

Northern Region
Vegetation Management Planning
User Guide and Template for Developed Recreation Sites
March 2010



An R1 User Guide and Template

Vegetation can significantly affect a recreational experience. It provides shade on a hot summer day and habitat for birds that fill the air with the sounds of summer. It blocks views between camping units or cabins and gives a camper a place to dry wet swim suits after a fun day playing in the lake. It can provide challenge for fabulous tree skiing or windows to scenic vistas of beautiful mountains in the distance.

But vegetation can also ruin a day if it's prickly and makes a rash, is so dense the sun never shines, or comes crashing down, destroying property or taking a life.

Purpose of a Vegetation Management Plan

Just as careful consideration goes into the site design of a recreation facility, a vegetation management plan “designs” how the vegetation contributes to the setting and recreation experience in the site and how it should be managed over time. Considerations include how the vegetation affects visitor comfort, safety, aesthetics, and use management (e.g. containment and circulation flow). In addition to meeting objectives for recreation use, proposed management treatment(s) ensures sustained protection and/or enhancement of the site's ecological and cultural resources.

R1 User Guide and Template

This user guide and template are meant to be tools to help recreation managers through an interdisciplinary NFMA-level planning process whose end result is a Vegetation Management Plan.

The user guide provides suggestions of things to consider when filling out the R1 template. They are organized with the following sections (you may want to expand or condense based on the complexity of your site and information needs):

- I. Vegetation Influence on the Recreation Experience
- II. Vegetation Existing Condition and Expected Trajectory
- III. Major Factors Affecting Potential Vegetation Treatments
- IV. Vegetation Desired Future Condition
- V. Actions to Achieve The Desired Vegetation Conditions
- VI. Proposed Schedule of Actions
- VII. Mitigation
- VIII. Monitoring
- IX. Specialists Involved in Plan Preparation.

When the template is complete it will be the foundation for deciding what actions will be incorporated into a proposed action later taken through the NEPA environmental analysis process. A quality vegetation management plan should help facilitate NEPA review of future vegetation treatment projects.

This R1 Vegetation Management Planning User Guide and Template is not meant to be a requirement or even a required format, but is meant to be a helpful tool. Any feedback from the field on ways it can be improved is appreciated!

R1 USER GUIDE

VEGETATION MANAGEMENT PLANNING FOR DEVELOPED RECREATION SITES



This information is necessary to link plans to the corporate data system (INFRA) and tier to the other planning efforts that may influence the location, scope and objectives for vegetation treatments.

The template is self-explanatory. Add a sketch map to help others link the narrative to relative locations in the site. Portions of sections I through III may need to be completed for each zone denoted on the map.



Use this section to define how the vegetation contributes to the setting and experience of people recreating in the site and serve as the objectives for proposed treatments. It is intended to assist the Interdisciplinary Team (IDT) in assessing vegetation from the perspective of both the recreation user and recreation manager. Vegetative influences will vary depending on the type of recreation site such as a ski area, campground, or scenic vista.



Use this section to describe the existing vegetation and its expected trajectory over time under existing management. This section should tie to vegetation function/characteristic in the previous section and summarize relevant information contained in a detailed silvicultural diagnosis.

Consider the existing vegetation particularly as it relates to the influences described in Section I. Consider the various factors affecting development of the vegetation including those shown in Section III below. Is it expected to continue growing? Is there a foreseeable change due to vegetative succession? Are there current or expected insect or disease problems that can affect vegetative development? Is the existing vegetation resilient to extended drought, flooding, frost, etc? Are there man-caused pressures such as soil compaction that may affect development?

The generic table provided in this section is a recommended format, but feel free to develop your own organization and format to reflect the important vegetation characteristics of your developed recreation site.

Example Table:

Vegetation Existing Condition and Expected Trajectory
Trees (over and understory):
<u>Existing condition:</u> Lodgepole pine-dominated overstory with some larch. Mountain pine beetles are killing LP at the south end of the campground around sites 7-9 and there are scattered trees hit on the east end by the SStoilet.
<u>Trajectory:</u> <i>Short term (< 2 years):</i> Expect accelerated mortality in the LP due to size and age according to Steed (FHP). <i>Mid -term (3-15 years):</i> Expect 70-80 percent mortality in the LP over about a 10-year period resulting in rapid increase in hazard trees and corresponding decrease in shade. <i>Long term (> 15 years):</i> Drastically opened canopy and reduction of shade as hazard trees are removed. Accumulation of surface fuels as limbs and tops break out of dead LP through removal of hazard trees and disintegration of snags away from campsites.
Shrub, Forb, Grass Vegetation:
<u>Existing condition:</u> Miscellaneous forbs with quite a bit of huckleberry, an attraction of the campground in mid-summer. Trampling and bare ground are confined to small areas within campsites – mostly around fire pits and between picnic tables and parking spots. Very little down wood because of 1910 burn and 1919 reburn that effectively cleared the area.
<u>Trajectory:</u> <i>Short term (< 2 years):</i> No change <i>Mid -term (3-15 years):</i> May get more luxurious ground cover as more light reaches the ground and more moisture is available after overstory mortality. Campground use is expected to increase due to demographics, but mortality degrading the sense of place and visual appeal may offset growth. Increased use would likely increase bare, trampled ground around campsites. <i>Long term (> 15 years):</i> Forb and huckleberry groundcover will be stable, but woody debris accumulations will be significant around campsites.

If you need to expand this section, you might consider looking at overstory, midstory, understory, and ground cover separately:

Vegetation Existing Condition and Expected Trajectory
Overstory:
<i>Existing condition:</i>
<i>Trajectory:</i> Short term (< 2 years): Mid -term (3-15 years): Long term (> 15 years):
Midstory:
<i>Existing condition:</i>
<i>Trajectory:</i> Short term (< 2 years): Mid -term (3-15 years): Long term (> 15 years):
Understory:
<i>Existing condition:</i>
<i>Trajectory:</i> Short term (< 2 years): Mid -term (3-15 years): Long term (> 15 years):
Ground Cover:
<i>Existing condition:</i>
<i>Trajectory:</i> Short term (< 2 years): Mid -term (3-15 years): Long term (> 15 years):

OR you may choose, instead, to look at all the vegetation by time frame:

<u>Existing Condition:</u>
<u>Short Term (<2 years) Trajectory:</u> i.e. eminently hazardous trees removed, several older trees still remain, new trees and shrubs planted and need tending, noxious weeds treated, fuels reduced. Balance between risk management and other recreation objectives: removed immediate threats but used discretion to retain viable older trees
<u>Mid Term (2-15 years) Trajectory:</u> i.e. screening has grown between sites, hazardous trees removed, fewer older trees remain, planted trees established, noxious weeds eliminated, fuels still at acceptable levels Balance between risk management and other recreation objectives: removed immediate threats and larger openings visible due to mortality of some older trees, newer vegetation is filling in the openings and some older monarchs remain
<u>Long Term (15+ years) Trajectory:</u> i.e. screening between sites, vigorous young stand with a diversity of age and species, improved wildlife habitat, reduced wildfire risk. Balance between risk management and other recreation objectives:

III. MAJOR FACTORS AFFECTING VEGETATION TREATMENT

Use this section to further describe factors that affect the vegetative trajectory described in Section II and describe how these factors may influence possible vegetation treatments. On the template the importance of each factor or constraint current and future vegetation may be described in whatever form deemed appropriate. The following discussion of each factor, however, provides possible alternative formats and topics to consider. If a specialist report is attached to your vegetation plan, note that in the relevant section.

DISTURBANCE FACTORS

Current possible future disturbances to recreation site vegetation should be taken into account so as to not be caught by surprise. Recreation sites, although designated for special uses and often highly managed are still part of the landscape. As such they are also subject to many of the same disturbances that affect the lands around them. These may include biological disturbances such as insects and diseases or weeds; abiotic disturbances such as water, wind, or fire; or human disturbances such as changes in road, water, or building infrastructure.

Insects, Diseases, Animal, and Other Damages

One possible format for summary of tree and shrub damages is given below followed by discussion of some of the main topics being considered:

Tree/Shrub Damages			
<input type="checkbox"/> List species affected, cause of damage, level of concern (low moderate severe), and frequency/trends (description).			
Species Affected	Cause	Concern	Frequency/Trends
Douglas-fir	Annosus root disease	High	Nearly all trees have been killed but a few are left that have crown symptoms and are expected to die in the next 20 years. Most will probably die standing.
Grand fir	Annosus root disease	High	Most have died and many of the remaining GF are expected to die standing or fall from root failure in the next 20 yrs. Root failure will create more extreme hazards.
Lodgepole Pine	Human	High	Several of the largest trees on the three high-use sites (4, 6 and 7) are nearly girdled by wires wrapped around stems. These are expected to die leaving little cover on these sites.
Western Redcedar	Multiple tops	Moderate	Most of the very large cedar have multiple tops with poor joint anatomy. High rates of failure are seen and can be expected to increase in the future as they grow larger,

Species Affected

List the tree or shrub species damaged by each causal agent. If there is no difference in the severity, frequency or other conditions, multiple species can be listed on the same line. If the impact of the causal agent varies by species, list them separately to specify the impact.

Causal Agent

Include both biotic and abiotic damage agents.

- Biotic agents generally include insects, diseases, animals, and humans.
 - Insect, disease and animal damages should be identified by someone who has completed an identification training course and using reference material such as the Northern and Central Rocky Mountain Field guide to conifer insects and diseases. A service visit by a Forest Health Protection representative is recommended before completing this section of the Vegetation Management Plan.
 - Human-origin damages commonly include girdling with ropes and wires, cutting and chopping stems and branches, driving nails into stems, and bark stripping.
 - Human-origin damages also include indirect damage such as compaction in sites and along trails, and burying roots during site renovation.
- Abiotic agents commonly include freeze cracking, snow breakage, windthrow that does not involve predisposition by root decay, and flooding.

Severity of Damage

In most cases the severity and frequency estimates are based on walk-through exams, although data from a formal hazard tree assessment may be used as well. Severity ratings are assigned independent of the frequency of occurrence, and they should reflect the general level of damage severity in the species. Damage causing direct mortality of any large trees is considered to have high severity. Since small trees typically have less impact on the recreational experience, it will take the death of several seedling and sapling trees to constitute moderate or high severity. It is important not to agonize over these ratings. The description of the damage is more important than the rating.

Examples for assigning damage severity:

LOW: Damage that is notable, but probably not sufficient to kill large trees, and unlikely to significantly alter the abundance of small trees and shrubs.

- Minor decay or deformation.
- Damage does not result in mortality of trees greater than 5 inches dbh.
- Damage resulting in mortality of smaller trees is uncommon.
- Examples of low severity damages are branch cankers that are not girdling the main stem, foliage damage by insects and diseases, a few nails driven into trees, and compaction on only one side of a tree along a trail.

MODERATE: Damages that could result in death or removal of large trees more than 10 years in the future, or that could noticeably alter abundance of small trees and shrubs.

- Significant decay or deformation occurs that is expected to lead to hazard tree conditions.
 - This includes cases of damage such as bark beetle strip attacks, bark stripping or chopping and other similar damages that kill large enough sections of cambium to cause decay or deformation that will likely lead to hazard tree conditions in the future.
- Non-girdling stem cankers, leans and multiple crowns that potentially cause moderate rates of hazard tree removals even if trees have low mortality rates.
- Damage leading to mortality of many saplings (trees less than 5 inches dbh). Examples are antler rubbing and trampling by human or horse traffic.

HIGH: Damages which are likely to result in death or removal of large trees or many small trees or shrubs in the near-term (within 10 years).

- Stem decay or root decay or damage that is likely to cause tree failure.
- Bark beetle attacks or root disease that has caused mortality of trees greater than 5 inches dbh.
- Trees greater than 5" dbh are girdled by stem cankers, animal chewing, sunscald, human-origin damage.
- Herbicide damage that killed nearly all of the tree seedlings or shrubs in a section of a campground.

Frequency/Trends

This is the most important information in this section. It gives the plan preparers a clear view of the level of damage observed and the trends observed. Is it a bark beetle outbreak that has peaked and is subsiding? Is it a large number of new stem infections of white pine blister rust that will eventually lead to the death of most of the white pines? Trends are often best identified with the assistance of professional entomologists or pathologists. The accuracy of this information may be critical to the selection of appropriate treatments for vegetation management.

Hazard Tree Evaluation

This is not a prerequisite for development of a vegetation management plan but it is often completed in conjunction with preparing a plan, either when the site is examined and data are taken for plan development, or as result of the management recommendation for the site. Hazard tree evaluation is a formal process and records of the evaluation are maintained for future reference even after the identified tree hazards have been treated. All trees that could impact an established site or amenity are examined by qualified hazard tree evaluators, identified trees are rated for hazard potential, and recommendations for removal or monitoring become part of the record for the site. Trees are typically mapped by sketching their location on a site map, by measuring direction and distance from known points, or by gps record. For information on methods, and to obtain forms and directions for hazard tree evaluation, contact your local Forest Health Protection office.

Abiotic/Physical Influences

Specialists with potential information on physical influences affecting vegetation at your site may include soil scientist, hydrologist, engineering, and silviculturist. The purpose of this section is to 1) identify water or soil traits, or reoccurring wind, snow / ice, or flooding events that might limit the types of vegetation that will grow in all or parts of your site, 2) consider the importance of those disturbances on site vegetation, 3) consider possible mitigation measures, and 4) identify relevant guidelines related to soil and water.

Possible examples of important findings could include:

- Strong wind event coming from the north in spring often result in windthrow along the northeast corner of the site. Thinning this area may result in significant windthrow that could change expected vegetation treatment outcomes.
- Soils along steep banks of the river that runs along the west edge of the site are prone to undercutting, resulting in banks falling into the river. It may be worth exploring whether vegetation can help stabilize these banks.

Example Table:

<u>Abiotic/Physical Influences</u>		
Are there wind events that influence this site?	If yes, describe	Other comment
Is there a stream within or adjacent to the site?	If yes, describe	What protective measures apply to this stream (i.e. Inland Fish Guidelines)
Is this site susceptible to floods?	If yes, describe	
Is the site susceptible to ice jams?	If yes, describe	
Has the water table at this site recently changed or is it expected to?	If yes, describe	Other comment
What is the soil texture at the site, i.e. sand, silt, clay		Soil condition: i.e. compacted
What is the drainage condition of the site.	Describe? i.e. standing water, overly dry soils	

Fuels Load and Wildfire Threats

Use this section to describe the significant fuel conditions in and around the developed recreation site and identify opportunities to modify those conditions to reduce hazardous fuel conditions.

Consider the fuels within and immediately adjacent to the developed recreation site. Does the ground cover provide flashy fuel that would support a fast-moving fire likely to escape confinement? Does the vegetative screening provide ladder fuel that would threaten the overstory? Are the ladder fuels continuous or broken? Would the canopy cover support an active crown fire? If a fire originates in the developed recreation site, what is threatened outside the site?

Consider the landscape context of the developed recreation site. Is it wildland/urban interface? Are there natural or man-made fuel breaks around the site? Is there private property and structures nearby? What are fuel conditions like outside the developed recreation site – do they pose a hazard to the site?

Consider engine access for fire suppression. Is there an adequate water source for fire suppression? Does the site have cell phone coverage for timely reporting of escaped campfires? Do these factors affect the assessment of desired fuel conditions?

Example Table:

Fuels
Fuels / wildland urban interface (circle one)
<input type="checkbox"/> Fuel loads: High, Moderate, Low
Fuel breaks around site: Yes, No
Are there private property structures in the vicinity? Yes, No If yes, describe:
Comments:

Weeds

Example: A table such as this is recommended to describe the weeds on site.

Weeds				
List weed species present, whether they are officially listed in the State as "noxious", current percent coverage, potential for spread, and a description of the population.				
Weed species	Noxious	Potential	Population description	Coverage
Spotted knapweed	Yes	High	<.1 acre; Mostly scattered in narrow zone along river	5%
Hounds tongue	Yes	Low	Few plants scattered along the road	<1%
St. John's wart	Yes	Moderate	<.01 acre; Cluster near host site	10%
Dogtail grass	No	Moderate	.2 acre along road from campground entry to host site.	20%
Weed Survey (attach map or location of gps data file):				

Weed species

It is important to correctly identify the weed to species and know whether it is noxious or not. Assistance in identifying weeds is available from the weed manager on most forests, and publications and identification services available through university extension offices and county weed management area websites.

Noxious check-off

Noxious weed species must, by law, be controlled. If in doubt, check with county extension offices for a current listing of noxious weed species. It is particularly important to control noxious weeds found in developed sites on forest land because these can provide portals for entry of weeds into the forest.

Potential for spread or intensification

This is the estimated potential for the weed to spread within the site. This is based on the ecology of the weed, the suitability of the site, the level of disturbance, and amount of available habitat for the weed. For example if it tends to follow the road corridor, is there more road corridor habitat available for spread? If the weed is wide-spread, what is the potential for intensification of the population? If the weed population appears to have peaked and is declining due to competition from native vegetation, the potential for spread or intensification is low.

Population description (Should be accompanied by a weed survey sketch map or GPS location data)

This is critical information used to decide whether and how to control the weed. Isolated spots with high coverage may be treated most effectively with herbicide applications, whereas scattered plants with low coverage may be effectively controlled with properly-timed hand pulling.

Coverage

This is a visual estimate of the percent coverage by the weed in the described population. This provides an estimate of the degree to which the weed has established, which in turn provides information to determine the best methods and frequency of control efforts to suppress or eliminate populations.

Planned Infrastructure Changes

Recreation areas often contain significant road systems, parking pads, toilets, and water lines and hydrants. Large changes in this type of infrastructure often require designed and engineered plans. It is important to find out whether any such changes or upgrades are being planned, and whether they would require changes in the site vegetation. Even if construction activities are outside your site boundary, projects nearby can change needs for visual and audio buffers within the site.

For example, an older campground may be slated for upgrade in two years. Planned activities include widening of roads, creation of RV-friendly (large and paved) parking at campsites, and the loss of some sites. Many trees will be removed in the process, while shrubs and ground cover will likely be damaged as well. Your plans for managing the vegetation should take these changes into consideration.

Check to see if this site is on the out year “ CIP” schedule for capital or major deferred maintenance improvements. This information would also alert you as to when you would need to revisit the site to update your plan.

Example Table:

Planned Infrastructure Changes
Describe future infrastructure plans that would affect site vegetation. Mark these on the map if possible.

RESOURCE NEEDS AND CONSTRAINTS

Recreation facility management affects forest-grassland resources. Some streamside campgrounds are located in sensitive fisheries habitat. Cultural resources are often located within recreation facilities and many rental cabins are historically significant. Some facilities are situated in sensitive wildlife areas.

Resources potentially affected by vegetation treatment in recreation facilities should be described in your vegetation management plan. This information should include the status of resource inventory within recreation facilities (i.e., has a cultural resource survey of the facility been done?) and a general description of potential resource impacts and mitigation measures. To the extent possible, resource specialists should be involved in the formulation of your vegetation management plan.

Standards and guidelines may already exist for managing specific resources within recreation facilities or their surrounding areas. Standards and guidelines for managing riparian areas is the obvious example. Historic property plans for managing historic rental cabins and their surrounding vegetation is less obvious. You should not reinvent the wheel or overlook existing data and guidelines.

Resource information in your vegetation management plan provides general (NFMA) guidance for developing vegetation projects and treatments. **You should expect additional and more detailed, site-specific analyses by resource specialists when such projects are designed, formalized and subject to NEPA interdisciplinary team (IDT) review.**

Cultural Resources

Many of our developed recreation sites occupy places that have been used for thousands of years before us. An understanding of the cultural resources that may exist at this site is important and required before making management decisions on treating vegetation that may involve ground disturbing activities.

Example Table:

Cultural Resources
<input type="checkbox"/> Archeological site / Cultural site / N/A (circle one) If there are archeological resources or other cultural concerns on the site, please describe. Provide map if necessary (or mark on main map).
Inventory completed of recreation facility? Name and date of report
Cultural resource identified? Name and number of site, ie: 24BW800, Little Booboo Cabin
Cultural resource type and condition? I.e., historic, rental cabin, good shape or prehistoric, lithic scatter, trashed
Cultural resource significance? I.e., National Register eligible or unevaluated
Effects of current recreation facility operation: I.e., rental cabin is the reason for this facility
Cultural resource location information is confidential and protected; site location information on file with Forest-Grassland Heritage Program Manager

Fish and Wildlife

Many developed recreation sites, especially campgrounds, are associated with streams, lakes, and/or riparian habitat. As such, they can provide for fishing opportunities and opportunities to observe wildlife, primarily birds. When treating vegetation in or adjacent to campgrounds, seek opportunities where you can provide shade for fish in streams and a diversity of vegetation structure and age classes to provide habitat for a variety of songbirds. Seek opportunities to encourage willow and other shrubs as well as deciduous trees such as aspen where possible.

During the NEPA analysis for the actions proposed, you will need to identify Threatened and Endangered and Sensitive Species as well as those for which you wish to provide habitat.

Example Table:

Target and Sensitive Plants or Animals		
List habitats you wish to encourage for wildlife viewing:		
<input type="checkbox"/> List T&E and Sensitive plants or animals of concern and possible protective measures.		
Plant (animal) name	Sensitivity level	Possible protective measures
Note protective measures taken or planned. Map if necessary.		

Soils-Hydrology

The ecosystem services provided by the soil vary from site to site. Although soil quality standards do not apply to developed sites, (FSM 2554.1), it will be helpful to identify what type of services you need from the soil in order to achieve the desired future condition you have proposed. For example, will you need to prevent erosion from use or during and after treatment? Do you want to change species types or enhance a shrub layer? Will the productivity of the soil in those locations contribute or hinder your potential success?

Other Resources:

There may be other resources unique to the site which needs to be evaluated and described.

IV. VEGETATION DESIRED FUTURE CONDITION

In this section of the template, first consider the desired future condition (DFC) overall for the recreation experience desired in this setting, and then evaluate if that desired future condition is feasible or achievable, based on the information shared by the specialists thus far.

An example might be that if a vegetative assessment was conducted for a campground or day use site that indicated extensive root rot disease, while the DFC may be a setting that promotes and retains high numbers of large, old trees throughout the site, disease issues may preclude retention of affected trees and alternative strategies may need to be developed and phased in over time to create that sense of setting, while concurrently addressing disease issues.

In creating that vegetative DFC, also consider the trending data regarding your projected vegetative and ecological conditions on the ground. An example might be warming trends and decreased precipitation trends at a site...which in turn might shift the re-vegetation strategy of this site to species that are more drought tolerant over time. Use the expertise of your specialists to help craft a realistic vegetative condition over time.

You can also use this section to be thinking about phased DFCs, to take advantage of “getting out ahead” of bug and disease issues, perhaps with a phased treatment approach over a multiyear period. Use the

information gained and shared thus far by your team to help guide the DFC that you want and can achieve for this site.

If you need to expand this section, you might consider looking at overstory, midstory, understory and ground cover:

Vegetation Desired Future Condition
<p>Overstory:</p> <p><i>Trajectory:</i> <i>Short term (< 2 years):</i> <i>Mid -term (3-15 years):</i> <i>Long term (> 15 years):</i></p>
<p>Midstory:</p> <p><i>Trajectory:</i> <i>Short term (< 2 years):</i> <i>Mid -term (3-15 years):</i> <i>Long term (> 15 years):</i></p>
<p>Understory:</p> <p><i>Trajectory:</i> <i>Short term (< 2 years):</i> <i>Mid -term (3-15 years):</i> <i>Long term (> 15 years):</i></p>
<p>Ground Cover:</p> <p><i>Trajectory:</i> <i>Short term (< 2 years):</i> <i>Mid -term (3-15 years):</i> <i>Long term (> 15 years):</i></p>

OR you may choose, instead, to look at all the vegetation by time frame:

Vegetation Desired Future Condition
<p><u><i>Short Term (<2 years)</i></u> i.e. eminently hazardous trees removed, several older trees still remain, new trees and shrubs planted and need tending, noxious weeds treated, fuels reduced.</p> <p>Balance between risk management and other recreation objectives: removed immediate threats but used discretion to retain viable older trees</p>
<p><u><i>Mid Term (2-15 years)</i></u> i.e. screening has grown between sites, hazardous trees removed, fewer older trees remain, planted trees established, noxious weeds eliminated, fuels still at acceptable levels</p> <p>Balance between risk management and other recreation objectives: removed immediate threats and larger openings visible due to mortality of some older trees, newer vegetation is filling in the openings and some older monarchs remain</p>
<p><u><i>Long Term (15 + years)</i></u> i.e. screening between sites, vigorous young stand with a diversity of age and species, improved wildlife habitat, reduced wildfire risk</p> <p>Balance between risk management and other recreation objectives:</p>

V. ACTIONS TO ACHIEVE DESIRED VEGETATION CONDITIONS

Describe the vegetation treatments needed to achieve or move towards the desired future condition. Consider what treatments need to be done soon and what subsequent treatments likely will be needed in the future. Describe how the treatments will alter the expected trajectory of the vegetation described in Section II and the expected trajectory after treatment. Tie the resulting vegetation and trajectory to the desired future condition in Section IV and the vegetative influences in Section I. This section should summarize relevant information contained in a detailed silvicultural diagnosis.

The complexity and detail of this section should be driven by the treatment needs identified on your specific site. The Vegetation Management Plan Template provides a simple format. Below is an example of a more complex evaluation format that divides actions into a) consideration of pros and cons of possible treatments; b) description of chosen treatments and c) an evaluation of how the chosen treatment may affect the vegetation influences on the recreation experience.

A. The Pros and Cons of Possible Treatments

Possible Actions to Achieve Desired Vegetative Conditions
Overstory Vegetation Changes Needed:
<i>Describe possible actions to achieve this change, and some of the pro's and con's of each</i>
Midstory Vegetation Changes Needed:
<i>Describe possible actions to achieve this change, and some of the pro's and con's of each</i>
Understory Vegetation Changes Needed:
<i>Describe possible actions to achieve this change, and some of the pro's and con's of each</i>
Ground Cover Vegetation Changes Needed:
<i>Describe possible actions to achieve this change, and some of the pro's and con's of each</i>

Here is an example of a second format already filled out:

Possible Actions to Achieve Desired Vegetative Conditions	
Overstory Vegetation Changes Needed:	
Objectives are to maintain stable shade and forested sense of place. Expected LP mortality does not fulfill these functions. Opportunity to convert to more long-lived species with fewer insect/disease hazards.	
<i>Possible Action 1:</i> Sanitation cut to thin lodgepole pine to reduce losses from MPB. Thin to 80-90 sq ft of basal area, removing LP from below and keeping all other species.	<i>Possible Action 2:</i> Two-aged shelterwood seed cut followed by planting WL, WP.
<i>Resource benefits and trade-offs:</i> This is a temporary measure to maintain some shade at reduced levels and lodgepole that defines this campgrounds sense of place. Overstory would be stabilized for maybe 20 years before subsequent treatments will be needed.	<i>Resource benefits and trade-offs:</i> This would dramatically reduce shade and the forested character of the campground for at least 2 decades. In the long term, a more diverse overstory of WL, WP, LP, and DF with some GF will develop from regeneration to provide a more resilient setting for the campground.
Ground Cover Vegetation Changes Needed:	
Current ground cover meets resource objectives. Needs to be monitored over time, especially if campground use increases. Woody debris accumulations may need to be addressed in the future.	
<i>Action 1:</i> No action	<i>Action 2:</i>
<i>Resource benefits and trade-offs:</i> Ground cover currently meets objectives and is expected to in the future under current use.	<i>Resource benefits and trade-offs:</i>

Or.....here is a third format, expanded even further: use

Possible Actions to Achieve Desired Vegetative Conditions	
<i>Describe vegetation changes needed to restore/maintain/create desired vegetation function/characteristic. Briefly describe feasible treatment alternatives considered to implement those treatments, and describe any trade-offs between resource objectives associated with each alternative.</i>	
Overstory Vegetation Changes Needed:	
<u>Action 1:</u>	<u>Action 2:</u>
<u>Resource benefits and trade-offs:</u>	<u>Resource benefits and trade-offs:</u>
Midstory Vegetation Changes Needed:	
<u>Action 1:</u>	<u>Action 2:</u>
<u>Resource benefits and trade-offs:</u>	<u>Resource benefits and trade-offs:</u>
Understory Vegetation Changes Needed:	
<u>Action 1:</u>	<u>Action 2:</u>
<u>Resource benefits and trade-offs:</u>	<u>Resource benefits and trade-offs:</u>
Ground Cover Vegetation Changes Needed:	
<u>Action 1:</u>	<u>Action 2:</u>
<u>Resource benefits and trade-offs:</u>	<u>Resource benefits and trade-offs:</u>

B. Chosen Vegetation Treatment and Expected Trajectory after Treatment

You may use these tables to describe the vegetation treatment alternative selected for implementation in more detail and the resulting expected trajectory of the vegetation.

Consider the existing vegetation particularly as it relates to the influences described in Section I. Consider the various factors affecting development of the vegetation after treatment (see Section III).

Here is an example of a simple format filled out:

Chosen Action and Expected Trajectory After Treatment
Overstory:
<i>Selected treatment:</i> Since the character of the overstory at the campground is going to change drastically in the near future anyway, the two-age shelterwood seed cut alternative has been selected. Remove all sawlog LP and GF (retain WL and DF). Yard tops, which must be removed from the site by the purchaser. Winter log to avoid campground conflicts and protect soil and ground cover. Require maximum 6" stump height. Yard away from and around camping area.
<i>Trajectory:</i>
<i>Short term (< 2 years):</i> Shade will be substantially reduced, but WL and DF leave trees will maintain some sense of forested character at about 25 to 40 trees per acre
<i>Mid-term (3-15 years):</i> DF crowns will respond to increased light and space, getting fuller and increasing shade and visual impression of a denser forest.
<i>Long term (> 15 years):</i> WL and DF will increase in diameter growth, providing widely spaced large trees over a younger, smaller class of WL, WP, and LP. Monitor DF for root disease and take additional action if needed.
Ground Cover:
<i>Selected treatment:</i> No treatment necessary.

Chosen Action and Expected Trajectory After Treatment
<i>Describe in more detail the vegetation treatment chosen and likely future vegetation under this treatment. This information helps determine specific activities outlined in the subsequent section.</i>
Overstory:
<i>Selected treatment:</i>
<i>Expected Trajectory:</i> <i>Short term (< 2 years):</i> <i>Mid -term (3-15 years):</i> <i>Long term (> 15 years):</i>
Midstory:
<i>Selected treatment:</i>
<i>Expected Trajectory:</i> <i>Short term (< 2 years):</i> <i>Mid -term (3-15 years):</i> <i>Long term (> 15 years):</i>
Understory:
<i>Selected treatment</i>
<i>Expected Trajectory:</i> <i>Short term (< 2 years):</i> <i>Mid -term (3-15 years):</i> <i>Long term (> 15 years):</i>
Ground Cover:
<i>Selected treatment:</i>
<i>Expected Trajectory:</i> <i>Short term (< 2 years):</i> <i>Mid -term (3-15 years):</i> <i>Long term (> 15 years):</i>

C. Possible Effects of the Chosen Actions on the Recreation Experience

Use one of these formats to describe the possible effects on the recreation experience you identified in Section I.

If a recreation site is in a situation where major tree removal is needed due to bug and disease issues, consider the implications of this on the recreation experience. Evaluate your treatment options, if they can be phased, what is the DFC you are trying to create, and what kinds of intermediary or mitigation measures could be implemented to get you to your DFC (e.g., could native shrubs be planted? Are there are other vegetative screening opportunities between campsites? Are there shade options that can be retained in rec settings where hot summer temperatures influence visitor use? Are there vegetative treatments that can enhance the setting such as a vista around a rental cabin, at the same time “preventive measures” are taken to maintain forest health?) Be thinking about what the recreation user is there for and craft your treatments, both immediate and mid and longer term around how the recreation user may experience these as part of their visit to the National Forest as well. In some cases, treatments may need to be extensive; when that is the case help frame what the site will look like to the user in the near term and in the long run.

Here are two possible formats for this section:

Possible Effects of Treatment On The Recreation Experience	
Function or Attribute	Effects From Treatment Options
A. Facilitates visitor safety and structural protection.	
B. Visual and/or noise buffer from surrounding uses and/or infrastructure.	
C. Screening for privacy between sites or from roads.	
D. Morning or afternoon shade .	
E. Provides wind and/or dust barrier/protection	
F. Blocks or enhances vistas and/or points of interest, open space?	
G. Creates visual variety /seasonal variety/ flowering vegetation	
H. Delineates use areas and circulation patterns.	
I. Other (e.g. creates bird watching opps; provides berry picking opps, etc.)	

OR.....

Possible Effects of Treatment On The Recreation Experience			
Function or Attribute	Existing Condition	Possible Action One	Possible Action Two
A. Facilitates visitor safety and structural protection.			
B. Visual and/or noise buffer from surrounding uses and/or infrastructure.			
C. Screening for privacy between sites or from roads.			
D. Morning or Afternoon shade .			
E. Provides wind and/or dust barrier/protection			
F. Blocks or enhances vistas and/or points of interest			
G. Creates visual variety /seasonal variety/ flowering vegetation			
H. Delineates use areas and circulation patterns.			
I. Other (e.g. creates bird watching opps; provides berry picking opps, etc.)			

VI. PROPOSED SCHEDULE OF ACTIONS

Based on the chosen alternative, specific steps will need to be taken to maintain or change vegetation. Many of these may be described in the silvicultural prescription but there may be a variety of treatments affecting the trees, shrubs, and ground vegetation that do not require a silvicultural prescription such as blocking access to allow ground cover to recover. Identify each step to be taken and determine a reasonable time line for their implementation.

You're considering projects spanning the next 20 years. Thus, you can expect this section to require periodic updates corresponding to periodic reviews of your plan. Projects may change over time based on how well previous treatments have worked or whether there has been some unexpected vegetation change (i.e. windthrow).

Options for accomplishing the various steps or tasks are varied. Consider all possible options not only for cost but for possible side-effects to the vegetation (e.g. season of activity or type of equipment used). As with most of the steps you've taken in writing this vegetation management plan, it is useful to document the various date and implementation options discussed for future reference. For example, a proposed thinning of your site may correspond to the expected date of a thinning project on the surrounding landscape.

Proposed actions identified in your vegetation management plan will require: 1) inclusion in forest and grassland annual programs of work (POW); 2) budget support; and 3) NEPA analysis and review. Establishing **treatment priorities** within the proposed schedule of action is therefore critical.

The existing vegetation condition may change between the time that your vegetation management plan is completed and the implementation of treatments. **NEPA will require you to consider this situation beyond the information already included in your vegetation management plan.** This can be facilitated by periodic monitoring of vegetation conditions in the recreation facility and updating your vegetation management plan.

Another format to schedule actions might look like:

Proposed Schedule of Actions			
Year (year 1-20)	Project/ Task	Funding/ implementation options	Cost

VII. MITIGATION

The vegetation management plan should describe the potential effects of proposed vegetation treatments on resources and ways to mitigate these impacts, per the Proposed Schedule of Actions. One example is implementing campground treatments only during wintertime when the ground is frozen and snow-covered in order to reduce or eliminate impacts to soils and archaeological sites.

Remember that a vegetation management plan provides general (NFMA) planning guidance and that site-specific vegetation treatments will require NEPA review. In some cases, this review will involve other State and Federal agencies (i.e., fisheries, cultural resources). Therefore, it important to display the range of mitigation options, recognizing that these will become more focused and detailed in the NEPA process.

Treatment Mitigation Actions	How	When
Protect Archeological Site	Over the Snow Logging	Winter
Protect New Shrub Plantings from Deer Browse	Fencing	Prior to Opening

VIII. MONITORING

Monitoring is done to make sure your treatments result in the desired conditions identified in your plan. This generic table is a format that may be used to schedule vegetation monitoring activities.

Example Table:

Vegetation Monitoring Activity	Protocol	Date Scheduled
Hazard trees – comprehensive	Johnson (1981)	2010
Hazard trees – annual spring clean-up	Form R1-FS-2330-1	Annually
Hazard trees – post-storm assessments	Form R1-FS-2330-1	As Needed
Short-term trajectory goals	Walk-through	2012
Mid-term trajectory goals	Walk-through	2015
Hazard trees – comprehensive	Johnson (1981)	2020
Long-term trajectory goals	Walk-through	2025

Due to immediate and developing safety and property protection concerns, hazard tree monitoring will often be scheduled on a tighter timeframe than monitoring of general vegetation trajectory. One form of documentation used for comprehensive hazard tree assessments is shown in “Tree Hazards Recognition and Reduction in Recreation Sites” by Johnson (1981), but other forms are also available. One form of documentation for an annual hazard tree assessment is the “Recreation Site Preseason Safety Inspection” form (R1-FS-2330-1), but more intensive documentation may be used. This preseason inspection form, or other forms of documentation, may also be used for quick assessments after storm damage to trees in recreation sites.

Vegetation trajectory monitoring should be scheduled to see if short-term, mid-term, and long-term trajectory goals are being met. Initial monitoring may start with a joint walk-through of the developed recreation site by the recreation specialist and certified silviculturist as scheduled in the monitoring plan. With the vegetation management plan in hand, they can determine if the vegetation trajectory is on-course. Brief documentation from this walk-through, describing whether or not the trajectory is meeting goals, may in itself suffice for vegetation trajectory monitoring needs. More intensive monitoring protocols, such as installation of temporary plots, inclusion of other specialists, or supplementary documentation can be used if the planning team finds it necessary while writing the plan or if initial walk-through monitoring finds vegetation trajectory is off-course.

A vegetation management plan is a dynamic document. When actions are not implemented in a timely manner, anticipated trajectory is not met, or the plan no longer meets site expectations, the plan should be revised.

IX. SPECIALISTS INVOLVED IN PLAN PREPARATION

Some of the resource specialists that may be involved in this plan are noted in this alternative format:

Specialist Area	Name	Signature	Report Included?
Recreation			
Silviculture			
FHP			
Landscape Architect			
Engineering/Infrastructure			
Fire/Fuels			
Heritage/Cultural Interests			
Ecologist /Botanist			
Hydrology/Watershed			
Fisheries/Wildlife			
Soil Scientist			
Range			

VIII. SIGNATURES

There is no requirement that a Vegetation Management Plan must be by the line officer, however, having signatures by the line officer, recreation staff and silviculturist documents the fact that the plan was a product of thorough deliberation and will provide good historic documentation for future managers.

R1 Vegetation Management Plan Template

VEGETATION MANAGEMENT PLANNING FOR DEVELOPED RECREATION SITES R1 TEMPLATE

March 2010

Vegetation Plan/ Date: _____

Site Name: _____ INFRA#: _____

District: _____ Forest: _____

Site Type: Campground _____ Day-Use Site _____ Rental Cabin _____ Trailhead _____
 Visitor Center _____ Ski Area _____ Other (describe) _____

Size (acres): _____

Land Management Allocation: _____

Applicable Standards and Guidelines: _____

Use: _____ PAOT: _____ # of Sites: _____ Season of Use: _____

Future Development/Investment Plans (per RFA, Design Narrative, Site Plans, etc):

Add a sketch map here. Denote zones where vegetation management may be significantly different. Also note if photographs were taken.

I. VEGETATION INFLUENCE ON THE RECREATION EXPERIENCE

Purpose: Explore how the existing vegetation affects the recreational experiences. Note what to maintain and what to change.

CHARACTERISTIC	MAINTAIN	NEED FOR CHANGE
A. Facilitates visitor safety and structural protection.		
B. Visual and/or noise buffer from surrounding uses and/or infrastructure.		
C. Screening for privacy between sites or from roads.		
D. Morning or afternoon shade .		
E. Provides wind and/or dust barrier/protection		
F. Blocks or enhances vistas and/or points of interest, open space?		
G. Creates visual variety /seasonal variety/ flowering vegetation		
H. Delineates use areas and circulation patterns.		
I. Other (e.g. creates bird watching opps; provides berry picking opps, etc.)		

II. VEGETATION EXISTING CONDITION AND EXPECTED TRAJECTORY

Purpose: Describe the existing vegetation and how it is likely to change if no treatment is done.

Trees (over and understory)

Existing Condition:

Trajectory:

Short term (< 2 years):

Mid -term (3-15 years):

Long term (> 15 years):

Shrub, Forb, Grass Vegetation

Existing Condition:

Trajectory:

Short term (< 2 years):

Mid -term (3-15 years):

Long term (> 15 years):

III. MAJOR FACTORS AFFECTING POTENTIAL VEGETATION TREATMENTS

Purpose: To sort through factors that may influence what vegetation treatments can be conducted. Additional reports on factors or constraints of considerable importance may be attached.

DISTURBANCE FACTORS

Insects, Diseases, Animal, and Other Damages List important damaging agents, severity (low, moderate, severe), and frequency (rare, moderate, abundant). Attach a Hazard Tree Evaluation if appropriate.

Abiotic / Physical Influences Note wind, water, or soil factors of importance (e.g. prone to flooding or wind storms)

Fuels Load and Wildfire Threats

Describe fuel loads in or near site, fuel breaks, structural protection concerns, and other fuel issues.

Weeds List weeds (noxious, invasive, or bothersome to visitors), their prevalence, and impact

Planned Infrastructure Changes Describe infrastructure plans and their time frame for implementation

Other (add as needed)

RESOURCE NEEDS AND CONSTRAINTS

Cultural Resources: Inventory status, cultural resources present, condition, etc.

Fisheries: (Target, T&E, Sensitive, In-Fish, etc)

Wildlife: (Target, T&E, Sensitive, etc)

Soils-Hydrology: (What ecosystem services do you want the soil to provide? e.g. water percolation, productivity)
Other (add as needed)

IV. VEGETATION DESIRED FUTURE CONDITION

Purpose: Describe the tree and understory vegetation you would like to have, being realistic about what you currently have and factors affecting possible treatments.

<p>Trees (over and understory):</p> <p>Short term (< 2 years):</p> <p>Mid -term (3-15 years):</p> <p>Long term (> 15 years):</p>
<p>Shrub, Forb, Grass Vegetation:</p> <p>Short term (< 2 years):</p> <p>Mid -term (3-15 years):</p> <p>Long term (> 15 years):</p>

V. ACTIONS TO ACHIEVE DESIRED VEGETATION CONDITIONS

Purpose: Describe the proposed vegetation treatments. Consider expected trajectory given the treatments. Include reasons for choice of treatment over other options, if applicable. Describe possible effects on characteristics listed in Section I if it is expected to change greatly.

<p>Trees (over and understory):</p> <p>Notes on Other Treatments Considered:</p> <p>Short term (< 2 years):</p> <p>Mid -term (3-15 years):</p> <p>Long term (> 15 years):</p>
<p>Shrub, Forb, Grass Vegetation:</p> <p>Notes on Other Treatments Considered:</p> <p>Short term (< 2 years):</p> <p>Mid -term (3-15 years):</p> <p>Long term (> 15 years):</p>

VI. PROPOSED SCHEDULE OF ACTIONS

Purpose: Identify the needed steps to accomplish the selected vegetation treatments, generally when they should be done, and if they might require NEPA (simple or more complex)

What (Action)	When	NEPA or other requirements?

VII. MITIGATION

Purpose: Although any NEPA processes will more fully explore mitigation measures if necessary, mention here possible measures identified during this preliminary design process.

Resource	Mitigation Requirement-Actions	How	When

VIII. MONITORING

Purpose: Monitor Vegetation to ensure treatments result in DFC identified in this plan.

Monitoring Activity	Protocol	Date Scheduled

IX SPECIALISTS INVOLVED IN PLAN PREPARATION

Purpose: Identify those who provided input for future consultation, if necessary. Do not repeat names given in the signature lines.

Name	Specialty	Date

Recreation Specialist: _____
Name Signature Date

Certified Silviculturist: _____
Name Signature Date

Line Officer Signature: _____
Name Signature Date

Attach specialist's reports if needed.