Writing Integrated Prescriptions from Your Cruise Results – or How Do I Recognize and Treat Wildlife Habitat Elements

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Writing an integrated forest and wildlife habitat management prescription is a several step process. Landowners first need to articulate their habitat and economic goals for the property. Forest and wildlife habitat managers can then manipulate habitat conditions at the landscape, stand, and within-stand scales to meet those goals, if they have the habitat information upon which to base a set of prescriptions. The described process can be found in DeGraaf et al. (1992).

Getting landowners to express their level of interest in wildlife habitat is the first step. Do their interests include a general wildlife diversity theme or are they particularly interested in certain species-groups: traditional game species (e.g. deer, moose, rabbit/hare, bear, grouse, woodcock, turkey, and waterfowl) or species of special interest or importance (e.g. threatened and endangered). A landowner may also be generally interested in particular wildlife taxa (e.g. amphibians (salamanders and frogs), reptiles (turtles and snakes), birds (neotropical migrants and residents), and mammals (bats, small mammals, and furbearers). Numerous habitat guidelines are available to landowners interested in game-species habitat; and forest stewardship and sustainability considerations (Williamson 1993; Elliott 1988; Sepik et al. 1981; VT Fish and Wildlife 1986).

Try to get a sense of habitat opportunity class across a larger landscape scale (Table 1). Current FIA statistics (Frieswyk and Widman 2000) indicate that most NH counties now (except Strafford) are at least 70 percent forested. Lands outside the Gulf of Maine coastal subsections still exceed 80 percent forested with the northern three counties ranging from 86 to 96 percent forested. Most properties typically managed by NH consulting foresters are still embedded in a predominantly forested landscape. Caution must be used when using this prescription process on predominantly upland and wetland nonforest landscapes, where forested stands are the less common features.

Consider using a 10-factor multiplier of the subject acreage to determine a rough composition of the area encompassing the subject property and surrounding neighborhood. Is the area almost totally forested (>90 percent) or mostly forested (70 to 90 percent)? How much aquatic habitat is available (<5 or >5 percent)? With this visual assessment of landscape composition, a consulting forester can begin assessing the current condition of the area against the generalized habitat composition goals presented in Table 1. These goals have been developed to present a broad range of habitat conditions over time for a variety of wildlife species.

Combining the surrounding area information with detailed current acreage or percentages of cover type, size, and stand density information gives the consultant a chance to assess the current condition (cover-type and size-class distributions) of the subject property against these habitat composition goals. Identifying the within-stand features (Table 2) in the inventory process

completes the information needed to construct a set of integrated prescriptions. Integrated prescriptions evolve from the answers to questions like:

- Is there enough or too much hardwood or softwood acreage (a conversion potential)?
- Is there enough or too little aspen-birch acreage?
- Is there enough or too little hard and soft mast present?
- Is there enough 0-10 year age class acreage in this management period?
- Is there enough large-sawtimber class acreage?
- Are there sufficient amounts of large coarse woody debris and larger-diameter cavity trees across the property?
- What is the potential for vernal pools, seeps, and riparian habitat across the property?
- Are there known woodland raptor nest sites, heron rookeries, bald eagle or osprey nest sites, bald eagle winter roost sites, peregrine falcon aeries, and wintering deer areas on the property?
- What other special habitat elements are present on this property and how important are they to the landowner (apple trees, upland openings, beaver-created openings, uncut or old-growth patches, rare plants and natural communities)?

Those stands subsequently treated in the current management period are the stands with prescriptions deemed most important. These stands could be high value stands, high-risk stands, esthetic-driven treatments, market-driven treatments or wildlife habitat-driven treatments. Some stand prescriptions may be less commercially operable; and may need to be paired with more saleable stand prescriptions. Some stand prescriptions may be more appropriately treated through a cost-share program. There will probably be some stands with a hands-off prescription.

Most of the answers to the questions presented require more information than just the quality and quantity of available growing stock. The good news is that most of the structural information can be gathered in a comprehensive vegetative inventory. Putting this information in context with the surrounding lands composition will require some additional effort. Ascertaining the current status of special habitat elements and features requires on-the-ground knowledge and periodic contact with Natural Heritage Inventory for any new rare or uncommon occurrences in the surrounding area. Doing these things will greatly improve the development and implementation of integrated management prescriptions.

Table 1. Habitat opportunity and composition goals by percent (DeGraaf et al. 1992).

Composition	I	II	III	IV
Habitat breadth:				
Forest	> 90	> 90	70-90	70-90
Nonforest	0-10	< 5	5-30	5-30
Water	< 5	> 5	< 5	> 5
Size-class distribution:				
Regeneration	5-15	5-15	5-10	5-15
Sapling-pole	30-40	30-40	25-35	30-40
Sawtimber	40-50	40-50	55--65	40-50
Large sawtimber	< 10	< 10	< 10	< 10
Cover-type distribution:				
Deciduous (not oak)				
Short rotation	5-15	10-25	5-10	5-20
Long rotation	20-35	15-30	20-40	10-20
Hard mast - oak	1-5	1-5	5-25	1-15
Coniferous	35-50	35-60	10-35	25-50
Nonforest				
Upland openings	3-5	3-5	15-30	5-10
Wetlands	1-3	1-3	1-3	3-5

Table 2. Within-stand features provided through integrated prescriptions (DeGraaf et al. 1992).

Within-stand feature	Clearcut	Shelterwood	Group/patch	Single-tree	Thinning
Canopy closure	Open	Partial	Partial	Closed	Closed – partial
Exposed perches	X	X	X		
Inclusions	X	X	X	X	X
Large cavity trees	X	X	X	X	X
Hard mast	Possible	X		X	X
Soft mast	X	X	X		
Midstory	Not immediate	Not immediate	Not immediate	X	X
Shrub layer	X	X	X		
Herb layer	X	X	X		
Coarse woody debris	X	X	X	X	X

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2001 Workshop Proceedings
Forest Measurements for Natural Resource Professionals

Caroline A. Fox Research
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Sampling & Management of Coarse Woody Debris- October 12
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A Workshop Series on Forest Measurements for Natural Resource Professionals was held in the fall of 2001. These proceedings were prepared as a supplement to the workshop. Papers submitted were not peer-reviewed or edited. They were compiled by Karen P. Bennett, Extension Specialist in Forest Resources and Ken Desmarais, Forester with the NH Division of Forests and Lands. Readers who did not attend the workshop are encouraged to contact authors directly for clarifications. Workshop attendees received additional supplemental materials.

Sampling and Management for Down Coarse Woody Debris in New England: A Workshop- October 12, 2001

The What and Why of CWD– *Mark Ducey,* Assistant Professor, UNH Department of Natural Resources

New Hampshire's Logging Efficiency– *Ken Desmarais,* Forester/ Researcher, Fox State Forest

The Regional Level: Characteristics of DDW in Maine, NH and VT– *Linda Heath,* Research Forester, USDA Forest Service, Northeastern Research Station, Durham, NH

The Effects of Management on CWD for Wildlife Habitat– *Mariko Yamasaki,* Research Wildlife Biologist, USDA Forest Service, Northeastern Research Station, Durham, NH

How Do Silvicultural Methods Affect Amounts of CWD?– *Bill Leak,* Research Forester, USDA Forest Service, Northeastern Research Station, Durham, NH

Methods for Sampling CWD: LIS– *Mark Ducey,* Assistant Professor, UNH

Methods for Sampling CWD: The Relascope Connection– *Jeff Gove,* Research Forester, USDA Forest Service, Northeastern Research Station, Durham, NH

Getting the Most From Your Cruise- October 19, 2001

Pre-Cruise Planning– *Mark Ducey,* Assistant Professor, UNH

Field Techniques– *John Bozak,* Professor, UNH Thompson School

What Do Your Results Mean?– *Ken Desmarais,* Forester/ Researcher, Fox State Forest

Writing an Integrated Prescription From Your Cruise Results– *Bill Leak,* Research Forester, *&* *Mariko Yamasaki,* Research Wildlife Biologist, USDA Forest Service, Northeastern Research Station, Durham, NH

Cruising Hardware and Software for Foresters- November 9, 2001

Forestry Tools- *Steve Bick,* Northeast Forests, LLC. Thendara, NY

Multicruise- *Tom Hahn,* FORECO

Flex-Fiber- *Tom Brann,* University of Maine University of Maine

Informal Use of Field Data Loggers- *Jeff Underhill,* Foresters Inc., Blacksburg, VA

Two-Dogs- *Jeff Underhill,* Foresters Inc., Blacksburg, VA

NED- *Mark Twery,* USDA-Forest Service, Northeastern Research Station, Burlington, VT

The Biotimber Inventory- *Andrea Alderman,* Society for the Protection of NH Forests

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