

Appendix - The Planning Process

Forest Operations Manual
The Conservation Forestry Program

The Planning Process

APPENDIX

Creating A Plan

Define
Management Goals

Research
Property Information

Conduct
Field Surveys

Define
Management Areas

Define & Formulate
Management Process

Write
Final Plan

The Nature Conservancy Philosophy

Creating an effective Management Plan for a given property involves six key steps:

1. Define the management goals.
2. Research existing information regarding property boundaries and owners, past management activities, land use, soils, rare species and communities, history, and related data.
3. Conduct field surveys to map the area, gather information on natural and cultural resources, and calculate all appropriate inventory data.
4. Define potential management areas based on constraints, requirements, and goals.
5. For each area, define the management objectives and formulate all appropriate management and monitoring activities.
6. Write the final plan, as described in *Section 1.2*, to fully document all information and recommendations.

The following sections describe each of these steps in detail.

Defining the Management Goals

Management goals guide the rest of the planning process. Goals are typically broad, open-ended statements that define desired outcomes for each property, given the available resources and the land's potential.

As noted earlier, the program has similar goals for each property:

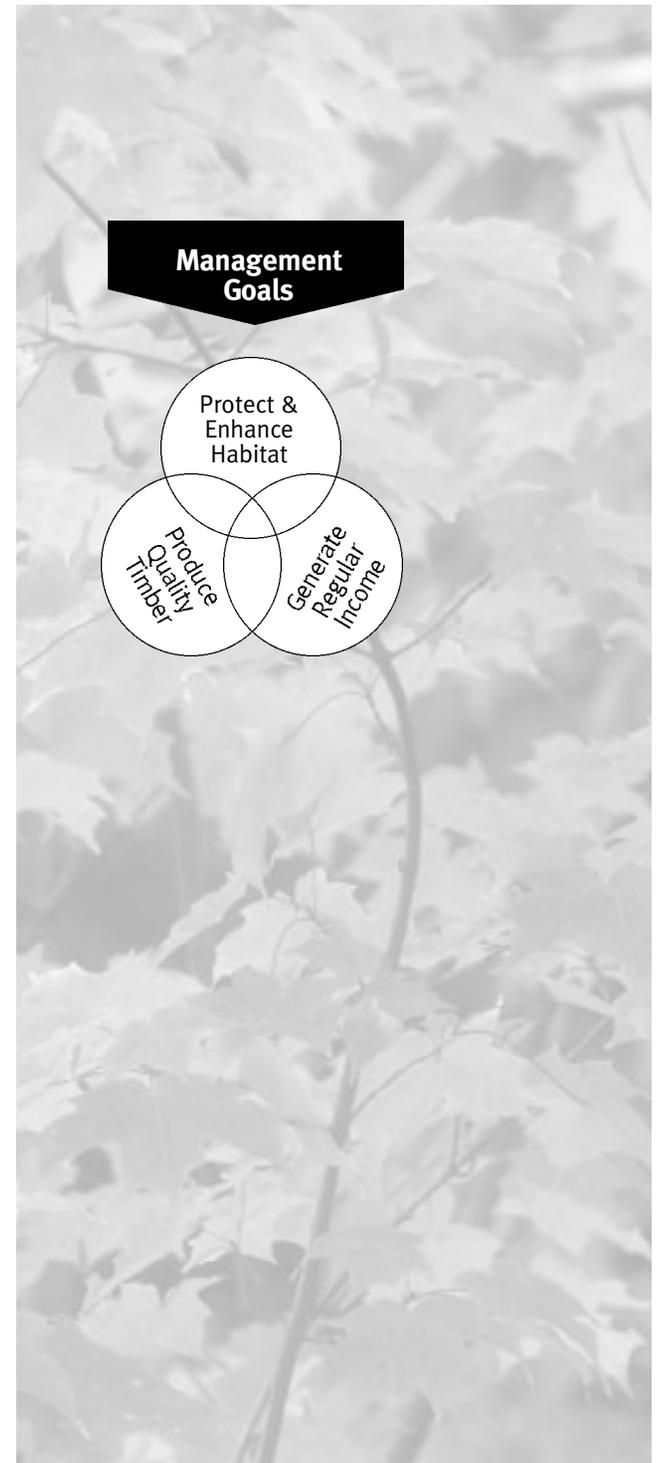
- To protect and enhance habitat, soil quality, water quality, rare species and communities, and other forest resources
- To produce high-quality sawtimber
- To generate regular income

With these broad issues at the forefront, forest managers will work with landowners to define additional goals such as enhancing forest aesthetics or increasing recreational opportunities. Because landowners often have not clearly and completely defined their goals for owning and managing forestland, managers should spend as much time as necessary listening and asking questions to fully understand each landowner's concerns.

Important questions include:

- How and why did you acquire the forestland?
- Does your family intend to keep forestland for future generations?
- What benefits do you hope to get from being a forest landowner?
- How much time do you spend on the land and in the forest, and doing what?

This list is by no means exhaustive, of course; instead, these questions provide a useful starting point for discussion between forest managers and landowners about the future plans for each property.





Researching Existing Information

To locate existing information about each property, at a minimum forest managers will:

- ☛ Collect deeds or plats describing the metes and bounds of property lines to accurately determine boundary location information and to assess whether any borders should be surveyed or marked before beginning management activities.
- ☛ Request old management plans, management records, aerial photographs, and any past land use information from the landowner, local state forestry offices, and/or past managers.
- ☛ Obtain soil resources information from the appropriate county Soil Survey by the Soil Conservation Service. If no published soil survey exists, visit the county Natural Resources Conservation Service office to locate the information.
- ☛ Check the known status of natural heritage resources on the property by contacting the appropriate state Natural Heritage Program and requesting a database search for the property's location.
 - Virginia Natural Heritage Program: <http://www.state.va.us/~dcr/dnh/>
 - Tennessee Natural Heritage Program: <http://www.state.tn.us/environment/nh/>

Conducting Field Surveys

There is no substitute for field surveys, and field work is often the most time-intensive part of the planning process. Foresters, biologists, and other appropriate experts walk the property to collect information on all the existing resources, from timber to rare species to old house sites to springs to birds, in order to gather as much information as possible about the property and all its resources.

Preparing for Field Work

Before going into the field forest managers should:

- Create a good map that clearly defines the property boundaries and has sufficient space to mark the locations of unique features, timber stands or other vegetation changes, historic sites, and so on. For accuracy, maps should always be created using dependable sources, relying primarily on official deeds or plats overlaid on U.S. Geological Survey topographical maps. To allow enough space to adequately see topographic features and note important resource locations, the map scale should be 1"=1320', 1"=1000', or larger.
- Create a soils map of the property based on the information collected from the Soils Survey for each county.
- Review soils and topographic maps to get a preliminary feel for what to expect and look for on the site.
- List the types of information to be collected, and on what scale, for the property.
- Study recent (and if available, older) aerial photographs for additional information. Like soils and topographic maps, these photographs can help managers predict and locate vegetation types, timber and field boundaries, forest corridors and fragments, road and trail locations, and land use patterns both for the property itself and for the entire neighborhood.
- Plan an efficient route to make each field day as productive as possible.
- Plan the timber inventory when necessary. Typically, these properties will have an existing timber inventory by the time the management plan is being prepared. Timber inventory information will be updated regularly so that its valuation is current and accurate. When a timber re-inventory is scheduled, The forest manager will set forest products inventory specifications, including the required accuracy of the estimates, and then design a cruise to meet these requirements. Management plan information will be updated when this occurs.





Conducting the Field Work and Collecting Data

In addition to collecting standard tree inventory data field foresters should be particularly alert to:

- Water resources
- Rare species and communities, and unique and fragile areas
- Aesthetic considerations
- Invasive or exotic species
- Erosion
- Other damaged or degraded areas

Foresters will collect field information using a forest resources inventory software program and handheld data collector whenever possible, or established field data forms, to standardize the field data and make analysis more efficient.

Defining Management Areas

Once forest managers have a clear sense of both the goals and the available resources, the next step in the process is to create individual management sites and areas (often called stands) for the property. Experienced foresters can begin to locate stand boundaries on the map as they walk the property and gain a sense of habitat or species boundaries, topographical changes, stream locations and so on, then complete the stand definitions back at the office after collating the data and calculating the inventory results.

The Conservation Forestry Program will use five different primary management areas:

- ☛ Rare Species and Communities Areas
- ☛ Riparian Management Zones
- ☛ Restoration Areas
- ☛ Timber Production Areas
- ☛ Non-Production Areas

The first two are easily and immediately defined—in any location that is home to a rare location-specific species or community, forest management is conducted with due consideration of the resources at risk. Restoration Areas are also relatively straightforward; any area damaged by human activity (mining, poor road building, abandoned farmland, erosion, etc.) should be considered for restoration.

The last two, timber production and non-timber areas, require more discernment as forest managers consider how best to achieve the management goals. Everything that is not a rare species or community area, riparian zone, or restoration area is potentially either a production or a non-production area, and forest managers must balance not only the needs of each individual property, but also of the entire landscape, as they make those designations.

Rare Species and Communities, Unique and Fragile Areas

If field surveys or reports from the state Natural Heritage Program (NHP) indicate the existence of, or potential for, rare species or communities in an area, forest managers will contact biologists at the state Natural Heritage Programs and/or Departments of Game and Inland Fisheries (DGIF) to confirm the results. Managers will then work with the NHP, the DGIF, and other experts to develop clear, specific objectives for the species or habitat area. These organizations, along with biologists from the George Washington and Jefferson National Forest, often have detailed management recommendations for specific rare species and communities.

In general, the forest manager will:

- Define no-cut zones and suitable harvest-activity buffers for any rare communities, unique/fragile areas, and location-specific rare species.
- Consider the habitat needs of non-location-specific rare species in all management planning and implementation (for example, protecting shagbark hickory and other loose bark trees with exposure to midday sun as roosting and maternity habitat for Indiana bats).
- Establish Riparian Management Zones and limit stream crossings to protect rare aquatic communities (see next section).





Riparian (Streamside) Management Zones

To protect state waters from sediment and other pollutants, and maintain riparian habitat, The forest manager will establish no-harvest Streamside Management Zones (SMZs) for every property based on the following guidelines:

- **Perennial streams, rivers, lakes, ponds, wetlands** (water flows all year most years): Impose a 75-foot (horizontal distance on each side of a stream) no-cut timber harvest buffer. Do not allow equipment in channels except at designated crossings.
- **Intermittent streams** (water flows part of the year most years): Impose a 50-foot (horizontal distance on each side of a stream) no-cut timber harvest buffer. Do not allow equipment in channels except at designated crossings.
- **Ephemeral streams** (pulse flows): Impose a 50-foot (horizontal distance on each side of a stream) no-machinery buffer. Timber harvest may remove an average of half of the canopy. Minimize channel crossings, and approve each individual crossing prior to equipment use.
- **Springs, seeps and bogs**: Impose an average 100-foot (horizontal distance) no-cut buffer. Do not skid logs through springs, seeps, or bogs.

Restoration Areas

A Restoration Area is any site that is badly damaged, often by erosion or poor past land management practices, and demands special management consideration to restore it to full health. Such areas might include old mines, areas subject to poor road building practices, bulldozed areas, or trash dumps. Note that while some areas, such as old strip mines, may be large enough to form a single management area, smaller restoration zones may also exist within any of the other four management areas.

Once restored, these areas may then become production or non-production sites (unless, of course, they are already part of a Riparian Management Zone or Rare Species/Community Area).

Timber-Production Stands

Timber-production stands are, obviously, those areas that the forester will manage to produce and harvest high-quality sawtimber. Non-production stands are areas that will be protected from harvest activities and managed for other goals.

As noted earlier, designating Rare Species and Communities Areas and Riparian Management Zones is more or less an “exact science”: anywhere a stream or rare species exists, protect it. Defining timber-production stands and non-production stands, in contrast, requires forest managers to balance a whole series of factors, including biodiversity, soil quality, aesthetic values, social concerns, and economic needs.

In general, after establishing protected areas for rare species and communities, riparian zones, and restoration areas, forest managers should begin by determining what parts of the remaining area are potential timber production stands. *Chapter 10: Harvesting and Marketing Timber*, provides detailed criteria for selecting timber production stands and designing harvests.

In general, production stands must meet the following criteria:

- **Operability:** Sufficient volume and value in forest products available to make logging economically feasible now or in the acceptably near future, using the system appropriate for the existing environmental conditions;
- **Forest Type:** Dominated by merchantable species that can grow into products;
- **Site Productivity:** At least “fair” for the production of timber products (i.e. an oak site index of at least 50);
- **Access:** Necessary access for the selected logging system exists, or can be constructed without significant adverse impact to soils or water quality;
- **Cultural Resources:** Logging will not negatively impact significant cultural resources;
- **Other:** Logging will not have a significant adverse impact on any ecological or socioeconomic considerations or landscape-level aesthetics.





When assessing each property, consider the regional needs for conservation corridors, forest reserves, and recreational areas, along with landscape aesthetics, as described in those chapters.

Forest Reserves: The forest manager will first look at the preserves managed by The Nature Conservancy and Virginia State Natural Area Preserves across its operating area. If a rare species or community type is found on lands managed by the Conservation Forestry Program, and not represented on existing preserves, the manager will consider creating a forest reserve to protect these resources.

Wildlife Corridors: The forest manager will consider the needs of large or far ranging wildlife in the management of enrolled lands. Wherever possible, corridors of suitable width and condition will be maintained.

Recreation and other high social value areas where people desire intact, unharvested forest can also become non-production forest areas. Forest managers may designate non-production areas when an area holds significant aesthetic, recreational, historical, or other social value for either the landowner or the local community.

When laying out management area boundaries for both production and non-production areas, forest managers should pay particular attention to landscape aesthetics, including shape, visual forces, scale, and diversity, as described in *Chapter 6: Addressing Social Concerns*.

Assigning Management Objectives and Developing Recommendations

With all management areas clearly defined, forest managers can then begin to develop specific management objectives and recommendations for each.

Objectives are concrete steps or workable tasks scheduled for a particular area that, when accomplished, move the area closer to achieving one or more management goals. Objectives should be realistic and precisely stated, with specific target start and end dates. In some cases, developing these objectives may depend on the landowner's interest in performing, or investing in, management activities to meet goals other than timber production.

Recommendations (or prescriptions) are the specific activities needed to accomplish each objective over the period of the management plan. They must include enough detail to allow any manager responsible for the objective to carry them out. In addition to the specific steps involved, management recommendations should include a justification of activities, with supporting documentation when necessary.

Management plans will include four specific types of recommendations:

- Silvicultural prescriptions for timber production areas—
see Chapter 8: Silvicultural Prescriptions
- Restoration plans for damaged areas, including design, site-preparation, species selection, planting specifications, and maintenance for areas being restored.
- Exotic species control and eradication plans describing the management of invasive, exotic species.
- Conservation or maintenance plans for non-timber production areas, such as riparian management zones and forest reserves.





Writing the Plan

The final step in the planning process is to write up the entire plan to record, in detail, all the descriptions, goals, objectives, and recommendations for each property. The size and diversity of natural resources on a property will influence the complexity and detail of its plan and the significance of its management to the neighborhood or region. For example, a 5,000-acre property with a diversity of past uses and forest types will require more planning and documentation than a 200 acre farm with one patch of timber. However, to ensure clear communication among forest managers, landowners, technicians, and others concerned in the future of the property, the plan should include all the information previously listed, using tables and summaries wherever appropriate to simplify the information. Carefully developed, clearly written Management Plans are crucial to the success of conservation forestry.

