Resolution Number 106 - 2015

A RESOLUTION AMENDING THE INTEGRATED FOREST STEWARDSHIP POLICY ADDING A POLICY FOR PROTECTION AND RESTORATION OF RIPARIAN AND WETLAND MANAGEMENT ZONES WITHIN KITSAP COUNTY

WHEREAS, Kitsap County adopted an Integrated Forest Stewardship Policy ("IFSP") in October 22, 2013; and

WHEREAS, Kitsap County has sought to enhance its IFSP to ensure greater protection of riparian and wetland management zones; and

WHEREAS, the County's Forest Stewardship Committee drafted a protection plan, which was reviewed and endorsed by the Kitsap County Parks & Recreation Advisory Board on May 20, 2015; and

WHEREAS, the proposed Integrated Forest Stewardship Policy amendment will continue to provide science-based stewardship and restoration of county-owned forest lands and associated natural resources, and

THEREFORE BE IT RESOLVED, the Board of County Commissioners amends the IFSP to include the Policy for the Protection and Restoration of Riparian and Wetland Management Zones in Kitsap County Parks as policy as shown in Attachment A.

DATED this 22nd day of June ,2015.

BOARD OF COMMISSIONERS STATE OF WASHINGTON KITSAP COUNTY

Dana Daniels

Dana Daniels, Clerk of the Board

BOARD OF COUNTY COMMISSIONERS
KITSAP COUNTY, WASHINGTON

Robert Gelder

ROBERT GELDER, Chair

E E Wolfe

EDWARD E. WOLFE, Commissioner

Charlotte Garrido

CHARLOTTE GARRIDO, Commissioner

Policy for the

Protection and Restoration of

Riparian and Wetland Management Zones in

Kitsap County Parks

The Kitsap County Forest Stewardship program is conducting restoration thinning in County parks within 200 feet of streams and wetlands; for that reason it is important to establish a program specific policy for the protection and restoration of riparian and wetland management zones (RMZ/WMZ).

Non-conventional thinning in overstocked stands is a recommended practice within riparian and wetland management zones in Western Washington[1]. The Kitsap County Forest Stewardship program exclusively uses non-conventional thinning. Operationally called variable density thinning (VDT), this type of ecological restoration thinning is specifically recommended for young dense Douglas fir plantations and advances the forest health and habitat goals of the Kitsap County Forest Stewardship program.

Why Use Ecological Restoration Thinning?

Restoration thinning is most beneficial in young (typically less than 50 years of age) dense conifer stands because of anticipated high growth rates[2]. Unlike conventional thinning, restoration thinning can maintain or accelerate dead wood production[1]. This is accomplished by leaving all or most of the dead wood as part of the thinning prescription. The approach is to use VDT to create variation in the forest landscape by crafting tree clumps, skips and openings that closely mimic natural forest conditions[2]. Additionally, all non Douglas fir tree species in the management zones are reserved as leave trees.

Healthy, diverse forests contain dead trees. Properly implemented, VDT will result in continued stand mortality that will continue to contribute dead wood to streams and wetlands. Thinning prescriptions will also call for the artificial creation of snags. Studies show that ninety-five percent of near-stream wood inputs come from within 82 to 148 feet of a stream; Shorter distance occur in young, shorter stands and longer distances occur in older and taller stands[1]. Therefore RMZs will increase over time.

The Washington Forest Practices Rules do address the RMZ and WMZ requirements for Western Washington, but given the ecological health and habitat goals for county parks, the Forest Stewardship Program elects to increase protection for both wetlands and riparian areas.

The Kitsap County Forest Stewardship Program policies for RMZ and WMZ are to be followed unless a site specific adaptive management prescription is approved by the Forest Stewardship Committee and the Kitsap County Community Forester. Under no circumstance can the WMZ or RMZ be less than what is required under the Washington Forest Practice Rules.

---

[1] Spies, Thomas, Michael Pollock, Gordon Reeves and Tim Beechie. 2013. Effects of Riparian Thinning on Wood Recruitment: A scientific Synthesis. Science Review Team Wood Recruitment Subgroup, Forest Sciences Laboratory, Corvallis, OR.

[2] Kerr, Andy, and Derek Churchill. 2012. Ecological Appropriate Restoration Thinning in the Northwest Forest Plan Area. Conservation Northwest, Geos Institute, Klamath-Siskiyou Wildlands Center and Oregon Wild. Seattle, WA.

Wetland Management Zones

In Kitsap County Parks, all wetlands are important regardless of their size and will be protected by a minimum buffer, with no harvest or use of equipment within the wetland management zone. Within wetland management zones all restoration thinning will be limited to low-impact harvest systems, specifically a cut-to-length (CTL) harvest system.

The WMZ will be measured horizontally from the edge or the point where the non-forested wetland becomes a forested wetland as determined by the method described in the Forest Practices Board Manual, Section 8 – Guidelines for Wetland Delineation. The delineation shall be of an average width as described per wetland type in the red columns. Forest Practices require that the WMZ not be less than the minimum nor more than the maximum (as shown in the red columns of Table A).

For Kitsap County Parks, the minimum WMZ for Type A and B wetlands (blue column of Table A) is equal to the WA FPA average width; thereby providing twice the protection. In WMZ's that exceed the KC Parks Minimum width, a total of 100 to 140 leave trees per acres greater than six inches dbh will remain; fifty of which will be greater that twelve inches dbh including 10 trees greater than twenty inches dbh, where they exist.

For Kitsap County Parks, Type B wetlands under ¼ acre and all forested wetlands will be protected with the no-harvest WMZ widths shown in the blue column of Table A.

Table A: Policy for Wetland Management Zone (WMZ) Protection

Forest Practices – Wetland Type with buffers showing additional park requirements.

Wetland Type	Acres	WA FPA Maximum Width	WA FPA Average Width	WA FPA Minimum Width No Harvest	KC Parks Minimum Width No Harvest
A (including bogs *)	Greater Than 5	200′	100′	50′	100′
A (including bogs *)	.5 to 5	100′	50′	50′	100′
A (Bogs only)	.25 to .5	100′	50′	25′	50′
B	Greater than 5	100′	50′	25′	50′
B	0.5 to 5	No WMZ	No WMZ	25′	50′
B	0.25 to 0.5	No WMZ	No WMZ	25′	50′
B	< 0.25	No WMZ	No WMZ	No WMZ	50′
Forested	n/a	No WMZ	No WMZ	No WMZ	50′

The columns highlighted in red represent WMZ no harvest zones under Forest Practices; the blue columns specify the Kitsap County Forest Stewardship Program WMZ policy for enhanced wetland management zone protection in Kitsap County Parks.

Riparian Management Zones

Decisions regarding Riparian Management Zone (RMZ) are more complicated than WMZ's as there are many options based on the presence or absence of: fish, cultural resources, threatened or endangered species, seasonal or perennial stream flow and stand age and density. Generally, rules in the Washington Forest Practices law protect fish bearing waters (Type F and S) quite well. The 4a Option (Tables B), no harvest within the inner zone or a small landowner "Alternative Plan" (Table C) will be used by the Forest Stewardship Program for the young plantation stands bordering streams in Kitsap County Parks.

The Kitsap County Forest Stewardship Program manages park forests for forest health and wildlife, as opposed to previous management for fiber production. With the exclusive use of restoration thinning (thinning from below), and leaving more trees per acre than the required minimums, the prescription will significantly preserve forest hydrology and provide for the recruitment of deadwood. By more than doubling the leave trees, required under Forest Practices Rules, beyond the no harvest in the Inner Zone (Option 4a in Tables B) there is no need to increase the core and inner zone buffers.

The columns highlighted in red represent FPA no harvest zones; blue columns indicate the Kitsap County Forest Stewardship Program policy for enhanced riparian management zone protection in Kitsap County Parks.

Tables B: Policy for Type S/F Stream Protection - No-Harvest Inner Zone

Type "S" (Shoreline) and "F" (Fish bearing) Streams

4a No Inner Zone Harvest - Buffer Width by Site Class (Stream <10 feet)

Site Class	WA FPA Core Zone No Harvest	WA FPA Inner Stream < 10' No Harvest	Total Buffer Width No Harvest	WA FPA Outer Zone TPA Minimum	**Kitsap County Forest Stewardship Program Outer Zone Average TPA**
I	50'	83'	133'	20	100 to 140
II	50'	63'	113'	20	100 to 140
III	50'	43'	93'	20	100 to 140
IV	50'	23'	73'	20	100 to 140
V	50'	10'	60'	20	100 to 140

4a No Inner Zone Harvest - Buffer Width by Site Class (Stream > 10 feet)

Site Class	WA FPA Core Zone No Harvest	WA FPA Inner Stream > 10' No Harvest	Total Buffer Width No Harvest	WA FPA Outer Zone TPA Minimum	**Kitsap County Forest Stewardship Program Outer Zone Average TPA**
I	50'	100'	150'	20	100 to 140
II	50'	78'	128'	20	100 to 140
III	50'	55'	105'	20	100 to 140
IV	50'	33'	83'	20	100 to 140
V	50'	18'	68'	20	100 to 140

Table C: Policy for Type S/F Stream Protection Using Alternate Plan

Small Landowner Alternate Plan – Type S & F Stream Fixed Width, No Harvest, by Site Class

Site Class	WA FPA - No Harvest Core Zone	**Kitsap County Forest Stewardship Program - Minimum No Harvest Core Zone**	**Kitsap County Forest Stewardship Program Average TPA For Outer Zone**
I	145'	145'	100 to 140
II	118'	118'	100 to 140
III	101'	101'	100 to 140
IV	82'	82'	100 to 140
V	75'	75'	100 to 140

Both perennial and seasonal streams need protection. Because the Kitsap County Forest Stewardship Program manages park forests for ecological diversity and wildlife, restoration thinning will significantly enhance forest hydrology and provide for the recruitment of deadwood into Type Np and Ns streams The blue column in Table(s) D indicate the buffer widths for Type Np and Ns streams under the Kitsap County Integrated Forest Stewardship Policy for Kitsap County Parks.

Tables D: Policy for Np/Ns Stream Protection No-Harvest Buffer

Type "Np" (Non-Fish Perennial) Streams

From S or F Stream Length of Np Stream	WA FPA- No Harvest Width Np	**Kitsap County Forest Stewardship Program – Minimum No Harvest Buffers**
Length > 1000, First 500'	50'	50'
Length <1000, First 300'	50'	50'
Length < 300'	50'	50'
Beyond 1,000'	0' with 30' ELZ	50'
All Sensitive Sites	50 to 56'	50 to 60'

Type "Ns" (Non-Fish Seasonal) Streams

WA FPA- No Harvest Buffer Width for Ns Stream	WA FPA Type Ns Restriction	**Kitsap County Forest Stewardship Program Buffer Minimum No Harvest Buffer**
0'	30' ELZ	50'

Thinning for Wildlife in Wetlands and Riparian Management Zones

The number of leave trees per acre for all restoration thinning in and adjacent to riparian and wetland management zones is base established thinning guidelines for optimum wildlife habitat enhancement.

The tree per acre range (100 to 140) will be determined in the field using the average diameter of the leave trees to calculate the relative density (RD) to optimize the desired wildlife habitat condition. Large trees need more space, more space means more light on the forest floor stimulating understory plants thereby creating diverse habitat for wildlife.

RD will be used to determine the thinning density or the number of leave trees per acre. The density goal will be an average RD of 35. Leave trees will be sampled and measured to determine the RD using the following guideline and methodology (Table E):

Table E: Thinning guidelines for Wildlife

Relative Density (RD) for Wildlife

	Lower Limit – RD 25		Upper Limit – RD 45	
Avg. Leave Tree DBH (inches)	Trees/Acre (TPA)	Avg. Tree Spacing (Feet)	Trees/Acre (TPA)	Avg. Tree Spacing (Feet)
6	312	11	561	8
7	248	13	446	8
8	203	14	365	10
9	170	16	306	10
10	145	17	261	11
11	126	18	226	12
12	110	19	198	13
13	98	21	176	14
14	88	22	158	15
15	79	23	142	15
16	72	24	129	16
17	65	25	118	17
18	60	26	108	18
19	55	28	100	18
20	51	29	92	19
21	48	30	86	20
22	44	31	80	21
23	42	32	75	21

Relative Density (RD) is a descriptive term that relates to the density of a timber stand to a fully stocked level. An ideal RD for wildlife habitat is between 25 and 45.

Mathematically, RD = Standing Basal Area (BA) in square feet per acre divided by the square root of the quadratic average of DBH in inches.

The quadratic average is the square root of the average squared diameters. For smaller areas, a simple average DBH can work about as well as the quadratic average in calculating RD.

Basal area (BA) is equal to the sum of the cross sectional area of trees at breast height on an acre of land. It is also equal to the BA of the average diameter multiplied by the trees per acre (TPA). To convert tree DBH to BA, square the DBH and multiply by 0.0054.

Thus an average tree diameter of 10 inches would have a basal area equal to (10 X 10 X 0.054) or 0.54 square feet.

Excerpted from Washington State University Extension
EB2000 "Silviculture for Washington Family Forest"[3]

[3] Hanley, Donald P. and David Baumgartner. Silviculture for Washington Family Forests. 2005. Washington State University Extension Bulletin 2000. Pullman, WA.

GLOSSARY

Type "A" Wetland	An area of ½ acre or more covered by open water seven consecutive days between April 1st and October 1st. This includes forested and non forested bogs that are greater than ¼ acre.
Type "B" Wetland	An open area of ¼ acre or more that is vegetated with water tolerant plants and/or shrubs.
Forested Wetland	A wetland with a tree crown closure of 30% or more, if trees are mature.
Type "S" Stream	Shorelines of Washington State
Type "F" Stream	Streams lakes and ponds that are used by fish, amphibians, wildlife and drinking water
Type "Np"	Perennial, year round stream flow (sometimes below the surface).
Type "Ns"	Seasonal streams
ELZ	Equipment limitation zone on type Np/Ns streams
Bogs	A unique wetland with peat or muck to 16 inches or more and vegetation, such as sphagnum moss, Labrador Tea, Bog Rosemary and other hydrophilic plants, requiring acidic soils. True bogs are rare on the landscape and Included here as bogs are Poor Fens for purposes of Forest Practices.
Conventional Thinning	Thinning that spaces the leave trees out as equally as possible and is designed as a method to produce the highest quality wood for the subsequent final harvest.
Non Conventional Thinning	Thinning where the smallest trees are removed first, thinning from below leaving the largest trees and clumps of trees along with skips and small openings; thereby creating a highly varied forest landscape.
DBH	The diameter of a tree at breast height (4.5 feet)
Riparian Zone	The area adjacent to streams, lakes and ponds.
Relative Density	A descriptive term that relates to the density of a timber stand to a fully stocked level. An ideal RD for wildlife habitat is between 25 and 45.