

2021 Sandy-Salmon Amphibian Monitoring Report  
Sandy-Salmon Floodplain, Clackamas County, OR  
Prepared for Bill Weiler

Prepared By:

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## **Summary**

This report was prepared for Bill Weiler of the Sandy River Watershed Council as part of phase II of The Sandy-Salmon Floodplain Reconnection. Surveys were conducted within the floodplain of the confluence of the Sandy and Salmon rivers. The purpose of these surveys was to detect for presence and abundance of pond-breeding amphibians in two ponds within the floodplain and their connecting channel. These surveys will be used to assess the potential impact of the project on pond-breeding amphibian populations. Species detected were the Northern red-legged frog (*Rana aurora*) (adult and larval), American bullfrog (*Lithobates catesbeianus*), rough-skinned newt (*Taricha granulosa*), and Northwestern salamander (*Ambystoma gracile*) (larval and egg mass). Supplemental surveys were conducted in and along Little Joe Creek, a tributary of the Sandy River and directly North of the project site (Figure 1). Species found were Dunn's salamander (*Plethodon dunni*) Pacific giant salamander (*Dicamptodon tenebrosus*) (larval), and Oregon slender salamander (*Batrachoseps wrighti*).

## **Methods**

In the months of June, July, August and November of 2021, visual encounter surveys (VES) (Heyer et. al, 1994) were used at two pond sites, referred to here as Pond 1 and Pond 2 (Figure 2). The outflow of Pond 1 forms a channel that feeds into Pond 2, which then feeds into the Sandy River. This channel between both ponds was surveyed using VES. Each survey was conducted in teams of 2-3. VES were performed by slowly walking around each pond and scanning surface and substrate of water with polarized sunglasses and binoculars. At Pond 1, a kayak was used in addition to walking around the pond to improve accuracy of VES. Abundance, behavior, and life stage of each species was recorded at the time of detection. Abiotic factors including cloud cover, water temperature, and air temperature were recorded. Additional surveys were conducted North of the floodplain along Little Joe Creek, a tributary of the Sandy River. VES and rock flipping surveys were used along this site. Though this is outside of the project area, amphibians at this site are considered in this report due to the site's proximity and connection to the floodplain.

## **Protocol Followed**

Thoroughly brushed off boots and field equipment at the beginning of the surveys and between each site visit. Sprayed boots and field equipment generously with 3% bleach solution, prepared the morning of each survey. Allowed bleach solution to sit for 5 minutes. After 5 minutes, rinsed off bleached items with water to protect next site from residual bleach. Amphibians were not handled. Any logs or rocks flipped were gently replaced into original position.

## Results

### Pond 1

Surveys at Pond 1 were conducted between the hours of 0900 and 1700 on 6 occasions, with variation in start and end times for each occasion. Species detected were Northern red-legged frog (*Rana aurora*), American bullfrog (*Lithobates catesbeianus*), rough-skinned newt (*Taricha granulosa*), and Northwestern salamander (*Ambystoma gracile*) (egg mass). Egg masses were empty and identified by shape, size, texture, and presence of algae inside egg mass.

Species Detected	Method	# of Individuals	Approx. Location	Time	Weather	Air Temp (Shade) (Celsius)	Water Temp (Celsius)	Habitat/Substrate
<b>6/20/2021</b>								
<b>Taricha granulosa</b>	VES	20+	45.3790882, -122.0292774	16:00	Sunny	31.6	19	Swimming in open water and under algae – substrate thick mud
<b>6/25/2021</b>								
<b>Rana aurora (adult)</b>	VES	1	45.3790882, -122.0292774	11:48	Sunny	35.4	21.8	Jumping into water – substrate thick mud/algae
<b>Taricha granulosa</b>	VES	3	45.3790882, -122.0292774	11:48	Sunny	35.4	21.8	Floating on surface/under algae mats. Substrate thick mud.
<b>7/16/2021</b>								
<b>Rana aurora (adult)</b>	VES	1	45.3790882, -122.0292774	11:30	Sunny	15.7	13.5	Jumping into water – substrate thick mud/algae
<b>Lithobates catesbeianus</b>	VES	1	45.3790882, -122.0292774	11:57	Sunny	15.7	13.5	Swimming under algae – substrate thick mud/algae
<b>Taricha granulosa</b>	VES	20+	45.3790882, -122.0292774	11:30-11:52	Sunny	15.7	3.5	Floating on surface/under algae mats. Substrate thick mud.
<b>7/18/2021</b>								
<b>Taricha granulosa</b>	VES	6	45.3790882, -122.0292774	11:39	Partly Cloudy	21.7	15.2	Swimming under algae. Substrate thick mud.
<b>8/1/2021</b>								
<b>Taricha granulosa</b>	VES	3	45.3790882, -122.0292774	12:30	Sunny	N/A – Battery Died	N/A – Battery Died	Swimming under algae. Substrate thick mud.
<b>11/12/2021</b>								
<b>Taricha granulosa</b>	VES	7	45.3790882, -122.0292774	15:30	Cloudy	N/A – Battery Died	N/A – Battery Died	Floating in open water. Substrate thick mud/algae.

## Pond 2

Surveys at Pond 2 were conducted between the hours of 0900 and 1700 on five occasions, with variation in start and end times for each occasion. Species were detected on four occasions. Species detected were Northern red-legged frog (*Rana aurora*) (adult and larval), American bullfrog (*Lithobates catesbeianus*), rough-skinned newt (*Taricha granulosa*), and Northwestern salamander (*Ambystoma gracile*) (juvenile and egg mass). Egg masses were empty and identified by shape, size, texture, and presence of algae inside egg mass.

Species Detected	Method	# of Individuals	Approx. Location	Time	Weather	Air Temp (Shade) (Celsius)	Water Temp (Celsius)	Habitat/Substrate
<b>6/25/2021</b>								
<b>Rana aurora (larvae)</b>	VES	20+	45.3785501, -122.0320146	13:25	Sunny	32	18	In water. Thick mud/algae
<b>Lithobates catesbeianus</b>	VES	5	45.3785501, -122.0320146	13:25	Sunny	32	18	In water. Thick mud/algae
<b>Taricha granulosa</b>	VES	10+	45.3785501, -122.0320146	13:25	Sunny	32	18	In water. Thick mud/algae
<b>7/11/2021</b>								
<b>Rana aurora (adult)</b>	VES	1	45.3785501, -122.0320146	10:28	Sunny	15.7	13.5	In water. Thick mud/algae
<b>Rana aurora (larvae)</b>	VES	2	45.3785501, -122.0320146	10:28-10:50	Sunny	15.7	13.5	In water. Thick mud/algae
<b>Taricha granulosa</b>	VES	8	45.3785501, -122.0320146	10:46	Sunny	15.7	13.5	In water. Thick mud/algae
<b>7/18/2021</b>								
<b>Lithobates catesbeianus</b>	VES	2	45.3785501, -122.0320146	12:47	Sunny	28.4	16.1	Alongside bank. Grass/mud.
<b>Taricha granulosa</b>	VES	9	45.3785501, -122.0320146	12:40-13:30	Sunny	28.4	16.1	Floating in water. Thick mud/algae
<b>8/01/2021</b>								
<b>Rana aurora (larvae)</b>	VES	2	45.3785501, -122.0320146	10:30	Partly Cloudy	N/A – Battery Died	N/A – Battery Died	Swimming under algae. Substrate thick mud.
<b>Taricha granulosa</b>	VES	15+	45.3785501, -122.0320146	10:30-11:45	Partly Cloudy	N/A – Battery Died	N/A – Battery Died	Floating in water. Thick mud/algae
<b>Ambystoma gracile (larvae)</b>	VES	2	45.3785501, -122.0320146	11:20	Partly Cloudy	N/A – Battery Died	N/A – Battery Died	Resting in substrate – thick mud/algae

### Outflow of Pond 1

The outflow of Pond 1 forms a channel that feeds into Pond 2, which then feeds into the Sandy River. This channel between both ponds was surveyed using VES. Surveys were conducted between the hours of 1200 and 1700 on four occasions with variation in start and end times for each occasion. Species were detected on two occasions. Species detected were Northern red-legged frog (*Rana aurora*) and rough-skinned newt (*Taricha granulosa*).

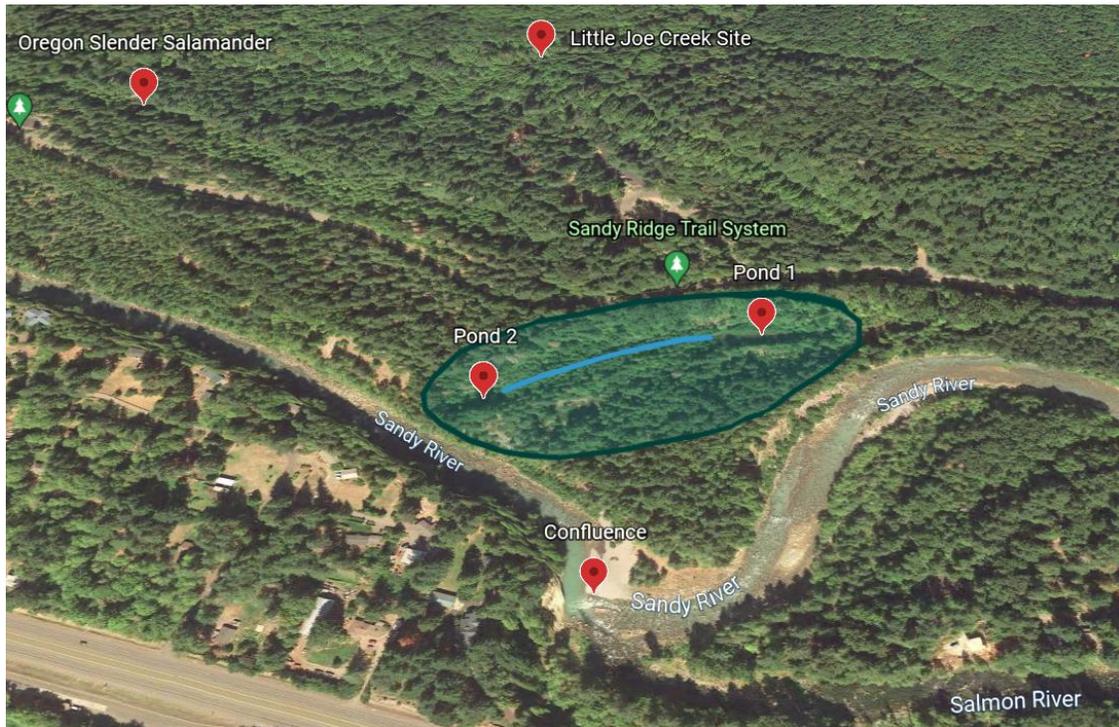
Species Detected	Method	# of Individuals	Approx. Location	Time	Weather	Air Temp (Shade) (Celsius)	Water temp (Celsius)	Habitat/Substrate
<b>6/20/2021</b>								
<b>Rana aurora (adult)</b>	VES	1	45.3787992, -122.0308344	16:55	Sunny	24.9	18.1	Found along bank, jumped into stream. Silty substrate
<b>Taricha granulosa</b>	VES	3	45.379172, -122.029951	16:42	Sunny	25.2	18.6	All 3 found swimming in pool in stream. Silty/muddy substrate.
<b>6/25/2021</b>								
<b>Rana aurora (adult)</b>	VES	1	45.3790969, -122.030504	12:42	Sunny	22.1	16.1	Found along bank, jumped into stream. Silty substrate
<b>Taricha granulosa</b>	VES	2	45.378848, -122.03188	12:58	Sunny	21.1	16.5	Both found swimming in pool in stream. Silty/muddy substrate.

### Little Joe Creek

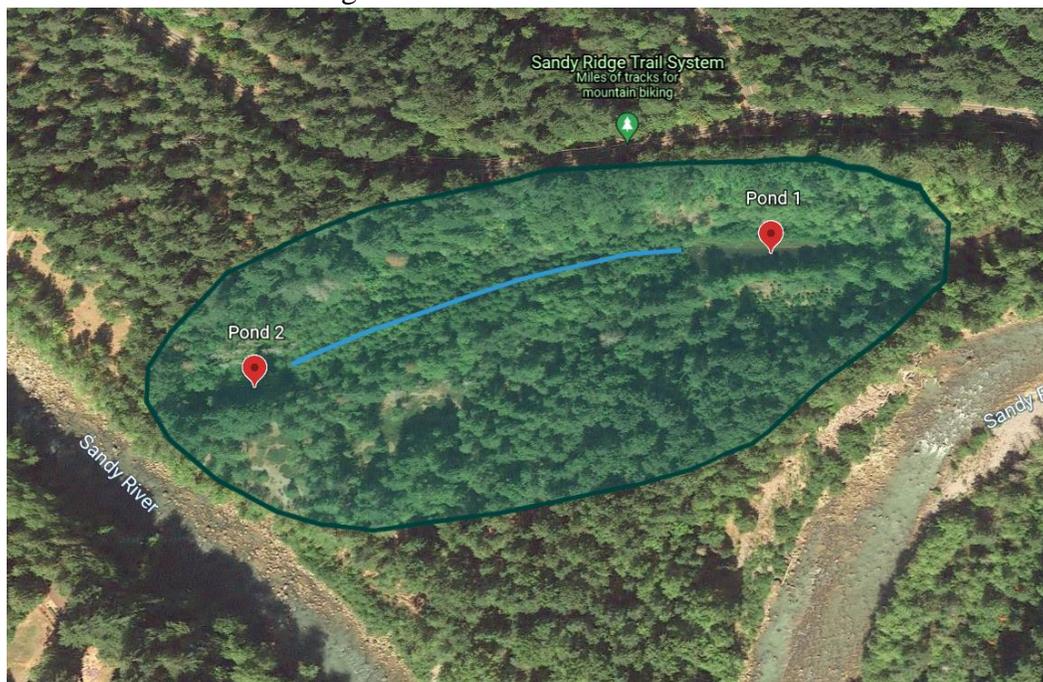
Supplemental surveys were conducted in and along Little Joe Creek, a tributary of the Sandy River and directly North of the project site (Figure 1). Surveys were conducted between the hours of 1200 and 1700 on four occasions with variation in start and end times for each occasion. Species found were Dunn's salamander (*Plethodon dunni*) Pacific giant salamander (*Dicamptodon tenebrosus*) (larval), and Oregon slender salamander (*Batrachoseps wrighti*).

Species Detected	Method	# of Individuals	Approx. Location	Time	Weather	Air Temp (Shade) (Celsius)	Water Temp (Celsius)	Habitat/Substrate
<b>7/11/2021</b>								
<b>Dicamptodon tenebrosus (larvae)</b>	VES	2	45.3829423 - 122.0311520	15:05	Sunny	27.3	15.8	Half exposed, underneath rock
<b>Plethodon dunni</b>	Rock flipping	1	45.3830452, - 122.0316860	14:24	Sunny	27	15.6	Streamside, underneath rock
<b>7/16/2021</b>								
<b>Dicamptodon tenebrosus (larvae)</b>	Rock flipping	1	45.3826978, - 122.0323801	13:00	Sunny	15.8	14.8	In shallow water under rock, fast moving stream
	Rock flipping	1	45.3830433, - 122.0315741	13:17	Sunny	16.2	14.4	Under flat rock, deep, slow-moving water
	Rock flipping	1	45.3829802, - 122.0314373	13:50	Sunny	16	14.5	Partially covered under small rocks, fast moving stream
	VES	1	45.3830068, - 122.0313917	14:05	Sunny	16	15.6	Swimming in open pool, medium flow
<b>8/01/2021</b>								
<b>Dicamptodon tenebrosus (larvae)</b>	Rock flipping	2	45.3829359, - 122.0310078	13:30	Sunny	N/A – Battery Died	N/A – Battery Died	One found under rock, one partially exposed under large rock, shallow water
<b>11/21/2021</b>								
<b>Batrachoseps wrighti</b>	VES	1	45.382658, - 122.036073	13:47	Partly Cloudy	12.7	N/A	Perched on top of rotting tree snag. Retreated into small hole in snag after 5 minutes. Tree snag located next to Little Joe Creek

## Appendix



**Figure 1.** Google Earth image displaying each study site. *Dicamptodon tenebrosus* and *Plethodon dunni* were found at “Little Joe Creek Site.” The blue line between Pond 1 and Pond 2 represents the channel connecting the two.



**Figure 2.** Google Earth image displaying the main study sites in the Sandy – Salmon floodplain. The blue line between Pond 1 and Pond 2 represents the channel connecting the two.

## References

Heyer, W. R. 1994. Measuring and Monitoring Biological Diversity: Standard Methods for Amphibians. Page (W. R. Heyer, M. A. Donnelly, R. W. McDiarmid, L. A. C. Hayek, and M. S. Foster, Eds.). 1st edition. Smithsonian Books.