

# Small Type N Stream Guidance and Flow Permanence Field Survey Protocol

*Survey Protocol Effective July 1, 2023*

*Rule Guidance Effective January 1, 2024*

This guidance document is divided into technical guidance and survey protocol. The technical guidance that references administrative rule will be effective January 1, 2024.

The perennial survey protocol is effective July 1, 2023.

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## Objective

Forest Practices Technical Guidance is advisory guidance, developed by the State Forester through a stakeholder process to assist landowners and resource professionals. The objective of this guidance is to describe how to implement the rules regarding the surveying and identification of small Type N streams for streamflow permanence features and associated protection requirements. This initial version is focused on the Phase 1 flow permanence process and survey protocol and the completion of an operational field survey. The Phase 1 Flow Permanence survey protocol is effective July 1, 2023, and will be so until Phase 2 is implemented according to administrative rules.

The Type N stream riparian management areas and associated protection requirements are effective January 1, 2024.

To ensure small perennial streams are identified adequately and riparian protections are applied appropriately during Phase 1, operators are required to complete an operational field survey (OAR 629-635-200(18) and 629-643-130). The operation field survey is intended to identify the uppermost flow feature on small Type Np streams within the Area of Inquiry. The specific requirements for individual surveys are based on the capabilities and resources of persons completing the survey and if the information is to be included in the department's electronic notification and reporting system (FERNs). Further information is provided in the Survey Process section.

## Background

In 2022, Senate Bill 1501 directed the Board of Forestry to adopt rules to apply the 2022 Private Forest Accord Report. The Private Forest Accord implemented many changes and new protections regarding streamside tree retention and identification of the end of flow permanence on small Type N streams. To identify and protect the small Type N perennial streams adequately, Forest Practice Rules have been adopted to include new provisions around water protection which included developing a comprehensive statewide high-resolution stream network, a multi-phase approach for flow permanence modeling, and implementing an operational field survey protocol for small type N streams.

## Terminology and Definitions

**“Area of Inquiry”** (AOI) means an area along a Type N stream beginning at the confluence with a Type F or Type SSBT stream and extending:

- a) During Phase 1, to the first **250 feet** encountered without a flow feature.
- b) After Phase 1, (in Phase 2) to the longer of the modeled end plus 250 feet or beyond the modeled end to the end of the first 250 feet encountered without a flow feature.

The AOI defines the area that is required to be surveyed for flow permanence to apply the appropriate riparian tree retention requirements.

**"Channel"** is a distinct bed or banks scoured by water which serves to confine water and that periodically or continually contains flowing water.

**“Flowing water”** means continuous visibly flowing surface water within a channel.

**“Flow feature”** means flowing water for 25 feet or more. *Note: Water must be flowing water as described by OAR 629-600-100 (48) to be determined to be a Flow Feature. A stagnant pool does not count as flowing water.*

**“Operational Field Survey”** means a flow duration survey completed during Phase 1 flow permanence protocols as defined in OAR 629-635-200(18).

**“RH Max”** means the maximum distance described for any particular small Type Np Stream.

**"Stream"** means a channel, such as a river or creek, which carries flowing surface water during some portion of the year.

- (a) For the purposes of the forest practice rules, streams include:
  - (A) The water itself, including any vegetation, aquatic life, or habitats therein.
  - (B) Beds and banks below the high-water level which may contain water, whether or not water is actually present.
  - (C) The area between the high-water level of connected side channels.
  - (D) Beaver ponds, oxbows, and side channels if they are connected by surface flow to the stream during a portion of the year; and
  - (E) Stream-associated wetlands.
- (b) "Streams" do not include:
  - (A) Ephemeral overland flow (such flow does not have a channel); or
  - (B) Road drainage systems or water developments as defined in OAR 629-600-100(157).

**"Terminal Type Np stream"** means the largest Type Np stream by basin size that is immediately upstream of the end of a Type F or Type SSBT stream. Specific to the Eastern Oregon Geographic Region.

**"Lateral Type Np stream"** means any Type Np stream that is not a Terminal Type Np stream. Specific to the Eastern Oregon Geographic Region.

**"Type N stream"** means a stream that meets the criteria of a Type Np or Ns stream.

**"Type Np stream"** means all perennial streams that are not Type SSBT or Type F.

**"Type Ns stream"** means all seasonal stream reaches that are not Type SSBT, Type F or Type Np streams.

## Overview

This Technical Guidance was developed to help operators and landowners complete field surveys of small Type N streams and to apply the appropriate protection requirements. These surveys will help determine the uppermost flow feature within the area of inquiry required by the administrative rules effective January 1, 2024. The uppermost flow feature(s) identified in the survey will distinguish Type Np from Type Ns streams which will subsequently determine vegetation retention and equipment limitation zone requirements for different stream reaches. The small Type N vegetation retention and equipment limitation zone requirements for all operators are provided in [OAR 629-643-0130](#) and more detail for Small Forestland Owners (SFOs) is provided in [OAR 629-643-0143](#).

The survey protocol in this guidance has been developed by the Oregon Department of Fish and Wildlife (ODFW) with consultation from ODF.

**Phase 1 Protocol (Operational field survey):** The objective of the operational field survey is to establish the location of the uppermost flow feature within the area of inquiry for Small Type N streams. This distinguishes a Type Np from a Type Ns stream for the purpose of applying the stream protection rules in the Division 643 of the Forest Practice Rules. During Phase 1, no mapped or modeled end is available to establish the uppermost flow feature (OAR 629-635-200(18)(a)). Though the statewide hydrography network may provide an estimated end of perennial flow information during Phase 1, this data is not comprehensive across the state and where available, is for informational purposes only and to assist those completing operational field surveys. This information is based off the USGS National Hydrography Dataset (NHD) high resolution flow data.

To establish the appropriate riparian management area prescriptions for small Type N streams during Phase 1, each applicable stream reach within a harvest unit, will require an operational field survey to be completed according to the ODFW survey protocol. An applicable stream reach is a small Type N stream that is:

- directly tributary to a Type F (SSBT) stream or
- an upstream branch of the Type N stream that is tributary to a Type F (SSBT) stream but still within the area of inquiry, or
- directly upstream of the end of a Type F (SSBT) stream but still within the area of inquiry.

An operation may proceed based on the results of an operational field survey after either:

- A) the survey is approved by ODFW, or
- B) 21 days have lapsed since the submission of the survey, and it has not been disapproved by ODFW.

If the operational field survey is approved by ODFW and is published to FERNS according to the **Survey Process**, it may be used for future notifications and operational planning. The requirement to survey all applicable small Type N streams will end once Phase 2 flow modeling is implemented.

**Phase 2 – Flow duration modeling (Modeled end):** Once a regulatory model for flow duration is published and available, a location of the modeled end (of perennial flow) will be determined for all small Type N streams. The modeled end will be mapped and published in the statewide hydrography network and available within the FERNS once Phase 2 is implemented.

## Survey Process to Determine Uppermost Flow Feature

The following outlines the steps that are needed to complete an operational field survey and submit the results to ODF as required in [Division 635 of the Forest Practice Rules](#). This outline provides the requirements and criteria to be followed during each phase and what to do if the location of stream surveys cross multiple properties or ownerships.

### Phase 1 Requirements

*Observations may be collected any time of the year. Operational field survey – Required regardless of whether the stream is mapped or classified as perennial or not. (OAR 629-635-200(18)(1))*

1. Planning for Operational Field Surveys
  - a. Determine the number, location, and extent of streams to be surveyed based on planning for future harvest operations.
  - b. All applicable small Type N stream channels within planned harvest operation area(s) must be surveyed to determine the location of tree retention areas and equipment limitation zones. If a stream cannot be surveyed, an operator may treat the stream as a small Type Np and protect it as such.
2. Conduct operational field surveys per Survey Protocol. Surveys may be conducted using either.
  - a. Low-precision methods
  - b. Geospatial based methods
3. Submit surveys to ODF with all information required in the Survey Protocol. Landowners will need to submit completed operational field surveys via electronic mail (e-mail) to their respective Oregon Department of Forestry (ODF) Stewardship Forester and shall include all necessary attachments and files that contain the required attributes and information per the Survey Protocol. ODF will share submitted surveys with ODFW for review and approval.
4. Surveys will be reviewed by ODF and ODFW to ensure completeness and that appropriate information is included. Once a survey is submitted, the following outcomes are possible:
  - A. **Approved** – the operational survey will define the harvest layout and retention requirements described in OAR 629-643-130.

- Low Precision - If the survey used a lower level of map precision (non-geospatial methods) as described in the Survey Protocol, it will not be incorporated into FERNS and department data. However, the survey results are allowed to be used to determine the uppermost flow feature and the small Type N stream protections for a single harvest operation.
  - If the survey used Geospatial-Based collection methods, survey information and mapped location(s) of the most upstream flow feature(s) may be used for future operations as documented in FERNS and department GIS data. ODF will be responsible for adding the location and extent of the most upstream flow feature(s) from the survey to FERNS and ODF GIS stream data.
- B. **Disapproved** – in which case ODF/ODFW shall provide an expeditious review and a process for resolution if the survey is disapproved. Survey information will not be incorporated into FERNS and ODF data until survey is approved.
- If over 21-days has elapsed since the submission of the survey, the operational field survey results may be used to determine the uppermost flow feature and associated small Type N stream protections for the included proposed harvest operation(s).
  - Prior operational field surveys recorded in the ODF data may be relied upon for planning and layout of harvest operations.
- C. **Delayed or No review** – If survey is not reviewed or disapproved by ODFW within 21-days, the completed operational field survey will define the harvest layout and retention requirements described OAR 629-643-0130 for a single harvest operation. Only an approved survey that used geospatial methods will be incorporated into FERNS and the ODF regulatory stream data.

## Frequently Asked Questions

When can stream surveys be completed?

**During Phase 1** - Stream flow permanence surveys are allowed to be completed during any time of the year which follows the **Survey Process** requirements. Surveys completed and approved can be used for operational needs to determine the uppermost flow feature on a small Type N stream (OAR 629-643-0130). Surveys completed during the appropriate low flow period as established by ODFW (typically July 1-September 30) may be incorporated into the flow duration modeling for Phase 2.

What does the operational field survey (OFS) establish??

- A completed survey establishes a point location of the uppermost flow feature(s) and becomes the distinction between Type Np below and Type Ns above. This distinction determines the vegetation retention and equipment limitation zone (ELZ/R-ELZ) requirements described in OAR 629-643-130. Once this location is identified, the point (uppermost flow feature) is valid for harvest activity notifications adjacent to (within) the relevant harvest unit/operation. If the criteria meet the Geospatial collection method in the as described in the survey process and is approved, the feature point(s) will be recorded and published into the FERNs and published maps to be available for reference for future operations.

What if flowing water that is a Flow Feature is found above the Area Inquiry?

Flowing water that is discovered outside the Area of Inquiry does not impact the uppermost Flow Feature determination. Protection requirements are based on Flow Features discovered within the Area of Inquiry.

Can the estimated end of perennial flow on the statewide hydrography be used During Phase 1?

- No mapped or modeled end is available to establish the uppermost flow feature (OAR 629-635-200(18)(a)) during Phase 1. Though the statewide hydrography network will provide an estimated end of perennial flow information during Phase 1, this data is not comprehensive across the state and where available, is for informational purposes only and to assist those completing operational field surveys. This information is based on the USGS National Hydrography Dataset (NHD) high resolution flow data.

What happens during Phase 2?

- Implementation of the flow permanence rules requires a multi-phase approach. Although only operational field surveys can be conducted in Phase 1, during Phase 2, a peer reviewed model will establish a 'Modeled End' for the end of perenniality of Type N streams. Once a regulatory model for flow permanence is published and available, the location of the modeled end (of perennial flow) will be identified on all small Type N streams and published in the regulatory stream map and available within FERNs. Field surveys for verification of the modeled end (verified end) may be conducted by ODFW during Phase 2. These verification surveys are distinct from operational field surveys. However, operational field surveys will be allowed in Phase 2 if a landowner wants to identify the uppermost flow feature in the field. Updated survey protocols will be published once Phase 2 is implemented. Approved surveys will substitute for the modeled end and the update will be published to all maps and within FERNs.

## Phase 1 Survey Protocol - Effective July 1, 2023

*Protocols were developed and provided by Oregon Department of Fish and Wildlife as required by OAR 629-635-200(18) and the Private Forest Accord Report (February 2022).*

### **PFA Flow Permanence Field Protocol for Phase 1**

**Overview:** A field-based protocol to document flow permanence status of type N streams

#### **Definitions:**

**Area of Inquiry (Phase 1):** from the confluence with a Type F or Type SSBT stream extending upstream to the end of the first 250 ft encountered without a flow feature.

**Channel initiation point:** most upstream point of channel with defined bed and banks indicative of surface water flow and sediment transport, generally free of terrestrial vegetation.

**Discontinuous flow:** surface water present but not flowing or not flowing through entire reach.

**Documentation locations:** locations requiring documentation and reporting to ODF/ODFW in accordance with protocol.

**Dry:** no visual or audible detection of surface water

**Flow feature:** flowing water for 25 ft or more

**Flowing water:** continuous visibly flowing surface water within a channel

**Process:** Phase 1 data collection focuses on identification and documentation of two primary locations within type N streams:

- (1) the upstream extent of the most upstream flow feature within an Area of Inquiry; and
- (2) the upstream extent of an Area of Inquiry.

The upstream extent of the most upstream flow feature within an Area of Inquiry should be determined by traversing type N streams and identifying the presence/absence of surface water and distances between flow features. Some streams may transition several times between flowing and discontinuous flow conditions, as well as dry reaches, all within an Area of Inquiry (see Figure 1). These flow status transitions and the distances between are important for surveyors to note in order to identify the most upstream flow feature within an Area of Inquiry while in the field. However, during Phase 1, only the most upstream flow feature extent, not all downstream flow features or downstream transitions between flow conditions (dry, discontinuous, etc.) within an Area of Inquiry, are required to be reported.

Streams tributary to type N streams within an Area of Inquiry of the mainstem stream are to be surveyed following the same procedure described above (uppermost extent of flow features and Area of Inquiry extent). The 250 ft Area of Inquiry measurement may begin at a mainstem uppermost flow feature extent when it occurs downstream of a tributary confluence (see Figure 2). Tributary confluences are also required documentation locations.

Additional documentation locations are required where small flowing water sections occur between the last flow feature and the upstream extent of an Area of Inquiry. These small flowing water sections are defined as any flowing water reaches less than 25 ft in length between the most upstream flow feature and the upstream limit of an Area of Inquiry.

Channel initiation points can act as the upstream limit of an Area of Inquiry when they occur downstream of the upstream limit of the Area of Inquiry (250 ft above the last flow feature).

A summary of the observation locations that require documentation and reporting is provided in Table 1 and illustrations in Figures 1 and 2.

Table 1. Summary of documentation requirements by location.

Observation Location	Documentation Required?
Tributary Junction	When Present
Tributary Uppermost Flow Feature Extent	When Present
Tributary Upstream Extent of Area of Inquiry	When Present
Mainstem Uppermost Flow Feature Extent	Yes
Mainstem Upstream Extent of Area of Inquiry (or Channel Initiation Point)	Yes
Flow Features Downstream of Uppermost Flow Feature	No
Flowing Water <25' Between Uppermost Flow Feature and Upstream Limit of Area of Inquiry	When Present

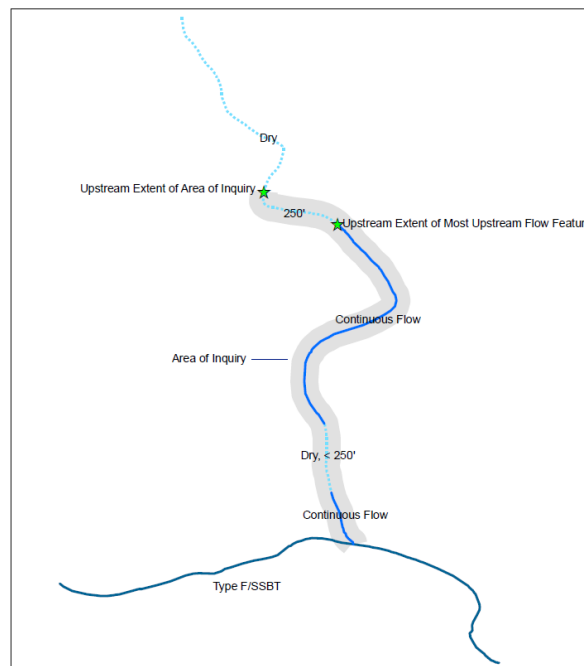




Figure 1. Illustration of required documentation locations (green stars) and reach flow classifications.

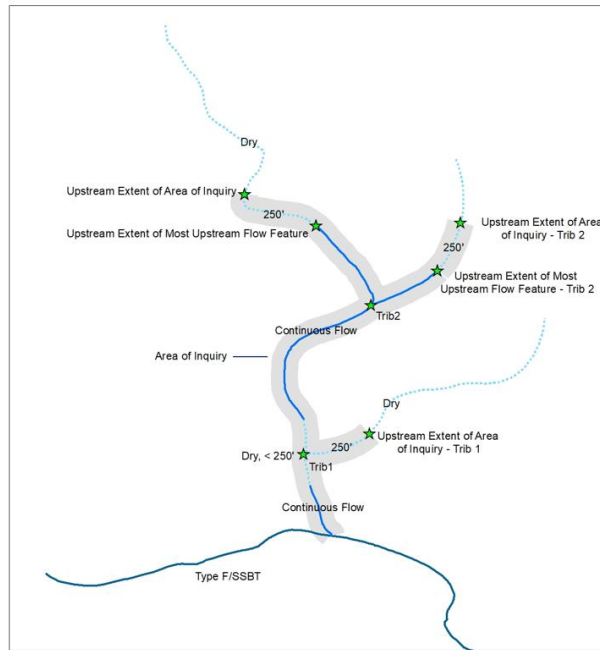


Figure 2. Illustration of required documentation locations (green stars) and reach flow classifications including tributaries.

**Flowing Water Determination:** Flow features require 25 ft of continuous visibly flowing water within a channel. If surface water is present throughout a 25 ft reach but surface current is minimal, place buoyant materials (e.g., small sticks, leaves, etc.) in stream to track surface currents. If buoyant particles move downstream, unaffected by wind, water is flowing. If buoyant particles do not move, water is not considered flowing.

**Distance Measurement:** All stream channel measurements are based on slope distance (parallel to local topographic slope). Recommended methods of measurement in the field include: range finders, hip chains, long-distance tape measurers, etc.

**Timing:** Observations may be collected year-round during Phase 1

**Flagging:** All documentation locations require flagging, which must include the following relevant information: date, initials of observer, observation location classification (e.g., uppermost flow feature extent, Area of Inquiry extent, etc.). See flagging abbreviations in Table 2 below.

Table 2. Flagging documentation location abbreviations.

Documentation Location	Abbreviation
Uppermost Flow Feature Extent	FFE
Upstream Area of Inquiry Extent	AOI
Tributary Junction	TJ
Channel Initiation Point	CIP

**Reporting:** Similar to flagging information, data to be submitted to ODF/ODFW include: documentation location classifications (e.g., uppermost flow feature extent, Area of Inquiry extent, channel initiation point, etc.); stream name/identifier; surveyor name; date; any relevant observation notes; and geospatial location data. For Area of Inquiry upstream extent locations, include distance from downstream flow feature extent in the observation notes. For tributary junctions, include flow status (dry, discontinuous, or flowing) of the tributary in the observation notes.

There are two options for reporting during Phase 1: A. Low Precision and B. Geospatial-Based.

A. Low Precision – Submissions are to include tabular data (observation location, coordinates, etc.; see example Tables 3 and 4), as well as a map illustrating documentation locations.

Table 3. Example of Low Precision tabular data for Figure 1.

<b>Stream</b>	Boulder Cr			
<b>Surveyor</b>	John Doe			
<b>Observation Location</b>	<b>Date</b>	<b>Lat</b>	<b>Long</b>	<b>Notes</b>
Uppermost Flow Feature End	9/12/2022	45.07598	-123.763978	Just above road
Area of Inquiry Upstream Extent	9/12/2022	45.07641	-123.763003	~265' above flow feature end

Table 4. Example of Low Precision tabular data for Figure 2.

<b>Stream</b>	Boulder Cr			
<b>Surveyor</b>	John Doe			
<b>Observation Location</b>	<b>Date</b>	<b>Lat</b>	<b>Long</b>	<b>Notes</b>
Trib1 Junction	9/12/2022	45.07629	-123.763528	Dry
Trib1 Area of Inquiry Upstream Extent	9/12/2022	45.07631	-123.763534	~275' above flow feature end
Trib2 Junction	9/12/2022	45.07634	-123.763316	Flowing water
Trib2 Uppermost Flow Feature End	9/12/2022	45.07639	-123.763103	
Trib2 Area of Inquiry Upstream Extent	9/13/2022	45.0764	-123.763105	~270' above flow feature end
Uppermost Flow Feature End	9/12/2022	45.07598	-123.763978	Just above road
Area of Inquiry Upstream Extent	9/12/2022	45.07641	-123.763003	~100' above flow feature end - channel initiation point

B. Geospatial-Based – Submissions are in the form of commonly used geospatial file formats (e.g., shapefiles, kmz/kml, etc.). All information required under the Low-Precision format (Tables 3 and 4) are also required here, via file attribute tables.



**Field Data Collection:** There are several ways field surveyors can collect and import observation data into geospatial formats suitable for submission. Standalone GPS units or mobile apps allow for data collection in the field, followed by in-office post processing to format for submission. The existing USGS-developed FLOWPER app is built specifically for documenting field observations of streamflow permanence (USGS,2020,<https://www.usgs.gov/news/flowper-users-guide-collection-flow-permanence-field-observations>). FLOWPER is designed to catalog observation points based on flow status (continuous flow, discontinuous flow, or dry). Although the observation format and nomenclature are slightly different than required under this Phase1 protocol, the FLOWPER-collected data can be used in-office to identify relevant documentation locations (e.g., uppermost flow feature extent). FLOWPER cataloged observations are first submitted to the USGS via the Esri Survey 123 app. The data can then be downloaded by users via ArcGIS online, edited to conform to Phase 1 documentation standards, and submitted to ODF/ODFW in a suitable geospatial format.

Using FLOWPER will enhance the database of flow permanence observations used to develop and vet the modeled flow permanence estimates to be used in later phases of the PFA.

The FLOWPER app has numerous data input categories. For the purposes of this protocol, relevant fields for each observation location include the following:

1. Observer Name
2. Observer Organization – select Oregon Private Timber
7. Flow Status – options are: Continuous flow, Discontinuous flow, Dry
16. Pertinent Notes – Input location/conditions information for an observation when relevant (e.g., obs. #5, head of channel).

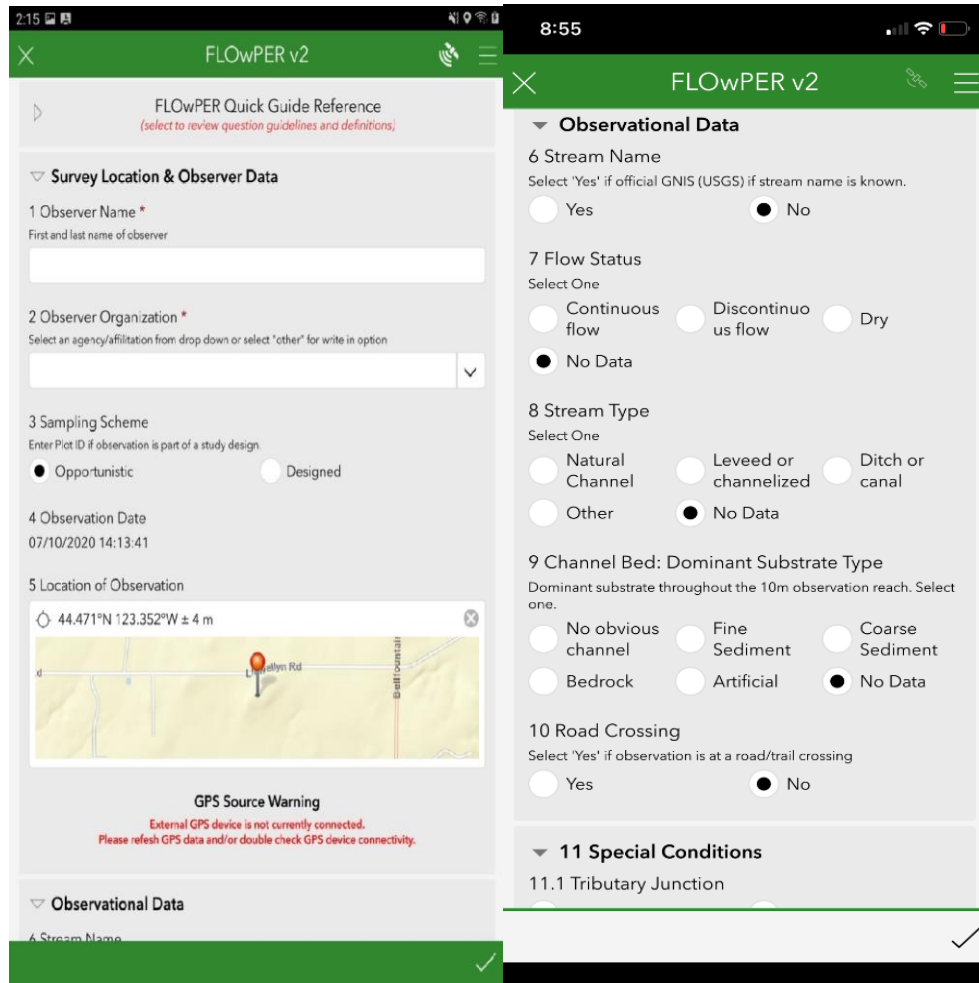


Figure 3. FLOWPER application images.

Surveyors are encouraged to input additional site condition data via the FLOWPER app. This additional information could be used to improve future flow permanence modeling efforts.

When an observation is complete, select the check box in the lower right corner of the application (see Figure 3). Observations collected without internet connection will need to be submitted once a connection is re-established.

### Equipment and subscriptions:

Users will need:

1. An ArcGIS Online account (<https://www.esri.com/en-us/arcgis/products/arcgis-online/buy>)
2. A mobile device with ability to access internet (tablet or smartphone)
3. An external GPS receiver with a minimum of 2.5-meter resolution.

## Protection Requirements based on Operational Field Survey (Phase 1) Results

The requirements apply to small Type N streams that flow into a Type F or Type SSBT stream. The Operational Field Survey is the process used to determine the location of the uppermost flow feature on a stream channel within the area of inquiry. The identified uppermost flow feature distinguishes Type Np (downstream) from Type Ns (upstream) streams which dictates the protection requirements for the stream segment(s) included in the survey. The complete requirements for operations near streams are provided in Division 643 in the FPA Administrative Rules.

### Tree Retention Requirements on Small Type N Streams

The tree retention distance along a small Type N stream is the shorter of the RH Max (distance) or the identified uppermost flow feature within the area of inquiry.

- The measurement of the RH Max starts at the confluence of the Type F/SSBT and extends upstream to the RH Max distances.
  - All upstream stream reaches (tributaries) within the Area of Inquiry will need to be surveyed as required by protocol in Phase 1.
- The RH Max distance is based on classification of the stream that the small Type Np stream(s) flow into.
  - For the Eastern Oregon region, the small Type Np stream is classified as either Terminal or Lateral which determines the RH Max distance.
- When the tree retention area is downstream of the RH Max, the upstream end will be rounded with a radius equal to the width of the retention area (circular arc).
- When the tree retention area ends at the RH Max, the upstream retention area end will be perpendicular to the channel (squared off).

Note: The RH Max distances are provided for in the following tables for Western Oregon and Eastern Oregon Type N Requirements.

### Equipment Limitation Zones (ELZ & R-ELZ's)

#### **Overview - ELZ Requirements (OAR 629-630-0700 &-0800) – For additional information see Forest Practices Technical Guidance for ELZ and R-ELZ**

Equipment Limitation Zone requirements are defined in Division 630 as follows:

**“ELZ”** (OAR 629-600-0100) means an equipment limitation zone in which disturbance from equipment activity shall be minimized.

**“R-ELZ”** (OAR 629-600-0100) means an equipment limitation zone in which disturbance from equipment activity shall be minimized and all trees less than 6 inches DBH and shrub species are retained where possible.

In Western Oregon, the ELZ and the R-ELZ is 35 feet.

In Eastern Oregon, the ELZ and the R-ELZ is 30 feet.

The requirements within the ELZ and R-ELZ depend on whether ground-based equipment or cable yarding is used complete harvesting activities within the ELZ or R-ELZ. Please refer to Division 643 and Forest Practices Technical Guidance for Equipment Limitation Zones for further requirements.

**Determining extents of R-ELZ & ELZ along a Type N stream**

**R-ELZ - Equipment Limitation Zones with Retention** are required when the uppermost flow feature within the area of inquiry is upstream of the RH Max. The R-ELZ extends from the end of the RH Max upstream to the end of the Type Np classification.

**ELZ – Equipment Limitation Zones** are to extend upstream of the tree retention area or R-ELZ to the end of the stream channel.

Any other Type N stream that is not included in the requirements described in the R-ELZ or ELZ above is required to maintain an ELZ for the entire stream channel. This requirement applies to the stream(s) whether they are mapped or not.

All Type F streams in the Eastern Oregon Region are required to apply an ELZ in the outer zone along the entire length of the stream.

The ELZ and R-ELZ distances are provided for in following Western Oregon and Eastern Oregon Type N Requirements tables.

## Western Oregon Type N Requirements

Stream Type	Standard Practice Width	SFO Minimum Option Width
Small Type Np flows into to Type SSBT	<p>Upstream retention distance is the shorter of the RH Max or the uppermost Flow Feature (per protocol).</p> <p>RMA width = 75' on first 500' of stream length, then 50' for the next 650'. Total RH Max from confluence with SSBT is 1,150'</p>	<p>Upstream retention is the shorter of the RH Max or uppermost flow feature. RMA width = 35'</p> <p>Total RH Max is 1,150 feet from confluence with the Type SSBT stream.</p>
	<p><b>The tree retention areas and 35-foot R-ELZ and ELZ apply to each side of the stream as follows:</b></p> <ol style="list-style-type: none"> <li>1. Equipment Limitation Zones with Retention (R-ELZ) extend from end of RH Max, upstream to the identified uppermost flow feature. The tree retention area is squared off at the end of the tree retention area (RH Max) in this case.</li> <li>2. If the uppermost flow feature is determined to be within the RH Max for the stream segment, the ELZ extends upstream to the end of the stream channel. Tree retention area will extend as a radius around the uppermost flow feature and an R-ELZ would not be required in this case.</li> </ol>	
Small Type Np flows into Type F	<p>Upstream retention distance is the shorter of the RH Max or the uppermost Flow Feature (per protocol). RMA width = 75'</p> <p>Total RH Max is 600 feet from the confluence with the Type F stream.</p>	<p>Upstream retention is the shorter of the RH Max or uppermost flow feature. RMA width = 35'</p> <p>Total RH Max is 600 feet from confluence with the Type F stream.</p>
	<p><b>The tree retention areas and 35-foot R-ELZ and ELZ apply to each side of the stream as follows:</b></p> <ol style="list-style-type: none"> <li>1. Equipment Limitation Zones with Retention (R-ELZ) are to extend from end of RH Max, upstream to the identified uppermost flow feature. The tree retention area is squared off at the end of the tree retention area (RH Max) in this case.</li> <li>2. If the uppermost flow feature is determined to be within the RH Max for the stream, the ELZ shall extend upstream to the end of the stream channel. Tree retention area will extend as a radius around the uppermost flow feature and an R-ELZ will not apply in this case.</li> </ol>	
Small Type Ns	35' ELZ	35' ELZ

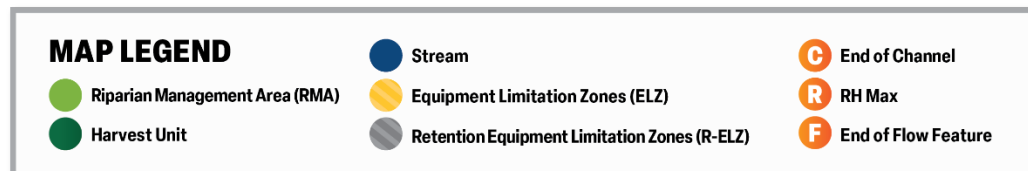
## Western Oregon Example Scenarios

The graphics is an example of uppermost flow feature identified above the RH Max on a Type SSBT (left) and the uppermost Flow Feature below the RH Max on a Type F (right).

## Small Type Np Stream & Equipment Limitation Zones



These diagrams are examples only and are not to scale. Conditions and requirements may differ.





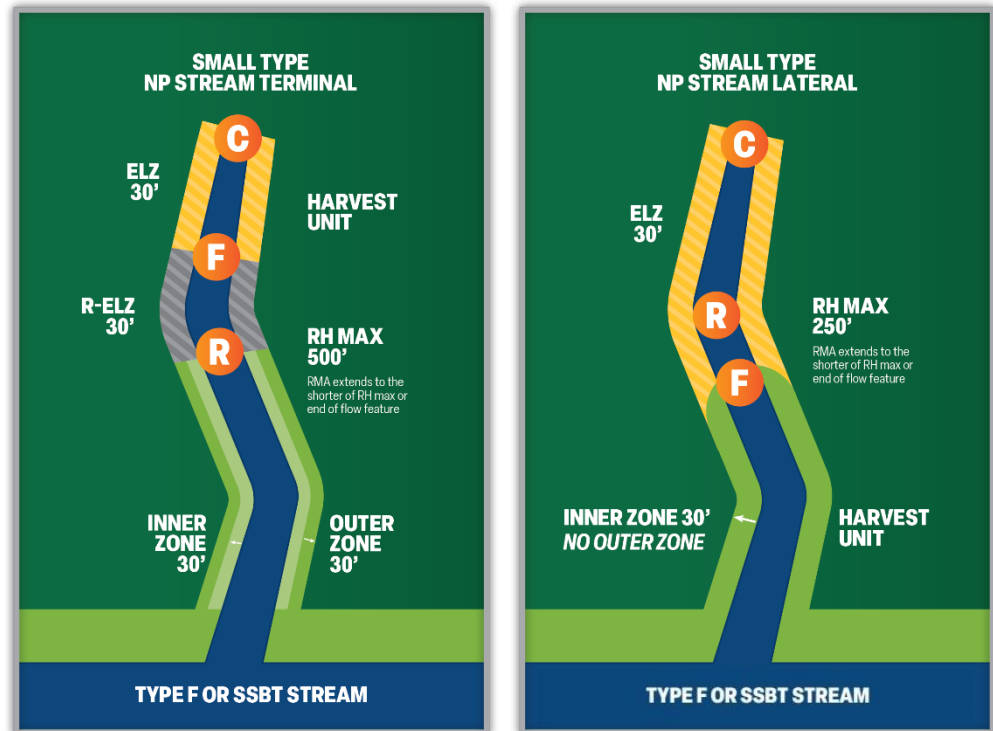
## Eastern Oregon Type N Requirements

Stream Type	Standard Practice	SFO Minimum Option
Small Type Np Terminal into Type F/SSBT	Upstream retention distance is the shorter of the RH Max or the uppermost Flow Feature per operation field survey. RMA width = 30' inner zone and 30' outer zone. Total RH Max from confluence with Type F/SSBT is 500'	Upstream retention distance is the shorter of the RH Max or uppermost Flow Feature per operational field survey. RMA width = 20' inner zone and 20' outer zone. Total RH Max from confluence with Type F/SSBT is 500'
	The tree retention areas and 30-foot R-ELZ and ELZ apply to each side of the stream as follows: 1. The ELZ's apply to the outer edge of the inner zone and extend out 30 feet. Equipment Limitation Zones with Retention (R-ELZ) are to extend from end of RH Max, upstream to the identified most uppermost flow feature. Tree retention area is squared off at the end of the RH Max in this case. 2. If the uppermost flow feature is determined to be within the RH Max for the stream, the ELZ shall extend upstream to the end of the stream channel. Tree retention area will extend as a radius around the uppermost flow feature and an R-ELZ will not apply in this case.	
Small Type Np Lateral into Type F/SSBT	Upstream retention distance is the shorter of the RH Max or the uppermost Flow Feature (per protocol). RMA width = 30' inner zone with no outer zone. Total RH Max is 250 feet from the confluence with the Type F/SSBT stream.	Upstream retention distance is the shorter of the RH Max or uppermost flow feature. RMA width = 20' inner zone with no outer zone. Total RH Max is 250 feet from confluence with the Type F/SSBT stream.
	The tree retention areas and a 30-foot-wide R-ELZ and/or ELZ apply to each side of the stream as follows: 1. Equipment Limitation Zones with Retention (R-ELZ) are to extend from end of RH Max, upstream to the identified uppermost flow feature. The end of the tree retention area is squared off at the end of the RH Max in this case. 2. If the uppermost flow feature is determined to be within the RH Max for the stream, the ELZ shall extend upstream to the end of the stream channel. Tree retention area will extend as a radius around the uppermost flow feature and an R-ELZ will not apply in this case.	
Small Type Ns flowing into a Type F/SSBT	30-foot R-ELZ extending 750 feet upstream from confluence. ELZ applies on remainder of channel.	30-foot R-ELZ extending 750 feet upstream from confluence. ELZ applies on remainder of channel.
Small Type Ns	30' ELZ from edge of inner zone extending out	30' ELZ from edge of inner zone extending out

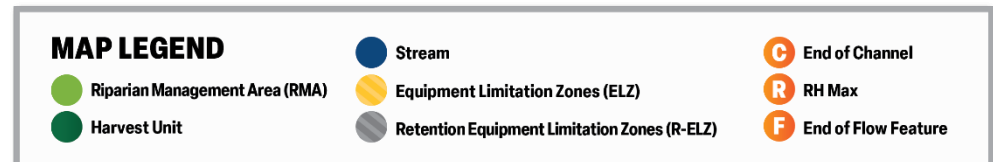
## Eastern Oregon Example Scenarios

The Graphic is an example of uppermost flow feature identified above the RH Max (Type Np Terminal) and the uppermost Flow Feature below the RH Max (Type Np Lateral). The ELZ applies to all outer zone areas (not shown).

## Small Type Np Stream & Equipment Limitation Zones



These diagrams are examples only and are not to scale. Conditions and requirements may differ.



## Specific Scenarios and Requirements in Phase 1

**Phase 1 Area of Inquiry: No Flow Features within the Area of Inquiry.** For Type N streams with no Flow Features (flowing water longer than 25 feet) within the Area of Inquiry, the entire channel upstream of the confluence with another stream will be classified as a Type Ns. This is regardless of a flow feature that exists upstream (outside) of the Area of Inquiry.

**Operational Field Survey is not completed or submitted prior to notifying for harvest activities.**

When a field survey is not completed for a harvest unit that includes applicable Type N streams that would be administered under Division 643, the uppermost Flow Feature would not be identified and therefore the operator would be required to:

1. Retain all trees as required within the RH Max distance based on
  - a. the geographic region (western vs. eastern) which the stream is located within and;
  - b. the classification of the stream the small Type N is flowing into.

The RH Max distances are in Tables 1 through 4 in Division 643 of the FPA Rules and included in the previous section of this guidance.

2. Apply an R-ELZ on the entire stream channel outside of the tree retention areas.

**Protocol for surveying stream reaches outside of legal control of operator/landowner.**

1. Is legal access available to the neighboring property?
  - a. Yes - Complete survey as applicable above in Survey Process.
  - b. No - Determine appropriate steps in 2.
2. Location of operation in relation to the property boundary:
  - a. Operation is downstream of the property boundary.
    - i. Survey the Type N stream beginning at the confluence with a Type F/SSBT stream.
    - ii. Can the Area of Inquiry be completed on the property?
      1. Yes – Complete the operational survey as above.
      2. No – The survey must end at the property boundary, and the layout of vegetation requirements will be per OAR 629-643-0130(7) which conservatively assumes that a flow feature exists upstream of the Property line.
  - b. Operation is upstream of the property boundary.
    - i. Survey the Type N stream beginning at the property boundary. The Area of Inquiry begins at the property boundary based on the conservative assumption that a flow feature exists immediately downstream of the property boundary.

**Phase 1 Area of Inquiry: Branching Type N streams**

Each tributary of the Type N stream that flows into and is hydrologically connected to a Type F/SSBT stream is eligible for protection based on the findings within the Area of Inquiry. All measurements for the RH Max and Area of Inquiry begin at the confluence with the Type F/SSBT stream and progress upstream direction for each branch of the Type N system. All measurements should be cumulative from the confluence with the fish stream (OAR 629-643-0130(1)). Figure 1 is an example of two tributaries of a Type N stream that flows into a Type F stream and is within the Area of Inquiry. This scenario would apply to both geographic regions although the RMA widths and requirements may be different than shown in Figure 1.



Figure 1: Branch Type N stream into Type F

**Areas of Flowing Water within the Area of Inquiry Downstream of the RH Max (OAR 629-643-130 (5)(b)(C)):**

A completed survey that documents the presence of flowing water (less than 25 feet in length) that is located downstream of the RH Max and all three conditions below exist, the operator is required to retain trees within 50 feet of the flowing water and establish an R-ELZ connecting this retention area with the retention area downstream.

The presence of flowing water that is (all three must apply):

1. Too short to be considered a Flow feature (less than 25 ft in length).
2. Within the Area of Inquiry above a Flow Feature. Note: Flowing Water too short to be considered a Flow Feature does not extend the Area of Inquiry.
3. Below the RH Max.

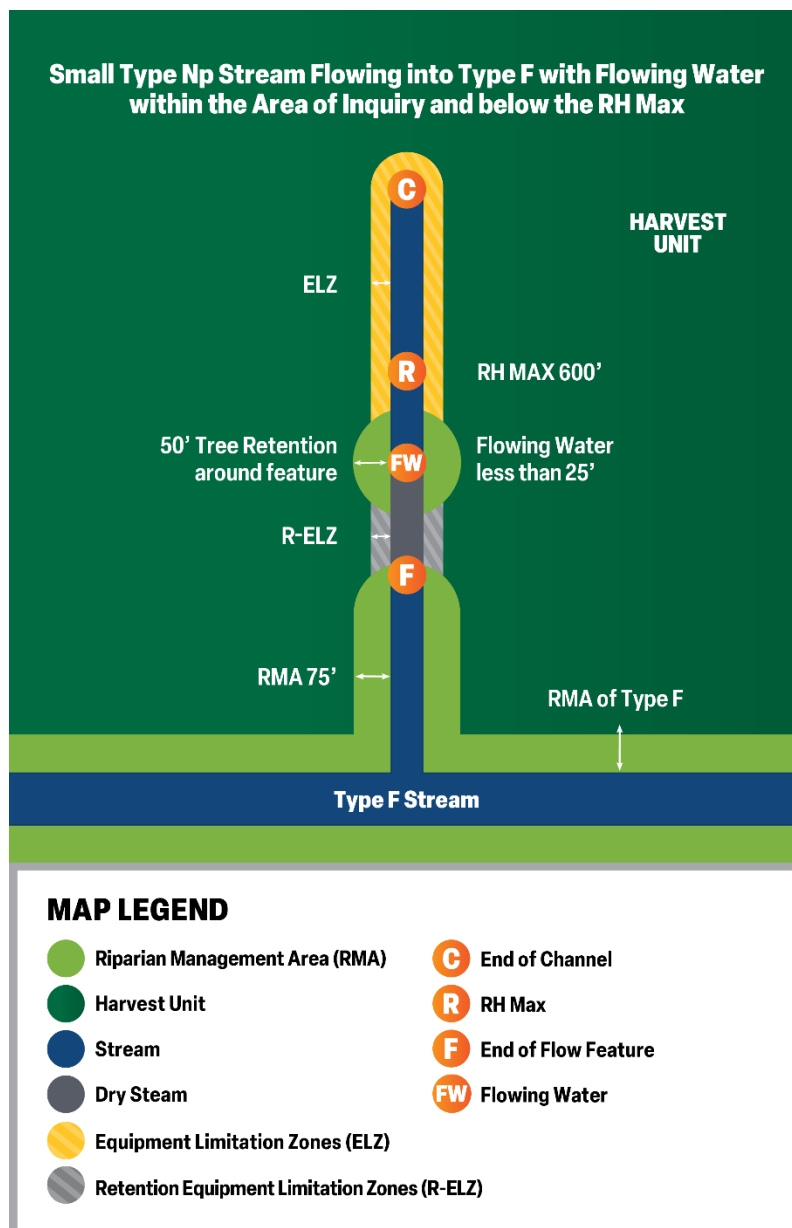


Figure 2 – Dry channel downstream the RH Max with Flowing Water

## Small Forestland Owner (SFO) provisions (OAR 629-643-0143) for Small Type N Streams

*Apply to all Phases of the Flow Permanence protocols.*

Due to inherent differences and requirements for Small Forestland Owners (SFO's) the rules provide several differences in the survey protocol and protection requirements for Type N streams. The small forestland owner needs to comply with all other requirements for Small Type N streams and the Phase 1 survey protocol. The following are the specific requirements that differ from the Standard Practice requirements. The SFO will need to apply the tree retention requirements specific to either Western or Eastern Oregon (OAR 629-643-0141 or 629-643-0142).

### SFO Specific Requirements (OAR 629-643-0143)

1. If the Area of Inquiry (AOI) extends beyond (upstream) SFO ownership and no Flow Feature is identified within the last 100 feet of the ownership boundary, the tree retention area is to be the shorter of:
  - RH Max or
  - The furthest upstream flow feature within the ownership boundary.
2. If the AOI extends to the furthest upstream flow feature within ownership boundary, the SFO shall:
  - Determine if a prior survey is documented in ODF FERNS or maps upstream of ownership control would alter the harvesting layout based on the vegetation retention requirements.
  - If the furthest identified upstream flow feature within the AOI is downstream of the RH max and flowing water (not a flow feature) is present between the flow feature and the RH Max then, the SFO shall.
    - Retain all trees within 35 feet of the flowing water and
    - The R-ELZ shall be extended from the furthest upstream flow feature within the AOI to the tree retention area surrounding the flowing water.
3. If the SFO is utilizing the Standard Practice of establishing a Riparian Management Area for a Type Np stream, they may apply for a forest conservation tax credit if the following conditions are met:
  - The furthest identified upstream Flow Feature is downstream the of the RH Max and an operational field survey documents 100 feet or more of surveyed dry stream between two flow features that are downstream of the RH Max of the small Type Np stream.
  - If these conditions are met, the SFO may claim an amount that is half of the stumpage value of the retained trees located between the inside edge of the applicable small forestland owner minimum option distance and the edge of the stream.
  - Regardless of whether the SFO utilizes the forest conservation tax credit, all trees within this zone shall be retained as required in Division 643.

## Survey Submittal

Landowners will need to submit completed Operation Field Surveys (flow permanence surveys) via electronic mail (e-mail) to their respective Oregon Department of Forestry (ODF) Stewardship Forester. The e-mails need to include all necessary attachments and files that contain the required attributes and information per the Survey Protocol.

An interactive list and contact information for ODF Foresters can be found here:

<https://www.oregon.gov/ODF/Working/Pages/FindAForester.aspx>

## References and Links

Private Forest Accord Report, February 2, 2022. Chapter 2 and 4, 196 pages.

Oregon Administrative Rules, Chapter 629 Forest Practice Rules, Divisions 600-665.

## Oregon Department of Forestry Field Offices

*For more information on the Oregon Forest Practices Act and Forest Practice Rules, please contact your local ODF office at <http://www.oregon.gov/ODF/Working/Pages/FindAForester.aspx> or the headquarters office at 2600 State Street, Salem, Oregon 97310. 503-945-7200.*