

State of Hawaii

Forest Stewardship Program

Handbook

Department of Land and Natural Resources
Division of Forestry and Wildlife (DOFAW)
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<http://hawaii.gov/dlnr/dofaw/forestry/fsp>

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Table of Contents

Program Overview	3
Applicant Eligibility	3
Proposal Deadlines	4
Program Procedures	4
Forest Stewardship Management Plans	5
Management Objectives	5
Management Plan Practices	6
Cost-Share and Allowable Rates	13
General Advice	14
Project Proposal Form	16
Forest Stewardship Management Plan Template	20

Appendices:

- Appendix A. Environmental Compliance and Permits
- Appendix B. State Forest Stewardship Program
- Appendix C. FSP-NRCS Financial Incentive Programs
- Appendix D. Forest Stewardship Management Plan Signature Page
- Appendix E. Useful Resources
- Appendix F. Natural Area Reserve System

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3060 Eiwa St.

Lihue, HI 96766

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Oahu

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Honolulu, HI 96822

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66-1220A Lalamilo Rd., Kamuela, HI

Phone: 808-887-6061

Forest Stewardship Website:

www.hawaii.gov/dlnr/dofaw/forestry/fsp

Division of Forestry and Wildlife Website:

www.hawaii.gov/dlnr/dofaw

Program Overview

The Hawaii Forest Stewardship Program (FSP) provides technical advice and financial assistance on a cost-share basis to promote the stewardship, enhancement, conservation and restoration of Hawaii's forests. The FSP focuses on the following objectives: forest productivity, native ecosystem health and biodiversity, watershed quality, wildlife habitat and recreation.

The Hawaii Forest Stewardship Program began in 1991 through the passage of Act 327 of the Hawaii State Legislature. The federal U.S. Forest Service Forest Stewardship Program provides administrative support for the state program. The Forest Stewardship Advisory Committee (FSAC) advises the Department of Land and Natural Resources Division of Forestry and Wildlife (DOFAW), who administers the program, on matters regarding the FSP. The Committee reviews FSP project proposals and management plans, and recommends those deserving of funding to the State Forester for program approval. The FSAC members represent federal and state agencies, professional foresters, resource consultants, conservation organizations, non-profit and land trust organizations, and private landowners.

Interested parties are asked to submit a project proposal to DOFAW for review by the FSAC; the FSAC will review proposals and invite those with accepted proposals to write a full Forest Stewardship management plan that must cover a period of at least 10 years. These plans should include all relevant information including any fire first response or timber harvest plans if these practices are desired. For FSP management plans approved by the Committee and the DOFAW State Forester:

1. Management plan development may be partially funded through FSP.
2. Implementation of the proposed or planned conservation practices may be partially funded through FSP and/or USDA-Natural Resource Conservation Service (NRCS) financial assistance programs.

The term of the contract agreement may vary depending on the funding source and scope of the project, but could range from 3 to 30 years. Regardless of the funding program you utilize, it is recommended to develop a long-term forest stewardship plan that includes all practices, timelines, and funding expectations for your project.

Note: that development of Forest Management Plans by NRCS-approved Technical Service Providers may be partially funded by NRCS, and subsequently be eligible for funding under NRCS financial assistance programs.

Applicant Eligibility

To be eligible for FSP, applicants must:

- Own at least 5 contiguous acres of forested or formerly forested land

OR

- Have a lease for a minimum of 10 years on at least 5 contiguous acres of forested or formerly forested land

AND

- Intend to **actively manage at least 5 acres** to enhance forest resource values for *both* private and public benefit

Individuals, joint owners, private groups, associations, lease or license holders, or corporations are eligible. Lands that qualify as Natural Area Reserves are not eligible (see *Appendix F*).

Program Deadlines

The FSP Coordinator accepts proposals and management plans on a continuous basis, which are compiled and reviewed prior to evaluation by the FSAC. The Committee generally meets on a quarterly basis each year; contact the FSP Coordinator for a current schedule. It is highly recommended that the FSP Coordinator is contacted before submitting a proposal and that a draft is submitted before the date of the FSAC meeting to enable preliminary review. By resolving any issues in advance with DOFAW staff, you will increase your chance of success.

Program Procedures for Project Proposals and Management Plan Development

1. Submit a project proposal to the FSP Coordinator. Follow the format on page 16. Project proposals are accepted, rejected, or revisions are requested. Once accepted, an invitation to develop a full management plan is given and the cost-share amount for the development of a plan is negotiated with the FSAC and DOFAW State Forester.

2. Develop and submit a management plan covering at least 10 years of management practices according to the format on page 20. *We recommend you seek the assistance of a professional forester, resource management consultant, or someone with expertise in management plan development unless you are otherwise qualified.* Plans must include a letter from the State Historic Preservation Division verifying there are no archeological, burial or historic sites on the property (see *Appendix A*). Once submitted the Forest Stewardship Advisory Committee may approve, request revisions, ask that additional detail be incorporated into the management plan, or disapprove the plan. Reimbursement development of the management plan based on the negotiated cost-share amount is made upon final approval of the plan by the Forest Stewardship Advisory Committee and the State Forester.

3. Prior to submission of final management plan, arrange a site visit with the FSP Coordinator, DOFAW Service Forester, and/or NRCS Soil Conservationist or designee to verify proposed practices and cost-share estimates.

4. Sharing the cost (cost-share) of Forestry Practices. Approved of a Forest Stewardship management plans are eligible for cost-share assistance for the implementation of practices as detailed in the plan. Eligible cost-share practices are found starting on page 6 and estimated cost-share rates are included in *Appendix B and C*.

5. Submit approved management plan for cost-share assistance for implementation of the management practices. The FSP Coordinator, on your behalf by request, will submit approval documents detailing FSP management plans to the appropriate funding agency. Both the Hawaii Forest Stewardship Program and NRCS financial assistance programs can provide cost-share assistance for approved FSP management practices. Details on both the State Forest Stewardship Program and NRCS financial assistance program funding options are available in *Appendix B and C*.

6. IF NECESSARY – Environmental compliance may be required. Depending on the funding

sources and project scope, an Environmental Assessment may be required to implement your management plan. Archeological surveys may be required where there is strong evidence to suggest the existence of archeological or historic resources. Grubbing and Grading Permits or Soil Conservation Plans may be required for construction related actions. If the project is within the conservation district, a Conservation District Use Permit may be required. If you plan to collect, propagate or plant threatened and endangered species, a permit will be required, contact the State Botanist at (808) 587-0166. (Appendix A)

7. Submit documents required to complete a contract with either Hawaii Forest Stewardship Program or NRCS. After management plans are approved, DOFAW or NRCS staff will prepare a contract agreement, which you review and sign. DOFAW or NRCS staff will instruct you on what documents and other compliance is needed to finalize your contract agreement. Some of the required information may include submission of a W-9 Form, federal and state tax clearances, a General Excise Tax Number, and/or other evaluation forms.

8. Submit semi-annual progress reports, invoices, and cost documentation. Templates for reports will be provided once your project contract agreement is approved. DOFAW or NRCS staff will visit your project site to verify practice completion and discuss progress or problems. Information contained in reports may be shared with the public.

Please note for FSP it takes at least 6-12 months from when a proposal is submitted to contract execution. Cost share funds will not be dispersed until the contract is fully executed and initial management practices have been completed and are ready for inspection and reimbursement.

Forest Stewardship Program Management Plans

FSP management plans cover a minimum period of 10 years, but can be longer. Professional services may be required in developing your management plan.

Management Objectives

- Forest Stewardship management plan development
- Growth and management of forests for timber and other forest products
- Native species restoration and/or protection
- Agroforestry (the forestry component only)
- Windbreaks (to protect forestry project areas)
- Fire pre-suppression
- Watershed, riparian, and/or wetland protection and improvement
- Forest recreation enhancement
- Native wildlife habitat enhancement
- Native forest conservation

Orchards, non-tree related agriculture and landscaping are NOT eligible objectives

Management Plan Practices

1. Forest Stewardship Management Plan Development

It is highly recommended that forestry projects have a management plan prior to any practice is implemented. Long term management plans will allow you to state your objectives, identify resource concerns, financially plan for activities, define monitoring protocols, identify where and when practices should be used, among others items. All FSP projects must have an approved management plan before they can be authorized for cost-share assistance. Please use the format detailed in this handbook when developing your plan (found on page 20). DOFAW staff provides applicants with technical expertise during plan development, but will not write the plan for you. A forestry consultant is highly recommended to assist with plan development, especially in regards to fire pre-suppression and first response as well as timber harvest planning.

Revisions/Amendments: Your plan may be revised as necessary to account for changing conditions. Increased costs of business should be built into annual budgets to avoid mid-decade amendments. All amendments are subject to approval by the Forest Stewardship Advisory Committee and the State Forester, and could result in project delays. All non-native species added to your plan or project site must be approved prior to their use.

2. Tree and Shrub Site Preparation

Most planting projects require the reduction or removal of existing vegetation, especially in the case of invasive species management, and/or site preparation to increase seedling survival. Heavy or light equipment or hand-labor may be cost-shared if you:

- Follow elevation contours when using heavy soil-moving equipment.
- Never use equipment in Streamside Management Zones
- Follow Best Management Practices to minimize erosion. See the guide at http://www.state.hi.us/dlnr/dofaw/pubs/BMPs_bestmanagement.pdf

You may need to improve the soil condition for seedling growth or natural regeneration by using tilling and sub-soiling where soil is compacted or where there are hardpans. In some cases, scarification can be used to promote the regeneration of *Acacia koa* where it once existed. Maximum allowable costs can vary depending on the density of existing vegetation, soil conditions, presence of a hardpan, and the steepness of the slope.

Components of Tree and Shrub Site Preparation

- A) Tree/Shrub Site Preparation (NRCS practice code 490): Tree/shrub site preparation is the treatment of areas to improve site conditions for establishing trees and/or shrubs. This practice is used to encourage natural regeneration of desirable woody plants and to permit artificial establishment of woody plants.
- B) Deep Tillage (324): Performing tillage operations below the normal tillage depth to modify adverse physical or chemical properties of a soil.
- C) Woody Residue Treatment (384): Treating woody plant residues created during forestry, agroforestry and horticultural activities to achieve management objectives.

*The NRCS practice codes should be included in your management plan especially if you intent on using a NRCS financial incentive program.

3. Fence

If seedlings and young trees need protection from feral and/or domestic animals, such as pigs, sheep, deer, cattle, horses, goats and humans; fences and other tree protection measures may be necessary. Fence cost-share limits depend on the type of fencing necessary for the site and intended purpose, which should be described in your management plan including specification on type (e.g. electric, barbed wire, cattle proof, etc), height, materials (e.g. wire, posts, gates, etc), and difficulty of installation. Please provide three (3) estimates of costs for all game proof fences, especially if costs are anticipated to exceed the allowed rates identified in *Appendix B* and *C*. Fences **MUST** be maintained for at least ten (10) years following installation and maintained in a manner that preserves their intended function, such as protecting seedlings from feral or grazing animals.

Components of Fence

- A) Fence (382): A constructed barrier to animals or people. This practice facilitates the accomplishment of conservation objectives by providing a means to control movement of animals and people, including vehicles.

4. Nutrient Management

Some project sites may require additional nutrient management in order to ensure successful plantings; we highly recommend having the soil tested prior to augmentation. The University of Hawaii's Agricultural Diagnostic Services Center provides soil, water and tissue testing. See www2.ctahr.hawaii.edu/adsc/downloads/price_list.pdf or <http://websoilsurvey.nrcs.usda.gov> for more information. Fertilizers and soil amendments may be organic or inorganic. Soil tests and professional recommendation rates for each species are required for cost-share on fertilizers. Soil amendments to improve the structure and fertility of the soil immediately surrounding the seedling root zone can also be cost-shared, including hydrating polymers.

All amendments must be used in accordance with registered uses, directions on labels, and all other applicable federal, state and local policies. Careful consideration should be applied regarding induced deficiencies of nutrients due to excessive nutrient levels and the affects of soil pH on the availability of plant nutrients. Do not apply inorganic fertilizers near to streams or wetlands where polluted runoff might enter water. Fertilizer applications are generally eligible for cost-share assistance for a period of up to four years subsequent to planting seedlings. Generally, the highest cost-share limit is applicable only where soil depletion is extreme and is justified by soil tests and recommendations.

Components

- A) Nutrient Management (590): Managing the amount, source, placement, form and timing of the application of plant nutrients and soil amendments.

5. Tree and Shrub Establishment

Depending on the management goals, most projects will require the establishment of trees and/or shrubs. You must consider the current and former plant communities at your site when choosing species. Seedlings should be purchased from local growers who use genetically diverse seeds or stock from as close to your planting location and/or habitat as possible. It is advised to order plant stock well in advance (three to four months for most species) to get the quantity, quality and species that you desire for your project. Use smaller container stock such as dibble tubes, airblock, or root-trainer, as opposed to

larger, potted stock to reduce site preparation and planting costs; however, this may vary depending on the species you select. Seedlings should be in good condition, adequate size and "hardened off" before planting. Seedlings that have been in containers for too long may not be healthy and will not grow as well once planted. A detailed species list is required in the management plan. **Projects that include invasive species will not be funded** unless there is an overriding environmental justification for their use (see General Advice). *Fruit trees are not eligible for cost-share unless the product of interest is for timber purposes.*

Seedlings are usually planted at the beginning of the wet season, and the planting area should be cleared of all weeds and competing vegetation from around newly planted seedlings to an area of at least 3 feet in diameter. Where dibble stock is used, soil is of good structure and there is adequate rainfall, the planting holes only need to be big enough to accommodate the small dibble. Where larger planting stock is used, holes must be large enough to accommodate freely hanging roots, or root balls. Roots should never be bent or crowded. Where long droughts may threaten seedling survival, larger holes can serve as water storage reservoirs, greatly increasing seedling survival rates. Holes dug through sod or untilled ground should be at least 16 inches square. *Do not place the plant so deep into the hole that the stem is buried.* Mix soil amendments or additives with soil before planting holes are filled to improve growing environment and soil water holding capacity. Avoid glazing sides of planting holes with digging tools, especially augers, in wet clay. Plantings for native forest restoration and tree plantations should be carefully and consistently maintained to assure the survival of a majority of the trees planted. Direct seeding or seed scatter are appropriate method and can be used for establishing trees, shrubs and groundcovers.

The NRCS Vegetative Guide provides species recommendations for planting relating to implementation of several management practices at: <http://www.plant-materials.nrcs.usda.gov/pubs/hipmstn9761.pdf> These lists are merely recommendations and do not exclude consideration of other species.

NRCS has also developed Ecological Site Descriptions for most of the Island of Hawaii. These are descriptions of different forest types, including detailed native species lists that correlate to specific soil types described in NRCS soil survey data. They are one basis for making native species planting recommendations for specific site. Current Ecological Site Descriptions are available at: http://efotg.nrcs.usda.gov/efotg_locator.aspx?map=HI. Click on the image of Hawaii, then the image of any island, then look in the left-side column and select Section II.

Components

- A) Tree/Shrub Establishment (612): Establishing woody plants by planting seedlings or cuttings, direct seeding, or natural regeneration.
- B) Riparian Forest Buffer (391): An area predominantly trees and/or shrubs located adjacent to and up-gradient from watercourses or water bodies.
- C) Alley Cropping (311): Trees or shrubs are planted in sets of single or multiple rows with agronomic, horticultural crops or forages produced in the alleys between the sets of woody plants that produce additional products.
- D) Multi-story Cropping (379): Existing or planted stands of trees or shrubs that are managed as an overstory with an understory of woody and/or non-woody plants that are grown for a variety of products.
- E) Silvopasture Establishment (381): An agroforestry application establishing a combination of trees or shrubs and compatible forages on the same acreage.
- F) Windbreak/Shelterbelt Establishment (380): Windbreaks or shelterbelts are single or multiple

rows of trees or shrubs in linear configurations.

6. Groundcover Establishment

Many projects may need to establish a temporary or permanent groundcover in order to protect from soil erosion, enhance habitat for wildlife, and/or limited the establishment of invasive species. Groundcover can be temporary or permanent vegetative cover including grasses, sedges, rushes, ferns, legumes, and forbs. Plant species selected should be adapted to the site condition, have physical characteristics to provide adequate protection, as well as appropriate for the duration that they are needed (i.e.: annual or perennial species). Implementation of this practice should be timed in conjunction with other practices as well as weather conditions in order to prevent soil erosion. This practice is also appropriate for use in agroforestry systems.

Components

- A) Conservation Cover (327): Establishing and maintaining permanent vegetative cover. This practice may be applied to accomplish one or more of the following: Reduce soil erosion and sedimentation, Improve water quality, Improve air quality, Enhance wildlife habitat and pollinator habitat, Improve soil quality, Manage plant pests.
- B) Cover Crop (340): Crops including grasses, legumes and forbs for seasonal cover and other conservation purposes.
- C) Riparian Herbaceous Cover (390): Grasses, sedges, rushes, ferns, legumes, and forbs tolerant of intermittent flooding or saturated soils, established or managed as the dominant vegetation in the transitional zone between upland and aquatic habitats.

7. Irrigation

Irrigation systems should be used only in areas where rainfall is not dependable to enhance seedling survival and growth during early development. Irrigation should not to be used to maintain trees as they become mature. Use mulch where feasible to help maintain soil moisture (see next section), and where feasible use drip irrigation. Cost-share assistance is available for system installation only; system maintenance and repairs are the responsibility of the applicant. Irrigation is only eligible for cost-share assistance for a period of up to four years following the seedling planting date. Allowable cost-share rates are for drip irrigation only. For catchment systems and ponds please provide three quotes for allowable cost-share rates. Irrigation systems should be maintained until the plants can survive on their own through a normal dry season. Please see a free publication at www.ctahr.hawaii.edu/oc/freepubs/ for assistance in designing irrigation systems.

Components

- A) Irrigation Pipeline (430): A pipeline and appurtenances installed to convey water for storage or application, as part of an irrigation water system.
- B) Irrigation Reservoir (436): An irrigation water storage structure made by constructing a dam, embankment, pit, or tank.
- C) Irrigation Water Management (449): The process of determining and controlling the volume, frequency and application rate of irrigation water in a planned, efficient manner.
- D) Irrigation System Sprinkler (442): An irrigation system in which all necessary equipment and facilities are installed for efficiently applying water by means of nozzles operated under pressure.

8. Mulching

Use organic mulch at least 2 inches thick where feasible to help control weeds after planting. Keep mulch away from plant stems where it can cause rot. Mulch consists of plant residues or other suitable manufactured materials. More information about mulching as a practice can be found here: <http://miami-dade.ifas.ufl.edu/pdfs/fyn/mulch-practices.PDF>

Components

- A) Mulching (484): Applying plant residues or other suitable materials produced off site, to the land surface.

9. Weed Control

Ongoing weed control and management are required for many projects, especially where invasive species are present. Establishment and maintenance of non-invasive ground covers (Groundcover Establishment) and native understory plants can assist with preventing establishment and re-establishment of unwanted vegetation, but additional chemical or mechanical methods may be needed to suppress weeds. Use higher planting densities and/or ground covers to shade out weeds, and eliminate or control weeds with herbicides, mechanically or by hand. Use control measures designed specifically for the particular weed species and minimize adverse environmental impacts when applying herbicides (Don't spray when it's windy, use the lowest rate of the least toxic alternative possible). Apply chemicals in accordance with registered uses, directions on labels, and all other applicable federal, state and local policies. Buffer zones surrounding planting areas are also eligible for weed control practices to prevent the spread of weeds into the planted area. Weed control should continue into the post 10-year management plan period as ongoing maintenance to assure tree survival and normal growth.

Components

- A) Brush Management (314): The management or removal of woody (non-herbaceous or succulent) plants including those that are invasive and noxious.
- B) Herbaceous Weed Control (315): The removal or control of herbaceous weeds including invasive, noxious and prohibited plants.

10. Fuel Break

Fire is a major threat to our natural resources and in some cases significantly increases the spread of non-native species. Fire can also result in forest fragments and in some cases create a fire cycle that is otherwise uncommon to the Hawaiian Islands. Projects in high fire threat areas must be protected from fire, typically via maintained fuel breaks. Other methods for fire protection or pre-suppression will be considered on a site specific basis. Fuel breaks can be maintained through chemical methods and mechanical (mowing) methods or by use of managed grazing animals. All projects should include a fire response plan which should include water availability, first responders, and contact information for those involved in fire suppression. Please include information on your projects fire first response plan in your management plan. Sites that are prone to fire danger or are in need of fire prevention or mitigation measures may be eligible for cost-shared rates.

Components

- A) Fuelbreak (383): The manipulation of species composition, stand structure and stocking by cutting or killing selected trees and understory vegetation.

11. Windbreak

Windbreaks can significantly reduce the negative effects associated with strong wind, including topsoil erosion, broken branches, salt spray, and growth inhibition, among other cumulative damages. Strong winds can also reduce the success of your project by sucking moisture from the soil and the plants.

Windbreaks generally consist of one or more rows of trees and shrubs planted to protect an area from prevailing winds, and to be most effective they should be perpendicular to the wind direction. More information about windbreaks use and advantages can be found here:

http://www.ctahr.hawaii.edu/ctahr2001/CTAHRInAction/Jul_02/windbreaks.html

Components

- A) Windbreak/Shelterbelt (380): Windbreaks or shelterbelts are single or multiple rows of trees or shrubs in linear configurations.

12. Special Areas Practices

Highly erodible, very steep and/or inaccessible sites may require more intensive methods to establish permanent vegetation, including trees, shrubs, ground covers, and grasses. In addition to the practices listed above, the following can be employed in these areas:

- Erosion control matting and/or other erosion control materials such as coir logs or rocks.
- Labor-intensive methods of hand-clearing undesirable vegetation.
- Terracing, water diversions, or other grading. *Additional permits may be required.*
- Establishment of more expensive plants in larger containers.
- Other materials and/or methods as necessary.

The applicant must obtain 3 quotes for the proposed work and materials, and consult with the FSP Coordinator to determine the allowable cost-share. Due to limited funds, this option may not always be available.

Components

- A) Critical Area Planting (342): For Highly Erodible Lands (HEL) or Steep areas - Establishing permanent vegetation on sites that have, or are expected to have, high erosion rates, and on sites that have physical, chemical or biological conditions that prevent the establishment of vegetation with normal practices.
- B) Stream Habitat Improvement and Management (395): Maintain, improve or restore physical, chemical and biological functions of a stream, and its associated riparian zone, necessary for meeting the life history requirements of desired aquatic species.
- C) Stream Crossing (578): A stabilized area or structure constructed across a stream to provide a travel way for people, livestock, equipment, or vehicles.
- D) Streambank and Shoreline Protection (580): Treatment(s) used to stabilize and protect banks of streams or constructed channels, and shorelines of lakes, reservoirs, or estuaries.
- E) Other Project Needs: The FSAC will consider use of other practices needed to protect sensitive areas or that will ensure successful plantings (such as constructed windbreaks). Please consult the FSP Coordinator prior to submission of the management plan.

13. Trail and Road Construction

Cost-sharing is available for trails in forest areas to enhance their recreational value, and to provide for public access, educational opportunities, and fire protection. Do not eliminate key trees that have scenic value, provide shade, reduce erosion and runoff, provide unique habitat for wildlife, or that add aesthetic value in the area - this includes tree snags. Develop trail grades suited for the intended purposes,

consider the topography, and avoid exceeding 10 percent slopes. Wherever possible, trail width should remain between 2 and 4 feet. Cut and fill slopes must be stable and include provisions for erosion control. Re-vegetate as soon as possible following trail construction. Design bridges, crossings, and elevated trails with professional assistance. Try to place directional and warning signs, handrails and culverts as dictated by the limitations of site. Include provisions for maintaining all wearing surfaces, signs and drainage structures for ten years following installation.

Components

- A) Trail Construction: Work involved with creating and/or maintaining trails to access work sites or for public recreational use.
- B) Water Crossings: Improved features for crossing streams or other water bodies to access work sites or for public recreation.
- C) Signs: Design, purchase and installation of signs to identify important features of the project to provide public information or to denote project area for safety concerns.
- D) Forest Trails and Landings (655): Construction of trails and lands for timber harvest activities.

14. Forest Stand Improvement

Where stands of trees are overstocked or over topped by less desirable trees, thinning can increase the growth, health and the future value of desired trees. Consider which species will be favored after thinning and if weeds will take over with more sunlight available. Choose cull (non desirable) trees with the assistance of a professional forester and plan for slash (biomass waste) disposal after thinning. Determine the best season and method for thinning. This practice can also be used to remove infected and/or host plant species to limit the spread of disease and pests.

Timber harvest should be conducted in accordance to an approved timber harvest plan AND in accordance to mandatory permits such as CDUP, EA, etc. (*Appendix A*). Timber cruises and inventories are a necessary part of any timber harvest plan. It is very important to consider the extraction method in the plan, as this could be very costly and/or inflict serious ecosystem damage. It is important to consult a professional when developing a timber harvest plan. See *Appendix B* for the timber harvest payback provision.

Components

- A) Forest Stand Improvement (666): The manipulation of species composition, stand structure and stocking by cutting or killing selected trees and understory vegetation.

15. Tree and Shrub Pruning

Pruning is a practice that alters the form and growth of a plant to improve the grow form of the selected species as well as for preventative maintenance. Removal of dead or drying branches injured by disease, severe insect infestation, storm or other adverse damage may be used to prevent unwanted growth form during early years of development. Pruning may also be required to maintain windbreaks to ensure desired tree form. Pruning often promotes better form and health by increasing light penetration and air movement.

Components:

- a) Tree and Shrub Pruning (660): The removal of all or part of selected branches, leaders or roots from trees and shrubs.

16. Forest Health and Protection

Forest health practices may be utilized to improve growing conditions for plants, prevent the spread or introduction of invasive or weed species, improve wildlife habitat, among other reason. Projects may want to consider the use of biological controls; alternative methods for reducing invasive animal species population species, such as rats, mice, slugs, snails, cats, feral ungulates, etc.; and/or other pest prevention activities.

Components

- A) Integrated Pest Management (595): A site-specific combination of pest prevention, pest avoidance, pest monitoring, and pest suppression strategies.
- B) Animal Control: Reduction and/or elimination of harmful non-native animals from a project area. Feral ungulates, cats, rats, mice and mongoose as well as non-native snails and slug control can be incorporated into management practices, as appropriate.
- C) Other Tree Protection: Tree tubes, shade clothes, and other animal barriers may be considered. The applicant must obtain 3 quotes for the proposed work and materials, and consult with the FSP Coordinator to determine the allowable cost-share. Due to limited funds, this option may not always be available.

19. Monitoring and Maintenance

All applicants are asked to include a monitoring plan for their proposed project. The monitoring plan should detail the frequency of monitoring for the associated practice and describe what will be recorded in monitoring reports (i.e.: seedling survivorship, weed control and present, etc). This information will help you determine if your project is successful as well as guide the need for practice modification in the future.

Under FSP, participants are expected to maintain cost-shared improvements for at least ten years following installation or for the life of the practice. “Maintain” means the improvements will not be willfully removed or destroyed and routine maintenance will assure that under normal conditions the improvements will serve the intended purpose. Details are given in each management practice description above and below.

Components

- A) Access Control (472): The temporary or permanent exclusion of animals, people, vehicles, and/or equipment from an area.
- B) Upland Wildlife Habitat Management (645): Provide and manage upland habitats and connectivity within the landscape for wildlife.

Cost-share and Allowable Rates

Implementation of conservation practices under approved Forest Stewardship management plans are eligible for cost-share assistance for your planned practice expenses under the Hawaii Forest Stewardship Program and NRCS financial assistance programs. Cost-share under assistance programs must be within the allowable rates and is generally on a reimbursement basis. You can include “in-kind” services (non-cash) such as labor costs, your own materials, and the use of your own equipment as part of your cost-share contribution. Allowed cost-share rates and additional information about these

programs is included in *Appendix B and C*.

General Advice

Invasive Species

Projects that include invasive species will not be funded unless there is an overriding environmental justification for their use. The following procedures will be used to judge whether a non-native species is considered invasive and/or approved or disapproved:

1. No species on the state 'Noxious Weed List' will be funded. See Page 11 of the state rules: www.hawaiiag.org/hdoa/adminrules/AR-68.pdf
2. Non-native species proposed for planting must be listed in FSP management plans or submitted as revisions of previously approved management plans. If the landowner is aware that the species may be considered invasive the plan should include a justification of the use of the species. New management plans and associated species lists are always reviewed by FSAC.
3. You can search for the invasive status of particular species at the Weed Risk Assessment website: <https://sites.google.com/site/weedriskassessment/home>
4. DOFAW FSP staff will gather information and recommendations about non-native species from DOFAW Branch staff and the Weed Risk Assessment scores; if there is no clear consensus, further information will be sought from invasive species experts.
5. For new non-native species added to revised management plans: If the information in step #4 clearly indicates that the species is not invasive, it will be approved by FSP staff without waiting for a FSAC meeting. If the information in step #3 indicates that the species may be invasive, the species may not be approved until reviewed by the FSP Committee.
6. If the FSAC disagrees about whether to consider the species, the final decision will be made by the DOFAW Invasive Species Coordinator.

These guidelines follow Federal Executive Order #13112, quoted below. In applying the Executive Order to the Hawaii FSP, (a) successful justifications for the use of invasive species will emphasize environmental benefits rather than economic benefits, and (b) new introductions of potentially invasive species carry a high risk of harm and will not be funded. Generally speaking, if there is a lack of information or clear understanding about how the species has or will affect Hawaiian ecosystems, the species in question will not be funded.

Federal Executive Order #13112 directs that [Federal] agencies "not authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species in the United States or elsewhere unless, pursuant to guidelines that it has prescribed, the agency has determined and made public its determination that the benefits of such actions clearly outweigh the potential harm caused by invasive species; and that all feasible and prudent measures to minimize risk of harm will be taken in conjunction with the actions."

Compliance

It is the responsibility of the applicant and/or consultant to complete all required environmental reviews, permits, and other compliance documents for their project. Any required permits and other environmental compliance must be approved prior and included with the plan when submitted for cost-share assistance under either the Hawaii Forest Stewardship Program or NRCS financial assistance program (environmental compliance requirements may vary between the two agencies). Descriptions of some required review and permits documents are included in *Appendix A*.

Best Management Practices (BMP's)

All FSP participants must adhere to current DOFAW **Best Management Practices** that are relevant to the project: www.state.hi.us/dlnr/dofaw/pubs/BMPs_bestmanagement.pdf. It is acceptable and encouraged to 'think outside of the box' and to utilize new technologies, as long as prior approval is gained by the FSAC and/or DOFAW State Forester.

Distribution and use of approved Forest Stewardship Management Plans:

The following information will be available as required by the Freedom of Information Act: name, address, project location, and funding provided. One of the objectives of the FSP is to generate useful information for landowners throughout Hawaii who may be considering forest management as a land use alternative. During the course of the project, you will be asked to share your experiences and knowledge, and to contribute to the development of data and be informational sources for others.

Once you are enrolled in the FSP your approved management plan will be made available for copy and distribution to the general public upon request. You are thus advised to delete any information that you consider to be proprietary, prior to submitting the management plan to the Forest Stewardship Advisory Committee. You can present relevant proprietary information to the Committee separate from the management plan. As required by the Freedom of Information Act, your name, project location, and funding is available, but will not be actively publicized. Although approved Forest Stewardship Management Plans are available for distribution to the general public, they should be used by potential applicants for informational purposes only. Any management plans that appear to plagiarize previously approved plans will not be accepted.

Project Proposal Form – Step One

In order to receive cost-share assistance for your project, you must submit a project proposal for review by the Forest Stewardship Advisory Committee. If the Committee approves this proposal, you will be invited to develop a full management plan. Upon completion and approval of your management plan, funding possibilities include (1) the Hawaii Forest Stewardship Program (FSP) for long-term management, eligible for 50% cost-share assistance; and/or (2) various USDA Natural Resource Conservation Service (NRCS) or Farm Service Agency (FSA) financial and technical assistance programs for plan implementation, eligible at 50% to 75% cost-share assistance (dependent on program). **Note:** An approved Forest Stewardship management plan is a valid proxy for an approved NRCS conservation plan. Retroactive cost-share (partial reimbursement) for Forest Stewardship management plan development is available for all management plans if and when they are approved. Project proposals should specify if the applicant is interested in funding support from the Hawaii Forest Stewardship Program, USDA (indicate program(s) if known), a combination of both, or for some other purpose.

Please submit the project proposal via e-mail to the Cooperative Resource Management Forester (contract information available at www.hawaii.gov/dlnr/dofaw/fsp) or by compact disk to DOFAW Forest Stewardship Program, 1151 Punchbowl Street Room 325, Honolulu, HI 96813.

[Start of Proposal Form]

1. Applicant and Property Information

Applicant Name:

Mailing Address, Email, Phone, Fax:

Landowner name:

Lease/License holder name:

Effective date of lease and lease term:

Address and Tax Map Key number(s) of project location:

State Land Use and County Zone designation:

Farm Service Agency Farm No. and Tract No. (if you already have one):

Driving directions from the nearest highway:

Property acreage:

Proposed acres in stewardship management area:

Ethnicity (optional):

2. Project Vision and Goals - Please describe your long-term vision and goals for the property and project (at least a paragraph of description).

3. Description of the project property or the land area to be managed

Existing flora/vegetation (native, non-native and/or invasive species):

Existing fauna/wildlife: (native, non-native and/or invasive species – birds, rats, cats, mongoose, frogs, ungulates, etc):

General elevation:

Slope:

Are gulches or any waterways present?

4. Land Use for the entire property (Place an “X” under all that apply):

	Pasture	Crop land	Sugar cane	Range land	Forest grazed	Forest non-grazed	Other - please describe
Historic							
Current							
Proposed							

5. Natural Resource Concerns - Please check all resource concerns that apply to the project:

- Noxious and invasive species
- Organic material depletion
- Plants not adapted or suited to site
- Threatened and endangered species
- Inadequate cover for wildlife
- Inadequate shelter for domestic animals
- Harmful temperatures of surface water
- Water quality, excess sediment
- Hydrologic Cycle, capture and storage of rainfall
- Other: _____
- Soil erosion
- Soil compaction
- Plant productivity, health, or vigor
- Wildlife habitat fragmentation
- Inadequate food for wildlife
- Undesirable air movement
- Adverse air temperature
- Insufficient flow in watercourses

A complete list of resource concerns and descriptions are available at:

http://efotg.nrcs.usda.gov/references/public/HI/quality_criteria_table_final_april_25_2005.pdf

6. Forest management objectives - Please check all objectives that apply to the project:

- Forest Stewardship management plan development
- Growth and management of native and non-native forests for timber and/or forest products
- Native species restoration
- Wildlife habitat improvement (list wildlife)
- Agroforestry systems (forestry component)
- Windbreaks (to protect forestry project areas)
- Watershed, riparian, and/or wetland protection and improvement
- Forest recreation enhancement and/or education and community outreach
- Fire prevention
- Carbon storage or sequestration and/or biomass production
- Silvopastoral systems
- Other _____

Please describe in a short paragraph how your project will address the above checked natural resource concerns and incorporate the forest management objectives checked above.

7. Proposed practices - Please check all practices that apply to your project:

- Management Plan (required)
- Fence
- Tree and Shrub Establishment
- Irrigation
- Tree and Shrub Site Preparation
- Nutrient Management
- Ground Cover Establishment
- Mulching

- Weed Control
- Windbreak
- Trail Construction
- Tree and Shrub Pruning
- Monitoring and Maintenance
- Fuelbreak
- Special Areas Practice
- Forest Stand Improvement
- Forest Health and Protection

8. Maps

- 1) Please attach a topographic map showing the area. Use topozone.com, googlemap.com and/or other appropriate maps (soils, roads, etc) to identify the location of the proposed project.
- 2) Provide a map/sketch of your project area(s) and where specific management practices will be applied.

9. Vegetation Selection - Attach a list of species you propose to plant. Please see the Forest Stewardship Program Handbook for information concerning invasive species. If containerized seedlings or vegetative propagation methods are proposed as a source of planting stock, please describe. If soil scarification is proposed as a method to stimulate natural regeneration, please describe.

10. Public benefit - Please check all public benefits that apply to the project:

- Economic diversification/employment (commercial production of a significant scale)
- Native ecosystem and biodiversity restoration
- Watershed improvement/protection
- Native wildlife habitat enhancement
- Educational, recreational or ecotourism opportunities
- Carbon sequestration and storage, and/or biofuel production
- Other ecosystem services: _____

11. Organizations that will be involved in the project

Briefly list and describe partnerships with other resource management agencies and organizations. If you plan on using grants or cost-sharing from other programs as a source for your part of the required match, please describe the source and amount of funding expected.

12. Estimated costs

This table can help you get a rough idea of how much your project will cost. Please see *Appendix B and C* for the Hawaii Forest Stewardship Program and NRCS financial assistance programs practice cost-share lists for guidance on allowed cost-share rates under each program.

Example: If you prepare 10 acres for planting (site prep) at a cost of \$800/acre (done only once per acre) then the total practice cost will be \$8,000. The Hawaii Forest Stewardship Program will pay \$400/acre (50% of the actual cost, within the cost-share limits) or a total of \$4,000. You will be responsible for the matching \$400/acre of the practice which can be in-kind match of labor and/or equipment or actual cash you contribute to install the management practice (could be your own money or other funding sources).

Table 1: Example of Estimated Costs Breakdown

Practice Component	Acres	Cost/Acre (Or Mgmt Plan)	Frequency or # of acres	Actual Total Cost	Estimated Landowner Cost-share	Estimated Program Cost-share
Management Plan*			1 plan*		Negotiable*	Negotiable*
Tree and Shrub Site Preparation						
Fence						
Nutrient Management						
Tree and Shrub Establishment						
Groundcover Establishment						
Irrigation						
Mulching						
Weed Control						
Fuel break						
Windbreak						
Special Areas Practice					Negotiable	Negotiable
Trail Construction						
Forest Stand Improvement						
Tree and Shrub Pruning						
Forest Health and Protection						
Monitoring and Maintenance						
TOTALS						

A Forest Stewardship Management Plan should address individual landowner objectives while meeting professional resource management standards.

*Project proposals must attach at least three quotes for the development of a Forest Stewardship management plan to be eligible for cost-share assistance on the development of the plan. If you are unable to obtain quotes from three professionals, please contact the Cooperative Resource Management Forester.

13. Other Information

You may add any photos or other details to this application you think will help us understand the project. Provided more information about your project will increase your chances for approval by the Forest Stewardship Advisory Committee.

[End of Proposal Form]

Upon submission and review of your project proposal, the Forest Stewardship Program will either:
(1) invite you to complete a full management plan,
(2) ask you to provide more information for a secondary review, or
(3) your request for management plan assistance may be declined.

Forest Stewardship Management Plan Template – Step Two

If the project proposal is accepted, you will develop a detailed and comprehensive Forest Stewardship Management Plan, which may require the services of a professional forester or resource management consultant. The management plan must meet standards set forth in national and state Forest Stewardship Program guidelines and follow the management plan template format below.

Management Plan development costs generally range from \$1,500 to \$10,000 depending on plan complexity. The cost-share amount provided by the FSP is negotiated after the project proposal is accepted, but many not exceed 50 percent of the total cost to develop the management plan. The cost-share for the management plan is payable upon receipt of the final management plan, approved by the Forest Stewardship Advisory Committee and the State Forester, and a receipt from the consultant's invoice has been received. **All cost-share funds are paid on a reimbursement basis.** Management plans should specify if the applicant is interested seeking funding support for management plan implementation from the State of Hawaii Forest Stewardship Program or other federal landowner assistance program, such as NRCS EQIP (*Appendix B and C*).

[Start of Management Plan Template]

I. Cover Sheet

- Applicant information (same as project proposal)
Name, address, email, phone and fax number
- Property information (same as project proposal)
Landowner name:
Lease/License holder name:
Tax Map Key number(s):
State and County land use district or (zone) designation:
Property acreage:
Farm Service Agency Tract Number (if you already have one):
Acres of stewardship management area:
Approximate elevation:
Slope:
Perennial or intermittent stream courses:
- Consultant's name, title, company, address, email, fax and phone number
- Date the plan was completed (or revised)

II. Signature Page (*Appendix D*) with signatures of the applicant, consultant, approval date by Forest Stewardship Advisory Committee, and State Forester.

III. Introduction

- Vision and long-term goals of the project
- Description of the property
- Overview of the project specific management objectives (can include topics identified from the project proposal). Please provide further clarification or detail on the specific goals or objectives of the project.
- Detailed maps showing the location and attributes of the project

- Brief history of land uses and a description of present conditions

IV. Land and Resource Description

Describe the existing condition of the land and natural resources found within or surrounding, as applicable to the project area. Please identify the resource concern (can include topics identified from the project proposal) such as:

- Existing vegetation/forest cover types
- Existing forest health and function, including any invasive species, chronic disease, insect, rodent and/or fire threats
- Soils and their condition
- General slope and aspect
- Water resources and their condition
- Timber resources
- Wetland resources
- Significant historic and cultural resources. State whether an archeological survey has been done. If so, provide a summary. (*Appendix A*)
- Existing wildlife – please provide a list
- Threatened and endangered species existing on property
- Existing recreational and aesthetic values
- Infrastructure and access conditions

V. Management Objectives and Practices

Describe the management objectives and practices of the project, and specifically how you intend to implement and maintain outcomes for at least 10 years after installation of the practices in order to achieve your desired forest resource management objectives. Management plans should clearly describe each practice and how it will address the associated natural resource concerns. Plans should also define management units/forest stands and/or acreages for each treatment/practice (subunits may be used if necessary).

Forest management plan development and the following conservation practices may be eligible for cost-share. Please provide a brief description of the purpose(s), quantity and type or approach for each selected practice and describe what steps you will take to conserve, protect, and enhance your forest's air, water and soil resources. For each resource element, consider:

1. What treatments/monitoring/protection is planned?
2. When will you implement treatments (season, year), follow-up activities, etc?
3. Where will the management take place: entire stand/unit, part of a stand, acres?

Table 2: Eligible Forest Stewardship Management Practices

Management Plan	Fence
Tree and Shrub Site Preparation <ul style="list-style-type: none"> ○ Tree/Shrub Site Preparation ○ Deep Tillage ○ Woody Residue Treatment 	Irrigation <ul style="list-style-type: none"> ○ Irrigation Pipeline ○ Irrigation Reservoir ○ Irrigation water management ○ Irrigation system sprinkler
Nutrient Management	Mulching
Tree and Shrub Establishment <ul style="list-style-type: none"> ○ Tree/Shrub establishment ○ Riparian Forest Buffer ○ Alley Cropping ○ Multi-story cropping ○ Silvopasture ○ Windbreak/Shelterbelt establishment 	Special Areas Practice <ul style="list-style-type: none"> ○ Critical Area Planting ○ Streambank Habitat Improvement ○ Streambank Crossing ○ Streambank and Shoreline Protection ○ Other Project Needs
Fuel Break	Trail Construction
Ground Cover Establishment <ul style="list-style-type: none"> ○ Conservation cover ○ Cover Crop ○ Riparian Herbaceous Cover 	Forest Health and Protection <ul style="list-style-type: none"> ○ Integrated Pest Management ○ Animal Control ○ Other tree protection
Forest Stand Improvement	Tree and Shrub Pruning
Weed Control <ul style="list-style-type: none"> ○ Brush management ○ Herbaceous weed control 	Monitoring and Maintenance <ul style="list-style-type: none"> ○ Access control ○ Upland wildlife habitat management

VI. Practice Implementation Schedule

In a table, clearly list all specific practices by year, total acreage, projected cost per acre, total cost, and associated cost-share. The Implementation Schedule should cover a period of at least 10 years even if there is no requested cost-share in some years. Cost projections can vary widely depending on your site and should be based on relevant and recent information and not simply estimations using the provided allowable cost-share rates. It is common for landowner project expenses to exceed the allowed cost-share rates, especially where real cost estimates are higher than established hold-down rates for a particular management practice (State FSP and NRCS EQIP cost-share rates may vary between programs). The FSP cost-share amounts requested for each management practice should not exceed the cost-share rates as listed in *Appendix B and C*.

All cost-share funds are paid on a reimbursement basis.

Example (use this format for each year. Include components where applicable)

Implementation Schedule Year 1

Practice Component	Component*	Units	Cost/Unit	Total Cost	Applicant Share	FSP Share
Tree and Shrub Site Preparation	Tree/Shrub Site Preparation (490)	4 acres	\$1,000	\$4,000	\$2,000	\$2,000
Nutrient Management	(590)	4 acres	\$200	\$800	\$400	\$400
Tree and Shrub Establishment	Riparian Forest Buffer (391)	1000 seedlings	\$4.00	\$4,000	\$2,000	\$2,000
Groundcover Establishment	Conservation Cover (327)	2 acres	\$300	\$600	\$300	\$300
TOTALS				\$9,400	\$4,700	\$4,700

*See Appendix C for more information on NRCS practice codes

VII. Budget Summary

The budget summary lists your projected cost-share, FSP share and total project costs per year for the length of the project. If you are receiving other private or public funding, please create additional columns for each source. Please use this format:

SAMPLE PROJECT BUDGET SUMMARY

YEAR	Total Budget	Landowner Share	Program Share	Other Funding Source
Year 1	\$38,717	\$22,177	\$16,540	
Year 2	\$24,882	\$12,441	\$12,441	
Year 3	\$25,844	\$13,274	\$12,570	
Year 4	\$19,660	\$9,830	\$9,830	
Year 5	\$23,060	\$11,530	\$11,530	
Year 6	\$23,060	\$11,530	\$11,530	
Year 7	\$23,060	\$11,530	\$11,530	
Year 8	\$14,750	\$11,275	\$3,475	
Year 9	\$14,750	\$11,275	\$3,475	
Year 10	\$5,250	\$3,740	\$1,510	
TOTALS	\$213,033	\$118,602	\$94,431	\$

Year one (1) begins upon contract execution, therefore dated years should not be listed in this table.

Economic Analysis for Commercial Timber Projects

If management objectives include commercial timber production, the plan must include an economic analysis such as a net present value or internal rate of return calculation. You should roughly estimate projected cost and income flows and consider their sensitivity to changes in economic factors such as price and risks. While it may be impossible to accurately predict financial returns over time or provide precise data on silvicultural systems, it is recommended that you consider possible outcomes in consultation with a qualified resource economist or extension forester. A good resource is “Financial Analysis for Tree Farming in Hawaii,” available at <http://www2.ctahr.hawaii.edu/oc/freepubs/pdf/RM-9.pdf>. A

downloadable model spreadsheet is available on line at http://www2.ctahr.hawaii.edu/oc/freepubs/spreads/RM-9_forest_econ_calc.xls. Management plans that do not include a viable economic analysis for commercial timber will not be approved.

VIII. Required Maps

All maps must be at an appropriate and defined scale and include the following:

- Legend and North arrow
- Property boundary
- Project boundary
- Practice location
- Existing and proposed roads
- Watercourses

- **Location Map:** Illustrate the general property/project site location on the island and in relation to towns, major topographic features etc (This could be the same map as project proposal).
- **Topographic Map:** Provides specific property and project or unit boundaries clearly marked.
- **Project/Site Map:** Gives the location, orientation and layout of all management practices and other intended activities in the project area. Each practice location must be clearly illustrated in relation to the topography, watercourses and/or other significant natural and cultural features of the site. The map must also illustrate the layout and orientation of any proposed tree plantings such as windbreaks, forestry plantings, and restoration areas.
- **Other Map:** Additional maps may be included to further describe the property area and project. *The importance of good maps cannot be emphasized enough. Projects with inadequate maps or those that do not provide the level of detailed described above will be delayed or will not be funded.*

IX. Photographs of Project Site- Clearly shows existing site conditions and vegetation for each proposed project area are necessary. Aerial and/or satellite imagery is recommended.

X. Monitoring activities- Please describe all expected monitoring plans including the frequency and who will do it.

XI. Other Attachments if Available (not required)

- Existing forest stand inventories
- Maps: USGS, vegetation, roads/trails/soils, topography, archeological sites
- Sources of assistance and information, bibliography

[End of FSP Template]

Environmental Compliance and Permits

Archeological and Historic Sites

As part of creating a management plan, please submit a letter asking that the State Historic Preservation Division (SHPD) verify that for the TMK of the proposed project area there are no archeological, burial or historic sites present. Send to:

Administrator
State Historical Preservation Division (SHPD)
601 Kamokila Blvd. #555
Kapolei, HI 96707

If you believe there may be such sites present on the project property then you must also submit a letter to the same address telling them of your plans and notating the possible sites. SHPD will review your plans to determine whether an archeological inventory survey must be done. If so, permitted archeologists in the state are listed on the SHPD website: <http://www.hawaii.gov/dlnr/hpd/archcon.htm>

For more information see: <http://www.hawaii.gov/dlnr/hpd/hpgreeting.htm>.

Grading Permits and Soil Conservation Plans

Grading, stockpiling, grubbing, and trenching may require permits for soil disturbing work. A Special Management Area permit is required if the planned work is in the Special Management Area. This is mostly work near the coastal areas and is tied to Coastal Zone Management program requirements. **Each county is responsible for issuing this permit.** In some cases, an approved soil conservation plan may be acceptable. Contact NRCS or your local Soil and Water Conservation District for more information or see <http://www.hi.nrcs.usda.gov/>.

For more information on County Grading regulations and permits see:

- O'ahu** http://www.co.honolulu.hi.us/refs/roh/14a10_19.htm
Section 14-14 for ordinances
http://www.honoluludpp.org/download/permits/permitlistings.asp?p_TypeID=4
For applications and information
- Hawai'i** http://www.hawaii-county.com/directory/dir_pubworks.htm
East Hi: (808) 961-8321 or **West Hi:** (808) 327-3520
- Maui** <http://ordlink.com/codes/maui/index.htm>
Or call (808) 270-7242.
- Kauai** <http://www.kauai.gov/Default.aspx?tabid=133>
(Under Forms, Applications, and Instructions)

Environmental Assessments (EA)

Plans that include the establishment of timber with the intent of eventual harvest and projects involving fencing an area over 10 acres must be accompanied by an Environmental Assessment (EA), HRS §343. The FSP Coordinator can provide you with samples of approved stewardship plans and EAs. Incorporating local communities and cultural assessment (when appropriate) is an important part of the EA process. A helpful guidebook from the Office of Environmental Quality Control, available on the web at: <http://hawaii.gov/health/environmental/oeqc/index.html>.

From the guidebook:

“An EA is an informational document prepared by the proposing agency or the private applicant and used to evaluate the possible environmental effects of a proposed action. The environmental assessment must give a detailed description of the proposed action or project and evaluate direct, indirect and cumulative impacts. The document must consider alternatives to the proposed project and describe any measures proposed to minimize potential impacts. The public has 30 days to review and comment on a draft environmental assessment. After the draft environmental assessment has been finalized and public comments responded to, the agency proposing or approving the action reviews the final assessment and determines if any “significant” environmental impacts are anticipated.

If the agency determines that the project will not have a significant environmental impact, it issues a finding of no significant impact (FONSI). This determination allows the project to proceed without further study. Within 30 days of the notice of this finding, the public may challenge an agency’s determination by filing suit in circuit court. If the agency determines that the action may have a significant impact, a more detailed environmental impact statement (EIS) be prepared. An EIS preparation notice is then issued and undergoes an additional 30-day comment period to define the scope of the draft EIS. Publication of an EIS preparation notice initiates a 60 day period during which an aggrieved party may challenge the determination in court.”

Conservation District Use Permit

State Land Use Law established the State Land Use Commission (LUC) in 1961, and granted the LUC the power to zone all lands in the State into three districts: Agriculture, Conservation, and Urban (the Rural District was added in 1963). DLNR was given jurisdiction over the Conservation District, formulated subzones and regulates land uses and activities therein.

The Conservation District has five subzones: Protective, Limited, Resource, General and Special. Omitting the Special subzone, the four subzones are arranged in a hierarchy of environmental sensitivity, ranging from the most environmentally sensitive (Protective) to the least sensitive (General); the Special subzone is applied in special cases specifically to allow a unique land use on a specific site. Subzone maps for each island are available on the web: www.hawaii.gov/dlnr/occl/.

These subzones define a set of "identified land uses" which may be allowed only by discretionary permit. The Office of Conservation and Coastal Lands (OCCL) can accept a permit application for an

Appendix A. Environmental Compliance and Permits

identified land use listed under the particular subzone covering the subject property. Conservation District Use Application forms and contact information is available on the web at:
www.hawaii.gov/dlnr/occl/documents.php.

Threatened and Endangered Species

If you plan to process, collect, propagate, out-plant or sell threatened or endangered species as part of your Forest Stewardship project please contact the Hawaii State Botanist for instructions and permits at 587-0166.

Safe Harbor Agreements

Environmental Defense, the U.S. Fish and Wildlife Service and DLNR encourage private landowners to restore and maintain habitat for endangered species without fear of incurring regulatory restrictions. If you feel this could happen as a result of the restoration or conservation process, you should consider initiating a Safe Harbor Agreement. More can be found at www.environmentaldefense.org/article.cfm?ContentID=136 or by contacting DLNR/DOFAW 1151 Punchbowl St., Rm. 325 Honolulu, HI 96813 Telephone (808) 587-0166 Fax (808) 587-0160

State Forest Stewardship Program

State of Hawaii Forest Stewardship Program Agreements

Hawaii Forest Stewardship Program contract agreements generally cover cost-share assistance for the 10 year period of the management plan and require an additional maintenance period, for which the term is negotiable between the applicant/landowner and the State. The State program allows eligible applicants, whose objectives do not include commercial timber production, to enter into contracts with term length ranging from 10 to 30 years, which include the cost-share assistance period. For applicants interested in commercial timber production, contract term lengths must be at least 30 years and include a payback provision as described in the “*Payback Provision and Taxes*” section below. All agreements must follow the State’s General Conditions and include special conditions based on your management plan.

Once your management plan has been submitted for the State program, the project will be reviewed and ranked for funding priority. Once selected for funding a contract agreement will be generated by DOFAW staff and submitted for your review. The Board of Land and Natural Resources is required to authorize all State Forest Stewardship Agreements and in some cases State of Hawaii Governor’s approval may also be required. The BLNR may approve, deny or request that adjustments be made to management plans and contract agreements to reflect current priorities or budget concerns. If approved, you will be asked to sign the agreement and submit the contract agreement for finalization. The agreement starts on the date of final approval by the BLNR Chairperson. If you begin your project before all parties sign and prior to State authorized execution of the contract, you will not be reimbursed for expenses incurred before the agreement date. You will receive a Forest Stewardship recognition sign to post on your project property.

The State Forest Stewardship Program provides for 50% cost-share reimbursement on all approved management plan practices at the allowable cost-share rates set for the program (see below). Enrolled parties are asked to submit project process reports and practice cost-share reimbursement requests on at least a bi-annual basis. After a site visit to verify your work under the reimbursement request, DOFAW will mail a payment for the completed management practices.

Allowable Cost-Share Rates for the State Forest Stewardship Program

When you create your project budget, you should use and consider the following allowed cost-share rates for the State Forest Stewardship Program. The State Forest Stewardship Program and the NRCS Environmental Quality Incentive Program utilize different cost-share rates for assistance funding. The allowed cost-share rates for the State Forest Stewardship Program are included below.

The State Forest Stewardship Program includes total low to high cost-share amounts for each allowed practice. The State will reimburse at 50% cost-share for each practice. If you think your costs will be higher than the allowed rates you will need to justify these rates to the FSP Coordinator; this may require documentation such as quotations from existing companies that provide the services or materials. Rates range from Low to High and the selection of a rate will depend on the circumstances of each project or practice. In your management plan you will need to justify the use of the high rates or selected rates for practices that have no rates established. Based on Committee and State approval, your contract agreement for financial assistance will set the rates for your particular project.

Appendix B. State Forest Stewardship Program

Practice	Unit	State Share Low	State Share High
Forest Stewardship Management Plan	per plan	\$1,500	\$5,200
Tree and Shrub Site Preparation	per acre	\$200	\$1,000
Fence	per foot	\$2.50	\$7.00
Nutrient Management	per acre	\$50	\$350
Tree and Shrub Establishment	per seedling	\$0.50	\$6
Groundcover Establishment	per acre	\$400	\$1,400
Irrigation	per foot	\$0.50	\$6
Mulching	per square foot	\$0.07	\$0.14
Weed Control	per acre	\$100	\$300
Fuelbreak	per acre	\$150	\$500
Windbreak	per seedling	\$0.50	\$6
Special Area Practice	per acre/tree/unit	*	*
Forest Stand Improvement	per acre	\$100	\$500
Tree and Shrub Pruning	per acre	\$100	\$300
Trail Construction	per foot	\$2	*
Forest Health and Protection	per acre/foot/unit	*	*
Monitoring	per acre	\$10	\$75

**The applicant must obtain at least 3 written quotes for the proposed work and/or consult with the FSP Coordinator to determine the allowable cost-share.*

NOTE: Rates in the above table represent 50% of the actual cost of installing the practice, which is the amount the State will contribute to a practice as a part of 50% cost-share agreement.

Allowable reimbursements are subject to a variety of factors including project scale, type, actual project costs, and the anticipated availability of program funding. The FSP Coordinator may allow exceptions to the listed cost-share rates if the requested amounts are justifiable. To date, projects requesting more than \$75,000 per year have not been approved.

Allowable In-Kind Rates for State Forest Stewardship

The Hawaii Forest Stewardship Program allows for the use of in-kind match for projects receiving financial assistance under contract agreement with the State. The below table includes the allowed in-kind cost-share rates.

In-kind means non-cash contributions to the project. When calculating your 50% required contribution to the project, you should use these rates to determine labor and equipment cost estimates. If you want to use higher rates, please provide justification (quotes) in your plan and/or contact the FSP Coordinator.

Appendix B. State Forest Stewardship Program

Hourly Rates for In-kind Contributions		
<i>Labor costs include fringe</i>		Current
General Hand Labor	per hour	\$21
Specialized Hand Labor	per hour	\$27
Line Posts	each	\$18
Corner Posts	each	\$20
Equipment with Operator		
1/2 and 3/4 ton truck	per hour	\$35
1 ton truck	per hour	\$40
1 1/2 ton truck	per hour	\$45
2 ton truck	per hour	\$50
2 1/2 ton truck	per hour	\$55
5 ton truck	per hour	\$65
20 ton tandem dump truck	per hour	\$85
12 ton tandem dump truck	per hour	\$75
2 and 4 wheel drive tractor	per hour	\$60
2 wheel drive tractor >40 hp	per hour	\$70
D-2 or TD6 w/ attachments	per hour	\$75
D-4 or TD9 w/ attachments	per hour	\$105
D-6 or TD14 w/ attachments	per hour	\$120
D-7 or TD18 w/ attachments	per hour	\$150
D-8 or TD20 with attachments	per hour	\$180
D-9 or TD25 w/ attachments	per hour	\$225
Back-hoe	per hour	\$85
Loader	per hour	\$100
Compressor	per hour	\$25
Power saw	per hour	\$25
Power post hole digger	per hour	\$35
Power sprayer	per hour	\$30
Bobcat	per hour	\$65
Manlift	per hour	\$35
Mulcher	per hour	\$25

Pay-back Provisions and Taxes

If landowners/lessees sell or transfer all or part of the stewardship managed property during the term of the approved contract agreement, they are required to pay back to the state all of the cost-share funds received in the past three years (or the portion of funding that corresponds to a pro-rated share of that portion of the managed property that is sold or transferred). *The landowner/lessee or contractor would not be required to reimburse the State for the cost-share assistance received if the new landowner contractually agrees to assume responsibility for the term remaining on the Forest Stewardship contract agreement.*

Cost-share reimbursement payments are considered as income and are thus normally subject to state and local taxes. However, depending upon your management activities, payments may be exempt from taxes. A guide to federal income tax regulations affecting private forests, and other resources are available on line at: <http://www.fs.fed.us/spf/coop/programs/loa/tax>. In addition, you may be eligible for

Appendix B. State Forest Stewardship Program

real property tax reductions or incentives because of your commitment to long-term forest management. For more information, contact your county tax office.

If the purposed stewardship plan includes an objective for commercial timber production, you will be required to pay back to the State a percentage of the funding assistance that is received through the program with each future commercial timber harvests as set forth in the contract. This pay back is typically 5 to 10 percent of total grant funding received, but the amount is negotiable. A payback provision will be included as a special condition of the contract, stipulating that this provision will survive the term length of the contract.

FSP-NRCS Financial Incentive Programs

NRCS EQIP Contact and Eligibility

As an alternative to State Forest Stewardship Program funding, completed Forest Stewardship Plans may be submitted to your local USDA-Natural Resource Conservation Service (NRCS) office for cost-share assistance under their financial incentive programs. Available NRCS financial programs that can fund FSP management plans include Environmental Quality Incentive Program (EQIP), Wildlife Habitat Incentive Program (WHIP), Hawaii Conservation Reserve Enhancement Program (CREP).

NRCS has eligibility requirements and cost-share schedules that should be considered as you develop your FSP management plan.

Contact information for NRCS offices can be found in the United States Government section of the telephone book under “Agriculture, Department of” or at this website: <http://www.pia.nrcs.usda.gov/programs/>

NRCS EQIP funded contracts must address at least one specific “Natural Resource Concern” occurring on your site; see the Forest Stewardship Project Proposal for more information on natural resource concerns. EQIP contracts are generally for a 3 to 5 year period. The Forest Stewardship Advisory Committee, FSP Coordinator, and/or a NRCS Soil Conservationist can assist you in identifying natural resource concerns on your site for incorporation into your FSP management plan.

The complete list of natural resource concerns is available at:

http://efotg.nrcs.usda.gov/efotg_locator.aspx?map=HI - click on the image of any island, then look in the left-side column, click on Section III, and open “Quality Criteria, Quality Criteria Table.” Some of the more likely resource concerns that could be addressed by forestry practices are included in the Project Proposal Form (on page 13).

NRCS Practices

If you are considering submitting your Forest Stewardship Plan to NRCS financial incentive program, please include NRCS practices and practice codes in your proposed Management Practices (as listed in your management plan). The following table will assist you. In many cases there are multiple NRCS practices that correlate to one FSP practice, in which case it is important to describe the planned work under each proposed management practice.

The complete list of all NRCS Practice Standards and Specifications can be found at:

http://efotg.nrcs.usda.gov/efotg_locator.aspx?map=HI. Click on the image of any island, then look in the left-side column, click on Section IV and open Current Practice Standards, Specifications, and Jobsheets. This information will help you understand NRCS Practice Standards.

Appendix C. FSP-NRCS Environmental Quality Incentive Program

FSP-NRCS Practices and Practice Codes

FSP Management Practices	NRCS Practice Code	NRCS Practice Names
Tree and Shrub Site Preparation	490 384 324	Tree/Shrub Site Preparation Woody Residue Treatment Deep Tillage
Fence	472 382	Access Control (for feral ungulate-proof fence) Fence (for other fences)
Nutrient Management	590	Nutrient Management
Tree and Shrub Establishment	612 391 311 379 381 380	Tree/Shrub Establishment Riparian Forest Buffer Alley Cropping (for agroforestry) Multistory Cropping (for agroforestry) Silvopasture Windbreak/Shelterbelt establishment
Irrigation	430 436 449 442	Irrigation Pipeline Irrigation Reservoir Irrigation water management Irrigation sprinkler system
Mulching	484	Mulching
Weed Control	314 315	Brush Management (for range and pasture lands) Herbaceous Weed control
Fuelbreak	383	Fuelbreak
Special Areas Practice	342 395 578 580	Critical Area Planting (for degraded lands) Stream Habitat improvement and Management Stream Crossing Streambank and Shoreline protection
Trail Construction	383	Fuelbreak (for fire pre-suppression)
Forest Stand Improvement	666	Forest Stand Improvement
Windbreak	380	Windbreak/Shelterbelt Establishment
Tree and Shrub Pruning	660	Tree and Shrub Pruning
Forest Health and Protection	595	Integrated Pest Management
Monitoring	472 645	Access Control Upland Wildlife Habitat Management

After your NRCS EQIP application is approved, and NRCS Soil Conservationist will assist you with formulating the final list of NRCS practices and completing all necessary documentation based on information included in your FSP management plan.

NRCS EQIP Cost-Share Rates

When you create your project budget, you should use and consider the following allowed cost-share

rates for the NRCS EQIP. The NRCS EQIP and the State Forest Stewardship Program utilize different cost-share rates for assistance funding. The allowed cost-share rates for NRCS EQIP are found here <http://www.pia.nrcs.usda.gov/programs/index.html> under EQIP Program Payment schedule.

Appendix D.

Forest Stewardship Plan Signature Page

Professional Resource Consultant Certification: I have prepared (revised) this Forest Stewardship Plan. Resource Professionals have been consulted and/or provided input as appropriate during the preparation of this plan.

Prepared by: _____
Professional Resource Consultant's Name

Professional Resource Consultant's Signature: _____

Date: _____

Applicant Certification: I have reviewed this Forest Stewardship Plan and hereby certify that I concur with the recommendations contained within. I agree that resource management activities implemented on the lands described shall be done so in a manner consistent with the practices recommended herein.

Prepared for: _____
Applicant's Name

Applicant's Signature: _____

Date: _____

State Forester's Approval: This plan meets the criteria established for Forest Stewardship Plans by Hawaii's Forest Stewardship Advisory Committee. The practices recommended in the plan are eligible for funding according to state of Hawaii Forest Stewardship Program guidelines and administrative rules.

Approved by: _____
State Forester's Name

State Forester's Signature: _____

Date: _____

Forest Stewardship Advisory Committee Approval: This plan was reviewed and approved by the Forest Stewardship Advisory Committee on _____
Date of approval

Appendix E.

Useful Resources

NRCS has developed Ecological Site Descriptions for most of the Island of Hawaii. These are descriptions of different forest types, including detailed native species lists, that correlate to specific soil types and the NRCS soil maps. They are useful for making specific site native species planting recommendations. Current Ecological Site Descriptions are available at:

http://efotg.nrcs.usda.gov/efotg_locator.aspx?map=HI. Click on the island image, then click on Section II in the left-side column.

Archeological Consultants <http://hawaii.gov/dlnr/hpd/archcon.htm>

Best Management Practices http://www.state.hi.us/dlnr/dofaw/pubs/BMPs_bestmanagement.pdf

Economics <http://www2.ctahr.hawaii.edu/oc/freepubs/pdf/RM-9.pdf>
http://www2.ctahr.hawaii.edu/oc/freepubs/spreads/RM-9_forest_econ_calc.xls

Environmental Assessments <http://hawaii.gov/health/environmental/oeqc/index.html>

Forestry Consultants <http://www.hawaiiforest.org/>

Forestry in Hawaii (general) www.ctahr.hawaii.edu/forestry/
<http://www2.ctahr.hawaii.edu/forestry/links.html>

MAPS- Tax Maps

Hawaii County <http://www.hawaiicounty.gov/real-property-tmk-maps/>
Maui County <http://www.mauipropertytax.com/>
Kauai County <http://www.kauai.gov/default.aspx?tabid=433>
Oahu <http://www.honolulupropertytax.com/Main/Home.aspx>
Topographic Maps <http://trails.com/>
NRCS Web Soil Survey <http://websoilsurvey.nrcs.usda.gov>

Natural Resources Conservation Service <http://www.pia.nrcs.usda.gov/>

Soil Tests from UH http://www.ctahr.hawaii.edu/site/downloads/adsc/price_list.pdf

State Historic Preservation <http://hawaii.gov/dlnr/hpd/hpgreeting.htm>

Taxes (Federal Income) <http://www.fs.fed.us/spf/coop/programs/loa/tax>

US Fish & Wildlife Service Programs <http://www.fws.gov/pacificislands/>

Noxious Weed List http://hawaii.gov/hdoa/admin-rules/subtitle-6-division-of-plant-industry/AR-68.pdf/at_download/file

Hawaii Pacific Weed Risk Assessment <http://www.plantpono.org/>
<https://sites.google.com/site/weedriskassessment/home>
<http://www.botany.hawaii.edu/faculty/daehler/wra/default2.htm>

Natural Area Reserve System

If you are wondering if your site can be considered a “potential natural area preserve” please review these criteria. The following criteria are adopted as important guides for the Natural Area Reserves Commission in selecting areas for the Natural Area Reserves System. *However, the Commission shall exercise its prerogative* of judgment with regard to these criteria and other criteria in selecting and recommending areas to be included in the Natural Area Reserves System.

Representativeness: Each selected Natural Area shall be representative of one or more major, natural, relatively unmodified ecosystems, geologic or physiographic features, or habitats containing endangered species of fauna or flora. The description of a proposed area shall include details of the features that make the area distinctive, unique, significant, or representative. The term representative as applied to ecosystems shall be interpreted in relation to macroclimatic zonation to ensure a balanced geographic distribution of natural areas as representative ecosystems.

Scientific Value: Each Natural Area shall have significant potential for scientific study, for teaching, for preservation of distinctive biota or other natural features, or for preserving natural genetic material. The description of a proposed area shall include details of the scientific attributes of the area.

Administrative: Each Natural Area shall be identifiable on maps and on the ground. It should be reasonably protectable from pests and from physical damage and, legally, from encroachment. Access to the area should be in conformance with the nature and purpose of the area. Utilities, communication facilities, and other right of way developments should be avoided as much as possible. Administrative or management factors should be detailed in the description of each proposed area.

Size of Areas: Each Natural Area shall be large enough, but no larger than necessary, to accomplish the particular purpose of establishing that Natural Area. A desired size is that which will provide essentially unmodified conditions in the interior portion. The cost and feasibility of protecting the area will have a bearing on the size. Some areas may be less than an acre while others may exceed 10,000 acres, where a special need is demonstrated.

Number of Areas: As many as possible of the major terrestrial and aquatic plant and animal communities and distinctive geologic features on each island should be represented in the Natural Area Reserves System. However, the Natural Area Reserves System shall not include unnecessary duplications of ecosystems or geologic features already protected in Federal Wildlife Refuges, National Parks, or private conservation groups.

Ownership: Natural Areas shall be composed of lands owned or legally controlled by the State in perpetuity. Privately owned areas desired for the Natural Area Reserves System may be obtained by gift, devise, purchase, or eminent domain as specified in the Act. Federal lands shall not be designated as Natural Areas under Act 139.