

D. PLANTS

D.1. Suitability

D.1.a. Plants Not Well Adapted to Site

DEFINITION: Plants are not adapted to soil and climatic conditions of the area.

Plants Suitability-Not Adapted Field Application Indicator Tools	RMS Quality Criteria Level-Quantitative	RMS Quality Criteria Level-Qualitative
Visual inspection		Tools and observation indicate the plant cover and mitigating practices result in adequate protection of other resources. Select species or varieties that are better adapted or modify site conditions to meet plant needs. When established plants are not well adapted and a client does not choose to change the plant(s), land use, or modify the site, Quality Criteria will be met as long as other resources are not adversely affected and all pertinent federal, state, and local laws related to noxious and invasive species are observed on the site.
Client interview		
Soils Interpretations and tests (pH)		
Revegetative Guide for Conservation Use in Alaska		
Managing Your Trees and Shrubs in Alaska: Planting Guide for Trees in Urban and Rural Alaska		
FOTG Section II. Ecological Site Descriptions NRCS National Range and Pasture Handbook; Worksheet for Determining Similarity Index Exhibit 4-7.	Similarity index >60%	Historic Climax or Desired Plant Community appears to support >60% of the plant species composition by weight. There are no obvious deleterious resource impacts and site meets user's objectives
FOTG Section II. Ecological Site Descriptions NRCS National Range and Pasture Handbook; Trend Determinations Exhibit 4-6.	Similarity Index <60% - Range Trend is Towards or Planned Trend is Positive	
Interpreting Indicators of Rangeland Health		All three indicators rate Adequate or better.
NRCS Pasture Condition Score Sheet	Pasture Condition Score overall rating of >35 or individual rating >4.	Pasture plants appear healthy and vigorous and are estimated to yield >80% (average management level) of the desired forage for the Forage Suitability Group. There are no significant resource or management problems.

NRCS-Alaska Technical Guide
Section III
Quality Criteria - FOTG Referenced Tools - Plants

FOTG Section II. Forage Suitability Groups and.	Desired Plant Community or Steady State: meets 90 percent of the annual average plant production, plant cover and desired species composition for the Suitability Group as well as user objectives	
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D.1.b. Plants Unsuitable for Intended Use

DEFINITION: Plant of concern does not meet the needs and objectives of the manager, such as by providing quantity and quality of desired food or forage, controlling erosion, improved soil condition, conserving water, adding beauty, providing habitat for animals and increasing crop or timber production.

Plants Unsuitable for Intended Use Field Application Indicator Tools	RMS Quality Criteria Level-Quantitative	RMS Quality Criteria Level-Qualitative
Soils Interpretations		Managed species are the appropriate species for intended use, within site condition constraints. Tools and observation indicate plant(s) selected or being managed is suitable for the intended use and client objectives. Adequate plant residues will be present to meet the quality criteria for Soil, Water, Air, Plants, and Animal resources
Alaska Irrigation Guide		
Planting Guide for Trees in Urban and Rural Alaska		
Windbreak Handbook National Agroforestry Technical Notes		
FOTG Section II. Ecological Site Descriptions NRCS National Range and Pasture Handbook; Worksheet for Determining Similarity Index Exhibit 4-7.	Similarity index >60%	Historic Climax or Desired Plant Community appears to support >60% of the plant species composition by weight or forest stocking. There are no obvious deleterious resource impacts and site meets user's objectives
Plants Unsuitable for Intended Use Field Application Indicator Tools	RMS Quality Criteria Level-Quantitative	RMS Quality Criteria Level-Qualitative
FOTG Section II. Ecological Site Descriptions NRCS National Range and Pasture Handbook; Trend Determinations Exhibit 4-6.	Similarity Index <60% - Range Trend is Towards or Planned Trend is Positive	
Interpreting Indicators of Rangeland Health		All three indicators rate Adequate or better.

D.2. Conditions

D.2.a. Productivity (Kinds, Amounts, and Distribution)

DEFINITION: Plants do not provide the quantity and quality of crops, forage, fiber, cover, and habitat in the amount and timeliness of production needed.

Plant Productivity Field Application Indicator Tools	RMS Quality Criteria Level-Quantitative	RMS Quality Criteria Level-Qualitative
Field Crop Production Handbook for Alaska		Average crop production is sufficient in quality and quantity to meet landowner's objectives and protect other components of the resource base.
NRCS National Forestry Manual Planning A Forest Inventory Guidelines for Managers of Alaska Native Lands (NRCS State Forester Library)	The density of the stand is within 25 percent of the stems per acre of similar forested sites of the same age and composition.	Trees are well distributed, vigorous, relatively free of Insects, disease, and other damage. The forest environment provides for the perpetuation and reproduction of principal plant species natural to the site.
The Alaska Vegetation Classification Ecological Site Descriptions	Canopy of native tree species in the stand is within 10% of either the ecological site description or the Alaska Vegetation Classification range for Canopy Closure Understory plant community is greater than 50% similarity index of expected plant communities. Planned trend is positive.	
Department of Natural Resources Division of Forestry Reforestation Handbook Alaska NRCS Tree and Shrub establishment Standard and Specification (612) NRCS National Forestry Handbook	Forest regeneration meets the minimum standards established in the Alaska NRCS Standards and Specifications for the specific purpose	

NRCS-Alaska Technical Guide
Section III
Quality Criteria - FOTG Referenced Tools - Plants

FOTG Section II. Ecological Site Descriptions NRCS National Range and Pasture Handbook; Worksheet for Determining Similarity Index Exhibit 4-7.	Similarity index >60%	Historic Climax or Desired Plant Community appears to support >60% of the plant species composition by weight. There are no obvious deleterious resource impacts and site meets user's objectives.
Plant Productivity Field Application Indicator Tools (continued)	RMS Quality Criteria Level-Quantitative	RMS Quality Criteria Level-Qualitative
FOTG Section II. Ecological Site Descriptions NRCS National Range and Pasture Handbook; Trend Determinations Exhibit 4-6.	Similarity Index <60% - Range Trend is Towards or Planned Trend is Positive	
Interpreting Indicators of Rangeland Health		All three indicators rate Adequate or better.
FOTG Section II. Forage Suitability Groups and NRCS Pasture Condition Score Sheet.	Pasture Condition Score overall rating of >35 or individual rating >4.	Pasture plants appear healthy and vigorous and are estimated to yield >80% (average management level) of the desired forage for the Forage Suitability Group. There are no significant resource or management problems.

D.2.b Health and Vigor

DEFINITION: Plants do not manufacture sufficient plant food to continue the growth cycle or to reproduce.

Plants Health and Vigor Field Application Indicator Tools	RMS Quality Criteria Level-Quantitative	RMS Quality Criteria Level-Qualitative
Visual inspection Monitoring Client interview		Plants do not show evidence of stress due to lack of management, and growth is not impaired due to weeds, diseases, or insects. Plant growth is vigorous, as indicated by site index guides, ecological site descriptions, or other production tables. Tools and observations indicate plants do not exhibit poor growth or poor form. Insect, disease or other damage are not above acceptable levels
Insects and Diseases of Alaskan Woody Ornamental Plants Insects and Diseases of Alaskan Forest Sbexpert Users Guide Version 1.0: A knowledge-Based Decision –Support Systems for Spruce Beetle Management	No more than 20% of the live trees are impaired by disease or insects.	Current insect and disease conditions in relation to climate and stand conditions present a condition that would result in total stand decline.

**NRCS-Alaska Technical Guide
Section III
Quality Criteria - FOTG Referenced Tools - Plants**

FOTG Section II. Ecological Site Descriptions NRCS National Range and Pasture Handbook; Worksheet for Determining Similarity Index Exhibit 4-7.	Similarity index >60%	Historic Climax or Desired Plant Community appears to support >60% of the plant species composition by weight. There are no obvious deleterious resource impacts and site meets user's objectives.
FOTG Section II. Ecological Site Descriptions NRCS National Range and Pasture Handbook; Trend Determinations Exhibit 4-6.	Similarity Index <60% - Range Trend is Towards or Planned Trend is Positive	
Interpreting Indicators of Rangeland Health		All three indicators rate Adequate or better.
FOTG Section II. Forage Suitability Groups and NRCS Pasture Condition Score Sheet.	Pasture Condition Score overall rating of >35 or individual rating >4.	Pasture plants appear healthy and vigorous and are estimated to yield >80% (average management level) of the desired forage for the Forage Suitability Group. There are no significant resource or management problems.

D.2.c1 Plant Damage by Wind Erosion

DEFINITION: Plants are damaged by wind erosion.

Plant Wind Erosion Field Application Indicator Tools	RMS Quality Criteria Level-Quantitative	RMS Quality Criteria Level-Qualitative
Visual inspection Monitoring WEQ Client interview	Estimated Soil Loss does not exceed crop tolerances as listed in the Alaska Wind Erosion Guide, <i>Estimated Crop Tolerances to Soil Loss (Blowing)</i>	Plant damage by wind erosion does not result in significant yield or stand reductions. Tools and observations indicate blowing soil particles do not damage seedlings. Plant yields are not reduced beyond acceptable levels. Adequate plant residues will be present to meet the quality criteria for Soil, Water, Air, other Plant, and Animal resource concerns.
FOTG Section II. Ecological Site Descriptions NRCS National Range and Pasture Handbook; Worksheet for Determining Similarity Index Exhibit 4-7.	Similarity index >60%	Historic Climax or Desired Plant Community appears to support >60% of the plant species composition by weight. There are no obvious deleterious resource impacts and site meets user's objectives.
Plant Wind Erosion Field Application Indicator Tools	RMS Quality Criteria Level-Quantitative	RMS Quality Criteria Level-Qualitative

**NRCS-Alaska Technical Guide
Section III
Quality Criteria - FOTG Referenced Tools - Plants**

FOTG Section II. Ecological Site Descriptions NRCS National Range and Pasture Handbook; Trend Determinations Exhibit 4-6.	Similarity Index <60% - Range Trend is Towards or Planned Trend is Positive	
Interpreting Indicators of Rangeland Health		All three indicators rate Adequate or better.
FOTG Section II. Forage Suitability Groups and NRCS Pasture Condition Score Sheet.	Pasture Condition Score overall rating of >35 or individual rating >4.	Pasture plants appear healthy and vigorous and are estimated to yield >80% (average management level) of the desired forage for the Forage Suitability Group. There are no significant resource or management problems.

D.2.c2 Corridor Enhancement, Riparian Cover

DEFINITION: Trees and/or shrubs located adjacent to watercourses or water bodies do not provide the functions of shade, detritus source, large woody debris, wildlife habitat, filter surface and shallow ground water flow, and protection against scour erosion.

Corridor Enhancement, Riparian Cover Indicator Tools	RMS Quality Criteria Level-Quantitative	RMS Quality Criteria Level-Qualitative
Stream Visual Assessment Protocol; National Water and Climate Center Technical Note 99-1	Good (7.5 score or better)	Stream corridors provide suitable habitat for plants and animals (terrestrial and aquatic) of concern to grow, reproduce and perpetuate at sustainable levels. Aquatic habitat and water temperature meets or exceeds standards established by federal, state and local regulations. Use observation and tools to determine if anthropogenic (human activity) inputs significantly impact the aquatic health and riparian/wetland function of surface water bodies.

D.3. Management

D.3.a. Establishment, Growth, and Harvest

DEFINITION: The management scheme or plan does not provide the proper techniques and timing to meet the plant needs of establishment, growth, and harvest.

Plant Management Field Application Indicator Tools	RMS Quality Criteria Level-Quantitative	RMS Quality Criteria Level-Qualitative
<p>Applicable areas of FOTG</p> <p>Criteria for Evaluating Lichen and other Plants on Reindeer Ranges; for Rotational plans</p>	<p>Utilization Class 4 or less</p>	<p>Establishment - Management including seeding dates, seedbed preparation for selected species, planting, fertility, and weed control are based on the FOTG.</p> <p>Growth and Harvest - Plants manufacture sufficient plant food to complete their growth cycle, including natural regeneration where applicable and are harvested in a timely manner to sustain productivity.</p> <p>Tools and observations indicate harvesting of perennial species occurs at a frequency, intensity, duration, and timing that meet the criteria for “plant condition” and “plant production”. Harvest of accumulated plant materials is accomplished in a manner that provides for the long-term sustainability of the plant resource.</p>
<p>NRCS National Range and Pasture Handbook; Exhibit 4-3 and Exhibit 4-5</p>	<p>Meet requirements in Prescribed Grazing Standard and Specification; FOTG. Section 4.</p>	<p>Establishment - Management including seeding dates, seedbed preparation for selected species, planting, fertility, and weed control are based on the FOTG.</p> <p>Growth and Harvest - Plants manufacture sufficient plant food to complete their growth cycle, including natural regeneration where applicable and are harvested in a timely manner to sustain productivity.</p> <p>Tools and observations indicate harvesting of perennial species occurs at a frequency, intensity, duration, and timing that meet the criteria for “plant condition” and “plant production”. Harvest of accumulated plant materials is accomplished in a manner that provides for the long-term sustainability of the plant resource.</p>
<p>FOTG. Section 4. Prescribed Grazing Standard and Specification</p>	<p>Current grazing utilization will be equal to or less than specified in Table 1, prescribed Grazing Specification</p>	

FOTG Section II. Forage Suitability Groups and NRCS Pasture Condition Score Sheet.	Pasture Condition Score overall rating of >35 or individual rating >4.	
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D.3.b. Nutrient Management

DEFINITION: The correct amount of plant nutrients exceeds or is not available to meet plant needs.

Nutrient Management Field Application Indicator Tools	RMS Quality Criteria Level-Quantitative	RMS Quality Criteria Level-Qualitative
Soil Test	Agronomic rates	Nutrients are available to meet the needs of plants without having adverse effects on other resources. Tools and observations indicate nutrient application is based on a realistic yield goal and considers all nutrient sources. Nutrients are applied at rates and times along with mitigating practices so no excessive leachate or runoff containing nutrients occurs below the root zone or beyond field boundaries.
Tissue Test	Agronomic rates	
University Fertilizer Guide Sheets	Agronomic rates	
Phosphorus Index	Balance for P if appropriate	
Agricultural Waste Management Field Handbook	Use book values only when test results are not available	

D.3.c. Pests - Brush, Weeds, Insects, Diseases, and Fungi

DEFINITION: Pests are not managed to meet the needs of the plants of concern and the manager's objectives and resource management objectives.

Plant Pests Field Application Indicator Tools	RMS Quality Criteria Level-Quantitative	RMS Quality Criteria Level-Qualitative
Integrated pest Management Guide for Alaska		Pests are managed based on threshold levels where available to achieve the landowner's desired production without having adverse effects on other resources. Federal, state, and local pest control laws or regulations will be followed. Tools and observations indicate the planned treatment effectively reduces adverse impacts of pest to a level that production, condition, and plant quality goals are reached and maintained.
Visual inspection		
Plant Management Areas		

NRCS-Alaska Technical Guide
Section III
Quality Criteria - FOTG Referenced Tools - Plants

<p>Insects and Diseases of Alaskan Woody Ornamental Plants</p> <p>Insects and Diseases of Alaskan Forest</p> <p>Sbexpert Users Guide Version 1.0: A knowledge-Based Decision –Support Systems for Spruce Beetle Management</p>	<p>No more than 20% of the live trees are impaired by disease or insects.</p>	<p>Current insect and disease conditions in relation to climate and stand conditions present a condition that would result in total stand decline.</p>
<p>FOTG Section II. Ecological Site Descriptions</p> <p>NRCS National Range and Pasture Handbook; Worksheet for Determining Similarity Index Exhibit 4-7.</p>	<p>Similarity index >60%</p>	<p>Historic Climax or Desired Plant Community appears to support >60% of the plant species composition by weight. There are no obvious deleterious resource impacts and site meets user's objectives.</p>
<p>Plant Pests Field Application Indicator Tools</p>	<p>RMS Quality Criteria Level-Quantitative</p>	<p>RMS Quality Criteria Level-Qualitative</p>
<p>FOTG Section II. Ecological Site Descriptions</p> <p>NRCS National Range and Pasture Handbook; Trend Determinations Exhibit 4-6.</p>	<p>Similarity Index <60% - Range Trend is Towards or Planned Trend is Positive</p>	
<p>Interpreting Indicators of Rangeland Health</p>		<p>All three indicators rate Adequate or better</p>
<p>FOTG Section II. Forage Suitability Groups and NRCS Pasture Condition Score Sheet.</p>	<p>Pasture Condition Score overall rating of >35 or individual rating >4.</p>	<p>Pasture plants appear healthy and vigorous and are estimated to yield >80% (average management level) of the desired forage for the Forage Suitability Group. There are no significant resource or management problems.</p>

D.3.d Threatened and Endangered Species (Includes Federally listed species, State listed species, unique species, etc.)

DEFINITION: Federal or state listed species occur on or near the site.

T&E Plants Field Application Indicator Tools	RMS Quality Criteria Level-Quantitative	RMS Quality Criteria Level-Qualitative
Field identification		<p>Actions and procedures will conform to laws and established policy for all officially listed federal and state species. Use observation and tools to determine if anthropogenic (human activities) inputs will impact known or potential sites.</p> <p>Identify presence or absence and document in plan.</p> <p>Engage Section VII consultation procedures found in Title 50, Chapter IV, Part 402 Interagency Cooperation – Endangered Species Act of 1973, as amended, where a project may impact federally listed endangered species. Engage avoidance, minimization or mitigation procedures for species identified on-site.</p>
FOTG Sect II		
<p>National Plants Database: http://plants.usda.gov/ and FOTG Section II. Ecological Sites</p>		