

**NATURAL RESOURCES CONSERVATION SERVICE
PACIFIC ISLANDS CONSERVATION PRACTICE JOBSHEET**

Range Planting (550)

Client Name:	Joe Rancher	Date Prepared:	06/01/2011
TMK(s):	1-1-111:111	Tract(s)/CIN #s:	1111 / 10, 11, 12
Field(s):	2, 4, 5	Planned Amount (acres):	10
Job Class:	III		
Ecological Site (ID and Name):	R161AY002HI – Shallow Desert		
Avg. Rainfall (in.):	20-25	Avg. Pan Evaporation (in.):	50-60
Elevation Range (ft):	950-1100	Soil Map Units:	312, 316 (unpub. HI801 soil survey, 2011)
Planner Name:	Jane Conservationist	JAA Level:	III

Purpose (Check Applicable Purposes)			
<input checked="" type="checkbox"/>	Restore plant community to native species (based on the Ecological Site Description).		Reduce soil erosion and/or improve water quality.
	Establish a desired plant community to meet goals.	<input checked="" type="checkbox"/>	Provide food, cover and/or shelter for native wildlife.
	Increase carbon sequestration opportunities.		Provide improved forages for livestock.

Planned Planting					
Plant Name (use common and scientific names and cultivar) / PIER score	Field # or Name	Acres to be Planted	Method of Establishment ¹	Spacing/Planting Rate ²	Total Planting Material Needed ³
Maiapilo (<i>Capparis sandwichiana</i>) / 0	2, 3, 4	10	Outplanting	10' x 10'	109 plants/acre (1090 total)
`Ohe makai (<i>Reynoldsia sandwichensis</i>) / 0	2, 3, 4	10	Outplanting	40' x 40'	7 plants/acre (70 total)
`A`ali`i (<i>Dodonaea viscosa</i>) / 0	2, 3, 4	10	Outplanting	15' x 15'	194 plants/acre (1940 total)

¹ **Method of Establishment:** seeding, planting vegetative material (stolons, sprigs or rhizomes), or planting trees and shrubs.

² **Spacing/Planting Rate:** Seeding Rate (Lbs PLS per acre), Plants per Acre, or Spacing Between Plants
 -For Hand-Planting or Planting in Furrows: place stolons in ground at a maximum spacing of 6-ft X 6-ft
 -For Disked-in Plant Materials: 40 bushels of material per acre (1 Bushel = 1.25 cuft).
 -Plants per Acre = 43,560 ft ÷ Spacing (Square feet) x Percent of Mixture

³ **Total Planting Material Needed:** Total Bulk Seed, Total Bushels of Vegetative Material, Total Plants
 -Bulk Seed to Purchase = Pure Live Seed (PLS) ÷ Percent Germination ÷ Percent Purity
 -Bushels Vegetative Material = 40 Bushels x Acres to be Planted x Percent of Mixture
 -Plants Needed = Plants per Acre x Acres to be Planted

Seed Tags: For information on understanding seed tag data to assist in completion of the seeding tables, go to <http://www.plant-materials.nrcs.usda.gov/pubs/idpmstn04265.pdf>

Invasiveness Considerations of Recommended Species (Check One)			
<input checked="" type="checkbox"/>	All recommended species rank <7 on the PIER score.		One or more recommended species rank ≥7 on the PIER score. These have been approved for use by the State Rangeland Mgmt Specialist or the Assistant Director for Technology, as evidenced by signature below.

N/A
Approval for use of potentially invasive species
(signature of SRMS or ADT, or designee)

_____ Date

Planned Planting Dates
Prior to or during the predominant rainy season, or during this time period to optimize soil moisture for germination and/or establishment:
Any time during the year, provided the planting site has been prepared with chemical and/or mechanical fallow and the area protected from herbivory (goats, sheep, cattle, horses, pig rooting, etc). If needed, supplemental irrigation will be provided during the establishment period (generally the first 6-8 months), so planting dates are very flexible.

Site Preparation (Select One)			
	Cultivated Seedbed	X	Plant into Stubble; or Hole (for outplantings)
	Plant into Chemical Fallow		Other (See below)
In all cases, the land will be weed-free prior to planting. For Seeding: Seedbed preparation will consist of plowing or ripping, followed by disking where soil conditions permit. Prepare a firm, weed-free seedbed. Use no-till seeding methods and equipment where practical and possible. If planting large areas of sloping land, and no-till is not possible, establish new plantings in increments or strips across the slope, alternating with undisturbed areas to minimize erosion. For Vegetative Planting and Outplanting of Trees/Shrubs: Where sprig nodes will be buried, remove all plant litter or debris prior to planting. Leaving plant stubble or litter on the soil in-between planting locations is recommended to protect the soil surface from potential erosion. <i>Additional site-specific requirements:</i> Because these plants are shrubs/trees and have been started in a nursery setting, the "seedbed prep" is minimal – consisting of chemical and/or mechanical fallow to reduce competition for water and nutrients by other species onsite. Refer to "Planting Methods" below for details on outplanting these species.			

Planting Methods (Select Method(s) - Consult the Vegetative Guide for More Information)		
	Drill / No-till / Planter:	Seeds will be planted with a conventional seed drill. The drill should be calibrated to ensure proper seed rate, depth, and distribution. Small grass, forbs, and legume seed will be planted no deeper than ½ inch. Large grass seeds shall be planted no deeper than ¾ inch.
	Sprigger:	Vegetative materials will be sprigged as soon as possible to prevent the loss of material viability.
	Broadcast and Roll / Drag:	A proper seedbed should be established before this planting method should be used. When seeds are to be broadcast the seed bed should be firm. Your foot imprint should not sink more than ¼ inches. Small grass, forbs, and legume seed will be planted no deeper than ½ inch. Large grass seeds shall be planted no deeper than ¾ inch.
X	Hand Planting:	Will be planted by hand.
	Tree Planter:	A tree planter will be used to establish trees and shrubs on the site. Calibrate the planter to ensure the proper distribution of the trees.
Vegetative Planting Requirements: The soil should be moist at the time of planting. It is very important that the nodes of all vegetative materials are planted firmly into the soil and covered. Use only fresh and recently acquired materials, and preferably with some roots already growing from nodes. Place the node(s) into the loosened ground to no more than 5-inches depth. Cover with fresh, loose soil, and press firmly with your foot. Tree/Shrub Outplanting Requirements: Use only fresh and recently acquired plant materials that have been acclimatized and grown in dibble tubes and/or plant pots. Dig a hole of sufficient size to insert the plant root and growth medium and backfill. Carefully remove the seedling/sapling from the tube or pot, placing it into the hole, making certain the roots are not bound up. Backfill the hole with loose soil material (or acceptable plant growth medium), and gently tamp to firmness. The root collar of the plant should be at the soil surface, not buried or exposed, when it is properly placed and tamped. Place mulch material (eg. organic matter, cardboard, wood chips, or other non-plastic weed-free material) around the planting to a depth no greater than 2-inches. If you are supplying supplemental irrigation, securely place the drip emitter(s) from the supplemental irrigation source within a 6-10" radius from the plant stem. <i>Additional site-specific requirements:</i>		

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Fertilization and Soil Amendments						
In most cases, use of fertilizer and soil amendments at the time of planting is not recommended. However, if they are desired, fertilizer and other amendments should be applied according to soil test results and recommendations, taking into account any NRCS adjustment guidelines established for specific soil conditions (eg, skeletal soils (soils with high rock content in the profile)).						
Soils Analyses:	N/A	N	N/A	P	N/A	K
Recommendations:	0	N	0	P ₂ O ₅	0	K ₂ O
Lime:	0					

Weed Control	
X	Chemical
X	Mow
	Other
<i>Recommendations, if applicable:</i>	
Remove all weeds from the site as soon as possible. This includes herbaceous and woody weeds, and may involve chemical and/or mowing treatments. Any chemical treatments will be done with extreme care so that the planted species are not affected by drift or direct application of herbicides. Do not use livestock to remove weeds by grazing until the plants have fully established (may take as long as 3-7 years for the outplanted trees/shrubs), and then only "flash graze" the area, removing the livestock before they damage any of the native plants.	

Grazing
Newly-planted pastures will not be grazed or harvested until the stand is well established and has reached the minimum height and stage of growth given in the specification for Prescribed Grazing (528). If a grazing plan (or 528-Prescribed Grazing jobsheet) has been prepared, follow the recommendations therein.
Where plantings are established to meet native wildlife needs, grazing and/or harvesting will be performed in a manner complimentary to the wildlife habitat and life cycle requirements. Grazing management activities in support of optimizing native wildlife habitat will be described within the 528-Prescribed Grazing jobsheet.
If a grazing plan is not needed, follow the additional guidance provided below.
<i>Recommendations, if applicable:</i>
This is a native planting using desirable woody species to restore the natural plant community and provide wildlife habitat and structure. Grazing will not take place on the area at all, with the possible and limited exception of "flash grazing" to reduce weed competition only after the plants are well-established and thriving (possibly 3-7 years or more post-planting).

Supplemental Irrigation	
If natural precipitation is not adequate for the initial establishment of the selected species, supplemental water may be applied. Always check soil moisture before and after each irrigation event. This will help you to make adjustments to the amount, timing and duration of irrigation events.	
<u>For Outplantings of Trees/Shrubs:</u> Supplemental irrigation, if needed, should be applied deeply, infrequently, and probably for no longer than 6-8 months, depending upon site conditions. Deeper and less frequent irrigations will encourage deeper root growth and soil exploration by roots, as opposed to shallow, frequent irrigation events.	
<i>The information below will help to ensure successful establishment:</i>	
Method of irrigation:	Drip emitters from existing water tank
Amount to apply:	Variable, but plan for no more than 2-3 gallons/week in the dry season for up to 6-8 months. Irrigation should slowly taper-off as plants mature.
Timing of irrigation applications:	Potentially year-round, depending upon current weather, but plan to

	provide water at least through the predominant dry season (May-Oct).
Duration of irrigation applications:	Depends on emitter output (gph or gpm) and number of emitters per plant. If one gph emitters, and 2 emitters per plant, a 1 to 1.5 hour irrigation time, once per week, should be sufficient.

Other Recommendations, if applicable:	
Plants may need to be protected from insect damage during the initial 6-12 months of establishment. Contact NRCS or Cooperative Extension Service if you need assistance in identifying insect damage or recommendations for insect control.	

Operation and Maintenance	
<ul style="list-style-type: none"> If the stand is thinner than desired, plant into the bare spots by inter-seeding or sprigging. Abnormal conditions following planting, such as drought, low vigor of desirable grasses, or invasion of undesirable plants may require extension of the grazing deferment period and/or additional treatments such as weed control or supplemental irrigation. In all cases and for all plantings, a prescribed grazing plan will be implemented following the planting period to encourage establishment and success of the desired plants in the community. 	
<i>Site specific or additional operation and maintenance requirements for treatment unit:</i>	

Certification of Proper Establishment	
The landowner and the NRCS agree that the planting will not be certified as complete until the following conditions are met:	
<ul style="list-style-type: none"> Success of the practice shall be determined by evaluating overall plant establishment after sufficient time has passed to monitor the planting and gather reliable basal gap and stubble height data (for herbaceous plantings). <u>Typical plantings require between 3 to 6 months before they can be evaluated for success.</u> <u>For herbaceous plantings</u>, the practice will be certified if the planting is considered to be established using stubble height data (refer to Tables 2 and 3, Prescribed Grazing-528 specification, "Minimum Height to Begin Grazing"). <u>For tree/shrub plantings</u>, the practice will be certified if the planting is considered established using an ocular estimation of plant health and vigor: 1) plants have sufficient healthy leaf quantity and leaf area; 2) plants are surviving without regular or anticipated supplemental irrigation needs; 3) plant roots have developed sufficiently to resist uprooting by moderate tugging on the plant at the root collar (ground surface). 	

**NATURAL RESOURCES CONSERVATION SERVICE
PACIFIC ISLANDS PRACTICE CERTIFICATION SHEET**

Range Planting (550)

Date Planted: 12/27/2011

Date of Field Visit for Certification: 06/10/2012

Applied as designed, or describe below:

Plant Species / Cultivar	Field # or Name	Acres Planted	Method of Establishment	Spacing/ Planting Rate	Total Planting Material Applied
Maiapilo (<i>Capparis sandwichiana</i>)					1090 plants
`Ohe makai (<i>Reynoldsia sandwichensis</i>)					70 plants
`A`ali`i (<i>Dodonaea viscosa</i>)					1940 plants

Attach a copy of the seed tag(s) for all seeded materials. If seed tag is not available, attach a copy of the seed analysis performed on the purchased/planted seed materials.

Applied Fertilizer or Soil Amendments - Applied as designed, or describe below:

Describe fertilizer application method, nutrients, and ratio:

Applied:		N		P ₂ O ₅		K ₂ O
Lime:			Method:			

Attach a copy of the soil test results for certification.

Management Items - Applied as designed, or describe below:

Weed Control:

Grazing:

Supplemental Irrigation:

Other:

Treatment Evaluation – Objectives Met: Yes No

	At the time of certification and if applicable , the Seeded and/or Planted species met the minimum stubble height requirements before grazing as shown in Tables 2 and 3, Prescribed Grazing-528 specification, "Minimum Height to Begin Grazing".
X	At the time of certification and if applicable , the out-planted trees and/or shrubs were living, healthy, and protected from herbivory.
X	Wildlife habitat requirements were met, and cultural resources were protected (if applicable).
X	Photographs of the successful planting area (and individual plants if desired) are included in the cooperator's case file.

CERTIFICATION:

I hereby certify that this practice has been installed in accordance with NRCS standards and specifications.

Jane Conservationist

NRCS Conservationist

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Job Approval Authority

06/10/2011

Date