Siskiyou RCD

STREAM INVENTORY REPORT

Noyes Valley Creek

INTRODUCTION

A stream inventory was conducted during 2/10/2023 to 2/20/2023 on Noyes Valley Creek. The survey began at the confluence with East Fork Scott River and extended upstream 1.1 miles. This report is supplemental/in addition to the East Fork report.

The Noyes Valley Creek inventory was conducted in two parts: habitat inventory and biological inventory. The objective of the habitat inventory was to document the habitat available to anadromous salmonids in Noyes Valley Creek.

The objective of this report is to document the current habitat conditions and recommend options for the potential enhancement of habitat for Chinook salmon, coho salmon, and steelhead trout. Recommendations for habitat improvement activities are based upon target habitat values suitable for salmonids in California's north coast streams.

WATERSHED OVERVIEW

Noyes Valley Creek is a tributary to the East Fork of the Scott River, located in Siskiyou County, California Noyes Valley Creek's legal description at the confluence with East Fork Scott River is T40N R08W S14. Its location is 41N°18'38" north latitude and W122°45'35" west longitude, LLID number 1227596413105. Mixed conifer forest dominates the watershed. The watershed is primarily/entirely privately owned and is managed for timber production/rangeland/recreation.

METHODS

The habitat inventory conducted in Noyes Valley Creek follows the methodology presented in the *California Salmonid Stream Habitat Restoration Manual* (Flosi et al, 1998). The California Conservation Corps (CCC) Technical Advisors and Watershed Stewards Project/AmeriCorps (WSP) Members that conducted the inventory were trained in standardized habitat inventory methods by the California Department of Fish and Game (DFG). This inventory was conducted by a two-person team.

SAMPLING STRATEGY

The inventory uses a method that samples approximately 10% of the habitat units within the survey reach. All habitat units included in the survey are classified according to habitat type and their lengths are measured. All pool units are measured for maximum depth, depth of pool tail

crest (measured in the thalweg), dominant substrate composing the pool tail crest, and embeddedness. Habitat unit types encountered for the first time are measured for all the parameters and characteristics on the field form. Additionally, from the ten habitat units on each field form page, one is randomly selected for complete measurement. All pools except step-pools are fully sampled.

HABITAT INVENTORY COMPONENTS

A standardized habitat inventory form has been developed for use in California stream surveys and can be found in the *California Salmonid Stream Habitat Restoration Manual*. This form was used in Noyes Valley Creek to record measurements and observations. There are eleven components to the inventory form.

1. Flow:

Flow is measured in cubic feet per second (cfs) near the bottom of the stream survey reach using a Flow tracker flow meter.

2. Channel Type:

Channel typing is conducted according to the classification system developed and revised by David Rosgen (1994). This methodology is described in the *California Salmonid Stream Habitat Restoration Manual*. Channel typing is conducted simultaneously with habitat typing and follows a standard form to record measurements and observations. There are five measured parameters used to determine channel type: 1) water slope gradient, 2) entrenchment, 3) width/ depth ratio, 4) substrate composition, and 5) sinuosity. Channel characteristics are measured using a clinometer, hand level, hip chain, tape measure, and a stadia rod.

3. Temperatures:

Both water and air temperatures are measured and recorded at every tenth habitat unit. The time of the measurement is also recorded. Both temperatures are taken in degrees Fahrenheit at the middle of the habitat unit and within one foot of the water surface.

4. Habitat Type:

Habitat typing uses the 24 habitat classification types defined by McCain and others (1990). Habitat units are numbered sequentially and assigned a type identification number selected from a standard list of 24 habitat types. Dewatered units are labeled "dry". Noyes Valley Creek habitat typing used standard basin level measurement criteria. These parameters require that the minimum length of a described habitat unit must be equal to or greater than the stream's mean wetted width. All measurements are in feet to the nearest tenth. Habitat characteristics are

measured using a clinometer, hip chain, and stadia rod.

5. Embeddedness:

The depth of embeddedness of the cobbles in pool tail-out areas is measured by the percent of the cobble that is surrounded or buried by fine sediment. In Noyes Valley Creek, embeddedness was ocularly estimated. The values were recorded using the following ranges: 0 - 25% (value 1), 26 - 50% (value 2), 51 - 75% (value 3) and 76 - 100% (value 4). Additionally, a value of 5 was assigned to tail-outs deemed unsuited for spawning due to inappropriate substrate like bedrock, log sills, boulders or other considerations.

6. Shelter Rating:

Instream shelter is composed of those elements within a stream channel that provide juvenile salmonids protection from predation, reduce water velocities so fish can rest and conserve energy, and allow separation of territorial units to reduce density related competition for prey. The shelter rating is calculated for each fully-described habitat unit by multiplying shelter value and percent cover. Using an overhead view, a quantitative estimate of the percentage of the habitat unit covered is made. All cover is then classified according to a list of nine cover types. In Noyes Valley Creek, a standard qualitative shelter value of 0 (none), 1 (low), 2 (medium), or 3 (high) was assigned according to the complexity of the cover. Thus, shelter ratings can range from 0-300 and are expressed as mean values by habitat types within a stream.

7. Substrate Composition:

Substrate composition ranges from silt/clay sized particles to boulders and bedrock elements. In all fully-described habitat units, dominant and sub-dominant substrate elements were ocularly estimated using a list of seven size classes and recorded as a one and two, respectively. In addition, the dominant substrate composing the pool tail-outs is recorded for each pool.

8. Canopy:

Stream canopy density was estimated using modified handheld spherical densiometers as described in the *California Salmonid Stream Habitat Restoration Manual*. Canopy density relates to the amount of stream shaded from the sun. In Noyes Valley Creek, an estimate of the percentage of the habitat unit covered by canopy was made from the center of approximately every third unit in addition to every fully-described unit, giving an approximate 30% sub-sample. In addition, the area of canopy was estimated ocularly into percentages of coniferous or hardwood trees.

9. Bank Composition and Vegetation:

Bank composition elements range from bedrock to bare soil. However, the stream banks are

usually covered with grass, brush, or trees. These factors influence the ability of stream banks to withstand winter flows. In Noyes Valley Creek, the dominant composition type and the dominant vegetation type of both the right and left banks for each fully-described unit were selected from the habitat inventory form. Additionally, the percent of each bank covered by vegetation (including downed trees, logs, and rootwads) was estimated and recorded.

10. Large Woody Debris Count:

Large woody debris (LWD) is an important component of fish habitat and an element in channel forming processes. In each habitat unit all pieces of LWD partially or entirely below the elevation of bankfull discharge are counted and recorded. The minimum size to be considered is twelve inches in diameter and six feet in length. The LWD count is presented by reach and is expressed as an average per 100 feet.

11. Average Bankfull Width:

Bankfull width can vary greatly in the course of a channel type stream reach. This is especially true in very long reaches. Bankfull width can be a factor in habitat components like canopy density, water temperature, and pool depths. Frequent measurements taken at riffle crests (velocity crossovers) are needed to accurately describe reach widths. At the first appropriate velocity crossover that occurs after the beginning of a new stream survey page (ten habitat units), bankfull width is measured and recorded in the appropriate header block of the page. These widths are presented as an average for the channel type reach.

DATA ANALYSIS

Data from the habitat inventory form are entered into Stream Habitat 2.0.18, a Visual Basic data entry program developed by Karen Wilson, Pacific States Marine Fisheries Commission in conjunction with the California Department of Fish and Game. This program processes and summarizes the data, and produces the following ten tables:

- Riffle, Flatwater, and Pool Habitat Types
- Habitat Types and Measured Parameters
- Pool Types
- Maximum Residual Pool Depths by Habitat Types
- Mean Percent Cover by Habitat Type
- Dominant Substrates by Habitat Type
- Mean Percent Vegetative Cover for Entire Stream
- Fish Habitat Inventory Data Summary by Stream Reach (Table 8)
- Mean Percent Dominant Substrate / Dominant Vegetation Type for Entire Stream
- Mean Percent Shelter Cover Types for Entire Stream

Graphics are produced from the tables using Microsoft Excel. Graphics developed for Noyes Valley Creek include:

- Riffle, Flatwater, Pool Habitat Types by Percent Occurrence
- Riffle, Flatwater, Pool Habitat Types by Total Length
- Total Habitat Types by Percent Occurrence
- Pool Types by Percent Occurrence
- Maximum Residual Depth in Pools
- Percent Embeddedness
- Mean Percent Cover Types in Pools
- Substrate Composition in Pool Tail-outs
- Mean Percent Canopy
- Dominant Bank Composition by Composition Type
- Dominant Bank Vegetation by Vegetation Type

HABITAT INVENTORY RESULTS

* ALL TABLES AND GRAPHS ARE LOCATED AT THE END OF THE REPORT *

The habitat inventory of 2/10/2023 to 2/20/2023, was conducted by Emma Morris, Tully Doyle. The total length of the stream surveyed was 5,859 feet with an additional 389 feet of side channel.

Stream flow was not measured on Noyes Valley Creek. Flow measurements taken in April 2023 measured 3.6-5.2 cfs.

Noyes Valley Creek is an E3 channel type for 6,248.00 feet of the stream surveyed.

Insert necessary information about the channel here. Below are some examples from the restoration manual.

E3 channel types are low gradient meandering riffle, slow stream with low width-depth ratio and little deposition. They are very efficient and stable, high meander width ratio, cobble channel.

Water temperatures taken during the survey period ranged from 36 to 36 degrees Fahrenheit. Air temperatures ranged from 40 to 40 degrees Fahrenheit.

Table 1 summarizes the Level II riffle, flatwater, and pool habitat types. Based on frequency of occurrence there were 47% riffle units, 28% flatwater units, 25% pool units, (Graph 1). Based on total length of Level II habitat types there were 58% riffle units, 24% flatwater units, 17% pool units (Graph 2).

Eight Level IV habitat types were identified (Table 2). The most frequent habitat types by percent occurrence were 47% Low Gradient Riffle units, 12% Glide units, 12% Run units (Graph 3). Based on percent total length, 58% Low Gradient Riffle units, 10% Glide units, 9% Run units

A total of 14 pools were identified (Table 3). Scour pools were the most frequently encountered, at 43%, and comprised 22% of the total length of all pools (Graph 4).

Table 4 is a summary of maximum residual pool depths by pool habitat types. Pool quality for salmonids increases with depth. Eleven of the 14 pools (79%) had a residual depth of two feet or greater (Graph 5).

The depth of cobble embeddedness was estimated at pool tail-outs. Of the 7 pool tail-outs measured, 2 had a value of 1 (28.6%); 2 had a value of 2 (28.6%); 2 had a value of 3 (28.6%); 1 had a value of 5 (14.3%); (Graph 6). On this scale, a value of 1 indicates the best spawning conditions and a value of 4 the worst. Additionally, a value of 5 was assigned to tail-outs deemed unsuited for spawning due to inappropriate substrate such as bedrock, log sills, boulders, or other considerations.

A shelter rating was calculated for each habitat unit and expressed as a mean value for each habitat type within the survey using a scale of 0-300. Riffle habitat types had a mean shelter rating of 30 , flatwater habitat types had a mean shelter rating of 19 , and pool habitats had a mean shelter rating of 12 (Table 1). Of the pool types, the Scour pools had a mean shelter rating of 10, Main Channel pools had a mean shelter rating of 19, Backwater pools had a mean shelter rating of 8 (Table 3).

Table 5 summarizes mean percent cover by habitat type. Terrestrial Vegetation is the dominant cover types in Noyes Valley Creek. Graph 7 describes the pool cover in Noyes Valley Creek. Terrestrial Vegetation is the dominant pool cover type followed by aquatic vegetation.

Table 6 summarizes the dominant substrate by habitat type. Graph 8 depicts the dominant substrate observed in pool tail-outs. Sand was observed in 33% of pool tail-outs, gravel observed in 25% of pool tail-outs, large Cobble observed in 8% of pool tail-outs.

The mean percent canopy density for the surveyed length of Noyes Valley Creek was 32%. The mean percentages of hardwood and coniferous trees were 98% and 2%, respectively. Sixty-eight percent of the canopy was open. Graph 9 describes the mean percent canopy in Noyes Valley Creek.

For the stream reach surveyed, the mean percent right bank vegetated was 83%. The mean percent left bank vegetated was 83%. The dominant elements composing the structure of the

stream banks consisted of 2% bedrock, 12% cobble/gravel, 87% sand/silt/clay, (Graph 10). Brush was the dominant vegetation type observed in 39% of the units surveyed. Additionally, --55% of the units surveyed had brush as the dominant vegetation type, and 39% had grass as the dominant vegetation (Graph 11). 39% grass, 55% brush, 5% deciduous trees, 0% coniferous trees.

BIOLOGICAL INVENTORY RESULTS

The Scott Valley Watershed Council conducted this part of the study.

DISCUSSION

Noyes Valley Creek is an E3 channel type for the entire 6,248 feet of stream surveyed. The suitability of E3 channel types for fish habitat improvement structures is as follows: E3 channel types are good for bank placed boulders, fair for opposing wing deflectors and poor for plunge weirs, boulder clusters and single wing deflectors.

The water temperatures recorded on the survey days 2/10/2023 to 2/20/2023, ranged from 36 to 36 degrees Fahrenheit. Air temperatures ranged from 40 to 40 degrees Fahrenheit. To make any further conclusions, temperatures would need to be monitored throughout the warm summer months, and more extensive biological sampling would need to be conducted.

Flatwater habitat types comprised 24% of the total length of this survey, riffles 58%, and pools 17%. The pools are relatively shallow, with only 11 of the 14 pools (79%) having a maximum residual depth greater than 2 feet. In general, pool enhancement projects are considered when primary pools comprise less than 40% of the length of total stream habitat. In first and second order streams, a primary pool is defined to have a maximum residual depth of at least two feet, occupy at least half the width of the low flow channel, and be as long as the low-flow channel width. Installing structures that will increase or deepen pool habitat is recommended for locations where their installation will not be threatened by high stream energy, or where their installation will not conflict with the modification of the numerous log debris accumulations (LDA's) in the stream.

Four of the 7 pool tail-outs measured had embeddedness ratings of 1 or 2. Two of the pool tail-outs had embeddedness ratings of 3 or 4. One of the pool tail-outs had a rating of 5, which is considered unsuitable for spawning. Cobble embeddedness measured to be 25% or less, a rating of 1, is considered to indicate good quality spawning substrate for salmon and steelhead. Sediment sources in Noyes Valley Creek should be mapped and rated according to their potential sediment yields, and control measures should be taken.

Three of the 12 pool tail-outs measured had gravel or small cobble as the dominant substrate. This is generally considered good for spawning salmonids.

The mean shelter rating for pools was 12. The shelter rating in the flatwater habitats was 19. A pool shelter rating of approximately 100 is desirable. The amount of cover that now exists is being provided primarily by Terrestrial Vegetation in Noyes Valley Creek. Terrestrial Vegetation is the dominant cover type in pools followed by aquatic vegetation. Log and root wad cover structures in the pool and flatwater habitats would enhance both summer and winter salmonid habitat. Log cover structure provides rearing fry with protection from predation, rest from water velocity, and also divides territorial units to reduce density related competition.

The mean percent canopy density for the stream was 32%. In general, revegetation projects are considered when canopy density is less than 80%.

The percentage of right and left bank covered with vegetation was HIGH at 83% and 83%, respectively. In areas of stream bank erosion or where bank vegetation is sparse, planting endemic species of coniferous and hardwood trees, in conjunction with bank stabilization, is recommended.

RECOMMENDATIONS

1) Noyes Valley Creek should be managed as an anadromous, natural production stream.

2) The limited water temperature data available suggest that maximum temperatures are within/above the acceptable range for juvenile salmonids. To establish more complete and meaningful temperature regime information, 24-hour monitoring during the July and August temperature extreme period should be performed for 3 to 5 years.

3) Where feasible, design and engineer pool enhancement structures to increase the number of pools. This must be done where the banks are stable or in conjunction with stream bank armor to prevent erosion.

4) Increase woody cover in the pools and flatwater habitat units. Most of the existing cover in the pools is from Terrestrial Vegetation. Adding high quality complexity with woody cover in the pools is desirable.

5) Inventory and map sources of stream bank erosion and prioritize them according to present and potential sediment yield. Identified sites should then be treated to reduce the amount of fine sediments entering the stream.

6) Active and potential sediment sources related to the road system need to be identified, mapped, and treated according to their potential for sediment yield to the stream and its tributaries.

7) Increase the canopy on Noyes Valley Creek by planting appropriate native vegetation like

willow, alder, redwood, and Douglas fir along the stream where shade canopy is not at acceptable levels. The reaches above this survey section should be inventoried and treated as well, since the water flowing here is affected from upstream. In many cases, planting will need to be coordinated to follow bank stabilization or upslope erosion control projects.

8) Suitable size spawning substrate on Noyes Valley Creek is limited to relatively few reaches. Projects should be designed at suitable sites to trap and sort spawning gravel.

9) There are several log debris accumulations present on Noyes Valley Creek that are retaining large quantities of fine sediment. The modification of these debris accumulations is desirable, but must be done carefully, over time, to avoid excessive sediment loading in downstream reaches.

10) There are sections where the stream is being impacted from cattle trampling the riparian zone. Alternatives should be explored with the grazier and developed if possible.

COMMENTS AND LANDMARKS

N/A.

REFERENCES

Flosi, G., Downie, S., Hopelain, J., Bird, M., Coey, R., and Collins, B. 1998. *California Salmonid Stream Habitat Restoration Manual*, 3rd edition. California Department of Fish and Game, Sacramento, California.

McCain, M., D. Fuller, L. Decker and K. Overton. 1990. Stream habitat classification and inventory procedures for northern California. FHC Currents. No.1. U.S. Department of Agriculture. Forest Service, Pacific Southwest Region.

Rosgen, D.L., 1994. A Classification of Natural Rivers. Catena, Vol 22: 169-199, Elsevier Science, B. V. Amsterdam.

Noyes Valley Creek Siskiyou RCD

LEVEL III and LEVEL IV HABITAT TYPES

RIFFLE

Low Gradient Riffle (LGR) [1.1] { 1}

High Gradient Riffle (HGR) [1.2] { 2}

CASCADE

Cascade (CAS) [2.1] { 3}

Bedrock Sheet (BRS) [2.2] {24}

FLATWATER

Pocket Water (POW) [3.1] {21}

Glide (GLD) [3.2] {14}

Run (RUN) [3.3] {15}

Step Run (SRN) [3.4] {16}

Edgewater (EDW) [3.5] {18}

MAIN CHANNEL POOLS

Noyes Valley Creek Siskiyou RCD

Trench Pool (TRP) [4.1] { 8 }

Mid-Channel Pool (MCP) [4.2] {17}

Channel Confluence Pool (CCP) [4.3] {19}

Step Pool (STP) [4.4] {23}

SCOUR POOLS

Corner Pool (CRP) [5.1] {22}

Lateral Scour Pool - Log Enhanced (LSL) [5.2] {10}

Lateral Scour Pool - Root Wad Enhanced (LSR) [5.3] {11}

Lateral Scour Pool - Bedrock Formed (LSBk) [5.4] {12}

Lateral Scour Pool - Boulder Formed (LSBo) [5.5] {20}

Plunge Pool (PLP) [5.6] { 9 }

BACKWATER POOLS

Secondary Channel Pool (SCP) [6.1] { 4 }

Backwater Pool - Boulder Formed

Noyes Valley Creek <u>Siskiyou RCD</u>

				(BPB)	
				[6.2]	
				{ 5 }	
Backwater Pool - Root Wad Formed					
				(BPR)	
				[6.3]	
				{ 6 }	
Backwater Pool - Log Formed					
				(BPL)	
				[6.4]	
				{ 7 }	
Dammed Pool					
				(DPL)	
			[6.5]		{13}

<u>ADDITIONAL UNIT DESIGNATIONS</u>				
Dry	(DRY)	[7.0]		
Culvert	(CUL)	[8.0]		
Not Surveyed	(NS)	[9.0]		
Not Surveyed due to a marsh			(MAR)	[9.1]

Table 1 - Summary of Riffle, Flatwater, and Pool Habitat

Stream Name: Noyes Valley Creek **LLID:** 1227596413105

Drainage: Scott River

Survey Dates: 2/10/2023 to 2/20/2023

Confluence Location: **Quad:** GAZELLE MTN. **Legal Description:** T40NR08WS14 **Latitude:** 41:18:38.0N **Longitude:** 122:45:35.0W

Habitat Estimated Units Total Volume	Units Mean Fully Residual Measured Volume	Habitat Mean Type Shelter	Habitat Occurrence (%) Pool Vol	Mean Length (ft.) Rating	Total Length (ft.)	Total Length (%)	Mean Width (ft.)	Mean Depth (ft.)	Mean Max Depth (ft.) (cu.ft.) (cu.ft.)	Mean Area (sq.ft.)	Estimated Total Area (sq.ft.)	Mean (cu.ft.)
16 20945	16 19	FLATWATER	28.1	95	1518	24.3	12.9	1.0	1.8	1271	20336	1309
14 57561	14 2997	POOL 12	24.6	78	1090	17.4	21.4	1.0	2.3	2638	36934	4112
27 20474	27 30	RIFFLE	47.4	135	3640	58.3	10.3	0.5	1.2	1535	41444	758

Total Total Volume Units (cu.ft.)	Total Units Fully Meassured	Total Length (ft.)	Total Area (sq.ft.)
57 98979	57	6248	98714

Table 2 - Summary of Habitat Types and Measured

Stream Name: Noyes Valley Creek **LLID:** 1227596413105

Drainage: Scott River

Survey Dates: 2/10/2023 to 2/20/2023

Confluence Location: **Quad:** GAZELLE MTN. **Legal Description:** T40NR08WS14 **Latitude:** 41:18:38.0N **Longitude:** 122:45:35.0W

Habitat Estimated Units Total Volume	Units Fully Mean Measured Residual	Habitat Mean Type Shelter	Habitat Mean Occurrence Canopy (%) (cu.ft.)	Mean Length (ft.) Pool Vol	Total Length (ft.) Rating	Total Length (%)	Mean Width (ft.)	Mean Depth (ft.)	Mean Max Depth (ft.) (cu.ft.)	Mean Area (sq.ft.)	Estimated Total Area (sq.ft.)	Mean Volume (cu.ft.)
27 20474	27 30	LGR 43	47.4	135	3640	58.3	10.0	0.5	2.3	1535	41444	758
7 11941	7 32	GLD 29	12.3	90	630	10.1	14.0	1.1	2.8	1472	10306	1706
7 7659	7 9	RUN 27	12.3	80	562	9.0	12.0	1.0	2.7	961	6728	1094
2 1344	2 7	SRN 15	3.5	163	326	5.2	9.0	0.4	1.3	1651	3302	672
4 2543	4 429	MCP 19	7.0 19	40	161	2.6	13.0	0.8	3.1	468	1872	636
6 4474	6 532	CRP 10	10.5 16	40	237	3.8	14.0	0.9	3.6	545	3269	746
1 5750	1 2300	SCP 10	1.8 0	230	230	3.7	50.0	0.2	2.9	11500	11500	5750
3 44795	3 11582	DPL 7	5.3 23	154	462	7.4	38.0	1.5	2.5	6764	20293	14932

Total Units	Total Units Fully Measured	Total Length (ft.)	Total Area (sq.ft.)	Total Volume (cu.ft.)
57	57	6248	98714	98979

Table 3 - Summary of Pools

Stream Name: Noyes Valley Creek **LLID:** 1227596413105

Drainage: Scott River

Survey Dates: 2/10/2023 to 2/20/2023

Confluence Location: **Quad:** GAZELLE MTN. **Legal Description:** T40NR08WS14 **Latitude:** 41:18:38.0N **Longitude:** 122:45:35.0W

Habitat Mean Units Residual	Units Estimated Fully Total Measured Pool Vol (cu.ft.)	Habitat Mean Type Shelter	Habitat Occurrence (%)	Mean Length (ft.)	Total Length (ft.)	Total Length (%)	Mean Width (ft.)	Mean Residual Depth (ft.)	Mean Area (sq.ft.)	Estimated Total Area (sq.ft.)
4	4	MAIN	29	40	161	15	12.9	0.8	468	1872
429	1717	19								
6	6	SCOUR	43	40	237	22	14.0	0.9	545	3269
532	3192	10								
4	4	BACKWATER	29	173	692	63	41.0	1.2	7948	31793
9262	37047	8								

Total Volume Units (cu.ft.)	Total Units Fully Meassured	Total Length (ft.)	Total Area (sq.ft.)
14	14	1090	36934
41956			

Table 4 - Summary of Maximum Residual Pool Depths By

Stream Name: Noyes Valley Creek **LLID:** 1227596413105

Drainage: Scott River

Survey Dates: 2/10/2023 to 2/20/2023

Confluence Location: **Quad:** GAZELLE MTN. **Legal Description:** T40NR08WS14 **Latitude:** 41:18:38.0N **Longitude:** 122:45:35.0W

Habitat Units	Habitat Type	Habitat Occurrence (%)	< 1 Foot Maximum Residual Occurrence Depth	< 1 Foot Percent Occurrence	1 < 2 Feet Maximum Residual Depth	1 < 2 Feet Percent Occurrence	2 < 3 Feet Maximum Residual Depth	2 < 3 Feet Percent Occurence	3 < 4 Feet Maximum Residual Depth	3 < 4 Feet Percent Occurrence	>= 4 Feet Maximum Residual Depth	>= 4 Feet Percent Occurrence
6	CRP	43	0	0	2	33	3	50	1	17	0	0
4	MCP	29	0	0	1	25	2	50	1	25	0	0
3	DPL	21	0	0	0	0	3	100	0	0	0	0
1	SCP	7	0	0	0	0	1	100	0	0	0	0

Total Units	Total < 1 Foot Max Resid. Depth	Total < 1 Foot % Occurrence	Total 1< 2 Feet Max Resid. Depth	Total 1< 2 Feet % Occurrence	Total 2< 3 Feet Max Resid. Depth	Total 2< 3 Feet % Occurrence	Total 3< 4 Feet Max Resid. Depth	Total 3< 4 Feet % Occurrence	Total >= 4 Feet Max Resid. Depth	Total >= 4 Feet % Occurrence
14	0	0	3	21	9	64	2	14	0	0

Mean Maximum Residual Pool Depth (ft.): 2

Table 5 - Summary of Mean Percent Cover By Habitat

Stream Name: Noyes Valley Creek **LLID:** 1227596413105

Drainage: Scott River

Survey Dates: 2/10/2023 to 2/20/2023

Confluence Location: **Quad:** GAZELLE MTN. **Legal Description:** T40NR08WS14 **Latitude:** 41:18:38.0N **Longitude:** 122:45:35.0W

Habitat Units	Units Mean %	Habitat	Mean %	Mean %	Mean %	Mean %	Mean %	Mean %	Mean %
Mean % Units Boulders	Mean % Fully Bedrock Measured Ledges	Type	Undercut Banks	SWD	LWD	Root Mass	Terr. Vegetation	Aquatic Vegetation	White Water
27	27	LGR	5	19	4	12	45	5	1
10	0								
7	7	GLD	6	17	4	10	58	4	0
1	0								
7	7	RUN	6	24	1	10	51	9	0
0	0								
2	2	SRN	18	0	0	0	55	0	8
20	0								
4	4	MCP	3	8	5	5	49	0	0
1	30								
6	6	CRP	15	10	8	6	44	16	0
1	0								
1	1	SCP	0	20	60	0	0	20	0
0	0								
3	3	DPL	0	12	8	0	28	43	0
8	0								

Table 6 - Summary of Dominant Substrates By Habitat

Stream Name: Noyes Valley Creek **LLID:** 1227596413105

Drainage: Scott River

Survey Dates: 2/10/2023 to 2/20/2023

Confluence Location: **Quad:** GAZELLE MTN. **Legal Description:** T40NR08WS14 **Latitude:** 41:18:38.0N

Longitude: 122:45:35.0W

Habitat % Total Units	Units Fully % Total Measured	Habitat Type	% Total Silt/Clay	% Total Sand	% Total Gravel	% Total Small Cobble	% Total Large Cobble
Boulder	Bedrock		Dominant	Dominant	Dominant	Dominant	Dominant
			Dominant	Dominant			
27	26	LGR	15	12	27	12	31
4	0						
7	7	GLD	57	14	0	0	29
0	0						
7	7	RUN	43	14	43	0	0
0	0						
2	2	SRN	0	0	50	0	50
0	0						
4	4	MCP	25	25	25	0	0
0	25						
6	6	CRP	50	0	17	17	17
0	0						
1	1	SCP	100	0	0	0	0
0	0						
3	3	DPL	100	0	0	0	0
0	0						

Table 7 - Summary of Mean Percent Canopy for Entire

Stream Name: Noyes Valley Creek **LLID:** 1227596413105
Drainage: Scott River

Survey Dates: 2/10/2023 to 2/20/2023

Confluence Location: **Quad:** GAZELLE MTN. **Legal Description:** T40NR08WS14 **Latitude:** 41:18:38.0N
Longitude: 122:45:35.0W

Habitat Units	Mean Percent Conifer	Mean Percent Hardwood	Mean Percent Open Units	Mean Right Bank % Cover	Mean Left Bank % Cover
32	2	98	18	83	83

Note: Mean percent conifer and hardwood for the entire reach are means of canopy components from units with canopy values greater than zero.

Open units represent habitat units with zero canopy cover.

Table 8 - Fish Habitat Inventory Data Summary

Stream Name: Noyes Valley Creek LLID: 1227596413105 Drainage: Scott River

Survey Dates: 2/10/2023 to 2/20/2023 Survey Length (ft.): 6248 Main Channel (ft.): 5859 Side Channel (ft.): 389

Confluence Location: Quad: GAZELLE MTN. Legal Description: T40NR08WS14 Latitude: 41:18:38.0N Longitude: 122:45:35.0W

Summary of Fish Habitat Elements By Stream Reach

STREAM REACH: 1

Channel Type: E3

Reach Length (ft.): 5859

Riffle/Flatwater Mean Width (ft.): 11.3

BFW:

Range (ft.): 3 to 89

Mean (ft.): 79.7818181818182

Std. Dev.: 26.3478071601558

Base Flow (cfs): 0

Water (F): 36 - 36 Air (F): 40 - 40

Dry Channel (ft.): 0

Canopy Density (%): 31.6

Coniferous Component (%): 1.9

Hardwood Component (%): 98.1

Dominant Bank Vegetation: Brush

Vegetative Cover (%): 83.0

Dominant Shelter: Terrestrial Veg.

Dominant Bank Substrate Type: Sand/Silt/Clay

Occurrence of LWD (%): 5.1

LWD per 100 ft.:

Riffles: 0

Pools: 0

Flat: 0

Pools by Stream Length (%): 17.4

Pool Frequency (%): 24.6

Residual Pool Depth (%):

< 2 Feet Deep: 21.4

2 to 2.9 Feet Deep: 64.3

3 to 3.9 Feet Deep: 14.3

>= 4 Feet Deep: 0.0

Mean Max Residual Pool Depth (ft.): 2.30

Mean Pool Shelter Rating: 12

Pool Tail Substrate (%): Silt/Clay: 25.0 Sand: 33.3 Gravel: 25.0 Sm Cobble: 0.0 Lg Cobble: 8.3 Boulder: 0.0 Bedrock: 8.3

Embeddedness Values (%): 1. 28.6 2. 28.6 3. 28.6 4. 0.0 5. 14.3

Table 9 -Mean Percentage of Dominant Substrate and Vegetation

Stream Name: Noyes Valley Creek **LLID:** 1227596413105
Drainage: Scott River

Survey Dates: 2/10/2023 to 2/20/2023

Confluence Location: **Quad:** GAZELLE MTN. **Legal Description:** T40NR08WS14 **Latitude:** 41:18:38.0N
Longitude: 122:45:35.0W

Mean Percentage of Dominant Stream Bank

Dominant Class of Substrate	Number of Units Right Bank	Number of Units Left Bank	Total Mean Percentage (%)
Bedrock	1	1	1.8
Boulder	0	0	0.0
Cobble/Gravel	9	4	11.6
Sand/Silt/Clay	46	51	86.6

Mean Percentage of Dominant Stream Bank

Dominant Class of Vegetation	Number of Units Right Bank	Number of Units Left Bank	Total Mean Percentage (%)
Grass	20	24	39.3
Brush	32	30	55.4
Hardwood Trees	4	2	5.4
Coniferous Trees	0	0	0.0
No Vegetation	0	0	0.0

Total Stream Cobble Embeddedness 2

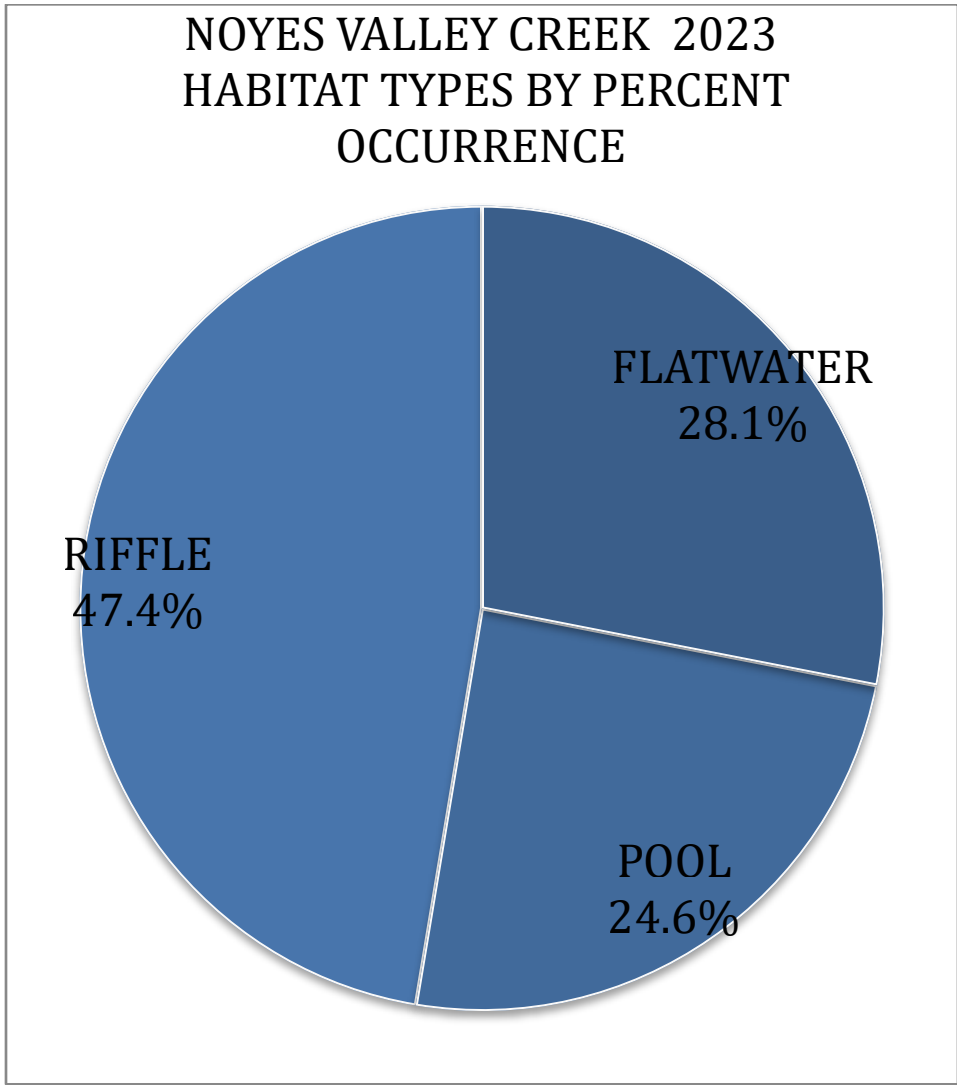
Table 10 - Mean Percent of Shelter Cover Types For Entire

Stream Name: Noyes Valley Creek **LLID:** 1227596413105
Drainage: Scott River

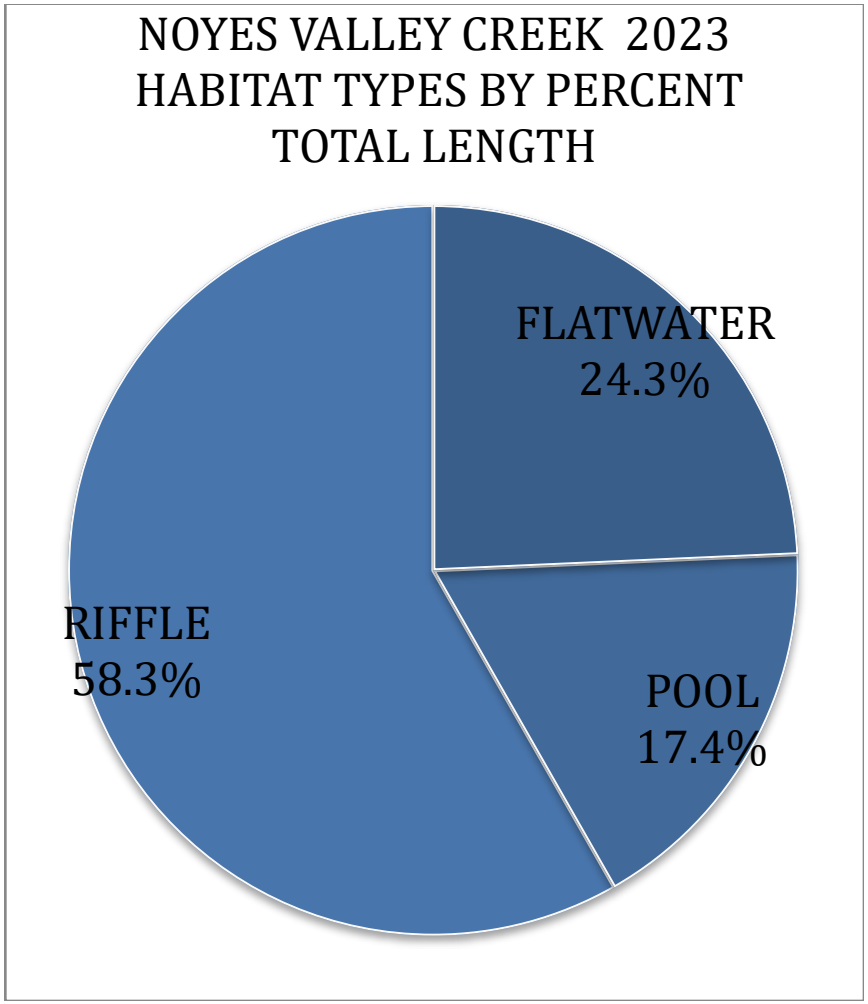
Survey Dates: 2/10/2023 to 2/20/2023

Confluence Location: **Quad:** GAZELLE MTN. **Legal Description:** T40NR08WS14 **Latitude:** 41:18:38.0N
Longitude: 122:45:35.0W

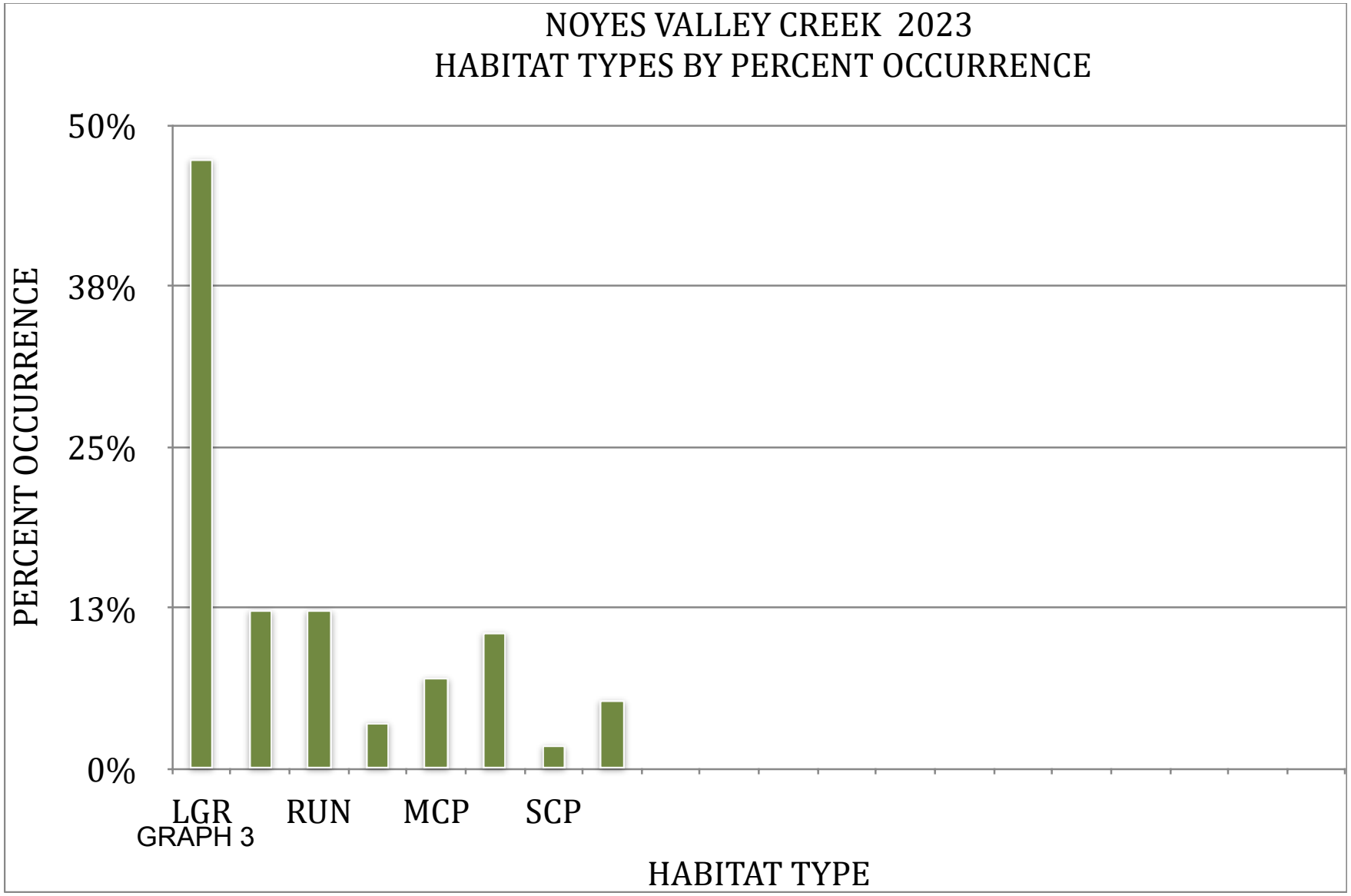
	Riffles	Flatwater	Pools
UNDERCUT BANKS (%)	5	8	7
SMALL WOODY DEBRIS (%)	19	18	10
LARGE WOODY DEBRIS (%)	4	2	11
ROOT MASS (%)	12	9	4
TERRESTRIAL VEGETATION (%)	45	54	39
AQUATIC VEGETATION (%)	5	6	18
WHITEWATER (%)	1	1	0
BOULDERS (%)	10	3	3
BEDROCK LEDGES (%)	0	0	9

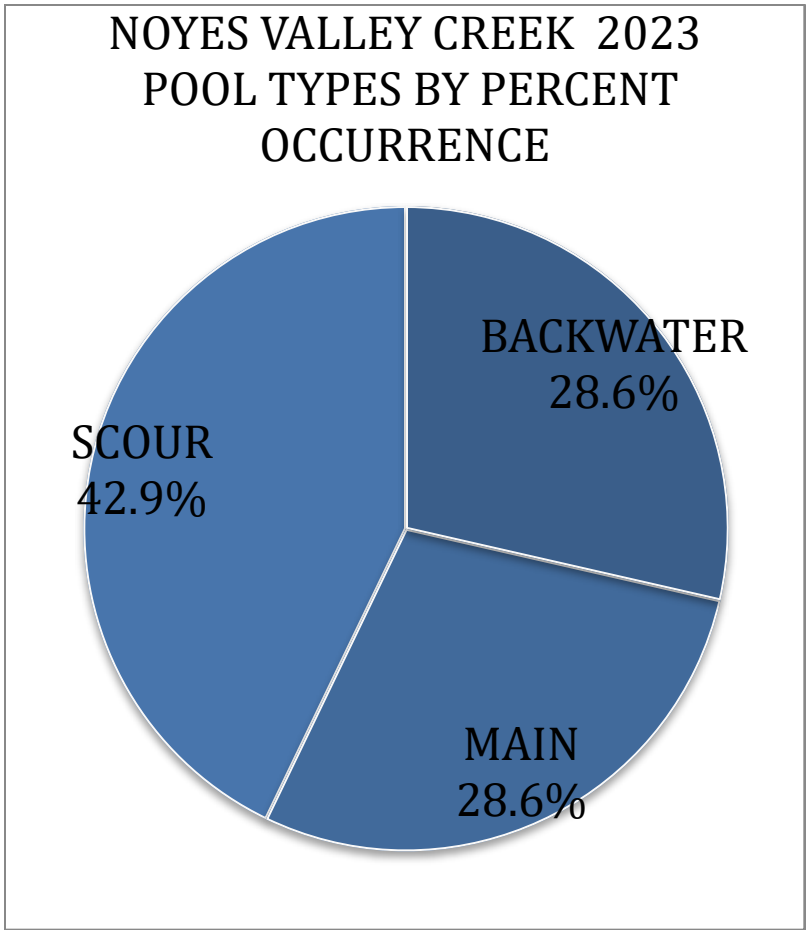

NOYES VALLEY CREEK 2023
HABITAT TYPES BY PERCENT
OCCURRENCE
FLATWATER
28.1%
RIFFLE
47.4%
POOL
24.6%

GRAPH 1

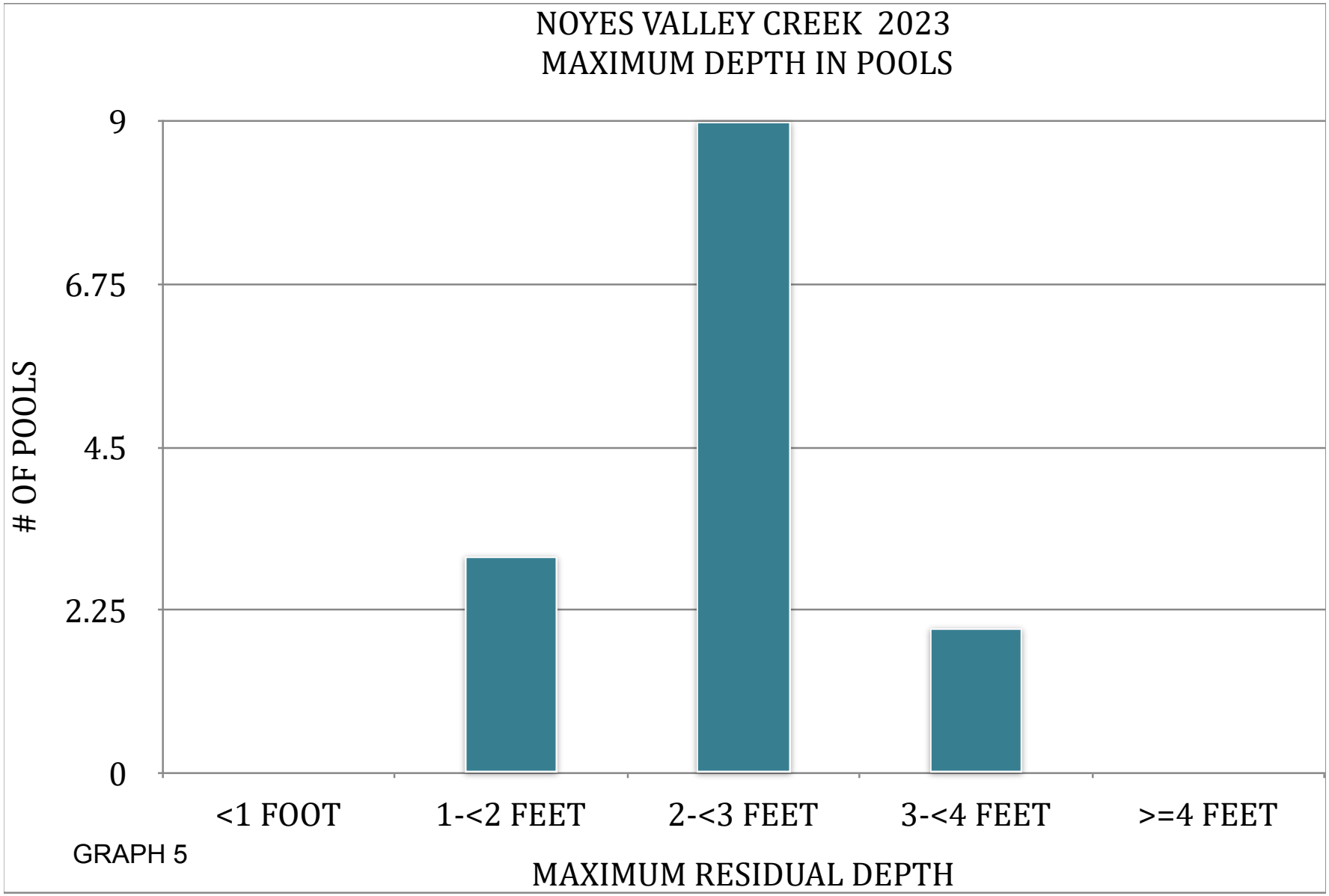

NOYES VALLEY CREEK 2023
HABITAT TYPES BY PERCENT
TOTAL LENGTH
FLATWATER
24.3%
POOL
17.4%
RIFFLE
58.3%

GRAPH 2

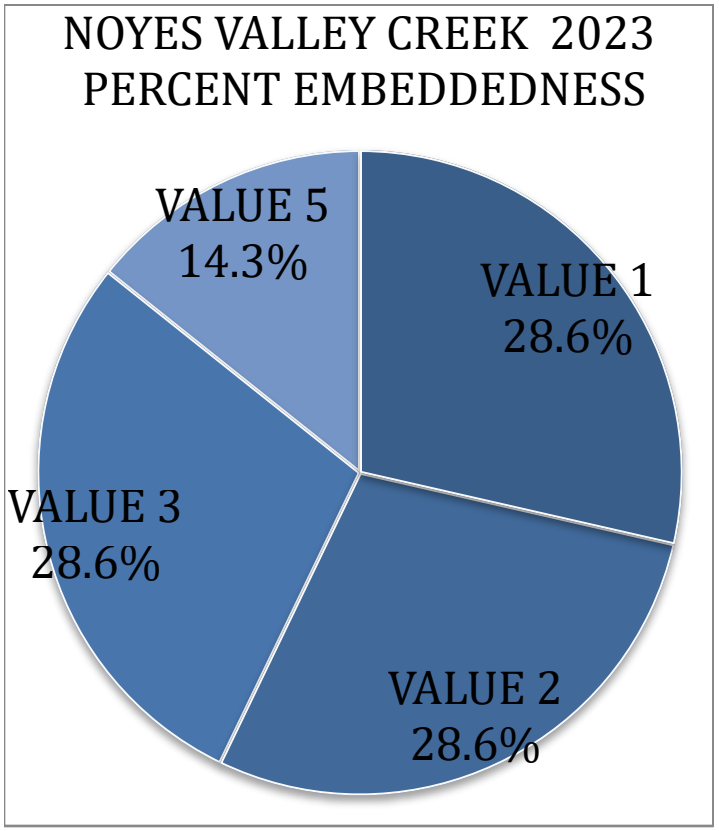

NOYES VALLEY CREEK 2023
HABITAT TYPES BY PERCENT OCCURRENCE
50%
38%
25%
13%
0%
PERCENT OCCURRENCE
LGR
RUN
MCP
SCP
HABITAT TYPE
GRAPH 3


NOYES VALLEY CREEK 2023
POOL TYPES BY PERCENT
OCCURRENCE
BACKWATER
28.6%
SCOUR
42.9%
MAIN
28.6%

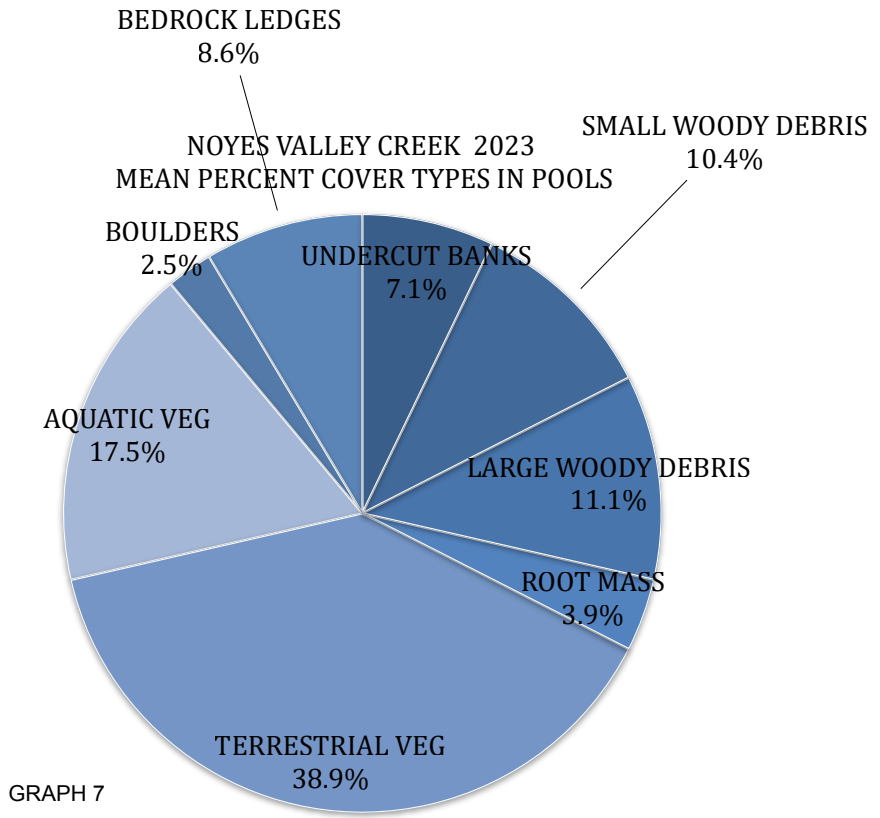
GRAPH 4


NOYES VALLEY CREEK 2023
MAXIMUM DEPTH IN POOLS
9
6.75
4.5
2.25
0
OF POOLS
<1 FOOT
1-<2 FEET
2-<3 FEET
3-<4 FEET
>=4 FEET
MAXIMUM RESIDUAL DEPTH

GRAPH 5

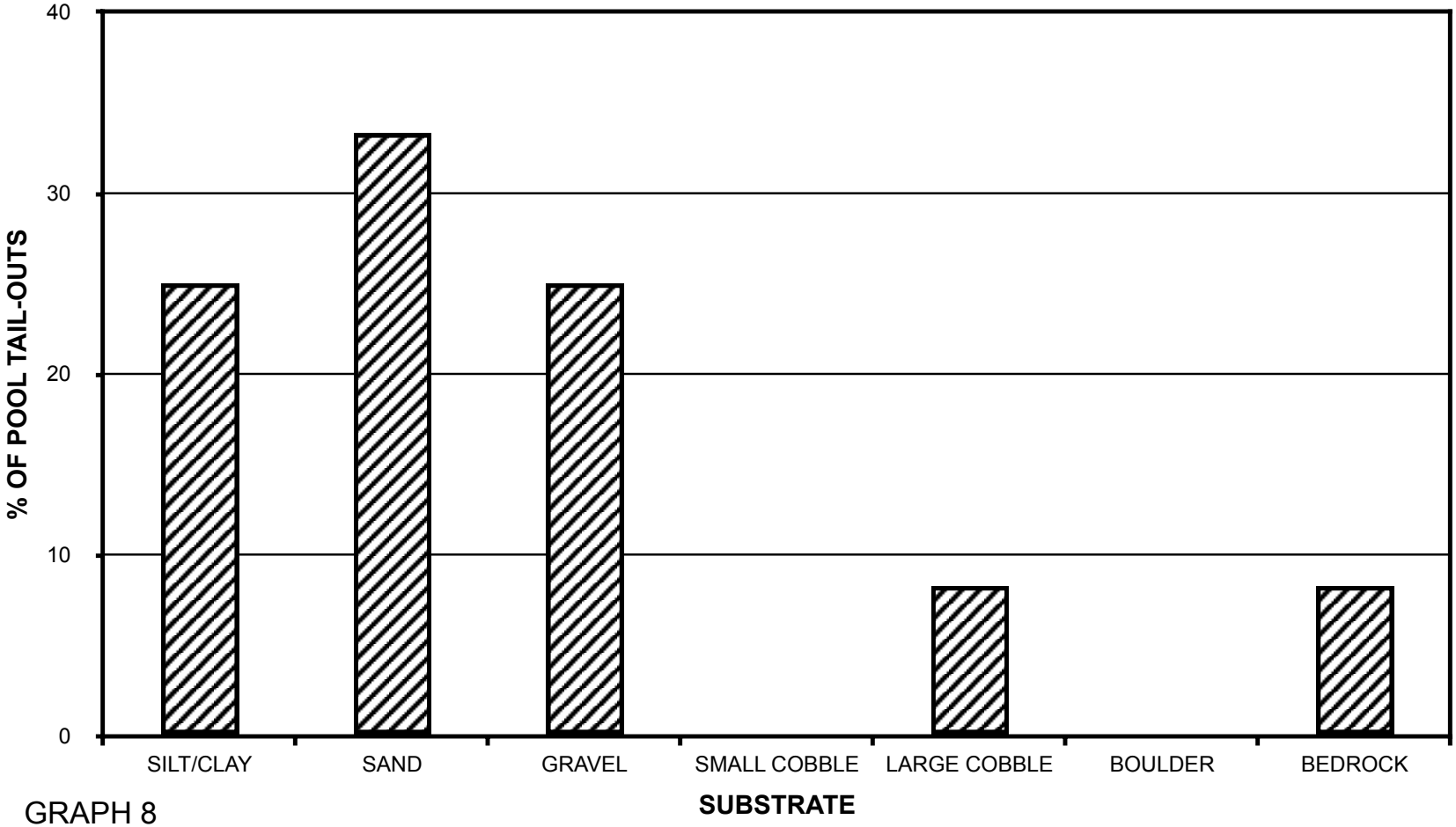

NOYES VALLEY CREEK 2023
PERCENT EMBEDDEDNESS
VALUE 5
14.3%
VALUE 1
28.6%
VALUE 3
28.6%
VALUE 2
28.6%

GRAPH 6

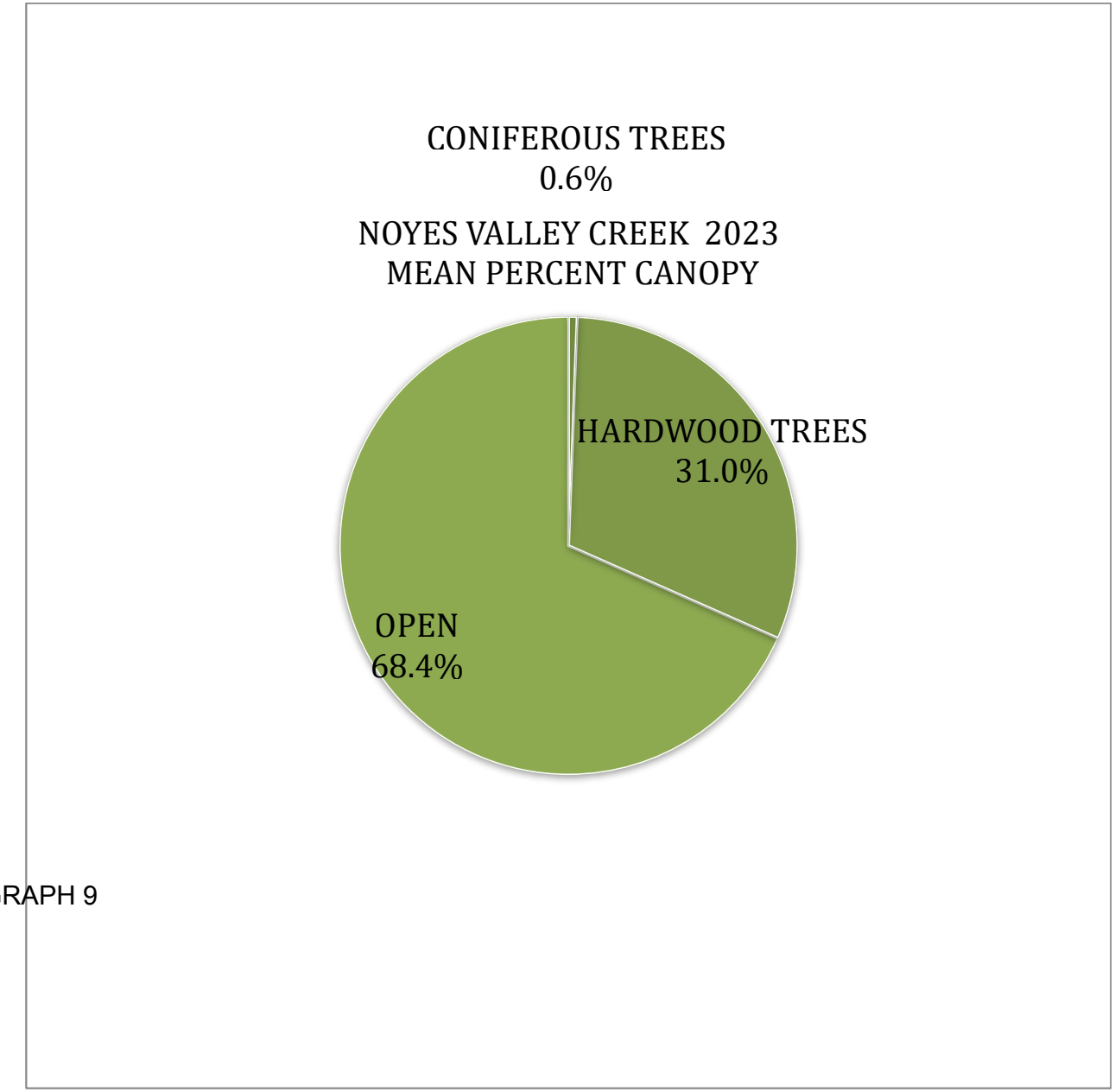

NOYES VALLEY CREEK 2023
MEAN PERCENT COVER TYPES IN POOLS
BEDROCK LEDGES
8.6%
SMALL WOODY DEBRIS
10.4%
BOULDERS
2.5%
UNDERCUT BANKS
7.1%
AQUATIC VEG
17.5%
LARGE WOODY DEBRIS
11.1%
ROOT MASS
3.9%
TERRESTRIAL VEG
38.9%

GRAPH 7

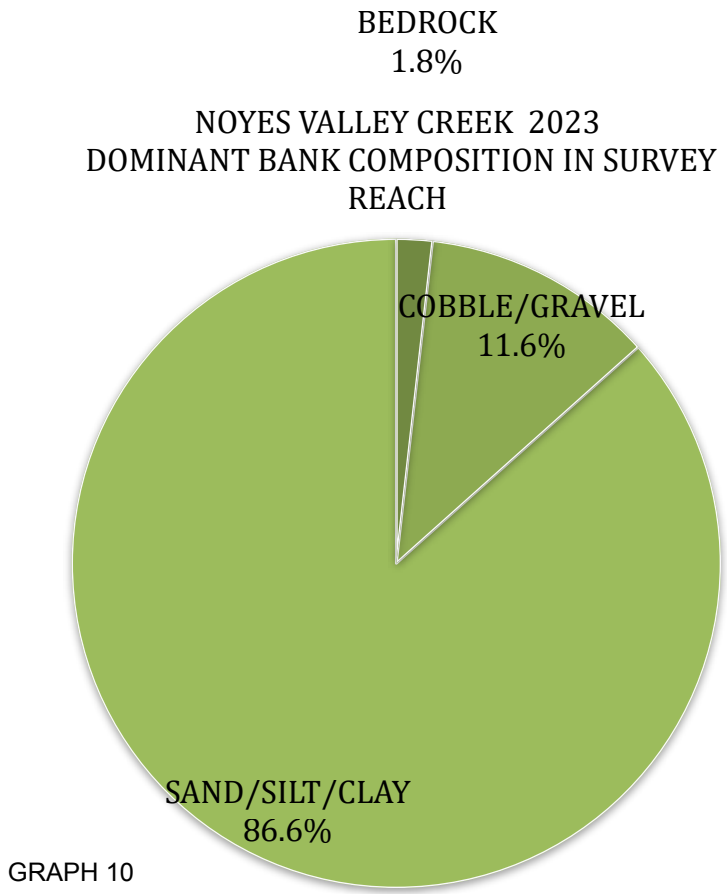
NOYES VALLEY CREEK 2023
SUBSTRATE COMPOSITION IN POOL TAIL-OUTS



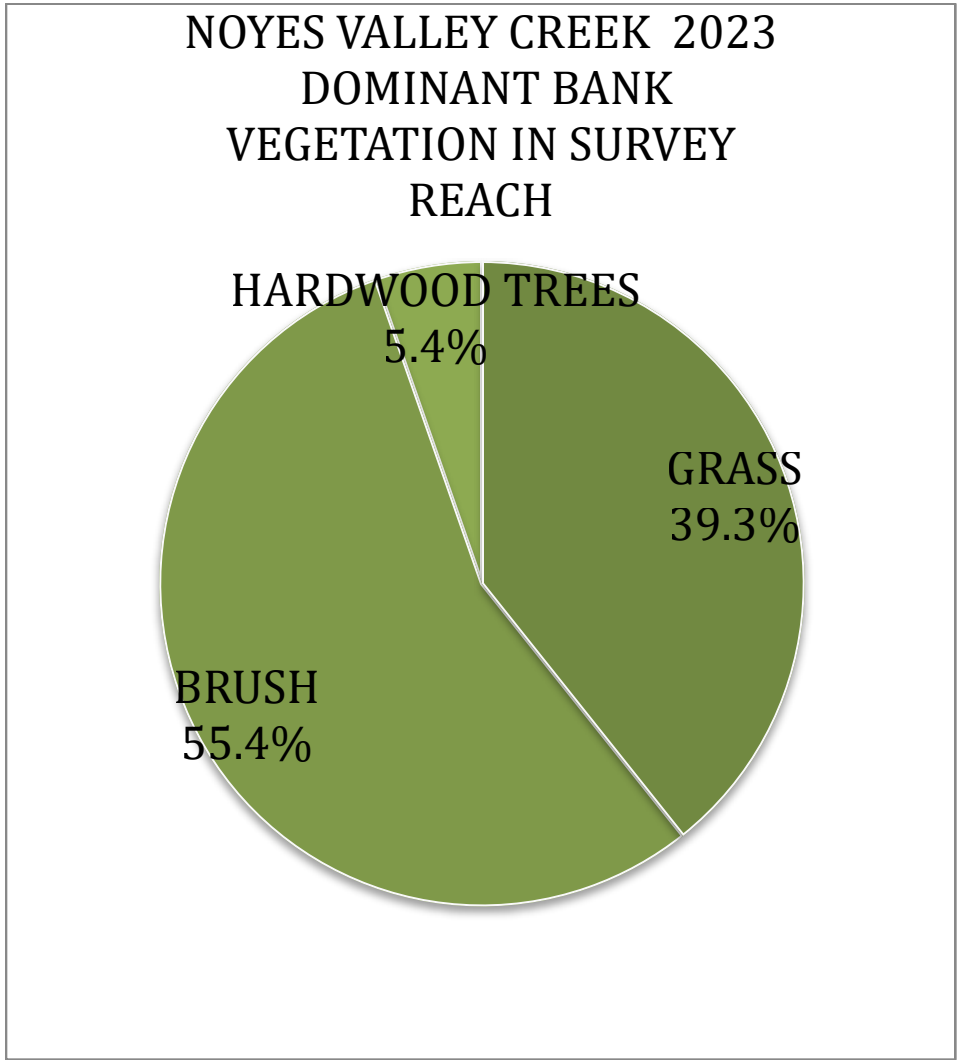
GRAPH 8


CONIFEROUS TREES
0.6%
NOYES VALLEY CREEK 2023
MEAN PERCENT CANOPY
HARDWOOD TREES
31.0%
OPEN
68.4%

GRAPH 9


BEDROCK
1.8%
NOYES VALLEY CREEK 2023
DOMINANT BANK COMPOSITION IN SURVEY REACH
COBBLE/GRAVEL
11.6%
SAND/SILT/CLAY
86.6%

GRAPH 10


NOYES VALLEY CREEK 2023
DOMINANT BANK
VEGETATION IN SURVEY
REACH
HARDWOOD TREES
5.4%
GRASS
39.3%
BRUSH
55.4%

GRAPH 11

Noyes Valley Creek @ ford Flow Tracker Measurements and stage height

All measurements

Noyes Valley Creek : 4/12/2023-4/25/2023

	Measured Discharge-Q (cfs)	Staff Gage Height								
Date	x - axis	y - axis	y/1.2892	log (y/ 1.2892)	log (y/ 1.2892)/ 0.1483	Calculated Q	difference (%)	Difference (cfs)	measurement error %	
4/12/23	5.266	1.65	1.27986348	0.107163	0.7226139	5.28	0.26%	0.014	2.2%	
4/19/23	4.311	1.6	1.24107973	0.093799	0.6324995	4.29	-0.48%	-0.020	2.3%	
4/25/23	3.607	1.56	1.21005274	0.082804	0.5583567	3.62	0.28%	0.010	2.1%