

Chapter 7

KEY DEFINITIONS

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Key Definitions

A

Active management: Intervening in the development of a forest stand through planting, thinning, managing competing vegetation, harvesting, or other stand management activities. Also referred to as “active forest management.”

Adjusted acres: A quantity of marbled murrelet habitat (in acres) that has been discounted or “adjusted” for factors that can reduce the benefit of that habitat to murrelets, for example whether the acres are close to a forest edge that can attract predators, whether the acres are near or far from occupied sites, and whether the habitat is subject to disturbance. Adjusted acres are used in the analytical framework to determine the balance of take to mitigation.

Analytical framework: A methodology agreed upon by DNR and the U.S. Fish and Wildlife Service (USFWS), also referred to as the “Joint Agencies,” to provide objective, repeatable, science-based estimates of potential impacts and mitigation to marbled murrelet habitat from DNR’s land management activities under the *State Trust Lands Habitat Conservation Plan* (1997 HCP). The analytical framework provides the means to assess how DNR’s mitigation measures cover potential impacts. This quantification will enable the Joint Agencies to evaluate whether a proposed conservation strategy meets the issuance criteria for the Incidental Take Permit.

B

Bare land value: An estimate of the value of managing forest land for timber production using specific management assumptions.

Basal area: A measure of stand density. The cross-sectional area of all stems in a stand measured at breast height, expressed in square feet per acre.

Biodiversity: The variety of life and its processes, including the variety of living organisms, the genetic differences among them, and the communities and ecosystems in which they occur.

Board foot: The amount of wood contained in an unfinished board 1 inch thick, 12 inches long, and 12 inches wide (2.54 x 30.5 x 30.5 centimeters), abbreviated bd. ft.; commonly, 1,000 bd. ft. is written as 1 MBF and 1,000,000 bd. ft. as 1 MMBF.

Board of Natural Resources (board): As defined and authorized in RCW 43.30.215, the board consists of six members: the governor or governor designee; the Superintendent of Public Instruction; the

Commissioner of Public Lands; the director of the School of Environmental and Forest Sciences at the University of Washington; the Dean of the College of Agriculture, Human, and Natural Resource Sciences at Washington State University; and a representative of those counties containing state forestlands acquired by the department. The board's duties include establishing DNR policy and setting appraisal value of lands and valuable materials including timber values offered for sale. See RCW 43.30.215 for more duties of the board.

Buffer: A forested strip left during timber harvest to conserve sensitive ecosystems or wildlife habitat. Active management may be allowed as long as it is consistent with the conservation objectives for the buffer.

C

Carrying capacity: The maximum population size of the species that the environment can sustain indefinitely, given the food, habitat, shelter, water, and other necessities available in the environment.

Commercial thinning: A thinning that generates revenue and is performed to meet a wide range of objectives, including improving the growth of the stand, enhancing stand health, reducing tree mortality, or accelerating the development of habitat.

Consultation: Unless otherwise specifically stated in this FEIS, “consultation” as used in this FEIS does not mean an Endangered Species Act Section 7 consultation, but refers to DNR informally contacting USFWS about a particular project. Through consultation, DNR and USFWS may identify project-specific measures to avoid, minimize, or mitigate potential impacts in order to ensure consistency with the 1997 HCP, as it may be amended, the incidental take permit, and applicable law.

Critical habitat (federal): Pursuant to the federal Endangered Species Act implementing regulations found at 16 U.S.C § 1532(5)(A), critical habitat for threatened and endangered species is “(i) the specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the provisions of section 1533 of this title [16 U.S.C. § 1533], on which are found those physical or biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protection; and (ii) specific areas outside the geographical area occupied by the species at the time it is listed in accordance with the provisions of section 1533 of this title [16 U.S.C. § 1533], upon a determination by the [U.S.] Secretary [of Interior] that such areas are essential for the conservation of the species.”

Cumulative impact: The incremental impact of an action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions. Cumulative impacts can occur from individually minor but collectively significant actions taking place over time and space.

D

Deferral: As used in this FEIS, the term “deferral” or “deferred lands” refers to forestland that will not be harvested during the planning period due to a long-term conservation commitment under the 1997 HCP, *Policy for Sustainable Forests*, or other DNR conservation objectives.

Dispersal habitat: Habitat used by juvenile northern spotted owls or at any age to disperse or move from one area designated for nesting-roosting-foraging habitat to another.

DNR-managed lands: Lands managed by the Washington Department of Natural Resources. Includes state trust lands, natural area preserves, and natural resources conservation areas. *See* state trust lands.

E

Endangered species: Any species of plant or animal defined through the federal Endangered Species Act as being in danger of extinction throughout all or a significant portion of its range and published in the Federal Register.

F

Forest health: Defined in RCW 76.06.020 as “the condition of a forest being sound in ecological function, sustainable, resilient, and resistant to insects, diseases, fire, and other disturbance, and having the capacity to meet landowner objectives.” RCW 76.06.140 points to “overcrowded” conditions (i.e., overstocking) as causing forest health impediment and to well-managed forests as the first line of defense.

Forest edge: An abrupt transition or boundary between two habitat types. Forest edges are created by roads, harvests, changes in species composition, and physical changes in the landscape.

G

Gene pool reserve: A naturally regenerated, Douglas-fir stand that DNR has deferred from harvest to ensure that native genetic material, well-adapted to local conditions, will be available to DNR in the future.

Guy line: A cable stay used to hold up a logging tower, spar, or a tailhold tree.

H

Habitat carrying capacity: The maximum number of female murrelets expected to breed if habitat use continues as estimated in the population viability analysis.

Habitat conservation plan (HCP): A conservation plan generated in accordance with Section 10 of the Endangered Species Act for the purpose of obtaining an incidental take permit for species protected under the Act.

HCP planning unit: A geographic area that is based on watersheds for the purpose of tying minimization and mitigation more closely to the natural systems and geographic variation in habitat, gaining economies of scale, and providing greater efficiency in planning and implementing the 1997 HCP.

High-quality spotted owl habitat: The most structurally complex habitat used by territorial northern spotted owls for nesting, roosting, and foraging. Refer to [DNR State Trust Lands Habitat Conservation Plan 2015 Annual Report](#) for a more complete definition.

High-quality habitat: Habitat with a P-stage value of 0.47 to 0.89.

I-K

Incidental take: Harm or harassment to individuals of a listed species when such take is incidental to, and not the purpose of, carrying out otherwise lawful activities such as timber harvests.

Inland habitat: Marbled murrelet habitat on land; nesting habitat.

L

Landing: A widened area (often on or adjacent to a forest road) to which logs are yarded or skidded for loading onto trucks to be hauled to market.

Large data overlay: DNR's complex GIS model comprised of hundreds of individual data sources describing DNR-managed lands. Examples of such data include forest inventory information, riparian and hydrology data, roads and trails, and other biological and physical information.

Limited operating periods: Period during which management activities can be carried out; runs from two hours after sunrise to two hours before sunset (USFWS 2012).

Long-term forest cover (LTFC): DNR-managed lands on which DNR maintains and grows forest cover for conservation purposes, including habitat conservation for the marbled murrelet, through the life of the 1997 HCP. Areas of long-term forest cover have existing conservation commitments under the 1997 HCP, *Policy for Sustainable Forests*, Natural Heritage Program, forest practices rules, the OESF Forest Land Plan, and/or are identified as marbled murrelet conservation areas.

Low-quality habitat: Habitat with a P-stage value of 0.25 to 0.36.

M

Management area for northern spotted owls: Lands identified and designated in the 1997 HCP to be managed for specific types of habitat for the northern spotted owl.

Marbled murrelet conservation area (MMMA): A generic term for a discrete area designated for marbled murrelet habitat conservation under one or more of the alternatives analyzed in this FEIS.

Marginal landscape: Landscape considered less valuable for marbled murrelet conservation because of distance from known occupied sites and murrelet critical habitat on federal lands, number of observations of murrelet nesting behavior, capability for developing future habitat, and other factors.

Metering Harvest: Delaying, until the end of the first decade following implementation (date of incidental take permit issuance), the harvest of murrelet habitat that DNR otherwise would be authorized to harvest upon amendment of its incidental take permit. Metering will maintain habitat capacity while additional habitat is developed under the long-term conservation strategy. These metered acres will become available for harvest at the beginning of the second decade.

N

National Environmental Policy Act (NEPA) of 1969: An act passed by the U.S. Congress to (1) declare a national policy which will encourage productive and enjoyable harmony between man and his environment; (2) promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; (3) enrich the understanding of the ecological systems and natural resources important to the Nation; and (4) establish a Council on Environmental Quality. In the state of Washington, NEPA's counterpart is the State Environmental Policy Act (SEPA).

Natural area preserve: Under authority of the state Natural Area Preserves Act of 1972 (codified in Chapter 79.70 RCW), an area established on public lands to protect the best remaining examples of many ecological communities, including rare plant and animal habitat. NAPs are managed by DNR under the Natural Areas Program.

Natural regeneration: Reforestation by natural seed-fall from existing stands and trees.

Natural resources conservation area: As codified in 1987 in Chapter 79.71 RCW, an area designated to protect outstanding examples of native ecosystems; habitat for endangered, threatened, and sensitive plants and animals; and scenic areas. The NRCA program represents a protection alternative to complement NAPs. NRCAs are managed by DNR under the Natural Heritage Program.

Nesting platform: A horizontal limb, tree structure, or deformity at least 7 inches in diameter and a minimum of 50 feet above the ground, as described in the 1997 HCP.

Nesting, roosting, and foraging management area: A discrete area to be managed for sub-mature or better northern spotted owl habitat and nest patches.

Nest patch: Designated 500-acre patches that include a 300-acre patch for nesting and a 200-acre buffer of sub-mature or better habitat.

O

Occupied site: Habitat patches of varying size in which murrelets are assumed to nest based on field observations.

Old-forest habitat or old forest: As used in this FEIS, a type of northern spotted owl habitat in the OESF HCP planning unit (1997 HCP, p. IV.88).

Old growth (western Washington): DNR's *Policy for Sustainable Forests* defers old-growth stands from harvest, defined as stands, 5 acres or larger, in the most structurally complex stage of stand development, also referred to as fully functional (determined through a standard scoring method based on a scientist panel consensus). Old growth stands also refer to stands with a natural origin date prior to 1850, generally considered the start of European settlement in the Pacific Northwest.

Olympic Experimental State Forest (OESF): An HCP planning unit that includes about 264,000 acres of forested state trust lands on the western Olympic Peninsula in which foresters and scientists seek to learn how to integrate revenue production and ecological values in a working forest.

P

Peak flow: Periods of high stream flow, usually associated with storm events.

Platform: A large limb or structure at least 50 feet above the ground and at least 7 inches in diameter on which a marbled murrelet might nest.

Platform tree: Mature trees with large limbs or other structures at least 50 feet above the ground and at least 7 inches in diameter.

Policy for Sustainable Forests: A policy document that provides broad direction for DNR, in the form of 23 policies, to effectively manage forested state trust lands. The *Policy for Sustainable Forests* was adopted by the Board of Natural Resources on July 11, 2006. The purpose of the *Policy for Sustainable Forests* is to conserve and enhance the natural systems and resources of forested trust lands managed by DNR to produce long-term, sustainable income and environmental and other benefits for the people of Washington.

Pre-commercial thinning: Thinning in which felled trees have little or no market value (usually because of insufficient size) and are therefore are left where felled.

P-stage: A habitat classification system used in the development of the marbled murrelet long-term conservation strategy. Assigns a numeric value to forest stands based on the probability of their use by marbled murrelets for nesting.

Procedure: An explicit department direction for implementing policies such as those contained in the *Policy for Sustainable Forests*.

Q

Quasi-extinction: The probability of the population dropping below a certain fraction of the starting population. A population that has reached quasi-extinction may have too few adults to assure persistence of the species.

R

Raw acres: Acres of marbled murrelet habitat that have not been adjusted for factors such as forest edges, location, disturbance, or when that habitat develops. *See* adjusted acres.

Relative density: A mathematically derived parameter that indicates the level of competition between trees and a theoretical optimal range for thinning.

Reclassified habitat: Higher-quality marbled murrelet habitat types identified for surveys under the interim strategy to determine occupancy (DNR 1997, p. IV.40).

Reforestation: The reestablishment of forest cover either naturally (by natural seeding, coppice, or root suckers) or artificially (by direct seeding or planting). *Synonym:* regeneration.

Regeneration: The act of renewing tree cover by establishing young trees naturally or artificially.

Riparian management zone (RMZ): A protected band of vegetation adjacent to wetlands (called wetland management zone or WMZ), lakes, rivers, and streams that varies in width based on stream or wetland size and presumed ecological significance. The 1997 HCP designated RMZs and WMZs in order to protect salmonid and other aquatic and riparian obligate species.

Road maintenance and abandonment plan (RMAP): A plan that covers all forest roads on a landowner's property constructed or used for forest practices after 1974. It is based on a complete inventory that also shows streams and wetlands adjacent to or crossed by roads. The plan lays out a strategy for maintaining existing roads to meet state standards and shows areas of planned or potential road abandonment.

S

Salvage: Logging performed to sell blowdown, insect-infested, or otherwise damaged timber before natural processes cause deterioration in quality and value. Salvage harvest volume is not counted toward the sustainable harvest level set by the board.

Security forest: A closed-canopy forest stand over 80-feet tall that is located adjacent to marbled murrelet nesting habitat and provides security from windthrow, predation, and other disturbances.

SEPA: The State Environmental Policy Act, codified under Chapter 43.21C RCW.

Silviculture: The art and science of cultivating forests to achieve objectives. (This concept incorporates theory, planning, and practice at the stand through landscape/management area scales.)

Site preparation: Preparation of a final-harvested or intermediate-harvested forest management unit to increase the probability of successful regeneration by reducing slash and/or undesirable tree and brush species. Site preparation may be performed concurrent with logging (by, for example, pulling up and disposing of brush clumps), through piling and burning logging slash, through broadcast- or under-burning logging slash, by manually cutting undesirable vegetation, by applying herbicide (aerial or ground) to undesirable tree and brush species prior to planting, or other methods or combinations of methods. Compare to “vegetation management.”

Skyline: A cable stretched taut between two points and used as a track for log carriers.

Socioeconomic resiliency: Defined by Daniels (2004) as the ability to adapt to change.

Southwest Washington: Defined for this planning effort as those portions of the Columbia and South Coast HCP planning units west of Interstate 5 and that portion of the South Coast planning unit south of Highway 8 and south of Highway 12 between the towns of Elma and Aberdeen.

Spar: A tree, wood mast, or metal tower used to support rigging for a cable yarding systems.

Stand density: A quantitative measure of stocking expressed either absolutely in terms of number of trees, basal area, or volume per unit area or relative to some standard condition; a measure of the degree of crowding of trees within stocked areas commonly expressed by various growing space ratios (for example, height/spacing).

Stand development stages: The generally recognized stages of forest stand development that would occur as trees and other organisms populate a piece of ground, grow into a stand, evolve in form, and gradually die in the absence of stand-replacement disturbance.

State trust lands: Lands held as fiduciary trusts to provide revenue to specific trust beneficiaries. The majority of these lands were granted to the state by the federal Enabling Act (25 U.S. Statutes at large, c 180 p 676 (1889)) as a means of financial support, primarily for public schools and universities. Other lands were acquired by Washington from the counties; those lands also are held and managed in trust the same as the federally granted lands (RCW 79.02.010(13)). The Washington State Department of Natural Resources generates revenue on forested state trust lands primarily through timber harvest.

Stochastic: Referring to patterns resulting from random effects.

Strategic location: A geographic area within Washington considered to have a disproportionately high importance for murrelet conservation due to proximity to marine waters and marine hot spots (areas with higher-than-average murrelet density), proximity to known occupied sites, abundance of habitat, abundance and distribution of occupied sites, capacity for developing future habitat, protection from disturbance, and proximity to federal lands.

Stringer: A narrow area (less than 656 feet [200 meters] wide), predominantly a riparian management zone, where adjacent uplands have not been designated as long-term forest cover. Stringers are part of long-term forest cover. Habitat within stringers is not considered mitigation because of edge effects.

Structurally complex stand: A forest stand in the in the niche diversification or fully functional stand development stages.

Stumpage: The price of standing timber or the right to harvest timber. Stumpage does not include costs of harvesting or transporting timber.

Sub-mature habitat: A northern spotted owl habitat definition for stands with the structural characteristics necessary to provide roosting and foraging functions and, rarely, nesting functions.

Sustainable harvest calculation: A strategic analysis process that quantifies forestry goals, such as future forest conditions and trust revenue, against forecasted near- and long-term effects of alternative sets of policy. This process is also used to recommend to the board the next decade's sustainable harvest level. DNR is required by law (RCW 79.10.320) to periodically calculate and adjust the harvest level from forested state trust lands managed by DNR.

Swiss needle cast: A fungal disease specific to Douglas fir that can cause yellowing and loss of needles and reduced diameter and height growth.

T

Tail block¹: A block attached to an anchor at the back end of the yarding area; used to guide the haulback line.

Tailhold: A stump, tree, rock bolt, or other immovable object to which a skyline is tied off or tail block attached.

Take: Defined in the Endangered Species Act as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect any threatened or endangered species. Harm may include significant habitat modification when such modification actually kills or injures a listed species through impairment of essential behavior (for example, nesting or reproduction).

Threatened species: Any species which is likely to become an endangered species in the foreseeable future throughout all or a significant portion of its range.

Timber sale: A sale of timber from DNR-managed forested state trust land that is separate from the land.

¹ <http://www.soperwheeler.com/about-us/education/logging-terminology/>

U

Upland: Land above the ordinary high watermark of bodies of water. In everyday usage, the term refers to all lands above riparian management zones and aquatic lands, forested as well as not.

V

Variable-density thinning: A type of commercial thinning in which a mixture of small openings (gaps), un-thinned patches (skips), and varying stand densities are created to achieve specific objectives, such as accelerating development of a complex stand structure.

Variable retention harvest: A type of regeneration or stand-replacement harvest in which elements of the existing stand, such as down wood, snags, and leave trees (trees that are not harvested), are left for incorporation into the new stand. Variable retention harvest is different from a clearcut, in which all of the existing stand is removed.

Vegetation management: Weeding of undesirable competing vegetation, generally performed between planting and establishment, which may be performed through a variety of means such as hand-slashing or felling, mechanical means, herbicide applied from the ground, and herbicide applied by aircraft. Compare to “site preparation.”

W-X

Windthrow: Blowing over or breaking of trees in the wind.

Y

Yarding: The act of moving timber to a landing using a cable system.