

Analysis of Impacts to the  
Olympic National Forest Timber Base from the  
Wild Olympics Wild and Scenic Rivers Act (H.R. 5995; S. 3329)

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## **Summary**

The purpose of this report is to determine what effect the Wild Olympics Wilderness and Wild and Scenic Rivers Act introduced by Congressman Dicks and Senator Murray in June 2012 would have on the timber base of the Olympic National Forest (ONF). This report is an update to a similar report issued in February 2012, and reflects the revised proposed wilderness boundaries in the legislation as introduced. The report provides an objective third party analysis of the number of potentially harvestable acres affected by the draft wilderness proposal and compares this to the total ONF timber base and current harvest rates. Proposed Wild and Scenic River designations were not included as current ONF harvest practices are permitted within Wild and Scenic corridors<sup>1</sup>. Potential wilderness acres were also not considered as these acres would not immediately or necessarily be designated as wilderness. Suitable acres within potential wilderness may be thinned before any future designation.

The estimated total number of acres removed from the timber base by the wilderness proposal is 882 assuming ground and cable-based yarding methods (Table 1). This amounts to 0.5% of the total timber base of the Olympic National Forest that is accessible by cable and ground-based yarding. If helicopter yarding is assumed in addition, an estimated 1,742 acres (in total) are removed, which equates to 0.8% of the total timber base. Helicopter yarding will not likely be feasible on timber sales sold during periods with low to moderate timber prices due to its high cost, especially with continuing high fuel prices.

**Table 1:** Timber base acres in the entire Olympic National Forest and the proposed wilderness additions. Sequential acreage reductions are shown for current management screens used by the Olympic National Forest.

Sequential Screens	Olympic National Forest		Wilderness Proposal	
	Timber Base Acres	Acres Removed	Timber Base Acres	Acres Removed
Total LSR & AMA	543,734		126,660	
1. Remove Inventoried Roadless within LSR & AMA	452,109	-91,625	48,540	-78,120
2. Remove stands in LSR >80 years & AMA >140 years	267,198	-184,911	6,062	-42,478
3. Remove acres in unsuitable vegetation types	266,503	-695	5,757	-305
4. Remove acres in no-harvest riparian buffers	226,868	-39,635	4,535	-1,222 <sup>a</sup>
5. Remove acres beyond maximum helicopter yarding distance (1/2 mile from roads)	225,664	-1,204	1,742	-2,793
6. Remove acres beyond maximum ground and cable yarding distance (1400 ft. from roads)	190,928	-34,736	882	-860
<sup>a</sup> At this stage of the GIS analysis, small "slivers" of suitable acres were removed. These slivers are artifacts of boundary inconsistency between GIS layers, and do not represent actual stands that could be treated. A total of 466 acres were removed.				

Since the adoption of the NW Forest Plan, the ONF has conducted commercial thinning operations on an estimated average of 1,350 acres per year<sup>2</sup>, or less than 1% of the current timber base. Approximately 60% of the timber base is in Late Successional Reserve (LSR) where harvests are restricted to stands less than 81 years of age<sup>3</sup>. The remaining acres are in Adaptive Management areas where harvests are generally avoided in stands older than 140 years<sup>3</sup>. Almost all harvests on the ONF are thinning sales designed to enhance habitat and old growth characteristics. Under current treatment rates, the ONF will not be able to treat all available acres before stands grow past 80 or 140 years, let alone conduct additional thinning entries in stands that have already been thinned. Under current policies, the limiting factor to the long term timber supply on the ONF is the rate of treatment not the number of available acres. The Olympic National Forest could significantly increase the current rate of harvesting by focusing on suitable acres outside of the proposed Wilderness for the next 50 years. The proposed wilderness within the Wild Olympics legislation will not limit timber supply under the current management policy framework, and thus should not result in reduced harvesting or job losses.

## **Methodology**

The analysis applied management screens currently used to determine suitable harvest acres by the ONF. The screens are based on mandated requirements and current management practices on the ONF, as well as operational limitations of commonly used harvesting technology for thinning. Table 1 shows the acreage reductions of these screens applied in a sequential manner. The screens are described below:

1. Inventoried Roadless Areas. No road building or thinning is allowed as mandated under the current Roadless Area Rule.
2. Age & Access Limitations: All stands over 80 years age in LSR and over 140 years age in Adaptive Management Areas were removed.
3. High elevation stands: These vegetation types are unlikely to be managed on the ONF and thus were eliminated. These include sub-alpine fir forest, mountain hemlock forest, and alpine park land.
4. No-cut riparian buffers: All streams and other riparian areas are given no-cut buffers on ONF timber sales<sup>4</sup>. It is unlikely that this practice will change given that protection of riparian areas is mandated in the NW Forest Plan. No-cut buffers of 100' for fish bearing streams and 75' for non-fish bearing streams were removed based on past ONF projects.
5. Helicopter yarding external distance: All acres beyond a ½ mile maximum external yarding distance from Forest Service system roads were removed to account for potential helicopter yarding<sup>5</sup>. Longer distances are possible, but are rarely economically viable given the decline in production rates and small volumes per acre removed in thinning sales.
6. Cable and ground based logging external distance: A maximum distance of 1,400' from Forest System roads was used to remove acres not accessible by ground or cable yarding technology. Again, longer distances are possible but rarely economically feasible. No distinction was made between uphill and downhill yarding to keep the analysis straightforward. As 1,400' is a high estimate of maximum external yarding distance for ground based yarding and downhill cable yarding, there are likely considerable acres within this 1,400' that will not be thinned. The ONF does construct short temporary roads to improve access, but these are not likely to increase the total number of net available acres beyond the total derived from using the 1,400' cutoff.

The six screens were general rules that could be applied in an objective manner across the whole ONF in a straightforward manner. However, additional acres are commonly removed in the ONF timber sale projects due to site-specific analysis of unstable slopes, special habitat areas, logging system constraints, areas of low stocking, and the need for additional no-thin area to create variability. Thus, the actual harvest acres removed by the proposed wilderness additions will be an estimated 10-25% less when timber sale projects are laid out on the ground, based on my professional experience with projects on the ONF and other National Forests. However, the boundaries of the proposed wilderness make some of the units that are not in the proposal too small to be economically viable. Due to the site specific nature of the additional acres that should be both removed and added to the number of harvest acres affected by the proposal, no attempt was made to quantify these acres in this report.

The analysis for this report used National Forest GIS layers for age class, management allocation (LSR, AMA), vegetation zones, roads, and inventoried roadless areas. For streams, the statewide hydro layer from the WA Department of Natural Resources was used because it classifies whether streams are fish bearing, while the ONF stream layer does not. The buffers generated from this DNR layer were checked against a layer of the full Riparian Reserve layer from the ONF. The buffers were 33% of the total acres in Riparian Reserves which fits the common rule of thumb to place 1/3<sup>rd</sup> of Riparian Reserves in no-cut buffers. All analysis was conducted using ArcGIS 10.0. Slight variation in results due to different GIS methodologies may result if this analysis is re-run.

## **Notes and References**

<sup>1</sup> USDA Forest Service 2009 *West Fork Humptulips Environmental Assessment*. Olympic National Forest.

<sup>2</sup> The ONF has sold an average of 16.9 million board feet per year over the last ten years (2002-2011).

This equates to roughly 1,350 acres per year assuming an average of 12,500/ acre removal. Source: FOIA request to Olympic National Forest (available upon request).

<sup>3</sup> The following documents guide and summarize current management practices on the ONF.

- USDA Forest Service & USDI Bureau of Land Management. 1994. *Standards and Guidelines for Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl*.
- USDA Forest Service. 1990a. Olympic National Forest land and resource management plan. Olympia, Washington.
- USDA 1990b. Olympic National Forest land and resource management plan. Final environmental impact statement. Olympia, Washington.
- Shoal, R. 2002. *Multiple-Objective Thinning on the Olympic National Forest: An Overview*. USDA Forest Service, Olympic National Forest.
- USDA Forest Service. 2004. *Olympic National Forest strategic plan: integrating aquatics, wildlife, and silviculture*. Olympic National Forest, Olympia, WA.

<sup>4</sup> Taken from a selection of recent ONF environmental assessments: *West Fork Humptulips Environmental Assessment (2009)*; *Jackson Thinning Environmental Assessment (2008)*; *Bear Creek Saddle Environmental Assessment (2005)*; *Matheny South Environmental Assessment (2001)*; *Two Y Thin Environmental Assessment (1998)*

<sup>5</sup> Personal communication with Loren Kellogg, Professor of Forest Engineering. College of Forestry. Oregon State University.