

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 Practice 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 applicant to do something in addition to what they proposed in the HCP. These conditions include:

- Requiring leave trees be left along Type Np 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”. See memo in Chapter 6 of this report.

There were 13 non-conversion forest practices applications associated with 20-acre parcels that had Type Np waters during the period from June 5, 2006 to July 1, 2007. Six of the thirteen applications were approved following the September 26, 2006 guidance issued from the Forest Practices Division. The six applications were not conditioned as directed. Additional forest practices staff training will address this issue.

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 riparian management zone (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 Type F stream in western Washington. The assumptions for the RMZ of this stream include a 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: $92.5\% - 44\% = 48.5\%$

This calculation will be made for each FPA and a running total for reduction in function will be kept for each WAU. 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.

6.5 Data Collection for Watershed Analysis Unit Threshold

Reduction in Function within WAUs

A field audit will be performed annually 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. State forest practices staff will visit the FPAs at the end of the harvest, in order to collect the measurements needed to calculate reduction in function. 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 calculations made in the office on the same FPAs.

These site visits will begin during the 2008 fiscal year (July 1, 2007 – June 30, 2008). The methodology for collecting data will be established prior to the start of the site visits.

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 15% of the stream length in the WRIA is reached. The State will then be able to let landowners know when the thresholds have been exceeded and that subsequent FPAs within the WRIA that are associated with 20-ac exempt parcels will no longer be covered by the ITPs unless they 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 the very low populations of bull trout that exist. 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 ITP 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 are working on a process to track forest practices in these bull trout areas of concern.

There were no forest practices that were 20-acre exempt parcels in the bull trout areas of concern during the reporting period from June 5, 2006 through June 30, 2007.

6.7 20-Acre Exempt Forest Practices Application Data

The total number of approved FPAs during the reporting period (June 5, 2006 to June 30, 2007) was 6,533. Following is additional data of interest regarding 20-acre exempt parcels.

FY 2007 Number of 20-acre Exempt FPAs

Total # of 20-acre FPAs with fish-bearing water	130
Total # of 20-ac exempt FPAs FY2007 that were conversions with fish-bearing water	19
Total # of 20-ac exempt FPAs with fish-bearing water that were not conversions	111
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 is in the process of being modified. The revised FPA instructions will assist landowners in determining if they can claim the 20-acre exemption and if they are covered by the ITPs based on land ownership and parcel size. This 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.