the baseline determination.
    f. The person conducting the surveys will be a qualified biologist or have sufficient training or experience in nene survey techniques.

2. Survey protocol:
    a. Time of year. Surveys should be conducted during the nonbreeding or flocking season between July and September when nene are most likely to be in flocks. Use of areas may vary by month. When possible, conduct at least one survey during the early and one during the late flocking season.
    b. Time of day. Daytime.
    c. Number of surveys. For properties <100 acres, at least two surveys will be conducted. Properties >100 acres typically require more time and effort, especially when landscape and vegetation vary. In this case, the surveyor should

[2] Based on National Park Service and DLNR methods.

work with DLNR, the Service and/or NRCS Biologist to develop appropriate sampling methods.

d. Location of census points. Focus on areas of the enrolled lands where nene are likely to be present such as pastures, lawns, croplands, reservoirs, natural and agricultural wetlands, shrublands, open-canopy shrubland-woodland community interfaces, sparsely-vegetated lava flows, and alpine grasslands.
e. Number of census points. At least one point per habitat type listed in (d) above, depending on size of area.
f. Census method.
    i. Scan survey area with binoculars for several minutes and mentally note any groupings of nene; survey area for 15 to 30 minutes;
    ii. If nene fly from survey area, include in count, but observe and note where birds land to prevent double-counting;
    iii. If nene fly into survey area, include in count and note where birds flew in from;
    iv. Record the number of nene;
    v. Record sex if possible and general behavior;
    vi. Check each nene for bands;
    vii. If banded, approach birds slowly and indirectly (from the side) using binoculars or use fieldscope to record bands;
    viii. If no nene are present, look for and record sign (feathers, tracks, droppings, etc.);
    ix. The primary objective of this survey is to get an accurate baseline. Band data will assist with future monitoring and population studies, thus, make a reasonable effort to record bands accurately.

3. Estimate the occurrence and breeding status of nene:
    a. Occurrence
        i. Common - regular visitor, likely to be seen in suitable habitat
        ii. Regular - regular visitor, but not certain to be seen in suitable habitat
        iii. Occasional - seen only a few times in the past year
    b. Breeding
        i. Breeding - evidence of reproduction (nests, eggs, chicks)
        ii. Nonbreeding - no evidence of reproduction
        iii. Unknown - unable to determine breeding status

Appendix E Monitoring Guidelines

Monitoring will be conducted by the Cooperator, NRCS, and RC&D. There are two monitoring categories: (1) biological benefits and (2) implementation. Under biological benefits, there are two types: (a) habitat and (b) species. If a habitat baseline was determined (koloa, moorhen, coot, stilt), then habitat conditions and species numbers will be monitored. If a species baseline was determined (nene), then the species numbers will be monitored. Under implementation monitoring, there are two types: (a) Status Review and (b) general compliance. Monitoring forms will be sent to RC&D for compilation of annual reports.

I. Monitoring biological benefits
   Objectives: Monitor maintenance of baseline conditions and document net conservation benefits to the species
   Methods: Follow protocols and schedule previously used to determine the baseline (Appendix D)
   Responsible parties: Cooperator with the assistance of NRCS
   a. Habitat (koloa, moorhen, coot, stilt)
      i. Re-assess uplands, wetlands, and/or riparian habitats
      ii. Estimate species occurrence and breeding status
      iii. Photomonitoring
      iv. Record number of adult and subadult birds, environmental conditions, and bands observed using the guidelines and forms on the DLNR website http://www.dofaw.net/. Cooperators should conduct counts at least twice per year at times consistent with the State waterbird count. If Cooperators chose option to participate in the bi-annual State waterbird survey, they should submit copies of forms to local DOFAW office.
   b. Species (nene)
      i. For nene, record number of adult and subadult birds and bands observed.
      ii. Estimate nene occurrence and breeding status
      iii. Photomonitoring

II. Monitoring implementation of agreements
   a. Status Review
      Objectives: Monitor progress in applying NRCS Conservation Plan and Farm Bill contract. Make recommendations for adaptive management. Identify needs for additional technical assistance.
      Methods: Follow NRCS contract review protocol (form NRCS-CPA-13). To be completed by September of each Federal Fiscal Year.
      Responsible party: NRCS
   b. General compliance
      Objective: Monitor compliance with the terms of the Cooperative Agreement
      Methods: Review monitoring forms for annual reporting and maintain regular open communications with Cooperator and the agencies.
      Responsible party: RC&D with the assistance of the Service and DLNR

Appendix F Guidelines for handling injured birds and bird carcasses

The purpose of these guidelines is to provide Cooperators with sufficient information to correctly determine the disposition of injured birds and carcasses that they encounter on the enrolled lands. The Hawai`i Division of Forestry and Wildlife (DOFAW) District Wildlife Manager should be contacted for assistance at 808-274-3433 (Kaua`i), 808-973-9787 (O`ahu), 808-984-8100 (Maui and Moloka`i), and 808-974-4221 (Hilo, Hawai`i), 808-887-6061 (Waimea, Hawai`i). If local DOFAW personnel are unavailable, the State Wildlife Program Manager in Honolulu should be contacted at 808-587-0166. The Service's Pacific Islands Fish and Wildlife Office, Conservation Planning and Permits Program, at 808-792-9400 may also be contacted. During nights and weekends or other periods when DOFAW or Service biologists are unavailable, contact the closest State permitted wildlife rehabilitator (list to be provided). All injured or dead birds found on the enrolled property must be noted in the RC&D annual report.

Criteria for Handling Injured or Ill Birds

If the bird can fly, do not remove it from the field. Notify DOFAW personnel as soon as possible. Continue to monitor the bird if possible. Record the following information, and photograph the bird (if possible):
□ Date
□ Location
□ Band numbers (if banded)
□ Condition of bird (e.g., type of injury). Be specific in describing injury (left vs. right, where exactly on bird is the injury). Also indicate if a predator is evident in the vicinity and all measures to eliminate the predator should be taken.
□ Additional comments
□ Name, address, and telephone number of observer

If an injured or ill bird cannot fly, do not remove it from the field. Notify DOFAW personnel as soon as possible. Mark the area and monitor the bird if possible until DOFAW personnel arrive.

Injured birds may be captured only by personnel trained and authorized for the capture and collection of live birds.

Criteria for Collecting Bird Carcasses

All bird carcasses will be collected for necropsy in order to determine cause of death, where possible, and to provide information about the species' general movements.

If a dead bird is found and determined to be fresh (within 48 hours of death), put the carcass in a sealed plastic bag and place that sealed bag inside another plastic bag (i.e., double bag), place in a freezer or on ice, and contact DOFAW personnel. If unable to contact DOFAW within 48 hours, keep the double-bagged specimen in a freezer or on ice until it can be collected for necropsy.

If a carcass is obviously in a state of decay place the bird in a sealed plastic bag in freezer and notify DOFAW personnel as soon as possible. Birds will be collected by DOFAW personnel.

Record the following information for all dead birds:
□ Date
□ Location (collection site)
□ Band numbers (if banded)
□ Condition of bird (e.g., type of injury)
□ Whether the bird was found dead or died subsequently
□ Additional comments
□ Name, address, and telephone number of observer

Appendix G RC&D Annual Report Template

Annual Report
Programmatic Safe Harbor Agreement Covering Hawaiian Goose, Duck, Moorhen, Coot, and Stilt for Participants of USDA Farm Bill Conservation Programs
Prepared by [Island] RC&D
[Date]

I. Report period

This annual report covers the period from October 1, [Year] to September 30, [Year].

II. Summary of activities

a. Program outreach (e.g., landowners contacted)
b. New Cooperators
c. Existing Cooperators
d. Results of monitoring
e. Other

III. Describe circumstances involving injury, mortality, or incidental take of the covered species, if any

IV. Time and expenses

Personnel	Hours	Travel ($)	Other ($)
Volunteer			
Staff			
Contractor			
Total			

V. Recommendations for improvement

VI. Attachments

a. Cooperator Monitoring Forms
b. NRCS Status Reviews

VII. List of Cooperators

	Date enrolled	Cooperator	Contact	Acres enrolled	Species to benefit
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					

Appendix H Net Conservation Benefit

The implementation of this Agreement is expected to provide a net conservation benefit[3] to the covered species. The biological goal of this Agreement is to aid in the recovery and maintenance of the covered species by increasing the species and/or habitat baselines of enrolled properties through restoration and management. By (1) increasing number or size of habitat patches and/or (2) enhancing or maintaining existing patches suitable for the covered species, this Agreement provides a mechanism to protect, restore, and manage the covered species and their habitat on private and other non-federal lands. Specifically, the management activities in this Agreement directly support the following recovery actions and conservation objectives:

Recovery plan for nene (USFWS 2004:52-57)

1. *Identify and protect nene habitat*
  1.1. *Identify year-round and seasonally-used suitable nene nesting and rearing habitat, and associated summer flocking habitat, necessary to sustain target populations*
  1.2. *Protect and restore sufficient suitable nene habitat to sustain target populations levels on each island*
  1.3. *Identify, map, and, where necessary, protect present and potential migratory routes as populations increase in size*
2. *Manage habitat and existing populations for sustainable productivity and survival*
  2.1. *Manage habitat to provide sufficient nutrition*
  2.2. *Monitor nene populations and evaluate trends*
3. *Control alien predators*
5. *Establish additional nene populations*
  5.1. *Establish cooperative agreements on private lands*
6. *Address conflicts between nene and human activities*
8. *Provide a public awareness and information program*
  8.1. *Work with nonprofit organizations to promote nene appreciation*

Recovery plan for koloa, moorhen, coot, and stilt (USFWS 2005:76-78):
1. *Protect and manage core and supporting wetlands*   1.1. *Develop management plans for core and supporting wetlands*   1.2. *Coordinate management of core and supporting wetlands with other agencies and organizations*   1.3. *Implement management plans for core and supporting wetlands*   1.4. *Monitor all populations of endangered waterbirds* 2. *Remove the threat of mallard-koloa hybridization on all islands where koloa occur and establish a self-sustaining population of koloa on Maui and/or Moloka`i* 3. *Establish a self-sustaining population of moorhen on the island of Hawai`i and Maui or Moloka`i* 5. *Plan and implement a public information and education program to increase public awareness and support for waterbird recovery*

[3] "… the cumulative benefits of the management activities identified in a Safe Harbor Agreement that provide for an increase in a species' population and/or the enhancement, restoration, or maintenance of covered species' suitable habitat within the enrolled property, taking into account the length of the Agreement and any off-setting adverse effects attributable to the incidental taking allowed by the enhancement of survival permit. Net conservation benefits must be sufficient to contribute either directly or indirectly, to the recovery of the covered species" (FR 32717).

DLNR wildlife conservation strategy (Mitchell et al. 2005:4-11 to 4-15)
1. Maintain, protect, manage, and restore native species and habitats in sufficient quantity and quality to allow native species to thrive. *Highest priority* • *For habitats on private land not currently protected and/or receiving management attention (e.g., middle reaches of stream corridors or coastal areas), encourage protection using appropriate tools, including acquisition, grant agreements, conservation easements, leases, technical assistance, development of safe harbor agreements or habitat conservation plans, and other tools.* *High priority* • *Develop recovery and management plans where needed to guide management, including short-term implementation plans, for species, species groups, or habitats;* • *Implement effective habitat management through a variety of activities: landscape-level predator management; invasive plant control, fencing and ungulate removal, predator control, wetland enhancement, riparian restoration, native species outplanting, fire threat mitigation, and management of human activity in sensitive areas;* • *Support the development and implementation of statewide programmatic Safe Harbor Agreements.* ***4. Strengthen existing and create new partnerships and cooperative efforts.*** *Highest priority* • *Expand and strengthen existing partnerships (e.g., by increasing communication, formalizing partnerships, or adding new partners).* *High priority* • *Establish new partnerships with private landowners, non-traditional partners, and with community groups to share information and facilitate implementation of identified conservation actions;* • *Explore areas of common ground and future collaboration with agricultural industries and research facilities;* • *Support and emphasize voluntary and incentive-based programs for native wildlife and habitat conservation on private lands.*

Direct Benefits:

Four of the species depend on wetlands and associated uplands to survive. Though obligate wetland species, koloa require herbaceous uplands to nest, and the koloa, moorhen, and coot use adjacent uplands to graze and loaf. Nene have evolved to a more terrestrial existence and are not obligate wetland species, however, they will readily use open-water wetlands when available. Thus, due to overlapping niches, wetlands, riparian, and grasslands habitat restoration have the potential to benefit multiple listed species. In addition, the covered species have the potential to serve as umbrella species given their mobility and wide ranges. By maintaining viable populations of the covered species through a guild and landscape approach, practices that directly benefit one listed species will likely benefit others.

Wetlands and many riparian habitat practices are expected to directly benefit all five covered species. Restoring, enhancing, creating, and maintaining wetlands will increase the amount of suitable foraging, breeding, loafing, and molting habitat. Management of water levels, vegetation, and predators will help to optimize cover and plant and invertebrate foods and increase the chances for survival and reproduction. Based on NRCS Wetlands Reserve Program (WRP) monitoring results, managed wetlands can have positive effects on waterbird populations within 2 to 3 years following treatment. On the Island of Hawai`i, WRP wetlands were constructed near stock ponds used by koloa. A 58 percent (7.6 to 12 acres) increase in wetland area resulted in an increase (1 to 2 pairs to 2 to 6 pairs) in the number of koloa using the

properties within three years (Ducks Unlimited, unpublished, 2002). At Hamakua Marsh State Wildlife Sanctuary on O`ahu, an overgrown riparian pasture was restored to a productive breeding ground for Hawaiian waterbirds. The birds responded to the management of the 22-acre seasonal wetland with increases from 0 to 2 coot breeding pairs (range 2 to 11 birds), 0 to 2 coot chicks (Polhemus and Smith 2005), 2 to 18 stilt breeding pairs, 2 to 22 stilt chicks (82 percent fledged), 4 to 10 moorhen breeding pairs, and 9 to 44 moorhen chicks (96 percent fledged) within 2 to 3 years (Smith and Polhemus 2003).

Uplands habitat practices are expected to directly benefit the five covered species by controlling threats and increasing the amount of suitable habitat for the covered species that utilize uplands during all or a portion of their life cycle. Practices that minimize predator populations and human activities or control domestic animals, particularly during breeding when birds are more sensitive to disturbance, are expected to increase breeding success and survivorship. Managing pastures through mowing or prescribed grazing can provide good forage for nene and nesting habitat for nene and koloa. Planting native species beneficial to waterfowl will improve species composition and vegetation structure and help meet the annual cycle requirements of waterfowl. Habitat management practices for nene similar to these have contributed to successful reintroductions to historically unoccupied lands. A 2001 release of 11 nene on Pu`u O Hoku Ranch on Moloka`i, supplemented by further releases, resulted in a population of 55 nene by 2003 (DOFAW, unpublished data 2003). One pair fledged three goslings during the first two years. Though there are no reintroductions in this Agreement, habitat management through this Agreement can support existing populations and future reintroductions.

Another major benefit of agricultural lands to wildlife conservation is to provide a buffer from urban encroachment. Marginal farmlands are particularly vulnerable to urban development. Through WRP, Cooperators can enroll in 30-year or perpetual conservation easements to protect lands from being converted to non-agricultural/development uses and receive incentives to continue to benefit the covered species beyond the durations of their Cooperative Agreements. For instance, marginal farmlands near bird refuges and sanctuaries could be managed to provide supplementary, seasonal, or primary habitats that increase habitat connectivity, reduce habitat fragmentation rates, and complement protected lands.

Indirect Benefits:

Conservation practices that directly benefit one covered species may provide indirect benefits to others. For example, if a Cooperator controls invasive woody species (e.g., guava, *Psidium* spp.) or revegetates bare areas of pasture with native vegetation to improve forage for nene or nesting habitat for koloa (direct benefits) and the treatment area is within a wetland watershed, this activity may also improve wetland hydrology and benefit other covered species (indirect benefits). The proper functioning condition of a wetland or stream is integrally linked to the health of its watershed; therefore, many practices that treat resource concerns, other than habitat, will indirectly benefit the covered species. This will occur through a wide variety of practices that may include soil conservation (e.g., mulching, grassed waterways); water conservation through more efficient irrigation systems (e.g., drip irrigation); improvements in water quality and circulation through riparian buffers or nutrient management plans; or control of invasive species potentially harmful to the covered species and agricultural operation through integrated pest management plans. The knowledge gained through monitoring and research will

be used to adapt management techniques and improve conservation strategies for the covered species. Successful agreements between private landowners and conservation groups are expected to provide additional opportunities to network, leverage limited resources, and benefit the covered species.

Assessment of and Potential for Incidental Take:

The permits authorize incidental take of the covered species and their habitat, above the baseline, resulting from implementation of management activities identified in the Cooperative Agreement, lawful activities on the enrolled property after these management activities have been initiated, and a return to baseline conditions after the terms of the Cooperative Agreement have been fully implemented and before permits expire.

Cooperators agree to minimize the potential for incidental take by foregoing certain management activities that increase chances of take, adopting practices that decrease chances of take, and scheduling management activities that may result in take during the nonbreeding season. However, koloa, moorhen, and coot breed year-round in many areas and "nonbreeding season" varies by location and climate. In addition, Hawaiian waterbirds are opportunistic foragers and breeders and may breed in unconventional and unprotected areas. Thus, even with minimization measures in place, take may occur unintentionally or incidental to the normal operations of working lands (e.g., cattle ranch, coffee farm, taro or hasu farm, recreation) or in relation to increases in population numbers and/or distributions of the covered species that may result from the conservation measures promoted by this Agreement. Human activity may cause nest or brood abandonment, livestock may trample or heavy equipment may crush eggs or young, construction of roads or buildings near habitat may diminish habitat suitability, nests may be flooded along reservoirs if water levels fluctuate widely, and weed control may expose nests to predators. In addition, Cooperators may exercise privileges under the permits to take species partially or completely back to baseline.

No loss of the existing baseline population or habitat is authorized in conjunction with the Agreement. Thus, the maximum net impact of take authorized under this Agreement is a return to original baseline conditions prior to habitat improvements, the status quo. To return to a baseline condition Cooperators must demonstrate that the baseline terms of the Cooperative Agreement were maintained and conservation measures implemented. In this event, the covered species may not be captured, killed, or otherwise directly taken. Cooperators are required to give the RC&D (or RC&D, the Service, and DLNR) a minimum 60-day advance notice for activities that will return the property to baseline conditions so the Service and DLNR can capture, rescue, and/or translocate the covered species, if appropriate. If translocation is infeasible, habitats could be made unsuitable (e.g., discontinue use of an artificial water source to a created wetland), birds hazed, or eggs collected for research. If a Cooperator wants to go back to baseline conditions, the return to baseline must be completed prior to the expiration of the 50-year permits.

How a Net Conservation Benefit will be Achieved:

There are numerous cases where managed wetlands have had a positive impact on populations of the covered species in a relatively short period of time. There are several cases of how managed pastures and other habitats can directly benefit nene populations. WRP

monitoring data show that benefits can be realized within 2 to 3 years. Thus, the 10-year Cooperative Agreement minimum is expected to be sufficient to achieve a net conservation benefit to the species. It is further anticipated that, by providing optional safe harbor assurances, NRCS in partnership with RC&D will be able to appeal to a wider group of landowners for Farm Bill Programs. More interest in these programs will likely result in more applicants and more and better habitats due to a larger, more competitive applicant pool. Collectively, the benefits of multiple 10 to 50 year Cooperative Agreements, which are facilitated by the allowable incidental take, are expected to significantly offset the potential for incidental take. Taking into account the voluntary conservation measures to improve habitat, on a programmatic basis, the minimization measures to reduce chances of take, and the multitude of direct and indirect benefits associated with those measures, the benefits of entering into this Agreement outweigh the risk

According to the Service's Safe Harbor Policy (64 FR 32717), conservation benefits need not be permanent, but must be sufficient to contribute directly or indirectly to the recovery of the covered species. Thus, a Cooperator may decide at the end of a 10 or 30-year Cooperative Agreement, for example, to discontinue habitat management or return to baseline conditions. However, given the mobility and strong dispersal capabilities of the covered species, it is believed that if habitats become unavailable, although there may be reproductive loss, these birds would locate alternate existing habitats or newly restored habitats, facilitated by this Agreement, within a reasonable amount of time on their own. In response to naturally dynamic habitats and ecosystems, koloa, moorhen, coot, and stilt generally use a variety of habitat types daily or seasonally to meet life cycle needs and can be quick to exploit newly restored and managed habitats. Without active management, habitats currently occupied are unlikely to remain occupied under current trends in weed succession, urban encroachment, and other degrading factors. Many protected and unprotected wetlands are at or near carrying capacity in their current conditions. While habitat improvements persist under this Agreement, they aid in conservation of the covered species by reducing habitat fragmentation rates, increasing habitat functional connectivity, and providing insurance against losses from demographic or genetic factors and catastrophic events. Wetlands, uplands, and riparian habitat improvements on private lands will provide new opportunities for the covered species to disperse, colonize, and establish viable breeding populations.

The duration of the Cooperative Agreements will range from 10 to 50 years depending on the practices and expected benefits. The duration of the Certificate of Inclusions will be the time remaining on the 50-year permits at the time of issuance to encourage Cooperators to maintain the habitat beyond the expiration of the Cooperative Agreement and not be inclined to return the property to baseline conditions within a shorter period. The actions proposed under the Cooperative Agreements are of limited duration making the Agreement's benefits appear transitory. However, the habitat maintained through this Agreement will not necessarily cease to exist upon expiration or termination of individual Cooperative Agreements because Cooperators may not choose to bring enrolled properties back to the baseline at that or any other time in the future. As new Cooperators continue to enroll under the Agreement over a 50-year period, the effect will be to have new land parcels constantly coming under Cooperative Agreements while other Cooperative Agreements expire. The net effect will be shifting mosaic of habitats being managed for the covered species, with a net beneficial impact upon the status quo.

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