

Small Type N Stream Guidance and Flow Permanence Field Survey Protocol

Survey Protocol Version 2, Effective July 1, 2024

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 V2 is effective July 1, 2024.

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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, 2024, 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 operational 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 include 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 tree retention distance described for any particular small Type Np Stream that flows into a Type F or SSBT 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(158).

"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 – If not applying the RH Max retention distance and an R-ELZ on entire channel, a field survey is required regardless of whether or not the stream is shown as perennial per the NHD attribute information in the Statewide Flow Line hydrography data. (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 submitted using either of the following formats per the [ODFW Phase 1 \(V2\) Survey Protocol](#)
 - a. Low-precision
 - b. Geospatial-based
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 was submitted using the Geospatial-based format, 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 have lapsed 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 N_p below and Type N_s above. This distinction determines the vegetation retention and equipment limitation zone (R-ELZ/ELZ) requirements described in OAR 629-643-130. Once this location is identified, the uppermost flow feature point is valid for harvest activity notifications adjacent to (within) the relevant harvest unit/operation. If the criteria meets the Geospatial collection method 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?

- There is 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.

Do I need to survey a small Type N stream that flows into a medium Type N stream?

- The survey protocol and stream protections are based on what the small Type N stream flows into. In the instance of a small stream, protections are based on what the stream is tributary to. When a small N stream is tributary to something other than a Type F/SSBT (e.g., a medium Type N), the survey protocol is not applicable in regard to applying the stream protections described in OAR 629-643-0130. Any small Type N stream flowing into a medium Type N, is not required to determine the uppermost flow feature extent. The protection requirement for such streams in both regions is the application of an ELZ on the entire channel (OAR 629-643-0105 & -0125).

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 small 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 will be updated in the Statewide Flow Line Hydrography and FERNS.

Forest Practices Act Flow Permanence Field Protocol - Phase 1

Version 2 – Published 5/7/24 – Effective July 1st, 2024

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

Definitions:

Area of Inquiry (AOI) (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: a distinct bed or banks scoured by water which serves to confine water and that periodically or continually contains flowing water

Channel Initiation Point (CIP): most upstream point of a defined channel

Discontinuous flow: surface water present but not flowing or not flowing through an entire 25 ft reach

Documentation locations: locations requiring documentation and reporting to ODF/ODFW in accordance with the 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

No Channel: a channel that is mapped on the statewide flowline layer but does not exist on the landscape

New Channel: a channel that is not mapped on the statewide flowline layer but exists on the landscape

Relocate Channel: a channel included in the statewide flowline layer, but the mapped location differs significantly from the actual location and requires a relocation in the linework

Short Flowing Water (SFW): flowing water reach less than 25 ft in length between the uppermost flow feature extent (FFE) and the upstream area of inquiry extent (AOI)

Statewide flowline layer: the regulatory statewide hydrography layer (linework) (<https://oregon-department-of-forestry-geo.hub.arcgis.com/datasets/geo::hydrography-flow-line/about>)

Survey End (END): End of flow permanence survey location; only required when a survey ends downstream of both an area of inquiry extent (AOI) and channel initiation point (CIP)

Survey Start (START): the most downstream location surveyed for each stream; required for mainstems and all tributaries surveyed

Uppermost Flow Feature Extent (FFE): the upstream extent of the most upstream flow feature within the area of inquiry

Table 1. Documentation location abbreviations.

Documentation Location	Abbreviation
Survey Start	START
Uppermost Flow Feature Extent	FFE
Short Flowing Water	SFW
Upstream Area of Inquiry Extent	AOI
Channel Initiation Point	CIP
Survey End	END
Miscellaneous Point of Interest	OTHER

Process: Phase 1 data collection focuses on identification and documentation of three primary locations within small type N streams: (1) the most downstream location surveyed (the survey start); (2) the upstream extent of the most upstream flow feature within an area of inquiry when flow features are present; and (3) the most upstream location surveyed (i.e., the upstream extent of an area of inquiry, channel initiation point, or survey end).

For every stream surveyed, the location and flow status (dry, flowing, or discontinuous) of the most downstream and upstream locations surveyed must be documented. This is required for both mainstem small type N streams and their tributaries.

Surveys can begin anywhere within a small Type N drainage network (e.g., road crossings, tributary junctions, etc.). However, flow permanence classifications based on submitted survey data will only be applicable to reaches upstream of survey start points.

The upstream extent of the most upstream flow feature within an area of inquiry should be determined by traversing small 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. 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, 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.

Documentation of the most upstream location surveyed is required to ensure the full area of inquiry has been investigated. 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). Channel initiation points are not required to be documented when they occur upstream of an area of inquiry extent. When landownership or other constraints prevent surveying the full upstream extent of a survey (i.e., survey ends downstream of both an area of inquiry and channel initiation point), survey end points (END) should be used to document the end of the survey. The rationale to end the survey prior to

reaching an area of inquiry extent or channel initiation point should be provided in the survey notes (e.g., survey stopped due to ownership transition, etc.) along with the flow status (dry, flowing, or discontinuous). If an area of inquiry extent or channel initiation point is documented, a survey end point is not required.

Tributaries to small type N streams within an area of inquiry of the mainstem stream are surveyed following the same procedure described above (survey start, uppermost extent of flow features, area of inquiry extent, etc.). The 250 ft area of inquiry measurement begins at a mainstem uppermost flow feature extent when it occurs downstream of a tributary confluence (see Figure 2). Survey start points on tributaries should be documented with unique names or ID's to differentiate each tributary (e.g., Trib 1, Trib 2, etc.).

Additional documentation locations are required where short flowing water sections (SFW) occur between the last flow feature and the upstream extent of an area of inquiry. These short flowing water sections are defined as any flowing water reach less than 25 ft in length between the most upstream flow feature extent and the upstream area of inquiry extent. Record a new SFW point for each short flowing water section.

A summary of the observation locations that require documentation and reporting is provided in Table 2 and Figures 1-3.

Table 2. Summary of documentation requirements by location.

Documentation Location	Abbreviation	Documentation Required?	Flow Status Options
Survey Start	START	Yes, for every stream, including tributaries	Dry, Flowing, Discontinuous
Flow Features Downstream of Uppermost Flow Feature	N/A	No	N/A
Uppermost Flow Feature Extent	FFE	When Present	N/A
Flowing Water <25' Between Uppermost Flow Feature and Upstream Limit of Area of Inquiry	SFW	When Present	Discontinuous
Channel Initiation Point	CIP	Yes, if it occurs downstream of AOI extent	Dry, Flowing, Discontinuous (immediately downstream reach)
Upstream Extent of Area of Inquiry	AOI	Yes, CIP replaces when downstream of AOI	Dry, Discontinuous
Survey End	END	Only when survey ends prior to reaching both AOI and CIP (e.g. land ownership change, aborted survey, etc.)	Dry, Flowing, Discontinuous
Miscellaneous Point of Interest	OTHER	As needed for hydrography edits	N/A

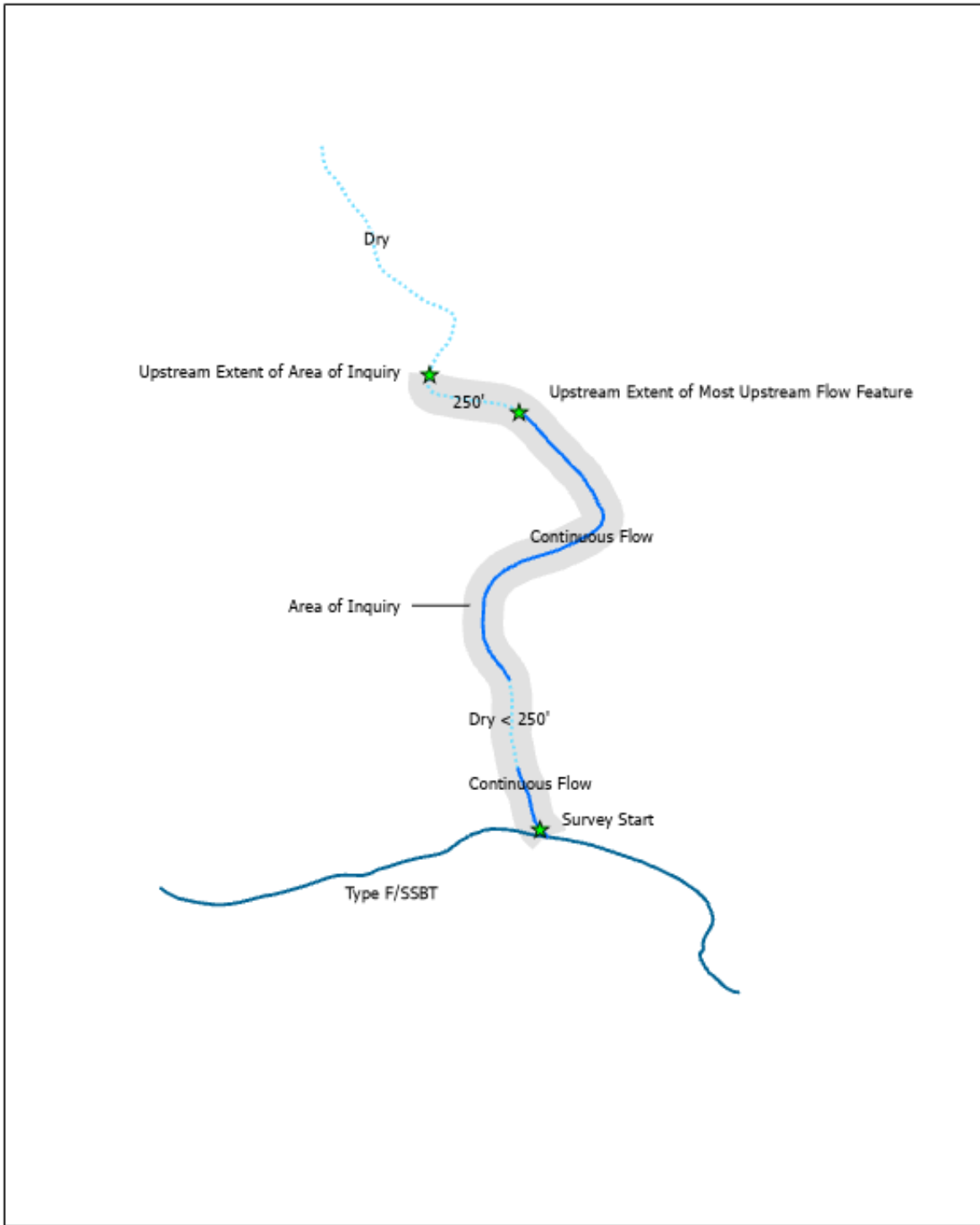


Figure 1. Illustration of required documentation locations (green stars) and reach flow status.

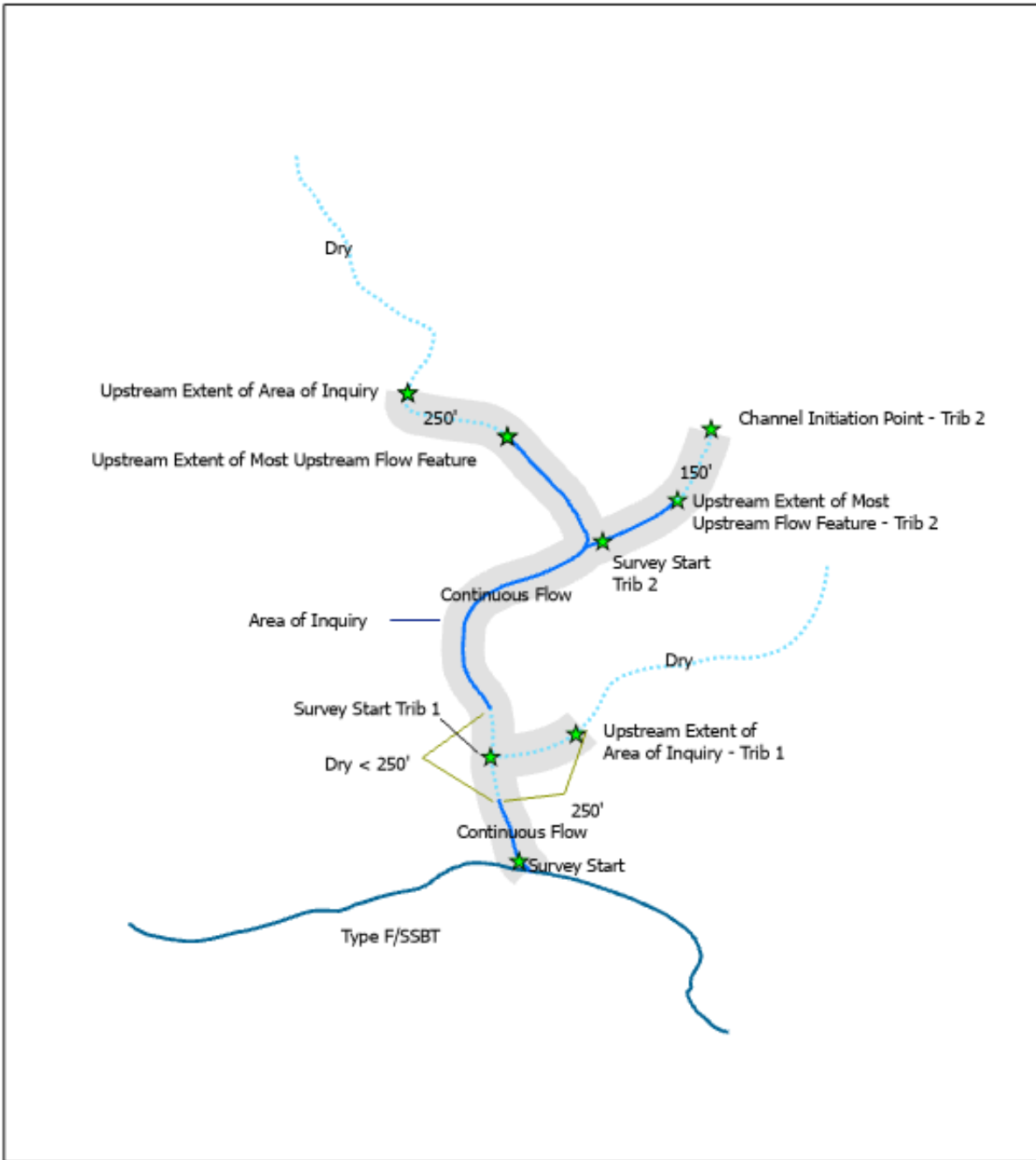


Figure 2. Illustration of required documentation locations (green stars) and reach flow status including tributaries.

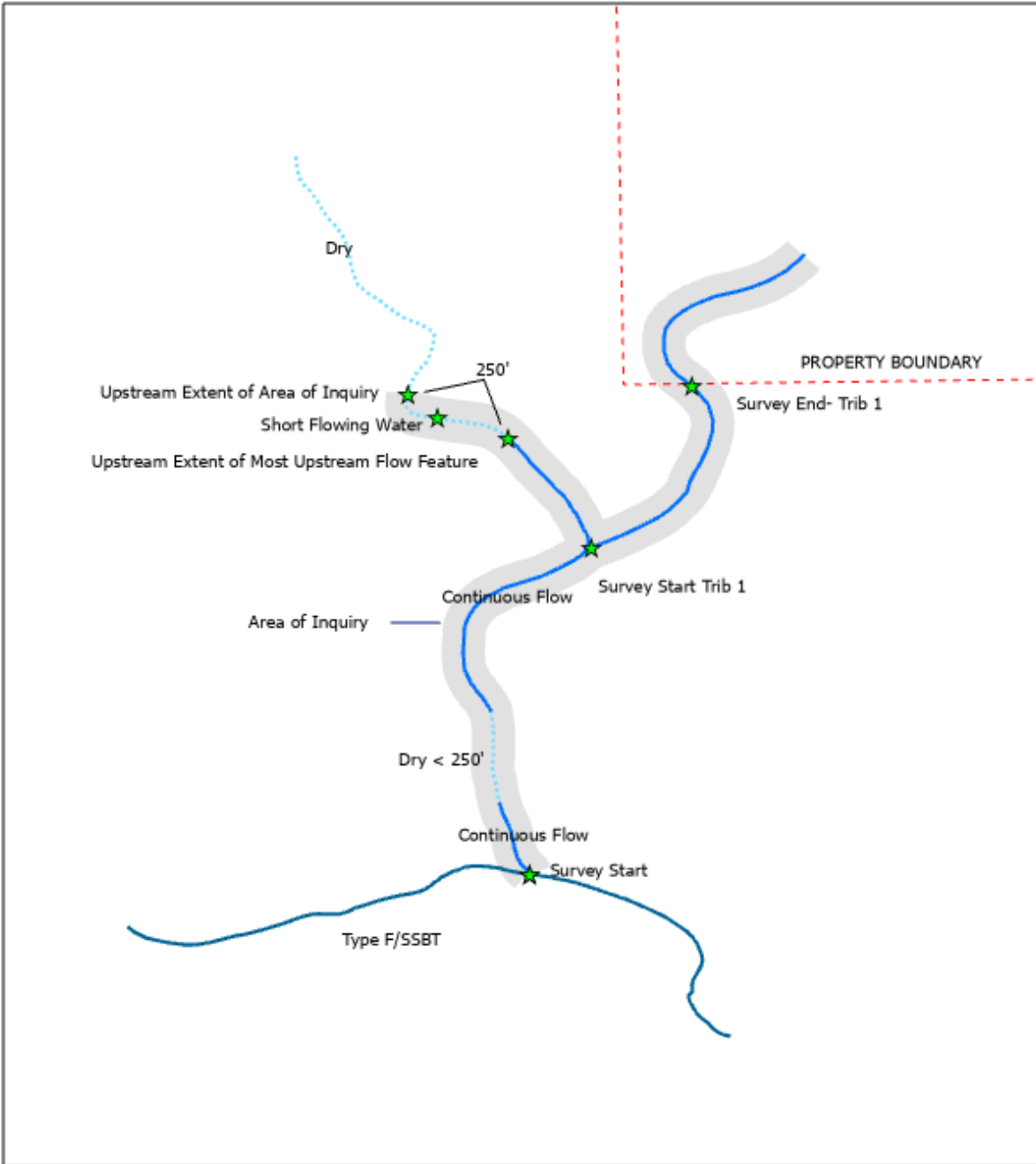


Figure 3. Illustration of required documentation locations (green stars) and reach flow status including tributaries when ending at a property boundary.

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. Channels with flowing water but very low flow rates or very shallow flow (i.e., sheet flow within channel) are considered flowing water if the wetted channel/flow is continuous for greater than or equal to 25 ft.

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 (aside from survey start points) require flagging, which must include the following information: date, initials of observer, and documentation location classification (e.g., uppermost flow feature extent, area of inquiry extent, etc.). See flagging abbreviations in Table 1.

Hydrography Edits: In situations where the Statewide Flowline Layer does not match conditions on the ground, data should be collected to facilitate edits to the linework. Field surveyors will encounter instances where streams depicted in the hydrography linework do not exist on the landscape (NO CHANNEL), and conversely, locations where there are streams on the landscape not included in the linework (NEW CHANNEL). In some cases, the locations of streams depicted in the linework may differ significantly from in-field conditions and require a relocation of the linework (RELOCATE CHANNEL; e.g., a stream that has been routed to follow a road). These circumstances require a minimum amount of data documentation to update the linework.

For each documentation point associated with a linework edit, please include NEW CHANNEL, NO CHANNEL, or RELOCATE CHANNEL identifiers in the hydrography edits field (Hydro Edit) of the survey data table (see tables 4 and 5 as examples).

NO CHANNEL: To remove an artificial stream from the linework, two data points need to be collected. One point at the mapped stream start (confluence or property boundary) and a second point at the closer of either 250 ft up the mapped channel (akin to an AOI), or the end of the mapped channel. The mapped stream start point should be classified as OTHER with a Hydro Edit of NO CHANNEL. The second upslope point should be marked as END also with a Hydro Edit of NO CHANNEL.

NEW CHANNEL: For documenting previously unmapped streams not in the linework, a standard flow permanence survey (e.g., start, flow feature extent, area of inquiry, etc.) is required, as well as documentation of the channel initiation point. Include a Hydro Edit of NEW CHANNEL for these datapoints. Additional datapoints to document the new channel location along its length (e.g., every 100 ft.) are encouraged, but not required. For these additional data points, use the OTHER point with a Hydro Edit of NEW CHANNEL. If the channel initiation point of the unmapped channel is not encountered prior to reaching the property boundary line, include a survey END point with a note.

RELOCATE CHANNEL: To correct inaccurately mapped channel locations. In these relocation instances, documentation points of the correct channel location are required at the beginning and end of the segment to be relocated in the linework, as well as every 100 ft or denser as needed within the segment. Classify relocation data points as OTHER documentation locations with Hydro Edits of RELOCATE CHANNEL. If a standard flow permanence survey point (e.g., survey start, flow feature extent, area of inquiry, etc.) falls within these segments that need relocation, use the appropriate survey abbreviation (e.g., FFE) with a Hydro Edit of RELOCATE CHANNEL.

Table 3. Hydrography edit data requirements.

Hydrography Edit	Required Documentation Locations
NO CHANNEL	OTHER at mapped channel start and END at 250 ft upslope or mapped end
NEW CHANNEL	Standard survey (e.g., START, FFE, AOI) and CIP
RELOCATE CHANNEL	OTHER points 100ft or denser as needed

Reporting: Similar to flagging information, data to be submitted to ODF/ODFW include:

- documentation location classifications (e.g., FFE, AOI, etc.)
- stream or unit name/identifier
- surveyor name
- date of survey
- location information (i.e., coordinates, geospatial data, or description based on submission format)
- flow status where appropriate
- hydrography edit classifications
- any relevant observation notes
- survey map

When provided, coordinates must be presented in decimal degrees, with a minimum of 5 decimal places, and be referenced to the NAD 1983 datum. **Flow status (dry, flowing, or discontinuous) information must be included in the submission for survey start, survey end, area of inquiry extent, and channel initiation documentation points.**

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 (documentation location, location description (preferably coordinates), etc.; see example Tables 4 and 5), as well as a map illustrating documentation locations including the statewide flowline layer (<https://oregon-department-of-forestry-geo.hub.arcgis.com/datasets/geo::hydrography-flow-line/about>). Additional map information, such as: property boundaries, intended harvest boundaries, and streamflow survey boundaries will assist in the review process.

Table 4. Example of tabular data for Figure 1.

Survey Information				Location Information			
Surveyor Name(s):	John Doe	Organization:		Location (T/R/S):	T:6S R:9W S:2		
Email Address:	john.doe@email.com	Landowner:	Doe Tree Farm	Unit/Survey Name:	Doe 1		
Phone:	555-555-5555			NOAP ID (optional):			

Date	Stream Name/Point Number	Documentation Location Abbreviation	Flow Status	Hydro Edit	Latitude	Longitude	Horizontal Accuracy (ft) (optional)	Notes (optional)
9/12/2022	Boulder Cr	START	Flowing	N/A	45.07597	-123.76397	11	
9/12/2022	Boulder Cr	FFE	N/A	N/A	45.07598	-123.76398	10.5	Just above road
9/12/2022	Boulder Cr	AOI	Dry	N/A	45.07641	-123.76300	18	~250' above FFE

Table 5. Example of documentation location tabular data for Figure 2.

Date	Stream Name/Point Number	Documentation Location Abbreviation	Flow Status	Hydro Edit	Latitude	Longitude	Horizontal Accuracy (ft) (optional)	Notes (optional)
9/12/2022	Boulder Cr	START	Flowing	N/A	45.07597	-123.76397	11	
9/12/2022	Trib 1	START	Dry	N/A	45.07629	-123.76353	12.5	~275' above FFE
9/12/2022	Trib 1	AOI	Dry	N/A	45.07631	-123.76353	15	
9/12/2022	Trib 2	START	Flowing	NEW CHANNEL	45.07634	-123.76332	12	
9/12/2022	Trib 2	FFE	N/A	NEW CHANNEL	45.07639	-123.76310	26	
9/13/2022	Trib 2	CIP	Dry	NEW CHANNEL	45.07640	-123.76311	13	~150' above FFE
9/12/2022	Boulder Cr	FFE	N/A	N/A	45.07598	-123.76398	10.5	Just above road
9/12/2022	Boulder Cr	AOI	Dry	N/A	45.07641	-123.76300	18	~250' above FFE

- B. Geospatial-Based – Submissions are in the form of commonly used geospatial file formats (e.g., shapefiles, geodatabases, or kmz/kml). All tabular data required under the Low-Precision format (Tables 4 and 5) are also required here, via file attribute tables. Maps are recommended, as they can be helpful for the review process, but are not required. When available, GPS horizontal accuracy data are requested for each documentation location.

Table 6. Summary of approved terminology for each point attribute.

Documentation Location	START, FFE, SFW, AOI, CIP, END, OTHER
Flow Status	Flowing, Dry, Discontinuous, NA
Hydro Edit	NO CHANNEL, NEW CHANNEL, RELOCATE CHANNEL, NA

Survey Review: Submitted data are reviewed for consistency with protocol requirements and if accepted, are ultimately used to classify stream reaches as either perennial or seasonal. Supplementary survey or proposed harvest boundary information (e.g., polygons, maps, notes, etc.) is always welcome, and can help reviewers determine if streams were intentionally not surveyed, which can accelerate the review process.

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 (WO-1 and EO-1, respectively).

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 to 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 stream(s) regardless of whether or not they are mapped in the Statewide Flow Line hydrography dataset.

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 (OAR 629-643-0120(4)). All Type F streams in Western Oregon are to apply an ELZ when harvesting near streams occurs within 35 feet of the active channel (OAR 629-635-0700 & -0800).

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

Western Oregon Type N Requirements Table (WO-1)

Stream Type	Standard Practice Width	SFO Minimum Option Width
Small Type Np flows into to Type SSBT	Upstream retention distance is the shorter of the RH Max or the uppermost Flow Feature (per protocol). 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'	Upstream retention is the shorter of the RH Max or uppermost flow feature. RMA width = 35' Total RH Max is 1,150 feet from confluence with the Type SSBT stream.
	<p>The tree retention areas and 35-foot R-ELZ and ELZ apply to each side of the stream as follows:</p> <ol style="list-style-type: none"> 1. Equipment Limitation Zones with Retention (R-ELZ) extend upstream to the identified uppermost flow feature. The end of the tree retention area is squared off at the end of the tree retention area (RH Max) in this case. 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 and end of tree retention area will extend as a radius around the uppermost flow feature. 	
Small Type Np flows into Type F	Upstream retention distance is the shorter of the RH Max or the uppermost Flow Feature (per protocol). RMA width = 75' Total RH Max is 600 feet from the confluence with the Type F stream.	Upstream retention is the shorter of the RH Max or uppermost flow feature. RMA width = 35' Total RH Max is 600 feet from confluence with the Type F stream.
	<p>The tree retention areas and 35-foot R-ELZ and ELZ apply to each side of the stream as follows:</p> <ol style="list-style-type: none"> 1. Equipment Limitation Zones with Retention (R-ELZ), extend upstream to the identified uppermost flow feature. The end of the tree retention area is squared off at the end of the tree retention area (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 and end of tree retention area will extend as a radius around the uppermost flow feature. 	
Small Type Ns	35' ELZ	35' ELZ

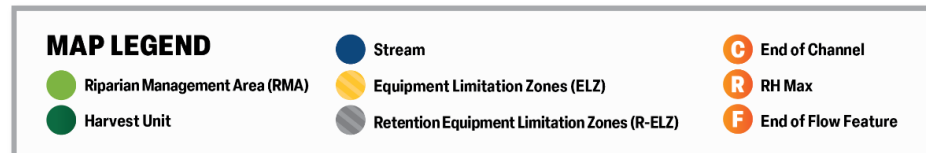
Western Oregon Example Scenarios

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.



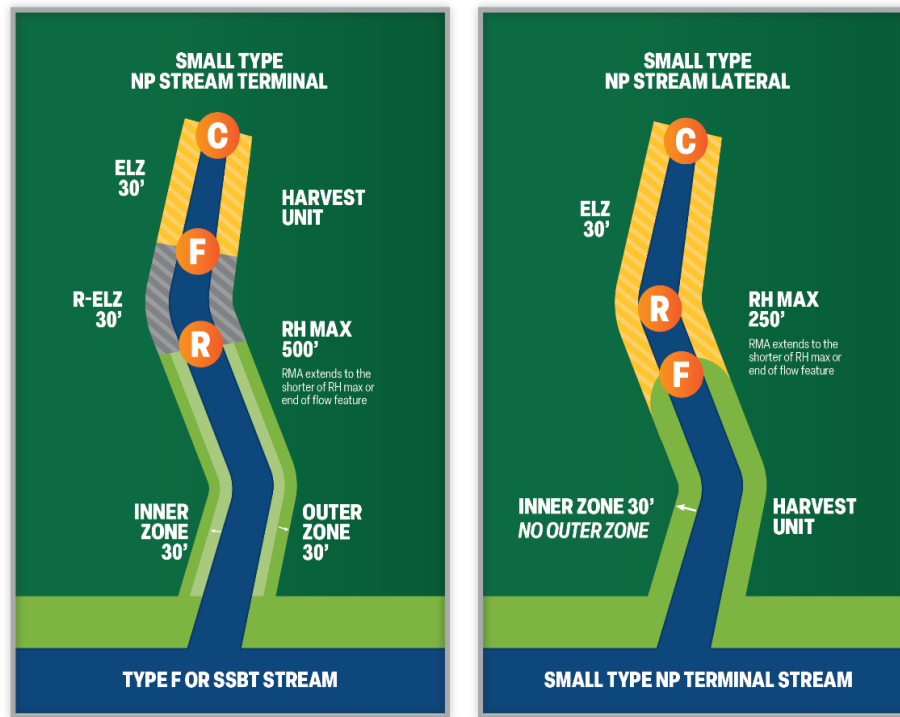
Eastern Oregon Type N Requirements (EO-1)

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/or 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 to 30 feet. Equipment Limitation Zones with Retention (R-ELZ) are to extend upstream to the identified most 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, an ELZ shall extend upstream to the end of the stream channel and end of tree retention area will extend as a radius around the uppermost flow feature.	
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. The ELZ's apply to the outer edge of the inner zone and extend out to 30 feet. Equipment Limitation Zones with Retention (R-ELZ) are to extend upstream to the identified most 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, an ELZ shall extend upstream to the end of the stream channel and end of tree retention area will extend as a radius around the uppermost flow feature.	
Small Type Ns flowing into a Type F/SSBT	30-foot R-ELZ extending 750 feet upstream from confluence. ELZ applies along remainder of channel.	30-foot R-ELZ extending 750 feet upstream from confluence. ELZ applies along remainder of channel.
Small Type Ns	30' ELZ from edge of channel	30' ELZ from edge of channel.

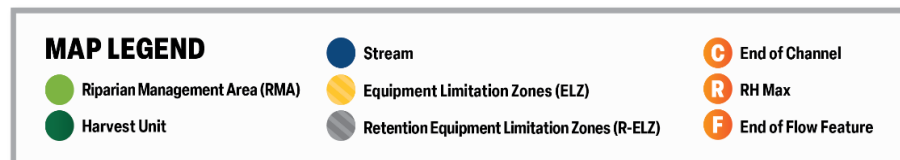
Eastern Oregon Example Scenarios

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 are 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: Western Oregon Example - 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)):

When a completed survey that documents the presence of flowing water (less than 25 feet in length) that is located within the area of inquiry downstream of the RH Max (i.e., a “short flowing water” feature [per the Flow Permanence V2 survey protocol] within the RH Max), 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). Note: Flowing Water too short to be considered a Flow Feature does not extend the Area of Inquiry.
2. Within the Area of Inquiry above a Flow Feature.
3. Below the RH Max.

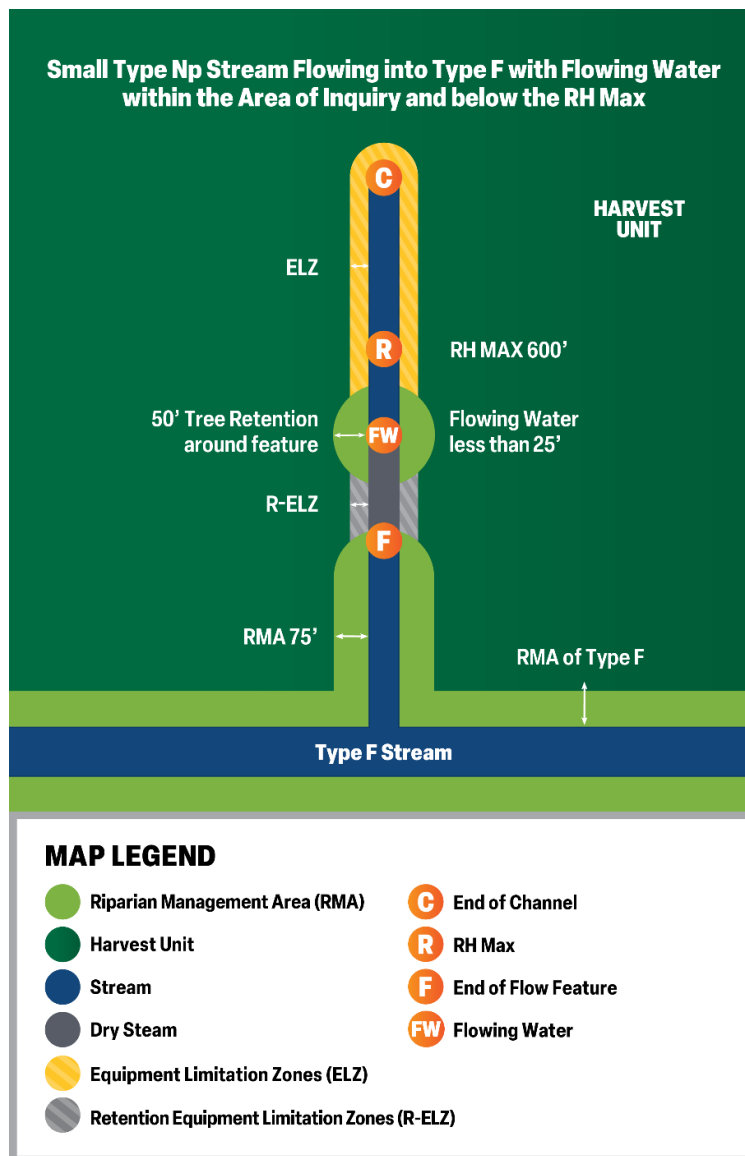


Figure 2 – Dry channel downstream the RH Max with Flowing Water

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:
 1. RH Max or
 2. 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:
 1. Determine if a prior survey is documented in ODF FERNS or is mapped upstream of ownership control would alter the harvesting layout based on the vegetation retention requirements (OAR 629-643-0130).
 2. 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:
 1. The furthest identified upstream Flow Feature is downstream of the RH Max and an operational field survey documents 100 feet or more of surveyed dry stream between any 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 and Submission Templates

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>

Landowner-specific information regarding Flow Surveys and other programs administered by ODFW are located at <https://www.dfw.state.or.us/habitat/PFA/landowners.html#FishPresence>.

- A reporting template Geodatabase for survey submissions that are completed in a geospatial format is available to collect and submit survey data in a common approved format. Link: [Reporting Template Geodatabase](#) (Version 2.0)
- For submission completed in the tabular format, a reporting template in Microsoft Excel is available. Link: [Reporting Template Excel](#)

Corrections to Statewide Flow Line hydrography data

Type N feature removal

To remove a hydrography feature on the Statewide Flow Line data, the landowner needs to conduct a survey to document that either:

- a) the feature does not meet the definition of a stream as defined in OAR 629-600-0100(134) or.
- b) the channel initiation point is different than represented in the Statewide Flow Line hydrography data

Landowner emails survey information, documentation, and survey points to ODF Forester requesting the flow line layer edits for a small Type N stream. Once edits are completed, ODF staff will reply to the original email notifying the landowner of completion.

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.