

## **Appendix C**

### ***Olympic Units***

#### **Unit 1 (refer to Oly-Units 1&2 map)**

This unit is located within Section 12 of Township 19N, Range 9W. The wind throw is scattered throughout this 45-acre unit. This timber will be salvaged and a variable density thinning prescription will be implemented. Blowdown timber will be salvaged on all 45 acres and the following prescription will be utilized for thinning on the 45 acres.

##### ***Thin Prescription***

- 15% of the stand will be untreated, “skip” (stream buffers, stands with unique characteristics such as large diameter or potential “nest” trees and large snags)
- 15% of the stand will be opened, creating small “gaps” – the wind throw and wind damaged trees will be salvaged to create these openings – the wind damage has already created these “gaps”
- The remaining 70% of the stand will be thinned, removing approximately 20-25% of the stand basal area.

##### **Stream Buffers**

There are four stream buffers (RMZ’s) that have been marked along the boundary of this unit.

- The southwest RMZ is marked at 113’ representing the core and inner zone of this buffer. The unnamed stream channel is a fish-bearing creek (type F) that is a tributary to the Wishkah River. The stream channel is < 10’ bank full width and is located within site class II. This buffer is marked at the forest practice standard and is approximately 475’ in total length.
- The remaining three RMZ’s located along the unit boundary are located on, no fish, perennial stream channels (type Np). Each of these short buffers has been marked at 50’ as required by the forest practice standard.

##### ***Roads and Landings***

The existing road system will be utilized for hauling logs. There is a 0.5-mile road that trails through the forest and three elk forage fields. The road will be utilized as the main landing location along with the forage field edges. No new spurs or landings will be needed at this unit.

#### **Unit 2 (refer to Oly-Units 1&2 map)**

This unit is located within Section 12 of Township 19N, Range 9W and covers 4 acres along the WDFW property boundary. The unit contains a solid section of damage that has created a 3-acre “gap”. The unit was a dense stand of Western Hemlock on a flat bench above a stream. This is a salvage only unit. No thinning will occur.

##### ***Stream Buffers***

There is one stream buffer (RMZ) that is marked along the boundary of the unit. This buffer is marked at 113’ representing the core and inner zone of this buffer. The unnamed stream channel is a fish-bearing creek (type F) that is a tributary to the Wishkah River. The stream channel is < 10’ bank full width and is located within site class II. This buffer is marked at the forest practice standard and is approximately 1,400’ in total length. This is the other side of the type F channel that is mentioned in Unit 1.

### ***Roads and Landings***

Logs will be hauled away from the unit utilizing an existing road system along the property boundary. This road connects to the county road system (Wishkah Road) and is approximately 0.25 miles long. No new spurs or landings will be needed at this unit.

### **Unit 3 (Refer to Oly-Unit 3 map)**

This unit is located within Section 10 of Township 19N, Range 9W and covers approximately 77 acres. This unit is surrounded by several privately owned “clear-cuts” which exposed the site to extreme wind damage. There is a significant amount of wind thrown timber piled throughout this unit. In many cases the piles are so significant that movement through large areas is completely blocked. This unit consists primarily of Douglas fir. Blowdown timber will be salvaged on all 77 acres and the following prescription will be utilized for thinning on the 77 acres.

#### ***Thin Prescription***

- 15% of the stand will be untreated, “skip” (stream buffers, stands with unique characteristics such as large diameter or potential “nest” trees, broken tops and large snags)
- 25% of the stand will be opened, creating small “gaps” – the wind throw and wind damaged trees will be salvaged to create these openings - the wind damage has already created these “gaps”
- The remaining 60% of the stand will be thinned, removing approximately 25% of the stand basal area.

#### ***Stream Buffers***

There is one no fish perennial (Np) stream located within this unit near the eastern boundary. A PIP (perennial initiation point) has been located and a 56’ radius buffer around this sensitive site has been marked. The PIP is the confluence of two no fish seasonal (type Ns) stream channels and is the uppermost point of perennial flow. A 50’ buffer downstream from the PIP has been marked according to forest practice standards. Each of these buffers is set at the forest practice standard. The type Np stream flows into the West Fork Wishkah via a 22’ vertical waterfall.

### ***Roads and Landings***

Access to this unit is limited. Two temporary, “dirt”, logging spurs will need to be constructed. These dirt spurs will be connected to the county roadway and county permits for this activity will be obtained. The total length of these two spurs is 2,000’ (20 stations). One landing to the north of the county road (Greenwood Road) will also need to be constructed. The dirt landing has been strategically placed in an area that received extensive wind throw. The spurs and landing are temporary and will be obliterated upon project completion. This will involve machine fluffing, debris placement, and planting where necessary. All tree species that are planted will be native species. Any forage seeding will be consistent with the Olympic-Willapa Hills Wildlife Area Plan in regards to forage seeding for the benefit of elk. No new permanent roads will be constructed at this unit. Two fields on the north side of the unit may also be utilized as landings and access points if needed by the logging contractor.

#### **Unit 4 (Refer to Oly-Units 4,5,6&7 map)**

This unit is located within Sections 10 & 11 of Township 19N, Range 9W and covers approximately 60 acres. There are numerous pockets of high-density blow down located within this unit. The wind thrown timber will be salvaged and a variable density thinning prescription will be utilized throughout the unit where needed. Blowdown timber will be salvaged on all 60 acres and the following prescription will be utilized for thinning on the 60 acres.

##### ***Thin Prescription***

- 15% of the stand will be untreated, “skip” (stream buffers, stands with unique characteristics such as large diameter or potential “nest” trees, broken tops and large snags)
- 15% of the stand will be opened, creating small “gaps” – the wind throw and wind damaged trees will be salvaged to create these openings -- the wind damage has already created these “gaps”
- The remaining 70% of the stand will be thinned, removing approximately 25-30% of the stand basal area.

##### ***Stream Buffers***

There are two stream buffers (RMZ's) located within this unit that have marked along the salvage and thin boundary.

- The southern RMZ is located on a fish-bearing (type F) channel. A buffer has been marked at 113” representing the core and inner zones and this extends for approximately 400’ along the unit boundary. This unnamed stream channel is a tributary to the West Fork of the Wishkah River. This buffer is set at the forest practice standard, however little to no salvage and thinning will occur within the outer zone which extends an additional 57’ from the marked RMZ.
- The northern RMZ in this unit is located on a no fish perennial stream (type Np) that is approximately 230’ in length and is set at the forest practice standard of 50’. This unnamed stream channel is a tributary of the West Fork of the Wishkah River. Fish passage into this stream is blocked by a 22’ waterfall that cascades into the West Fork Wishkah.

##### ***Roads and Landings***

There is an existing road system within this unit that will be utilized for hauling and landings. There are two main roads that total .45 miles. There are also four fields that will be utilized as landings. No new roads or landing areas will need to be created for salvaging and thinning purposes at this unit.

#### **Unit 5 (Refer to Oly-Units 4,5,6&7 map)**

This unit is located in Section 11 of Township 19N, Range 9W and covers approximately 12 acres. This unit consists primarily of Douglas fir. Blowdown timber will be salvaged on all 12 acres and the following prescription will be utilized for thinning on the 12 acres.

##### ***Thin Prescription***

- 15% of the stand will be untreated, “skip” (stream buffers, stands with unique characteristics such as large diameter or potential “nest” trees and large snags)

- 15% of the stand will be opened, creating small “gaps” – the wind throw and wind damaged trees will be salvaged to create these openings -- the wind damage has already created these “gaps”
- The remaining 70% of the stand will be thinned, removing approximately 25-30% of the stand basal area. This will occur while salvaging the dispersed wind thrown timber throughout the unit.

#### ***Stream Buffers***

There is one stream located within this unit. The stream is a tributary of the West Fork Wishkah River and it is a no fish perennial (type Np). A 50’ buffer has been marked consistent with the forest practice standard for this stream type. The buffer is located on the unit boundary and is approximately 1,300’ in length.

#### ***Roads and Landings***

Access to this small unit is limited. A short temporary, dirt logging spur will be constructed to access the site. This temporary spur will span approximately 1,700’ (17 stations) The spur is temporary and will be obliterated upon project completion. This will involve machine fluffing, debris placement, and planting where necessary. All tree species that are planted will be native species including western red cedar, Sitka spruce, Douglas fir, and western hemlock.. Any forage seeding will be consistent with the Olympic-Willapa Hills Wildlife Area Plan in regards to forage seeding for the benefit of elk. No new permanent roads will be constructed at this unit.

#### **Unit 6 (Refer to Oly-Units 4,5,6 &7 map)**

This unit is located in Section 11 of Township 19N, Range 9W and covers approximately 45 acres. This unit consists primarily of Douglas fir. Blowdown timber will be salvaged on all 45 acres and the following prescription will be utilized for thinning on the 45 acres.

#### ***. Thin Prescription***

- 15% of the stand will be untreated, “skip” (stream buffers, stands with unique characteristics such as large diameter or potential “nest” trees and large snags)
- 15% of the stand will be opened, creating small “gaps” – the wind throw and wind damaged trees will be salvaged to create these openings -- the wind damage has already created these “gaps”
- The remaining 70% of the stand will be thinned, removing approximately 25-30% of the stand basal area. This will occur while salvaging the dispersed wind thrown timber throughout the unit.

#### ***Stream Buffers***

There is one stream located within this unit. The stream is a tributary of the West Fork Wishkah River and it is a no fish perennial (type Np). A 50’ buffer has been marked consistent with the forest practice standard for this stream type. The buffer is located on the unit boundary and is approximately 1,830’ in length. This is the other side of the stream that is described in Unit 5.

#### ***Roads and Landings***

Existing roads and fields will be utilized for access and landings in this unit. There is one main road that bisects the unit that totals .85 miles. The temporary dirt spur that will be constructed for Unit 5 will also be utilized in the northern section of Unit 6. No new spurs or landings will be needed at this unit.

**Unit 7 (Refer to Oly-Units 4,5,6&7 map)**

This unit is located in Section 11, Township 19N, Range 9W and covers approximately 6 acres. This unit is small and is dealing primarily with the wind throw that is present on the edge of the elk forage field. This is a salvage unit.

***Stream Buffers***

There are no stream buffers within this unit.

***Roads and Landings***

Existing roads and fields will be utilized for salvaging the wind throw at this site.

**Unit 8 (Refer to Oly-Units 8&9 map)**

This unit is located in Section 1, Township 19N, Range 9W and covers approximately 4 acres. This unit contains a solid section of damage that has created a 4-acre “gap”. The unit was a dense stand of Western Hemlock. The majority of the Hemlock is on the ground at this site leaving only broken tops, snags, and large diameter Sitka spruce trees. This is a salvage only unit. No thinning will occur.

***Stream Buffers***

One unmapped no fish seasonal stream (Ns) is located within this unit. The creek was identified and mapped while in the process of laying this unit out. There are no buffer standards for Ns stream channels, except for 30’ equipment no entry zone.

***Roads and Landings***

There is no permanent access to this unit. Two short dirt landings will be constructed off of the county roadway. Two access points are needed to reach each side of the small Ns stream channel that bisects this unit. The landings are temporary and will be obliterated upon project completion. This will involve machine fluffing, debris placement, and planting where necessary. All tree species that are planted will be native. Any forage seeding will be consistent with the Olympic-Willapa Hills Wildlife Area Plan in regards to forage seeding for the benefit of elk. No new permanent roads or landings will be constructed at this unit.

**Unit 9 (Refer to Oly-Units 8&9 map)**

This unit is located in Section 1, Township 19N, Range 9W and covers approximately 4 acres. This unit contains a solid section of damage that has expanded the existing elk forage field by 1 acre. The unit was a dense stand of Western Hemlock. This is a salvage only unit. No thinning will occur.

***Stream Buffers***

There are no streams present at this unit.

***Roads and Landings***

Existing roads and fields will be utilized for salvaging the wind throw at this site. No new permanent roads or landings will be constructed at this unit.

**Unit 10 (Refer to Oly-Units 10&11 map)**

This unit is located in Section 29 of Township 20N, Range 8W and covers approximately 3 acres. This unit contains a solid section of damage that has created a 3-acre “gap”. The unit was a dense stand of Western Hemlock. This is a salvage only unit. No thinning will occur.

### ***Stream Buffers***

There are no streams present at this unit.

### ***Roads and Landings***

Existing roads and fields will be utilized for salvaging the wind throw at this site.

### **Unit 11 (Refer to Oly-Units 10&11 map)**

This unit is located in Section 29 of Township 20N, Range 8W and covers approximately 2 acres. This small unit is primarily salvaging the wind throw that is present on the edge of the elk forage field. This is a salvage only unit. No thinning will occur.

### ***Stream Buffers***

There are no streams present at this unit.

### ***Roads and Landings***

Existing roads and fields will be utilized for salvaging the wind throw at this site. No new permanent roads or landings will be constructed at this unit.

## ***Johns River Units***

### **Unit 1 (Refer to JR-Unit 1,2,3 map)**

This unit is located within Section 1 of Township 16N, Range 11W and covers approximately 50 acres. The unit covers the hilltop bench forest above the Johns River tideflats. This unit follows the snaking road system that is present. All wind thrown timber within 200' of the roadway will be salvaged in this unit. This will consist of salvaging small pockets of blowdown within the unit that consist of .25-.75 acres. These small "gap" openings will be very beneficial for increased elk forage and will promote an enhanced forest structure condition on the perimeter of these openings.

### ***Stream Buffers***

There are no streams located within this unit.

### ***Roads and Landings***

The Johns River Eastside Road will be utilized for hauling and as the landing location for this unit. This road system has several spurs that trail toward the tideflats as well. The total length of the Eastside Road and existing spurs is 2.2 miles in length. No new permanent roads or landings will be constructed at this unit.

### **Unit 2 (Refer to JR-Unit 1,2,3 map)**

This unit is located within Section 1 of Township 16N, Range 11W and covers approximately 9 acres. This unit suffered 70-90% stand loss as a result of the storm event. It is composed primarily of Western Hemlock, however several large diameter spruce trees held their ground. This large opening will be re-planted to assimilate the native cedar/spruce/fir/hemlock forest structure that historically existed.

### ***Stream Buffers***

There are no streams located within this unit.

### ***Roads and Landings***

The Johns River Eastside Road will be utilized for hauling and as the primary landing location for this unit. No new permanent roads or landings will be constructed at this unit.

**Unit 3 (Refer to JR-Units 1,2,3 map)**

This unit is located within Section 12 of Township 16N, Range 11W and covers approximately 6 acres. This stand of dense western hemlock also suffered significant damage during the storm event. Timber will be salvaged in a manner that creates small open pockets, throughout the unit. This will increase herbaceous forage, which will be available to elk in this “high-use” area. The boundary for this unit was set beyond the need for marking RMZ because of the steep slopes that are present to the north of the unit.

***Stream Buffers***

There are no streams located within this unit.

***Roads and Landings***

The Johns River Eastside Road will be utilized for hauling and as the landing location for this unit. No new permanent roads or landings will be constructed at this unit.

**Unit 4 (Refer to JR-Units 4,5 map)**

This unit is located within Section 12 of Township 16N, Range 11W and encompasses approximately 2 acres. This stand of hemlock, located adjacent to the county road, suffered complete damage.

***Stream Buffers***

There are no streams located within this unit.

***Roads and Landings***

There is currently an existing gravel “pull-off”, off of the county road, that will be utilized as the landing for this extremely small unit. No new permanent roads or landings will be constructed at this unit.

**Unit 5 (Refer to JR-Units 4,5 map)**

This unit is located within Section 12 of Township 16N, Range 11W and covers approximately 3 acres. This stand of hemlock, located on the edge of recent, privately owned, clear-cut suffered extensive damage.

***Stream Buffer***

There is one stream buffer located at this unit. This unmapped stream channel is a no fish perennial (type Np). A 50’ buffer has been marked on the north boundary of this unit. This is consistent with the forest practice standard for this stream type. The buffer is approximately 230’ in length.

***Roads and Landings***

This unit is adjacent to a county fire department that has a large paved parking area. WDFW donated this parcel to the county several years ago. The parking area will be utilized as the landing for this unit. No new permanent roads or landings will be constructed at this unit.

**Unit 6 (Refer to JR-Unit 6 map)**

This unit is located in Section 32 of Township 17N, Range 10W and covers approximately 7 acres. This mature stand of hemlock is located along the south shore of Grays Harbor. The majority of the stand was severely damaged from the storm event except for a few remaining large diameter spruce trees and several small dense pockets of

western hemlock. This unit will be re-planted to assimilate the native cedar/spruce/fir/hemlock forest structure that historically existed.

***Stream Buffers***

There are no streams located within this unit.

***Roads and Landings***

An existing road along the western border of the property accesses this entire unit. This road will be used for hauling and as the main landing location. The road is approximately 900' in length. No new permanent roads or landings will be constructed at this unit.