



# Stream Restoration

Large Wood Addition Projects  
Prince of Wales Island

Ellyn Rickels, Hydrologist

POW LLA Public Workshop (virtual)

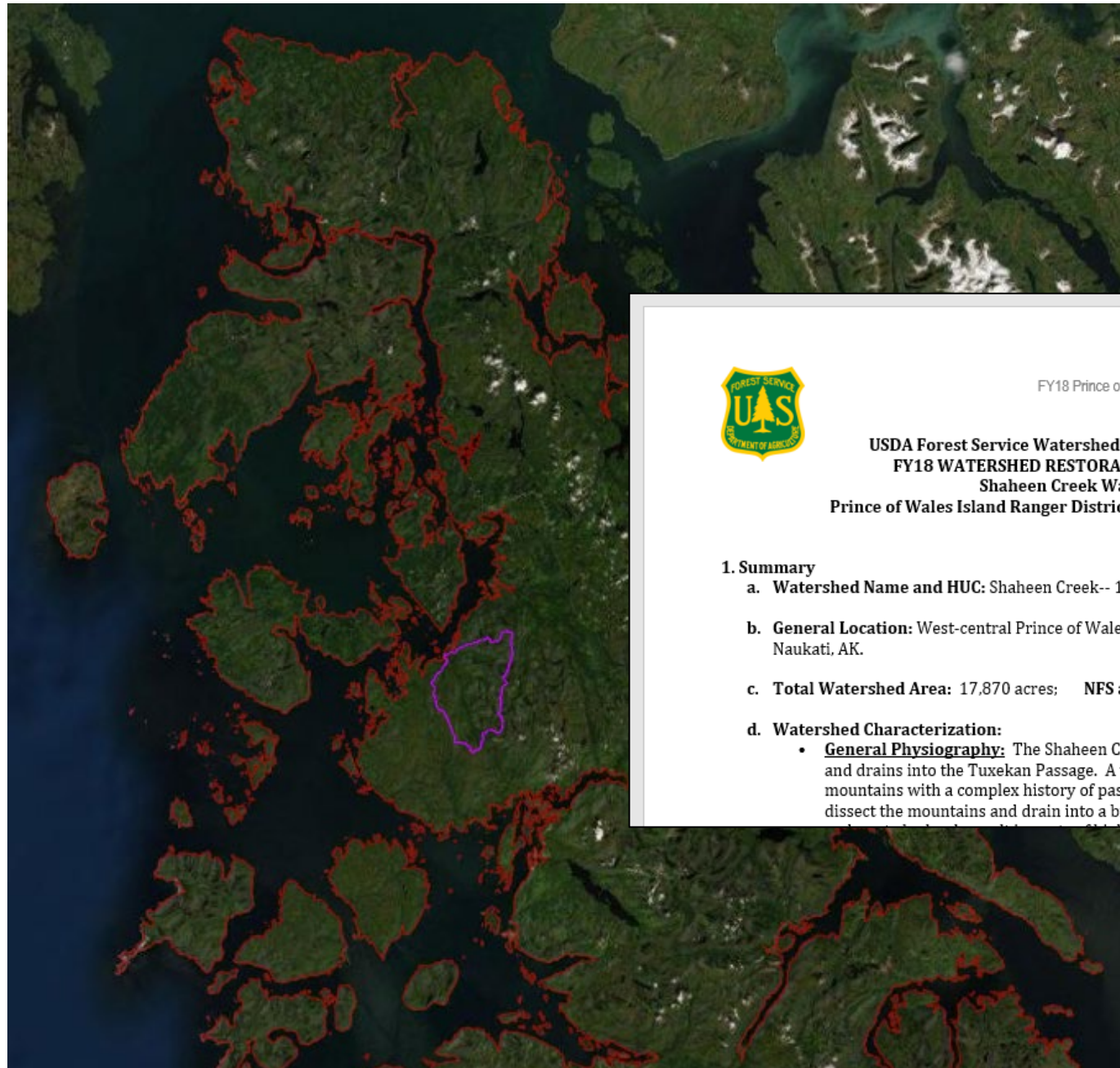
April 2, 2022

## Last POW LLA public meeting:

- Large Woody Debris
- Determining restoration needs
  - Watershed Condition Framework
  - Priority Watersheds
- 2021 Accomplishments
  - Nahania Creek
- 2022 (and beyond) Projects
  - Shaheen Creek



# Shaheen Creek Watershed



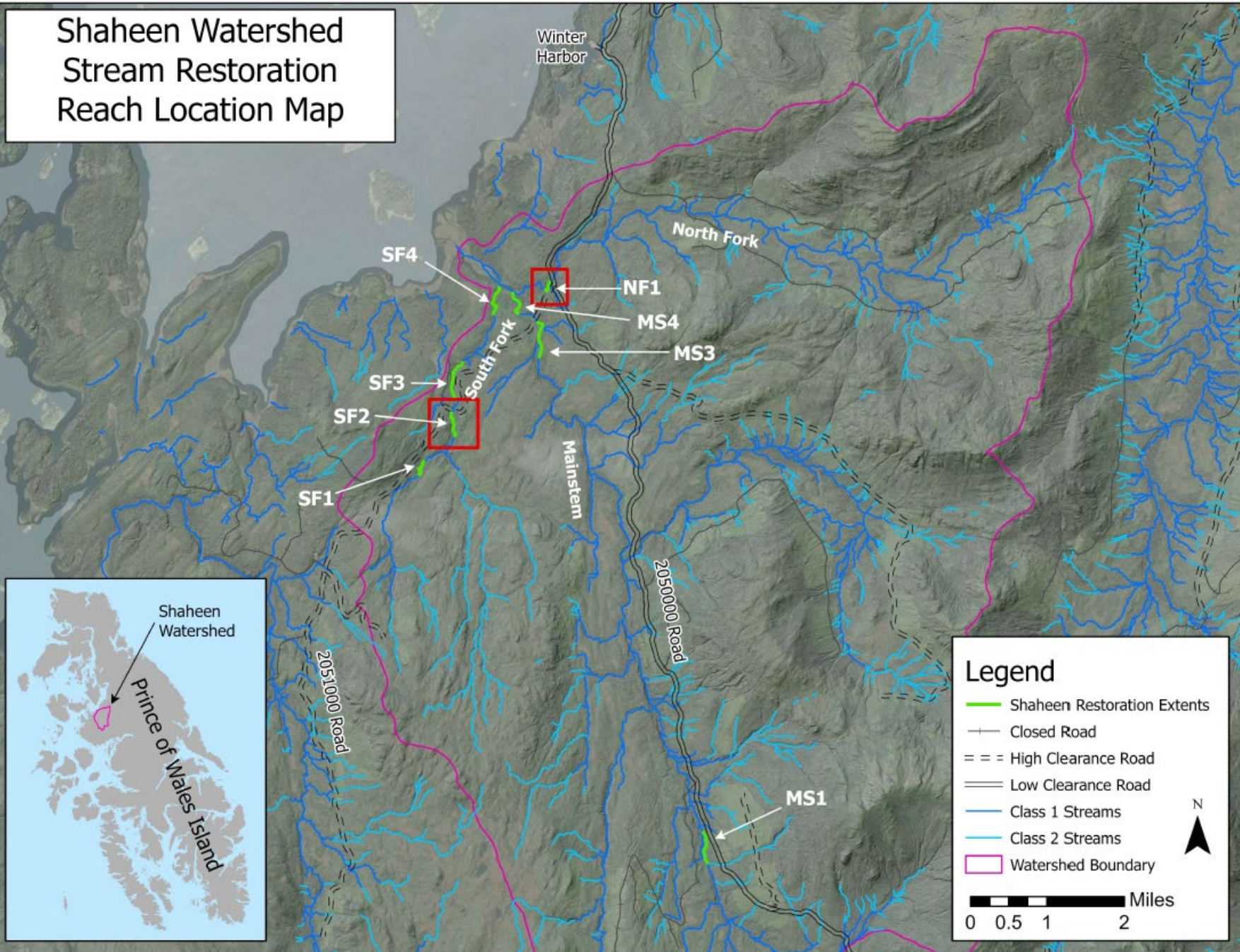
Shaheen Creek Watershed Restoration Action Plan  
FY18 Prince of Wales Island Ranger Districts, Tongass National Forest

## USDA Forest Service Watershed Condition Framework FY18 WATERSHED RESTORATION ACTION PLAN Shaheen Creek Watershed Prince of Wales Island Ranger Districts, Tongass National Forest

### 1. Summary

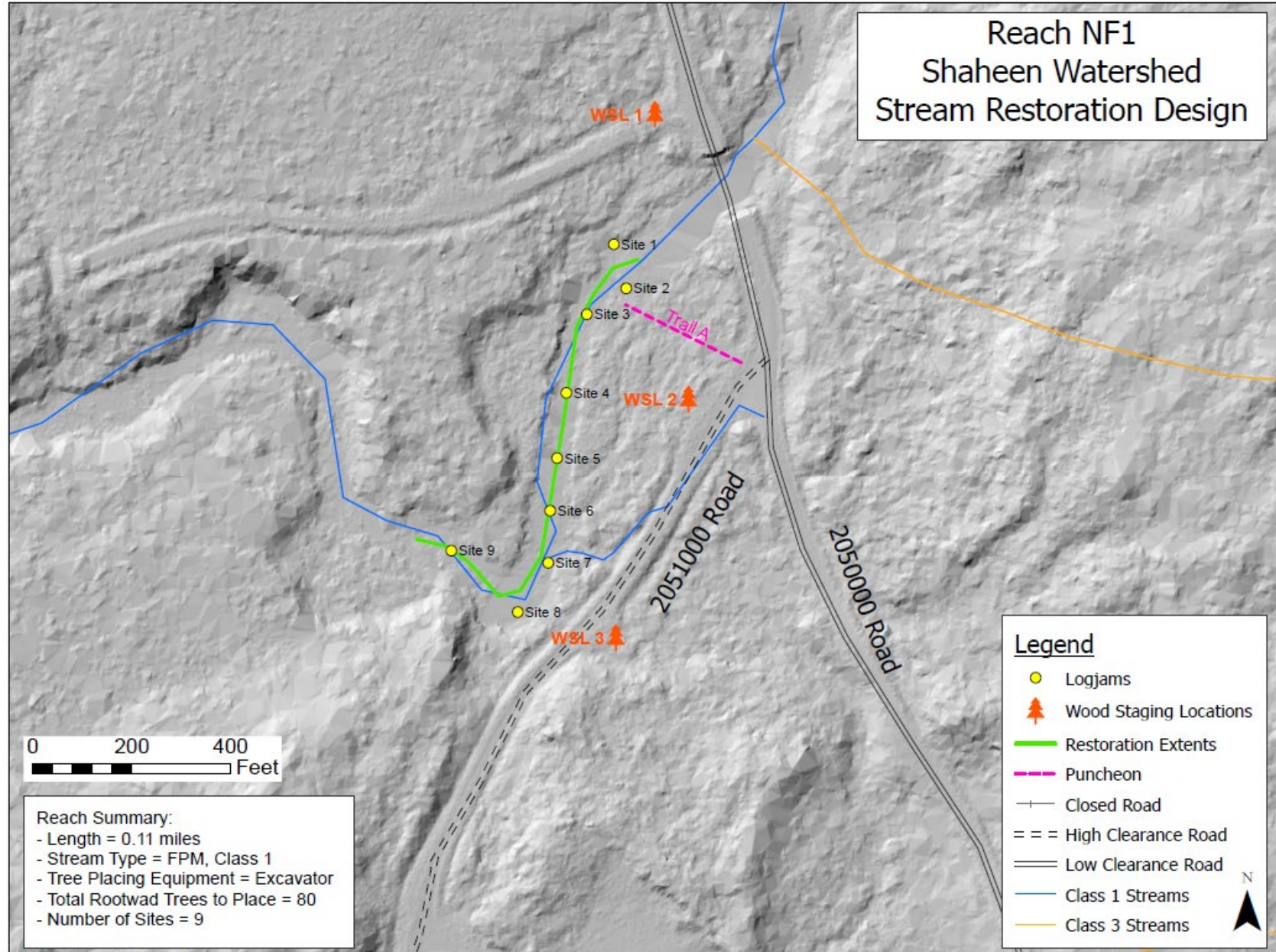
- a. **Watershed Name and HUC:** Shaheen Creek-- 190101031005
- b. **General Location:** West-central Prince of Wales Island, approximately 11 miles south of Naukati, AK.
- c. **Total Watershed Area:** 17,870 acres; **NFS area within watershed:** 100%
- d. **Watershed Characterization:**
  - **General Physiography:** The Shaheen Creek watershed covers over 28 square miles and drains into the Tuxekan Passage. A volcanic terrain consists of rugged mountains with a complex history of past glaciation. Many small and steep valleys dissect the mountains and drain into a broad valley and lowlands. Areas of

# Shaheen Watershed Stream Restoration Reach Location Map



Phase 1: NF1 and SF2  
 Implementation Summer 2022  
 0.33 stream miles  
 ~200 root wad trees  
 18 logjam sites

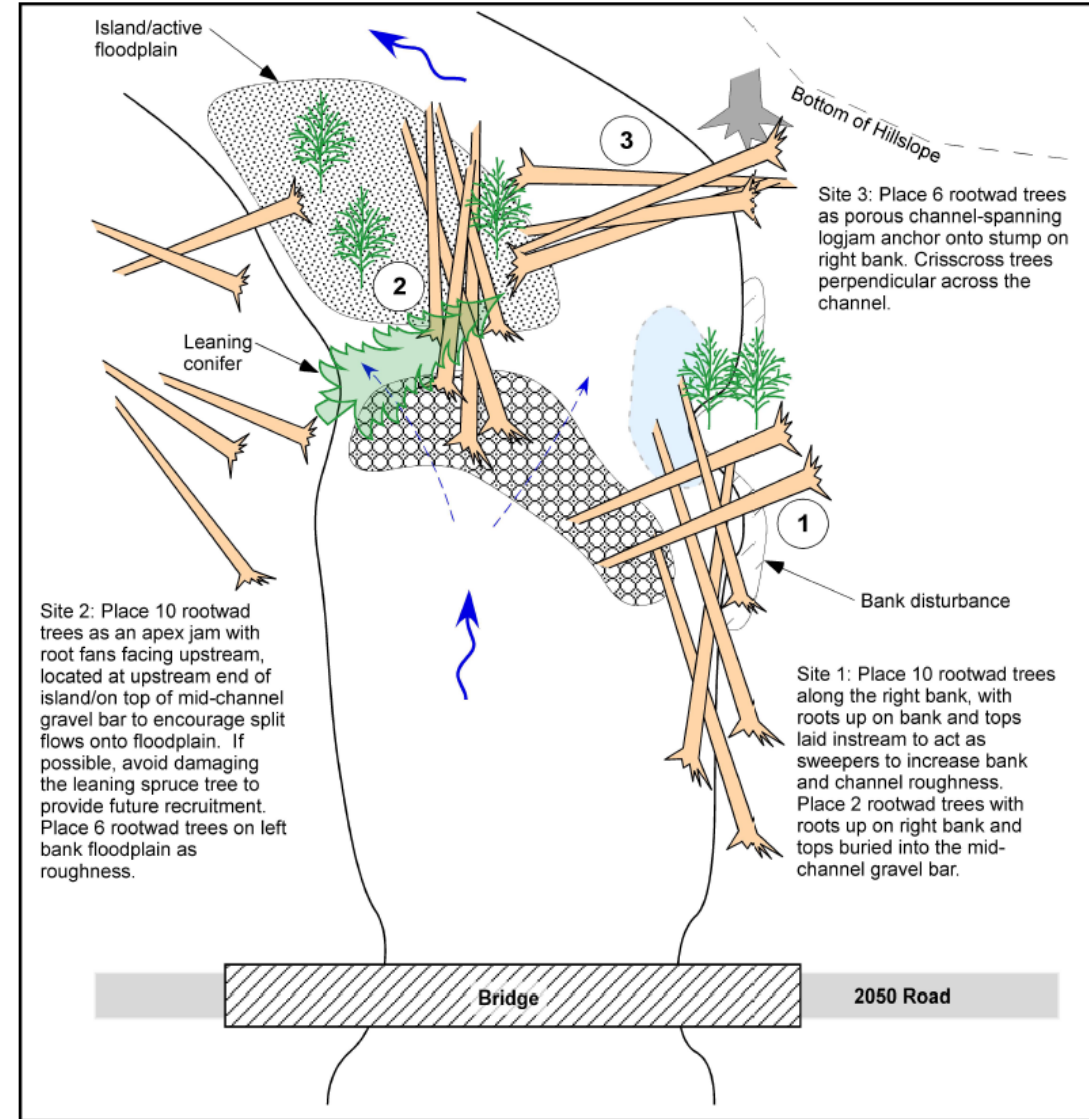


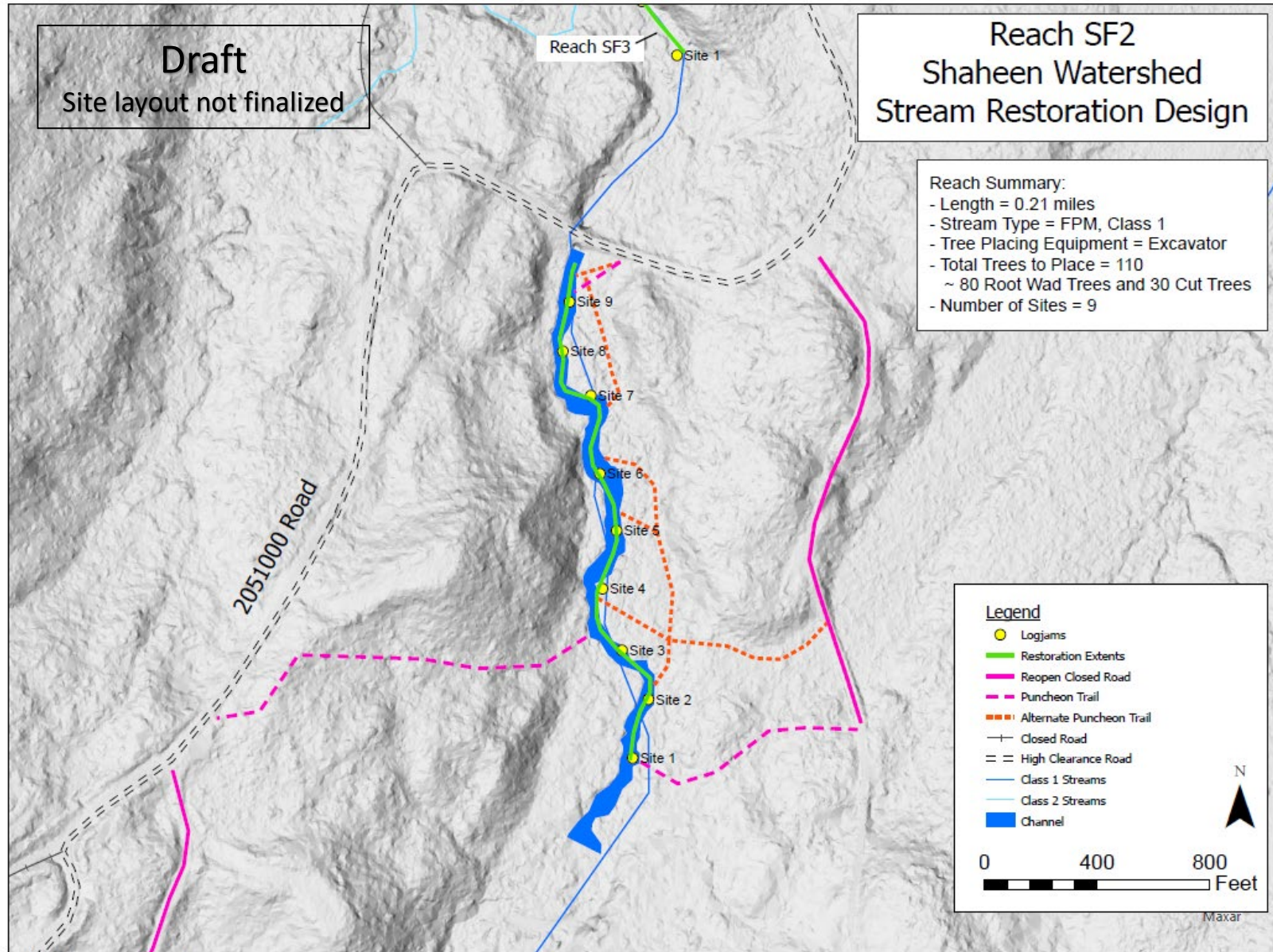


Updated Sept. 2021, E.Rickels

# Shaheen Reach NF1

## Example of site-specific design





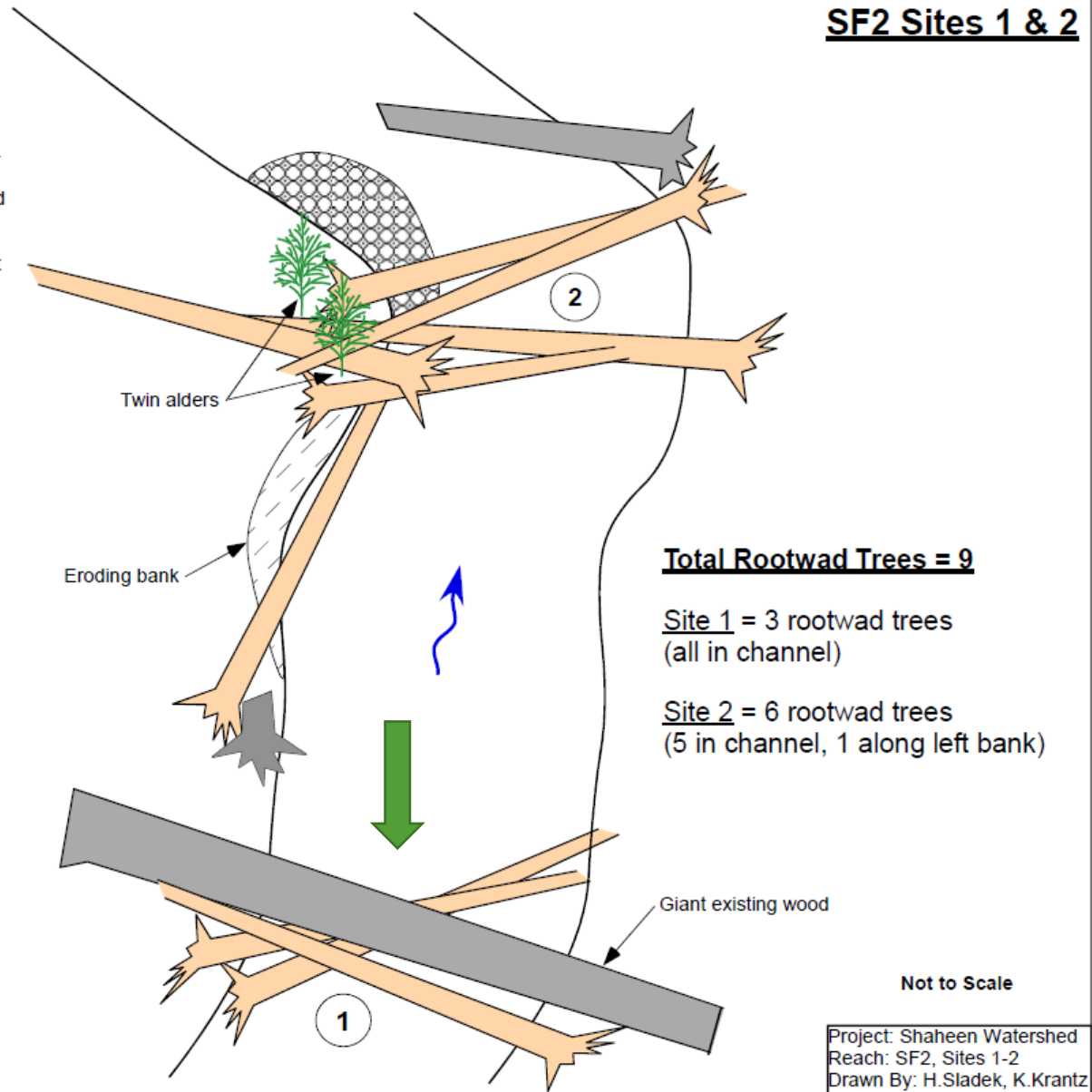
# Shaheen Reach SF2

Example of site-specific design



Site 2: Place 5 rootwad trees as channel-spanning porous jam. Lock trees around and existing wood tips extending in. Place 1 left bank with root stump.

Place 1 left bank with root stump.



**SF2 Sites 1 & 2**

**Total Rootwad Trees = 9**

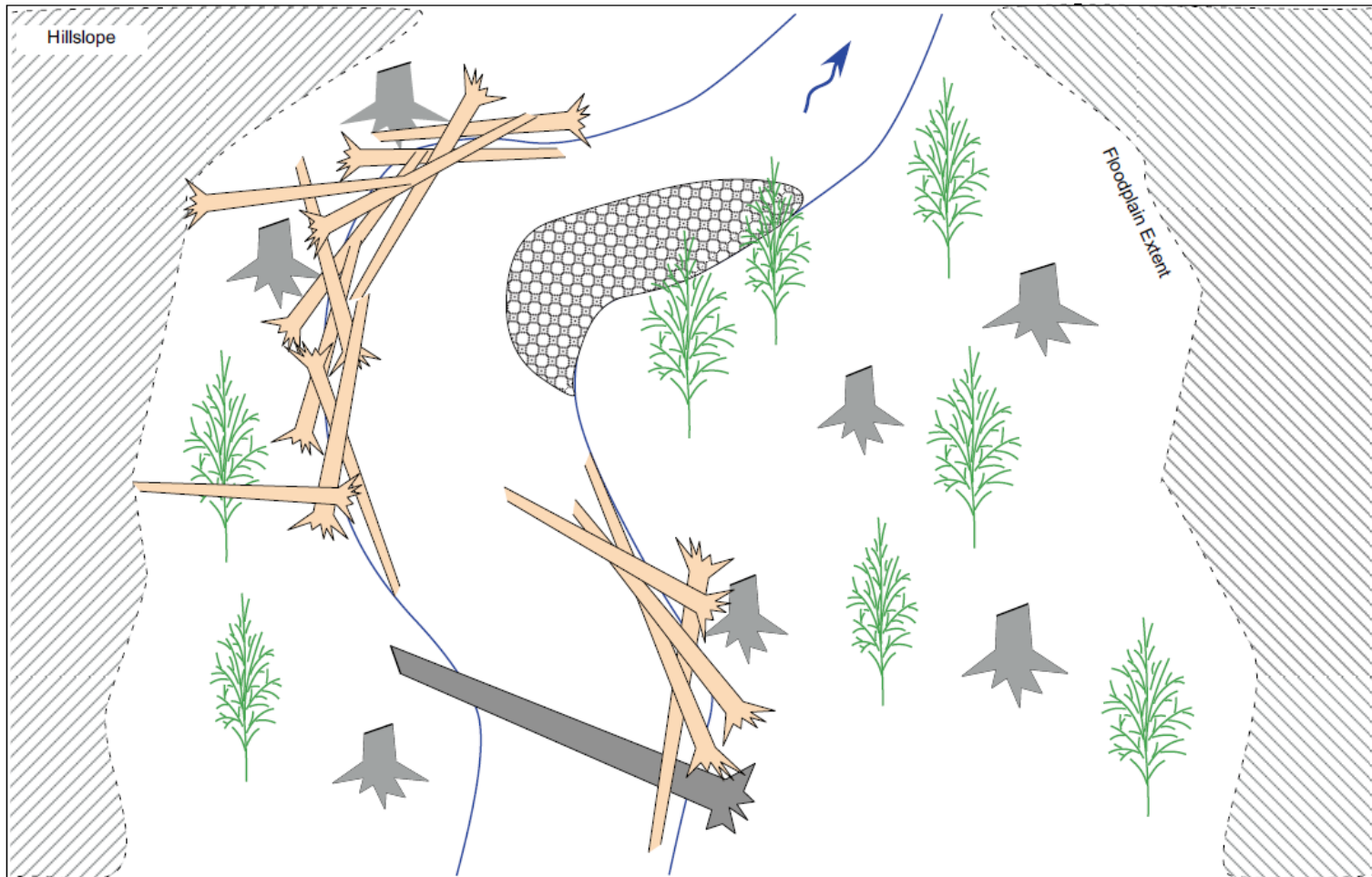
**Site 1 = 3 rootwad trees**  
(all in channel)

**Site 2 = 6 rootwad trees**  
(5 in channel, 1 along left bank)

Not to Scale

Project: Shaheen Watershed  
Reach: SF2, Sites 1-2  
Drawn By: H.Sladek, K.Krantz  
Date: September 2019

# Design Typical



Examples of a “typical” restoration structures.

Available in the workshop files

**Notes:**

Trees, or large woody debris (LWD), are placed along the streambank to provide roughness in order to minimize excessive bank erosion or excessive lateral channel migration. LWD is interwoven and crisscrossed in order to remain relatively stable. LWD is also stacked to weigh the structure down and reduce buoyancy during high flows.

Tongass National Forest  
Craig and Thome Bay Ranger Districts  
Typical Design Sketches

Structure: **Bank Roughness**  
Drawn By: Helen Sladek  
Date: June 2019  
Sheet: 3 of 5

Not to Scale



## Future Projects

FISCAL YEAR 2023 Watershed Improvement and Restoration, Sustainable Recreation	Current Status	Associated Documents	List Field Surveys Required	Timeframe for Surveys to be Completed
<b>Stream Restoration</b>				
1. Nahania Creek Restoration	Monitoring surveys only; ongoing	Workshop Presentation	Completed	Completed
2. Shaheen NF1 Restoration	Final designs and implementation in 2022, ongoing	Shaheen Design Maps, Workshop presentation	Botany/Invasives, Engineering, Karst, Silviculture, Soils, Wildlife	2022
3. Shaheen SF2 Restoration	Final designs and implementation in 2022, ongoing	Shaheen Design Maps, Workshop presentation	Botany/Invasives, Engineering, Karst, Silviculture, Soils, Wildlife	2022
4. Shaheen MS1 Restoration	Final designs and implementation in 2023-2024	Shaheen Design Maps, workshop presentation	Botany/Invasives, Engineering, Karst, Silviculture, Soils, Wildlife	2022
5. Shaheen MS3 Restoration	Final designs and implementation in 2023-2024	Shaheen Design Maps, workshop presentation	Botany/Invasives, Engineering, Karst, Silviculture, Soils, Wildlife	2022
6. Shaheen MS4 Restoration	Final designs and implementation in 2023-2024	Shaheen Design Maps, workshop presentation	Botany/Invasives, Engineering, Karst, Silviculture, Soils, Wildlife	2022
7. Shaheen SF1 Restoration	Final designs and implementation in 2023-2024	Shaheen Design Maps, workshop presentation	Botany/Invasives, Engineering, Karst, Silviculture, Soils, Wildlife	2022
8. Shaheen SF3 Restoration	Final designs and implementation in 2023-2024	Shaheen Design Maps, workshop presentation	Botany/Invasives, Engineering, Karst, Silviculture, Soils, Wildlife	2022
9. Shaheen SF4 Restoration	Final designs and implementation in 2023-2024	Shaheen Design Maps, workshop presentation	Botany/Invasives, Engineering, Karst, Silviculture, Soils, Wildlife	2022