

**NB.450.12.X, TCH – Environmental Quality Incentive Program (EQIP)  
CONSERVATION ACTIVITY PLANS (CAP) FY2012**

National Bulletin: 450-12-xx

November XX 2012

Subject: TCH– EQIP Conservation Activity Plans – FY 2013 Technical Guidance

**Action Required by:**

**AN OFFICIAL COPY OF THE BULLETIN DIRECTIVE WILL BE RE-POSTED HERE WHEN  
ISSUED TO THE AGENCY EDIRECTIVES WEBSITE.**

**Contact** If you have any questions, contact the National Agronomist at (202) 720-3783.

C. Wayne Honeycutt  
Deputy Chief for Science and Technology

Attachments:

CAP 102 CNMP August 2012.docx  
CAP 104 Nutrient Management Plan Criteria August 2012.docx  
CAP 106 Forest Management Plan August 2012.docx  
CAP 106 Guide for Foresters for the Joint Management Plan Template.21Feb11.pdf  
CAP 106 Guide for Landowners for the Joint Management Plan Template.21Feb11.pdf  
CAP 106 Managing Your Woodlands Natl ATFS FS NRCS Joint Mgt Plan Template\_21Feb11.doc  
CAP 106 Managing Your Woodlands Natl ATFS FS NRCS Mgt Plan Template\_elec Sign\_21Feb11.pdf  
CAP 110 Grazing Management Plan August 2012.docx  
CAP 114 Conservation Plan Supporting Integrated Pest Management Plan August 2012.docx  
CAP 114 Template Conservation Plan Spt Integrated Pest Management August 2012.docx  
CAP 118 Irrigation Water Management Plan Criteria August 2012.docx  
CAP 122 Agricultural Energy Management Plan Headquarters August 2012.docx  
CAP 124 Landscape Agriculture Energy Management Plan August 2012.docx  
CAP 124 Template AgEnergy\_Mgt\_Plan\_Landscape Aug 2012.docx  
CAP 126 Comprehensive Air Quality Management Plan August 2012.docx  
CAP 130 Drainage Water Management Plan Criteria August 2012.docx  
CAP 134 Conservation Plan Supporting Transition from Irrigation to Dryland Farming August 2012.docx  
CAP 134 Template Transition from irrigated to Dryland Farming August 2012.docx  
CAP 138 Conservation Plan Spt Organic Transition Plan CAP ver 5 Aug 2012.docx  
CAP\_138\_Template\_Organic\_Cropland Aug 2012.dotx  
CAP\_138\_Template\_Organic\_Grazing Aug 2012.dotx  
CAP 142 Fish and Wildlife Habitat Management Plan August 2012.docx  
CAP 146 Pollinator Habitat Enhancement Plan August 2012.docx  
CAP 150 SPCC Criteria August 2012.docx  
CAP 154 IPM Herbicide Resistance Weed Conservation Plan August 2012.docx  
CAP 154 Template Conservation Plan Spt IPM Herbicide Resistance Weed August 2012.docx  
CAP List and Description FY13.docx

CAP No	CAP Name*	General Descriptions of CAPs - Approved for EQIP - Fiscal Year 2013	Required to be offered **
102	Comprehensive Nutrient Management Plan	A comprehensive nutrient management plan (CNMP) is a conservation plan for an animal feeding operation (AFO)	All States
104	Nutrient Management Plan	Nutrient management plans are documents of record of how nutrients will be managed for plant production and to address the environmental concerns with the offsite movement of nutrients.	All States
106	Forest Management Plan	A forest management plan is a site specific plan developed for a client, which addresses one or more resource concerns on land where forestry-related conservation activities or practices will be planned and applied.	All States
110	Grazing Management Plan	A grazing management plan is a site specific conservation plan developed for a client which addresses one or more resource concerns on land where grazing related activities or practices will be planned and applied.	All States
114	Integrated Pest Management Plan	Integrated Pest Management (IPM) is an ecosystem-based strategy that is a sustainable approach to manage pests using a combination of techniques such as chemical tools biological control, habitat manipulation, and modification of cultural practices and use of resistant varieties.	All States
118	Irrigation Water Management Plan	The objective of Irrigation Water Management (IWM) is to control the volume, frequency, and rate of water for efficient irrigation	All States
122	Agricultural Energy Management Plan-Headquarters	An Agricultural Energy Management Plan- Headquarters (AgEMP) is a detailed documentation of energy consuming components and practices of the current operation, the previous year's on-farm energy consumption, and the strategy by which the producer will explore and address their on-farm energy conservation concerns, objectives, and opportunities.	All States
124	Agricultural Energy Management Plan-Landscape	A Landscape Agricultural Energy Management Plan (Landscape AgEMP) contains the strategy by which the producer will explore and address producer/grower on-farm energy savings and opportunities on the working land (crop, forest, pasture, range).	All States
126	Comprehensive Air Quality Management CAP	Comprehensive Air Quality Management Plans (CAQMPs) can be part of conservation plans applicable to many agricultural operations. These plans assess practices and strategies adopted by agricultural operations to address environmental concerns directly related to air quality and atmospheric change.	Required in Air Quality Initiative States. Optional other States
130	Drainage Water Management Plan	The objective of a Drainage Water Management (DWM) is to control soil water table elevations and the timing of water discharges from subsurface or surface agricultural drainage systems	All States
134	Conservation Plan Supporting Transition from Irrigation to Dryland Farming Plan	A transition from irrigated to dryland farming and ranching conservation activity plan is a conservation system that focuses on crop yield sustainability and water conservation/water harvesting techniques.	Required in States with AWEF projects. Optional other States.
138	Conservation Plan Supporting Organic Transition	A "Conservation Plan Supporting Organic Transition" is a conservation activity plan documenting decisions by producers/growers who agree to implement a system of conservation practices which assist the producer to transition from conventional farming or ranching systems to an organic production system.	All States
142	Fish and Wildlife Habitat Management Plan	A fish and wildlife habitat plan is a site specific plan developed for a client who is ready to plan and implement decisions with consideration for fish and wildlife habitat and other biological resources.	All States
146	Pollinator Habitat Plan	A pollinator habitat enhancement plan is a site-specific conservation plan developed for a client that addresses the improvement, restoration, enhancement, expansion of flower-rich habitat that supports native and/or managed pollinators.	All States
150	Oil Spill, Prevention, Control, and Countermeasure (SPCC)	An Oil Spill Prevention, Control, and Countermeasure (SPCC) conservation activity plan (CAP) is a plan prepared and certified by a registered Professional Engineer (PE) in accordance with the U.S. Environmental Protection Agency (EPA) rules for producers with more than 10,000 gallons of liquid storage capacity.	Required in approved pilot States. Optional in other States.
154	Integrated Pest Management Herbicide Resistance Weed	Integrated Pest Management Herbicide Resistance Weed Conservation Plan is a plan with emphasis to modify herbicide use for suppressing weeds on cropland	Optional all States

\* Check with local NRCS office to find out which CAPs are available in your State or location.

\*\* This column indicates if the CAP is required to be offered in a State or to support a specific financial assistance program or initiative.

Version: 11/1/2012

## Comprehensive Nutrient Management Plan Criteria

### Practice Activity Code (102) (No.)

#### 1. Definitions

A. A comprehensive nutrient management plan (CNMP) is a conservation plan for an animal feeding operation (AFO) that:

- (1) Typically include the following two components:
  - (i) **The production area**, including the animal confinement, feed, and other raw materials storage areas, animal mortality facilities, and the manure handling containment or storage areas; and
  - (ii) **The land treatment area**, including any land under control of the AFO owner or operator, whether it is owned, rented, or leased, and to which manure or process wastewater is, or might be, applied for crop, hay, pasture production, or other uses.

**Note:** Operations that confine animals and export all manure and litter offsite; or operations that do not confine animals, but do import sufficient quantities of manure, wastewater, animal by-products, etc. to require structural facilities for storage, handling or transfer, would also need a CNMP.

- (2) Meets Natural Resources Conservation Service (NRCS) quality criteria for water quality (nutrients, organics, and sediments in surface and groundwater) and soil erosion (sheet and rill, wind, ephemeral gully, classic gully, and irrigation induced natural resource concerns on the production area and the land treatment area).
- (3) Mitigates, if feasible, any excessive air emissions and/or negative impacts to air quality resource concerns that may result from practices identified in the CNMP or from existing on-farm areas/activities.
- (4) Complies with Federal, Tribal, State, and local laws, regulations, and permit requirements.
- (5) Satisfies the owner/operator's production objectives.

**Note:** If it is probable that the producer will forward the CNMP to the State regulatory agency in pursuit of a National Pollutant Discharge Elimination System (NPDES) permit, the planner should include all farm acreage that could foreseeably receive manure. This additional acreage, when included in the CNMP, will increase planning options should the plan need to be altered after it becomes a regulatory plan. Planning flexibility makes it less likely that the NPDES permit will need to be revised.

B. The Producer Activity Document (PAD) is an abbreviated CNMP document for the producer's use that summarizes the day-to-day activities to implement the CNMP. A template for a PAD is available in the Manure Management Planner (MMP) software.

C. Miscellaneous Definitions:

**Internal transfers.** These are on-the-farm relocations (transfers) of manure, litter, wastewater, by-products, etc.

## CNMP Criteria

This section establishes the minimum criteria the planner must address in the development and implementation of CNMPs.

### A. General Criteria

- 1) A CNMP must be designed to assist owners/operators in taking voluntary actions to minimize potential pollutants from animal confinement facilities and land application of manure and organic by-products.
- 2) Information in the CNMP must document the landowner(s) decisions.
- 3) The CNMP must be developed in accordance with all applicable Federal, Tribal, State and local water quality goals or regulations.
- 4) The CNMP must require evaluation and documentation of compliance with the National Environmental Policy Act, the Endangered Species Act, the National Historic Preservation Act, and other effects on the environment. This evaluation and documentation process WILL BE COMPLETED BY NRCS.
- 5) A CNMP must be developed by persons who meet NRCS certification requirements. The specific criteria for certification of NRCS employees and conservation partners can be found in NRCS General Manual 180 Part 409. The specific criteria for certification for Technical Service Providers (TSP) is available via the TSP website <http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/technical/tsp>
- 6) All CNMPs must be developed through utilization of the national CNMP development templates as adopted by the State in which the operation is located.
- 7) A CNMP must be developed in accordance with the State nutrient management conservation practice standard (code 590).
- 8) The NRCS review and approval process for CNMPs must be followed. The CNMP planner submits the following to NRCS and/or regulatory agency for review and signatures:
  - (i) Printed copy of the CNMP document;
  - (ii) CNMP document file (If using MMP, include the “.nat-cnmp.doc” file);
  - (iii) PAD document file (If using MMP, include the “.nat-prd.doc” file);
  - (iv) Nutrient Management planning tool plan file (If using MMP, include the “.mmp” file);
  - (v) Revised Universal Soil Loss Equation (RUSLE2) database file (.gdb extension);
  - (vi) Conservation plan xml file from Customer Service Toolkit (.consplan.xml extension); and
  - (vii) If requested, the Geographic Information Systems (GIS) shapefiles created for the operation.

- 9) Delivery of the CNMP - A CNMP must be signed by the producer, certified planner, and appropriate specialist(s), and include other signatures as required. Once the CNMP has been reviewed and signed by the planner(s) and reviewer(s), copies of the CNMP and PAD document(s) are delivered to the producer for signature. The planner returns one copy of the finalized and signed documents to the NRCS Field Service Center, the producer retains a signed copy, as well.

All electronic files supporting the CNMP shall be delivered to the respective field office to be saved in the client's NRCS file.

- 10) Archiving of the CNMP document and associated data.

(i) Once the CNMP has been completed and delivered to the producer, the NRCS archives the signed hard copy and sufficient electronic documentation (see "Submit the CNMP" list above), technical references, software versioning, etc., to facilitate recreation of the CNMP documents for future reference as part of the CNMP review/revision cycle. (See CNMP Handbook Section IV Developing a CNMP, item 8 Submit, Review, Archive CNMP data and document(s).)

(ii) Before TSPs can check conservation practice information back into the NRCS National Conservation Practice Database (NCPdb), the data will need to be reviewed and accepted by NRCS designated Field Service Center staff. Procedures are being developed to enable and accommodate this review.

- 11) In most situations, addressing the CNMP Criteria will require a combination of conservation practices and management activities to meet the production needs of the AFO owner/operator, and resource concerns associated with the production and land treatment areas. The Field Office Technical Guide (FOTG) Section III and National Planning Procedures Handbook contain additional information and guidance.

## **CNMP**

### **A. Specific CNMP Elements.**

- (1) Minimum specific elements for a CNMP include:
- (i) Background and Site Information;
  - (ii) Manure and Wastewater Handling and Storage;
  - (iii) Farmstead Safety and Security;
  - (iv) Land Treatment Practices;
  - (v) Soil and Risk Assessment Analyses;
  - (vi) Nutrient Management according to the criteria in the Nutrient Management Conservation Practice (Code 590);
  - (vii) Feed Management (Optional);
  - (viii) Other Utilization Options (Optional);
  - (ix) Recordkeeping; and
  - (x) References.

**Note:** “Feed Management” and “Other Utilization Options” are not required elements of a CNMP. However, the “Feed Management Element” and/or “Other Utilization Options” should be included in the CNMP, if used, to help manage the farm nutrient balance.

**Note:** Where air quality has been identified as a resource concern due to agricultural operations, an air quality element may be needed.

## B. Specific CNMP Element Criteria.

**Note:** Each of the CNMP elements must address specific criteria. The degree to which these elements are addressed in the development and implementation of a site-specific CNMP is determined by General Criteria contained in NI-190-304, Section 304.1A (<http://directives.sc.egov.usda.gov/>) and the specific criteria provided for each element of the CNMP below:

- (1) Background and Site Information Element – This element provides a brief description of:
  - (i) Name of owner/operator in control of the site;
  - (ii) Facility location and mailing address;
  - (iii) Latitude and longitude of the production area entrance;
  - (iv) The type and size of the AFO;
  - (v) Resource concerns, including those that may arise from the implementation of the CNMP (air quality); and
  - (vi) The producer’s manure management objectives.
- (2) Manure and Wastewater Handling and Storage Element:
  - (i) This element must address the components and activities associated with the production facility, including feed management decisions made to reduce the nutrient content of manure, feedlot or animal loafing facilities, manure and wastewater storage and treatment structures and areas, animal mortality facilities, feed and other raw material storage areas, and any areas used to facilitate transfer of manure and wastewater.
  - (ii) The manure and wastewater handling and storage facilities will provide for adequate collection, handling, storage, and/or treatment of manure and organic by-products that facilitate application during favorable weather conditions and is compatible with crop management strategies, including the application of nutrients at agronomic rates.
  - (iii) Practices planned for the collection, storage, treatment, and/or transfer practices will meet the minimum criteria and documentation as addressed in the NRCS conservation practice standards, contained in Section IV of the NRCS FOTG. Existing structures will function in accordance with the planned manure and waste water handling system.
  - (iv) If it is determined that excessive negative impacts to air quality resource concerns arise from existing or planned production activities identified in the

CNMP, then air quality impact mitigation is required in the CNMP.

(v) The Manure and Wastewater Handling and Storage element will include:

- Map(s) of production area: Accurate scaled drawing or aerial photo of the confinement areas, production buildings, manure storage, and treatment locations, and feed storage areas;
- Production area conservation practices (including air quality impact mitigation [if required]): document the conservation practice decisions and operation and maintenance (O&M) requirements;
- Manure collection, transfer, storage, and treatment: type, operational capacity, annual requirement, maximum days of storage, manure on-hand at start of the plan, management of silage leachate, scraping lots, etc;
- Animal inventory: group name, type, number, weight, confinement period, percentage of manure collected (days of confinement/ $365 \times 100$ ), additional bedding or washwater, facility identification where manure will be stored (pad, house/building/barn, lagoon);
- Mortality Management: description of how the normal mortality will be managed in an environmentally acceptable manner (burial requirements, incineration, composting, hauled away to rendering);
- Planned Manure Exports off the Farm: month/year, amount;
- Planned Manure Imports onto the Farm: month/year, manure type, amount, source; and
- Planned Internal Transfers of Manure: month/year, manure source, amount, and manure destination.

(3) Farmstead Safety and Security element – This element will address the need for onsite guidance and procedures to be followed in the event of a leak or spill emergency, catastrophic mortality, or other biosecurity concern.

- (i) General emergency procedures to follow in response to leaks or spills of manure, chemical, fuel, or other substance that may pose a threat to the environment, and appropriate contact information.
- (ii) Procedures for biosecurity, including protocol for farm visitors, and disposal of animal veterinary waste.
- (iii) Procedures to follow in the event of catastrophic mortalities.
- (iv) The Chemical Handling Checklist must be included in the CNMP document when the CNMP will be utilized for an NPDES permit.

(4) Land Treatment Practices Element – This element will address the need for and implementation of appropriate conservation practices for land treatment areas. On fields where manure and organic by-products are applied, it is essential that runoff and soil erosion be reduced to acceptable levels, and that plant uptake of applied nutrients be maximized to prevent manure nutrients from reaching surface and/or



groundwater or being volatilized to the air. Therefore, the planner must develop a conservation system that will reduce runoff and control soil erosion from the field to the level specified in Section III of the FOTG. Criteria for land treatment practices element:

- (i) Map(s) documenting fields and conservation practices (a GIS-developed map product is preferred):
  - Aerial maps of land application areas including soil maps;
  - Fields delineated to show setbacks, buffers, waterways, conservation practices planned or other site specific features important to nutrient management planning (risers, inlets, wells);
  - Identification of sensitive areas such as sinkholes, streams, springs, lakes, ponds, wells, gullies, and drinking water sources; and
  - Other site information features of significance, such as property boundaries or occupied dwellings.
- (ii) Land treatment conservation practices planned or applied to meet the quality criteria for soil erosion, air and water quality. Include the practice narrative and the O&M requirements for each practice. Design specifications (job sheets, engineering plans) and information associated with planning and implementation of the included conservation practices must be maintained.
- (iii) To achieve the desired soil erosion, water and air quality improvements on land treatment areas, adjacent fields may also require conservation treatment.
- (iv) Additional natural resource concerns may need to be addressed to meet an acceptable treatment level for erosion, water and air quality, for example, managing the plant resource on pasture lands.
- (v) If it is determined that excessive negative impacts to air quality resource concerns arise from existing or planned land treatment activities, identified in the CNMP, then air quality impact mitigation is required in the CNMP.
- (5) Soil and Risk Assessment Analyses Element – This element will document the results of the predicted average annual soil erosion from wind and/or water as a result of the planned treatment(s) and nitrogen and/or phosphorus risk assessments as required by the State. Any State required risk assessment necessary for CNMP development will be included to document the relative risk of nutrient loss to the environment. Refer to the State-specific Nutrient Management conservation practice standard (code 590) for further guidance.
- (6) Nutrient Management Element – This element must meet the technical criteria for the Nutrient Management conservation practice (code 590) standard, and address the use and management of all nutrients applied on cropland, hayland, or pastureland (animal manure, wastewater, commercial fertilizers, crop residues, legume credits, irrigation water, organic by-products). Planners must document the rationale when using custom recommendations in the CNMP.
  - (i) Some data necessary to develop a CNMP will come from chemical analyses of



soils, plant tissue, manure, water, and feed. Soil test analyses must be performed by laboratories successfully meeting the requirements and performance standards of the North American Proficiency Testing Program (NAPT) under the auspices of the Soil Science Society of America, or the Agricultural Laboratory Proficiency Program (APL), or other state approved program that considers laboratory performance and proficiency to assure accuracy of test results.

- (ii) Manure analyses must be performed by laboratories successfully meeting the requirements and performance standards of the Manure Testing Laboratory Certification Program (MTLCP) <http://www.mda.state.mn.us/licensing/pestfert/manurelabs.htm> under the auspices of the Minnesota Department of Agriculture, or State-recognized program that considers laboratory performance and proficiency to assure accuracy of test results. States are encouraged to adopt the MTLCP or State Conservationists can establish State proficiency criteria that meet or exceed the MTLCP program criteria.
- (iii) Nutrients from biosolids must be included in nutrient management planning when applied on farms for which CNMPs are being developed. Biosolids (sewage sludge) applications are regulated by the U.S. Environmental Protection Agency (EPA) and, therefore, must be applied in accordance with EPA regulations (40 C.F.R. Parts 403 Pretreatment and 503 Biosolids) and other State and/or local regulations regarding the use of biosolids as a nutrient source.
- (iv) Criteria for the CNMP Nutrient Management Element must include all proposed applications of manure and other needed nutrients to meet the Nutrient Management conservation practice standard (code 590). This would include all fields that may receive manure applications from any manure source. The plans and specifications must include the following tables:
  - Field information—identify field names, total acres, and spreadable acres in a table format;
  - Manure application setback distances—identify setbacks for each field on the map and in a table format;
  - Soil test data—soil test data for each field displayed in a table;
  - Irrigation water test data (if applicable);
  - Manure nutrient analysis—document most recent manure analysis in a table;
  - Planned crops and fertilizer recommendations—list fields, crops, yield goals, and fertilizer recommended;
  - Manure application planning calendar—display manure applications planned, when crops are grown, and restrictions that would prevent nutrient/manure applications, for example, winter spreading or high potential for nitrate leaching;
  - Planned nutrient applications—the timing, rate, source(s), and methods of application by field;

- Field nutrient balance—the recommended nutrient amounts, nutrients applied, and balance after recommendation, and balance after crop removal;
- Manure inventory annual summary—annual manure production by source and storage facility; and
- Farm nutrient balance (acres planned for nutrient application) – summary of primary nutrients applied from all nutrient sources, by crop, year, and field. The net excess or shortage of nitrogen, phosphorus, and potassium must be displayed by crop year and field.

**Note:** The fertilizer material annual summary documents the amount of commercial fertilizer needed each crop year. While not required, it can be very useful to the producer for planning purposes.

- (7) Feed Management Element (optional) – Include only if a Feed Management Plan is required to reduce the total nutrients excreted by the livestock on the farm. Do not include discussions of optional feed management.

When Feed Management conservation practice (code 592) is included in the CNMP, diets and feed management strategies must be developed by professional animal scientists, independent professional nutritionists, or other comparably qualified individuals. When required by State policy or regulation, animal nutritionists must be certified through any certification program recognized within the State.

- (8) Other Utilization Options Element (optional) – Include only if utilization options other than land application are planned.

**Note:** Criteria are not offered for Feed Management and for Other Utilization Options because they are not always required CNMP elements. Technical criteria used to implement these elements are found in Section IV of the Field Office Technical Guide (FOTG).

- (9) Recordkeeping Element – It is important that accurate records are kept to effectively document and demonstrate implementation activities associated with the CNMP, and to meet the documentation requirements of regulatory agencies. Recordkeeping includes appropriate management and maintenance of practices and structures. AFO owners/operators have responsibilities to maintain records that document the implementation of CNMPs in accordance with conservation practice standards, including the State nutrient management conservation practice (code 590), including:
- i. Producer activity checklist;
  - ii. Inspection/monitoring records (taken from the O&M requirements contained in each conservation practice under CNMP Elements 2 and 4);
  - iii. Annual crop records—crop, yield by field;
  - iv. (iv) Manure application records—date, rate, timing, weather, setbacks, by manure type, manure source, storage facility, by fields receiving manure, etc.;
  - v. (v) Other nutrient applications (e.g. commercial fertilizer and irrigation water application) records—nutrient content analysis, application

rate/acre, amount of water applied, nutrient content of irrigation water, etc.;

- vi. Manure exports off the farm—date(s) and amount(s);
- vii. Manure imports onto the farm—date(s), amount(s), and analysis (prior to application);
- viii. Internal transfers of manure—date(s), amount(s), initial location(s) and final location(s); and
- ix. Other records required by State and/or local regulations: manure analysis—by date, type, and storage facility, soil testing—by field or conservation management unit, etc.
  - Recordkeeping responsibilities are reviewed with producers when the CNMP is planned and during the implementation follow-up visits. Electronic copies of the CNMP and PAD must be maintained at the operation headquarters for future review and potential revision.
  - When Federal funds are used (i.e. Environmental Quality Incentives Program) to develop the CNMP, follow-up for implementation and O&M of the CNMP is the responsibility of NRCS employees or United States Department of Agriculture (USDA)-authorized third party vendors. When the CNMP is used for regulatory purposes (i.e. NPDES permit), the farmer is responsible for follow-up and O&M of the CNMP, including recordkeeping. NRCS employees or other USDA-authorized providers of technical assistance will provide guidance to farmers that ensure the farmer knows which records they need to keep and how to maintain those records.

(10) References Element – This element must document all technical sources important to understanding the contents or implementation of the CNMP. This element should include reference sites where useful information pertinent to the CNMP can be obtained. To avoid unnecessary expansion of the CNMP document, planners must minimize inclusion of hard copies of supporting documentation.

### **CNMP Format and Template**

- A. The CNMP and PAD national templates provide a basic format and content framework that is consistent across all States. The national templates are the required format of a CNMP. States are permitted to make additions to meet State-specific code.
- B. The CNMP is an important part of the conservation system for the AFO. The CNMP documents the planning decisions and O&M activities for the AFO. In addition, the CNMP includes background information and guidance, and reference Web sites where up-to-date information can be obtained. The PAD is a subset of the CNMP and provides the information about day-to-day management activities and required recordkeeping. Electronic copies of both the CNMP and the PAD must remain in the possession of the producer/landowner to facilitate future revision(s).

- C. Planners must submit electronic files .AWM; .MMP; and .Doc (the State-adapted national template) to the reviewer.
- D. The CNMP elements are represented in the national template as sections.

### **CNMP National Template**

A. At a minimum, the following sections and format will be required in the template:

- a) Cover and Signature Page:
  - i) Name of owner/operator;
  - ii) Facility location (physical address) and mailing address;
  - iii) Latitude and longitude of the production area entrance;
  - iv) Type and size of the AFO;
  - v) Plan period; and
  - vi) All required signatures for acceptance of a CNMP in the State.
- b) Section 1 – Background and Site Information:
  - i) 1.1 General description of the operation;
  - ii) 1.2 Sampling, calibration, and other statements; and
  - iii) 1.3 Natural Resource Concerns.
- c) Section 2 – Manure and Wastewater Handling and Storage:
  - i) 2.1 Map(s) of Production Area;
  - ii) 2.2 Production Area Conservation Practices (Including air quality impact mitigation, if required);
  - iii) 2.3 Manure Storage;
  - iv) 2.4 Animal Inventory;
  - v) 2.5 Normal Animal Mortality Management;
  - vi) 2.6 Planned Manure Exports off the Farm;
  - vii) 2.7 Planned Manure Imports onto the Farm; and
  - viii) 2.8 Planned Internal Transfers of Manure.
- d) Section 3 – Farmstead Safety and Security:
  - i) 3.1 Emergency Response Plan;
  - ii) 3.2 Biosecurity Measures, including Biosecurity Protocol for Farm Visitors and Disposal of Animal Veterinary Waste;
  - iii) 3.3 Catastrophic Animal Mortality Management; and
  - iv) 3.4 The EPA agreed-to [Chemical Handling Check List](#) must be included when the CNMP will be utilized for an NPDES permit.
- e) Section 4 – Land Treatment.

- i) 4.1 Map(s) of fields and conservation practices:
  - Aerial maps of land application areas;
  - Fields delineated with setbacks, buffers, waterways, conservation practices planned or other site-specific features important to nutrient management planning, (risers, inlets, wells, etc.);
  - Identification of sensitive areas such as sinkholes, streams, springs, lakes, ponds, wells, gullies, and drinking water sources; and
  - Other site information or features of significance to nutrient management planning, such as property boundaries and occupied dwellings.
- (ii) 4.2 Land Treatment Conservation Practices:
  - Land treatment conservation practices are planned and installed to the land treatment area and must be in accordance with NRCS conservation practice standards. The objective of these practices is to prevent, minimize, or mitigate the impact of potential contaminants to water and air resources near agricultural fields.
  - MMP will automatically generate State-approved conservation practice narratives in the CNMP document. Design specifications information associated with planning and implementation of the conservation practices, job sheets, engineering plans, if essential, will be placed in the customer's file to minimize the content of the CNMP. When job sheets are used, they must not conflict with information automatically generated by MMP and content must be agreed-to by State-based partners.
- f) Section 5 – Soil and Risk Assessment Analyses:
  - i) 5.1 Soil information;
  - ii) 5.2 Predicted soil erosion;
  - iii) 5.3 Nitrogen and phosphorus risk analyses; and
  - iv) 5.4 Additional field data required by risk assessment procedure(s).
- g) Section 6 – Nutrient Management - Meets the Nutrient Management Conservation Practice (Code 590):
  - i) 6.1 Field information;
  - ii) 6.2 Manure application setback distances;
  - iii) 6.3 Soil test data;
  - iv) 6.4 Manure nutrient analyses;
  - v) 6.5 Planned crops and fertilizer recommendations;
  - vi) 6.6 Manure application planning calendar;
  - vii) 6.7 Planned nutrient applications;
  - viii) 6.8 Field nutrient balance;

- ix) 6.9 Manure inventory annual summary;
  - x) 6.10 Fertilizer material annual summary; and
  - xi) 6.11 Farm nutrient balance.
- h) Section 7 – Feed Management
- i) (Include only if a Feed Management Plan is required to reduce the total nutrients excreted by the livestock on the farm. Do not include discussions of optional feed management strategies.)
  - ii) When Feed Management conservation practice (code 592) is included in the CNMP, diets and feed management strategies must be developed by professional animal scientists, independent professional nutritionists, or other comparably qualified individuals. When required by State policy or regulation, animal nutritionists must be certified through any certification program recognized within the State.
- i) Section 8 – Other Utilization Options - Include only if utilization options other than land application are planned.
- j) Section 9 – Recordkeeping - Recordkeeping information is contained in the PAD for specific recordkeeping items, including tables and forms. Planners must work with the producer and provide guidance regarding recordkeeping.
- k) Section 10 – References
- i) 10.1 Publications.
  - ii) 10.2 Software and Data Sources, including pertinent version information.
- b) CNMP Producer Activity Document (PAD) National Template
- a) A document will be prepared to assist the producer in understanding and managing the CNMP. This document must be readily available to the producer. The PAD national template below provides the basic format and content for a PAD. Typically, the PAD will not contain sufficient information for operations choosing to seek a permit.
  - b) At a minimum, the following sections and format will be required in the template: (Specific sections in the PAD below refer to maps or tabular information.)
    - i) Cover Page:
      - Name of Owner/Operator;
      - Facility Location (physical address) and Mailing Address;
      - Latitude and Longitude of the Production Area Entrance;
      - Type and Size of the AFO;
      - Plan period; and



- Includes all required signatures for acceptance of a CNMP in the State.
- ii) Section 1 – Background and Site Information. Background and Site Information is contained in the CNMP document.
- iii) Section 2 – Manure and Wastewater Handling and Storage
  - 2.1. Map(s) of Production Area: sketch or aerial photo of the confinement areas, production buildings, manure storage and treatment locations, and feed storage areas.
  - 2.2. Production Area Conservation Practices: documentation of the conservation practice decisions and O&M requirements.
  - 2.6. Planned Manure Exports off the Farm.
  - 2.7. Planned Manure Imports onto the Farm.
  - 2.8. Planned Internal Transfers of Manure.
- iv) Section 3 – [Farmstead Safety and Security](#)
  - 3.1 Emergency Response Plan (Sample).
  - 3.2 Biosecurity measures, including biosecurity protocol for farm visitors and disposal of animal veterinary waste.
  - 3.3 Catastrophic mortality management including State required procedures and contact information.
- v) Section 4 – Land Treatment Practices
  - 4.1 Map(s) of Fields including land treatment conservation practices.
  - 4.2 Land Treatment Practices: documentation of the conservation practice decisions and O&M requirements.
- vi) Section 5 – Soil and Risk Assessment Analyses
  - Soil and Risk Assessment Analyses are contained in the CNMP document.
- vii) Section 6 – Nutrient Management – Meets the Nutrient Management Conservation Practice (Code 590).
  - 6.1 Field information.
  - 6.2 Manure application setback distances.
  - 6.6 Manure application planning calendar.
  - 6.7 Planned nutrient applications.
  - 6.10 Fertilizer material annual summary.
- viii) Section 7 – Feed Management
  - Feed Management is contained in the CNMP document.
- ix) Section 8 – Other Utilization Options
  - Other Utilization Options are contained in the CNMP document

x) Section 9 – Recordkeeping

- Planners must work with the producer and provide guidance regarding advantageous and required recordkeeping. The PAD Recordkeeping items include the following tables and forms:
  - 9.1 Producer activity checklist;
  - 9.2 Inspection/monitoring records;
  - 9.3 Crop records;
  - 9.4 Manure application records;
  - 9.5 Other nutrient applications (commercial fertilizer and irrigation water application records);
  - 9.6 Manure exports off the farm;
  - 9.7 Manure imports onto the farm;
  - 9.8 Internal transfers of manure; and
  - 9.9 Other records required by State and/or local regulations.

xi) Section 10 – References

- References include State-based technical information in support of farming activities. Also see CNMP document for additional references.
  - 10.1 Publications—provide a list of electronically executable reference materials (url).

## **Nutrient Management Plan**

### **Criteria - Practice/Activity Code (104)( No.)**

#### **1. Definition**

Nutrient management plans are documents of record of how nutrients will be managed for plant production and to address the environmental concerns with the offsite movement of nutrients. These plans are prepared in collaboration with producer and/or landowner and are designed to help the producer with implementation and maintenance activities associated with the plan.

A Nutrient Management conservation activity plan must:

- a. Meet NRCS quality criteria for soil erosion (sheet, rill, wind, and ephemeral/concentrate flow erosion), water quality and quantity, and other identified resource concerns;
- b. Be developed in accordance with technical requirements of the NRCS Field Office Technical Guide (FOTG) and policy requirements of General Manual, Title 190, Part 402, Nutrient Management; and guidance contained in the National Agronomy Manual, Subpart 503C.
- c. Comply with federal, state, tribal, and local laws, regulations and permit requirements; and
- d. Satisfy the operator's objectives.

#### **2. Nutrient Management Plan Technical Criteria**

This section establishes the minimum criteria to be addressed in the development of Nutrient Management Plans.

##### **A. General Criteria**

The "Nutrient Management Plan" must be developed by certified Technical Service Providers (TSPs). In accordance with Section 1240 (A), the Environmental Quality Incentive Program (EQIP) program provides funding support through contracts with eligible producers to obtain services of certified TSPs for development of Nutrient Management Plans. The specific TSP criteria required for Nutrient Management Plan development is located on the TSP website <http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/technical/tsp>.

##### **B. Nutrient Management Specific Element Criteria**

The Nutrient Management Plan must include, but not be limited to, the following components:

1. Background and Site Information
  - Name of owner/operator;
  - Farm location and mailing address;

- Soil map units;
- Conservation plan map;
- Field names or codes;
- List of crops grown on the parcel, with acreage for each crop
- Description of the concerns related water quality, soil erosion (wind and water) or other local concerns, etc.

## 2. Land Treatment

Land Treatment must address the need for and implementation of appropriate conservation practices for land treatment areas. On fields where nutrients (manure, organic by-products, and commercial fertilizer) are applied, it is essential that runoff and soil erosion (sheet, rill, wind, and ephemeral/concentrate flow erosion) as close as possible, and that plant uptake of applied nutrients be maximized to prevent nutrients from reaching surface and/or groundwater or being volatilized to the air. Therefore, the planner must develop a conservation system that will reduce runoff and control soil erosion from the field to the level specified in Section III of the FOTG. Criteria for land treatment practices element:

### (i) GIS Map(s) documenting fields and conservation practices:

- Aerial maps of land application areas including soil maps;
- Fields delineated to show setbacks, buffers, waterways, conservation practices planned or other site specific features important to nutrient management planning (risers, inlets, wells);
- Identification of sensitive areas such as sinkholes, streams, springs, lakes, ponds, wells, gullies, and drinking water sources; and
- Other site information features of significance, such as property boundaries or occupied dwellings.

### (ii) Land treatment conservation practices planned or applied to meet the quality criteria for soil erosion (sheet, rill, wind, and ephemeral/concentrate flow erosion), water quality, and quantity. Include the practice narrative and the O&M requirements for each practice. Design specifications (job sheets, engineering plans) and information associated with planning and implementation of the included conservation practices must be maintained.

### (iii) To achieve the desired soil erosion, water and air quality improvements on land treatment areas, adjacent fields may also require conservation treatment.

### (iv) Additional natural resource concerns may need to be addressed to meet an acceptable treatment level for erosion, water quality, and air quality, for example, managing the plant resource on pasture lands.

- (v) If it is determined that excessive negative impacts to air quality resource concerns arise from existing or planned land treatment activities, identified in the plan, then air quality impact mitigation is required in the nutrient plan.

### 3. Nutrient Management

Nutrient Management plans must meet the technical criteria for the Nutrient Management conservation practice (code 590) standard, and address the use and management of all nutrients applied on cropland, hayland, or pastureland (animal manure, wastewater, commercial fertilizers, crop residues, legume credits, irrigation water, organic by-products). Planners must document the rationale when using custom recommendations in the nutrient plan.

### C. Practice Standards

The Nutrient Management Plan must address the resource concerns identified and the conservation practices needed to comprise a conservation system. Document the planned conservation practices, the site specific specifications for the practice, the amount to be applied, and schedule of application.

### D. References

- USDA Natural Resource Conservation Service National Agronomy Manual, Parts 507 and 503C.
- General Manual, Title 190, Part 402, Nutrient Management

### E. Deliverables for the Client – a hardcopy of the plan that includes:

- Cover page – name, address, phone of client and TSP; Total Acres of the Plan, signature blocks for the TSP, producer, and a signature block for the NRCS acceptance.
- Soils map and appropriate soil descriptions
- Resource assessment results (wind and water erosion, water availability, soil fertility, and others that may be needed)
- Complete Hardcopy of the client's plan (MsWord copy). Document the planned conservation practices showing the planned amount, the fields where the practice is to be applied, and the planned year of application.
- When the following practices are planned include the appropriate Jobsheet or Implementation Requirements (founding in Section IV of the State eFOTG):

Code	Practice Name
328	Conservation Crop Rotation
329	Residue and Tillage Management, No-Till/Strip-Till/Direct Seed
330	Contour Farming
332	Contour Buffer Strips
340	Cover Crops

<b>Code</b>	<b>Practice Name</b>
344	Residue Management, Seasonal
345	Residue and Tillage Management, Mulch Till
346	Residue and tillage Management, Ridge-Till
386	Field Boarder
390	Riparian Herbaceous Cover
391	Riparian Forest Buffer
393	Filter Strip
585	Strip-Cropping
590	Nutrient Management
601	Vegetative Barrier
635	Vegetated Treatment Area

- The plans and specifications as stated in the 590 Nutrient Management Standard.

**F. Deliverables for NRCS Field Office:**

- Complete Hardcopy and Electronic copy of the client's plan (MsWord or other appropriate digital format copy).
- Digital Conservation Plan Map with fields, features, and structural practices located.
- Digital Soils Map.



## **Forest Management Plan Criteria Practice/Activity Code (106) (No.)**

### **1. Definition**

A forest management plan is a site specific plan developed for a client, which addresses one or more resource concerns on land where forestry-related conservation activities or practices will be planned and applied. These criteria were developed to implement Section 1240 (A) of the Food, Conservation and Energy Act of 2008, which allows for the development of forest management plans as one of the purposes of the Environmental Quality Incentives Program (EQIP). The forest management plan will:

- A. Meet Natural Resources Conservation Service (NRCS) quality criteria for the identified resource concern(s).
- B. Comply with federal, state, tribal, and local laws, regulations, and permit requirements.
- C. Meet the client's objectives.

### **2. Forest Management Plan Criteria**

This section establishes the minimum criteria to be addressed in the development of Forest Management Plans.

#### **A. General Criteria**

- 1) A Forest Management Plan shall be developed by certified technical service providers. In accordance with Section 1240 (A), the Environmental Quality Incentive Program (EQIP) program provides funding support through contracts with eligible producers to obtain services of certified Technical Service Providers (TSPs) for development of a Forest Management Plan (FMP). The specific criteria required for each type of certification for TSP is located on the following web site:  
<http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/technical/tsp>

#### **B. Background and Site Information**

- 1) Landowner information – name, address, operation, size
- 2) Location and plan map of parcel
- 3) Documentation of existing practices
- 4) Past harvest history
- 5) Identification of resource concerns

#### **C. Client Objectives, which may include these considerations and others**

- 1) Expected income
- 2) Forest stand improvement
- 3) Wildlife habitat/riparian areas
- 4) Recreation
- 5) Agroforestry
- 6) Pollinator Habitat and Protection

#### **D. Existing Conditions**

- 1) Identify resource concerns based on an inventory to assess these concerns and opportunity for treatment. A forest inventory will be conducted using generally accepted forest inventory methods. Describe the inventory process in the plan. The inventory typically includes forest management unit and stand boundaries, site index, basal area, species, size class, wood product potential, soil conditions, slopes, topography, aspect, natural and cultural features, roads, wildfire risk (surface and crown fires), risk of insect and disease infestation, fish and wildlife species and habitat elements, noxious and invasive species, water quality and other important features as applicable.

E. Desired Future Conditions

- 1) Goals such as stocking, basal area, species composition, wildlife, pollinator habitat and protection, recreation, etc. for stands where practices/activities are recommended to meet future goals.

F. Forest Management Plan Documentation

- 1) Forest management plan map – boundaries, fields (i.e., foresters may refer to them as different stands of trees), scale, north arrow, stand boundaries, appropriate map symbols
- 2) Soils map – legend, interpretations, suitability index for forest activities
- 3) A wetland delineation map and associated wetland compliance documentation (Food Security Act of 1985), **if applicable**.
- 4) Conservation plan (record of decisions) (*MsWord Document or the national common forest management plan template developed and accepted by U.S. Forest Service, NRCS, and the American Tree Farm System. It has also been endorsed by the National Association of State Foresters.*) to include the planned practice(s), the amounts to be applied, the schedule for implementation.
  - a) When any of the following practices are used in this plan, the site specific specifications shall be developed in the attached template, in a NRCS approved job sheet, or separate plan. A Forest Management Plan may include as appropriate, but is not limited to, the conservation practices listed below:

Code	Practice Name
311	Alley Cropping
379	Multi-Story Cropping
380	Windbreak/Shelterbelt Establishment
381	Silvopasture Establishment
383	Fuel Break
384	Woody Residue Treatment
394	Firebreak
472	Access Control
490	Tree/Shrub Site Preparation
612	Tree/Shrub Establishment
650	Windbreak/Shelterbelt Renovation
654	Road/Trail/Landing Closure and Treatment
655	Forest Trails and Landings
660	Tree/Shrub Pruning
666	Forest Stand Improvement

- b) The practices listed under a) above are the primary NRCS forestry and agroforestry practices, but additional conservation practices may be needed to meet all the landowner's objectives. For all other practices the practice shall be documented for the planned amount, the fields where the practice is to be applied, and the planned year of application. Below are examples of additional conservation practices that may be planned on forestland:

Code	Practice name
314	Brush Management
315	Herbaceous Weed Control
327	Conservation Cover
338	Prescribed Burning
342	Critical Area Planting
382	Fence
395	Stream Habitat Improvement and Management
560	Access Road
578	Stream Crossing
580	Streambank and Shoreline Protection
595	Integrated Pest Management
643	Restoration and Management of Declining Habitats
644	Wetland Wildlife Habitat Management
645	Upland Wildlife Habitat Management
647	Early Successional Habitat Development/Management

Practices beyond the basic forestry/agroforestry practices may be included in a plan but the design and implementation of these will be conducted by an appropriately certified TSP for those practices

#### G. References

- 1) Refer to the USDA NRCS Field Office Technical Guide ([http://efotg.sc.egov.usda.gov/efotg\\_locator.aspx](http://efotg.sc.egov.usda.gov/efotg_locator.aspx) , Select State, Select Section 4 Conservation Practices) for a complete list of potential conservation practices.

### 3. Deliverables for the Client – a hardcopy of the plan that includes:

- A. Completed template for **Forest Management Plan (106)** [Managing Your Woodlands Natl ATFS FS NRCS Mgt Plan Template\_elec Sign\_21Feb11.pdf or Managing Your Woodlands Natl ATFS FS NRCS Joint Mgt Plan Template\_21Feb11.doc] that includes the Cover Page – name, address, phone of client and TSP and a signature page with the client, TSP and NRCS signatures.
- B. Forest management plan map – boundaries, fields (i.e., foresters may refer to them as different stands of trees), scale, north arrow, stand boundaries, appropriate map symbols
- C. Soils map and appropriate soil descriptions. The Web Soil Survey can provide the needed information: <http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm>

- D. Resource assessment results (wind and water erosion, water availability, soil fertility, and others that may be needed)
- E. For management practices. The planned practices and the site specific specifications on how each practice will be applied; when the practice will be applied; and the extent (acres or number) that will be applied.
- F. For engineering/structural practices. The planned practice when it will be applied and extent, and located on the conservation plan map.

#### **4. Deliverables for NRCS Field Office:**

- A. Complete Hardcopy and Electronic copy of the client's plan [Managing Your Woodlands Natl ATFS FS NRCS Mgt Plan Template\_elec Sign\_21Feb11.pdf or Managing Your Woodlands Natl ATFS FS NRCS Joint Mgt Plan Template\_21Feb11.doc] with appropriate practice specifications (or job sheets) for the planned practices as appropriate.
- B. Digital Conservation Plan Map with fields, features, and structural practices located.
- C. Digital Soils Map.

#### **5. Coordination with State Forestry Agencies and U.S. Forest Service**

In accordance with Section 2506 of the Food, Conservation and Energy Act of 2008, NRCS will accept as a qualifying EQIP plan of operations:

- A. Forest Stewardship Plan, as described in Section 5 of the Cooperative Forestry Assistance Act of 1978, 16 U.S.C. 2103a; or
- B. Another practice plan approved by the State Forester; or
- C. Another plan determined appropriate by the Secretary.

**To further enhance the coordination, a national common forest management plan template has been developed and accepted by U.S. Forest Service, NRCS, and the American Tree Farm System. It has also been endorsed by the National Association of State Foresters. The template is attached as an appendix to these criteria.**

#### **6. Definitions of Forest Stewardship Plan and Forest Management Plan (106)**

##### **A. Forest Stewardship Plans**

Through the U.S. Forest Service's Forest Stewardship Program, State forestry agencies annually receive financial and technical assistance that allows them to help landowners develop Forest Stewardship Plans (FSP) for their nonindustrial private forest land. FSP are prepared by foresters employed by State forestry agencies or by private consulting foresters under the direction of those State agencies. FSP are developed for the landowner's entire forested ownership and/or any land that will be planted to forest vegetation.

Forest Stewardship Plans will continue to be developed for private landowners by State forestry agencies, with financial and technical assistance provided by the U.S. Forest Service through the Forest Stewardship Program. With the provisions in the new Farm Bill there is an opportunity for NRCS to provide financial assistance through EQIP that

increases the planning and application of forestry-related conservation practices. NRCS will coordinate and cooperate with State forestry agencies in the delivery of forestry assistance to private landowners.

#### **B. Forest Management Plan (106)**

To complement the planning assistance provided by State forestry agencies (i.e., Forest Stewardship Plans), NRCS is using a different term to describe the planning assistance that will be provided to clients through EQIP. NRCS will use the term “Forest Management Plan (FMP)”. The FMP criteria described above were developed in cooperation with the U.S. Forest Service to assure alignment with the national standards for a Forest Stewardship Plan. A few criteria were added to assure compliance with NRCS requirements (e.g., NRCS conservation practice names). These criteria replace the Prescribed Forestry – 409 National Practice Standard, which was rescinded and removed from the National Handbook of Conservation Practices (NPCH).

A Guide for Foresters and  
other Natural Resource  
Professionals on using:  
*Managing Your Woodlands:*  
*A template for your plans for the future*





## Table of Content

Introduction to the Template and Guide .....	3
Where to Begin? .....	4
Cover Page: Owner and Plan Author.....	5
Property Description .....	6
Property History.....	6
Forest Management Goals .....	6
Property Maps.....	7
Forest Natural Resources Enhancement and Protection .....	7
Protect Special Sites and Social Considerations.....	8
Air, Water, and Soil Protection.....	8
Fish, Wildlife and Biodiversity.....	9
Management of Forest Resources.....	9
Other .....	10
Stand Level Information .....	11
Stand Objectives .....	11
Stand Current Conditions.....	11
Stand Desired Future Stand Condition .....	11
Forest Management Activities .....	11
Management Activity Schedule and Tracking.....	12
Signatures and Approvals .....	13
References.....	14
Resources for the Landowner .....	14
Appendix 1: Glossary .....	15
Appendix 2 Tax and Business Management.....	23
Appendix 3 Timber Sale Contract Checklist for Private Landowners and Loggers.....	24
Appendix 4: The USDA Farm Bill: What is in it for Woodland Owners.....	26

## Introduction to the Template and Guide

This guide was developed to assist you, the forester or natural resource professionals, in working with a landowner to develop a forest resources management plan using the *Managing Your Woodlands: A template for your plans for the future*. We encourage you to work with the Landowner as a co-creator in the development of their plan. A landowner who is more involved in the development and has a clear understanding of what their plan outlines will be more likely to implement the management outlined in the plan.

There is also a landowner guide that is available to help landowners prepare materials in advance of working with their foresters. landowner involvement in the development of a plan is very important, as they need to understand and agree with their plan to implement it. This guide includes useful information for landowners including description on the type of information that is necessary to include in the template. There is also a glossary with relevant forestry terms, and a list of available resources. If you are planning on meeting with a landowner, you might want to provide them with a copy of the landowner guide, as the template and guides are tools to assist you in working with the landowner.

### Why this template?

This template allows landowners to participate in several different programs available to them:

#### **American Tree Farm System**

The American Tree Farm System® (ATFS) is the largest and oldest sustainable woodland system in America, internationally recognized, meeting strict third-party certification standards.

For 70 years, ATFS has enhanced the quality of America's woodlands by giving forest owners the tools they need to keep forests healthy and productive. Stemming the loss of America's woodlands is vital to our country's clean water and air, wildlife habitat, recreational activities, and producing the wood and paper products we all need. ATFS provides landowners with the validation that they are doing right by their land, meeting the highest standards of sustainability and being good stewards for the future.

ATFS is a program of the American Forest Foundation.

*The American Tree Farm System grows stewardship from the roots.*

To participate in your state ATFS program, please visit

[www.treefarmssystem.org/stateleaders](http://www.treefarmssystem.org/stateleaders)

#### **Forest Stewardship Program**

The Forest Stewardship Program works through State forest agency and other partners to sustain and improve our Nation's private forest landscapes. The program develops and delivers appropriate technical and planning assistance to enable active, informed, long-term forest management. Forest Stewardship management plans provide landowners with practical guidance for achieving their

own unique objectives in a way that also maximizes public goods and services provided by forests, such as clean drinking water, clean air, carbon sequestration, wood fiber, recreation, and scenic landscapes. Landowners who implement Forest Stewardship management plans are in a much better position to participate in certification programs and access emerging markets, such as those for ecosystem services and biomass for energy

### **Natural Resources Conservation Service (NRCS) incentive programs**

NRCS provides financial assistance to private landowners to implement forestry and agroforestry related practices through Farm Bill and discretionary conservation programs. Assistance is also provided for multi-year and permanent easements to conserve forest land to meet program goals. There are several incentive programs including:

- *Environmental Quality Incentives Program (EQIP)* offers financial and technical help to assist eligible participants including forest owners with management practices on their lands; a forest management plan is required to participate.
- *Wildlife Habitat Incentive Program (WHIP)* offers technical and cost-share assistance for landowners to establish and improve fish and wildlife habitat; family forestland is eligible and forestry practices are encouraged.
- *Conservation Stewardship Program (CSP)* offers stewardship contracts to landowners who meet a certain threshold of land stewardship and agree to maintain and improve their land.
- *For more information about these and other programs refer to <http://www.nrcs.usda.gov/programs/> or contact the local NRCS office.*

## **Where to Begin?**

A management plan should be completed by a forester or other natural resource professional, but the landowner needs to take an active role in the development of their plan. The landowner should be considered a co-creator of the plan with the forester.

An *Understanding Your Plan* Guide is available to forest landowners and is a companion to this guide and the forest management plan template. Foresters and natural resource professionals are encouraged to provide the landowner guide to their landowner clients as a resource. There are several sections of the template that the landowner can either complete or begin before meeting with their forester. The forester can also begin gathering some of this information prior to the first meeting with the landowner:

- **Owner's contact information**
- **Property Description:** complete as much as possible and then review with the landowner.
- **Property History:** most of this information will be provided by the landowner and then reviewed with their forester. The forester can gather information about the area surrounding the landowner's property such as existing landscape or watershed plans.
- **Forest Management Goals:** the forester asks the landowner to identify their goals for their property

- **Property Maps:** collect the appropriate maps of the property (e.g., aerial photos, soil map, etc.) and compare or reconcile with any maps the landowner has.
- **Forest Natural Resources Enhancement and Protection:** the forester or planner will complete this section but the landowner can start to think about their goals related to the different topic areas and provide to the forester. Ask the landowner:
  - Are there any special sites that you and your family have that you want to protect?
  - From your personal knowledge or research, are there special sites, that threatened and endangered species might be using on your property (Reference: [www.treefarmssystem.org/woodlandresources](http://www.treefarmssystem.org/woodlandresources))
  - Have you considered the other section descriptions within the landowner guide and thought about your goals or concerns?
- **Stand Level Information:** the forester will complete this section, but the landowner should identify their objectives for each stand, given the goals that they have outlined.
- **Management Activity Schedule and Tracking:** the landowner and forester, working together, will need to develop the schedule and he/she will be responsible for tracking activities (unless they have designated someone else to be in charge of implementing the management plan). Make sure the landowner understands and are comfortable with the dates documented for the different activities that have been outlined in the plan.

When completing a section, review the requirements in the guide to ensure that you fill in all the appropriate information. When meeting with the landowner initially, review what information they have already compiled from using the landowner guide to gain their perspectives or clarify certain points.

## Cover Page: Owner and Plan Author

This section provides the contact information for the landowner and the plan preparer (the forester or natural resource professional). Be sure to encourage the landowner to keep this section updated. And remind them to inform you and their participating programs if any of the information changes:

- Forest Stewardship Program: State forestry contact or State Forester's office (list of State Foresters is available at [http://www.stateforesters.org/about\\_nasf](http://www.stateforesters.org/about_nasf))
- American Tree Farm System: state American Tree Farm System contact ([www.treefarmssystem.org/stateleaders](http://www.treefarmssystem.org/stateleaders))
- NRCS Incentive program: Local service center (<http://offices.sc.egov.usda.gov/locator/app>)

Note the date when the plan was originally completed. Encourage the landowner to regularly review their plan, be sure to date and initial any updates or notes that they add.

## Property Description

The legal property description includes the name of the state, name of the county, township number, range number, section number, and portion of a section where relevant. This information can be found on their property deed.

The Tax Parcel Number is the number assigned to their property by their local tax assessor. This number is not required but it can be helpful to record all relevant property information in one location.

If they are planning on participating in a USDA Farm Bill program, then the landowner will need to register at the nearest USDA Service Center.

GPS coordinates are very helpful in locating relevant maps online.

The entire property may not have trees and not all of the woods may be eligible for this plan, but cleared land can be included if the intent is to plant trees on it. Hence the three acreage questions in this section:

- Total ownership acreage: the total acreage of the property
- Total forested acreage: the total acreage with trees
- Total acreage covered by plan: the portion of the acreage that will be described in this plan (forested or not).

For the topography and access information, these are estimates based on your experience on the property. For the slope section, include what percentage of land is in each category.

For the road condition, the percentages represent how much of the roads are accessible to vehicles. For the estimates of road length, include estimated miles of road for each category.

Please include the watershed unit that is appropriate for the state.

## Property History

The Property History is a brief description of the history of the land and ownership including length of current ownership, past management activities, and surrounding environment (whether nearby property is developed, private woods, public forests, etc.). This information can be based on personal knowledge, property records, and local information sources as well as what evidence is seen on the ground, stumps, skid trails, etc.

## Forest Management Goals

Ownership Goals are at the heart of the plan and describes what the landowner wants to gain from their property and resources. We encourage landowners to make a list of their goals and objectives that reflect their expectations, personal values, and the potential of

their woods. Their goal statements should broadly summarize their vision for their land, but should be specific enough to know if they are reaching them. In the landowners guide, we use some information about goal development from the *Good Forestry in the Granite State: Recommended Voluntary Forest Management Practices for New Hampshire* (Bennett, 2010).

## Property Maps

Maps are a valuable tool for forest owners and many mapping tools are now available online for them. For the property maps they will need to include the following:

1. Delineate property boundaries, stands, special sites, threatened and endangered species present, water resources, roads, existing practices, future conservation practices, scale, and a directional arrow. Example of map types could include:
  - A Contour map
  - Aerial photo (for free aerial photo downloads <http://earth.google.com/>) GIS printout
2. Soil Information
  - Soils Map: including legend, interpretations, etc.  
For soil maps, NRCS has developed a web-based map-making tool for private landowners: <http://websoilsurvey.nrcs.usda.gov>.  
Or you can check with the local NRCS office (<http://offices.sc.egov.usda.gov/locator/app>). Soil maps are required for NRCS incentive programs.

Multiple copies of the maps might be necessary to ensure the legibility of information. Some states agencies also have mapping tools available online, check with the state forestry agency for more information.

## Forest Natural Resources Enhancement and Protection

This section relates to the natural resource elements found throughout the entire property. Some of the treatments related to these resource areas may qualify for federal and state incentive programs. Include appropriate activities and treatments in the Management Activity Schedule and Tracking table as well as on the map(s). Complete the Activity Schedule and draw and label the areas of management on the map if using this plan as part of an incentive program application. There is no need to repeat this information in the stand specific section.

For this section, consider the goals that the landowner has identified for their woods. You will also need to address the following information for each section:

1. What treatments/ monitoring/ protection are planned?
2. When will they implement treatments (season, year), follow-up activities, etc?
3. Where will the management take place: entire stand, part of a stand, acres?
4. Do they have applicable permits, professional assistance, and applications for the incentive programs?



## **Protect Special Sites and Social Considerations**

### **Special Sites**

Are there archeologically, culturally, historically, geologically, biologically or ecologically valuable sites or high conservation value forests (HCVF) on the property that should be delineated and protected? The concept of HCVF is one that is used by various organizations, including ATFS, to describe forests of outstanding and critical importance due to their environmental, social, biodiversity or landscape values. What assistance did you seek when identifying special sites or what information did you gather? There are lots of online resources available to help identify special sites in your state. A landowner can visit [www.treefarmssystem.org/woodlandsresources](http://www.treefarmssystem.org/woodlandsresources) to find their state's information.

Special sites can also include sites that are designated by the landowner, and can represent places or things that are important to them or their family.

### **Adjacent stand or ownership concerns**

How does surrounding management affect their woods and how do the landowner's actions impact their neighbors? Consider aesthetic quality, wildfire concerns, privacy, wildlife movement and habitat, noxious weeds, urban encroachment, if applicable. Aesthetic qualities should be considered throughout this plan as it is being developed.

It might be appropriate to consider a modification of forestry practices in consideration of public view, including timber sale layout, road and log landing locations, intersections with public roadways, distributing logging residue, tree retention, timing of operations and other factors relevant to the scale and location of the project.

For more information on federal and state designated weeds, please visit <http://plants.usda.gov/java/noxiousDriver>

### **Recreation**

If recreation is one of the landowner's goals for their woods then identify the resources and how they will be addressed in their management.

### **Access**

Are property boundaries posted? How are they marked? Does the landowner have legal access to the property? Is public access allowed? Address access for management purposes.

## **Air, Water, and Soil Protection**

### **Soil protection**

Consider steep slopes, woody debris retention, nutrient cycling, vehicle travel, soil compaction, flood runoff, livestock issues, silvopastures, and Best Management Practices (BMPs), if applicable. Include a soil map if desired (**Note:** required for NRCS).

BMPs are essential to ensuring the benefits for air, soil and water that are made possible through sound management of your woods. To find the BMPs in your state, visit

[www.treefarmssystem.org/woodlandresources/](http://www.treefarmssystem.org/woodlandresources/) and search by your state to find the link to BMPs.

### **Roads**

Consider general maintenance, erosion potential, BMPs, if applicable, road surface condition, road runoff, drain-dips, culverts, stream crossings, weed control, and time-of-year use.

### **Streams, wetlands, ponds, lakeshore**

Consider BMPs, if applicable, riparian habitat, wildlife, and road crossings. If a wetlands delineation map is available, include as a reference.

### **Effects of Natural Disasters**

Has the property been affected by floods, wildfire, wind, ice or other natural disasters? Are you at risk? Consider what the landowner should do after a natural disaster occurred, if appropriate.

### **Rangeland Resources (if applicable)**

If there is rangeland on the property then address that resource in this section.

### **Carbon sequestration (optional)**

This is an optional resource that the landowner might want to consider. Include a current estimation of the tons of standing carbon per acre plus growth rate—sequestration per year. Carbon sequestration consideration is not currently a requirement of either the Forest Stewardship Program, American Tree Farm System or NRCS programs.

## **Fish, Wildlife and Biodiversity**

### **Fish & Wildlife**

Consider desired species, habitat improvement, animal control, den sites, nest boxes, snag retention, access, hunting, and the current state of the habitat. What assistance did you seek or information did you gather?

### **State and Federal threatened or endangered species - plants or animals**

What assistance did you seek or information did you gather related to state and federal threatened or endangered species? To search for site specific information visit [www.treefarmssystem.org/woodlandsresources](http://www.treefarmssystem.org/woodlandsresources).

## **Management of Forest Resources**

For the management described in this section include the general management that relates to the natural resource elements found throughout the entire property. For stand specific management activities, please include those in the **Stand Level Information** section.

### **Protection from Pests**

Includes insects, diseases, weeds, invasive species. What inventory, control, monitoring, prevention guidelines will be employed. Consider using a range of integrated pest management including mechanical, physical, biological, cultural or chemical management.

### **Reforestation and Afforestation**

Consider natural seedling recruitment, planting, site preparation, and current conditions that might affect regeneration.

### **Prescribed Fire/Burns** (optional)

Prescribed fires/burns can be a very useful management tool in certain locations and certain times. Consider using prescribed burns for stand/habitat improvement, fuel reduction, Home Firewise Safety (below), current fuel conditions, and degree of wildfire risk.

**Home Firewise Safety:** Home Firewise Safety is a program sponsored by the US Forest Service, US Department of the Interiors and the National Association of State Foresters to encourage local solutions for wildfire safety. For more information about this, please visit <http://www.firewise.org/index.php>

**Firewise Communities Program:** The National Fire Protection Association's ([NFPA](#)) Firewise Communities program encourages local solutions for wildfire safety by involving homeowners, community leaders, planners, developers, firefighters, and others in the effort to protect people and property from the risk of wildfire. The program is co-sponsored by the [USDA Forest Service](#), the [US Department of the Interior](#), and the [National Association of State Foresters](#).

To save lives and property from wildfire, NFPA's Firewise Communities program teaches people how to adapt to living with wildfire and encourages neighbors to work together and take action now to prevent losses. We all have a role to play in protecting ourselves and each other from the risk of wildfire. For more information visit [www.firewise.org](http://www.firewise.org)

### **Management Plan Implementation Constraints**

Consider available markets for wood products, landowner interest and time, financial limitations, land use ordinances, seasonal access, wildlife activity, insect activity, operability due to slope, etc.

### **Other**

Use this space to include information on any other natural resource enhancements and protection that are not included in the sections above.

## Stand Level Information

### Stand Objectives

Work with the landowner to identify objectives for each stand that relate to the goals that the landowner outlined.

### Stand Current Conditions

**General Description:** This section would include the history, site index, elevation, slope, stand quality and health, average growth rate, summary of size classes, summary of heights, stocking level, density, risk rating, etc. for the stand in question. Further detailed inventory/plot data can be included if desired.

**Current forest type and current age:** For each forest type represented in the stand, include an estimate of its current age.

**The bird's eye view of current stand conditions and structure** are simple graphic representations of the landowner's woods. They are meant to provide the landowner with an understanding of the different spacing and structures that can be found and what their stand looks like at the time their plan was developed. Current spacing shows how far apart different size trees are from each other.

### Stand Desired Future Stand Condition

This section outlines what the stand will look like in the future, based on the landowner's objectives for the stand.

**Desired Forest Type and Expected Longevity:** This section shows the forest type(s) you would like to see in this stand and the maximum age you expect trees to reach before they die of natural causes or they are harvested.

This section also addresses how the tree species would grow either through natural regeneration or planting.

## Forest Management Activities

Once the desired future stand condition has been identified, then this section will outline the forest management activities for each stand.

**Forest Health Management Activities:** These activities include pruning, pre-commercial thinning from above/below, prescribed fires, sanitation, salvage, etc.

**Harvesting:** For these activities, describe the type of treatment: even-aged (clearcut, thinning), uneven-aged (group select, single tree select, overstory removal, understory removal, etc), treatment methods (ground based or skyline), time of year, type of harvest; seed tree, multiage, sanitation, etc.

**Slash management:** For this section, discuss how the slash will be addressed after a management activity. Examples include: leave slash at the stump, jackpot pile, whole tree skid, chipping, pulp. Address the large woody debris and nutrient cycling.

**Post management activities:** These could include burning landings, piles, broadcast or seeding roads and landings and/or weed spray roadsides.

**Permits:** Include a list of permits for which you applied for or will need to apply for, if necessary for the management activities outlined here.

**Best Management Practices:** Is there a wetland or stream within your management activity area? Is it properly marked and are the appropriate laws being followed? BMPs are essential to ensuring the benefits for air, soil and water that are made possible through sound management of your woods. To find the BMPs in your state, visit [www.treefarmssystem.org/woodlandresources/](http://www.treefarmssystem.org/woodlandresources/) and search by your state to find the link to BMPs.

**Monitoring:** After the management activity occurs, how often will the activity area be evaluated to ensure the overall forest management goals are being met?

**Repeat the Stand Level Information sections for each stand identified on the property.**

## **Management Activity Schedule and Tracking**

This section includes the schedule of management activities for each stand and can be used by the landowner to can track when the activities were completed, what incentive programs were used (if any) and what the net cash flow was for that activity. The net cash flow is optional and only a tool to help the landowner track the financial costs/benefits for the different management activities. Encourage the landowner to update the schedule if an activity date changes.

The American Forest Foundation has developed a brochure to help woodland owners. It can be found online:

[http://www.treefarmssystem.org/2008FarmBill/AFFFarmBillBrochure\\_web\\_lo.pdf](http://www.treefarmssystem.org/2008FarmBill/AFFFarmBillBrochure_web_lo.pdf)

If the landowner is planning on applying for NRCS incentive programs, then the NRCS Practice Code will need to be included in this activity schedule. These codes can be found on the NRCS Conservation Practice Standards website (<http://www.nrcs.usda.gov/technical/standards/nhcp.html>).

Common forest practices for NRCS programs:

- [Forest stand improvement](#)
- [Tree or shrub site preparation](#)
- [Tree or shrub establishment](#)

- [Forest trails and landings](#)
- [Road/Trail/Landing Closure and Treatment](#)
- [Forest slash treatment](#)
- [Firebreak](#)
- [Fuel Break](#)
- [Prescribed burning](#)
- [Tree or shrub pruning](#)
- [Riparian forest buffer](#)
- [Silvopasture establishment](#)
- [Multi-Story Cropping](#)
- [Windbreak or shelterbelt establishment](#)
- [Windbreak or shelterbelt renovation](#)
- [Integrated Pest Management](#)
- [Wetland restoration](#)
- [Restoration and Management of Rare and Declining Habitats](#)
- [Early Successional Habitat Development/Management](#)
- [Upland Wildlife Habitat Management](#)
- [Access Control](#)
- [Access Road](#)

Each state NRCS office adds state specific information to these standards and specifications and can be viewed at the state's field office technical guide:

<http://www.nrcs.usda.gov/technical/efotg/index.html>

There might also be state run incentive programs that might need to be included in this section as well.

## **Signatures and Approvals**

With this plan, the landowner is eligible to participate in the US Forest Service's Forest Stewardship Program, the American Forest Foundation's American Tree Farm System and NRCS incentive programs. This plan will need to be reviewed and approved by representatives for each of the programs in which the landowner would like to participate.

## References

Bennett, Karen P. editor. 2010. *Good Forestry in the Granite State: Recommended Voluntary Forest Management Practices for New Hampshire (second edition)*. University of New Hampshire Cooperative Extension, Durham, N.H. [www.goodforestry.org](http://www.goodforestry.org)

Swenson, Steve, 2009. *My Healthy Woods: A Handbook for Family Woodland Owners managing woods in Southwest Wisconsin*. A publication of the Aldo Leopold Foundation and the American Forest Foundation, Baraboo, WI.

<https://www.aldoleopold.org/Programs/myhealthywoods.shtml>

## Resources for the Landowner

- Forest Stewardship Program:  
<http://www.fs.fed.us/spf/coop/programs/loa/fsp.shtml>
- List of State Foresters and their contact information:  
[http://www.stateforesters.org/about\\_nasf](http://www.stateforesters.org/about_nasf)
- American Tree Farm System: [www.treefarmssystem.org](http://www.treefarmssystem.org)
- Your state American Tree Farm System contact:  
[www.treefarmssystem.org/stateleaders](http://www.treefarmssystem.org/stateleaders)
- NRCS: <http://www.nrcs.usda.gov/>
- 2008 NRCS Farm Bill Conservation Programs:  
<http://www.nrcs.usda.gov/programs/farmbill/2008/index.html>
- NRCS Conservation Practice Standards:  
<http://www.nrcs.usda.gov/technical/standards/nhcp.html> Provides information on all the different Conservation Practices and their codes.
- NRCS Field Office Technical Guide:  
<http://www.nrcs.usda.gov/technical/efotg/index.html> Technical guides are the primary scientific references for NRCS. Technical guides used in each field office are localized so that they apply specifically to the geographic area for which they are prepared..
- Woodland Owners Brochure on 2008 Farm Bill:  
[http://www.treefarmssystem.org/2008FarmBill/AFFFarmBillBrochure\\_web\\_lo.pdf](http://www.treefarmssystem.org/2008FarmBill/AFFFarmBillBrochure_web_lo.pdf)
- Woodland Owner Resources: <http://www.treefarmssystem.org/woodlandresources/> Provides information on fish, wildlife, biodiversity, special sites and Best Management Practices for you state.
- To find out information on your watershed, visit:  
<http://cfpub.epa.gov/surf/locate/index.cfm>
- **The attached appendices are additional resources for landowners.**

## Appendix 1: Glossary

**Acceptable Growing Stock:** Saleable trees that are of good form, species and quality and would be satisfactory as crop trees.

**Adaptive management:** A dynamic approach to forest management in which the effects of treatments and decisions are continually monitored and used to modify management on a continuing basis to ensure that objectives are being met (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Adverse regulatory actions:** Written warning, citations or fines issued by law enforcement or regulatory bodies.

**Aerial Photo:** Photo taken from an elevated position like on an aircraft.

**Afforestation:** the establishment of a forest or a stand in an area where the preceding vegetation or land was not forest. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Age Class:** A distinct aggregation of tree that originated at the same time, from a single natural event or regeneration activity or a grouping of trees (e.g. ten year age class) as used in inventory or management. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Aspect:** The direction that a slope faces (north, south, etc.)

**Basal Area:** The cross-sectional area of a tree, in square feet, at 4.5 feet from the ground (at breast height). When the basal area of all the trees in a stand are added together, the result is expressed as square feet of basal area per acre, which is a measure of a stand's density.

**Biomass:** A renewable energy source of biological materials derived from living, or recently living organisms, such as wood, waste, and crop residues.

**Biodiversity:** The variety and abundance of life forms, processes, functions and structures of plants, animals and other living organisms, including the relative complexity of species, communities, gene pools and ecosystems at spatial scales that range from local through regional to global (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998).

**Board Feet:** A unit for measuring wood volumes. It is commonly used to express the amount of wood in a tree, sawlog, or individual piece of lumber. A piece of wood 1 foot long, 1 foot wide, and 1 inch thick (144 cubic inches).

**Broadcast:** to spread or apply seed, fertilizer, or pesticides more or less evenly over an entire area. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Canopy:** The more or less continuous cover of branches and foliage formed collectively by the tops, or crowns of adjacent trees.

**Carbon sequestration:** the incorporation of carbon dioxide into permanent plant tissue. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Chip:** a small piece of wood used to make pulp or wood composite or fuel. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Clearcut:** 1. a stand in which essentially all trees have been removed in one operation – *note* depending on management objectives, a clearcut may or may not have reserve trees left to attain goals other than regeneration. 2. a regeneration or harvest method that



removes essentially all trees in a stand. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Contour Map:** A map where each line represents a change in elevation.

**Crop Tree:** A tree identified to be grown to maturity for the final harvest cut, usually on the basis of its location with respect to other trees and its timber quality.

**Cull:** A tree, log, lumber or seedling that is rejected because it does not meet certain specifications for usability or grade. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Culvert:** a device used to channel water. It may be used to allow water to pass underneath a road, railway, or embankment for example. Culverts can be made of many different materials; steel, polyvinyl chloride (PVC) and concrete are the most common. Formerly, construction of stone culverts was common.

**Den Tree:** A living tree with a cavity large enough to shelter wildlife.

**Desired species:** Those species of flora and fauna designated in the landowner's management plan and not known to cause negative impacts on the local environment.

**Diameter Breast Height (DBH):** The diameter of a tree at 4.5 feet above the ground.

**Endangered Species:** Any species of plant or animal defined through the Endangered Species Act of 1976 as being in danger of extinction throughout all or a significant portion of its range, and published in the Federal Register. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Even-Aged Management:** Forest management with periodic harvest of all trees on part of the forest at one time or over a short period to produce stands containing trees all the same or nearly the same age or size.

**Forest owner:** Landowner or designated representative such as, but not limited to, professional resource manager, family member, trustee, etc.

**Forest product:** [Forest Produce] Any raw material yielded by a forest. Generally defined in Forest Acts or Ordinances, and subdivided conventionally into major forest products, i.e. timber and fuelwood, and minor forest products, i.e. all other products including leaves, fruit, grass, fungi, resins, gums, animal parts, water, soil, gravel, stone and other minerals on forest land (F. C. Ford –Robertson, Terminology of Forest Science Technology, Practice, and Products, Society of American Foresters, 1971).

**Forest Stand Improvement:** See timber stand improvement.

**Forest type:** A category of forest usually defined by its trees, particularly its dominant tree species as based on percentage cover of trees, e.g. spruce fir, longleaf-slash pine, Douglas fir.

**Forest vitality:** The health and sustainability of a forest.

**Fuel management:** the act or practice of controlling flammability and reducing resistance to control of wildland fuels through mechanical, chemical, biological, or manual means, or by fire in support of land management objectives. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Group Select:** trees are removed and new age classes are established in small groups – *note* – 1. the width of groups is commonly approximately twice the height of the mature trees with smaller openings providing microenvironments suitable for tolerant regeneration and larger openings providing conditions suitable for more intolerant regeneration – *note* 2. the management unit or stand in which regeneration, growth, and

yield are regulated consists of an aggregation of groups. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Girdling:** Completely encircling the trunk of a tree with a cut that severs the bark and cambium of the tree. Herbicide is sometimes injected into the cut to ensure death of the tree.

**GPS (Global Positioning System) Coordinates:** a commonly hand held, satellite based navigational device that records x, y, z coordinators and other data allowing users to determine their location on the surface of the earth. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Hack-n-squirt:** A tree treatment method where an axe or hatchet is used to make "hacks" (injections) into the tree's cambium layer. A plastic "squirt" bottle is used to spray a specific amount of herbicide into the cuts placed around the tree.

**Harvesting:** the felling skidding, on-site processing, and loading of trees or logs onto trucks. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**High conservation value forests (HCVF):** Forests of outstanding and critical importance due to their environmental, social, biodiversity or landscape values. Due to the small scale and low-intensity of family forest operations, informal assessment of HCVF occurrence through consultation with experts or review of available and accessible information is appropriate.

**High-grading:** Cutting only the high-value trees from a forest property, leaving a stand of poor quality with decreased future timber productivity.

**Incentive Programs:** State and federal agencies will offer landowners the opportunity to apply for incentive programs that will provide support and financial assistance to implement forestry and agroforestry related practices through conservation programs. Assistance can also provided for multi-year and permanent easements to conserve forest land to meet program goals. For more information on the federal incentive programs, see Appendix 4.

**Integrated Pest Management:** The maintenance of destructive agents, including insects, at tolerable levels by planned use of a variety of preventative, suppressive, or regulatory tactics and strategies that are ecologically and economically efficient and socially acceptable (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998). A pest control strategy that uses a variety of complementary strategies including: mechanical devices, physical devices, genetic, biological or cultural management and chemical management (US EPA).

**Intermediate Cut:** Removing immature trees from the forest sometime between establishment and stand harvest to improve the quality of the remaining forest stand. Contrast this technique with a harvest cut.

**Invasive species:** Non-native species whose introduction does or is likely to cause economic or environmental harm or harm to human health (Executive Order 13112 (Feb. 3, 1999). **Invasive Species:** is a species that is 1) non-native (or alien) to the ecosystem under consideration and 2) whose introduction causes or is likely to cause economic or environmental harm or harm to human health. Invasive species can be plants, animals, and other organisms (e.g., insects, microbes, etc.). Human actions are the primary means of invasive species introductions. (Invasive Species Definition Clarification and Guidance White Paper Submitted by the Definitions Subcommittee of the Invasive Species Advisory Committee (ISAC), Approved by ISAC Apr 27, 2006.)

**Landings:** a cleared area in the forest to which logs are yarded or skidded for loading onto trucks for transport. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Landowner:** Entity that holds title to the property for which the management plan is being written.

**Large woody debris:** any piece(s) of dead woody material, e.g. dead boles, limbs and large root masses, on the ground in the forest stands or in streams. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Log Rules:** A table showing estimated amount of lumber that can be sawed from logs of given lengths and diameters. Two log rules are commonly used in Missouri:

***Doyle Rule*** is a simple formula rule used in the eastern United States. It underestimates the amount of lumber in small logs and overestimates large logs.

***International 1/4-inch Rule*** is a formula rule allowing 1/2 –inch taper for each 4 feet of length and 1/16-inch shrinkage for each one-inch board. This measure approximates the actual sawmill lumber tally.

**Management plan:** Documents that guide actions and that change in response to feedback and changed conditions, goals, objectives and policies. Management plans may incorporate several documents including, but not limited to, harvest plans, activity implementation schedules, permits, research, etc. For the purposes of the American Tree Farm System® eligible management plans, plan amendments may include letters, notes, and other forms of informal updates in addition to formal plan revisions.

**Mast:** Nuts of trees, such as oak, walnut, and hickory, that serve as food for many species of wildlife.

**Mature Tree:** A tree that has reached the desired size or age for its intended use.

**MBF:** Abbreviation for 1,000 board feet.

**Noxious plant (weed):** a plant specified by law as being especially undesirable, troublesome and difficult to control (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Nutrient cycle:** the exchange or transformation of elements among the living and nonliving components of the ecosystem. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Overstocked:** A forest stand condition where too many trees are present for optimum tree growth.

**Overstory:** That portion of the trees in a stand forming the upper crown cover.

**Overstory removal:** the cutting of trees constituting an upper canopy layer to release trees or other vegetation in an understory. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Pesticide:** Pesticides include chemicals commonly known as herbicides and insecticides.

**Pole Timber:** Trees from 6 inches to 12 inches in diameter at breast height.

**Prescribed Burn/Fire:** To deliberately burn natural fuels under specific weather conditions, which allows the fire to be confined to a predetermined area and produces the fire intensity to meet predetermined objectives. A fire ignited by management to meet specific objectives (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998).

**Pruning:** Removing live or dead branches from standing trees to improve wood quality.

**Pulpwood:** Wood cut primarily for manufacture of paper, fiberboard, or other wood fiber products.

**Qualified contractor:** Forest contractors who have completed certification, licensing, recommended training and education programs offered in their respective states.

**Qualified natural resource professional:** A person who by training and experience can make forest management recommendations. Examples include foresters, soil scientists, hydrologists, forest engineers, forest ecologists, fishery and wildlife biologists or technically trained specialists in such fields.

**Qualified Tree Farm inspector:** A natural resource professional who has completed ATFS required training for certifying forested properties and is eligible to inspect properties on behalf of ATFS. ATFS requires all trained inspectors meet approved eligibility requirements.

**Rangeland** Land on which the historic climax plant community is predominantly grasses, grasslike plants, forbs, or shrubs. Includes lands revegetated naturally or artificially when routine management of that vegetation is accomplished mainly through manipulation of grazing. Rangelands include natural grasslands, savannas, shrublands, most deserts, tundra, alpine communities, coastal marshes, and wet meadows

**Rare species:** A plant or animal or community that is vulnerable to extinction or elimination.

**Reforestation:** the reestablishment of forest cover either naturally (by natural seeding, coppice, or root suckers) or artificially (by direct seeding or planting) – *note* reforestation usually maintains the same forest type and is done promptly after the previous stand or forest was removed. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Regeneration:** The number of seedlings or saplings existing in a stand. The process by which a forest is renewed by direct seeding, planting, or naturally by self-sown seeds and sprouts.

**Regeneration Cut:** Any removal of trees intended to assist regeneration already present or to make regeneration possible.

**Release:** To free trees from competition by cutting, removing, or killing nearby vegetation.

**Riparian:** related to, living or located in conjunction with a wetland, on the bank of a river or stream but also at the edge of a lake or tidewater – *note* the riparian community significantly influences and is significantly influenced by, the neighboring body of water. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Riparian Zone:** The area adjacent to or on the bank of rivers and streams.

**Sapling:** Trees from 2 inches to 6 inches in diameter at breast height.

**Sawtimber:** Trees at least 12 inches in diameter at breast height from which a sawed product can be produced.

**Scale:** The extent of forest operations on the landscape/certified property.

**Seedling:** a young plant.

**Seed-tree Harvest:** A harvest and regeneration method where nearly all trees are removed at one time except for scattered trees to provide seed for a new forest.

**Selection Harvest:** Harvesting trees to regenerate and maintain a multi-aged structure by removing some trees in all size classes either singly or in small groups.

**Shelterwood Harvest:** A harvesting and regeneration method that entails a series of partial cuttings over a period of years in the mature stand. Early cuttings improve the vigor and seed production of the remaining trees. The trees that are retained produce seed and also shelter the young seedlings. Subsequent cuttings harvest shelterwood trees and allow the regeneration to develop as an even-aged stand.

**Single Tree Selection:** Individual trees of all size classes are removed more or less uniformly throughout the stand, to promote growth of remaining trees and to provide space for regeneration. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Site Index:** An expression of forest site quality based on the height of a free-growing dominant or co-dominant tree at age 50 (or age 100 in the western United States).

**Skid:** 1. to haul a log from the stump to a collection point (landing) by a skidder. 2. a load pulled by a skidder. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Skid Trail:** A road or trail over which equipment or horses drag logs from the stump to a landing.

**Skidding:** Pulling logs from where they are cut to a landing or mill.

**Skyline:** harvesting a cableway stretched tautly between two points, such as yarding tower and stump anchor, and used as a track for a block or skyline carriage. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Slash:** the residue, e.g., treetops and branches, left on the ground after logging or accumulating as a result of storm, fire, girdling, or delimbing. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Snag:** a standing, generally un-merchantable dead tree from which the leaves and most of the branches have fallen – *note* for wildlife habitat purposes, a snag is sometimes regarded as being at least 10 inches in diameter at breast height and at least 6 feet tall; a hard snag is composed primarily of sound wood, generally merchantable, and a soft snag is composed primarily of wood in advanced stages of decay and deterioration. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Soil Compaction:** The process by which the soil grains are rearranged, resulting in a decrease in void space and increasing bulk density. Can occur from applied loads, vibration or pressure from harvesting or site preparation equipment. Compaction can cause decreased tree growth, increased water runoff and soil erosion. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Soil map:** A map showing the distribution of soils or other soil map units in relation to prominent physical and cultural features of the earth's surface. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Special sites:** Those areas offering unique historical, archeological, cultural, geological, biological or ecological value. Special Sites include:

- A. Historical, archaeological, cultural and ceremonial sites or features of importance to the forest owner;
- B. Sites of importance to wildlife such as rookeries, refuges, fish spawning grounds, vernal ponds and shelters of hibernating animals;
- C. Unique ecological communities like relic old-growth, springs, glades, savannas, fens and bogs; and
- D. Geological features such as terminal moraines, cliffs and caves.



**Stand:** A group of trees with similar characteristics, such as species, age, or condition that can be distinguished from adjacent groups. A stand is usually treated as a single unit in a management plan.

**Stand Density:** A measure of the stocking of a stand of trees based on the number of trees per area and diameter at breast height of the tree of average basal area.

**Stand Management Recommendations:** The recommended management activities that should be done in that stand, based on the landowner's goals and objectives.

**Stand Structure:** The horizontal and vertical distribution of plants in the forest, including the height, diameter, crown layers, and stems of trees, shrubs, understory plants, snags and down woody debris. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**State forestry best management practice(s) (BMPs):** Forestry BMPs are generally accepted forest management guidelines that have been developed by state forestry agencies with broad public stakeholder input.

**Stocking:** An indication of the number of trees in a stand in relation to the desirable number of trees for best growth and management.

**Sustainability:** The capacity of forests, ranging from stands to ecoregions, to maintain their health, productivity, diversity and overall integrity, in the long run, in the context of human activity (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998).

**Sustainable forest management:** The practice of meeting the forest resource needs and values of the present without compromising the similar capability of future generations (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998). *Note –* AFF's Standards of Sustainability reflect criteria of sustainability based on the Montreal Process, 1993, and the Pan-European Operational- Level Guidelines (PEOLGs).

**Thinning:** a cultural treatment made to reduce stand density of trees primarily to improve growth, enhance forest health, or recover potential mortality. Types of thinning include: chemical, crown, free, low, mechanical, selection. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Threatened Species:** A plant or animal species that is likely to become endangered throughout all or a significant portion of its range within the foreseeable future. A plant or animal identified and defined in the Federal Register in accordance with the Endangered Species Act of 1976. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Timber Stand Improvement (TSI):** A thinning made in immature stands to improve the composition, structure, condition, health, and growth of the remaining trees.

**Undesirable Growing Stock:** Trees of low quality or less valuable species that should be removed in a thinning.

**Understocked:** Insufficiently stocked with trees.

**Understory:** all forest vegetation growing under an overstory. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Uneven-Aged Management or Stand:** A stand of trees containing at least three age classes intermingled on the same area.

**Visual quality measures:** Modifications of forestry practices in consideration of public view, including timber sale layout, road and log landing locations, intersections with

public roadways, distributing logging residue, tree retention, timing of operations and other factors relevant to the scale and location of the project.

**Volume:** The amount of wood in a tree, stand of trees, or log according to some unit of measurement, such as board foot, cubic foot, etc.

**Watershed:** the area of land where all of the water that is under it or drains off of it goes into the same place. For example the Mississippi River watershed includes all the land that drains into the Mississippi River. This watershed is the fourth largest in the world and includes water from 31 states.

**Wetland:** A transitional area between water and land that is inundated for periods long enough to produce wet soil and support plants adapted to that environment. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Wolf Tree:** A very large, overmature tree that is or was open grown. These trees tend to have large full crowns and numerous branches.

**Woody Debris:** Any piece(s) of dead woody material (e.g. dead tree trunk, limbs, large root ball) on the ground in the forest or in streams. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

## **Appendix 2 Tax and Business Management**

Woodland owners have to deal with property taxes, income tax for timber harvests and other revenue generating activities, and estate taxes when properties are passed on to future generations. This section was developed to help the landowner consider the tax implication for their property when they are planning for the management of their property.

Some states have special tax programs that can be used by woodland owners to help minimize their tax liability.

Landowners could consider addressing the following in their plan:

1. **Property tax:** The forest management plan should document the current tax status of the property. Their state might have specific property tax programs that you may be eligible to participate in. Please be aware of the program rules and regulations.
2. **Income tax:** Include a statement that timber harvest and other revenue generating activities generally produce a federal and state income tax liability. Tax credits may be available for some management activities.
3. **Federal and State Incentive Programs:** There is tax implication for participating so be aware of those implications.
4. **Estate tax:** Good estate planning can help to lessen tax liability when passing land to heirs and that landowners should seek good planning and tax advice.
5. **Record keeping:** Good record keeping can help landowners manage their assets, increase their revenues, and minimize their tax liability.
6. **Land Use:** Document the land use classifications of the property from the county land use plan.

It is recommended that the landowner works with a professional tax advisor who can assist them in developing this section.



## Appendix 3 Timber Sale Contract Checklist for Private Landowners and Loggers

The following is a checklist of issues private landowners and logging contractors may want to consider on a logging contract. Each of the items should be addressed in a contract to allow for a minimum probability of a dispute. **Issues can be as detailed as both parties find acceptable and economically feasible.**

- \_\_\_ **Property location and legal description are clearly defined**  
Include Tree Farm certification number if applicable.
- \_\_\_ **Property boundaries and harvest units are clearly and accurately marked**  
Logging trespass can result in a minimum cost of 3x value of trees.
- \_\_\_ **Property ownership is documented and type of ownership is specified**  
Either individual, partnerships, corporations, etc.
- \_\_\_ **Insurance is documented**  
Any contractor working for a landowner must have Commercial General Liability \$1 –million, Loggers Broad Form Property Damage Liability \$1-million, Workers’ Compensation \$100,000 or an Independent Contractor Exemption, and Automobile Liability \$1-million. If they do not have these, the landowner will be held liable for any damage or personnel injury that may occur. Insurance can be written to include owner and consulting forester.
- \_\_\_ **Access to the property/harvest unit are specified and documented**  
To avoid trespass or the disturbance of sensitive area access routes should be clearly delineated. If access across other ownerships is required, written and notarized documentation of access permission should be obtained.
- \_\_\_ **Type of harvest is clearly specified for each stand**  
Typically trees are marked both at eye level and on the stump, or harvest tree characteristics are defined by species, diameter, crown characteristic, or residual tree spacing.
- \_\_\_ **Timing of harvest is specified**  
Dates when harvesting and/or other treatments need to be conducted or completed by.
- \_\_\_ **Residual property specifications should be defined**  
This is as detailed as the landowner and contractor can agree upon. Issues can be the completeness of residual logging debris disposal, burn pile rehabilitation, grass seeding, skid trail rehab, noxious weed control, tree planting, noncommercial thinning, access roads- does the logger need to do repairs and bring them up to a particular standard or are they required to put them to bed and pull up the culverts?

- \_\_\_\_ **Best Management Practices (BMP's) responsibilities are designated**  
Compliance to state BMP's is ultimately the landowners responsibility but should be specified in the contract.
  - \_\_\_\_ **Performance bond or contract penalty**  
Create some provision for compensation to the landowner for harvesting activities that deviate from specifications. Having the contractor post a bond is the best protection for the landowner but imposes a risk on the contractor.
  - \_\_\_\_ **Method of payment is clearly defined**  
Could include: **Lump sum** is one payment for the entire estimated log volume, this method may over or underestimate actual value but is simple and can be demanded in advance of the actual harvesting. **Payment by unit** is where payment for logs occurs based upon the actual scaled logs at the mill. Either the contractor pays an agreed upon percentage to the landowner or the mill pays agreed upon percentages separately to the contractor and landowner. Downfall is that in cases of salvaging dead and dying trees a delayed harvesting job can result in losses of standing tree value.
  - \_\_\_\_ **Method of scaling is defined**  
Either direct scaling or weight scaling are used. Direct scaling tends to be more accurate though each mill may use different defect deductions. Weight scaling works for large volume sales that have trees of similar species and diameter. In general logs should be trucked to the mill quickly following harvest or they lose significant water weight or for most accurate conversions a continuous representative sample of logs should be check scaled and weighed.
  - \_\_\_\_ **Notification**  
It is defined if and when the contractor or landowner needs to notify the other party about when activities are to start or end and the type of format – written, e-mail, telephone. This is to avoid issues with blocked access, noise, special sites, etc.
  - \_\_\_\_ **Expiration date**  
Any contract should have a defined end date after which the contract is no longer valid.
  - \_\_\_\_ **Notarization**  
Any legally binding document should have signatures notarized.
- \*\*\* This is simply a recommended check list compiled from a variety of sources including the Montana Logging Association. Any contract can be challenged. It is always advised that a contract be reviewed by an attorney. You may also want an attorney's fees recovery statement in the document that will allow for recovery of legal fees should a dispute require legal action. \*\*\*

## **Appendix 4: The USDA Farm Bill: What is in it for Woodland Owners**

# Understanding Your Plan

A Guide for Landowners using  
*Managing Your Woodlands:*  
*A Template for Your Plans for the Future*



## Table of Content

Introduction to the Template and Guide .....	3
Where to Begin? .....	4
Best Practices for your Management Plan .....	5
Recommendations on Implementing your Management Plan .....	5
Cover Page: Owner and Plan Author .....	7
Property Description .....	7
Property History .....	8
Forest Management Goals: Developing your goals .....	8
Property Maps .....	12
Forest Natural Resources Enhancement and Protection .....	13
Protect Special Sites and Social Considerations .....	13
Air, Water, and Soil Protection .....	14
Fish, Wildlife and Biodiversity .....	15
Management of Forest Resources .....	15
Other .....	16
Stand Level Information .....	16
Stand Objectives .....	16
Stand Current Conditions .....	16
Stand Desired Future Stand Condition .....	17
Forest Management Activities .....	17
Management Activity Schedule and Tracking .....	18
Signatures and Approvals .....	19
References .....	20
Resources for You, the Landowner .....	20
Appendix 1: Glossary .....	21
Appendix 2 Tax and Business Management .....	29
Appendix 3 Timber Sale Contract Checklist for Private Landowners and Loggers .....	30
Appendix 4: The USDA Farm Bill: What is in it for Woodland Owners .....	32

## Introduction to the Template and Guide

This guide was developed to assist landowners in using *Managing Your Woodlands: A template for your plans for the future* as you work with your forester or natural resource professional to develop a forest resources management plan. Landowner involvement in the development of a plan is very important, as you need to understand and agree with your plan to implement it. This guide includes useful information for landowners including description on what is necessary to include in the template. There is also a glossary with relevant forestry terms, and a list of resources available to you.

Your forester will be using the guide that was developed for them as they work with you to develop your plan.

### Why this template?

This template allows you to participate in several different programs available to you as a woodland owner:

#### **American Tree Farm System**

The American Tree Farm System® (ATFS) is the largest and oldest sustainable woodland system in America, internationally recognized, meeting strict third-party certification standards.

For 70 years, ATFS has enhanced the quality of America's woodlands by giving forest owners the tools they need to keep forests healthy and productive. Stemming the loss of America's woodlands is vital to our country's clean water and air, wildlife habitat, recreational activities, and producing the wood and paper products we all need. ATFS provides landowners with the validation that they are doing right by their land, meeting the highest standards of sustainability and being good stewards for the future.

ATFS is a program of the American Forest Foundation.

*The American Tree Farm System grows stewardship from the roots.*

To participate in your state ATFS program, please visit

[www.treefarmssystem.org/stateleaders](http://www.treefarmssystem.org/stateleaders)

#### **Forest Stewardship Program**

The Forest Stewardship Program works through State forest agency and other partners to sustain and improve our Nation's private forest landscapes. The program develops and delivers appropriate technical and planning assistance to enable active, informed, long-term forest management. Forest Stewardship management plans provide landowners with practical guidance for achieving their own unique objectives in a way that also maximizes public goods and services provided by forests, such as clean drinking water, clean air, carbon sequestration, wood fiber, recreation, and scenic landscapes. Landowners who implement Forest Stewardship management plans are in a much better position to participate in certification programs and access emerging markets, such as those for ecosystem services and biomass for energy

### **Natural Resources Conservation Service (NRCS) incentive programs**

NRCS provides financial assistance to private landowners to implement forestry and agroforestry related practices through Farm Bill and discretionary conservation programs. Assistance is also provided for multi-year and permanent easements to conserve forest land to meet program goals. There are several incentive programs including:

- *Environmental Quality Incentives Program (EQIP)* offers financial and technical help to assist eligible participants including forest owners with management practices on their lands; a forest management plan is required to participate.
- *Wildlife Habitat Incentive Program (WHIP)* offers technical and cost-share assistance for landowners to establish and improve fish and wildlife habitat; family forestland is eligible and forestry practices are encouraged.
- *Conservation Stewardship Program (CSP)* offers stewardship contracts to landowners who meet a certain threshold of land stewardship and agree to maintain and improve their land.
- *For more information about these and other programs refer to <http://www.nrcs.usda.gov/programs/> or contact the local NRCS office.*

## **Where to Begin?**

A management plan should be completed by a forester or other natural resource professional while you take an active role in the development of your plan. You should consider yourself a co-creator of the plan with your forester.

There are several sections of the template that you can either complete or begin before meeting with your forester:

- **Owner's contact information**
- **Property Description:** complete as much as possible and then review with your forester
- **Property History:** complete what is known and then review with your forester
- **Forest Management Goals:** identify the goals you have for your property
- **Property Maps:** you might have or be able to locate some of the appropriate maps of your property, if not; your forester will be able to help.
- **Forest Natural Resources Enhancement and Protection:** your forester will complete this section but you can start to think about your goals related to the different topic areas. Consider:
  - Are there any special sites that you and your family have that you want to protect?
  - You can do some preliminary research on what special sites, threatened and endangered species might be on your property using the [www.treefarmssystem.org/woodlandresources](http://www.treefarmssystem.org/woodlandresources)

- Review the other section descriptions within this guide and begin to think about goals or concerns that you might have for each of them. Be prepared to discuss these with your forester
- **Stand Level Information:** your forester will also complete this section. However you will need to work with him/her to identify your objectives for each stand, given the goals that you have outlined.
- **Management Activity Schedule and Tracking:** you and your forester, working together, will need to develop the schedule and you will be responsible for tracking activities (unless you have designated someone else to be in charge of implementing your management plan). Make sure you understand and are comfortable with the dates documented for the different activities that have been outlined in your plan.

When completing a section, review the requirements in the guide to ensure that you fill in all the appropriate information. When meeting with your forester initially, review what information you have compiled as he/she might be able to add more information or help clarify certain points.

## Best Practices for your Management Plan

1. As a landowner, you should retain a copy of your management plan and store it in an easily accessible location.
2. Every time you complete an activity, be sure to make a note of it in your management plan. If you have decided not to do an activity, or have delayed implementation, be sure to make a note of the reasons why.
3. Informal updates to the plan can be made with handwritten notes. Be sure to include a date and initial these notes throughout the management plan.
4. Review your management plan annually; make sure that the goals in your plan are still the goals you have for your land, review your stand descriptions and update as necessary. An example of when you may need to update your stand descriptions could be if you have a disease or pest issue or some type of natural disaster that affects your stands (fire, wind, ice, etc). Check your desired future stand conditions to ensure that you are on track for your forest management.
5. Consult a forester if you have major changes to your plan or questions about your forest and your management.

## Recommendations on Implementing your Management Plan

- **Annually:** (as needed)
  - Maintain property boundaries.
  - Maintain wildlife food plots and wildlife structures.
  - Maintain firebreaks/lines.
  - Monitor and control invasive species.
  - Review your management plan for needed changes – update accordingly.



- Keep good records of the activities that you conduct on your property. Be sure to save relevant contracts and receipts. Records of these activities are needed for participation in some of the programs available to you with this plan.
- Check your Management Activity Schedule and Tracking Table
- **Within ten years:** It is a good idea to formally review your plan and your forest with your forester or natural resource professional every ten years.
- **Questions?** Contact your agency forester or private consulting forester with any questions you have about implementing any part of your plan.

## Cover Page: Owner and Plan Author

This section provides the contact information for you, the landowner. Be sure to keep it updated. If changes are made, be sure to inform your forester. If you participate in any of the programs available to you, you will need to update the supporting organizations if your contact information changes:

- Forest Stewardship Program: your state forestry contact or your State Forester's office (list of State Foresters is available at [http://www.stateforesters.org/about\\_nasf](http://www.stateforesters.org/about_nasf))
- American Tree Farm System: your state American Tree Farm System contact ([www.treefarmssystem.org/stateleaders](http://www.treefarmssystem.org/stateleaders))
- NRCS Incentive program: your local service center (<http://offices.sc.egov.usda.gov/locator/app>)

The Plan Author is the forester or natural resource professional (i.e. a wildlife biologist or other specialist) who worked with you to develop your plan. By having their contact information on the front page, you can easily follow up with them for assistance or questions that you might have when you are implementing your plan.

Note the date when the plan was originally completed. During your regular review of you plan, be sure to date and initial any updates or notes that you add to your plan. For example, if you notice on your Management Activity Schedule and Tracking that you were not able to complete an activity on its planned date, update the planned date, add your initials and include a brief note on why you made the change.

## Property Description

The legal property description includes the name of the state, name of the county, township number, range number, section number, and portion of a section where relevant. This information can be found on your property deed. If you can't find your deed, you can go to your local county clerk's office or the land records office to get a copy.

The Tax Parcel Number is the number assigned to your property by your local tax assessor. This number is not required but it can be helpful to record all relevant property information in one location in your plan.

If you are planning on participating in a USDA Farm Bill incentive program, then you will need to register at your nearest USDA Service Center. After you take in your deed for the property, your forest management plan and an Adjusted Gross Income Statement, you will be given an FSA Farm and Tract Number. Again, it can be helpful to record that number here.

GPS coordinates are very helpful in locating relevant maps online. For more information on selecting a GPS unit, check out the "Testing GPS Handhelds in the Woods" in the July/August 2009 *Tree Farmer* Magazine [www.treefarmssystem.org/treefarmermagazine/](http://www.treefarmssystem.org/treefarmermagazine/)

Your entire property may not have trees and not all of your woods may be eligible for this plan, but you can include cleared land in your plan area if you intend to plant trees on it. Hence the three acreage questions in this section:

- Total ownership acreage: the total acreage of the property
- Total forested acreage: the total acreage with trees
- Total acreage covered by plan: the portion of the acreage that will be described in this plan (forested or not).

Your forester will identify the number of stands within your property. Through the planning process, your woodland will be divided (on paper) into distinct management units called “stands.” Usually stand boundaries will correspond to natural or constructed features such as streams, slope and/or aspect changes, ridges, roads, or fields. Stands can also be made up of groups of trees with similar characteristics, such as species, age, or condition that can generally be distinguished from adjacent groups.

For the topography and access information, these are estimates based on your experience on the property. Your forester can work with you to ensure an accurate description of this information. For the slope section, include what percentage of land is in each category.

For the road condition, the percentages represent how much of the roads are accessible to vehicles. For the estimates of road length, include estimated miles of road for each category.

A **watershed** is the area of land where all of the water that is under it or drains off of it goes to the same place. To find out information on your watershed, visit: <http://cfpub.epa.gov/surf/locate/index.cfm>. Your forester will be able to assist you with this section, including finding your watershed “address” – which watershed your property is in.

## Property History

The Property History is a brief description of the history of the land and ownership including length of current ownership, past management activities, and surrounding environment (whether nearby property is developed, private woods, public forests, etc.). This information can be based on personal knowledge, property records, and local information sources. Your forester will also consider what evidence is seen on the ground, stumps, skid trails, etc. You may or may not know much about your property but working with a forester can help fill in some of this information.

## Forest Management Goals: Developing your goals

Ownership Goals are at the heart of the plan and describes what you want to gain from your property and resources. Make a list of your goals and objectives that reflect your expectations, personal values, and the potential of your woods. Your goal statements should broadly summarize your vision for your land, but should be specific enough to know if you are reaching them. Goals can apply to either your woods as a whole or to

one stand of trees. When you have multiple goals for your woods, prioritization is needed. Goals serve as a guide to where you want to end up (Swenson, 2009).

To develop your goals, consider the following from the *Good Forestry in the Granite State: Recommended Voluntary Forest Management Practices for New Hampshire* (Bennett, 2010):

### **Developing goals is integral to managing forest land.**

Your goals should be driven by the reasons you own your land. The duration of most plans is 10 years, short when compared with the life of the forest. When setting your goals think big and long term. List all your hopes and dreams for your property. Thinking long term will help you develop short-term objectives that ensure you reach your long-term goals. Talking with UNH Cooperative Extension county foresters, other foresters, loggers, family, neighbors, and friends can help you develop your goals.

Your goals for the current and future use of your property should be specific. You will use your goals to formulate recommendations that then become a course of action to accomplish these objectives. The more specific and measurable your goals, the easier to monitor and track whether you are achieving them.

Clear goals help you decide what actions to take and what actions to avoid. Often landowners tell foresters, “I want to do what is right for the land and make a little money.” Foresters manage land based on a landowner's objectives. Without your specific instructions, the forester (or logger) can only make decisions based on their ideas of “what is good for the land,” which may not align with your intentions. Consider your wishes for the use of your land before talking with a forester. Be prepared to adapt or revise your goals as you learn more about your land from your research and from working with your forester.

### **Setting goals will help you:**

- Invest your time, energy, and financial resources wisely.
- Communicate effectively with professionals who may help you achieve your objectives.
- Avoid undesired changes on your property.
- Think long term about your property and its resources.
- Avoid doing something that may not be in your best interest or in the best interests of your land

Consider and write down the answers to the following questions to help you develop goals and priorities:

## **General**

- Why do you own your property?
- How long do you expect to own your property?
- How would you like it to be used or managed when you no longer own it?
- How do you currently use your land?
- Do you want to use it differently in the future?
- What is most important to you about your land?
- Are you enrolled in, or interested in current use taxation, Tree Farm, or an incentive program through the Natural Resources Conservation Service?  
Would you like to learn more about these and other programs?

## **Your interest and ability to work on the land**

- Are you interested in working on your own land (pruning, clearing trails or vistas, cutting firewood, tapping sugar maples for syrup, etc.)? If so, how much time can you devote, and what skills do you have or are interested in developing?
- Do you have hand tools or power equipment such as a bow saw, pole saw, loppers, chainsaw, or tractor, etc?

## **Property Condition**

- Are there any insect or disease problems?
- Have any natural disturbances such as ice storms, wind, fire, or flood affected your land?
- Are there special places on your property? A place may be special for sentimental reasons or because of an unusual geological formation, significant wildlife habitat, and many other reasons.
- Are there plants or a particular tree or group of trees you want to protect?

## **Timber**

- Do you want to improve the health or economic value of the forest?
- Are you interested in managing for income from wood products?
- Do you have specific goals for the amount or timing of income?
- Are you willing to cut trees to enhance the timber, aesthetic, recreational, wildlife, or other nontimber resources?
- Do some aspects about timber harvesting concern you?

## **Aesthetics**

- Do you want to maintain views to or from the property?
- Do you want to open up a view?
- If your property has road frontage or other areas viewed by the public, how important is maintaining the appearance to you?

## **Recreation**

- Do you or others walk, hike, camp, fish, hunt, snowmobile, bird watch, swim, bike, ski, snowshoe, or enjoy your land in other ways?
- Do you want to enhance the ability to enjoy these or other activities?
- Would you like to improve the existing trails and roads?
- Do you want to prohibit any activities?

## **Water and Soil**

- Do you want to give special attention to vernal pools, bogs, swamps, seeps, small streams, and wet areas?

## **Wildlife**

- Do you know what wildlife use your property?
- Do you want to enhance the habitat for any of these species?
- Would you like to encourage a broader variety of wildlife by improving habitat for species not currently present?

## **Diversity**

- Do you want to encourage a broad variety of plants and animals?
- Do you want to protect unusual plants and animals?
- Do you want to discourage invasive non-native species?

## **Cultural Resources**

- Do you want to protect cultural features such as stone walls, foundations, cellar holes, or wells?

## **Other Nontimber Uses**

- Do you harvest maple syrup, Christmas trees or other nontimber forest products? Do you want to?
- Are you interested in growing and harvesting non-traditional products such as mushrooms, herbs, and greens?
- Are you interested in using your property for educating others about forests?

## **Considerations**

- [UNH Cooperative Extension has forms](#) to help you think through and write down your goals.
- Your goals might change as you learn more through personal exploration and interaction with professionals, as the land changes, or if your situation

changes. Goals often become more detailed and specific as you learn about your land.

- Your property is part of the larger landscape. Your goals and the opportunity to achieve them may be affected by the characteristics of the surrounding land. Conversely, your actions can affect conditions on nearby lands. Adopting the landscape perspective is especially important when considering wildlife habitat. Different wildlife species need different forest types and ages to meet their needs. Most birds and animals require distinct habitats during different parts of the year or during various stages in their lives. Not all forest landowners own enough acres to meet all the habitat needs of many wildlife species. The benefits of managing for wildlife on smaller tracts may only be realized if this management complements conditions and management on neighboring properties.

### **Recommended Practices**

- Determine your goals and write them down.
- Involve family members in discussions about your land so they understand your goals and objectives, especially if you plan to leave your land to them.
- Discuss your goals with your forester and revise them as you learn more about your land, or if your situation changes. Include written objectives as part of your forest management plan.
- When wildlife habitat management is a goal, examine your land within its larger context to determine the habitat management that may be effective and reasonable to pursue within your woodlot.
- Refer to the appropriate chapters in [\*the Good Forestry in the Granite State: Recommended Voluntary Forest Management Practices for New Hampshire manual\*](#) to learn more about the resources that interest you.

## **Property Maps**

Maps are a valuable tool for forest owners and many mapping tools are now available online. For your property maps you will need to do the following:

1. Delineate property boundaries, stands, special sites, threatened and endangered species present, water resources, roads, existing practices, future conservation practices, scale, and a directional arrow. Example of map types could include:
  - A Contour map
  - Aerial photo (for free aerial photo downloads <http://earth.google.com/>) Once you download the free software, you can enter in an address or coordinates to find your location. You can create an outline of your property or polygon of your property using the polygon tool.
  - GIS printout

### **2. Soil Information**

- Soils Map: including legend, interpretations, etc.  
For soil maps, NRCS has developed a web-based map-making tool for private landowners: <http://websoilsurvey.nrcs.usda.gov>. You can search by address, state and county, latitude and longitude to develop a soil map and report for your property.  
Or you can check with your local NRCS office (<http://offices.sc.egov.usda.gov/locator/app>). Soil maps are required for NRCS incentive programs.

Multiple copies of the maps might be necessary to ensure the legibility of information. Some states agencies also have mapping tools available online, check with your state forestry agency for more information.

## **Forest Natural Resources Enhancement and Protection**

This section relates to the natural resource elements found throughout the entire property. Some of the treatments related to these resource areas may qualify for federal and state incentive programs. Include appropriate activities and treatments in the Management Activity Schedule and Tracking table as well as on the map(s). Complete the Activity Schedule and draw and label the areas of management on the map if using this plan as part of an incentive program application. There is no need to repeat this information in the stand specific section.

For this section, consider the goals that you have identified for your woods. Your forester will be able address the following information for each section:

1. What treatments/ monitoring/ protection are planned?
2. When will you implement treatments (season, year), follow-up activities, etc?
3. Where will the management take place: entire stand, part of a stand, acres?
4. Do you have applicable permits, professional assistance, and applications for the incentive programs?

## **Protect Special Sites and Social Considerations**

### **Special Sites**

Are there archeologically, culturally, historically, geologically, biologically or ecologically valuable sites or high conservation value forests (HCVF) on your property that you wish to delineate and protect? The concept of HCVF is one that is used by various organizations, including ATFS, to describe forests of outstanding and critical importance due to their environmental, social, biodiversity or landscape values. What assistance did you seek when identifying special sites or what information did you gather? There are lots of online resources available to help you identify special sites in your state. Visit [www.treefarmssystem.org/woodlandsresources](http://www.treefarmssystem.org/woodlandsresources) to find your state's information.

Special sites can also include sites that are designated by you, the landowner, and can represent places or things that are important to you or your family.

### **Adjacent stand or ownership concerns**



How does surrounding management affect your woods and how do your actions impact your neighbors? Consider aesthetic quality, wildfire concerns, privacy, wildlife movement and habitat, noxious weeds, urban encroachment, if applicable. Aesthetic qualities should be considered throughout this plan as it is being developed.

It might be appropriate to consider a modification of forestry practices in consideration of public view, including timber sale layout, road and log landing locations, intersections with public roadways, distributing logging residue, tree retention, timing of operations and other factors relevant to the scale and location of the project.

For more information on federal and state designated weeds, please visit <http://plants.usda.gov/java/noxiousDriver>

### **Recreation**

If recreation is one of your goals for your woods, identify the resources and how they will be addressed in your management.

### **Access**

Are property boundaries posted? How are they marked? Do you have legal access to the property? Is public access allowed? Address access for management purposes.

## **Air, Water, and Soil Protection**

### **Soil protection**

Consider steep slopes, woody debris retention, nutrient cycling, vehicle travel, soil compaction, flood runoff, livestock issues, silvopastures, and Best Management Practices (BMPs), if applicable. Include a soil map if desired (**Note:** required for NRCS incentive programs).

BMPs are essential to ensuring the benefits for air, soil and water that are made possible through sound management of your woods. To find the BMPs in your state, visit [www.treefarmssystem.org/woodlandresources/](http://www.treefarmssystem.org/woodlandresources/) and search by your state to find the link to BMPs.

### **Roads**

Consider general maintenance, erosion potential, BMPs, if applicable, road surface condition, road runoff, drain-dips, culverts, stream crossings, weed control, and time-of-year use.

### **Streams, wetlands, ponds, lakeshore**

Consider BMPs, if applicable, riparian habitat, wildlife, and road crossings. If a wetlands delineation map is available, include as a reference.

### **Effects of Natural Disasters**

Has your property been affected by floods, wildfire, wind, ice or other natural disasters? Are you at risk? Consider how you would react if a natural disaster occurred.

**Rangeland Resources** (if applicable)

If you have rangeland on your property then address that resource in this section.

**Carbon sequestration** (optional)

This is an optional resource that you might want to consider. Include a current estimation of the tons of standing carbon per acre plus growth rate–sequestration per year.

Carbon sequestration consideration is not currently a requirement of the Forest Stewardship Program, American Tree Farm System or NRCS incentive programs.

**Fish, Wildlife and Biodiversity****Fish & Wildlife**

Consider desired species, habitat improvement, animal control, den sites, nest boxes, snag retention, access, hunting, and the current state of the habitat. What assistance did you seek or information did you gather?

**State and Federal threatened or endangered species - plants or animals**

What assistance did you seek or information did you gather related to state and federal threatened or endangered species? To search for site specific information visit

[www.treefarmssystem.org/woodlandsresources](http://www.treefarmssystem.org/woodlandsresources).

**Management of Forest Resources**

For the management described in this section include the general management that relates to the natural resource elements found throughout the entire property. For stand specific management activities, please include those in the **Stand Level Information** section.

**Protection from Pests**

Includes insects, diseases, weeds, and invasive species. What inventory, control, monitoring, prevention guidelines will be employed. Consider using a range of integrated pest management including mechanical, physical, biological, cultural or chemical management.

**Reforestation and Afforestation**

Consider natural seedling recruitment, planting, site preparation, and current conditions that might affect regeneration.

**Prescribed Fire/Burns** (optional)

Prescribed fires/burns can be a very useful management tool in certain locations and certain times. Consider using prescribed burns for stand/habitat improvement, fuel reduction, Home Firewise Safety (below), current fuel conditions, and degree of wildfire risk.

**Home Firewise Safety:** Home Firewise Safety is a program sponsored by the US Forest Service, US Department of the Interiors and the National Association of State Foresters to encourage local solutions for wildfire safety. For more information about this, please visit <http://www.firewise.org/index.php>

**Firewise Communities Program:** The National Fire Protection Association's ([NFPA](#)) Firewise Communities program encourages local solutions for wildfire safety by involving homeowners, community leaders, planners, developers, firefighters, and others in the effort to protect people and property from the risk of wildfire. The program is co-sponsored by the [USDA Forest Service](#), the [US Department of the Interior](#), and the [National Association of State Foresters](#).

To save lives and property from wildfire, NFPA's Firewise Communities program teaches people how to adapt to living with wildfire and encourages neighbors to work together and take action now to prevent losses. We all have a role to play in protecting ourselves and each other from the risk of wildfire. For more information visit [www.firewise.org](http://www.firewise.org)

### **Management Plan Implementation Constraints**

Consider available markets for wood products, your interest and time, financial limitations, land use ordinances, seasonal access, wildlife activity, insect activity, operability due to slope, etc.

### **Other**

Use this space to include information on any other natural resource enhancements and protection that are not included in the sections above.

## **Stand Level Information**

Your forester should develop this section, however you need to be involved in developing the stand objectives to ensure that they are in line with the management goals that you identified. Your forester will identify the number of stands within your property. Usually stand boundaries will correspond to natural or constructed features such as streams, slope and/or aspect changes, ridges, roads, or fields. Stands will also be made up of groups of trees with similar characteristics, such as species, age, or condition that can generally be distinguished from adjacent groups.

### **Stand Objectives**

For each stand, write your management objectives for that stand. Your objectives should be linked to the management goals that you outlined in the **Forest Management Goals** section at the beginning of this plan.

### **Stand Current Conditions**

**General Description:** This section would include the history, site index, elevation, slope, stand quality and health, average growth rate, summary of size classes, summary of heights, stocking level, density, risk rating, etc. for the stand in question. Further detailed inventory/plot data can be included if desired.

**Current forest type and current age:** For each forest type represented in your stand, include an estimate of its current age. The US government has a website that has some interesting maps showing the location of some of the main forest types within the US: [http://www.nationalatlas.gov/articles/biology/a\\_forest.html](http://www.nationalatlas.gov/articles/biology/a_forest.html). Your forester will be an

expert on the forests in your area and will be able to provide detailed information about your specific woods and the forest type and tree species found within it.

**The bird's eye view of current stand conditions and structure** are simple graphic representations of your woods. They are meant to provide you with an understanding of the different spacing and structures that can be found and what your stand looks like at the time you develop your plan. As you manage your stand for the objectives outlined above, this section will be a reference to show what your stand looked like when you first started your management. Current spacing shows how far apart different size trees are from each other.

### **Stand Desired Future Stand Condition**

This section outlines what you would like the stand to look like in the future. Your forester can develop this section based on the objectives that you have outlined. Most of the sections are the same as those in the Current Stand Condition section; however they will describe the future condition you would like to see.

**Desired Forest Type and Expected Longevity:** This section shows the forest type(s) you would like to see in this stand and the maximum age you expect trees to reach before they die of natural causes or they are harvested.

This section also addresses how the tree species would grow from seedlings in your woods. You could either plant the species you would like to see or they could naturally regenerate, or grow from seeds of trees already in the stand.

### **Forest Management Activities**

Once your desired future stand condition has been identified, then this section will outline the forest management activities for each stand that will need to be done to ensure that you will reach that desired condition.

**Forest Health Management Activities:** These activities include pruning, pre-commercial thinning from above/below, prescribed fires, sanitation, salvage, etc.

**Harvesting:** For these activities, describe the type of treatment: even-aged (clearcut, thinning), uneven-aged (group select, single tree select, overstory removal, understory removal, etc), treatment methods (ground based or skyline), time of year, type of harvest; seed tree, multiage, sanitation, etc.

**Slash management:** For this section, discuss how the slash will be addressed after a management activity. Examples include: leave slash at the stump, jackpot pile, whole tree skid, chipping, pulp. Address the large woody debris and nutrient cycling.

**Post management activities:** These could include burning landings, piles, broadcast or seeding roads and landings and/or weed spray roadsides.

**Permits:** Include a list of permits for which you applied for or will need to apply for, if necessary for the management activities outlined here.

**Best Management Practices:** Is there a wetland or stream within your management activity area? Is it properly marked and are the appropriate laws being followed? BMPs are essential to ensuring the benefits for air, soil and water that are made possible through sound management of your woods. To find the BMPs in your state, visit [www.treefarmssystem.org/woodlandresources/](http://www.treefarmssystem.org/woodlandresources/) and search by your state to find the link to BMPs.

**Monitoring:** After the management activity occurs, how often do you plan on evaluating the activity area to ensure your overall forest management goals are being met?

**Repeat the Stand Level Information sections for each stand identified on your property.**

## **Management Activity Schedule and Tracking**

This section allows you, with your forester, to create a schedule of management activities for each stand and then you can track when they were completed, what incentive programs you used (if any) and what the net cash flow was for that activity. The net cash flow is optional and only a tool to help you track the financial costs/benefits for the different management activities. If your planned activity date changes, be sure to update and include the date and a signature of when the updates were made and why.

For information on what federal incentive programs are available to woodland owners, please look at the Woodland Owners Brochure for the 2008 Farm Bill:

[http://www.treefarmssystem.org/2008FarmBill/AFFFarmBillBrochure\\_web\\_lo.pdf](http://www.treefarmssystem.org/2008FarmBill/AFFFarmBillBrochure_web_lo.pdf)

If you are planning on applying for NRCS incentive programs, then you will need to include the NRCS Practice Code. These codes can be found on the NRCS Conservation Practice Standards website (<http://www.nrcs.usda.gov/technical/standards/nhcp.html>). If you have a question about conservation practice codes, contact your local NRCS field office <http://offices.sc.egov.usda.gov/locator/app>.

Common forest practices for NRCS programs:

- [Forest stand improvement](#)
- [Tree or shrub site preparation](#)
- [Tree or shrub establishment](#)
- [Forest trails and landings](#)
- [Road/Trail/Landing Closure and Treatment](#)
- [Forest slash treatment](#)
- [Firebreak](#)
- [Fuel Break](#)
- [Prescribed burning](#)
- [Tree or shrub pruning](#)

- [Riparian forest buffer](#)
- [Silvopasture establishment](#)
- [Multi-Story Cropping](#)
- [Windbreak or shelterbelt establishment](#)
- [Windbreak or shelterbelt renovation](#)
- [Integrated Pest Management](#)
- [Wetland restoration](#)
- [Restoration and Management of Rare and Declining Habitats](#)
- [Early Successional Habitat Development/Management](#)
- [Upland Wildlife Habitat Management](#)
- [Access Control](#)
- [Access Road](#)

Each state NRCS office adds state specific information to these standards and specifications and can be viewed at the state's field office technical guide:

<http://www.nrcs.usda.gov/technical/efotg/index.html>

Some states also have state run incentive programs, for information on those, please contact your state forester ([http://www.stateforesters.org/about\\_nasf](http://www.stateforesters.org/about_nasf)).

## Signatures and Approvals

This template is provided as a tool to help you develop and then accomplish the objectives that you have for your woods. This plan will guide you in achieving the benefits of managing your woods and its related resources. With this plan, you are eligible to participate in the US Forest Service's Forest Stewardship Program, the American Forest Foundation's American Tree Farm System and NRCS incentive programs. This plan will need to be reviewed and approved by representatives for each of the programs if you chose to participate in the programs. This section provides the space for your signature and the necessary signatures to participate in your state's Tree Farm System, Forest Stewardship and NRCS incentive programs.

## References

Bennett, Karen P. editor. 2010. *Good Forestry in the Granite State: Recommended Voluntary Forest Management Practices for New Hampshire (second edition)*. University of New Hampshire Cooperative Extension, Durham, N.H. [www.goodforestry.org](http://www.goodforestry.org)

Swenson, Steve, 2009. *My Healthy Woods: A Handbook for Family Woodland Owners managing woods in Southwest Wisconsin*. A publication of the Aldo Leopold Foundation and the American Forest Foundation, Baraboo, WI.

<https://www.aldoleopold.org/Programs/myhealthywoods.shtml>

## Resources for You, the Landowner

- Forest Stewardship Program:  
<http://www.fs.fed.us/spf/coop/programs/loa/fsp.shtml>
- List of State Foresters and their contact information:  
[http://www.stateforesters.org/about\\_nasf](http://www.stateforesters.org/about_nasf)
- American Tree Farm System: [www.treefarmssystem.org](http://www.treefarmssystem.org)
- Your state American Tree Farm System contact:  
[www.treefarmssystem.org/stateleaders](http://www.treefarmssystem.org/stateleaders)
- Natural Resources Conservation Service: <http://www.nrcs.usda.gov/>
- 2008 NRCS Farm Bill Conservation Programs:  
<http://www.nrcs.usda.gov/programs/farmbill/2008/index.html>
- NRCS Conservation Practice Standards:  
<http://www.nrcs.usda.gov/technical/standards/nhcp.html> Provides information on all the different Conservation Practices and their codes.
- NRCS Field Office Technical Guide:  
<http://www.nrcs.usda.gov/technical/efotg/index.html> Technical guides are the primary scientific references for NRCS. Technical guides used in each field office are localized so that they apply specifically to the geographic area for which they are prepared..
- Woodland Owners Brochure on 2008 Farm Bill:  
[http://www.treefarmssystem.org/2008FarmBill/AFFFarmBillBrochure\\_web\\_lo.pdf](http://www.treefarmssystem.org/2008FarmBill/AFFFarmBillBrochure_web_lo.pdf)
- Woodland Owner Resources: <http://www.treefarmssystem.org/woodlandresources/> Provides information on fish, wildlife, biodiversity, special sites and Best Management Practices for you state.
- To find out information on your watershed, visit:  
<http://cfpub.epa.gov/surf/locate/index.cfm>
- **The attached appendices are additional resources for landowners.**



## Appendix 1: Glossary

**Acceptable Growing Stock:** Saleable trees that are of good form, species and quality and would be satisfactory as crop trees.

**Adaptive management:** A dynamic approach to forest management in which the effects of treatments and decisions are continually monitored and used to modify management on a continuing basis to ensure that objectives are being met (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Adverse regulatory actions:** Written warning, citations or fines issued by law enforcement or regulatory bodies.

**Aerial Photo:** Photo taken from an elevated position like on an aircraft.

**Afforestation:** the establishment of a forest or a stand in an area where the preceding vegetation or land was not forest. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Age Class:** A distinct aggregation of tree that originated at the same time, from a single natural event or regeneration activity or a grouping of trees (e.g. ten year age class) as used in inventory or management. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Aspect:** The direction that a slope faces (north, south, etc.)

**Basal Area:** The cross-sectional area of a tree, in square feet, at 4.5 feet from the ground (at breast height). When the basal area of all the trees in a stand are added together, the result is expressed as square feet of basal area per acre, which is a measure of a stand's density.

**Biomass:** A renewable energy source of biological materials derived from living, or recently living organisms, such as wood, waste, and crop residues.

**Biodiversity:** The variety and abundance of life forms, processes, functions and structures of plants, animals and other living organisms, including the relative complexity of species, communities, gene pools and ecosystems at spatial scales that range from local through regional to global (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998).

**Board Feet:** A unit for measuring wood volumes. It is commonly used to express the amount of wood in a tree, sawlog, or individual piece of lumber. A piece of wood 1 foot long, 1 foot wide, and 1 inch thick (144 cubic inches).

**Broadcast:** to spread or apply seed, fertilizer, or pesticides more or less evenly over an entire area. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Canopy:** The more or less continuous cover of branches and foliage formed collectively by the tops, or crowns of adjacent trees.

**Carbon sequestration:** the incorporation of carbon dioxide into permanent plant tissue. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Chip:** a small piece of wood used to make pulp or wood composite or fuel. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Clearcut:** 1. a stand in which essentially all trees have been removed in one operation – *note* depending on management objectives, a clearcut may or may not have reserve trees left to attain goals other than regeneration. 2. a regeneration or harvest method that



removes essentially all trees in a stand. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Contour Map:** A map where each line represents a change in elevation.

**Crop Tree:** A tree identified to be grown to maturity for the final harvest cut, usually on the basis of its location with respect to other trees and its timber quality.

**Cull:** A tree, log, lumber or seedling that is rejected because it does not meet certain specifications for usability or grade. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Culvert:** a device used to channel water. It may be used to allow water to pass underneath a road, railway, or embankment for example. Culverts can be made of many different materials; steel, polyvinyl chloride (PVC) and concrete are the most common. Formerly, construction of stone culverts was common.

**Den Tree:** A living tree with a cavity large enough to shelter wildlife.

**Desired species:** Those species of flora and fauna designated in the landowner's management plan and not known to cause negative impacts on the local environment.

**Diameter Breast Height (DBH):** The diameter of a tree at 4.5 feet above the ground.

**Endangered Species:** Any species of plant or animal defined through the Endangered Species Act of 1976 as being in danger of extinction throughout all or a significant portion of its range, and published in the Federal Register. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Even-Aged Management:** Forest management with periodic harvest of all trees on part of the forest at one time or over a short period to produce stands containing trees all the same or nearly the same age or size.

**Forest owner:** Landowner or designated representative such as, but not limited to, professional resource manager, family member, trustee, etc.

**Forest product:** [Forest Produce] Any raw material yielded by a forest. Generally defined in Forest Acts or Ordinances, and subdivided conventionally into major forest products, i.e. timber and fuelwood, and minor forest products, i.e. all other products including leaves, fruit, grass, fungi, resins, gums, animal parts, water, soil, gravel, stone and other minerals on forest land (F. C. Ford –Robertson, Terminology of Forest Science Technology, Practice, and Products, Society of American Foresters, 1971).

**Forest Stand Improvement:** See timber stand improvement.

**Forest type:** A category of forest usually defined by its trees, particularly its dominant tree species as based on percentage cover of trees, e.g. spruce fir, longleaf-slash pine, Douglas fir.

**Forest vitality:** The health and sustainability of a forest.

**Fuel management:** the act or practice of controlling flammability and reducing resistance to control of wildland fuels through mechanical, chemical, biological, or manual means, or by fire in support of land management objectives. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Group Select:** trees are removed and new age classes are established in small groups – *note* – 1. the width of groups is commonly approximately twice the height of the mature trees with smaller openings providing microenvironments suitable for tolerant regeneration and larger openings providing conditions suitable for more intolerant regeneration – *note* 2. the management unit or stand in which regeneration, growth, and

yield are regulated consists of an aggregation of groups. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Girdling:** Completely encircling the trunk of a tree with a cut that severs the bark and cambium of the tree. Herbicide is sometimes injected into the cut to ensure death of the tree.

**GPS (Global Positioning System) Coordinates:** a commonly hand held, satellite based navigational device that records x, y, z coordinators and other data allowing users to determine their location on the surface of the earth. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Hack-n-squirt:** A tree treatment method where an axe or hatchet is used to make "hacks" (injections) into the tree's cambium layer. A plastic "squirt" bottle is used to spray a specific amount of herbicide into the cuts placed around the tree.

**Harvesting:** the felling skidding, on-site processing, and loading of trees or logs onto trucks. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**High conservation value forests (HCVF):** Forests of outstanding and critical importance due to their environmental, social, biodiversity or landscape values. Due to the small scale and low-intensity of family forest operations, informal assessment of HCVF occurrence through consultation with experts or review of available and accessible information is appropriate.

**High-grading:** Cutting only the high-value trees from a forest property, leaving a stand of poor quality with decreased future timber productivity.

**Incentive Programs:** State and federal agencies will offer landowners the opportunity to apply for incentive programs that will provide support and financial assistance to implement forestry and agroforestry related practices through conservation programs. Assistance can also provided for multi-year and permanent easements to conserve forest land to meet program goals. For more information on the federal incentive programs, see Appendix 4.

**Integrated Pest Management:** The maintenance of destructive agents, including insects, at tolerable levels by planned use of a variety of preventative, suppressive, or regulatory tactics and strategies that are ecologically and economically efficient and socially acceptable (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998). A pest control strategy that uses a variety of complementary strategies including: mechanical devices, physical devices, genetic, biological or cultural management and chemical management (US EPA).

**Intermediate Cut:** Removing immature trees from the forest sometime between establishment and stand harvest to improve the quality of the remaining forest stand. Contrast this technique with a harvest cut.

**Invasive species:** Non-native species whose introduction does or is likely to cause economic or environmental harm or harm to human health (Executive Order 13112 (Feb. 3, 1999). **Invasive Species:** is a species that is 1) non-native (or alien) to the ecosystem under consideration and 2) whose introduction causes or is likely to cause economic or environmental harm or harm to human health. Invasive species can be plants, animals, and other organisms (e.g., insects, microbes, etc.). Human actions are the primary means of invasive species introductions. (Invasive Species Definition Clarification and Guidance White Paper Submitted by the Definitions Subcommittee of the Invasive Species Advisory Committee (ISAC), Approved by ISAC Apr 27, 2006.)

**Landings:** a cleared area in the forest to which logs are yarded or skidded for loading onto trucks for transport. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Landowner:** Entity that holds title to the property for which the management plan is being written.

**Large woody debris:** any piece(s) of dead woody material, e.g. dead boles, limbs and large root masses, on the ground in the forest stands or in streams. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Log Rules:** A table showing estimated amount of lumber that can be sawed from logs of given lengths and diameters. Two log rules are commonly used in Missouri:

***Doyle Rule*** is a simple formula rule used in the eastern United States. It underestimates the amount of lumber in small logs and overestimates large logs.

***International 1/4-inch Rule*** is a formula rule allowing 1/2 –inch taper for each 4 feet of length and 1/16-inch shrinkage for each one-inch board. This measure approximates the actual sawmill lumber tally.

**Management plan:** Documents that guide actions and that change in response to feedback and changed conditions, goals, objectives and policies. Management plans may incorporate several documents including, but not limited to, harvest plans, activity implementation schedules, permits, research, etc. For the purposes of the American Tree Farm System® eligible management plans, plan amendments may include letters, notes, and other forms of informal updates in addition to formal plan revisions.

**Mast:** Nuts of trees, such as oak, walnut, and hickory, that serve as food for many species of wildlife.

**Mature Tree:** A tree that has reached the desired size or age for its intended use.

**MBF:** Abbreviation for 1,000 board feet.

**Noxious plant (weed):** a plant specified by law as being especially undesirable, troublesome and difficult to control (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Nutrient cycle:** the exchange or transformation of elements among the living and nonliving components of the ecosystem. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Overstocked:** A forest stand condition where too many trees are present for optimum tree growth.

**Overstory:** That portion of the trees in a stand forming the upper crown cover.

**Overstory removal:** the cutting of trees constituting an upper canopy layer to release trees or other vegetation in an understory. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Pesticide:** Pesticides include chemicals commonly known as herbicides and insecticides.

**Pole Timber:** Trees from 6 inches to 12 inches in diameter at breast height.

**Prescribed Burn/Fire:** To deliberately burn natural fuels under specific weather conditions, which allows the fire to be confined to a predetermined area and produces the fire intensity to meet predetermined objectives. A fire ignited by management to meet specific objectives (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998).

**Pruning:** Removing live or dead branches from standing trees to improve wood quality.

**Pulpwood:** Wood cut primarily for manufacture of paper, fiberboard, or other wood fiber products.

**Qualified contractor:** Forest contractors who have completed certification, licensing, recommended training and education programs offered in their respective states.

**Qualified natural resource professional:** A person who by training and experience can make forest management recommendations. Examples include foresters, soil scientists, hydrologists, forest engineers, forest ecologists, fishery and wildlife biologists or technically trained specialists in such fields.

**Qualified Tree Farm inspector:** A natural resource professional who has completed ATFS required training for certifying forested properties and is eligible to inspect properties on behalf of ATFS. ATFS requires all trained inspectors meet approved eligibility requirements.

**Rangeland:** Land on which the historic climax plant community is predominantly grasses, grasslike plants, forbs, or shrubs. Includes lands revegetated naturally or artificially when routine management of that vegetation is accomplished mainly through manipulation of grazing. Rangelands include natural grasslands, savannas, shrublands, most deserts, tundra, alpine communities, coastal marshes, and wet meadows

**Rare species:** A plant or animal or community that is vulnerable to extinction or elimination.

**Reforestation:** the reestablishment of forest cover either naturally (by natural seeding, coppice, or root suckers) or artificially (by direct seeding or planting) – *note* reforestation usually maintains the same forest type and is done promptly after the previous stand or forest was removed. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Regeneration:** The number of seedlings or saplings existing in a stand. The process by which a forest is renewed by direct seeding, planting, or naturally by self-sown seeds and sprouts.

**Regeneration Cut:** Any removal of trees intended to assist regeneration already present or to make regeneration possible.

**Release:** To free trees from competition by cutting, removing, or killing nearby vegetation.

**Riparian:** related to, living or located in conjunction with a wetland, on the bank of a river or stream but also at the edge of a lake or tidewater – *note* the riparian community significantly influences and is significantly influenced by, the neighboring body of water. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Riparian Zone:** The area adjacent to or on the bank of rivers and streams.

**Sapling:** Trees from 2 inches to 6 inches in diameter at breast height.

**Sawtimber:** Trees at least 12 inches in diameter at breast height from which a sawed product can be produced.

**Scale:** The extent of forest operations on the landscape/certified property.

**Seedling:** a young plant.

**Seed-tree Harvest:** A harvest and regeneration method where nearly all trees are removed at one time except for scattered trees to provide seed for a new forest.

**Selection Harvest:** Harvesting trees to regenerate and maintain a multi-aged structure by removing some trees in all size classes either singly or in small groups.

**Shelterwood Harvest:** A harvesting and regeneration method that entails a series of partial cuttings over a period of years in the mature stand. Early cuttings improve the vigor and seed production of the remaining trees. The trees that are retained produce seed and also shelter the young seedlings. Subsequent cuttings harvest shelterwood trees and allow the regeneration to develop as an even-aged stand.

**Single Tree Selection:** Individual trees of all size classes are removed more or less uniformly throughout the stand, to promote growth of remaining trees and to provide space for regeneration. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Site Index:** An expression of forest site quality based on the height of a free-growing dominant or co-dominant tree at age 50 (or age 100 in the western United States).

**Skid:** 1. to haul a log from the stump to a collection point (landing) by a skidder. 2. a load pulled by a skidder. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Skid Trail:** A road or trail over which equipment or horses drag logs from the stump to a landing.

**Skidding:** Pulling logs from where they are cut to a landing or mill.

**Skyline:** harvesting a cableway stretched tautly between two points, such as yarding tower and stump anchor, and used as a track for a block or skyline carriage. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Slash:** the residue, e.g., treetops and branches, left on the ground after logging or accumulating as a result of storm, fire, girdling, or delimbing. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Snag:** a standing, generally un-merchantable dead tree from which the leaves and most of the branches have fallen – *note* for wildlife habitat purposes, a snag is sometimes regarded as being at least 10 inches in diameter at breast height and at least 6 feet tall; a hard snag is composed primarily of sound wood, generally merchantable, and a soft snag is composed primarily of wood in advanced stages of decay and deterioration. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Soil Compaction:** The process by which the soil grains are rearranged, resulting in a decrease in void space and increasing bulk density. Can occur from applied loads, vibration or pressure from harvesting or site preparation equipment. Compaction can cause decreased tree growth, increased water runoff and soil erosion. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Soil map:** A map showing the distribution of soils or other soil map units in relation to prominent physical and cultural features of the earth's surface. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Special sites:** Those areas offering unique historical, archeological, cultural, geological, biological or ecological value. Special Sites include:

- A. Historical, archaeological, cultural and ceremonial sites or features of importance to the forest owner;
- B. Sites of importance to wildlife such as rookeries, refuges, fish spawning grounds, vernal ponds and shelters of hibernating animals;
- C. Unique ecological communities like relic old-growth, springs, glades, savannas, fens and bogs; and
- D. Geological features such as terminal moraines, cliffs and caves.



**Stand:** A group of trees with similar characteristics, such as species, age, or condition that can be distinguished from adjacent groups. A stand is usually treated as a single unit in a management plan.

**Stand Density:** A measure of the stocking of a stand of trees based on the number of trees per area and diameter at breast height of the tree of average basal area.

**Stand Management Recommendations:** The recommended management activities that should be done in that stand, based on the landowner's goals and objectives.

**Stand Structure:** The horizontal and vertical distribution of plants in the forest, including the height, diameter, crown layers, and stems of trees, shrubs, understory plants, snags and down woody debris. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**State forestry best management practice(s) (BMPs):** Forestry BMPs are generally accepted forest management guidelines that have been developed by state forestry agencies with broad public stakeholder input.

**Stocking:** An indication of the number of trees in a stand in relation to the desirable number of trees for best growth and management.

**Sustainability:** The capacity of forests, ranging from stands to ecoregions, to maintain their health, productivity, diversity and overall integrity, in the long run, in the context of human activity (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998).

**Sustainable forest management:** The practice of meeting the forest resource needs and values of the present without compromising the similar capability of future generations (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998). *Note –* AFF's Standards of Sustainability reflect criteria of sustainability based on the Montreal Process, 1993, and the Pan-European Operational- Level Guidelines (PEOLGs).

**Thinning:** a cultural treatment made to reduce stand density of trees primarily to improve growth, enhance forest health, or recover potential mortality. Types of thinning include: chemical, crown, free, low, mechanical, selection. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Threatened Species:** A plant or animal species that is likely to become endangered throughout all or a significant portion of its range within the foreseeable future. A plant or animal identified and defined in the Federal Register in accordance with the Endangered Species Act of 1976. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Timber Stand Improvement (TSI):** A thinning made in immature stands to improve the composition, structure, condition, health, and growth of the remaining trees.

**Undesirable Growing Stock:** Trees of low quality or less valuable species that should be removed in a thinning.

**Understocked:** Insufficiently stocked with trees.

**Understory:** all forest vegetation growing under an overstory. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Uneven-Aged Management or Stand:** A stand of trees containing at least three age classes intermingled on the same area.

**Visual quality measures:** Modifications of forestry practices in consideration of public view, including timber sale layout, road and log landing locations, intersections with

public roadways, distributing logging residue, tree retention, timing of operations and other factors relevant to the scale and location of the project.

**Volume:** The amount of wood in a tree, stand of trees, or log according to some unit of measurement, such as board foot, cubic foot, etc.

**Watershed:** the area of land where all of the water that is under it or drains off of it goes into the same place. For example the Mississippi River watershed includes all the land that drains into the Mississippi River. This watershed is the fourth largest in the world and includes water from 31 states.

**Wetland:** A transitional area between water and land that is inundated for periods long enough to produce wet soil and support plants adapted to that environment. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

**Wolf Tree:** A very large, overmature tree that is or was open grown. These trees tend to have large full crowns and numerous branches.

**Woody Debris:** Any piece(s) of dead woody material (e.g. dead tree trunk, limbs, large root ball) on the ground in the forest or in streams. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)

## **Appendix 2 Tax and Business Management**

Woodland owners have to deal with property taxes, income tax for timber harvests and other revenue generating activities, and estate taxes when properties are passed on to future generations. This section was developed to help you consider the tax implication for your property when you are planning for the management of your property.

Some states have special tax programs that can be used by woodland owners to help minimize their tax liability. Be sure to include the program information here in your plan if you choose to participate.

Consider addressing the following in your plan:

1. **Property tax:** The forest management plan should document the current tax status of the property. Your state might have specific property tax programs that you may be eligible to participate in. Please be aware of the program rules and regulations.
2. **Income tax:** Include a statement that timber harvest and other revenue generating activities generally produce a federal and state income tax liability. Tax credits may be available for some management activities.
3. **Federal and State Incentive Programs:** There is tax implication for participating so be aware of those implications.
4. **Estate tax:** Good estate planning can help to lessen tax liability when passing land to heirs and landowners should seek good planning and tax advice.
5. **Record keeping:** Good record keeping can help landowners manage their assets, increase their revenues, and minimize their tax liability.
6. **Land Use:** Document the land use classifications of the property from the county land use plan.

It is recommended that you work with a professional tax advisor who can assist you in developing this section.



## Appendix 3 Timber Sale Contract Checklist for Private Landowners and Loggers

The following is a checklist of issues private landowners and logging contractors may want to consider on a logging contract. Each of the items should be addressed in a contract to allow for a minimum probability of a dispute. **Issues can be as detailed as both parties find acceptable and economically feasible.**

\_\_\_ **Property location and legal description are clearly defined**

Include Tree Farm certification number if applicable.

\_\_\_ **Property boundaries and harvest units are clearly and accurately marked**

Logging trespass can result in a minimum cost of 3x value of trees.

\_\_\_ **Property ownership is documented and type of ownership is specified**

Either individual, partnerships, corporations, etc.

\_\_\_ **Insurance is documented**

Any contractor working for a landowner must have Commercial General Liability \$1 –million, Loggers Broad Form Property Damage Liability \$1-million, Workers' Compensation \$100,000 or an Independent Contractor Exemption, and Automobile Liability \$1-million. If they do not have these, the landowner will be held liable for any damage or personnel injury that may occur. Insurance can be written to include owner and consulting forester.

\_\_\_ **Access to the property/harvest unit are specified and documented**

To avoid trespass or the disturbance of sensitive area access routes should be clearly delineated. If access across other ownerships is required, written and notarized documentation of access permission should be obtained.

\_\_\_ **Type of harvest is clearly specified for each stand**

Typically trees are marked both at eye level and on the stump, or harvest tree characteristics are defined by species, diameter, crown characteristic, or residual tree spacing.

\_\_\_ **Timing of harvest is specified**

Dates when harvesting and/or other treatments need to be conducted or completed by.

\_\_\_ **Residual property specifications should be defined**

This is as detailed as the landowner and contractor can agree upon. Issues can be the completeness of residual logging debris disposal, burn pile rehabilitation, grass seeding, skid trail rehab, noxious weed control, tree planting, noncommercial thinning, access roads- does the logger need to do repairs and bring them up to a particular standard or are they required to put them to bed and pull up the culverts?

- \_\_\_\_ **Best Management Practices (BMP's) responsibilities are designated**  
Compliance to state BMP's is ultimately the landowners responsibility but should be specified in the contract.
  - \_\_\_\_ **Performance bond or contract penalty**  
Create some provision for compensation to the landowner for harvesting activities that deviate from specifications. Having the contractor post a bond is the best protection for the landowner but imposes a risk on the contractor.
  - \_\_\_\_ **Method of payment is clearly defined**  
Could include: **Lump sum** is one payment for the entire estimated log volume, this method may over or underestimate actual value but is simple and can be demanded in advance of the actual harvesting. **Payment by unit** is where payment for logs occurs based upon the actual scaled logs at the mill. Either the contractor pays an agreed upon percentage to the landowner or the mill pays agreed upon percentages separately to the contractor and landowner. Downfall is that in cases of salvaging dead and dying trees a delayed harvesting job can result in losses of standing tree value.
  - \_\_\_\_ **Method of scaling is defined**  
Either direct scaling or weight scaling are used. Direct scaling tends to be more accurate though each mill may use different defect deductions. Weight scaling works for large volume sales that have trees of similar species and diameter. In general logs should be trucked to the mill quickly following harvest or they lose significant water weight or for most accurate conversions a continuous representative sample of logs should be check scaled and weighed.
  - \_\_\_\_ **Notification**  
It is defined if and when the contractor or landowner needs to notify the other party about when activities are to start or end and the type of format – written, e-mail, telephone. This is to avoid issues with blocked access, noise, special sites, etc.
  - \_\_\_\_ **Expiration date**  
Any contract should have a defined end date after which the contract is no longer valid.
  - \_\_\_\_ **Notarization**  
Any legally binding document should have signatures notarized.
- \*\*\* This is simply a recommended check list compiled from a variety of sources including the Montana Logging Association. Any contract can be challenged. It is always advised that a contract be reviewed by an attorney. You may also want an attorney's fees recovery statement in the document that will allow for recovery of legal fees should a dispute require legal action. \*\*\*

## **Appendix 4: The USDA Farm Bill: What is in it for Woodland Owners**

# Managing Your Woodlands:

## A template for your plans for the future

**Owner(s) Name(s)** \_\_\_\_\_

Owner(s) Mailing Address(es) \_\_\_\_\_

\_\_\_\_\_

Owner(s) Phone Number(s) \_\_\_\_\_

Owner(s) Email(s) \_\_\_\_\_

Owner(s) Signature(s) \_\_\_\_\_

**Plan Author** \_\_\_\_\_

Plan Author Mailing Address \_\_\_\_\_

\_\_\_\_\_

Plan Author Phone Number \_\_\_\_\_

Plan Author Email \_\_\_\_\_

Plan Author Signature \_\_\_\_\_

Date of Original Plan Completion \_\_\_\_\_ Revision date(s) \_\_\_\_\_

*Please note:* Informal updates to the plan can be made with handwritten notes. Be sure to include a date and initial these notes throughout the management plan.



## TABLE OF CONTENTS

Property Description .....	2
Property History .....	3
Forest Management Goals .....	3
Property Map(s) .....	4
Forest Natural Resources Enhancement and Protection .....	5
Protect Special Sites & Social Considerations .....	5
Air, Water, and Soil Protection .....	6
Fish, Wildlife and Biodiversity .....	7
Management of Forest Resources .....	7
Other .....	8
Stand Level Information .....	9
Stand 1 Objectives .....	9
Stand 1 Current Conditions .....	9
Stand 1 Desired Future Stand Condition .....	10
Stand 1 Forest Management Activities .....	11
Management Activity Schedule and Tracking .....	13
Signatures and Approvals .....	14

**This template should be used in association with the landowner and the forester guides which include detailed instructions on how to correctly complete the template to develop a management plan that will meet the requirements for the American Tree Farm System (ATFS), Natural Resources Conservation Service (NRCS) and the US Forest Service. Please refer to the guide when working with your forester or natural resource professional to develop your plan.**

This template was developed by the US Forest Service, Natural Resources Conservation Service (NRCS), and the American Forest Foundation's American Tree Farm System (ATFS) using information from the following state joint Forest Stewardship, ATFS and NRCS templates:

- Mississippi Forest Stewardship Management Plan developed by the Mississippi Stewardship Forest, Mississippi Forestry Commission and the US Forest Service
- Missouri Common Forest Plan Format developed by the Missouri Department of Conservation and NRCS
- Montana Forest Stewardship Plan/Tree Farm Plan developed by the Montana Forest Stewardship Program, Montana Tree Farm Program, Montana State University Extension, Montana DNRC, US Forest Service and NRCS
- Oregon Forest Stewardship Plan Template developed by Oregon State University Forestry Extension Program

Thanks to the following reviewers: Tim Albritton, Dean Berry, Karen Bennett, Jill Butler, Dave Casey, Linda Casey, Jim Cathcart, Bill Chaney, Wade Conn, Dean Cumbia, Robert Etheridge, Jonas Feinstein, Carri Gaines, Nate Goodrich, Andy Henriksen, Joe Holmberg, Debra Huff, Gary Johnson, Bob Logar, Leah MacSwords, Naomi Marcus, Carol Nielsen, James Poole, Robert Radspinner, S.R. Raymond, George Rheinhardt, Steve Smith, Raymond Sowers, Rich Steensma, Pam Synder, Rob Wait, Doug Wallace, and Daniel Wand.

# Property Description

Legal property description \_\_\_\_\_

\_\_\_\_\_

Nearest city or town \_\_\_\_\_

Tax Parcel Number (*optional*) \_\_\_\_\_

FSA Farm and Tract Numbers (*if applicable*) \_\_\_\_\_

GPS coordinates (*optional*) \_\_\_\_\_

Total ownership acreage \_\_\_\_\_ Total forested acreage \_\_\_\_\_

Total acreage covered by this plan \_\_\_\_\_

Number of unique stands of trees \_\_\_\_\_

Do you reside on the property? ☐ ☐  
Yes No

Basic topography (estimate percent of total acreage that is)

Complex topography (many steep ravines and aspects) ☐

Simple topography (few ravines and changes of aspect) ☐

Percent of land that is Flat (<5% grade) \_\_\_\_\_ Gentle Slope (6 to 20% grade) \_\_\_\_\_

Steep Slope (> 21% grade) \_\_\_\_\_

Road Conditions (check): ☐ Excellent (80% accessible) ☐ Good (at least 50%)

☐ Fair (at least 25%) ☐ Poor (less than 10%)

Estimated improved road length (bulldozed with graveled surface) \_\_\_\_\_

Estimated unimproved road length (bulldozed with but original soil/bedrock) \_\_\_\_\_

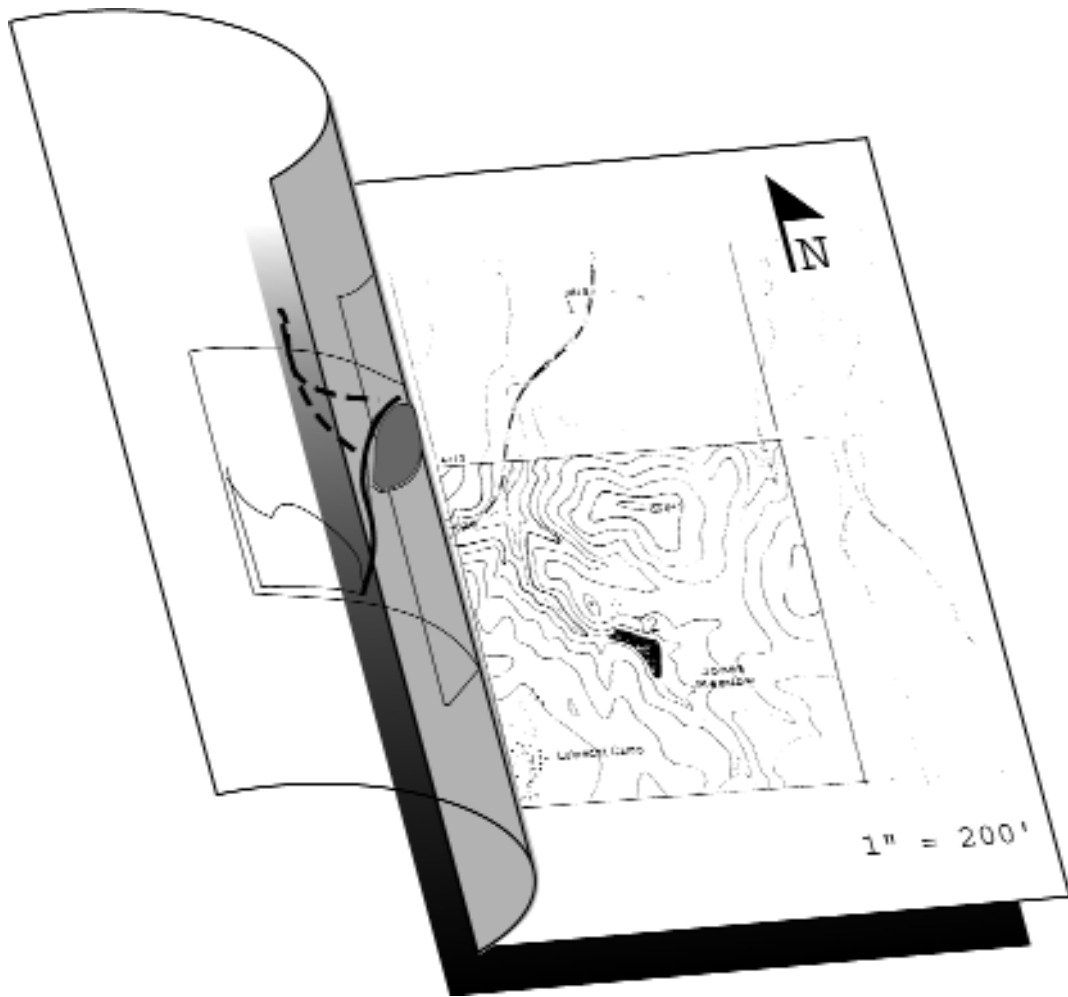
Which watershed is the property located in (include appropriate watershed unit for your state):

\_\_\_\_\_

## This image shows a single sheet of white paper with horizontal blue ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

[illegible]

## Property Map(s)



Attach property map(s) here.



## Forest Natural Resources Enhancement and Protection

This section relates to the natural resource elements found **throughout the entire property**. Some of the treatments related to these resources may qualify for federal and state incentive programs. For this section, include appropriate activities and treatments in the Management Activity Schedule and Tracking table as well as on the map(s). Complete the Activity Schedule and draw and label the areas of management on the map if using this plan as part of an incentive program application. There is no need to repeat this information in the stand specific section.

For each resource element, consider:

1. *What treatments/monitoring/protection are planned?*
2. *When will you implement treatments (season, year), follow-up activities, etc?*
3. *Where will the management take place: entire stand, part of a stand, acres?*
4. *Do you have applicable permits, professional assistance, and applications for the incentive programs?*

### Protect Special Sites & Social Considerations

Special sites

---

---

---

---

---

---

Adjacent stand or ownership concerns

---

---

---

---

---

---

Recreation

---

---

---

---

Access

---

---

## **Air, Water, and Soil Protection**

*What **goals** do you have, or what **steps will you take** to conserve, protect and enhance your forest's air, water and soil resources?*

Soil protection

---

---

---

---

Roads

---

---

---

---

Streams, wetlands, ponds, lakeshore

---

---

---

---

---

Effects of Natural Disasters

---

---

---

---

---

Rangeland Resources (if applicable)

---

---

---

---

---

(optional) Carbon sequestration

---

---

---

---

## **Fish, Wildlife and Biodiversity**

*Describe the resources on your property and the activities you are planning to accommodate your goals.*

Fish & Wildlife

---

---

---

---

---

---

State and Federal threatened or endangered species - plants or animals

---

---

---

---

## **Management of Forest Resources**

Protection from Pests

---

---

---

---

---

Reforestation and Afforestation

---

---

---

---

---

*(optional)* Prescribed Fire/Burns

---

---

---

---

---

Management Plan Implementation Constraints

---

---

---

---

---

---

---

**Other**

---

---

---

---

---

---

---

## Stand Level Information

For each stand, write what your management objectives are and a brief description of the stand and its current and desired future conditions as well as the management activities. Further detailed inventory/plot data can be included if desired.

### Stand 1 Objectives

Stand 1 \_\_\_\_\_ Acres \_\_\_\_\_

Objectives: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

### Stand 1 Current Conditions

General description

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Current forest type and current age

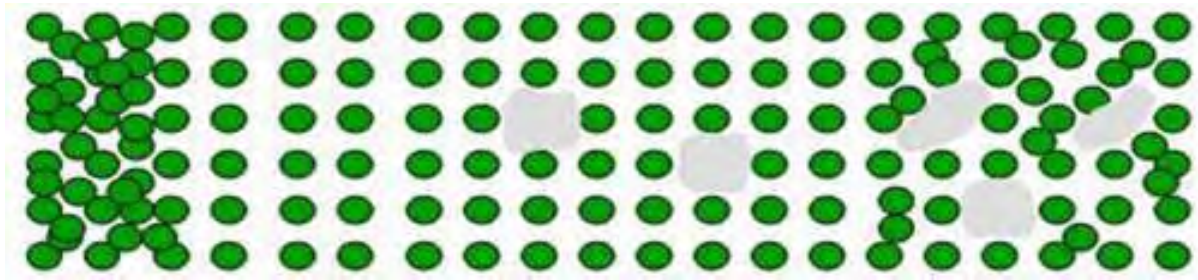
Forest Type

Age

_____	_____
_____	_____
_____	_____

### Bird's-eye view of current stand condition (check one)

- ☐ Wild stand
 ☐ Evenly spaced
 ☐ Evenly spaced with openings
 ☐ Variable density spaced with openings



**Current spacing (in feet)** Large (>9"DBH) \_\_\_\_\_(ft) Pole (5-8"DBH) \_\_\_\_\_(ft) Seedling (<5"DBH) \_\_\_\_\_(ft)  
 Size and shape of openings \_\_\_\_\_

Current structure:



- ☐ One canopy layer
 ☐ Two canopy layer
 ☐ Multi-layer/Unevenaged

### Stand 1 Desired Future Stand Condition

Desired forest type and expected longevity

Forest Type

Age

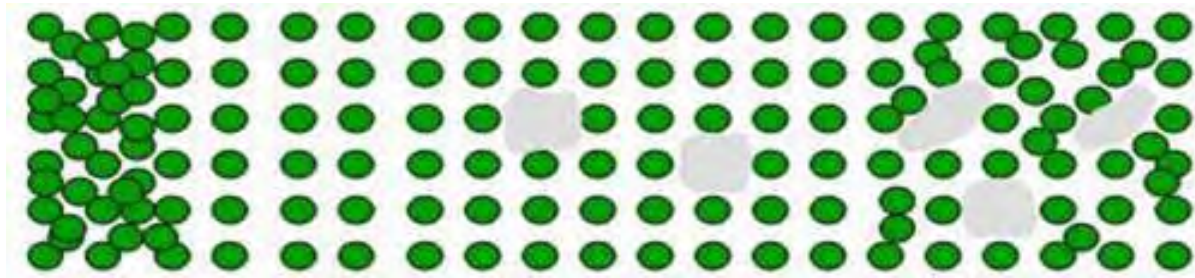
_____	_____
_____	_____
_____	_____

Desired species to naturally regenerate \_\_\_\_\_

Desired species to plant \_\_\_\_\_

**Bird's-eye view of desired future stand condition** (check one)

- ☐ Wild stand     
 ☐ Evenly spaced     
 ☐ Evenly spaced with openings     
 ☐ Variable density spaced with openings



**Desired spacing (in feet)** Large (>9"DBH) \_\_\_\_\_(ft) Pole (5-8"DBH) \_\_\_\_\_(ft) Seedling (<5"DBH) \_\_\_\_\_(ft)

Size and shape of openings \_\_\_\_\_

**Desired structure:**



- ☐ One canopy layer   
 ☐ Two canopy layer   
 ☐ Multi-layer/Unevenaged

**Other Desired Stand Descriptions:** \_\_\_\_\_

---



---



---

**Stand 1 Forest Management Activities**

*If a subset of the stand is being treated, the general area can either be described or identify the impacted areas on your map*

**Forest Health Management Activities**

---



---



---



---

Harvesting

---

---

---

---

Slash management

---

---

---

---

Post harvest activities

---

---

---

---

Permits

---

---

---

Best Management Practices

---

---

---

Monitoring

---

---

Add more pages as needed for each additional stand of trees.



## Management Activity Schedule and Tracking

[illegible]

**Add more pages as needed.** \*NRCS Practice Code needed if practice will be submitted for a NRCS incentive program, otherwise leave blank.

# Signatures and Approvals

---

---

## Landowner

I have reviewed this plan and believe the management recommendations will help me meet my goals and objectives for my property. I agree to follow this plan to ensure the sustainability of my management.

\_\_\_\_\_  
Landowner

\_\_\_\_\_  
Date

---

---

## Forest Stewardship Program

I certify that this Forest Management Plan meets the requirements of the federal Forest Stewardship Program.

\_\_\_\_\_  
Plan Author

\_\_\_\_\_  
Date

I certify that this Forest Management Plan meets the requirements of the federal Forest Stewardship Program.

\_\_\_\_\_  
State Forestry Representative

\_\_\_\_\_  
Date

Forest Stewardship Tracking Number: (if necessary) \_\_\_\_\_

---

---

## NRCS Incentive Programs

I certify that this Forest Management Plan meets the requirements of the USDA Environmental Quality Incentives (EQIP) Program and/or the Quality Criteria for forest activity plans in Section III of the USDA NRCS Field Office Technical Guide.

\_\_\_\_\_  
Technical Service Provider

\_\_\_\_\_  
Number

\_\_\_\_\_  
Date

\_\_\_\_\_  
District Conservationist

\_\_\_\_\_  
Date

---

---

## American Tree Farm Program

I certify that this Forest Management Plan meets the requirements of the American Forest Foundation's American Tree Farm System.

\_\_\_\_\_  
ATFS Inspecting Forester

\_\_\_\_\_  
Number

\_\_\_\_\_  
Date

Certified Tree Farm Number: (e.g. AL 1234) \_\_\_\_\_

Date of ATFS Certification: \_\_\_\_\_

**Grazing Management Plan  
Practice Activity Code (110) (No.)**

**1. Definition**

A grazing management plan is a site specific conservation plan developed for a client which addresses one or more resource concerns on land where grazing related activities or practices will be planned and applied.

The grazing management plan will:

- A. Meet NRCS quality criteria for soil erosion control, water quality, fish and wildlife, rangeland/pasture/grazed woodland health and productivity, and other identified resource concerns.
- B. Will be developed following the principle provided in Chapter 11 of the National Range and Pasture Handbook.
- C. Comply with federal, state, tribal, and local laws, regulations, and permit requirements.
- D. Meet the client's objectives.

**2. Grazing Management Plan Technical Criteria**

This section establishes the minimum criteria to be addressed in the development of Grazing Management Plans.

- A. General Criteria: A Grazing Management Plan shall be developed by certified Technical Service Providers (TSPs). In accordance with Section 1240 (A), the Environmental Quality Incentive Program (EQIP) program provides funding support through contracts with eligible producers to obtain services of certified TSPs for development of Grazing Management Plans. The specific TSP criteria required for Grazing Management Plan development is located on the TSP registry (TechReg) web site at:  
<http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/technical/tsp>
- B. Background and site information
  - 1. Landowner information – name, address, operation, size
  - 2. Location and plan map of parcel
- C. Identify Client Objectives such as:
  - 1. Improve forage yield, quality, diversity, and persistence.
  - 2. Meet livestock nutritional needs.
  - 3. Maximize browse, forage and roughage pasture yields.
  - 4. Improve production cost efficiency.
  - 5. Maintain or improve wildlife habitat.
  - 6. Maintain or improve water quality
  - 7. Prevent or reduce erosion
  - 8. Others as appropriate
- D. Existing Conditions
  - 1. Consult Ecological Site Description as reference condition

2. Vegetative species, diversity, and condition by land use, ecological site and forage suitability group.
3. Animal types, (breed and species including wildlife) and number
4. Acres available
5. Waste handling and storage
6. Watering system
7. Fencing
8. Documentation of existing practices/history/grazing records
9. Current forage and roughage conditions
10. Current Animal demand/forage balance (livestock and wildlife)
11. All Resource concerns (not meeting Quality Criteria)

E. Desired Future Conditions

1. Record Keeping
2. Monitoring Plan
3. O & M for practices
4. Nutrient Management as applicable
5. Fencing
6. Animal Demand / Forage/Roughage Balance
7. Adequate Water Source(s)
8. Plant species composition

F. Grazing Land Planning Documentation

1. Conservation plan map –scale, north arrow, planned and existing boundaries, fields, paddocks, watering systems, fence, land use, appropriate map symbols, identification of forage suitability groups and/or ecological sites by field
2. Grazing distribution and key grazing sites and species
3. Soils map – legend, interpretations, forage suitability index for grazing activities, ecological site descriptions
4. Resource Concerns addressed by the conservation plan
5. Contingency plans for winter, drought, fire, flood mud, mortality, bio- security, etc.
6. Planned Animal demand /forage balance (livestock and wildlife)
7. Conservation plan (record of decisions) (*MsWord Document*) to address the resource needs for the “Grazing Management Plan”. The record of decisions shall include the planned practice, schedule for implementation, and site-specific specifications to apply the conservation practice. The site-specific specifications can be on an NRCS Jobsheet available for the conservation practice or in a narrative form for the non-engineering type practices. Planned engineering type practices shall include the conservation practice, schedule of implementation, and identified on the plan map. The plan may include, but are not limited to the conservation practices listed below:

\* Practices requiring site-specific specifications:

Code	Practice Name
314	Brush Management
315	Herbaceous Weed Control
382	Fence
511	Forage Harvest Management

Conservation Systems are reviewed periodically, and updated if needed. To obtain the current version of this system, contact your Natural Resources Conservation Service State Office, or visit the Field Office Technical Guide.

512	Forage and Biomass Planting
528	Prescribed Grazing
548	Grazing Land Mechanical Treatment
550	Range Planting

8. Additional practices for planning consideration but not requiring site-specific specifications include:

Code	Practice name
322	Channel Bank Vegetation
338	Prescribed Burning
342	Critical Area Planting
378	Pond
380	Windbreak/Shelterbelt Establishment
381	Silvopasture Establishment
382	Fence
390	Riparian Herbaceous Cover
394	Firebreak
395	Stream Habitat Improvement and Management
472	Access Control
516	Pipeline
561	Heavy Use Area Protection
574	Spring Development
575	Animal Trails and Walkways
580	Streambank and Shoreline Protection
590	Nutrient Management
595	Integrated Pest Management
614	Watering Facility
642	Water Well
644	Wetland Wildlife Habitat Management
645	Upland Wildlife Habitat Management
657	Wetland Restoration
658	Wetland Creation
659	Wetland Enhancement

### 3. Deliverables for the Client – a hardcopy of the plan that includes:

- Cover page – name, address, phone of client and TSP; Total Acres of the Plan, signature blocks for the TSP, producer, and a signature block for the NRCS acceptance.
- Soils map and appropriate soil descriptions
- Resource assessment results (wind and water erosion, water availability, soil fertility, and others that may be needed)
- For the practices listed above that require site-specific specifications prepare and document the site-specific specifications on how each practice will be applied; when the practice will be applied, and the extent (acres or number) that will be applied.

Conservation Systems are reviewed periodically, and updated if needed. To obtain the current version of this system, contact your Natural Resources Conservation Service State Office, or visit the Field Office Technical Guide.

- For all other planned practices identify in the plan when the practice will be applied, the extent, the practice location, and for structural practices locate the practice on the conservation plan map.

**3. Deliverables for NRCS Field Office:**

- Complete Hardcopy and Electronic copy of the client's plan (MsWord copy) and other appropriate digital supporting documents.
- Digital Conservation Plan Map with fields, features, and structural practices located.
- Digital Soils Map.

## **Integrated Pest Management Plan Criteria**

### **Practice/Activity Code (114) (No.)**

#### **1. Definition:**

An Integrated Pest Management (IPM) plan is a conservation activity plan documenting decisions by producer/growers who agree to implement an ecosystem-based strategy that is a sustainable approach to manage pests using a combination of conservation practices and IPM techniques that are characterized as chemical tools, biological control, and habitat manipulation, modification of cultural practices and use of resistant varieties. Methods of chemical applications are selected in a manner that minimizes risks to human health, beneficial and non-target organisms, and the environment. The “Integrated Pest Management activity plan” will:

- Meets NRCS quality criteria for soil erosion, water quality, air quality, and plant quality;
- Comply with federal, state, tribal, and local laws, regulations and permit requirements;
- Addresses operator’s objectives.

Producers choose to implement an Integrated Pest Management Plan for reasons that include, but are not limited to:

- Managing pests effectively and economically;
- Minimizing the risk associated with pest suppression;
- Producing quality commodities;

#### **2. IPM Plan Criteria**

This section establishes the minimum criteria to be addressed in the development and implementation of Integrated Pest Management Plans developed by a certified Technical Service Provider (TSP). Complete the Integrated Pest Management Plan (114) template provided that includes the following items:

- Background and site information;
- Farm location and mailing address;
- Soils Map and soil map units description using the Web Soil Survey <http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm> as a minimum printout the Soil Report > AOI Inventory > Map Unit Descriptions
- Digital Conservation plan map with;
  1. Streams, surface waters, surface drainage, and wetlands on or adjacent to site. Locations of sensitive resource areas identified on the plan map to include:
  2. Streams, drains, surface waters, wetlands, wells, groundwater, drains, grassed waterways and existing buffer practices;
  3. Sensitive wildlife habitat (on and off-site), food plots;
  4. Potential off-target drift areas;
  5. Property lines, field Boundaries, name/number, acres, and land use
  6. Map scale
  7. Structural practices located on Map

## 8. Legend

- Identification of beneficial predators and parasites;
- Consideration for pollinator habitat and pollinator protection;
- Grower Name, County, State;
- Monitoring guidelines: This element addresses monitoring strategies that utilize damage and economic thresholds to prevent pest resistance and potential harmful effects on human health and the environment. The monitoring should include:
  - a. List of crops to be maintained
  - b. Scouting for insects (both beneficial and pest), disease, weeds with dates and results;
  - c. Weather forecasting;
  - d. Degree-day prediction of pest life cycle events;
- Other methods of monitoring and results, such as pheromone traps
- State University's IPM guidelines for specific crops (optional): This element addresses individual State University Year Round Integrated Pest Management Programs to be utilized by planners:

Where available use State Agricultural University issued crop specific:

- a. Integrated Pest Management guidance for individual crops that indicate activities to be undertaken throughout the year based on the crop production cycle. For example; monitoring may be prescribed for a particular pest or pests during pre-plant, pre-emergence, rapid growth, dormancy, bud-break, bloom, fruit set, maturation, harvesting, postharvest and storage periods;
- b. Where available, use State Agricultural University issued Integrated Pest Management guidance for individual crops, pests and diseases. These differ from year round programs in that they may only refer to management of a single pest. **Note:** There are non-state university organization that likewise provide credible guidelines (e.g., Rodale Institute, Kutztown,)
- Record Keeping: This element addresses a list of records that shall be maintained detailing:
  - a. Date of monitoring;
  - b. Results of monitoring;
  - c. Identification of both vertebrate and invertebrate pests;
  - d. Identification of beneficial insects enlisted;
  - e. Identification of specific raptors and/or bats enlisted;
  - f. Identification of crop and/or plant community condition;
  - g. Threshold of infestation;
  - h. Strategies implemented with dates;



- i. All required records required by state and federal requirements;
- j. Records required or needed as part of the State University IPM guidelines being used;
- WIN-PST Report provided when pesticides are applied. Window Pesticide Screening Tool (WIN-PST) Soil/Pesticide Interaction Hazard Report
- Total acres of the plan;
- Resource evaluations and mitigation process for soil, water, air and plant quality as related to suppression tactics that are being applied to the treated site.
- Planned conservation practices and IPM techniques to mitigate potential environmental risk not to degrade the soil, water, air, and plant quality as related to suppression tactics being applied to manage the pest.
  - See Agronomy Technical Note #5: Pest Management in the Conservation Planning Process @ <http://directives.sc.egov.usda.gov/> See Technical Notes > Title 190 Ecological Sciences > Agronomy > Technical Note #5.
  - NRCS (State Field Office Technical Guide – FOTG) [http://efotg.sc.egov.usda.gov/efotg\\_locator.aspx](http://efotg.sc.egov.usda.gov/efotg_locator.aspx), Select State, Go to Section IV, then to Practice 595 Integrated Pest Management.
  - Other practices to address soil, water, air, plant quality, and other resources concerns.
- Document the planned conservation practices and/or IPM to address the identified resources concerns. For each planned practice/IPM technique identify the field (s) or location a field a practice is to be applied; the amount of the practice to be applied, and the scheduled year to apply the practice. For all the planned practices develop the appropriate specifications to implement the conservation in the appropriate **Implementation Requirements (previously Jobsheet); document found in Section IV of the Electronic Field Office Technical Guide for the respective state.** Below is a reference guide that provides mitigations conservation practices and IPM techniques for potential environmental risk associated with pest control tactics.
  - Agronomy Technical Note #5: Pest Management in the Conservation Planning Process @ <http://directives.sc.egov.usda.gov/> See Technical Notes > Title 190 Ecological Sciences > Agronomy > Technical Note #5. References

### 3. Deliverables for the Client – a hardcopy of the plan that includes:

- Cover page (Template) – name, address, phone of client and TSP; Total Acres of the Plan, signature blocks for the TSP and producer, and a signature block for the NRCS acceptance.
- Complete hardcopy of the client’s plan (MsWord copy of the “Plan Template” and other appropriate plan documents.).
- Document the planned conservation practices to address the identified resource concerns. For each planned practice (1) identify the field(s) or location within a field a practice is to be applied, (2) the amount of the practice to be applied, and (3) the scheduled year to apply the practice.

- The following practices shall have the Implementation Requirements (Jobsheets) prepared when planned:

Code	Practice Name
314	Brush Management
327	Conservation Cover
328	Conservation Crop Rotation
329	Residue and Tillage Management, No-Till/Strip Till/Direct Seed
340	Cover Crop
345	Residue and Tillage Management, Mulch Till
346	Residue and Tillage Management, Ridge Till
595	Integrated Pest Management

- Soils Map and soil map units descriptions using the Web Soil Survey <http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm> as a minimum printout the Soil Report > AOI Inventory > Map Unit Descriptions
- Resource assessment results soil erosion, water quality, air quality, plant quality, and others identified resource concerns that may be needed. Complete in the template or add printouts from assessment tool (RUSLE2, WEPS).
- Provide the Window Pesticide Screening Tool (WIN-PST) Soil/Pesticide Interaction Hazard Ratings report (**Only if the WIN-PST Identified Hazard Rating is intermediate or higher**) and IPM Implementation Requirements using **Pest Management and the 595 Jobsheet 2.1.xlsm** or other state NRCS accepted document (**Only if the WIN-PST Identified Hazard Rating is intermediate or higher**).
- Digital Conservation plan map with;
  1. Streams, surface waters, surface drainage, and wetlands on or adjacent to site. Locations of sensitive resource areas identified on the plan map to include:
  2. Streams, drains, surface waters, wetlands, wells, groundwater, drains, grassed waterways and existing buffer practices;
  3. Sensitive wildlife habitat (on and off-site), food plots;
  4. Potential off-target drift areas;
  5. Property lines, field Boundaries, name/number, acres, and land use
  6. Map scale
  7. Structural practices located on Map
  8. Legend
- 4. **Deliverables for NRCS Field Office (Same as client, but add an electronic copy of the materials:**
  - Complete Hardcopy and Electronic copy of the client's plan (MsWord copy and other digital plan documents.).
  - Digital Conservation Plan Map with fields, features, and structural practices located.
  - Digital Soils Map

## Conservation Plan Support Integrated Pest Management Conservation Activity Plan (114)

<b>Owner(s) Name(s):</b>				
<b>Owner(s) Mailing Address(es):</b>				
<b>Owner(s) Phone Number(s):</b>				
<b>Owner(s) Email(s):</b>				
	<b>Owner(s) Signature(s)</b>			
<b>Plan Developed by:</b>				
<b>Planner's Mailing Address:</b>				
<b>Planner's Phone Number:</b>				
<b>Planner's Email:</b>				
	<b>Planner's Signature</b>			
<b>Plan Date:</b>				
<b>Total Acres in Plan:</b>				
<b>Producer's Objectives or Goals</b>				
<b>Attachments:</b>	Conservation Plan Map Soils Map and Descriptions Practice Plans or Jobsheets (list) Soil Loss Evaluation Printouts (list) WIN-PST Soil/Pesticide Interaction Hazard Report printouts (list) Others (list):			

## Conservation Plan Support Integrated Pest Management Conservation Activity Plan (114)

### Resource Concern Assessment

Resource Concern	Minimum Treatment Level	Does this meet the minimum treatment Before Plan? Describe or attach evaluation	Does this meet the minimum treatment After Plan Implementation? Describe or attach evaluation	Comments
<b>SOIL QUALITY</b> <b>Soil Erosion - Sheet, rill,</b>	Soil loss per RUSLE2 is $\leq T + 1$ ton	Attach RUSLE2 Printout for each field	Attach RUSLE2 Printout for each field	
<b>SOIL QUALITY</b> <b>Soil Erosion - Wind erosion</b>	Soil Loss per WEPS is $\leq T + 1$ ton	Attach WEPS Printout for each field	Attach WEPS Printout for each field	
<b>SOIL QUALITY</b> <b>Soil Erosion – Concentrated flow erosion</b>	Concentrated flow erosion is stabilized.	Describe fields with the problem:	Describe fields with the problem:	
<b>WATER QUALITY</b> <b>WIN-PST HAZARD RATING</b>	Intermediate rating and above requires mitigation. See Agronomy Technical Note 5: Pest Management in the Conservation Planning Process.	Attach WIN-PST soil/interaction hazard rating printout for each field:	Attach WIN-PST soil/interaction hazard rating printout for each field	
<b>AIR QUALITY</b> <b>-Drift.</b> <b>-Volatilization – Volatile organic compound (VOC) emission</b>	Pesticide applicator should follow the labor instructions and warnings that prevent drift. VOC nonattainment areas must reduce emission by 20%	Describe and attach supporting document	Describe and attach support document	
<b>Other resource concerns (Describe):</b>		Describe:	Describe:	

**Conservation Plan Support Integrated Pest Management  
Conservation Activity Plan (114)**

**List the planned timings, rates, sources, and methods of application of pesticide for the operation:**

[illegible]

**Conservation Plan Support Integrated Pest Management  
Conservation Activity Plan (114)**

[illegible]

## **IRRIGATION WATER MANAGEMENT PLAN CRITERIA PRACTICE/ACTIVITY CODE (118) (NO.)**

### **1. Definition of an Irrigation Water Management Plan**

The objective of Irrigation Water Management (IWM) is to control the volume, frequency, and rate of water for efficient irrigation, and for the following purposes:

- Promote desired crop response.
- Optimize the use of available water supplies.
- Improve water quality, by reducing irrigation sources of surface and ground water contamination.
- Minimize irrigation induced soil erosion.
- Improve soil environment for vegetative growth.
- Manage salts in the root zone.
- Improve air quality, by reducing movement of particulate matter.
- Provide appropriate and safe fertigation and chemigation.
- Reduce energy consumption.

The objective of an Irrigation Water Management Plan (IWMP) is to provide the producer a guide for the proper management and application of irrigation water resources. The potential benefits of IWM can be effectively determined by interviewing the producer to identify fields, soils, crops, climate, and available water supply; measuring the volumes of water withdrawn or applied; determining irrigation system uniformity, selecting a method to schedule irrigations, and then combining these components to produce an IWMP for the farm.

### **2. IWMP Criteria**

This section establishes the minimum criteria to be addressed in the development of Irrigation Water Management Plans.

#### **A. General Criteria:**

1. Irrigation Water Management Plans shall be developed by certified Technical Service Providers (TSPs). In accordance with Section 1240 (A), the Environmental Quality Incentive Program (EQIP) program provides funding support through contracts with eligible producers to obtain services of certified TSPs for development of Irrigation Water Management Plans. The specific TSP criteria required for Irrigation Water Management Plan development is located on the TSP registry (TechReg) web site at:  
<http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/technical/tsp>.
2. The IWMP should address the resource concerns identified, and the conservation practices needed to comprise a conservation system for IWM. In addition, the IWMP should be based on the economics of water use, energy consumption, and crop yield. Management may be limited by water (deficit irrigation), or limited by land (unlimited water). The two general management schemes for irrigation water conservation in agriculture are: Demand Management (reducing withdrawals or reducing crop requirements), and Supply Management (increasing water storage, yield, or supplies).

Technologies available for Demand Management include:

- Irrigation scheduling.
- Increased system uniformity.
- Increased irrigation efficiency.
- Reduced water evaporation.
- Reduced soil evaporation (utilize crop residue or mulch).
- Reduced water use by non-beneficial vegetation.
- Limited irrigation (applying less than maximum  $ET_C$ ).
- Crop selection (lower  $ET_C$  or drought resistant strains).
- Decision-making models (optimize water, energy, and nutrient use).
- Conversion of irrigated cropland to dry land farming.

Technologies available for Supply Management include:

- Increased water storage capacity.
- Groundwater recharge.
- Water harvesting.
- Vegetative management for increased watershed runoff.
- Reuse of waste or drainage water.
- Water transfers

**B. IWMP Technical Criteria.** The IWMP should include, but not be limited to, the following components:

1. Farm and field information:
  - a. Name of producer.
  - b. Farm number.
  - c. Field and/or tract number.
  - d. Crops grown, and planned rotation by field.
  - e. Name of contractor or consultant developing plan.
  - f. Date of plan development.
2. The objectives of the producer, which should involve one of the purposes listed in Conservation Practice Standard (CPS) 449, Irrigation Water Management.
3. A map that includes field boundaries, and a soils map with the predominant soils listed and area quantified. If the qualifying acres for the plan are a subset of fields, the boundaries of the IWMP acreage should also be delineated.
4. An irrigation system map that includes the size, materials, and locations of the mains, laterals, and application systems.
5. Documentation of past water withdrawals and applications, by crop.
6. The methods planned to measure or quantify future water withdrawals and irrigation applications.
7. Planned water application volumes, on a seasonal and/or annual basis, and by crop.
8. Soil tests, to include nutrient levels and salinity. Water tests, to include nutrients, pathogens, salinity, pH, and trace elements.



9. Estimates of irrigation system uniformity, based on testing, evaluation, or observation. Distribution Uniformity (DU) should be based on the ratio of the average depth infiltrated in the low one-quarter of the field, to the average depth infiltrated over the entire field.
10. Documentation of the scientific method planned for scheduling the timing and amount of irrigation applications, based on the measurement or estimation of soil moisture, and the measurement or prediction of evapotranspiration (ET<sub>c</sub>) of the crop(s). The proposed irrigation scheduling method should include:
  - a. Estimated volume of water applied, by field, irrigation event, season, and/or year.
  - b. Estimated frequency or timing of irrigation applications, by field.
  - c. Estimated application rates and depths of irrigation events.
11. An Operation and Maintenance plan, to include a check list of items to eliminate non-beneficial system losses.
12. A signature page, with names, dates and signatures of all contract holders and the person who prepared the plan. The signature page should also contain a space for approval by NRCS.
13. The IWMP components shall be assembled into one complete plan.

**C. Associated Practice Standards.** The IWMP should address the resource concerns identified, and the conservation practices needed to comprise a conservation system for IWM. In addition to the information required in CPS 449, Irrigation Water Management, existing irrigation systems and conveyance facilities may require modification, augmentation, or replacement of components. NRCS Conservation Practice Standards to be incorporated in the IWMP could include:

Code	Practice name
449	Irrigation Water Management
441	Irrigation System, Micro
442	Irrigation System, Sprinkler
443	Irrigation System, Surface & Subsurface
430	Irrigation Pipeline
428	Irrigation Ditch Lining
388	Irrigation Field Ditch
320	Irrigation Canal or Lateral
587	Structure for Water Control
436	Irrigation Reservoir
447	Irrigation System, Tailwater Recovery
533	Pumping Plant
464	Irrigation Land Leveling
450	Anionic Polyacrylamide (PAM) Application
610	Salinity and Sodic Soil Management
590	Nutrient Management

#### D. References

Conservation Systems are reviewed periodically, and updated if needed. To obtain the current version of this system, contact your Natural Resources Conservation Service State Office, or visit the Field Office Technical Guide.

- USDA-NRCS, National Engineering Handbook, Part 623, Section 15, Irrigation.
- USDA-NRCS, National Engineering Handbook, Part 652, National Irrigation Guide.

### **3. Deliverables for the Client – a hardcopy of the IWMP that includes:**

- Cover page – name, address, and phone number of producer and TSP; Total Acres of the Plan, signature blocks for the TSP, producer, and a signature block for the NRCS acceptance.
- Soils map and appropriate soil descriptions.
- Resource assessment results (wind and water erosion, water availability, soil fertility, and others that may be needed).
- Complete Hardcopy of the client's plan (MsWord copy). Document the planned conservation practices showing the planned amount, the fields where the practice is to be applied, and the planned year of application.

### **4. Deliverables for the NRCS Field Office:**

- Complete Hardcopy and Electronic copy of the client's plan (MsWord and/or other appropriate digital copies).
- Digital Conservation Plan Map with fields, features, and structural practices located.
- Digital Soils Map.

## Agricultural Energy Management Plan - Headquarters Criteria Conservation Activity Plan Practice Code (122) (No.)

### 1. Definition

An Agricultural Energy Management Plan- Headquarters (AgEMP) is a detailed documentation of energy consuming components and practices of the current operation, the previous year's on- farm energy consumption, and the strategy by which the producer will explore and address their on-farm energy conservation concerns, objectives, and opportunities.

### 2. AgEMP Headquarters Criteria:

This section establishes the minimum criteria to be addressed in the development of an AgEMP for Headquarters.

**A. General Criteria:** An AgEMP - Headquarters shall be developed by a certified Technical Service Provider (TSP). In accordance with Section 1240 (A) of the 2008 Farm Bill, the Environmental Quality Incentives Program (EQIP) provides funding support through contracts with eligible producers to obtain services of certified TSPs for development of an AgEMP- Headquarters. The TSP proficiency criteria required to develop an AgEMP - Headquarters for an EQIP eligible producer is located on the TSP registry (TechReg) web site at:  
<http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/technical/tsp>

### B. Criteria for Specific Elements of an AgEMP:

1. **The AgEMP - Headquarters** will meet the Type 2 on-farm energy audit minimum criteria established in the *ANSI/ASABE S612 July2009 Performing On-farm Energy Audits* standard, hereafter referred to as the industry standard.
2. **Background and Site Information** – The AgEMP will provide a narrative for:
  - a. Name of producer
  - b. Facility location(s)
  - c. Type and size of the operation (e.g., description of the poultry, dairy, or swine, etc. as well as production levels, and any unusual factors that affect energy use)
  - d. Producer concerns, objectives, opportunities, and overall management scheme for the enterprise (i.e., description of why the producer wants an on-farm energy audit and their specific objectives)
3. **Documentation of Baseline Current Energy Use:** The AgEMP will provide comprehensive documentation of the current energy resources (e.g., electricity, natural gas, etc.) used for all of a producers farming enterprises, respective total current energy usage, and total cost data. This will also be broken down by major activity per month over the past annual cycle. The evaluation of current energy use shall address major activities listed in (but not limited to) the industry standard associated with the processing and storage of agricultural commodities, feeding, housing, processing of farm animals, and animal products. Current energy use for engine driven equipment used in the cultivation, protection, and harvesting of agricultural commodities will also be evaluated as applicable. A comprehensive summary of all of the above items will be presented by energy resource. In addition to the above comprehensive

Conservation systems are reviewed periodically and updated if needed. To obtain the current version of this system plan, contact your Natural Resources Conservation Service [State Office](#) or visit the [electronic Field Office Technical Guide](#).

farm energy baseline, the AgEMP will document the major activities associated with each of the individual farm enterprises:

- a. Components/details of the major activities, as appropriate, and primary equipment:
  - Manufacturer of equipment,
  - Equipment component factory ratings (hp, efficiency, BTU input and BTU output)
  - Management use efficiencies (eg. manual/automatic systems)
- b. Annual energy use

**NOTE:** If a major activity is not applicable to the farm enterprise or the major activity has no opportunities for improved energy use, the report needs to state this.

4. **Recommended Measures/Conservation Practices:** The AgEMP will provide appropriate energy savings for each major activity (including a comparison to the baseline energy use) that reduces energy use and addresses the energy management needs for the agricultural operation (see ASABE S612 Table 1).
  - a. The Recommended Measures for energy improvement are to be presented.
  - b. Estimated energy savings are to be presented. Energy savings shall be documented for the major activities at the farm headquarters as kWh, joules, gallons, etc. and shall also be converted to a common measure of millions of British Thermal Units (mBTU).
  - c. Estimated installed cost and energy cost savings in years are to be presented
  - d. Simple payback period (in years) shall be documented for each of the recommended energy improvement measures.
  - e. Estimated emissions reductions (specific estimates for CO<sub>2</sub>, N<sub>2</sub>O, CH<sub>4</sub>, SO<sub>2</sub>, and NO<sub>x</sub>) are to be provided for each recommended energy improvement/measure.
  - f. The plan may include, but is not limited to, the conservation practices listed below:
    - Farmstead Energy Improvement (374)
    - Irrigation System, Micro-irrigation (441)
    - Irrigation System, Sprinkler (442)
    - Irrigation Water Management (449)
    - Pumping Plant (533)
  - g. The plan may include, but is not limited to the following recommended energy improvement measures: Lamps, timers, sensors, fans, control systems, variable drives, compressors, motors, insulation, heaters, waterers, evaporator/chillers, planting, tilling, harvesting, engine driven equipment. (Refer to Table 1 in the ASABE S612 industry standard, for more information on the components listed for each of the major energy activity categories)
5. **Summary Reporting of Recommended Measures:** The following table and its format must be provided at the beginning of the AgEMP report. The summary table (shown below) will contain each of the various recommended measures, prioritized according to pay-back period.
  - a. Estimated reduction in energy use (electricity, propane, other), estimated energy savings, estimated installation cost, estimated energy cost savings, estimated

Conservation systems are reviewed periodically and updated if needed. To obtain the current version of this system plan, contact your Natural Resources Conservation Service [State Office](#) or visit the [electronic Field Office Technical Guide](#).

greenhouse gases and air pollutant co-benefits will be provided for each energy improvement/recommended measure.

- b. The Payback in Years column determines the sequence in which recommended measures are to be listed in the Summary Table. This sequence can be used to provide guidance on the recommended sequence of implementation, from shortest time of payback to longest time of payback.
- c. Recommended measures with payback periods exceeding 10 years may be presented in the body of the report but shall not be included in the Summary of Recommendations.
- d. Guidance on how to calculate the estimated greenhouse gases and estimated air pollutant co-benefit is provided in Appendix A.

### SUMMARY OF RECOMMENDATIONS

Table 1 below contains a summary of the recommended energy improvement measures for a poultry operation. Energy efficient equipment lowers costs by performing the same or more work with less energy.

**Table 1. Summary of Estimated Annual Energy Efficiency Improvements**

Recommended Measure	Estimated Reduction in Energy Use				Estimated Costs, Savings, Payback, and Prioritization for Implementation			Environmental Benefits				
	Electric Savings (kWh)	Propane Savings (Gal)	Other 3/	Energy Savings 1/ (mBTU)	Installed Cost [a]	Energy Cost Savings [b]	Payback in Years [a / b]	Greenhouse Gases			Air Pollutant Co-Benefits <sup>2/</sup>	
								Estimated CO <sub>2</sub> (lbs)	Estimated N <sub>2</sub> O (lbs)	Estimated CH <sub>4</sub> (lbs)	Estimated SO <sub>2</sub> (lbs)	Estimated NO <sub>x</sub> (lbs)
<b>Example:</b> Lighting	25,210			86	\$1,740	\$2,094	0.8	30,988	0.562		0.038	0.020
<b>Example:</b> Seal Air Leaks		477		44	\$1,500	\$809	1.9	5,962	0.043		0.000	0.003
<b>Example:</b> Insulate Brood Curtain		98		9	\$450	\$167	2.7	1,226	0.009		0.000	0.001
<b>Example:</b> Exposed Foundation Wall Insulation		383		35	\$5,621	\$651	8.6	4,788	0.034		0.000	0.002
<b>Example:</b> Curtain to Solid Insulated Sidewalls		444		41	\$7,168	\$754	9.5	5,550	0.040		0.000	0.003
<b>Totals</b>	<b>25,210</b>	<b>1,402</b>		<b>21</b>	<b>\$16,478</b>	<b>\$4,475</b>	<b>3.7</b>	<b>48,514</b>	<b>0.688</b>		<b>0.038</b>	<b>0.029</b>

**Table 1 Notes:**

- 1) The estimated energy and cost savings are approximate values provided from an actual on-farm energy audit. A portion of the benefits for some of the improvements offset the benefits of others; for example, insulating side walls will actually seal up some of the air leaks and reduce the heat load in the winter.

Conservation systems are reviewed periodically and updated if needed. To obtain the current version of this system plan, contact your Natural Resources Conservation Service [State Office](#) or visit the [electronic Field Office Technical Guide](#).

- 2) SO<sub>2</sub> and NO<sub>x</sub> are ambient air contaminants; CO<sub>2</sub> is a green house gas.
- 3) Other: Gasoline, Diesel fuel, Natural Gas

Energy Savings as a percent of total energy usage will also be presented for each energy type as shown in Table 2 below.

**Table 2. Energy Savings of Recommendations**

Fuel	Current Usage	MBtu Usage	Savings	MBtu	% Savings
Electricity (KWh)	135,920	464	1,903	6	1.4%
Natural Gas (ccf)	4,214	430	0	0	0
Totals		894		6	0.7%

**6. References:** The AgEMP shall include technical documentation of sources used for the Headquarters AgEMP. Include the actual documents or web sites that contain the technical documentation useful for the producer such as:

- a. fact sheets
- b. product information
- c. recommendations and or comparisons of specific products
- d. journal articles
- e. manufacturer product information sheets, etc.

**7. Definitions:**

- a. Energy: Fuels (propane, diesel, natural gas, etc.) and electricity used to perform stationary farm and ranch activities.
- b. On-Farm Energy Auditor: A person who has the technical qualifications to perform an agricultural energy audit.
- c. Energy Type: The type of fuel (liquid or gas), electricity, etc. used to perform farm and ranch activities.
- d. Current Energy Usage: The annual usage of energy (electricity, natural gas, other fuels, etc.) for stationary farm or ranch operations.

**8. Deliverables for the Client – a hardcopy of the AgEMP shall include:**

- a. An Agricultural Energy Management Plan Checklist with all items checked that are contained in the Plan report.
- b. The Cover page of the AgEMP will contain the following:
  - Name and address of Producer and TSP,
  - Date AgEMP was performed,
  - Signature blocks for the TSP and producer, and
  - Signature and date block for the NRCS Field Office concurrence.

**9. Deliverables for NRCS Field Office:**

Complete Hardcopy and Electronic copy (MS Word) of the completed AgEMP Headquarters.

## **APPENDIX A**

### **ENVIRONMENTAL BENEFITS**

#### **Guidance on how to determine values for greenhouse gases and air pollutant co-benefits environmental benefits.**

In order to estimate the environmental benefits associated with estimated energy savings, NRCS has developed a Quick Energy calculator that transforms energy saving measures for fuels and electricity into atmospheric emission reductions. The Quick Energy Tool relies on EPA's state-level aggregated emission factors for electricity, to generate estimates of emissions savings for electricity. The Quick Energy Tool relies on the EPA Energy Information Agency's emission factors for liquid and gaseous fuels, to generate estimates of emissions savings for liquid and gaseous fuels.

The Web link to the NRCS COMET Quick Energy Calculator for converting Energy Savings into Emissions Reductions is located at: <http://www.comet2.colostate.edu/>

**Agriculture Energy Management Plan, Landscape  
Criteria - Practice/Activity Code (124) (No.)**

**1. Definition**

A Landscape Agricultural Energy Management Plan (Landscape AgEMP) contains the strategy by which the producer will explore and address producer/grower on-farm energy savings and opportunities on the working land (crop, forest, pasture, range). A Landscape Agricultural Energy Plan conservation activity plan must:

- Meet NRCS quality criteria for soil erosion, water quantity, energy, and other identified resource concerns;
- Comply with federal, state, tribal, and local laws, regulations and permit requirements; and
- Satisfy the operator's objectives.

**Energy Definitions:**

- a. Energy: Fuels (purchased propane, diesel and natural gas) and electricity used to perform stationary farm and ranch activities. This definition includes renewable energy sources.
- b. Energy Management: Optimization of energy use on farms and ranches to minimize non-renewable energy consumption.
- c. Energy Source: The type of fuel (liquid or gas), electricity, or renewable power used to perform farm and ranch activities.

**Tools Needed:**

One or more tools are needed to evaluate energy associated with tillage, agrichemicals, irrigation, pasture management, and forest operations. Some tools already exist or can be made functional with minimal effort.

**Tools Available to Support the Landscape Energy Assessment**

Audit Element	Tools Available or needed	Tool output
Field Equipment Operation	<ul style="list-style-type: none"><li>• RUSLE2 and WEPS</li><li>• Energy Estimator Tillage <a href="http://ecat.sc.egov.usda.gov/">http://ecat.sc.egov.usda.gov/</a></li></ul>	<ul style="list-style-type: none"><li>• Fuel or BTU use per acre</li></ul>
Embedded Energy in Nitrogen	<ul style="list-style-type: none"><li>• Factor = 20,000 BTU's per pound of synthetic nitrogen reduced.</li></ul>	Fuel or Btu use per acre
Irrigation	<ul style="list-style-type: none"><li>• Energy Self-Assessment</li><li>• Energy Estimator Irrigation <a href="http://ipat.sc.egov.usda.gov/">http://ipat.sc.egov.usda.gov/</a></li></ul>	

Conservation Systems are reviewed periodically, and updated if needed. To obtain the current version of this system, contact your Natural Resources Conservation Service State Office, or visit the Field Office Technical Guide.



## 2. Landscape AgEMP Criteria:

- A. This section establishes the minimum criteria to be addressed in the development of Landscape Agricultural Energy Plan developed by a certified Technical Service Provider (TSP).
- B. The Completed “Landscape Agricultural Energy Plan (124)” template that includes the following required items:
- Background and Site Information Element
  - Name of owner/operator;
  - Farm location and mailing address;
  - Soils Map and soil map units descriptions using the Web Soil Survey <http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm> as a minimum printout the Soil Report > AOI Inventory> Map Unit Descriptions
  - Digital Conservation plan map with;
    1. Streams, surface waters, surface drainage, wetlands on or adjacent to site
    2. Property lines
    3. Field Boundaries, name/number, acres, and land use
    4. Map scale
    5. Structural Practices Located on Map
    6. Legend
    7. Grower Name, County, State
  - Total acres of the plan;
  - Resource evaluations for soil erosion, water quantity, and other local concerns identified.
  - Landscape Agricultural Energy Resource Assessment: This element determines and documents current energy usage, over the past annual cycle. The evaluation of energy conservation activities shall include energy used in the cultivation, irrigation, production, protection, and harvesting of agricultural/forest crops. The Landscape AgEMP shall address energy use for the following elements (as applicable):
    - a. Cropland field equipment operations - estimate energy use associated with the current field equipment operations under current management and with the planned treatment applied. (Compare in common units):
      - Field equipment operations that involve equipment passing over the field(s) (cultivation, planting, harvest, manure application, etc.) (use RUSLE2 or WEPS to estimate energy use)
      - Embedded energy in synthetic nitrogen used (20,000 BTU’s per pound of synthetic nitrogen).
      - Growing/producing legume nitrogen for crops - energy saved by using less synthetically produced nitrogen
      - Irrigation energy required (system type, pressures, management techniques, pumping plant management, system maintenance)
    - b. Pasture field equipment operations and potential use of legumes

- Pasture management (feed and water hauling, management to reduce irrigation, fertilization, or mowing)
  - Field operations (mowing, spreading manure or fertilizer, etc.)
  - Changes in species composition (growing/producing legume nitrogen for crops energy saved by using less synthetically produced nitrogen, or conserving irrigation water)
  - Irrigation energy required (system type, pressures, management techniques, pumping plant management, system maintenance)
  - Pumping livestock water
- c. Forest field / harvest operations
- Forest operations and management (forest trails and landings, identified potential energy savings in other land uses associated with windbreaks/shelterbelts)
- d. Range field equipment and management
- Forage operation and management
  - Pumping livestock water
  - Planned conservation practices to address soil erosion, water quantity, energy, and other local resource or human concerns. Document the planned conservation practices showing the planned amount, the fields where the practice is to be applied, and the planned year of application.
  - When the following practices are planned include the appropriate Jobsheet or Implementation Requirements (founding in Section IV of the State eFOTG):

Code	Practice Name
328	Conservation Crop Rotation
330	Contour Farming
340	Cover Crop
345	Residue and Tillage Management, Mulch Till
329	Residue and Tillage Management, No Till/Strip Till/Direct Seed
346	Residue and Tillage Management, Ridge Till
380	Windbreak/Shelterbelt Establishment
528	Prescribed Grazing

### C. References

- USDA Natural Resource Conservation Service National Agronomy Manual, <http://directives.sc.egov.usda.gov/> Title 190,
- NRCS (State Field Office Technical Guide – FOTG) [http://efotg.sc.egov.usda.gov//efotg\\_locator.aspx](http://efotg.sc.egov.usda.gov//efotg_locator.aspx), Select State, Go to Section IV.

### 3. Deliverables for the Client – a hardcopy of the plan that includes:

- Complete Hardcopy of the client's plan (MsWord copy of the "Plan Template"). Document the planned conservation practices showing the planned amount, the fields where the practice is to be applied, and the planned year of application.
- Completed template for **Landscape Agricultural Energy Management Plan (124)**
- Soils Map and soil map units descriptions using the Web Soil Survey <http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm> as a minimum printout the Soil Report > AOI Inventory> Map Unit Descriptions
- Resource assessment results (wind and water erosion, water quantity, and others identified resource concerns that may be needed) – complete in the template or add printouts from assessment tool (RUSLE2 or WEPS)
- Landscape Agricultural Energy Resource Assessment (Where RUSLE2 or WEPS was used to estimate energy, the RUSLE2 or WEPS printouts for erosion can also be used to document energy before and after planned treatment). For irrigation add the printout for the Energy Estimator, Irrigation or other data showing before and after energy savings if a different irrigation energy estimator was used.
- When the following practices are planned include the appropriate Jobsheet or Implementation Requirements (founding in Section IV of the State eFOTG):

Code	Practice Name
328	Conservation Crop Rotation
330	Contour Farming
340	Cover Crop
345	Residue and Tillage Management, Mulch Till
329	Residue and Tillage Management, No Till/Strip Till/Direct Seed
346	Residue and Tillage Management, Ridge Till
380	Windbreak/Shelterbelt Establishment
528	Prescribed Grazing

- Digital Conservation plan map with;
  - a. Streams, surface waters, surface drainage, and wetlands on or adjacent to site
  - b. Property lines
  - c. Field boundaries, name/number, acres, and land use
  - d. Map scale
  - e. Structural practices located on Map
  - f. Legend
  - g. Grower name, county, state

### 4. Deliverables for NRCS Field Office:

- Complete Hardcopy and Electronic copy of the client's plan and deliverables.
- Digital Conservation Plan Map with fields, features, and structural practices located.
- Digital Soils Map

Conservation Systems are reviewed periodically, and updated if needed. To obtain the current version of this system, contact your Natural Resources Conservation Service State Office, or visit the Field Office Technical Guide.

## Agriculture Energy Management Plan, Landscape Conservation Activity Plan (124)

<b>Owner(s) Name(s):</b>			
<b>Owner(s) Mailing Address(es):</b>			
<b>Owner(s) Phone Number(s):</b>			
<b>Owner(s) Email(s):</b>			
	<b>Owner(s) Signature(s)</b>		
<b>Plan Developed by:</b>			
<b>Planner's Mailing Address:</b>			
<b>Planner's Phone Number:</b>			
<b>Planner's Email:</b>			
	<b>Planner's Signature</b>		
<b>Plan Date:</b>			
<b>Total Acres in Plan:</b>			
<b>Producer's Objectives or Goals</b>			
<b>Attachments:</b>	Conservation Plan Map Soils Map Soils Descriptions Practice Plans or Jobsheets (list) Soil Loss Evaluation Printouts (list) Energy Printouts Showing Before and After Energy Use (Savings) (list) Other (list):		

## Agriculture Energy Management Plan, Landscape Conservation Activity Plan (124)

### Resource Concern Assessment

Resource Concern	Minimum Treatment Level	Does this meet the minimum treatment Before Plan? Describe or attach evaluation	Does this meet the minimum treatment After Plan Implementation? Describe or attach evaluation	Comments
<b>SOIL EROSION - Sheet, rill,</b>	Soil loss per RUSLE2 is $\leq T + 1$ ton	Attach RUSLE2 Printout for each field	Attach RUSLE2 Printout for each field	
<b>SOIL EROSION - Wind erosion</b>	Soil Loss per WEPS is $\leq T + 1$ ton	Attach WEPS Printout for each field	Attach WEPS Printout for each field	
<b>SOIL EROSION – Concentrated flow erosion</b>	Concentrated flow erosion is stabilized.	Describe fields with the problem:	Describe fields with the problem:	
<b>INSUFFICIENT WATER –Inefficient moisture management</b>	Runoff and evapotranspiration are minimized to meet Client objectives, consistent with land capability.	Describe:	Describe:	
<b>INEFFICIENT ENERGY USE – Farming/ranching practices and field operations</b>	Field operations and practices meet energy efficiency objectives and are addressed by planner using an energy assessment - e.g. On-Line Energy Self Assessment tool, RUSLE2, or WEPS as appropriate	Describe and attach Energy assessments	Describe and attach Energy assessments	
<b>Other resource concerns (Describe):</b>		Describe:	Describe:	

**Agriculture Energy Management Plan, Landscape Conservation Activity Plan (124)**

**For Energy Saving due to nitrogen credits from grass/legumes:**

[illegible]

**Agriculture Energy Management Plan, Landscape Conservation Activity Plan (124)**

[illegible][illegible]

## **Comprehensive Air Quality Management Plan Criteria Practice/Activity Code (126) (No.)**

### **1. Definition**

Comprehensive Air Quality Management Plans (CAQMPs) can be part of conservation plans applicable to many agricultural operations. These plans assess practices and strategies adopted by agricultural operations to address environmental concerns directly related to air quality and atmospheric change. Also recommended are management options and structural alternatives to address resource concerns identified during the assessment. A Comprehensive Air Quality Management Plan (CAQMP):

- a. Meets NRCS quality criteria or a measureable improvement for air quality and other identified resource concerns;
- b. Complies with federal, state, tribal, and local laws, regulations and permit requirements;
- c. Addresses the operator's objectives.

### **2. CAQMP Criteria**

This section establishes the minimum criteria to be addressed in the development of CAQMP.

- A. **General Criteria** - The CAQMP shall be developed by certified Technical Service Providers (TSPs). In accordance with Section 1240 (A), the Environmental Quality Incentive Program (EQIP) program provides funding support through contracts with eligible producers to obtain services of certified TSPs for development of CAQMP. The specific TSP criteria required for CAQMP development is located on the TSP registry (TechReg) web site at:  
<http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/technical/tsp>
- B. The planner shall address the following elements during the CAQMP development process:
  - Background and Site Information;
  - Documentation of the CAQMP Emissions of Concern;
  - Documentation of the CAQMP components;
  - References
- C. CAQMP specific element criteria will offer conservation treatment practices related to the following air quality and atmospheric change resource concerns:
  - Particulate Matter,
  - Ozone Precursors,
  - Odors (where appropriate), and
  - Greenhouse Gases



D. Each of the CAQMP elements will address specific criteria. The degree to which these elements are addressed in the development and implementation of a site-specific CAQMP is determined by the specific criteria provided for each element of the CAQMP below.

- a) Background and Site Information. This element provides a brief description of:
- Name of owner/operator;
  - Facility location(s) and mailing address;
  - Type and size of the operation;
  - Air Quality resource concerns
- b) Documentation of the CAQMP Emissions of Concern. This element documents the owner's/operator's consideration of the CAQMP emissions of concern. It is recognized that a CAQMP may not address all of these emissions; however each emission of concern needs to be considered by the planner and owner/operator during the development of the CAQMP, and the owner's/operator's decisions regarding each must be documented. The following eight emissions contribute to the NRCS air quality and atmospheric change resource concerns (the applicable concern(s) are included in parentheses after the emission). Examples of practices and activities to consider to address each emission are included below the emission.

1) Direct Particulate Matter Emissions (Particulate Matter)

- Paving or gravel application
- Dust suppressant application
- Mulch application
- Speed or traffic reduction
- Residue management
- Wind management (e.g., vegetative barriers; wind breaks)
- Irrigation management
- Range management
- Animal incineration
- Manure/waste management and utilization (e.g., manure removal, manure scraping, and covered storage)
- Sprinkler irrigation
- Engine emissions management (e.g., engine replacement, filters, etc.)

2) Ammonia (Particulate Matter, Odors)

- Manure/waste management and utilization
- Incorporating/injecting manure
- Fertilizer management
- Feed management
- Biofilter/scrubber installation

- 3) Volatile Organic Compounds/VOCs (Particulate Matter, Ozone Precursors, Odors)
  - Manure/waste management and utilization
  - Incorporating/injecting manure
  - Biofilter/scrubber installation
  - Feed management
  - Non-burning alternatives to prescribed burning of crop residue/waste
  - Engine emissions management (e.g., engine replacement, engine retrofit, etc.)
  - Pesticide management
  - Non-burning alternatives to open burning
  - Prescribed burning
- 4) Oxides of Nitrogen/NO<sub>x</sub> (Particulate Matter, Ozone Precursors)
  - Manure/waste management and utilization
  - Incorporating/injecting manure
  - Fertilizer management
  - Feed management
  - Engine emissions management (e.g., engine replacement, engine retrofit, etc.)
  - Non-burning alternatives to open burning
  - Prescribed burning
  - Soil management
- 5) Odorous sulfur compounds (Odors)
  - Manure/waste management
  - Feed management
  - Incorporating/injecting manure
  - Biofilter/scrubber installation
- 6) Carbon Dioxide/CO<sub>2</sub> (Greenhouse Gases)
  - Residue management
  - Carbon sequestration to offset CO<sub>2</sub> emissions
  - Soil management
  - Utilization of agricultural residues/wastes as renewable fuel feedstock
  - Engine emissions management (e.g., engine replacement, engine retrofit, etc.)
  - Non-burning alternatives to open burning
  - Prescribed burning
- 7) Methane/CH<sub>4</sub> (Greenhouse Gases)

- Anaerobic digester power generation with animal waste feedstock
  - Manure/waste management and utilization
  - Feed management (e.g., amendments)
- 8) Nitrous Oxide/N<sub>2</sub>O (Greenhouse Gases)
- Manure/waste management and utilization
  - Incorporating/injecting manure
  - Fertilizer management
  - Feed management
  - Soil management
- c) Documentation of the CAQMP Components. The CAQMP shall address the resource concerns identified. This element documents the owner's/operator's decisions as to what NRCS conservation practices are planned. Typical NRCS Conservation Practice Standards are included in the components below. It is recognized that a CAQMP may not contain all of these components; however each component needs to be considered by the planner and owner/operator during the development of the CAQMP, and the owner's/operator's decisions regarding each must be documented. CAQMP Components:
- 1) Land Treatment Practices for erosion control and air emissions management which could include irrigation, unpaved road, and surface treatment, barriers and windbreaks, fertilizer management, incorporating/injecting manure, etc.
  - 2) Land Treatment Practices for carbon sequestration that could include nutrient, fertilizer and pest management.
  - 3) Crop Residue Management for erosion control or to minimize emissions from prescribed burning which could include no-tilling, mulch till, chipping and mulching of orchard pruning's, utilization of agricultural residues/wastes as renewable fuel feedstock, etc.
  - 4) Manure Management Systems for odor and other air emissions management which could include manure and wastewater handling and storage practices such as the use of lagoon covers, solid-liquid separation, biofilters/scrubbers, anaerobic digesters, etc.
  - 5) Livestock feeding to manage nutrient content in feed to reduce emissions from animal agriculture that impact air quality
  - 6) Livestock Housing and Feedlots to address dust, odors, and other air emissions from the confinement of animals which could include biofilters/scrubbers, cleaning up spilled materials, manure removal, irrigation sprays, etc.

## 7) Other Utilization Activities

- d) References Element. This element lists the technical documentation sources used for the CAQMP and may include the actual documents or web sites that contain the technical documentation useful for the producer.

### 3. Deliverables for the Client – a hardcopy of the plan that includes:

- a. Cover page – name, address, phone of client and TSP; Total Acres of the Plan, signature blocks for the TSP, producer, and a signature block for the NRCS acceptance.
- b. Soils map and appropriate soil descriptions
- c. Resource assessment results (wind and water erosion, water availability, soil fertility, and others that may be needed)
- d. Complete Hardcopy of the client's plan (MsWord copy). Document the planned conservation practices showing the planned amount, the fields where the practice is to be applied, and the planned year of application.
- e. When the following practices are planned include the appropriate Jobsheet or Implementation Requirements (founding in Section IV of the State eFOTG):

Code	Practice Name
371	Air Filtration and Scrubbing
372	Combustion System Improvement
373	Dust Control on Unpaved Roads and Surfaces
375	Dust Control from Animal Activity on Open Lot Surfaces
380	Windbreak/Shelterbelt Establishment

- f. For engineering/structural and other practices. Document when the planned practice will be applied, the estimated extent, and the location on the conservation plan map.

### 4. Deliverables for NRCS Field Office:

- a. Complete Hardcopy and Electronic copy of the client's plan (MsWord copy) and other applicable digital supporting documents.
- b. Digital Conservation Plan Map with fields, features, and structural practices located.
- c. Digital Soils Map.

## **DRAINAGE WATER MANAGEMENT PLAN CRITERIA PRACTICE/ACTIVITY CODE (130) (NO.)**

### **1. Definition of a Drainage Water Management Plan**

The objective of a Drainage Water Management (DWM) is to control soil water table elevations and the timing of water discharges from subsurface or surface agricultural drainage systems for the following purposes:

- Improve water quality.
- Improve the soil environment for vegetative growth.
- Reduce the rate of oxidation of organic soils.
- Prevent wind erosion.
- Enable seasonal shallow flooding or surface watercourse flows for fish and wildlife habitat.

The objective of a Drainage Water Management Plan (DWMP) is to provide the producer a framework for the implementation of DWM on existing artificially drained land. The desirability and potential benefits of a DWM system can be effectively determined by interviewing the producer, identifying field boundaries and soil types, obtaining a drain map, developing a topographic map, and then combining these components to produce a DWMP for the field or farm.

### **2. DWMP Criteria**

This section establishes the minimum criteria to be addressed in the development of Drainage Water Management Plans.

**A. General Criteria:** In accordance with Section 1240 (A), the Environmental Quality Incentive Program (EQIP) provides funding support through contracts with eligible producers to obtain services of certified TSPs for development of Drainage Water Management Plans. The specific TSP criteria required for DWMP development is located on the TSP registry (TechReg) web site at:

<http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/technical/tsp>

**B. DWMP Technical Criteria:** The DWMP should include, but not be limited to, the following components:

1. Farm and field information:
  - a. Name of producer.
  - b. Farm number.
  - c. Field and/or Tract number.
  - d. Crops grown, and planned rotation by field.
  - e. Name of contractor or consultant developing plan
  - f. Date of plan development
2. The objectives of the producer, which should involve one of the purposes listed in Conservation Practice Standard (CPS) 554, Drainage Water Management.
3. A map that includes field boundaries, and a soils map with the predominant soils listed and area quantified. If the qualifying acres for the plan are a subset of field(s), the boundaries of the DWMP acreage should also be delineated.

Conservation systems are reviewed periodically and updated if needed. To obtain the current version of this system plan, contact your Natural Resources Conservation Service [State Office](#) or visit the [electronic Field Office Technical Guide](#).

4. A Drainage System Map that includes the materials, diameters or dimensions, and locations of the laterals and mains (depth and grade of tile lines or ditches not required for the DWMP).
5. A delineation of the area within the field drained by the system. The definition of the drained area is taken from the lateral spacing recommendations of the soil, as specified in the NRCS or State Drainage Guide. The outer boundary of the drained area is delineated by a line around the drained area (tiled or ditched), at a distance of one-half of the tile or ditch lateral spacing.
6. A wetland delineation map, if applicable.
7. A Topographic Map on a maximum scale of 1:2,400, that shows elevation contours on a 6-inch increment (drainage system map and topographic map need to be the same scale). The topographic map should include, at a minimum, all of the drained area as defined above.
8. An overlay of the above maps (e.g., field boundaries, drain locations, contour map) with the location, size, and impacted area identified for each planned control structure.
  - If the control structures are set on a 2-foot elevation interval, the impacted area is defined as the drained area (from item 5) contained within the 2-foot contour above the control elevation.
  - If the control structures are set at an elevation interval less than 2 feet, then the impacted area is the drained area contained within the control elevation interval at which the control structures are set.
  - If the control structures are set at an elevation interval greater than 2 feet, then the impacted area is the drained area contained within the 2-foot contour above the control elevation.
  - The control elevation is the elevation of the soil surface at the lowest spot in the area of the field impacted by the operation of the water control structure.
9. The management instructions should follow the Operation and Maintenance section of CPS 554, which states that to reduce soil oxidation and to minimize wind erosion and nitrate transport, the outlet elevation at the water control structure shall be set to allow the water table to rise to within 6 inches or less of the ground surface at the designated control elevation during fallow periods and when practical. The DWMP also must include the following instructions:
  - The time after harvest to replace boards and the designated outlet elevation during the winter months (or fallow season),
  - The time in the spring to release water (this will vary depending on the crop: e.g. March for corn and April for soybeans), and
  - Guidelines for the control of drainage and the management of the water table during the growing season (see CPS 554), and
  - Evaluation of the DWMP's effect on wetlands if applicable, and compliance with the National Food Security Act.

Conservation systems are reviewed periodically and updated if needed. To obtain the current version of this system plan, contact your Natural Resources Conservation Service [State Office](#) or visit the [electronic Field Office Technical Guide](#).

10. A summary sheet that lists the pipe diameter or dimensions of each water control structure and the area impacted by each structure.
11. A signature page, with names, dates and signatures of all contract holders and the person who prepared the plan. The signature page should also contain a space for approval by NRCS.
12. A checklist for NRCS District Conservationist, covering each component of the DWMP, should also be included.
13. The DWMP should be packaged as one plan. A template of a DWMP is available on the Illinois Drainage Guide (Online), on the webpage "Related Information", <http://www.wq.uiuc.edu/dg/>.

**C. Associated Practice Standards:** The DWMP should address the resource concerns identified, and the conservation practices needed to comprise a conservation system for DWM. In addition to the water control structures as described in CPS 554, Drainage Water Management, existing drainage systems may require augmentation, modification, or replacement of existing components. Typical NRCS Conservation Practice Standards to be incorporated in a DWMP could include:

Code	Practice name
554	Drainage Water Management
606	Subsurface Drain
607	Surface Drain, Field Ditch
608	Surface Drainage, Main or Lateral
747	Denitrifying Bioreactor
587	Structure for Water Control
658	Wetland Creation
659	Wetland Enhancement
657	Wetland Restoration
590	Nutrient Management
646	Shallow Water Development and Management
644	Wetland Wildlife Habitat Management

**D. References:**

USDA-NRCS, National Engineering Handbook, Part 624, Section 16, Drainage.

USDA-NRCS, National Engineering Handbook, Part 650, Engineering Field Handbook, Chapter 14, Water Management (Drainage).

**3. Deliverables for the Client – a hardcopy of the DWMP that includes:**

- Cover page – name, address, and phone numbers of producer and TSP; Total Acres of the Plan, signature blocks for the TSP, producer, and a signature block for the NRCS acceptance.
- Soils map and appropriate soil descriptions.

Conservation systems are reviewed periodically and updated if needed. To obtain the current version of this system plan, contact your Natural Resources Conservation Service [State Office](#) or visit the [electronic Field Office Technical Guide](#).

- Resource assessment results (wind and water erosion, water availability, soil fertility, and others that may be needed).
- Complete Hardcopy of the client's plan (MsWord copy) with the planned conservation practices documented for the planned amount, the fields where the practice is to be applied, and the planned year of application.

**4. Deliverables for NRCS Field Office:**

- Complete Hardcopy and Electronic copy of the client's plan (MsWord copy).
- Digital Conservation Plan Map with fields, features, and structural practices located.
- Digital Soils Map.



**Transition from Irrigated to Dryland Farming and Ranching Plan Criteria**  
**Practice/Activity Code (134) (No.)**

**1. Definition**

Dryland systems are those, which describe production techniques under limited precipitation and usually severe resource concern constraints. The resource constraints include soil erosion by both wind and water; periods of water stress of significant duration; and limited production inputs. A transition from irrigated to dryland farming and ranching conservation activity plan is a conservation system that focuses on crop yield sustainability and water conservation/water harvesting techniques. A Transition to Dryland conservation activity plan must:

- Meet NRCS quality criteria for soil erosion, water quantity, and other identified resource concerns;
- Comply with federal, state, tribal, and local laws, regulations and permit requirements; and
- Satisfy the operator's objectives.

Producers may choose to transition from irrigated to dryland farming and/or ranching for reasons that include, but are not limited to:

- Reducing water use;
- Protecting threatened or endangered species;
- Restoring flow to streams and improving fisheries;
- Improving irrigation water management on other land not in dryland system;
- Protecting or securing present water rights; and
- Continuing farming/ranching in drought conditions or if water rights are reduced or lost.

**2. Transition from Irrigated to Dryland Plan Technical Criteria**

This section establishes the minimum criteria to be addressed in the development of Transition from Irrigated to Dryland Plans developed by a certified Technical Service Provider (TSP).

- A. Completed the "Transition from Irrigated to Dryland Plan (138)" template provided that includes the following required items:
- B. Background and Site Information Element
  - Name of owner/operator;
  - Farm location and mailing address;
  - Soils Map and soil map units descriptions using the Web Soil Survey <http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm> as a minimum printout the Soil Report > AOI Inventory> Map Unit Descriptions
  - Digital Conservation plan map with;

Conservation Systems are reviewed periodically, and updated if needed. To obtain the current version of this system, contact your Natural Resources Conservation Service State Office, or visit the Field Office Technical Guide.

1. Streams, surface waters, surface drainage, wetlands on or adjacent to site
  2. Property lines
  3. Field Boundaries, name/number, acres, and land use
  4. Map scale
  5. Structural Practices Located on Map
  6. Legend
  7. Grower Name, County, State
- Total acres of the plan;
  - Resource evaluations for soil erosion, water quality, water quantity, and other local concerns identified.
- C. Planned conservation practices to address soil erosion, water quantity, and other local resource or human concerns.
- Crop rotation plan – consider:
    1. A crop succession of sufficient intensity to assure maximum use of effective precipitation
    2. A rotation diversity to promote greater stability and diminished external input requirements
    3. Using tillage and planting methods that reduce soil disturbance and renew dependence on cultural practices that will reduce reliance on costly technology
  - Other practices to address soil erosion, water quantity, and other resource concerns;
  - List the planned timings, rates, sources, and methods of application of crop nutrients and the results of soil tests and/or tissue tests as appropriate for the operation;
- D. Typical Practice Standards to Transition from Irrigated to Dryland Farming:
- Conservation Crop Rotation (328)
  - Cover Crop (340)
  - Contour Farming (330)
  - Field Border (386)
  - Filter Strip (393)
  - Hedgerow Planting (422)
  - Mulching (484)
  - Pasture and Hayland Planting (512)
  - Residue and Tillage Management, Mulch Till (345)
  - Residue Management, No Till/Strip Till/Direct Seed (329)
  - Residue Management, Ridge Till (346)
  - Residue Management, Seasonal (344)

- Stripcropping (585)
- Windbreak/Shelter Belt Establishment (380)
- Nutrient Management (590)
- Pest Management (595)
- Prescribed Grazing (528)
- Terrace (600)
- Water Harvesting Catchment (636)
- Other of engineering type practices

#### E. References

- USDA Natural Resource Conservation Service National Agronomy Manual, <http://directives.sc.egov.usda.gov/> Title 190,
- NRCS (State Field Office Technical Guide – FOTG) [http://efotg.sc.egov.usda.gov//efotg\\_locator.aspx](http://efotg.sc.egov.usda.gov//efotg_locator.aspx), Select State, Go to Section IV.

### 3. Deliverables for the Client – a hardcopy of the plan that includes:

- Complete Hardcopy of the client’s plan (MsWord copy) of the “Plan Template”. Document the planned conservation practices showing the planned amount, the fields where the practice is to be applied, and the planned year of application.
- When the following practices are planned include the appropriate Jobsheet or Implementation Requirements (founding in Section IV of the State eFOTG):

Code	Practice Name
328	Conservation Crop Rotation
340	Cover Crop
345	Residue and Tillage Management, Mulch Till
329	Residue and Tillage Management, No Till/Strip Till/Direct Seed
346	Residue and Tillage Management, Ridge Till
344	Residue Management, Seasonal
484	Mulching
512	Forage and Biomass Planting
511	Forage Harvest Management

- Completed template for **Transition from Irrigated to Dryland Plan (138)**
- Soils Map and soil map units descriptions using the Web Soil Survey <http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm> as a minimum printout the Soil Report > AOI Inventory> Map Unit Descriptions
- Resource assessment results (wind and water erosion, water quantity, and others identified resource concerns that may be needed) – complete in the template or add printouts from assessment tool (RUSLE2 or WEPS)
- Digital Conservation plan map with;

Conservation Systems are reviewed periodically, and updated if needed. To obtain the current version of this system, contact your Natural Resources Conservation Service State Office, or visit the Field Office Technical Guide.

- a. Streams, surface waters, surface drainage, wetlands on or adjacent to site
- b. Property lines
- c. Field Boundaries, name/number, acres, and land use
- d. Map scale
- e. Structural Practices Located on Map
- f. Legend
- g. Grower Name, County, State

**4. Deliverables for NRCS Field Office:**

- Complete Hardcopy and Electronic copy of the client's plan (MsWord copy and/or other appropriate digital copies of documents) and deliverables.
- Digital Conservation Plan Map with fields, features, and structural practices located.
- Digital Soils Map

## Transition from Irrigated to Dryland Farming Conservation Activity Plan (134)

<b>Owner(s) Name(s):</b>			
<b>Owner(s) Mailing Address(es):</b>			
<b>Owner(s) Phone Number(s):</b>			
<b>Owner(s) Email(s):</b>			
	<b>Owner(s) Signature(s)</b>		
<b>Plan Developed by:</b>			
<b>Planner's Mailing Address:</b>			
<b>Planner's Phone Number:</b>			
<b>Planner's Email:</b>			
	<b>Planner's Signature</b>		
<b>Plan Date:</b>			
<b>Total Acres in Plan:</b>			
<b>Producer's Objectives or Goals</b>			
<b>Attachments:</b>	Conservation Plan Map Soils Map Soils Descriptions Practice Plans or Jobsheets (list) Soil Loss Evaluation Printouts (list) Other (list):		

## Transition from Irrigated to Dryland Farming Conservation Activity Plan (134)

### Resource Concern Assessment

Resource Concern	Minimum Treatment Level	Does this meet the minimum treatment Before Plan? Describe or attach evaluation	Does this meet the minimum treatment After Plan Implementation? Describe or attach evaluation	Comments
<b>SOIL EROSION - Sheet, rill,</b>	Soil loss per RUSLE2 is $\leq T + 1$ ton	Attach RUSLE2 Printout for each field	Attach RUSLE2 Printout for each field	
<b>SOIL EROSION - Wind erosion</b>	Soil Loss per WEPS is $\leq T + 1$ ton	Attach WEPS Printout for each field	Attach WEPS Printout for each field	
<b>SOIL EROSION – Concentrated flow erosion</b>	Concentrated flow erosion is stabilized.	Describe fields with the problem:	Describe fields with the problem:	
<b>INSUFFICIENT WATER –Inefficient moisture management</b>	Runoff and evapotranspiration are minimized to meet Client objectives, consistent with land capability.	Describe:	Describe:	
<b>Other resource concerns (Describe):</b>		Describe:	Describe:	

## Transition from Irrigated to Dryland Farming Conservation Activity Plan (134)

[illegible]

## **Conservation Plan Supporting Organic Transition Plan Criteria Practice/Activity Code (138) (No.)**

### **1. Definition**

A “Conservation Plan Supporting Organic Transition” is a conservation activity plan documenting decisions by producers/growers who agree to implement a system of conservation practices which assist the producer to transition from conventional farming or ranching systems to an organic production system. The Conservation Plan Supporting Organic Transition” will:

- a. At a minimum address and achieve the planning criteria for the NRCS resource concerns for soil erosion, water quality, and plant condition. Other resource concerns can also be addressed based on the land user objectives.
- b. Develop the linkage between the resource concerns addressed to the National Organic Program requirements for organic farming. This will assist the grower to develop their Organic System Plan (OSP) as defined in the USDA National Organic Program (NOP) Standards ([www.ams.usda.gov/nop](http://www.ams.usda.gov/nop)).
- c. Comply with federal, state, tribal, and local laws, regulations and permit requirements.
- d. Document the producer’s objectives and decisions for practice implementation during the transition period.

**Note:** The plan can help support a producer’s efforts to become a certified operation. However, this plan is not a replacement for an Organic System Plan (OSP) as required by the National Organic Program.

### **2. The following are “planning considerations” for the planner to consider during the conservation plan development process for organic operations or those operations transitioning to organic:**

- Identification of natural resource concerns to be addressed
- Producers objectives and goals related to organic production
- Fertility, Soil Quality and Erosion Control (NOP Part §205.203 and §205.205)
- Cover crops and cover crop management, hedgerows, and/or artificial structures for beneficial insects, pollinators, bats, and raptors or other diversified plantings in annual and perennial crops;
- Consideration of wildlife-friendly cover crops;
- List of planned nutrient applications (incorporated, foliar, soil inoculants, compost);
- Results (as appropriate) for: soil tests, tissue tests, microbiological tests, crop quality testing;
- Method and frequency of fertility management monitoring;
- Methods of erosion control and documentation:



- Erosion prediction printouts for before and after the planned system using approved erosion prediction tools such as RUSLE2 and/or WEPS when applicable.
- Crop rotation (NOP Part §205.205)
  - a. Practices to maintain or improve soil organic matter content;
  - b. Practices to manage deficient or excess nutrients and support nutrient cycling;
  - b. Provide for pest management in annual and perennial crops;
  - c. Address erosion control.
- Pest Management (NOP Part §§205.206)
  - a. Substances used for controlling insects or disease;
  - b. Biological controls (including encouraging and managing bats and raptors);
  - c. Pest control materials and reason for use;
  - d. Synthetic pesticides used in or around facilities where organic products are stored;
  - e. Beneficial predators and parasites;
  - f. Pollinator habitat and pollinator protection.
- Locations of sensitive resource areas to include:
  - a. Rivers, streams, drains, surface waters, coastal waters, wetlands, wells, groundwater, drains, grassed waterways and buffers;
  - b. Sensitive plant species and/or essential fish and wildlife (including invertebrates) habitat (on and off-site), and food plots;
  - c. Drinking water sources.
- Livestock (NOP Part §205.236 to §205.239)
  - a. Livestock, poultry, breeds, gender, numbers, hatch or purchase dates;
  - b. Crops grown for organic livestock feed;
  - a. Livestock Feed - access to pasture for all ruminants;
  - b. Drinking Water Source;
  - c. For operations producing both Organic and Non-organic livestock, the separation between organic and non-organic livestock;
  - d. Manure Management - Storage and application techniques, application rates, number of acres manure applied to, and when applied.
- Biodiversity - conservation plants, habitat for birds, pollinators, bats, beneficial insects, natural areas restored or protected, and wildlife friendly farm practices

### **3. Transition to Organic Farming Plan Criteria**

This section establishes the minimum criteria to be addressed in the development of Transition to Organic System Plan developed by a certified Technical Service Provider (TSP).

- A. A completed the “CAP\_138\_Cropland\_Template.dotx” template provided for the Cropland Acres and/or the “CAP\_138\_Grazing\_Template.dotx” provided for the grazing acres. The templates include the following required items:**

## Background and Site Information Element

- Name of owner/operator;
- Farm location and mailing address of the grower;
- Soils Map and soil map units descriptions using the Web Soil Survey <http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm> as a minimum printout the Soil Report > AOI Inventory> Map Unit Descriptions
- Digital Conservation plan map with:
  1. Streams, surface waters, surface drainage, and wetlands on or adjacent to site
  2. Property lines
  3. Required setbacks
  4. Field boundaries, name/number, acres, and land use
  5. Map scale
  6. Structural practices located on Map
  7. Legend
  8. Grower Name, County, State
- Total acres of the plan
- Producer's Objectives and Goals
- Resource evaluations for soil erosion, soil quality, water quality, plant condition, and other local concerns identified and identified with the applicable NOP requirement for each identified resource concern. (*See Attached - NRCS Resource Concern NOP Reference Tables for Cropland and Grazing*)
- Planned conservation practices to address soil erosion, soil quality, water quality, plant condition, and other local resource or human concerns; and schedule of practice application.
- Document in general terms the source of plant nutrients to be used, their rates, methods of application, and timings of application. This documentation is not considered a full nutrient management plan. If a full nutrient management plan is needed then a qualified nutrient management specialist should develop the nutrient management plan;

- B. Document the planned conservation practices to address the identified resource concerns. For each planned practice (1) identify the field(s) or location within a field a practice is to be applied, (2) the amount of the practice to be applied, and (3) the scheduled year to apply the practice. For the following practices develop the appropriate specifications to implement the conservation practices in the appropriate Jobsheet or Implementation Requirements (*Implementation Requirements documents are new for 2013 and replace the term Jobsheets used in previous years*) document found in Section IV of the Electronic Field Office Technical Guide for the respective state.**

Code	Practice Name
314	Brush Management
328	Conservation Crop Rotation
340	Cover Crop
511	Forage Harvest Management
528	Prescribed Grazing
512	Forage and Biomass Planting
550	Range Planting
345	Residue and Tillage Management, Mulch Till
346	Residue and Tillage Management, Ridge Till
329	Residue and Tillage Management, No-Till/Strip Till/Direct Seed
585	Stripcropping

### C. References

- USDA National Organic Program (NOP - [www.ams.usda.gov/nop](http://www.ams.usda.gov/nop))
- California Certified Organic Farmers (<http://www.ccof.org/>)
- USDA NRCS Field Office Technical Guide  
[http://efotg.sc.egov.usda.gov/efotg\\_locator.aspx](http://efotg.sc.egov.usda.gov/efotg_locator.aspx) , Select State, Select Section 4 Conservation Practices
- ATTRA Organic Documentation Forms, Organic Crop and Livestock Workbooks (<http://www.attra.org/>)

### 4. Deliverables for the Client – a hardcopy of the plan that includes:

- Complete Hardcopy of the client's plan ( "CAP\_138\_Cropland\_Template Aug 2012.dotx" template provided for the Cropland Acres and/or the "CAP\_138\_Grazing\_Template Aug 2012.dotx" provided for the grazing acres) with appropriate practice specifications (Jobsheets or Implementation Requirements) for the planned practices listed above.
- Soils Map and soil map units descriptions using the Web Soil Survey <http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm> as a minimum printout the Soil Report > AOI Inventory> Map Unit Descriptions

- Resource assessment results (wind and water erosion, soil quality, water quality, plant condition, water quantity, and others identified resource concerns that may be needed) – complete in the template or add printouts from assessment tool (RUSLE2 or WEPS)
- For all practices not listed above (not requiring a Jobsheet or implementation requirements) document when the practice will be applied, the amount/extent, and field number in the respective “Plan Template”. For structural or point/type practice locate the planned location on the conservation plan map.
- Digital Conservation plan map with;
  - a. Streams, surface waters, surface drainage, and wetlands on or adjacent to site
  - b. Property lines
  - c. Field Boundaries, name/number, acres, and land use
  - d. Map scale
  - e. Structural practices located on map
  - f. Legend
  - g. Grower Name, County, State

#### **5. Deliverables for NRCS Field Office:**

- Complete Hardcopy and electronic copy of the client’s plan and supporting documents.
- Soils Map and soil map units descriptions using the Web Soil Survey <http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm> as a minimum printout the Soil Report > AOI Inventory> Map Unit Descriptions
- Resource assessment results (wind and water erosion, soil quality, water quality, plant condition, water quantity, and others identified resource concerns that may be needed) – complete in the template or add printouts from assessment tool (RUSLE2 or WEPS)
- Digital Conservation plan map with;
  - a. Streams, surface waters, surface drainage, and wetlands on or adjacent to site
  - b. Property lines
  - c. Field Boundaries, name/number, acres, and land use
  - d. Map scale
  - e. Structural Practices Located on Map
  - f. Legend
  - g. Grower Name, County, State

## Attachment – Resource Concerns for Cropland and Grazing with NOP Reference:

**RESOURCE CONCERN ASSESSMENT FOR CROPLAND**—Conservation Plan Supporting Organic Transition must evaluate each of the **8 primary resource** concerns associated with this CAP and list those fields that DO NOT meet the minimum treatment level. Not all resource concerns listed apply or occur on all farms. For those resource concerns that do not apply indicate using a “NA” in the comments. Conservation practices that the producer makes a decision to apply shall be listed in the **Schedule of Planned Conservation Practices table**. All assessment and measurement data should be provided. Other resource concerns can be addressed in the plan if the producer is interested in addressing them.

RESOURCE CONCERN ASSESSMENT FOR CROPLAND				
NRCS Resource Concern	Description of Concern	NOP Regulation Practice Standard(s)	Minimum Treatment Level	Measurement & Assessment Tool
<b>SOIL EROSION - Sheet, rill</b>	Detachment and transportation of soil particles caused by rainfall runoff/splash, irrigation runoff or wind that degrades soil quality	<ul style="list-style-type: none"> <li>• 205.203 Soil fertility and crop nutrient management practice standard</li> <li>• 205.205 Crop rotation practice standard</li> </ul>	Soil loss per RUSLE2 is $\leq T + 1$ ton	Attach RUSLE2 Printout for each field
<b>SOIL EROSION - Wind erosion</b>	Detachment and transportation of soil particles caused by rainfall runoff/splash, irrigation runoff or wind that degrades soil quality	<ul style="list-style-type: none"> <li>• 205.203 Soil fertility and crop nutrient management practice standard</li> <li>• 205.205 Crop rotation practice standard</li> </ul>	Soil Loss per WEPS is $\leq T + 1$ ton	Attach WEPS Printout for each field
<b>SOIL EROSION - Concentrated flow erosion</b>	Untreated classic gullies may enlarge progressively by head cutting and/or lateral widening. Ephemeral gullies occur in the same flow area and are obscured by tillage. This includes concentrated flow erosion caused by runoff from rainfall, snowmelt or irrigation water.	<ul style="list-style-type: none"> <li>• 205.203 Soil fertility and crop nutrient management practice standard</li> <li>• 205.205 Crop rotation practice standard</li> </ul>	Concentrated flow erosion is stabilized	In field observation
<b>SOIL QUALITY DEGRADATIONS - Organic Matter Depletion</b>	Soil organic matter is not adequate to provide a suitable medium for plant growth, animal habitat, and soil biological activity	<ul style="list-style-type: none"> <li>• 205.203 Soil fertility and crop nutrient management practice standard</li> <li>• 205.205 Crop rotation practice standard</li> </ul>	Soil condition index (SCI) per RUSLE2 is $\geq 0.0$	RUSLE2 printout with SCI calculation Printout for each field

RESOURCE CONCERN ASSESSMENT FOR CROPLAND				
NRCS Resource Concern	Description of Concern	NOP Regulation Practice Standard(s)	Minimum Treatment Level	Measurement & Assessment Tool
<b>INSUFFICIENT WATER - Inefficient use of irrigation water</b>	Irrigation water is not stored, delivered, scheduled and/or applied efficiently	<ul style="list-style-type: none"> <li>• 205.200 General</li> </ul>	<ul style="list-style-type: none"> <li>• Water is scheduled and applied efficiently</li> <li>• State established criteria is met</li> </ul>	<ul style="list-style-type: none"> <li>• Irrigation Schedule</li> <li>• State established criteria</li> </ul>
<b>WATER QUALITY DEGRADATION - Excess nutrients in surface and ground waters</b>	Nutrients - organic and inorganic - are transported to receiving waters through surface runoff and/or leaching into shallow ground waters in quantities that degrade water quality and limit use for intended purposes	<ul style="list-style-type: none"> <li>• 205.203 Soil fertility and crop nutrient management practice standard</li> <li>• 205.205 Crop rotation practice standard</li> </ul>	<ul style="list-style-type: none"> <li>• Nutrient applications are based on soil and/or tissue tests and nutrient budget for realistic crop yields</li> <li>• Nitrogen &amp; Phosphorus loss risk assessments are acceptable</li> </ul>	Describe and attach N & P assessments
<b>DEGRADED PLANT CONDITION - Plant productivity and health</b>	<p>Plant productivity, vigor and/or quality negatively impacts other resources or does not meet yield potential due to improper fertility, management or plants not adapted to site</p> <p>As an example this concern addresses pollinators, beneficial insects, wind erosion, and excess soil deposition that influence plant condition</p>	<ul style="list-style-type: none"> <li>• 205.203 Soil fertility and crop nutrient management practice standard</li> <li>• 205.205 Crop rotation practice standard</li> </ul>	Plants are adapted to the site, managed to meet realistic production objectives identified by the client, and do not negatively impact other resources.	<ul style="list-style-type: none"> <li>• Site observation and documentation of applicable practices</li> <li>• Client-identified yield objectives</li> <li>• Crop Damage Tolerance Tables from WEPS</li> <li>• Plant ID field guides and pollinator guides to assess diversity</li> </ul>

RESOURCE CONCERN ASSESSMENT FOR CROPLAND				
NRCS Resource Concern	Description of Concern	NOP Regulation Practice Standard(s)	Minimum Treatment Level	Measurement & Assessment Tool
<b>DEGRADED PLANT CONDITION - Excess Pest</b>	<p>Excessive pest damage to plants including that from undesired plants, diseases, animals, soil borne pathogens, and nematodes</p> <p>As an example, this concern addresses invasive plant, animal and insect species</p>	<ul style="list-style-type: none"> <li>• 205.206 Crop pest, weed, and disease management practice standard</li> </ul>	<ul style="list-style-type: none"> <li>• Pest damage to plants does not exceed economic, environmental thresholds or other client-identified criteria</li> <li>• Plant pests, including noxious and invasive species are managed to eradicate, control or minimize spread</li> </ul>	<ul style="list-style-type: none"> <li>• Client interview</li> <li>• Site observation and documentation of applicable practices</li> <li>• Available risk assessment tools for invasive species</li> <li>• Field guides for plant, insect or disease pests</li> <li>• PLANTS Database</li> </ul>

**RESOURCE CONCERN ASSESSMENT FOR GRAZING SYSTEMS**—Conservation Plan Supporting Organic Transition must evaluate each of the **11 primary resource concerns** associated with this CAP and list those fields that DO NOT meet the minimum treatment level. Not all resource concerns listed apply or occur on all farms. For those resource concerns that do not apply indicate using a “NA” in the comments. Conservation practices that the producer makes a decision to apply shall be listed in the **Schedule of Planned Conservation Practices table**. All assessment and measurement data should be provided. Other resource concerns can be addressed in the plan if the producer is interested in addressing them.

<b>RESOURCE CONCERN ASSESSMENT FOR GRAZING SYSTEMS</b>				
<b>Resource Concern</b>	<b>Description of Concern</b>	<b>NOP Regulation Practice Standard(s)</b>	<b>Minimum Treatment Level</b>	<b>Measurement &amp; Assessment Tool</b>
<b>SOIL EROSION - Sheet, rill</b>	Detachment and transportation of soil particles caused by rainfall runoff/splash, irrigation runoff or wind that degrades soil quality	<ul style="list-style-type: none"> <li>• 205.203 Soil fertility and crop nutrient management practice standard</li> <li>• 205.240 Pasture practice standard</li> </ul>	Soil loss per RUSLE2 is $\leq T$	Attach RUSLE2 Printout for each field
<b>SOIL EROSION - Wind erosion</b>	Detachment and transportation of soil particles caused by rainfall runoff/splash, irrigation runoff or wind that degrades soil quality	<ul style="list-style-type: none"> <li>• 205.203 Soil fertility and crop nutrient management practice standard</li> <li>• 205.240 Pasture practice standard</li> </ul>	Soil Loss per WEPS is $\leq T$	Attach WEPS Printout for each field
<b>SOIL EROSION - Concentrated flow erosion</b>	<p>Untreated classic gullies may enlarge progressively by head cutting and/or lateral widening.</p> <p>Ephemeral gullies occur in the same flow area and are obscured by tillage.</p> <p>This includes concentrated flow erosion caused by runoff from rainfall, snowmelt or irrigation water.</p>	<ul style="list-style-type: none"> <li>• 205.203 Soil fertility and crop nutrient management practice standard</li> <li>• 205.240 Pasture practice standard</li> </ul>	Concentrated flow erosion is stabilized	In field observation
<b>SOIL QUALITY DEGRADATIONS - Organic Matter Depletion</b>	Soil organic matter is not adequate to provide a suitable medium for plant growth, animal habitat, and soil biological activity	<ul style="list-style-type: none"> <li>• 205.203 Soil fertility and crop nutrient management practice standard</li> </ul>	<ul style="list-style-type: none"> <li>• Soil condition index (SCI) per RUSLE2 is <math>&gt; 0.0</math></li> <li>• Pasture Condition Score - plant cover <math>\geq 4</math></li> <li>• Pasture Condition Score - plant residue <math>\geq 4</math></li> </ul>	<ul style="list-style-type: none"> <li>• RUSLE2 printout with SCI calculation for each field</li> <li>• Pasture Condition Score Card</li> </ul>



## RESOURCE CONCERN ASSESSMENT FOR GRAZING SYSTEMS

Resource Concern	Description of Concern	NOP Regulation Practice Standard(s)	Minimum Treatment Level	Measurement & Assessment Tool
<b>INSUFFICIENT WATER - Inefficient use of irrigation water</b>	Irrigation water is not stored, delivered, scheduled, and/or applied efficiently	<ul style="list-style-type: none"> <li>• 205.200 General</li> </ul>	<ul style="list-style-type: none"> <li>• Water is scheduled and applied efficiently</li> <li>• State established criteria if applicable are met</li> </ul>	<ul style="list-style-type: none"> <li>• Irrigation schedule</li> <li>• State established criteria</li> </ul>
<b>WATER QUALITY DEGRADATION - Excess nutrients in surface and ground waters</b>	Nutrients - organic and inorganic - are transported to receiving waters through surface runoff and/or leaching into shallow ground waters in quantities that degrade water quality and limit use for intended purposes	<ul style="list-style-type: none"> <li>• 205.203 Soil fertility and crop nutrient management practice standard</li> <li>• 205.240 Pasture practice standard</li> </ul>	<ul style="list-style-type: none"> <li>• Plant Condition Score - plant cover <math>\geq 4</math></li> <li>• Plant Condition Score - concentration areas <math>\leq 3</math></li> <li>• Plant Condition Score - livestock concentration areas <math>\geq 4</math></li> <li>• Nutrient applications are based on soil and/or tissue tests and nutrient budget for realistic crop yields</li> </ul>	<ul style="list-style-type: none"> <li>• N &amp; P Risk Analysis Tools</li> <li>• MMP - Manure Management Planner</li> <li>• Approved nutrient management planning tools</li> <li>• Pasture Condition Score</li> </ul>
<b>DEGRADED PLANT CONDITION - Plant productivity and health</b>	<p>Plant productivity, vigor and/or quality negatively impacts other resources or does not meet yield potential due to improper fertility, management or plants not adapted to site</p> <p>This concern addresses pollinators, beneficial insects, wind erosion, and excess soil deposition that influence plant condition</p>	<ul style="list-style-type: none"> <li>• 205.202 Land Requirement</li> <li>• 205.203 Soil fertility and crop nutrient management practice standard</li> </ul>	<ul style="list-style-type: none"> <li>• Plant Condition Score - desirable plants <math>\geq 3</math></li> <li>• Plant Condition Score - plant cover <math>\geq 4</math></li> <li>• Plant Condition Score - plant vigor <math>\geq 4</math></li> <li>• Plants are adapted to the site, meet production goals and do not negatively impact other resources.</li> </ul>	<ul style="list-style-type: none"> <li>• Pasture Condition Score</li> <li>• Forage Suitability Groups reports</li> </ul>

# Conservation Plan Supporting Organic Transition

## Conservation Activity Plan (138) – Cropland

---

<b>Owner(s) Name(s)</b>				
<b>Owner(s) Mailing Address(es)</b>				
<b>Owner(s) Phone Number(s)</b>				
<b>Owner(s) Email(s)</b>				
<b>Owner(s) Signature(s)</b>				
<b>Organic Certifying Entity</b>				
<b>Plan Developed by</b>				
<b>Planner's Mailing Address</b>				
<b>Planner's Phone Number</b>				
<b>Planner's Email</b>				
<b>Planner's Signature</b>				
<b>Plan Date</b>				
<b>Total Acres in Plan</b>	<b>Certified Organic</b>	<b>Transitioning</b>	<b>Non-Organic</b>	<b>Total</b>
<b>Producer's Objectives or Goals</b>				
<b>Attachments Included</b>	<ul style="list-style-type: none"> <li>Conservation Plan Map</li> <li>Soils Map and Descriptions</li> <li>Practice Plans and/or Job Sheets</li> <li>Soil Loss Evaluation Printouts</li> <li>Other Supporting Documentation</li> </ul>			

## Conservation Plan Supporting Organic Transition

### Conservation Activity Plan (138) – Cropland

**RESOURCE CONCERN ASSESSMENT**—Conservation Plan Supporting Organic Transition must evaluate each of the 8 primary resource concerns associated with this CAP and list those fields that DO NOT meet the minimum treatment level. Not all resource concerns listed apply or occur on all farms. For those resource concerns that do not apply indicate using a “NA” in the comments. Conservation practices that the producer makes a decision to apply shall be listed in the **Schedule of Planned Conservation Practices table**. All assessment and measurement data should be provided. Other resource concerns can be addressed in the plan if the producer is interested in addressing them.

Resource Concern	Description of Concern	NOP Regulation Practice Standard(s)	Minimum Treatment Level	Measurement & Assessment Tool
<b>SOIL EROSION - Sheet, rill</b>	Detachment and transportation of soil particles caused by rainfall runoff/splash, irrigation runoff or wind that degrades soil quality	<ul style="list-style-type: none"> <li>205.203 Soil fertility and crop nutrient management practice standard</li> <li>205.205 Crop rotation practice standard</li> </ul>	Soil loss per RUSLE2 is $\leq T + 1$ ton	Attach RUSLE2 Printout for each field
Do existing conditions or proposed alternatives meet the minimum treatment criteria? (Describe or attach evaluation)				
Fields that DO NOT Meet Minimum Criteria				
<b>SOIL EROSION - Wind erosion</b>	Detachment and transportation of soil particles caused by rainfall runoff/splash, irrigation runoff or wind that degrades soil quality	<ul style="list-style-type: none"> <li>205.203 Soil fertility and crop nutrient management practice standard</li> <li>205.205 Crop rotation practice standard</li> </ul>	Soil Loss per WEPS is $\leq T + 1$ ton	Attach WEPS Printout for each field
Do existing conditions or proposed alternatives meet the minimum treatment criteria? (Describe or attach evaluation)				
Fields that DO NOT Meet Minimum Criteria				

## Conservation Plan Supporting Organic Transition

### Conservation Activity Plan (138) – Cropland

Resource Concern	Description of Concern	NOP Regulation Practice Standard(s)	Minimum Treatment Level	Measurement & Assessment Tool
<b>SOIL EROSION - Concentrated flow erosion</b>	Untreated classic gullies may enlarge progressively by head cutting and/or lateral widening. Ephemeral gullies occur in the same flow area and are obscured by tillage. This includes concentrated flow erosion caused by runoff from rainfall, snowmelt or irrigation water.	<ul style="list-style-type: none"> <li>205.203 Soil fertility and crop nutrient management practice standard</li> <li>205.205 Crop rotation practice standard</li> </ul>	Concentrated flow erosion is stabilized	In field observation
Do existing conditions or proposed alternatives meet the minimum treatment criteria? (Describe or attach evaluation)				
Fields that DO NOT Meet Minimum Criteria				
<b>SOIL QUALITY DEGRADATIONS - Organic Matter Depletion</b>	Soil organic matter is not adequate to provide a suitable medium for plant growth, animal habitat, and soil biological activity	<ul style="list-style-type: none"> <li>205.203 Soil fertility and crop nutrient management practice standard</li> <li>205.205 Crop rotation practice standard</li> </ul>	Soil condition index (SCI) per RUSLE2 is $\geq$ 0.0	RUSLE2 printout with SCI calculation Printout for each field
Do existing conditions or proposed alternatives meet the minimum treatment criteria? (Describe or attach evaluation)				
Fields that DO NOT Meet Minimum Criteria				
<b>INSUFFICIENT WATER - Inefficient use of irrigation water</b>	Irrigation water is not stored, delivered, scheduled and/or applied efficiently	<ul style="list-style-type: none"> <li>205.200 General</li> </ul>	<ul style="list-style-type: none"> <li>Water is scheduled and applied efficiently</li> <li>State established criteria is met</li> </ul>	<ul style="list-style-type: none"> <li>Irrigation Schedule</li> <li>State established criteria</li> </ul>
Do existing conditions or proposed alternatives meet the minimum treatment criteria? (Describe or attach evaluation)				
Fields that DO NOT Meet Minimum Criteria				

## Conservation Plan Supporting Organic Transition

### Conservation Activity Plan (138) – Cropland

Resource Concern	Description of Concern	NOP Regulation Practice Standard(s)	Minimum Treatment Level	Measurement & Assessment Tool
<b>WATER QUALITY DEGRADATION - Excess nutrients in surface and ground waters</b>	Nutrients - organic and inorganic - are transported to receiving waters through surface runoff and/or leaching into shallow ground waters in quantities that degrade water quality and limit use for intended purposes	<ul style="list-style-type: none"> <li>• 205.203 Soil fertility and crop nutrient management practice standard</li> <li>• 205.205 Crop rotation practice standard</li> </ul>	<ul style="list-style-type: none"> <li>• Nutrient applications are based on soil and/or tissue tests and nutrient budget for realistic crop yields</li> <li>• Nitrogen &amp; Phosphorus loss risk assessments are acceptable</li> </ul>	Describe and attach N & P assessments
Do existing conditions or proposed alternatives meet the minimum treatment criteria? (Describe or attach evaluation)				
Fields that DO NOT Meet Minimum Criteria				
<b>DEGRADED PLANT CONDITION - Plant productivity and health</b>	<p>Plant productivity, vigor and/or quality negatively impacts other resources or does not meet yield potential due to improper fertility, management or plants not adapted to site</p> <p>As an example this concern addresses pollinators, beneficial insects, wind erosion, and excess soil deposition that influence plant condition</p>	<ul style="list-style-type: none"> <li>• 205.203 Soil fertility and crop nutrient management practice standard</li> <li>• 205.205 Crop rotation practice standard</li> </ul>	Plants are adapted to the site, managed to meet realistic production objectives identified by the client, and do not negatively impact other resources.	<ul style="list-style-type: none"> <li>• Site observation and documentation of applicable practices</li> <li>• Client-identified yield objectives</li> <li>• Crop Damage Tolerance Tables from WEPS</li> <li>• Plant ID field guides and pollinator guides to assess diversity</li> </ul>
Do existing conditions or proposed alternatives meet the minimum treatment criteria? (Describe or attach evaluation)				
Fields that DO NOT Meet Minimum Criteria				

## Conservation Plan Supporting Organic Transition

### Conservation Activity Plan (138) – Cropland

Resource Concern	Description of Concern	NOP Regulation Practice Standard(s)	Minimum Treatment Level	Measurement & Assessment Tool
<b>DEGRADED PLANT CONDITION - Excess Pest</b>	<p>Excessive pest damage to plants including that from undesired plants, diseases, animals, soil borne pathogens, and nematodes</p> <p>As an example, this concern addresses invasive plant, animal and insect species</p>	<ul style="list-style-type: none"> <li>205.206 Crop pest, weed, and disease management practice standard</li> </ul>	<ul style="list-style-type: none"> <li>Pest damage to plants does not exceed economic, environmental thresholds or other client-identified criteria</li> <li>Plant pests, including noxious and invasive species are managed to eradicate, control or minimize spread</li> </ul>	<ul style="list-style-type: none"> <li>Client interview</li> <li>Site observation and documentation of applicable practices</li> <li>Available risk assessment tools for invasive species</li> <li>Field guides for plant, insect or disease pests</li> <li>PLANTS Database</li> </ul>
Do existing conditions or proposed alternatives meet the minimum treatment criteria? (Describe or attach evaluation)				
Fields that DO NOT Meet Minimum Criteria				
Other resource concerns (describe)				
Do existing conditions or proposed alternatives meet the minimum treatment criteria? (Describe or attach evaluation)				
Fields that DO NOT Meet Minimum Criteria				
Other resource concerns (describe)				
Do existing conditions or proposed alternatives meet the minimum treatment criteria? (Describe or attach evaluation)				
Fields that DO NOT Meet Minimum Criteria				

## Conservation Plan Supporting Organic Transition

### Conservation Activity Plan (138) – Cropland

**Schedule of Planned Conservation Practices with identified sections in an Organic System Plan where applicable.**

*Attach documentation containing conservation practice details and specifications (Jobsheet and/or Implementation Requirements for: 314, 328, 340, 511, 528, 512, 550, 345, 346, 329, 585).*

*Add conservation practice blocks, as needed.*

**NRCS Conservation Practice:** Choose an item

**Organic System Plan Linkage:** Choose an item; Choose an item; Choose an item; Choose an item

**Narrative:**

Field	Planned Amount	Unit	Month	Year	Applied Amount	Date	Attachment (Y/N)

**NRCS Conservation Practice:** Choose an item

**Organic System Plan Linkage:** Choose an item; Choose an item; Choose an item; Choose an item

**Narrative:**

Field	Planned Amount	Unit	Month	Year	Applied Amount	Date	Attachment (Y/N)

## Conservation Plan Supporting Organic Transition Conservation Activity Plan (138) – Cropland

---

### Schedule of Planned Conservation Practices with identified sections in an Organic System Plan where applicable.

*Attach documentation containing conservation practice details and specifications (Jobsheet and/or Implementation Requirements).  
Add conservation practice blocks, as needed.*

NRCS Conservation Practice: **Choose an item**

Organic System Plan Linkage: **Choose an item; Choose an item; Choose an item; Choose an item**

Narrative:

Field	Planned Amount	Unit	Month	Year	Applied Amount	Date	Attachment (Y/N)

NRCS Conservation Practice: **Choose an item**

Organic System Plan Linkage: **Choose an item; Choose an item; Choose an item; Choose an item**

Narrative:

Field	Planned Amount	Unit	Month	Year	Applied Amount	Date	Attachment (Y/N)



## Conservation Plan Supporting Organic Transition Conservation Activity Plan (138) – Cropland

---

### Schedule of Planned Conservation Practices with identified sections in an Organic System Plan where applicable.

Attach documentation containing conservation practice details and specifications (Jobsheet and/or Implementation Requirements).  
Add conservation practice blocks, as needed.

NRCS Conservation Practice: **Choose an item**

Organic System Plan Linkage: **Choose an item; Choose an item; Choose an item; Choose an item**

Narrative:

Field	Planned Amount	Unit	Month	Year	Applied Amount	Date	Attachment (Y/N)

NRCS Conservation Practice: **Choose an item**

Organic System Plan Linkage: **Choose an item; Choose an item; Choose an item; Choose an item**

Narrative:

Field	Planned Amount	Unit	Month	Year	Applied Amount	Date	Attachment (Y/N)

## **Conservation Plan Supporting Organic Transition Conservation Activity Plan (138) – Cropland**

---

# Conservation Plan Supporting Organic Transition

## Conservation Activity Plan (138) – Grazing

---

<b>Owner(s) Name(s)</b>				
<b>Owner(s) Mailing Address(es)</b>				
<b>Owner(s) Phone Number(s)</b>				
<b>Owner(s) Email(s)</b>				
<b>Owner(s) Signature(s)</b>				
<b>Organic Certifying Entity</b>				
<b>Plan Developed by</b>				
<b>Planner's Mailing Address</b>				
<b>Planner's Phone Number</b>				
<b>Planner's Email</b>				
<b>Planner's Signature</b>				
<b>Plan Date</b>				
<b>Total Acres in Plan</b>	<b>Certified Organic</b>	<b>Transitioning</b>	<b>Non-Organic</b>	<b>Total</b>
<b>Producer's Objectives or Goals</b>				
<b>Attachments Included</b>	<ul style="list-style-type: none"> <li>Conservation Plan Map</li> <li>Soils Map and Descriptions</li> <li>Practice Plans and/or Job Sheets</li> <li>Soil Loss Evaluation Printouts</li> <li>Other Supporting Documentation</li> </ul>			

## Conservation Plan Supporting Organic Transition

### Conservation Activity Plan (138) – Grazing

**RESOURCE CONCERN ASSESSMENT**—Conservation Plan Supporting Organic Transition must evaluate each of the 11 primary resource concerns associated with this CAP and list those fields that DO NOT meet the minimum treatment level. Not all resource concerns listed apply or occur on all farms. For those resource concerns that do not apply indicate using a “NA” in the comments. Conservation practices that the producer makes a decision to apply shall be listed in the **Schedule of Planned Conservation Practices table**. All assessment and measurement data should be provided. Other resource concerns can be addressed in the plan if the producer is interested in addressing them.

Resource Concern	Description of Concern	NOP Regulation Practice Standard(s)	Minimum Treatment Level	Measurement & Assessment Tool
<b>SOIL EROSION - Sheet, rill</b>	Detachment and transportation of soil particles caused by rainfall runoff/splash, irrigation runoff or wind that degrades soil quality	<ul style="list-style-type: none"> <li>• 205.203 Soil fertility and crop nutrient management practice standard</li> <li>• 205.240 Pasture practice standard</li> </ul>	Soil loss per RUSLE2 is $\leq T + 1$ ton	Attach RUSLE2 Printout for each field
Do existing conditions or proposed alternatives meet the minimum treatment criteria? (Describe or attach evaluation)				
Fields that DO NOT Meet Minimum Criteria				
<b>SOIL EROSION - Wind erosion</b>	Detachment and transportation of soil particles caused by rainfall runoff/splash, irrigation runoff or wind that degrades soil quality	<ul style="list-style-type: none"> <li>• 205.203 Soil fertility and crop nutrient management practice standard</li> <li>• 205.240 Pasture practice standard</li> </ul>	Soil Loss per WEPS is $\leq T + 1$ ton	Attach WEPS Printout for each field
Do existing conditions or proposed alternatives meet the minimum treatment criteria? (Describe or attach evaluation)				
Fields that DO NOT Meet Minimum Criteria				

## Conservation Plan Supporting Organic Transition

### Conservation Activity Plan (138) – Grazing

Resource Concern	Description of Concern	NOP Regulation Practice Standard(s)	Minimum Treatment Level	Measurement & Assessment Tool
<b>SOIL EROSION - Concentrated flow erosion</b>	<p>Untreated classic gullies may enlarge progressively by head cutting and/or lateral widening.</p> <p>Ephemeral gullies occur in the same flow area and are obscured by tillage.</p> <p>This includes concentrated flow erosion caused by runoff from rainfall, snowmelt or irrigation water.</p>	<ul style="list-style-type: none"> <li>• 205.203 Soil fertility and crop nutrient management practice standard</li> <li>• 205.240 Pasture practice standard</li> </ul>	Concentrated flow erosion is stabilized	In field observation
Do existing conditions or proposed alternatives meet the minimum treatment criteria? (Describe or attach evaluation)				
Fields that DO NOT Meet Minimum Criteria				
<b>SOIL QUALITY DEGRADATIONS - Organic Matter Depletion</b>	Soil organic matter is not adequate to provide a suitable medium for plant growth, animal habitat, and soil biological activity	<ul style="list-style-type: none"> <li>• 205.203 Soil fertility and crop nutrient management practice standard</li> </ul>	<ul style="list-style-type: none"> <li>• Soil condition index (SCI) per RUSLE2 is &gt; 0.0</li> <li>• Pasture Condition Score - plant cover ≥ 4</li> <li>• Pasture Condition Score - plant residue ≥ 4</li> </ul>	<ul style="list-style-type: none"> <li>• RUSLE2 printout with SCI calculation for each field</li> <li>• Pasture Condition Score Card</li> </ul>
Do existing conditions or proposed alternatives meet the minimum treatment criteria? (Describe or attach evaluation)				
Fields that DO NOT Meet Minimum Criteria				
<b>INSUFFICIENT WATER - Inefficient use of irrigation water</b>	Irrigation water is not stored, delivered, scheduled, and/or applied efficiently	<ul style="list-style-type: none"> <li>• 205.200 General</li> </ul>	<ul style="list-style-type: none"> <li>• Water is scheduled and applied efficiently</li> <li>• State established criteria are met</li> </ul>	<ul style="list-style-type: none"> <li>• Irrigation schedule</li> <li>• State established criteria</li> </ul>

## Conservation Plan Supporting Organic Transition

### Conservation Activity Plan (138) – Grazing

Resource Concern	Description of Concern	NOP Regulation Practice Standard(s)	Minimum Treatment Level	Measurement & Assessment Tool
Do existing conditions or proposed alternatives meet the minimum treatment criteria? (Describe or attach evaluation)				
<b>Fields that DO NOT Meet Minimum Criteria</b>				
<b>WATER QUALITY DEGRADATION - Excess nutrients in surface and ground waters</b>	Nutrients - organic and inorganic - are transported to receiving waters through surface runoff and/or leaching into shallow ground waters in quantities that degrade water quality and limit use for intended purposes	<ul style="list-style-type: none"> <li>205.203 Soil fertility and crop nutrient management practice standard</li> <li>205.240 Pasture practice standard</li> </ul>	<ul style="list-style-type: none"> <li>Plant Condition Score - plant cover <math>\geq 4</math></li> <li>Plant Condition Score - concentration areas <math>\leq 3</math></li> <li>Plant Condition Score - livestock concentration areas <math>\geq 4</math></li> <li>Nutrient applications are based on soil and/or tissue tests and nutrient budget for realistic crop yields</li> </ul>	<ul style="list-style-type: none"> <li>N &amp; P Risk Analysis Tools</li> <li>MMP - Manure Management Planner</li> <li>Approved nutrient management planning tools</li> <li>Pasture Condition Score</li> </ul>
Do existing conditions or proposed alternatives meet the minimum treatment criteria? (Describe or attach evaluation)				
<b>Fields that DO NOT Meet Minimum Criteria</b>				
<b>DEGRADED PLANT CONDITION - Plant productivity and health</b>	<p>Plant productivity, vigor and/or quality negatively impacts other resources or does not meet yield potential due to improper fertility, management or plants not adapted to site</p> <p>This concern addresses pollinators, beneficial insects, wind erosion, and excess soil deposition that influence plant condition</p>	<ul style="list-style-type: none"> <li>205.202 Land Requirement</li> <li>205.203 Soil fertility and crop nutrient management practice standard</li> </ul>	<ul style="list-style-type: none"> <li>Plant Condition Score - desirable plants <math>\geq 3</math></li> <li>Plant Condition Score - plant cover <math>\geq 4</math></li> <li>Plant Condition Score - plant vigor <math>\geq 4</math></li> <li>Plants on the site are listed in applicable Forage Suitability Groups reports or State list.</li> </ul>	<ul style="list-style-type: none"> <li>Pasture Condition Score</li> <li>Forage Suitability Groups reports</li> </ul>

## Conservation Plan Supporting Organic Transition

### Conservation Activity Plan (138) – Grazing

Resource Concern	Description of Concern	NOP Regulation Practice Standard(s)	Minimum Treatment Level	Measurement & Assessment Tool
Do existing conditions or proposed alternatives meet the minimum treatment criteria? (Describe or attach evaluation)				
Fields that DO NOT Meet Minimum Criteria				
<b>DEGRADED PLANT CONDITION - Excess Pest</b>	<p>Excessive pest damage to plants including that from undesired plants, diseases, animals, soil borne pathogens, and nematodes</p> <p>This concern addresses invasive plant, animal and insect species</p>	<ul style="list-style-type: none"> <li>• 205.206 Crop pest, weed, and disease management practice standard</li> </ul>	<ul style="list-style-type: none"> <li>• Pest damage to plants does not exceed economic, environmental thresholds or other client-identified criteria</li> <li>• Plant pests, including noxious and invasive species, are managed to eradicate, control or minimize spread</li> <li>• Plant Condition Score - insect and disease pressure <math>\geq 4</math></li> <li>• Plant Condition Score - site adaptation <math>\geq 4</math></li> </ul>	<ul style="list-style-type: none"> <li>• Pasture Condition Score</li> <li>• PLANTS Database</li> </ul>
Do existing conditions or proposed alternatives meet the minimum treatment criteria? (Describe or attach evaluation)				
Fields that DO NOT Meet Minimum Criteria				
<b>LIVESTOCK PRODUCTION LIMITATION – Inadequate feed and forage</b>	<p>Feed and forage quality or quantity is inadequate for nutritional needs and production goals of the kinds and classes of livestock</p>	<p>205.240 Pasture practice standard</p>	<p>Provide a minimum of 30% of a ruminant's dry matter intake, on average, over the course of the grazing season as established by the state NRCS</p>	<p>Assessment of forage/feed needs versus availability determined using GRAS - Grassland Resource Analysis System; NutBAI - Nutritional Balancer tool; or other state recognized tools</p>

## Conservation Plan Supporting Organic Transition

### Conservation Activity Plan (138) – Grazing

Resource Concern	Description of Concern	NOP Regulation Practice Standard(s)	Minimum Treatment Level	Measurement & Assessment Tool
Do existing conditions or proposed alternatives meet the minimum treatment criteria? (Describe or attach evaluation)				
Fields that DO NOT Meet Minimum Criteria				
<b>LIVESTOCK PRODUCTION LIMITATION – Inadequate livestock shelter</b>	Livestock lack adequate shelter from climatic conditions to maintain health or production goals	<ul style="list-style-type: none"> <li>• 205.239 Livestock living conditions</li> <li>• 205.240 Pasture practice standard</li> </ul>	Artificial and/or natural shelter meets animal health and client objectives	Site observation and documentation of applicable practices
Do existing conditions or proposed alternatives meet the minimum treatment criteria? (Describe or attach evaluation)				
Fields that DO NOT Meet Minimum Criteria				
<b>LIVESTOCK PRODUCTION LIMITATION – Inadequate livestock water</b>	Quantity, quality and/or distribution of drinking water are insufficient to maintain health or production goals for the kinds and classes of livestock	205.239 Livestock living conditions 205.240 Pasture practice standard	Water of acceptable quality and quantity is provided and adequately distributed to meet Client goals and animal needs	Site observation and documentation of applicable practices using GRAS - Grassland Resource Analysis System - tool for water distribution



## Conservation Plan Supporting Organic Transition

### Conservation Activity Plan (138) – Grazing

#### Schedule of Planned Conservation Practices with identified sections in an Organic System Plan where applicable.

Attach documentation containing conservation practice details and specifications (Jobsheet and/or Implementation Requirements for: 314, 328, 340, 511, 528, 512, 550, 345, 346, 329, 585).

Add conservation practice blocks, as needed.

NRCS Conservation Practice: Choose an item

Organic System Plan Linkage: Choose an item; Choose an item; Choose an item; Choose an item

Narrative:

Field	Planned Amount	Unit	Month	Year	Applied Amount	Date	Attachment (Y/N)

NRCS Conservation Practice: Choose an item

Organic System Plan Linkage: Choose an item; Choose an item; Choose an item; Choose an item

Narrative:

Field	Planned Amount	Unit	Month	Year	Applied Amount	Date	Attachment (Y/N)

## Conservation Plan Supporting Organic Transition

### Conservation Activity Plan (138) – Grazing

---

#### Schedule of Planned Conservation Practices with identified sections in an Organic System Plan where applicable.

Attach documentation containing conservation practice details and specifications (Jobsheet and/or Implementation Requirements).  
Add conservation practice blocks, as needed.

NRCS Conservation Practice: **Choose an item**

Organic System Plan Linkage: **Choose an item; Choose an item; Choose an item; Choose an item**

Narrative:

Field	Planned Amount	Unit	Month	Year	Applied Amount	Date	Attachment (Y/N)

NRCS Conservation Practice: **Choose an item**

Organic System Plan Linkage: **Choose an item; Choose an item; Choose an item; Choose an item**

Narrative:

Field	Planned Amount	Unit	Month	Year	Applied Amount	Date	Attachment (Y/N)

## Conservation Plan Supporting Organic Transition

### Conservation Activity Plan (138) – Grazing

---

#### Schedule of Planned Conservation Practices with identified sections in an Organic System Plan where applicable.

*Attach documentation containing conservation practice details and specifications (Jobsheet and/or Implementation Requirements).  
Add conservation practice blocks, as needed.*

NRCS Conservation Practice: **Choose an item**

Organic System Plan Linkage: **Choose an item; Choose an item; Choose an item; Choose an item**

Narrative:

Field	Planned Amount	Unit	Month	Year	Applied Amount	Date	Attachment (Y/N)

NRCS Conservation Practice: **Choose an item**

Organic System Plan Linkage: **Choose an item; Choose an item; Choose an item; Choose an item**

Narrative:

Field	Planned Amount	Unit	Month	Year	Applied Amount	Date	Attachment (Y/N)

## **Conservation Plan Supporting Organic Transition Conservation Activity Plan (138) – Grazing**

---

**Fish and Wildlife Habitat Plan Criteria**  
**Practice/Activity Code (142) (No.)**

**1. Definition**

A fish and wildlife habitat plan is a site-specific plan developed for a client who is ready to plan and implement decisions with consideration for fish and wildlife habitat and other biological resources.

**A Fish and Wildlife Habitat Plan:**

- Meets Natural Resource Conservation Service (NRCS) quality criteria for fish and wildlife habitat and other identified resource concerns;
- Complies with federal, state, tribal and local laws, regulations and permit requirements;
- Addresses the client's objectives.

**2. Fish and Wildlife Habitat Conservation Plan Criteria**

This section establishes the minimum criteria to be addressed in the development of a Fish and Wildlife Habitat Plan

**A. General Criteria**

A Fish and Wildlife Habitat Conservation Plan shall be developed by a certified technical service provider. In accordance with Section 1240 (A), the Environmental Quality Incentive Program (EQIP) program provides funding support through contracts with eligible producers to obtain services of certified Technical Service Providers (TSPs) for development an Fish and Wildlife Habitat Conservation Plan. The specific criteria required for each type of certification for TSP is located on the TSP registry (TechReg) web site at:

<http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/technical/tsp>

**B. Fish and Wildlife Plan Criteria**

- A fish and wildlife activity conservation plan will address NRCS quality criteria for fish and wildlife and soil erosion, water quality, or other identified resource concerns.
- The plan will comply with Federal, State, Tribal, and local laws, regulations, and permit requirements.
- Satisfy the participant's objectives in regard to fish and wildlife resources.

**C. Background and Site Information**

- Landowner information – name, address, operation, size
- Location and plan map of parcel
- Documentation of existing practices/history
- Resource inventory
- Fish and wildlife resource concerns

**D. Client Objectives**

Conservation Systems are reviewed periodically, and updated if needed. To obtain the current version of this system, contact your Natural Resources Conservation Service State Office, or visit the Field Office Technical Guide.

- Manage working lands for fish and wildlife resources
- Increase populations of selected species or groups
- Maintain populations of selected species or groups
- Improve habitat for aquatic, wetland, and/or terrestrial species

#### **E. Document Existing Conditions**

- Conservation plan map – boundaries, fields, scale, streams, surface waters, wetlands, fences, land uses, etc.
- Soils map – legend, interpretations for fish and wildlife resources
- Client's decisions – conservation practices needed to achieve objectives
- Habitat assessment, evaluations, or Habitat Suitability Index (HSI) models
- Current management activities
- Carrying capacity for selected species/resources

#### **F. Desired Future Conditions/Goals**

- Improve or maintain fish and wildlife population levels
- Restore fish and wildlife species or habitats

#### **G. Assessing/Monitoring of Fish and Wildlife Populations**

- Evaluation methods and approach
- Assessment design

#### **H. Conservation Practices and/or Activities and Support Documents**

- Fish and wildlife-related Conservation Practice Standards - The National Handbook of Conservation Practices lists more than 170 practices. Virtually every conservation practice impacts fish and wildlife resources in some manner. The practices listed in Attachment 1 are specifically related to fish and wildlife resources. These practices will, when properly implemented and/or managed, positively affect biological resources. Attachment 2 relates conservation practices to groupings of biological resources.
- Habitat assessment guides (State specific). Habitat evaluations and Habitat Suitability Index (HSI) models for many fish and wildlife species are available to guide the planner in formulating alternatives for the land owner/participant. The alternative(s) selected are implemented through one or more conservation practices that provide or improve needed habitat elements. The practices, when implemented, should achieve the participant's objectives, solve identified problems, and improve habitat conditions.
- Requirements from State-specific Field Office Technical Guide

### **3. Deliverables for the Client – a hardcopy of the plan that includes:**

- Cover page – name, address, phone of client and TSP; Total Acres of the Plan, signature blocks for the TSP, producer, and a signature block for the NRCS acceptance.

- Soils map and appropriate soil descriptions
- Resource assessment results (habitat assessment, etc.)
- Complete Hardcopy of the client's plan (MsWord copy) with the planned conservation practices and their respective practice site-specific specifications in a NRCS approved jobsheet, or separate practice plan for the following practices:

Code	Practice Name
643	Restoration and Management of Declining Habitats
644	Wetland Wildlife Habitat Management
645	Upland Wildlife Habitat Management

- For other practices they shall be documented in the plan for the planned amount, the fields where the practice is to be applied, and the planned year of application.

#### 4. Deliverables for NRCS Field Office:

- Complete Hardcopy and Electronic copy of the client's plan (MsWord copy) and other appropriate digital supporting files.
- Digital Conservation Plan Map with fields, features, and structural practices located.
- Digital Soils Map.

#### 5. References

1. National Planning Procedures Handbook
2. Field Office Technical Guide
3. National Biology Handbook
4. National Biology Manual
5. National Forestry Manual
6. National Forestry Handbook
7. National Environmental Compliance Handbook
8. TechReg Technical Service Provider Registry

## Attachment 1 - Typical Conservation Practices/Fish and Wildlife Resources

<b>National Conservation Practice Standards Specific to Fish and Wildlife Resources</b>
<b>Aquaculture Ponds</b> (397)—A water impoundment constructed and managed for commercial aquaculture production. To provide suitable aquatic environment for producing, growing, and harvesting commercial aquaculture products.
<b>Constructed Wetland</b> (656)—A wetland constructed for the primary purpose of water quality improvement; i.e., treatment of wastewater, sewage, surface runoff, milk-house wastewater, silage leachate, and mine drainage. Practice treats wastewater by the biological and mechanical activities of the constructed wetland.
<b>Early Successional Habitat Development/Management</b> (647)—Manage early plant succession to benefit desired wildlife or natural communities. Increase plant community diversity, provide wildlife habitat for early successional species and provide habitat for declining species.
<b>Field Border</b> (386)—A strip of perennial grass or shrubs established at or around the edge of a field. Field borders provide productive habitat for wildlife that favor early successional habitats on agricultural landscapes.
<b>Fish Passage</b> (396)—Eliminating or mitigating the effects of natural or artificial barriers, such as dams, culverts, or cross-channel structures to fish and other aquatic organisms. Allows for the unimpeded movement of aquatic organisms past stream barriers.
<b>Fishpond Management</b> (399)—Developing or improving impounded water to produce fish and other aquatic organisms for domestic use or recreation. Provides a suitable aquatic environment for producing, growing, and harvesting fish or other aquatic organisms.
<b>Restoration and Management of Declining Habitats</b> (643)—Restoring and conserving rare or declining native vegetated communities and associated wildlife species to restore and manage habitats degraded by human activity, increase native plant community diversity, or manage unique or declining native habitats.
<b>Riparian Herbaceous Cover</b> (390)—Consists of grasses, grass-like plants, and forbs at the fringe of the water along watercourses. Provides habitat for aquatic and terrestrial organisms, improves and protects water quality, stabilizes the channel bed and streambanks, establishes corridors to provide landscape linkages among existing habitats, and fosters management of existing riparian herbaceous habitat to improve or maintain desired plant communities.
<b>Shallow Water Management for Wildlife</b> (646)—Managing shallow water on agricultural lands and moist soil areas for wildlife habitat. Areas provide open water areas to facilitate waterfowl resting and feeding, and habitat for amphibians and reptiles that serve as important prey species for other wildlife.
<b>Stream Habitat Improvement and Management</b> (395)—Create, restore, maintain, or enhance physical, chemical, and biological functions of a stream system to provide desired quality and quantity of water, fish, and wildlife habitat, channel morphology and stability, and aesthetics and recreation opportunities.
<b>Upland Wildlife Habitat Management</b> (645)—Creating, restoring, maintaining, or enhancing areas for food, cover, and water for upland wildlife and species that use upland habitat for part of their life cycle. Provide all of the habitat elements in the proper amounts and distribution, and manage the species to achieve a viable wildlife population within the species home range.

Attachment 1 continued

Conservation Systems are reviewed periodically, and updated if needed. To obtain the current version of this system, contact your Natural Resources Conservation Service State Office, or visit the Field Office Technical Guide.



<b>National Conservation Practice Standards Specific to Fish and Wildlife Resources</b>
<b>Wetland Creation</b> (658)—A wetland created on a site location that historically was not a wetland or was a wetland but with a different hydrology, vegetation type, or function than naturally occurred on the site. Create wetlands that have wetland hydrology, hydrophytic plant communities, hydric soil conditions, and wetland functions and/or values.
<b>Wetland Enhancement</b> (659)—The modification or rehabilitation of an existing or degraded wetland where specific function and/or values are improved for the purpose of meeting specific project objectives. For example, managing site hydrology for waterfowl or amphibian use, or managing plant community composition for native wetland hay production.
<b>Wetland Restoration</b> (657)—A rehabilitation of a degraded wetland where soils, hydrology, vegetative community, and biological habitat are returned to the original condition to the extent practicable. To restore wetland conditions and functions that occurred on the disturbed wetland site prior to modification to the extent practicable.
<b>Wetland Wildlife Habitat Management</b> (644)—Retaining, developing, or managing habitat for wetland wildlife. To maintain, develop, or improve habitat for waterfowl, furbearers, or other wetland-associated wildlife.
<b>Wildlife Watering Facility</b> (648)—Constructing, improving, or modifying watering facilities or places for wildlife to obtain drinking water.

## Attachment 2 - Conservation Practices and Affected Biological Resources

Biological Resource	Relevant Practices
<b>Aquatic Invertebrates</b> —crayfish, snails, stoneflies, mayflies, riffle beetles	Stream Habitat Improvement and Management , Riparian Forest Buffer, Wetland Restoration
<b>Terrestrial Invertebrates</b> —earthworms, nematodes, dung beetles	Conservation Cover, Forest Stand Improvement, Prescribed Grazing
<b>Pollinators</b> —bees, butterflies, moths, birds, bats	Alley Cropping, Conservation Crop Rotation, Tree/Shrub Establishment, Early Successional Habitat Development/Management
<b>Fish</b>	Nutrient Management, Irrigation Water Management, Riparian Forest Buffer, Stream Habitat Improvement and Management, Wetland Restoration, Fish Passage
<b>Amphibians</b>	Pond, Stream Habitat Improvement and Management, Wetland Restoration
<b>Reptiles</b>	Wetland Wildlife Habitat Management, Wetland Restoration, Restoration and Management of Declining Habitats
<b>Birds</b>	Hedgerow Planting, Early Successional Habitat Development/Management, Prescribed Burning, Wetland Wildlife Habitat Management, Shallow Water Management for Wildlife, Prescribed Grazing, Irrigation Water Management, Restoration and Management of Declining Habitats, Wetland Restoration, Field Border, Residue Management, No-Till and Strip Till, Windbreak/Shelterbelt Establishment, Riparian Buffer, Filter Strip, Forest Harvest Management,
<b>Mammals</b>	Brush Management, Prescribed Grazing, Wildlife Watering Facility, Fence, Forest Stand Improvement, Riparian Forest Buffer, Tree/Shrub Establishment, Conservation Cover, Stream Habitat Improvement and Management, Windbreak/Shelterbelt Establishment; Early Successional Habitat Development and Management, Prescribed Grazing, Structure for Water Control, Mine Shaft & Audit Closing, Forest Harvest

Conservation Systems are reviewed periodically, and updated if needed. To obtain the current version of this system, contact your Natural Resources Conservation Service State Office, or visit the Field Office Technical Guide.

**Pollinator Habitat Enhancement Plan  
Practice Activity Code (146) (No.)**

**1. Definition**

A pollinator habitat enhancement plan is a site-specific conservation plan developed for a client that addresses the improvement, restoration, enhancement, or expansion of flower-rich habitat that supports native and/or managed pollinators.

The pollinator habitat enhancement plan will:

- a. Meet NRCS quality criteria for soil erosion control, water quality, soil quality, plant condition, fish and wildlife, rangeland/pasture/grazed woodland health and productivity, and other identified resource concerns.
- b. Comply with federal, state, tribal, and local laws, regulations, and permit requirements.
- c. Meet the client's objectives.

**2. Pollinator Habitat Enhancement Plan Technical Criteria**

This section establishes the minimum criteria to be addressed in the development of Pollinator Habitat Enhancement Plans.

**A. General Criteria:** A Pollinator Habitat Enhancement Plan shall be developed by certified Technical Service Providers (TSPs). In accordance with Section 1240 (A), the Environmental Quality Incentive Program (EQIP) program provides funding support through contracts with eligible producers to obtain services of certified TSPs for development of Pollinator Habitat Enhancement Plans. The specific TSP criteria required for Pollinator Habitat Enhancement Plan development is located on the TSP registry (TechReg) web site at:

<http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/technical/tsp>

**B. Background and site information**

- Landowner information – name, address, operation, size
- Location and plan map of parcel

**C. Identify Client Objectives such as:**

1. Improve pollination service provided by wild (unmanaged) bees by:
  - a. Increasing floral diversity and ensuring continuous and diverse bloom,
  - b. Increasing undisturbed habitat/ground (including the creation of alkali or other ground-nesting bee beds),
  - c. Increasing nesting opportunities for tunnel-nesting bees, and
  - d. Providing pollinator refugia.
2. Improve pollination service provided by managed bees by:
  - a. Increasing floral diversity and ensuring continuous and diverse bloom,
  - b. Providing readily accessible clean water
3. Increase diversity and availability of butterfly host plants.
4. Increase abundance of beneficial insects important for pest management.

Conservation Systems are reviewed periodically, and updated if needed. To obtain the current version of this system, contact your Natural Resources Conservation Service State Office, or visit the Field Office Technical Guide.

5. Improve cost efficiency (e.g. removal of marginal crop land from production and/or improvement of produce quality from enhanced pollination).
6. Maintain or improve wildlife habitat.
7. Maintain or improve water quality.
8. Prevent or reduce erosion.
9. Beautify the landscape.
10. Provide pollinator populations with refuge from pesticides.
11. Change or adjust pesticide use to reduce hazards for pollinator populations.

#### **D. Existing Conditions**

1. Create the conservation plan map including field boundaries, streams, surface waters, wetlands, fences, and land uses.
2. Acquire a soils map and appropriate soil descriptions for the land use and resource concerns.
3. Identify the number of acres available.
4. Use an appropriate habitat assessment, evaluation, or Habitat Suitability Index model and (when available) the Ecological Site Description to define the existing conditions for wildlife.
5. Document the existing management practices and activities on cropped and non-cropped portions of the property.

#### **E. Desired Future Conditions/Goals**

1. The plant species composition benefits a diverse pollinator community (i.e., at least 12 species of flowering plants, three of which are in bloom at any one time during the early, mid, and late periods of the growing season).

**Note:** if the planting is designed to support adjacent insect-pollinated agriculture, then:

- Minimize bloom competition with insect-pollinated crops, and
  - Take care to avoid plants that may serve as crop pest or disease hosts.
2. There is minimal weed competition, but the inclusion, where appropriate, of beneficial “weeds” (e.g., milkweed as Monarch butterfly host plants).
  3. Large areas of undisturbed pollinator habitat are available:
    - No tillage in areas appropriate for ground-nesting bees
    - Overgrown bunch grasses for bumble bee nest sites
    - Host plants for butterflies
    - Tree cavities, standing dead trees, exfoliating bark (e.g., in riparian or adjacent land) for wood-nesting bees
  4. Record Keeping
    - Dates of first flowering for each of the pollinator-friendly forage plant species

- Specific pollinators, plants visited, and time-frame (date range) of visits
  - Evidence of ground-nesting and wood-nesting bee activity
  - If providing crop pollination services, record crop yields
5. Monitoring Plan - Identify specific dates and data to be recorded.
  6. Operation & Maintenance activities for practices - Ensure that these are followed
  7. Adequate clean water source(s) for honey bees

#### **F. Pollinator Habitat Enhancement Planning Documentation**

1. Conservation plan map –scale, north arrow, planned and existing boundaries, fields, land use, appropriate map symbols, and, where available, the identification of ecological sites by field.
2. Soils map – legend, appropriate interpretations, and, where available, the ecological site descriptions
3. Resource Concerns addressed by the conservation plan
4. Contingency plans for harsh winter conditions, drought, fire, flooding, and other extraordinary events
5. Conservation plan (record of decisions). Complete Hardcopy of the client's plan (MsWord copy) with the planned conservation practices and the site specific specifications in a NRCS approved job sheet, or separate plan when the following practices are planned:

<b>Code</b>	<b>Practice Name</b>
327	Conservation Cover
340	Cover Crop
342	Critical Area Planting
386	Field Border
390	Riparian Herbaceous Cover
391	Riparian Forest Buffer
393	Filter Strip
422	Hedgerow Planting
645	Upland Wildlife Habitat Management

For other planned practices, document the planned practice amount, the fields where the practice is to be applied, and the planned year of application.

#### **3. Deliverables for the Client – a hardcopy of the plan that includes:**

- Cover page – name, address, phone of client and TSP; Total Acres of the Plan, signature blocks for the TSP, producer, and a signature block for the NRCS acceptance.
- Soils map and appropriate soil descriptions
- Resource assessment results (wind and water erosion, habitat assessments, soil fertility, soil quality, and others that may be needed)

Conservation Systems are reviewed periodically, and updated if needed. To obtain the current version of this system, contact your Natural Resources Conservation Service State Office, or visit the Field Office Technical Guide.

- Conservation plan (record of decisions). Complete Hardcopy of the client's plan (MsWord copy) with the planned conservation practices and the site specific specifications in a NRCS approved job sheet, or separate plan when the following practices are planned:

Code	Practice Name
327	Conservation Cover
340	Cover Crop
342	Critical Area Planting
386	Field Border
390	Riparian Herbaceous Cover
391	Riparian Forest Buffer
393	Filter Strip
422	Hedgerow Planting
645	Upland Wildlife Habitat Management

For other planned practices, document the planned practice amount, the fields where the practice is to be applied, and the planned year of application.

#### **4. Deliverables for NRCS Field Office:**

- Complete Hardcopy and Electronic copy of the client's plan (MsWord copy) and other applicable digital support documents.
- Digital Conservation Plan Map with fields, features, and structural practices located.
- Digital Soils Map.

# **Spill Prevention, Control, and Countermeasure Conservation Activity Plan Criteria Code (150) (No.)**

## **1) Definition**

An Oil Spill Prevention, Control, and Countermeasure (SPCC) conservation activity plan (CAP) is a plan prepared and certified by a registered Professional Engineer (PE) in accordance with the U.S. Environmental Protection Agency (EPA) rules for producers with more than 10,000 gallons of liquid storage capacity. Producers with less than 10,000 gallons of liquid oil/fuel storage capacity are not required to hire a registered PE to prepare their plan, and may self-certify. See EPA website for more information:

<http://www.epa.gov/emergencies/content/spcc/index.htm>

## **2) SPCC Criteria:**

This section establishes the minimum criteria to be addressed in the development of an SPCC CAP.

### **A) General Criteria**

- 1) An SPCC CAP shall be developed by certified Technical Service Providers (TSPs). In accordance with Section 1240 (A), the Environmental Quality Incentives Program (EQIP) program provides funding support through contracts with eligible producers to obtain services of certified TSPs for development of an SPCC CAP. Specific TSP criteria required for the SPCC CAP development is located on the TSP registry (TechReg) web site at:

<http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/technical/tsp>

### **B) The SPCC CAP shall address and document the following elements:**

- 1) Background and site information;
- 2) Existing inventory of liquid storage tanks and containers
- 3) Secondary containment conservation practices planned;
- 4) Reference documents.

### **C) SPCC Element Specific Criteria**

- 1) The SPCC CAP is applicable to farms with liquid storage capacities greater than 10,000 gallons of regulated substances in above ground containers as defined by EPA SPCC Tier 2 rule. The degree to which these elements are addressed in the development and implementation of a site-specific SPCC CAP is determined by the General Criteria in Section A and the specific criteria provided for each element of the SPCC are identified below.

- 2) Background and Site Information - This element provides a brief description of:
  - a. Name of producer
  - b. Facility location(s) and mailing address
  - c. Type and size of the operation
  - d. Producer concerns
- 3) Criteria for SPCC CAP - The SPCC plan is to be tailored to the individual farm and should cover the required elements including, but not limited to, the following:
  - a. Professional Engineer certification
  - b. Plan must comply with the provisions of 40 CFR 112
  - c. Facility diagram
  - d. Type of oil capacity of each container
  - e. Oil spill predictions
  - f. Facility drainage
  - g. Facility inspection
  - h. Site security
  - i. Five year review plan
  - j. Management approval
  - k. Appropriate secondary containment
  - l. Loading/unloading requirements and procedures for tank car and tank trucks
  - m. Brittle fracture evaluations
  - n. Bulk storage container compliance
  - o. Transfer procedures and equipment (including piping)
  - p. Integrity testing
  - q. Personnel training and oil discharge prevention briefing
- 4) SPCC CAP (record of decisions) (*Utilizing MsWord Document*) conservation practices and measures taken to address meeting EPA regulation. The record of decisions shall include the measures taken to provide secondary containment for regulated substances, planned practices, schedule for implementation, and site specific specifications to apply the conservation practices. NRCS conservation practice to address water quality and secondary containment is Agricultural Secondary Containment Facility (code 710).
- 5) References: This element lists the technical documentation sources used for the SPCC CAP and may include the actual documents or web sites that contain the technical documentation useful for the producer.



**3) Deliverables for the Client – a hardcopy of the plan that includes:**

- A. Cover page – name, address, phone of client and TSP; Total storage capacities of the Plan, signature blocks for the TSP, producer, and a signature block for the NRCS acceptance.
- B. The completed SPCC CAP will include the following sections:
  - (i) Summary of the facility's location, storage tanks and containment types and volumes, and any containment measures already in use. Additionally, this will be located on a map of the facilities.
  - (ii) A list of recommended measures required to meet regulation and cost estimates.
  - (iii) A narrative summary of the recommendations made through the SPCC plan including description of containment facilities.
  - (iv) For engineering/structural practices. The planned practice(s) when it will be applied and extent, and located on the plan map.

**4) Deliverables for NRCS Field Office:**

- A) Complete Hardcopy and Electronic copy of the producer's CAP (MsWord copy).

## Conservation Plan Support IPM Herbicide Resistance Weed Conservation Activity Plan (154)

<b>Owner(s) Name(s):</b>				
<b>Owner(s) Mailing Address(es):</b>				
<b>Owner(s) Phone Number(s):</b>				
<b>Owner(s) Email(s):</b>				
	<b>Owner(s) Signature(s)</b>			
<b>Plan Developed by:</b>				
<b>Planner's Mailing Address:</b>				
<b>Planner's Phone Number(s):</b>				
<b>Planner's Email:</b>				
	<b>Planner's Signature</b>			
<b>Plan Date:</b>				
<b>Total Acres in Plan:</b>				
<b>Producer's Objectives or Goals</b>				
<b>Attachments:</b>	Conservation Plan Map Soils Map and Descriptions Practice Plans or Jobsheets (list) Soil Loss Evaluation Printouts (list) WIN-PST Soil/Pesticide Interaction Hazard Report Printouts (list) Others (list):			

## Conservation Plan Support IPM Herbicide Resistance Weed Conservation Activity Plan (154)

### Resource Concern Assessment

Resource Concern	Minimum Treatment Level	Does this meet the minimum treatment Before Plan? Describe or attach evaluation	Does this meet the minimum treatment After Plan Implementation? Describe or attach evaluation	Comments
<b>SOILQUALITY</b> <b>Soil Erosion - Sheet, rill,</b>	Soil loss per RUSLE2 is $\leq T + 1$ ton	Attach RUSLE2 Printout for each field	Attach RUSLE2 Printout for each field	
<b>SOILQUALITY</b> <b>Soil Erosion - Wind erosion</b>	Soil Loss per WEPS is $\leq T + 1$ ton	Attach WEPS Printout for each field	Attach WEPS Printout for each field	
<b>SOIL EROSION – Concentrated flow erosion</b>	Concentrated flow erosion is stabilized.	Describe fields with the problem:	Describe fields with the problem:	
<b>WATER QUALITY</b> <b>WIN-PST Hazard Rating</b>	Intermediate rating and above requires mitigation. See Agronomy Technical Note No. 5: Pest Management in the Conservation Planning Process	Attach WIN-PST soil/interaction hazard rating printout for each field (attach only if a hazard rating of intermediate or higher):	Attach WIN-PST soil interaction hazard rating printout for each field (attach only if a hazard rating of intermediate or higher):	
<b>AIR QUALIT</b> <b>-Drift</b> <b>-Volatilization -- Volatile Organic compound (VOC) emission</b>	Pesticide applicator should follow the labor instructions and warnings that prevent drift. VOC nonattainment areas must reduce emission by 20%.	Describe and/or attach supporting document:	Describe and/or attach supporting document	
<b>Other resource concerns (Describe):</b>		Describe:	Describe:	

**Conservation Plan Support IPM Herbicide Resistance Weed  
Conservation Activity Plan (154)**

**List the planned timings, rates, and methods of application of herbicide for the operation:**

[illegible]

**Conservation Plan Support IPM Herbicide Resistance Weed Conservation Activity Plan (154)**

[illegible]