

20-Acre Riparian Exempt Forestland

6.1 Introduction

In 1999, Washington's Legislature exempted certain forestland parcels from some riparian protection measure requirements adopted by the Board. Exempt parcels include those that are 20 contiguous acres or less and are owned by individuals whose total ownership is less than 80 forested acres statewide. These parcels are commonly referred to as "exempt 20-acre parcels." While not subject to some Forests and Fish riparian protection requirements, exempt 20-acre parcels must still provide protection for public resources in accordance with the Forest Practices Act.

In arriving at their permitting decisions, the Services concluded that they would condition the ITPs regarding 20-acre exempt forest practices applications. Conditions require the State to do something in addition to what was proposed in the HCP. These conditions include:

- Requiring leave trees be left along Type Np (non fish-bearing, perennial) waters for riparian function.
- Providing eligibility criteria for coverage of 20-acre exempt parcels under the ITPs.
- Defining coverage thresholds for 20-acre exempt parcels in each Watershed Administrative Unit (WAU) and Water Resource Inventory Area (WRIA).
- Outlining certain spawning and rearing habitat of bull trout (also known as "Bull Trout Areas of Concern") where ITP coverage may not apply.

6.2 Type Np Water Leave Tree Requirements

WAC 222-30-023(3) states that DNR will require trees to be left on Np waters on 20-acre exempt parcels where such practices are needed to protect public resources. The Services concluded that leaving trees along Np waters is necessary in most situations. Both ITPs have a condition which states "permittee (Washington State) shall require trees to be left along Type Np waters under the 20-acre exemption unless such leave trees are not necessary to protect covered species (public resources) and their habitats." In order to implement this ITP condition, a guidance memo was written September 26, 2006 and delivered to DNR region forest practices staff clarifying that "henceforth FPAs should be conditioned to require leave trees along Type Np waters within exempt 20 acre parcels unless DNR determines this is not necessary".

There were 13 forest practices applications associated with 20-acre parcels that had Type Np waters during the period from July 1, 2007 to June 30, 2008. Six of the applications (less than half) were conditioned according to the Np guidance memo which follows WAC 222-30-023(3). Ongoing forest practices staff training will emphasize the need to include the condition according to the Type Np waters guidance memo.

6.3 Watershed Analysis Unit (WAU) and Water Resource Inventory Area (WRIA) Thresholds

In the ITPs the Services defined permit coverage thresholds for WAUs and WRIsAs. When a threshold within a WAU or WRIA is reached, subsequent FPAs with 20-acre exempt parcels within those WAUs or WRIsAs will not be covered by the ITPs unless the landowner chooses to follow standard RMZ rules instead of 20-acre exempt RMZ rules. The Services placed a 10% threshold on cumulative reduction in riparian function as measured by recruitable large woody debris (LWD) within a WAU for 20-acre exempt parcels. In addition, the Services placed a 15% threshold for when the WAUs that exceed the 10% reduction in function within a WRIA have a cumulative stream length that exceeds 15% of the total stream length within the WRIA. The State has

developed methods, approved by the Services, to collect data and to track the cumulative percent reduction of function in each WAU and the percent cumulative stream length in each WRIA.

6.4 Cumulative Reduction in Function Calculation Methodology

A formula called the Equivalent Area Buffer Index (EBAI) will help determine the percent reduction in function as measured by LWD along fish bearing streams. The EBAI was developed for the FPHCP Environmental Impact Statement (EIS) as a tool for comparing alternatives in terms of the level of ecological function conserved by various management practices. The EBAI for LWD recruitment potential is a quantitative measure that compares the potential of a riparian area to provide woody debris to streams originating from tree mortality, windthrow, and bank undercutting (a function of slope distance from the stream channel in relationship to tree height). The EBAI methodology takes into account management activities within the buffer zone. The EBAI value is determined based upon the mature conifer curve of LWD recruitment potential by McDade et al. (1990) that relates cumulative percent of LWD recruitment with distance from the stream bank in terms of tree height. The EBAI formula will be used to determine the level of recruitable LWD for the stream length in the harvest area for both the planned 20-acre exempt RMZ as well as for an RMZ using standard forest practices rules so that a comparison can be made between the two RMZs. The reduction in function will be calculated by subtracting the percent of function of the proposed 20-acre exempt RMZ buffer from the percent of function that would be provided by the standard RMZ buffer rules.

As an example, consider a fish-bearing, or Type F stream in western Washington. The assumptions for the RMZ of this stream include a Channel Migration Zone (CMZ) that is 10 feet wide, followed by a 50-foot core zone, followed by a 60-foot inner zone in which a light selection harvest is assumed (30% volume removal), followed by a 45-foot outer zone in which a moderate-heavy selection harvest is assumed (70% volume removal). This gives a total RMZ width of 155 feet including the 10-foot CMZ. The total RMZ width of 155 feet is based on an average of Site Class II and III areas $[(140+170)/2]$, which represent the most common site classes on forestland covered by the ITPs. Next, it is necessary to go to the McDade (1990) mature conifer curve, which has been standardized for 155 feet, as the buffer distance that assumes full protection for the 100-year Site Potential Tree Height (SPTH). This curve reads the cumulative percentage of LWD contribution in relation to the distance from the stream. In our example, we need to determine the percent of the total LWD contributed by the different RMZ zones (e.g., 0-10 ft., 10-60 ft., 60-120 ft., and 120-165 ft.). The values are 17% for the 0-10 foot zone, 62% for the 10-60 foot zone, 18% for the 60-120 foot zone, and 3% for the 120-165 foot zone. The last step is to multiply the contribution percentage by the tree retention percentage for each RMZ zone and sum them up.

$$(0.17 \times 1.0) + (0.62 \times 1.0) + (0.18 \times 0.7) + (0.03 \times 0.3) = 0.925$$

Therefore, the RMZ on Type F streams in western Washington would provide for an estimated 92.5% of full LWD recruitment potential, given the assumption that full recruitment potential is achieved at a buffer width equal to the 100-year SPTH.

20-acre exempt RMZs are less complex than standard rule RMZs. Typically they are one width with the same degree of harvest throughout. An example of a 20-acre exempt RMZ follows:

If the proposed RMZ on a 20-ac exempt parcel is 58 feet wide and 40% of the trees will be harvested in the RMZ, then the formula for that RMZ will be:

$$0.73 \times 0.6 = 0.44$$

Therefore, the RMZ on this Type F stream on the 20-acre exempt parcel would provide for an estimated 44% of full LWD recruitment potential.

The reduction in LWD recruitment potential along the stream length in the 20-acre parcel is: $92.5\% - 44\% = 48.5\%$

Annual in-office calculations of reduction in function

An estimate in reduction in function by WAU will be made annually and reported in the FPHCP annual report. The estimate will be calculated using the fixed average reduction in function values derived in the FPHCP EIS (see Appendix B page B-28).

Western Washington:

- EBAI average for Forests and Fish Rules = .93
- EBAI average for Rules prior to Forests and Fish = .60
- EBAI average for New 20-ac rules = $.60 \times 1.15 = .69$
- Average Reduction in function = $.93 - .69 = .24$

Eastern Washington:

- EBAI average for Forests and Fish Rules = .91
- EBAI average for Rules prior to Forests and Fish = .67
- EBAI average for New 20-ac rules = $.67 \times 1.15 = .77$
- Average Reduction in function = $.91 - .77 = .14$

A running in-office average total for reduction in function will be kept for each WAU. A field check of a subset of the FPAs in each WDNR region will be made to verify that the in-office estimates are accurate. When the 10% threshold is reached within a WAU, subsequent 20-acre exempt landowners will be informed that their FPA will not be covered by the ITPs unless they choose to use standard RMZ buffers on their 20-acre parcel.

The in-office calculations for the time period of the first annual report (6/5/06 – 6/30/07) follow. Next year’s report will contain the cumulative in office calculations from 2006 – 2008.

Estimated Percent Loss of LWD Recruitment Potential by WAU

<u>WRIA</u>	<u>WAU</u>	<u>% Reduction in LWD Function in WAU</u>
Okanogan	Antonie Creek	.0187
Middle Spokane	Blanchard Creek	.0401
Upper Chehalis	Bunker Creek	.0156
Lewis	Cathlapotl	.0320
Lewis	Cedar Creek/Chelatchie Creek	.0493

Kitsap	Colvos Passage/Carr Inlet	.0133
Grays-Elochoman	Coal Creek	.0100
Cowlitz	Connelly	.1657
Cowlitz	Cowlitz River/Mill Creek	.0166
Little Spokane	Deadman Creek/Peone Creek	.0373
Lower Chehalis	Delezene Creek	.0468
Little Spokane	Dragoon Creek	.0307
Nooksack	Drayton	.0014
Lower Chehalis	East Fork Humptulips	.0994
Puyallup-White	Electron	.0211
Lower Skagit-Samish	Friday Creek	.0298
Grays-Elochoman	Grays Bay	.0012
Colville	Haller Creek	.0430
Kennedy-Goldsborough	Harstine Island	.1057
LyceHoko	Hoko	.0037
Lewis	Horsehoe Falls	.0917
Colville	Huckleberry Creek	.0192
Upper Chehalis	Independence Creek	.1275
Island	Whidbey Is.	.0735
Salmon-Wasougal	Lacamas Lake	.0486
Nooksack	Lake Whatcom	.0700
Cowlitz	Lower Coweeman	.0195
Lewis	Lower Kalama	.0142
Willapa	Lower Naselle	.0226
Upper Chehalis	Lower Newaukum	.0358
Willapa	Lower Willapa	.1007
Kitsap	Lynch Cove	.0135
Nisqually	Mashel	.0167
Kennedy-Goldsborough	Mason	.0359
Lower Chehalis	Middle Humptulips	.0186
Nisqually	Mitchel	.0377
Cowlitz	Nineteen Creek	.1897
Willapa	North Headwaters	.0491
Colville	North-Middle Forks/Deer Creek	.0328
Cowlitz	Ostrander	.2036
Little Spokane	Otter Creek	.0177
Walla Walla	Patit Creek	.0005
Pend Oreille	Pend Oreille/Cedar Creek	.0398
Snoho	Qilceda Creek	.0342
Queets/Quinault	Quinault Lake	.1143
Lewis	Rock Creek	.0193
LyceHoko	Salt Creek	.0412
Lower Skagit-Samish	Samish River	.0217

Lower Chehalis	Satsop	.0325
Pend Oreille	Tacoma Creek	.1030
Cowlitz	Toutle River	.0238
Salmon-Wasougal	Vancouver	.0267
Cowlitz	Winston Creek	.0236
Lower Chehalis	Wishkah Headwaters	.0562
Deschutes	Woodland Creek	.0454
Lower Chehalis	Wynochee River System	.0010
Lewis	Yacolt	.0266

There were approximately 77 20-acre exempt FPAs associated with S or F waters between the time period of 6/5/06 – 6/30/07. The table above shows estimated percent loss of LWD recruitment potential in each WAU containing one or more of the 77 FPAs.

6.5 Data Collection for Watershed Analysis Unit Threshold

Reduction in Function within WAUs

An ongoing field audit will occur on a subset of the 20-acre exempt FPAs to help verify that the measurements obtained from FPAs in the office for calculation of reduction in function are accurate. This field audit will begin in fall 2008. (The field data collection forms for eastern and western Washington are included at the end of this chapter). State forest practices staff will collect the measurements needed to calculate reduction in function during routine compliance visits to FPAs. Measurements including width of RMZ, percent of trees left after harvest, and length of RMZ will be obtained. These measurements will be input into the EBAI formula to calculate cumulative reduction in potential LWD recruitment. The results will be compared to the estimated calculations made in the office on the same FPAs.

Cumulative Stream Length for WRIAs

A baseline stream length has been calculated for all WRIAs. As WAUs reach the 10% threshold, the State will track the total stream length in those WAUs to determine when the 15% threshold stream length in the WRIA is reached. The State will then be able to inform landowners that subsequent FPAs within the WRIA that are associated with 20-acre exempt parcels will no longer be covered by the ITPs, as thresholds are reached, unless the landowners choose to apply standard RMZ rules.

6.6 Bull Trout Areas of Concern

The Services conditioned the ITPs regarding specific identified spawning and rearing habitat areas for bull trout. These areas are of concern because of extremely low populations of bull trout. The condition states that a forest practice which qualifies for and uses the 20-acre exempt riparian rules and falls within these bull trout areas of concern will not be covered by the ITPs unless the forest practice is shown to not measurably diminish the level of riparian function. The function is measured by recruitable LWD and is compared to the level of function that would have been provided by standard rules. The State and the Services developed a process to track forest practices in these bull trout areas of concern. See “Bull Trout Areas of Concern 20-acre Exempt Applications Review Process” at the end of this chapter.

There were no forest practices applications that were associated with 20-acre exempt parcels in the bull trout areas of concern during the reporting period from July 1, 2007 through June 30, 2008.

6.7 20-Acre Exempt Forest Practices Application Data

The total number of approved FPAs during the reporting period (July 1, 2007 to June 30, 2008) was 5,396. Following is additional data of interest regarding 20-acre exempt parcels.

FY 2008 Number of 20-acre Exempt FPAs

Total # of 20-acre FPAs with fish-bearing water	90
Total # of 20-ac exempt FPAs that were conversions with fish-bearing water	12
Total # of 20-ac exempt FPAs with fish-bearing water that were not conversions	78
Total # of 20-ac exempt FPAs that were in Bull Trout Areas of Concern	0

6.8 Additional 20-Acre Exempt Information

The forest practices application instructions were modified during this reporting period to better explain when landowners may not be covered by the FPHC (go to www.dnr.wa.gov/BusinessPermits/Topics/ForestPracticesApplications/Pages/fp_forms.aspx to see the new FPA instructions and forms). The revised instructions will help landowners decide if they want to voluntarily leave standard buffers in lieu of 20-acre exempt buffers in order to maintain coverage under the ITPs.

Bull Trout Areas of Concern on 20-Acre Exempt Applications Review Process

May 5, 2008

The USFWS' Incidental Take Permit (ITP) includes a condition related to 20-acre exempt forest practices applications that fall within specific bull trout spawning and rearing habitat Populations. Twenty-acre exempt forest practices that fall within these areas and are determined by USFWS to "measurably diminish" riparian function as compared to that which would be provided by standard rules will not be covered under the ITP. The USFWS provided the state with GIS layer that shows these areas of concern. The layer is available in DNR's Forest Practices Risk Assessment Tool (FPRAT), in the Plants, Animals, and Habitat Folder, and is called "FPHCP Bull Trout Populations".

In order to protect bull trout habitat in these areas, the USFWS and DNR's FPHCP administrator have developed a process to be notified quickly of applicable 20-acre exempt forest practices applications and to notify landowners of ITP coverage on the FPA decision date.

- Through the Forest Practices Application Review System (FPARS), USFWS is notified of all 20-acre exempt applications, including those within the delineated bull trout populations. USFWS scans the applications to determine if any fall within the areas of concern and takes note of the classification. A class II notification can commence within 5 days after acceptance by DNR. A class III application has a review period of 14 days.
- When a 20-acre exempt application falls within the Bull Trout populations, USFWS contacts the FPHCP administrator to jointly review the 20-acre exempt application. When the FPHCP administrator is not available, USFWS contacts the Forest Practices Division (FPD) Operations staff.
- The FPHCP administrator (or FPD Operations staff) notifies the appropriate region forest practices coordinator of the review.
- Within a few days of initially receiving the application, USFWS and DNR makes every effort to review the application in the office and decide if the forest practice will measurably diminish the level of riparian function. The decision will be made no later than the 4th day of a Class II notification or the 13th day of a Class III or Class IV application. In addition, USFWS will send their comments in writing (via e-mail) to the FPHCP administrator (or FPD Operations staff) and to the region simultaneously by the 4th day of a Class II notification or the 13th day of a Class III or Class IV application.
- If the FPA is not authorized under the ITPs due to diminished riparian function, the region forest practices coordinator notifies the applicant via a form letter (that has been provided by Division operations staff). The letter is sent concurrently with the FPA decision.

NOTE: The landowner's forest practices application **would** be covered under the ITP if the application follows **standard** forest practices RMZ rules as listed in WAC 222-30-021 or WAC 222-30-022 and does not employ the 20 acre exemption rules in WAC 222-30-23.

20-Acre Exempt RMZ Field Data Collection Form for Eastern Washington

*Note: Email completed form to
HCP_Administrator@dnr.wa.gov*

FPA #:

Date:

Forest Practices Forester:

	Stream Segment A			Stream Segment B	
	Side (N,S,E,W)	Side (N,S,E,W)		Side (N,S,E,W)	Side (N,S,E,W)
1) What is the RMZ length? (ft.)					
2) Is the stream segment w/in the Bull Trout overlay?					
3) What is the upland harvest strategy? (partial cut or "other" harvest type)					
4) What is the average RMZ width? (ft.) <i>(Note: RMZ includes associated wetlands and/or area left to meet shade requirements)</i>					
5(a) Is there new road construction within the average RMZ? If so, <i>estimate</i> the percent volume removed in the RMZ.					
5(b) Is there timber harvest within the average RMZ? If so, <i>estimate</i> the percent volume removed in the RMZ.					
6) How close to the stream channel did harvest occur? (ft.)					
7) Comments					

8) Draw a picture of the RMZ on the reverse side if needed for clarification

20-Acre Exempt RMZ Field Data Collection Form for Western Washington

*Note: Email completed form to
HCP_Administrator@dnr.wa.gov*

FPA #:

Date:

Forest Practices Forester:

	Stream Segment A			Stream Segment B	
	Side (N,S,E,W)	Side (N,S,E,W)		Side (N,S,E,W)	Side (N,S,E,W)
1) What is the RMZ length? (ft.)					
2) What is the required RMZ width? (e.g., 29', 58', 86', 115')					
3) What <i>average</i> RMZ width was actually left? (ft.) <i>(Note: RMZ includes associated wetlands and/or area left to meet shade requirements)</i>					
4(a) Is there new road construction within the average RMZ? If so, <i>estimate</i> the percent volume removed in the RMZ.					
4(b) Is there timber harvest within the average RMZ? If so, <i>estimate</i> the percent volume removed in the RMZ.					
5) Is it an even-age or an uneven-aged harvest outside of the RMZ?					
6) Comments					

7) Draw a picture of the RMZ on the reverse side if needed for clarification

