

Cardinal Rule of Forestry Communications



 Tell people what they want to hear, not what you want to tell them (Peterson 1983).

Technical Writing in the Forestry Private Sector

- Forest management plans
 - Current use (VT use value appraisal, NH current use, ME tree growth)
 - American Tree Farm System
 - Woodland Resource Action Plan (ME)
 - Natural Resources Conservation Service (NRCS) Conservation Activity Plan (CAP 106)
 - Forest Stewardship Plan
- Contracts
 - Loggers and landowners
- Letters: cover letters, recommendation letters, adjacent property owners
- Electronic Communications: Emails, Website, Blog, and Social Media

Technical Writing in the Forestry Public Sector

- National Environmental Policy Act (NEPA)
 - Environmental Assessments, Categorical Exclusions, Environmental Impact Statements
 - Specialist Reports, Response to Comments, and Field Notes
- Forest Plan and Projects
 - Literature review, white paper
- Timber Sale Contracts
- Prospectus and Advertisement
- Silvicultural Prescriptions
- 🕒 Other
 - Newspaper Articles, Cover Letters, Resumes and Emails



1) Clarity – most important criterion

- Consider the implications of an unclear prescription/marking guide:
 - Confusion leading to loss of productivity
 - Mark too heavy or too light
 - Mark the wrong trees (cut trees / leave trees)
 Mark or don't mark skid trails
 - Paint facing trail
 - Wrong paint color
 - ■You wanted the stumps marked?
- Clarity is achieved through specificity.



Ten Ways to Improve Technical Writing 2) Conciseness

- Verbosity is the most common problem with writing styles.
- If there is a more direct or shorter way to say something, use it.
- Avoid redundancy
 - Example: Dead standing snag
- Avoid prepositional phrases
 - Example: use because in place of due to the fact that
- Avoid multisyllabic words such as "mul-ti-syl-lab-ic"

Ten Ways to Improve Technical Writing

- 3) Accessible Document Design (Formatting)
 - Use graphics (tables and figures)
 - White space
 - Boldface text
 - Headings and subheadings
 - Italics
 - Underlining
 - Varied font sizes
 - Bullets
 - Numbered lists

Ten Ways to Improve Technical Writing

- 4) Audience Recognition
 - Who is your audience?
 - What does your audience know, need to know, and want to know?
 - When the audience fails to understand the text, you have failed to communicate!

Ten Ways to Improve Technical Writing

- 5) Use Specific and Precise Language
 - Failure to use specific numbers majority, most, high, low, large,
 - small Example: small groups/patches
 - Presentation of results
 - Tables and graphs need to be clearly labeled (title and axes) and explained
 - Show how conclusions are drawn from them



Ten Ways to Improve Technical Writing

6) Use Proper Punctuation

- Comma
 - Original: Needle-cast diseases may be affecting the health of white pine resulting in reduced growth.
 - Better: Needle-cast diseases may be affecting the health of white pine, resulting in reduced growth.

Colon

- Original: Growth rates of trees may vary by: tree species, tree age, stand density, and site characteristics.
- Better: Growth rates of trees may vary by tree species, tree age, stand density, and site characteristics.
- Or: Growth rates of trees may vary by the following: tree species, tree age, stand density, and site characteristics.

Ten Ways to Improve Technical Writing

- 7) Avoid passive Voice and First Person
 - Passive voice better to say the subject did something than to say something was done
 - Original: Two methods are being examined by the forester for possible implementation.
 - Better: The forester is examining two methods for possible implementation.
 - First person the message should focus on the technical content not the author(s)
 - ■Original: We followed established protocols to carry out the measurements.
 - Better: Measurements were made following established protocols.

Ten Ways to Improve Technical Writing

8) Use a Hyphen Only When Needed

- General rule: particles (bi, by, co, de, non, pre, re, un, etc.) that are not words by themselves should not be hyphenated when added as a prefix to a word.
 - Examples: noncommercial, nonindustrial, unsustainable, precommercial, and submerchantable
- The same is true for many longer particles such as anti, post, counter, over, under, etc.
 - Examples: postharvest, overstocked, understocked and counterproductive
- Compound modifiers (words used to modify a noun) should be hyphenated.
 - Examples: low-impact forestry, small-scale farmers, uneven-aged silviculture

Ten Ways to Improve Technical Writing

9) Use Forestry Terminology Appropriately

- Silviculturist / Silviculturalist
- Selective / Selection
- Thinning / Regeneration
- Timber Stand Improvement / Site Preparation
- Shelterwood...
- Rotation / Cutting Cycle / Stand Age
- Advance Regeneration / Advanced Regeneration

Ten Ways to Improve Technical Writing

10) Proofread (Plain English Campaign)

- Make sure you understand punctuation and grammar before beginning
- Avoid distractions but give yourself frequent breaks
- Consider reading out loud
- Look for inconsistencies in style and formatting in addition to proofing words and punctuation
- Be methodical
- Use a hard copy to do the final proofread
- Always get someone else to do a final proofread of your own work
- If proofing your own work, give yourself adequate time between writing and proofing

Silvicultural Prescription

- Northeast Silviculture Institute for Foresters
 - Site Description
 - Existing Stand Description
- Desired Future Condition
- Implementation
- Resource Coordination and Mitigation Measures
- Monitoring and Evaluation
- Resources
 - USDA Forest Service Region 9 Handbook 2409.17 Ch. 8 Silvicultural Examinations, Prescriptions, and Evaluations
 - A Guide for Foresters and other Natural Resource Professionals on using: Managing Your Woodlands: A template for your plans for the future (USDA NRCS, American Tree Farm System, and state Forest Stewardship Plans)
 - Forestry Core Curriculum Style Manual for Reports. Jeremy Stovall. Revised 08/29/2011.
 - Good Forestry in the Granite State



Silvicultural Prescription

- National Advanced Silvicultural Program
 - Involve resource specialists early in the NEPA process (before Scoping)
- Identify project stand and get to know it well
- Develop a few alternatives
- Should be implementable
- Review with specialists
- Identify issues
- Develop design features and mitigation measures





Soils NRCS Web Soil Survey Focus: tree species, soil relationships, and influence of soils on operating season

- Why Trees Grow Where They Do in New Hampshire Forests (Leak and Riddle 1979)
- Water Relations & Enrichment in the B Horizon
- Particle Size & Compaction in the C Horizon
- Nine Basic Types in NH (e.g. poorly drained, outwash, enriched)



Silvicultural Prescription - Site Description

Water

- USGS Water Data
- Watershed
- Lakes / Ponds
- Streams (Perennial, Intermittent, and Ephemeral)
- State Laws & Local Ordinances
- Existing & Potential Concerns
 Water Quality
 - Fish Habitat / Fish Passage





Silvicultural Prescription - Site Description

Wetlands

- USFWS National Wetlands Mapper
- Forested / Nonforested
- Unmapped wetlands
- State Laws
 - ME Inland Waterfowl & Wading Bird Habitat
- Local Ordinances
- Vernal Pools





Silvicultural Prescription – Existing Stand Description

- Existing Stand Description
 - Forest Type Groups
 - Hardwood, Softwood, Mixedwood
 - Forest Types
 - White Pine / Red Oak
 - Aspen / Birch
 - Spruce / Fir
 - Natural Communities
 - The Nature of New Hampshire Natural Communities of the Granite State
 - Natural Landscapes of Maine A Guide to Natural Communities and Ecosystems
 - Wetland, Woodland, Wildland: A Guide to the Natural Communities of VT



Silvicultural Prescription – Existing Stand Description

- Species Details
 - Composition
 - Overstory, Midstory, & Understory
 - Stocking
 - Relate to Stocking Guide
 - Relative Density
 - Stand Structure
 - Vertical & Horizontal
- 🗖 Age
 - Be careful not to oversimplify
- Size



Silvicultural Prescription – Existing Stand Description

- Genetic Considerations
 - Genotype an individual's hereditary constitution
 - Phenotype the product of the interaction of the genes of an organism with the environment
 - Dysgenic being detrimental to the genetic qualities of future generations
 - Retain some large trees with cavities for wildlife



Silvicultural Prescription – Existing Stand Description

- Forest Health
- Insects
 - Emerald Ash Borer
 - Asian Longhorned Beetle
 - Hemlock Wooly Adelgid
- Diseases
- White Pine Needle-cast Diseases
- Caliciopsis Canker



Silvicultural Prescription - Existing Stand Description

- Natural Disturbances
 - Small & Frequent
 - Wind
 - Ice Storms
 - Insects & Disease
 - Large & Infrequent
 - Tornados
 - Hurricanes
 - Fires



Silvicultural Prescription – Existing Stand Description

- Growth Rates
 - Cookies, Cores, & Ocular Estimates
 - Determine whether or not there is a need to release trees from competition
 - Assess potential effect from insects, diseases, and/or droughts
 - Project stands forward or backward

Site Index

- A species-specific measure to determine the relative productivity of a particular site
- Height of "free to grow" tree at a base age on the site of interest
- Incorporated in growth and yield modeling

Silvicultural Prescription – Existing Stand Description

Coarse Woody Debris/Fuel Loading

- Brown's Protocol
- Photo Series
- Snags
 - Wildlife Values
- "Danger Trees" and OSHA
 - Each danger tree shall be felled, removed or avoided. Each danger tree, including lodged trees and snags, shall be felled or removed using mechanical or other techniques that minimize employee exposure before work is commenced in the area of the danger tree. If the danger tree is not felled or removed, it shall be marked and no work shall be conducted within two tree lengths of the danger tree unsolve the conducted within two tree lengths of the danger tree unsolves the employee denoties that a shorter distance will not create a hazard for an employee. [1910.266(h1)(vi)]



Silvicultural Prescription – Existing Stand Description

Special Features

- Your perception of a special feature may differ from the landowner's and vice versa
- Examples: cultural site, scenic vista, hiking trail, hemlock inclusion, nest, den, chestnut tree, etc.
- Exemplary Natural Communities
 - NH Natural Heritage Bureau
- Maine Natural Areas Program



Silvicultural Prescription – Desired Future Condition

- Desired Future Condition
 - The overstory contains healthy, vigorous red and white pine scattered throughout the stand.
 - The midstory and understory are comprised of a diversity of softwoods that are moderately dense throughout the stand.
- Short Term Objectives
- Reduce windthrow potential
- Release softwood understory
- Long-term Objectives
 - Promote an uneven-aged structure
 - Maintain a healthy stand of a diversity of softwoods



Silvicultural Prescription – Implementation Details

Layout

- Operational unit may or may not coincide with the stand boundary
- Be familiar with features within and near the operational unit
- Skid trails and landing
- Complete layout in snow-free conditions
- Can stream crossings or other sensitive areas be avoided?
- Consider the operating season
- Avoid sharp angles on boundaries
- Consider views to the operational unit



Silvicultural Prescription – Implementation Details

The Art of Marking

- Paint: color, type, cost
- Paint application (dots and slashes)
- Presence of old paint
- Marking on two sides of a tree
- Stump marks
- Marking summer unit on snow / marking winter unit without snow
- Marking too many or too few trees
- Marking along roads, trails, property boundaries
- Remarking timber (recruising & retallying)
- Sale not sold (oh boy!)



Silvicultural Prescription – Implementation Details Silvicultural Treatment • Even-aged • Regeneration Treatments (e.g. clearcut) • Intermediate Treatment (e.g. thinning)

- Two Aged
 - Shelterwood with Reserves
- Seed tree with Reserves
- Uneven-aged
- Group Selection
- Single-tree Selection
- Other
 - Improvement cut
 - Conversion to Uneven-aged
 - Rehabilitation Cut

Silvicultural Prescription – Implementation Details

- Stand Protection
 - Harvesting Equipment
 - Browsing
 - Windthrow
 - Insects
 - Disease
 - Desiccation
 - Winter injury
 - Excessive Exposure
 - ■Fire



Silvicultural Prescription – Implementation Details

- Cultural Operations
 - Site Preparation Treatment
 - Timber Stand Improvement
 - Wildlife Habitat Improvement



Silvicultural Prescription – Resource Coordination and Mitigation Measures

- Threatened or Endangered Species
 ESA, State List, Regional Forester's List
 - Three Birds Orchid / Nodding Pogonia
 - Involve Resource Specialist(s)
 Modify unit boundary
 - Modify intensity of treatment
 - Modify operating season
 - Increase pre and post harvest monitoring



unknown photo credit

Silvicultural Prescription – Resource Coordination and Mitigation Measures

- Cultural Resources
 - Rock Walls
 - ■Cellar Holes
 - Cemeteries
 - Articles more than 50 years old
 - ■Prehistoric use
- Forest Archeologist
- State Historic Preservation Office (SHPO)



Silvicultural Prescription – Resource Coordination and Mitigation Measures

Water Quality

- Buffer streams
- Place brush in trails
- Water bars (temporary / permanent)
- Use adequately sized temporary bridges, pole fords, or other appropriate means to cross streams
- Coordinate with Resource Specialists (Hydrologist, Fisheries Biologist, and Soil Scientist)
- Follow Laws, Contracts, and BMPs
- Sale Administration





- Recreation
- Trail buffers
- Face marking paint away from trails
- Skid across trails
- Trail creation/maintenance opportunities
- Signs (during and pre/post operations)
- Managing hazards
- Closeout



Silvicultural Prescription – Resource Coordination and Mitigation Measures

Roads

- Legal access
- Temporary vs. permanen
- Winter vs. summer
- Culverts vs. broad-based dips
- Steep roads
- Turning radius
- Landings
- Size and location
 Gravel & boulders / logs
- Staver & bounders /
 Seed & mulch

Signs

Bridges

Size & Weight

- Placement, Installation & Remova
- Temporary vs Permanent



Silvicultural Prescription – Resource Coordination and Mitigation Measures

Fish & Wildlife

- State & Federal Laws
- Coordinate with State and Federal Agencies
- Fish & Game Department
 - US Fish & Wildlife Service
- Follow recommended actions (restrictions)
- Consider the following:
 - Modify unit boundary
 - Modify intensity of treatment
 - Modify operating season
 - Increase pre and post harvest monitoring



Silvicultural Prescription – Resource Coordination and Mitigation Measures

Soils

- Erosion
- Trails and roads
- Nutrient depletion
 - Whole tree harvesting
- Compaction
- Influence of operating season
- Roads, landings, skid trails (location, steepness, and length), and stream crossings



Silvicultural Prescription – Resource Coordination and Mitigation Measures

- Visuals
 - State & Federal Laws
 e.g. NH Basal Area Law
 - Beauty is in the eye of the beholder...
 - Consider the following:
 - Visual buffers
 - Feather edges
 - Modify unit boundary
 - Modify intensity of treatment
 - Modify operating season



Silvicultural Prescription – Resource Coordination and Mitigation Measures

Fuels

- State & Federal Laws
- ■Private Lands
 - State Forest Rangers
 - Local ordinances
 - The Nature Conservancy (prescribe fire)
- US Forest Service
 - Wildland Urban Interface
 - Coordinate with fire/fuels folks



Silvicultural Prescription – Resource Coordination and Mitigation Measures

Pest Management

- Integrated Pest Management
- Focus on prevention
- Use pesticides only when needed
- Inspection, Monitoring & Reporting
- Control Measures
 - Do nothing, cultural treatment, mechanical treatment, biological treatment, and/or pesticides
- Response should depend on the following:
- what damage has occurred?
- how much damage is likely to occur if no control measures are taken?
- what (reasonable) options exist to control the pest?



Silvicultural Prescription – Implementation Details

Nonnative invasive species management





Japanese barberry removal usi gloves, shovel, and bag

Silvicultural Prescription – Monitoring and Evaluation

- Survival / stocking surveys
 - Regeneration vs. Establishment
 - Failure due to lack of moisture and/or browsing
- Treatment effectiveness
 Short -term objectives
- Quality control
- Sale administration



