

Appendices to:

The Upper Sacramento River Anadromous Fish Habitat Restoration Project: Monitoring of Habitat Restoration Sites in the Upper Sacramento River in 2021 - 2022

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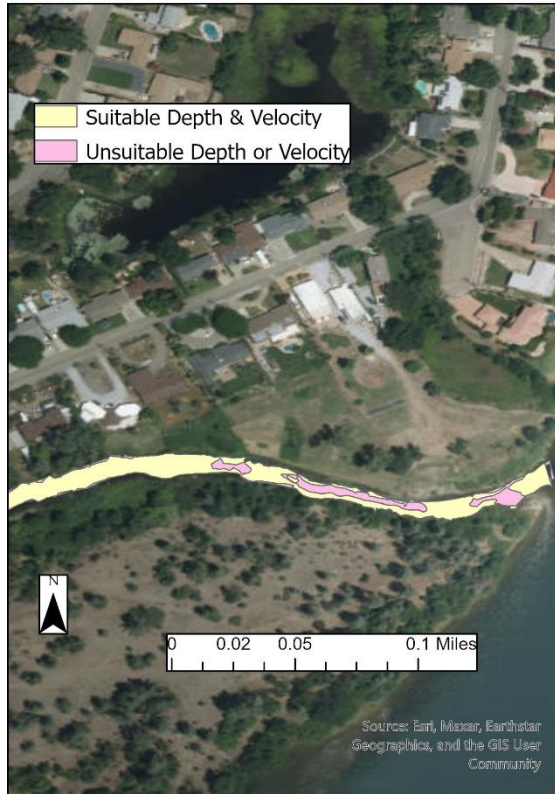
APPENDIX A: HABITAT MAPS

For details on habitat mapping procedures, refer to past monitoring reports. Each map depicts areas within side channels that meet criteria suitable for rearing juvenile salmonids in the upper Sacramento River. Maps on the left-hand side depict areas with suitable depth and velocity values (yellow), and areas of unsuitable depth or velocity (pink). Maps in the middle depict areas with suitable cover from predators (multi-colored, each color representing a distinct cover type), and areas with no suitable cover from predators (pink). Maps on the right-hand side depict areas of “optimal habitat” (light green) where both cover and depth & velocity criteria are met, areas of “suitable habitat” (light blue) where either cover or depth & velocity criteria were met, areas of unsuitable habitat (pink) where neither cover nor depth & velocity criteria were met for juvenile rearing, as well as points of fish locations observed by snorkelers (multi-colored triangle and square icons). For details on snorkeling procedures refer to past annual reports in the microhabitat-use section. Note that overlapping points were dispersed using the “disperse markers” tool in ArcGIS Pro for ease of viewing, so some fish locations might deviate slightly from actual observed location.

Shea Island

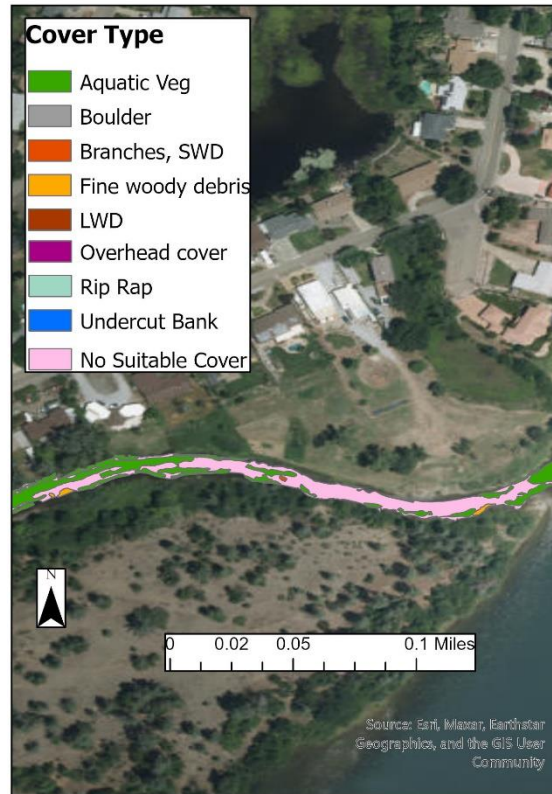
**Pre Restoration Habitat Mapping: Shea Island (Upper)
Keswick Release 6,800 CFS**

Depth & Velocity Mapping



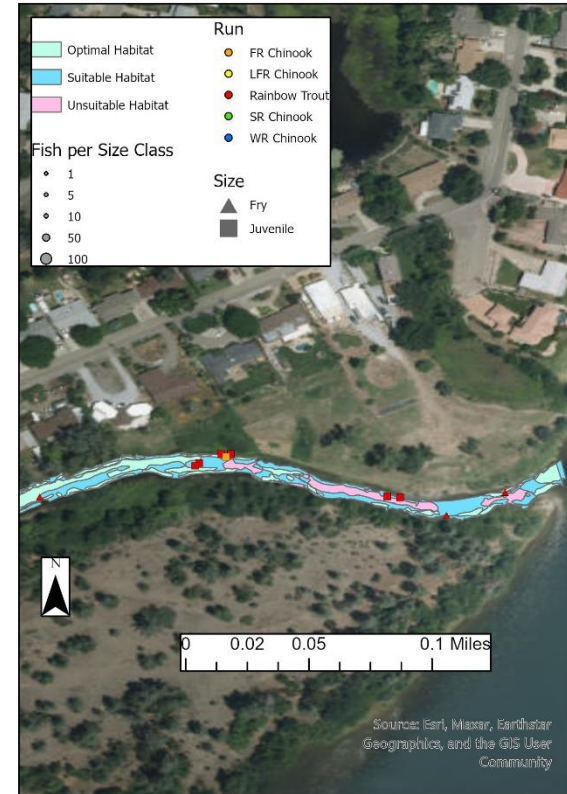
*Dates mapped: 9-1-21

Cover from Predators



*Dates mapped: 9-1-21, & 9-2-21

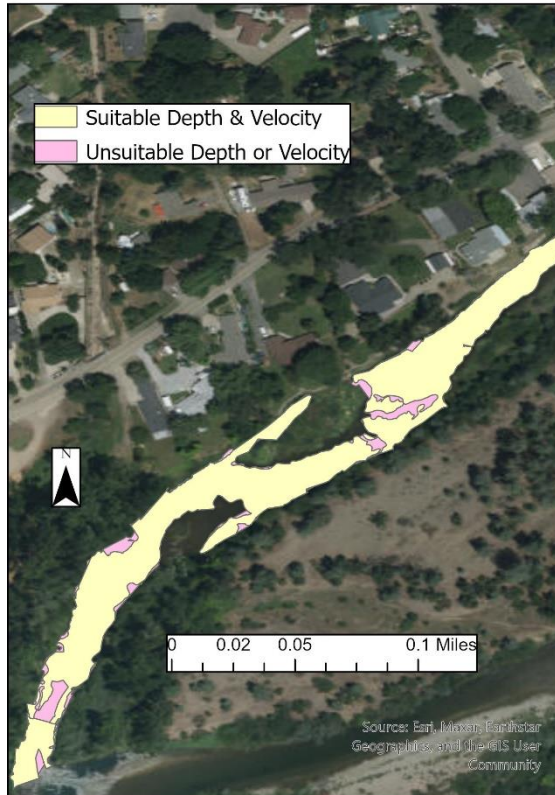
Fish Locations Among Optimal & Suitable Habitat



*Dates snorkeled: 6-24-21 & 6-28-21
*Keswick flow during snorkel: 8300 CFS

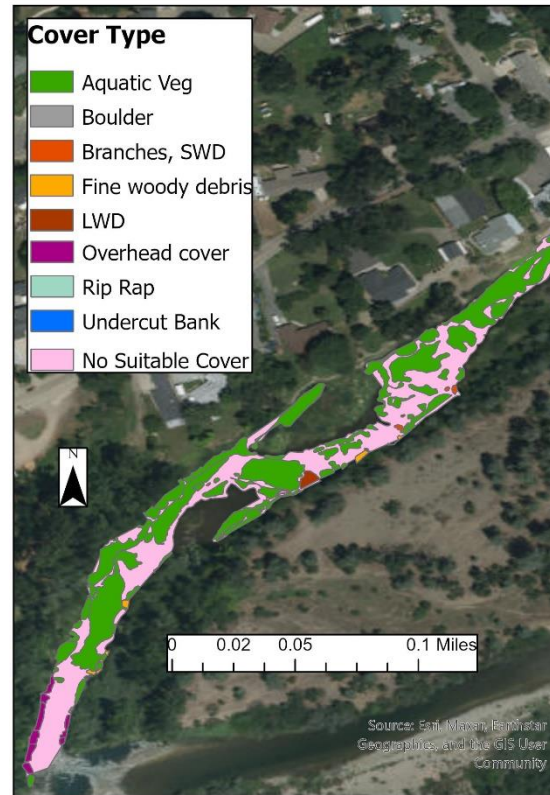
Pre Restoration Habitat Mapping: Shea Island (Lower) Keswick Release 6,800 CFS

Depth & Velocity Mapping



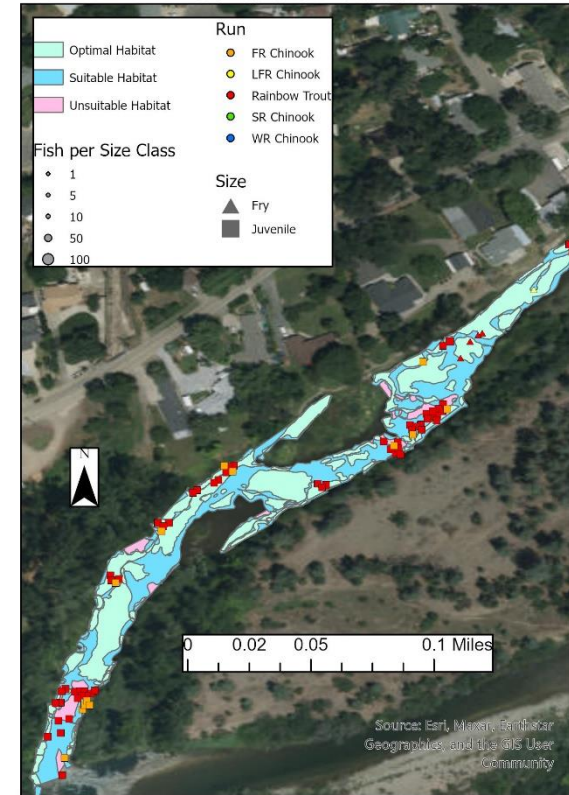
*Dates mapped: 9-1-21

Cover from Predators



*Dates mapped: 9-1-21, & 9-2-21

Fish Locations Among Optimal & Suitable Habitat

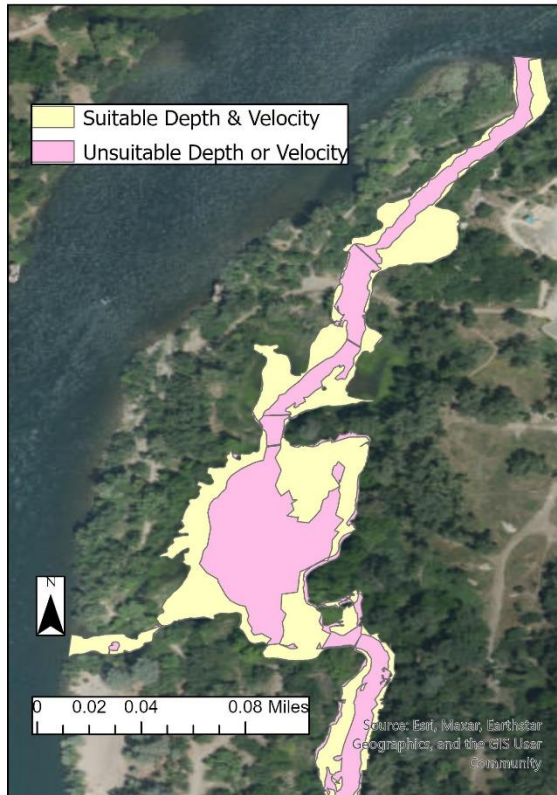


*Dates snorkeled: 6-24-21 & 6-28-21
*Keswick flow during snorkel: 8300 CFS

South Cypress

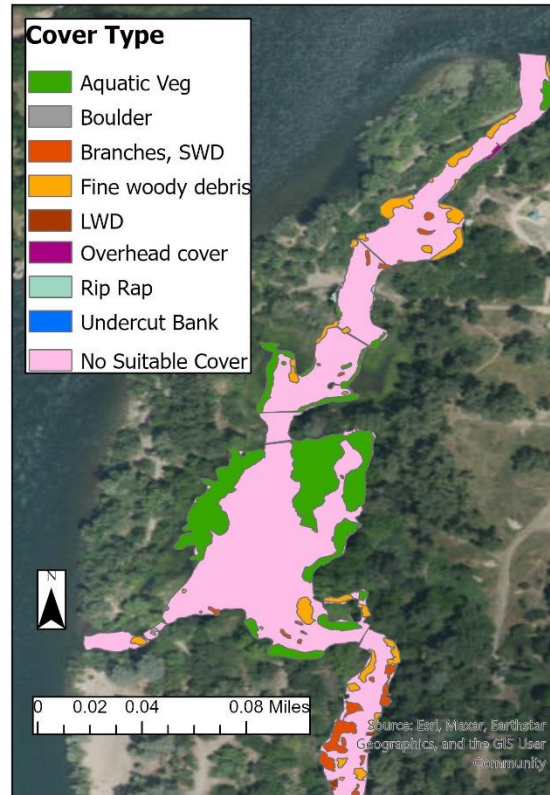
**Post Restoration Habitat Mapping: South Cypress (Upper)
Keswick Release 3,250 CFS**

Depth & Velocity Mapping



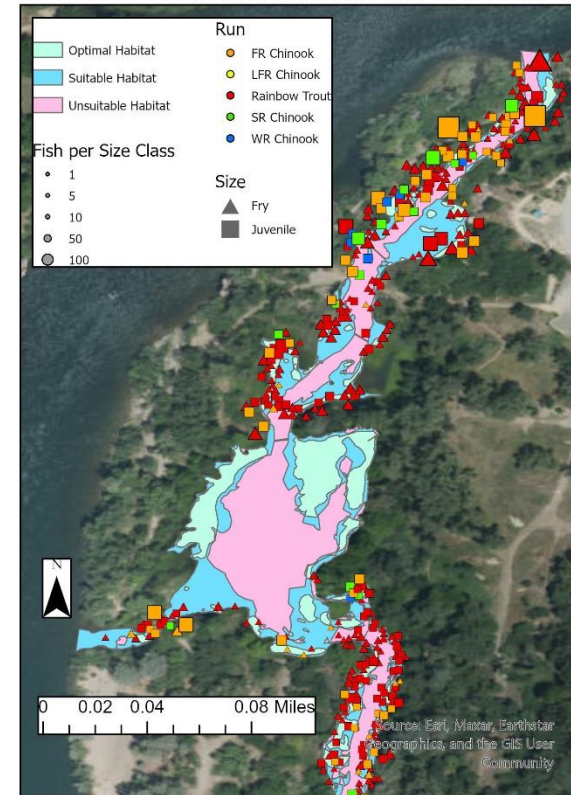
*Dates mapped: 12-30-21, 1-3-22, & 1-4-22

Cover from Predators



*Dates mapped: 3-10-22 & 3-14-22

Fish Locations Among Optimal & Suitable Habitat

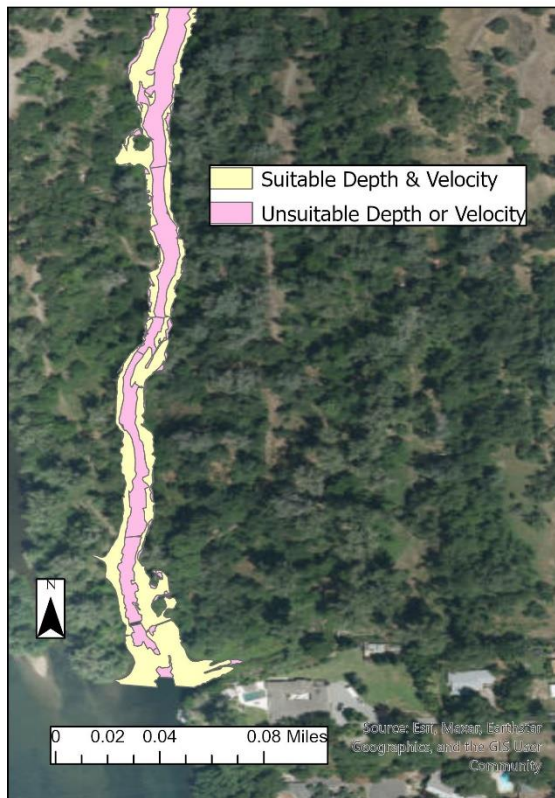


*Dates snorkeled: 4-7-22 through 4-18-22

*Keswick flow during snorkel: 3250 CFS

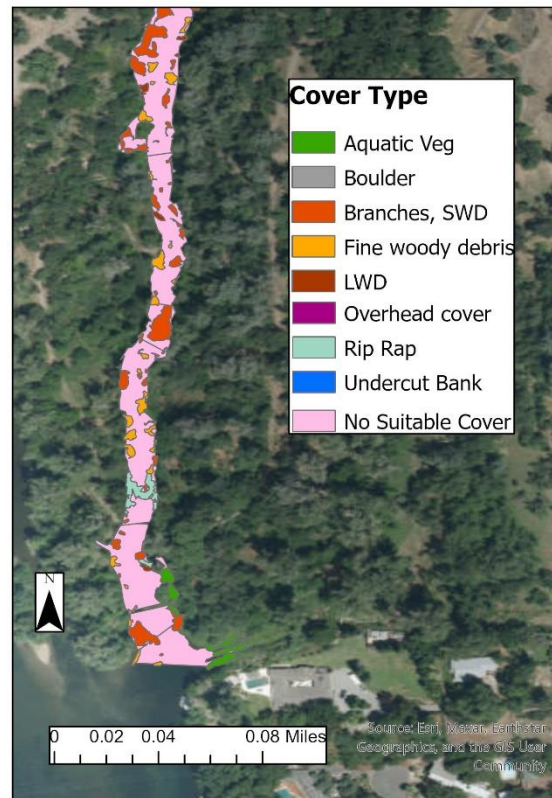
Post Restoration Habitat Mapping: South Cypress (Lower) Keswick Release 3,250 CFS

Depth & Velocity Mapping



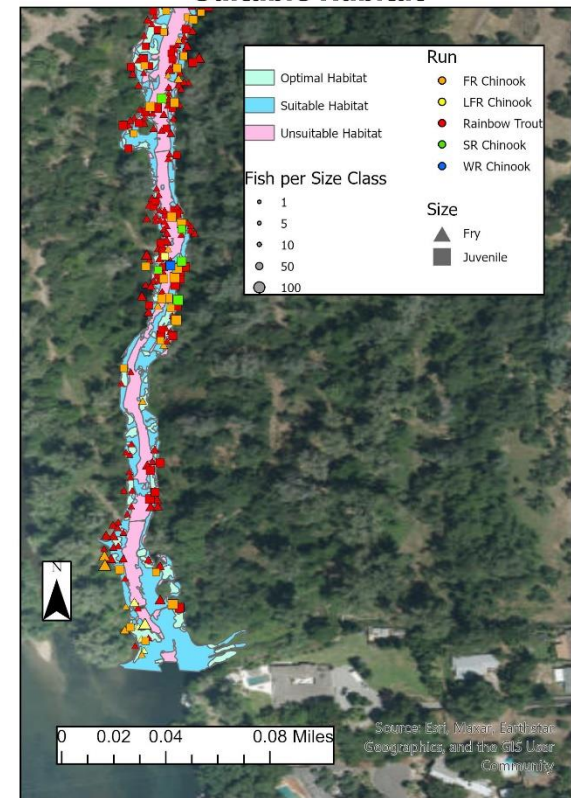
*Dates mapped: 12-30-21, 1-3-22, & 1-4-22

Cover from Predators



*Dates mapped: 3-10-22 & 3-14-22

Fish Locations Among Optimal & Suitable Habitat

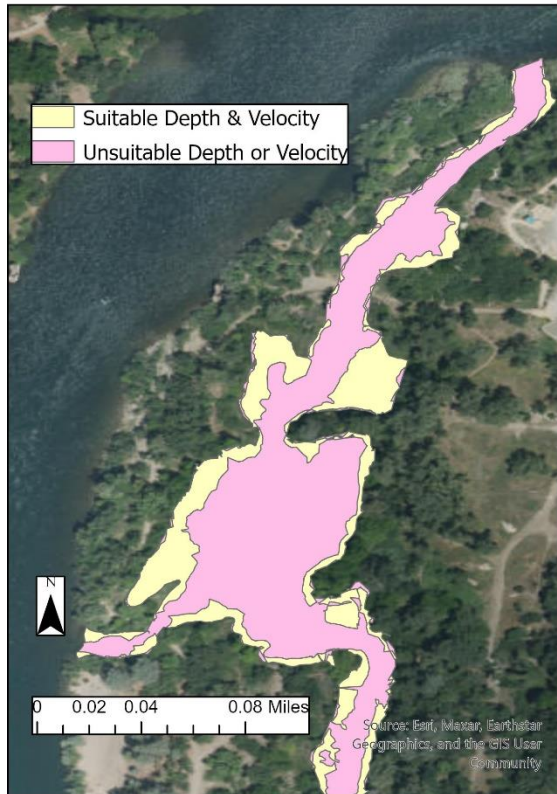


*Dates snorkeled: 4-7-22 through 4-18-22

*Keswick flow during snorkel: 3250 CFS

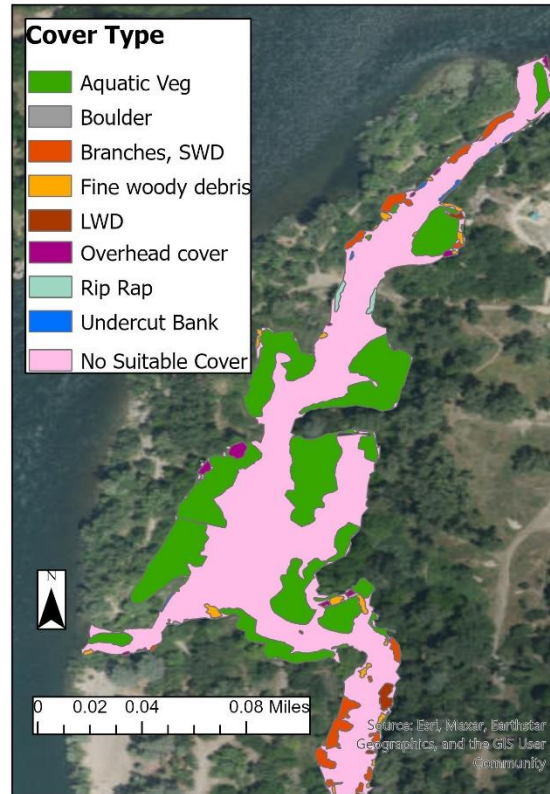
Post Restoration Habitat Mapping: South Cypress (Upper) Keswick Release 9,000 CFS

Depth & Velocity Mapping



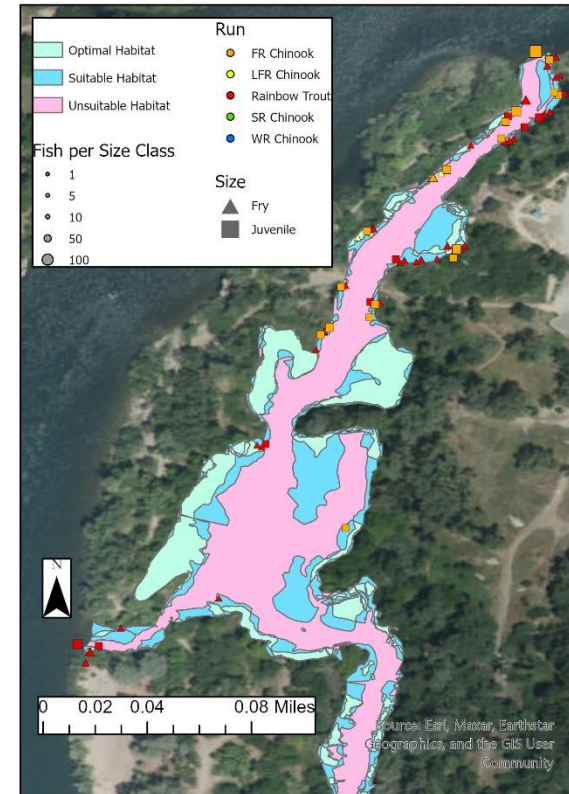
*Dates mapped: 7-28-21, 7-29-21, 8-2-21, 8-3-21, & 8-4-21

Cover from Predators



*Dates mapped: 7-29-21, 8-2-21, 8-3-21, & 8-4-21

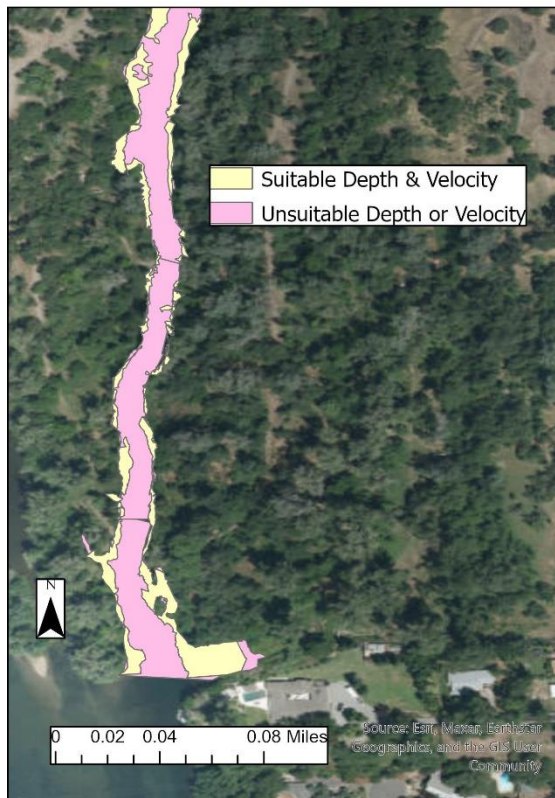
Fish Locations Among Optimal & Suitable Habitat



*Dates snorkeled: 5-20-21, & 5-25-21
*Keswick flow during snorkel: 8600 CFS

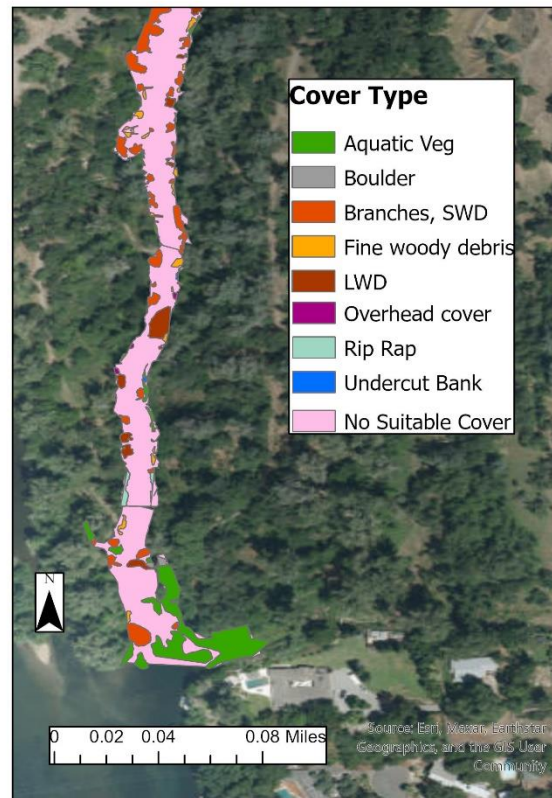
Post Restoration Habitat Mapping: South Cypress (Lower) Keswick Release 9,000 CFS

Depth & Velocity Mapping



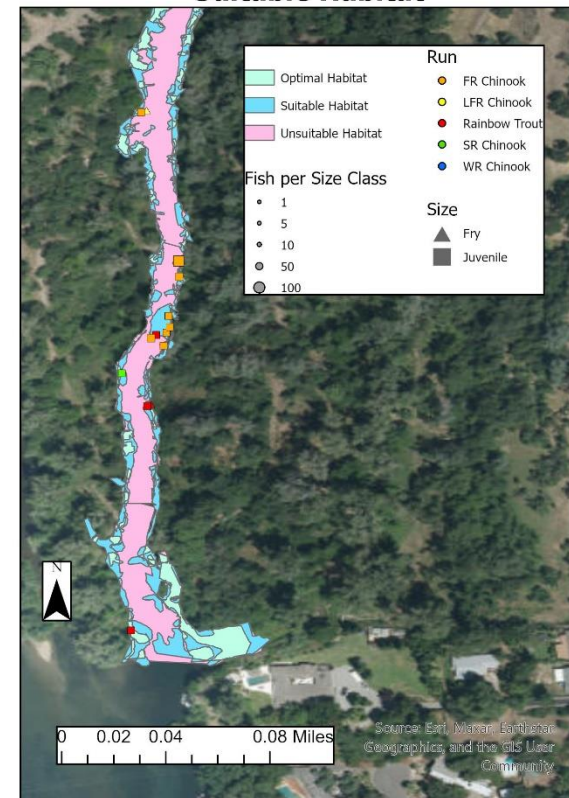
*Dates mapped: 7-28-21, 7-29-21, 8-2-21, 8-3-21, & 8-4-21

Cover from Predators



*Dates mapped: 7-29-21, 8-2-21, 8-3-21, & 8-4-21

Fish Locations Among Optimal & Suitable Habitat



*Dates snorkeled: 5-20-21, & 5-25-21
*Keswick flow during snorkel: 8600 CFS

Rio Vista

**Post Restoration Habitat Mapping: Rio Vista (Upper)
Keswick Release 3,250 CFS**

Depth & Velocity Mapping



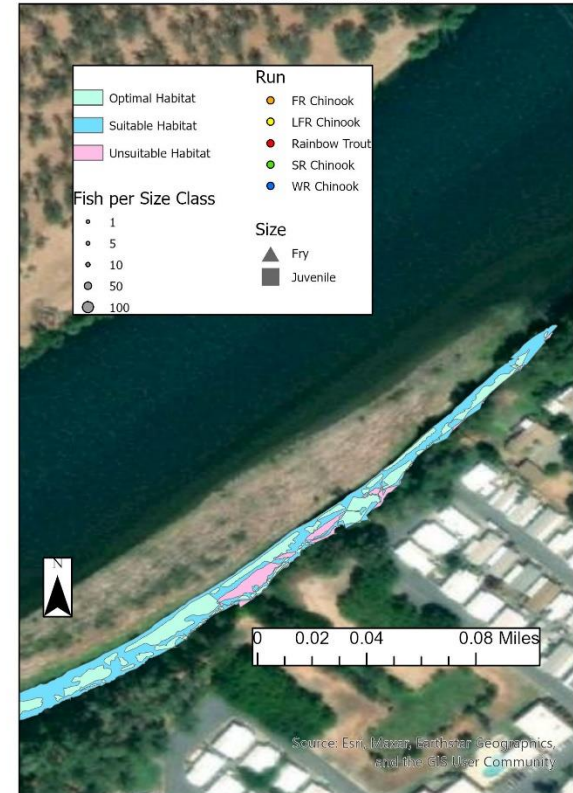
*Dates mapped: 1-13-22

Cover from Predators



*Dates mapped: 2-7-22

Fish Locations Among Optimal & Suitable Habitat



*Dates snorkeled: 5-6-21, & 5-19-21
*Keswick flow during snorkel: 8600 CFS

Post Restoration Habitat Mapping: Rio Vista (Middle) Keswick Release 3,250 CFS

Depth & Velocity Mapping



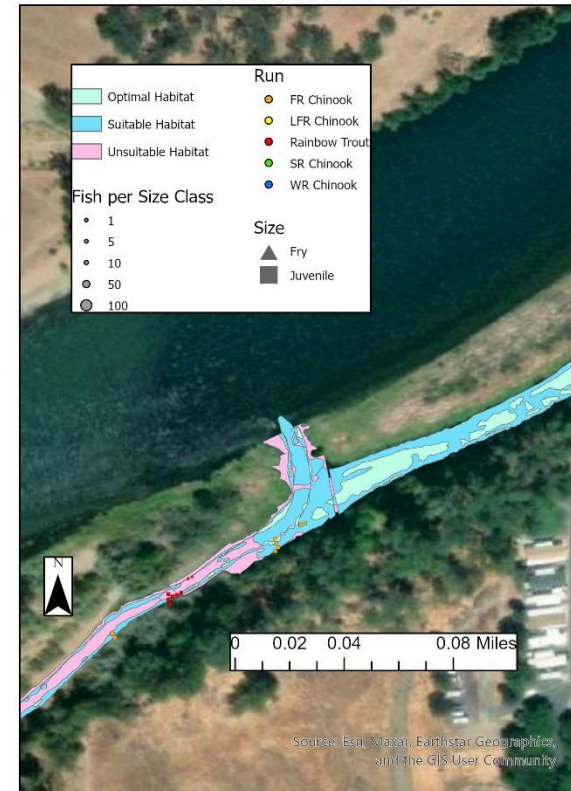
*Dates mapped: 1-13-22

Cover from Predators



*Dates mapped: 2-7-22

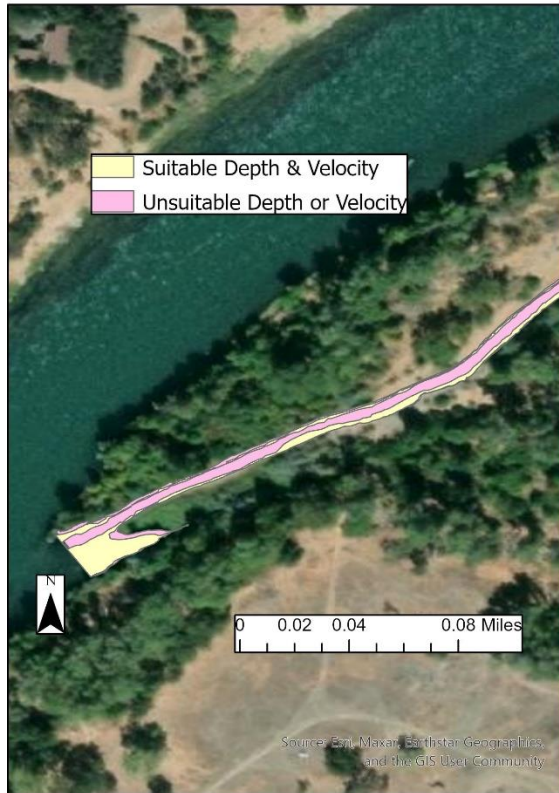
Fish Locations Among Optimal & Suitable Habitat



*Dates snorkeled: 5-6-21, & 5-19-21
*Keswick flow during snorkel: 8600 CFS

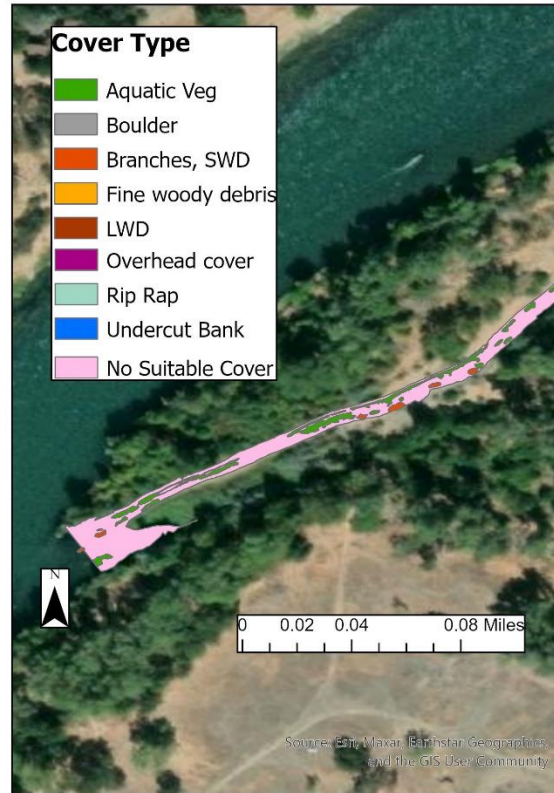
Post Restoration Habitat Mapping: Rio Vista (Lower) Keswick Release 3,250 CFS

Depth & Velocity Mapping



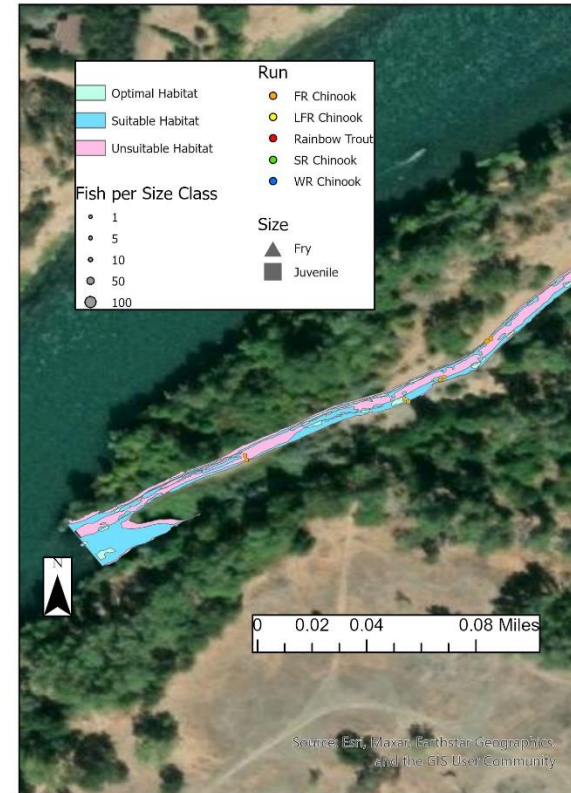
*Dates mapped: 1-13-22

Cover from Predators



*Dates mapped: 2-7-22

Fish Locations Among Optimal & Suitable Habitat



*Dates snorkeled: 5-6-21, & 5-19-21
*Keswick flow during snorkel: 8600 CFS

Post Restoration Habitat Mapping: Rio Vista (Upper) Keswick Release 8,800 CFS

Depth & Velocity Mapping



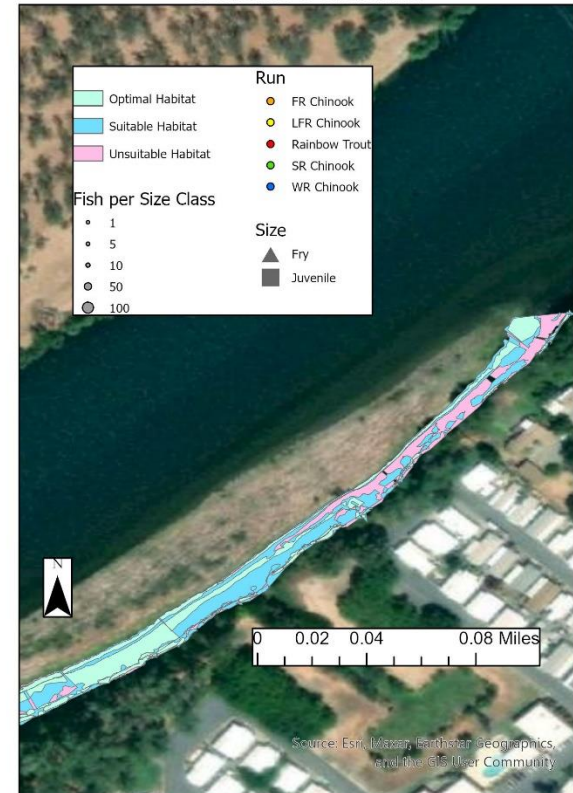
*Dates mapped: 6-29-21, 6-30-21, 7-1-21, 7-5-21, & 7-6-21

Cover from Predators



*Dates mapped: 6-29-21, 6-30-21, 7-1-21, 7-5-21, & 7-6-21

Fish Locations Among Optimal & Suitable Habitat



*Dates snorkeled: 5-6-21, & 5-19-21
*Keswick flow during snorkel: 8600 CFS

Post Restoration Habitat Mapping: Rio Vista (Middle) Keswick Release 8,800 CFS

Depth & Velocity Mapping



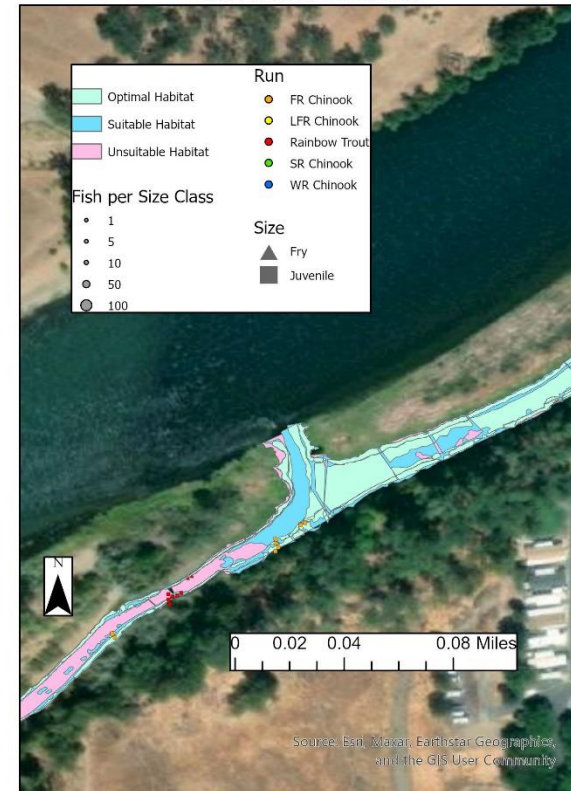
*Dates mapped: 6-29-21, 6-30-21, 7-1-21, 7-5-21, & 7-6-21

Cover from Predators



*Dates mapped: 6-29-21, 6-30-21, 7-1-21, 7-5-21, & 7-6-21

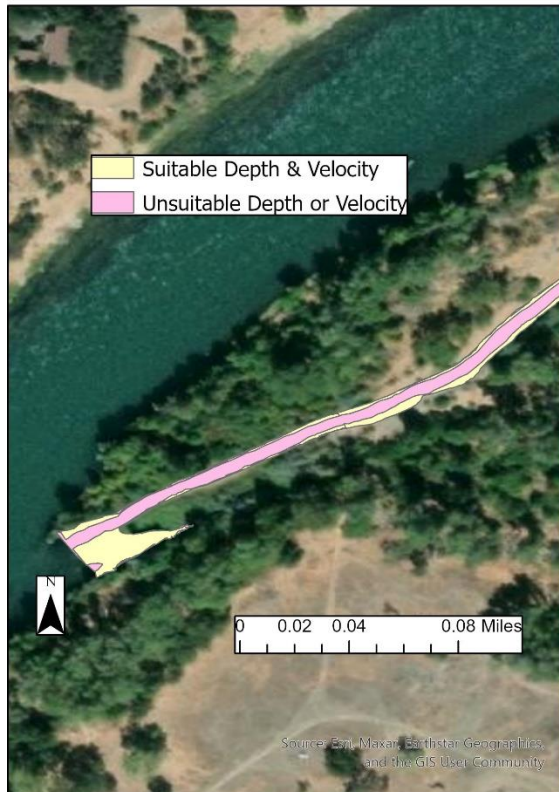
Fish Locations Among Optimal & Suitable Habitat



*Dates snorkeled: 5-6-21, & 5-19-21
*Keswick flow during snorkel: 8600 CFS

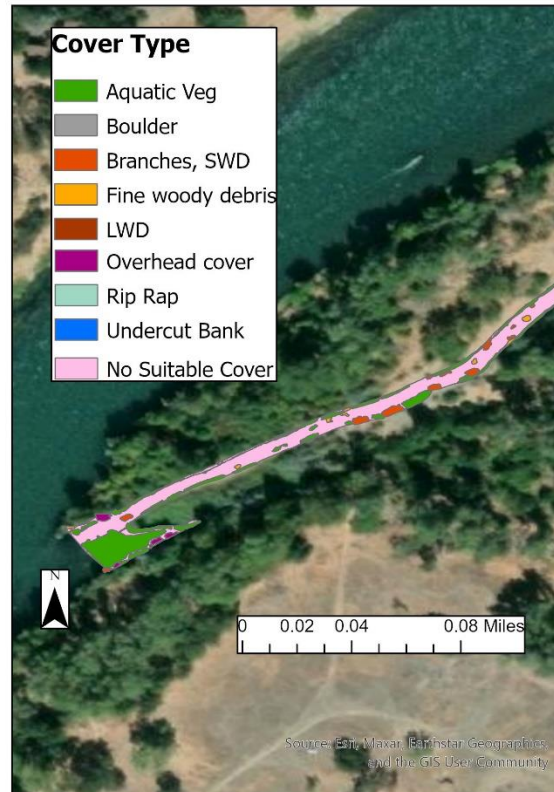
Post Restoration Habitat Mapping: Rio Vista (Lower) Keswick Release 8,800 CFS

Depth & Velocity Mapping



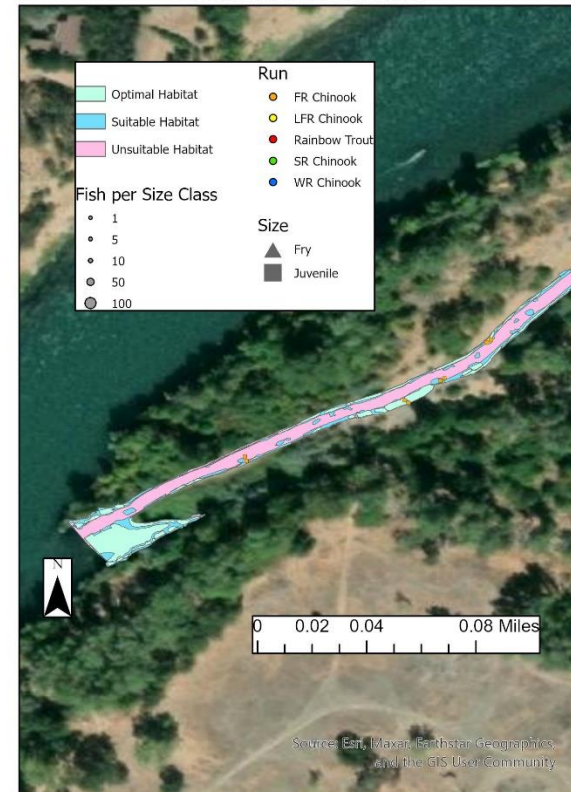
*Dates mapped: 6-29-21, 6-30-21, 7-1-21, 7-5-21, & 7-6-21

Cover from Predators



*Dates mapped: 6-29-21, 6-30-21, 7-1-21, 7-5-21, & 7-6-21

Fish Locations Among Optimal & Suitable Habitat

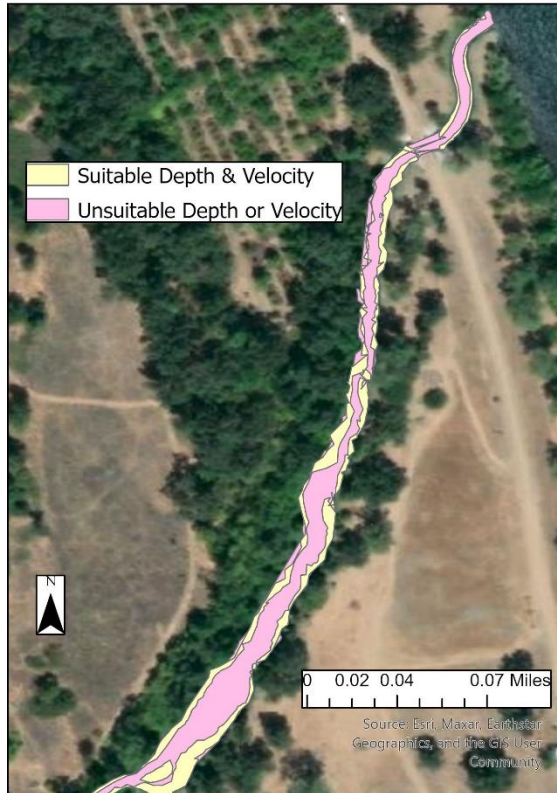


*Dates snorkeled: 5-6-21, & 5-19-21
*Keswick flow during snorkel: 8600 CFS

Reading Island

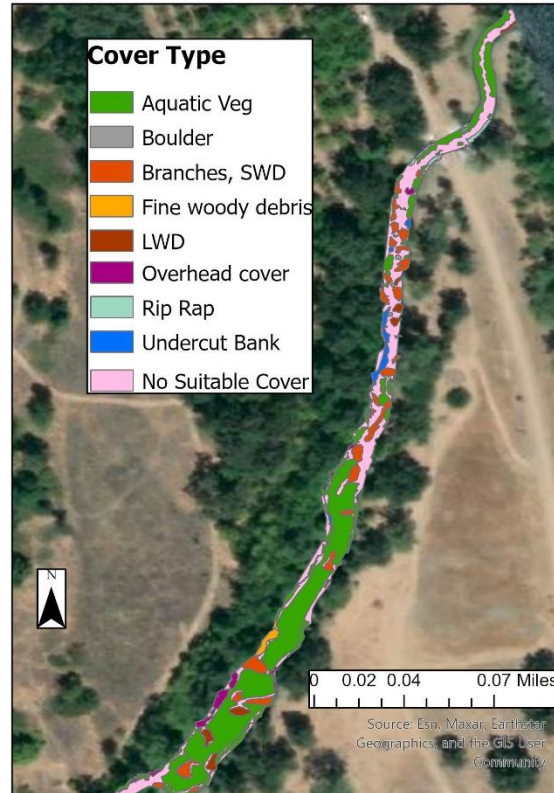
**Post Restoration Site Habitat Mapping: Reading Island (Upper)
Keswick Release 6,800 CFS**

Depth & Velocity Mapping



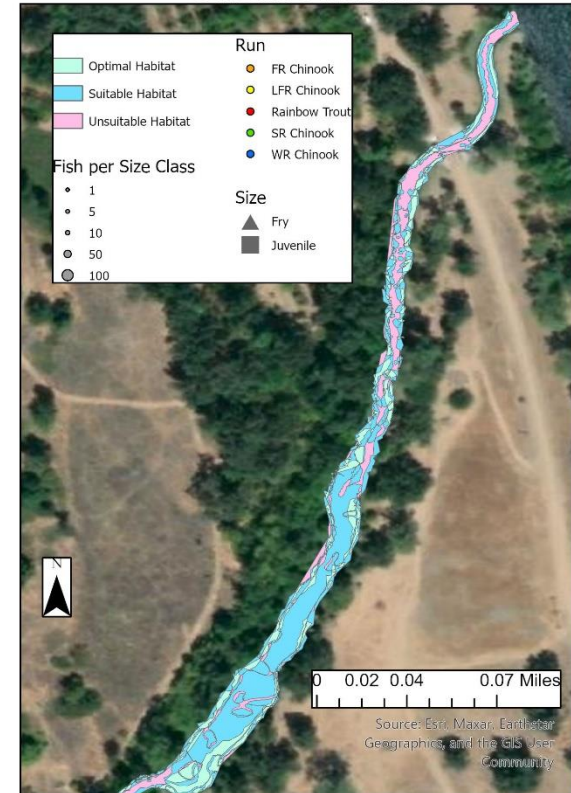
*Dates mapped: 9-8-21, 9-9-21, & 9-10-21

Cover from Predators



*Dates mapped: 9-8-21, 9-9-21, 9-10-21, & 9-15-21

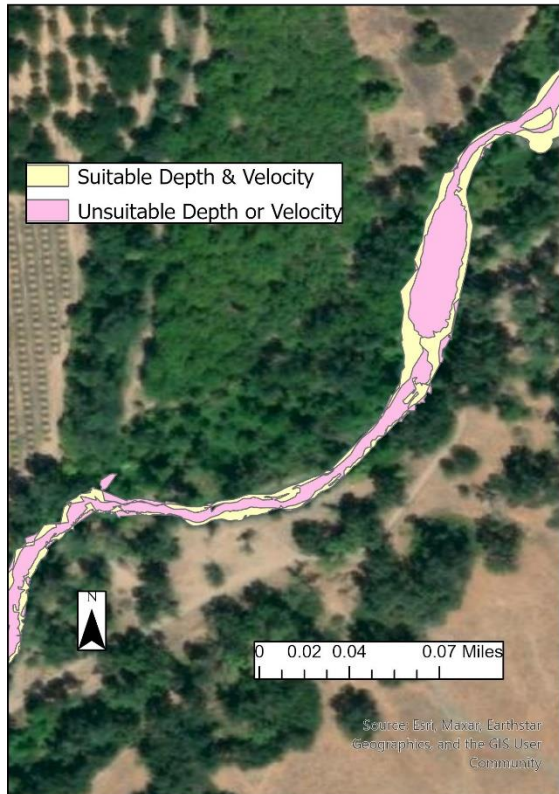
Fish Locations Among Optimal & Suitable Habitat



*Dates snorkeled: 10-12-21
*Keswick flow during snorkel: 6800 CFS

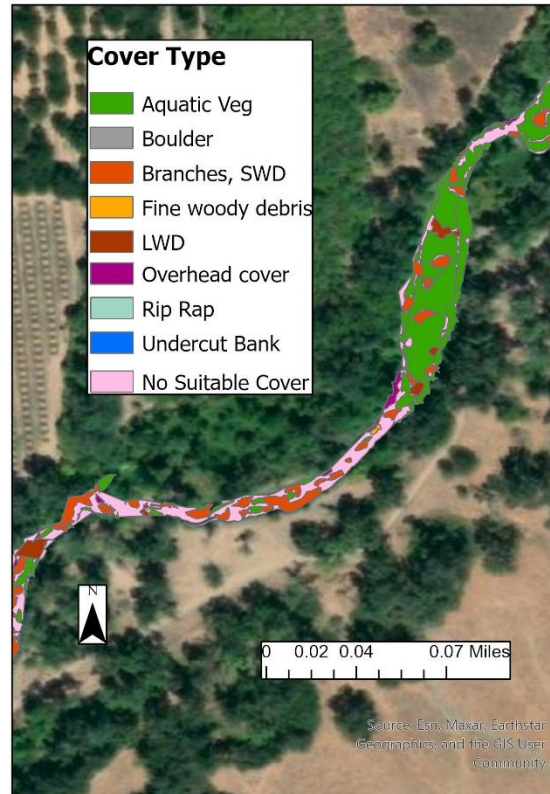
Post Restoration Site Habitat Mapping: Reading Island (Middle) Keswick Release 6,800 CFS

Depth & Velocity Mapping



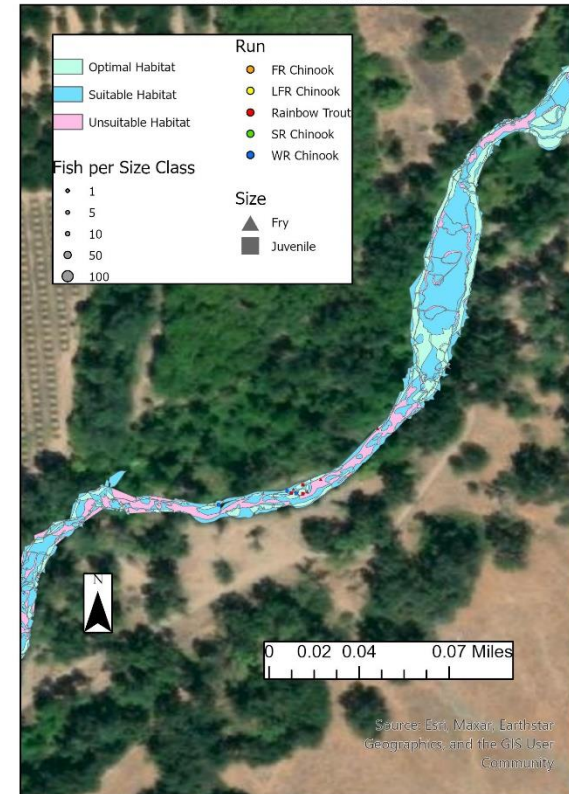
*Dates mapped: 9-8-21, 9-9-21, & 9-10-21

Cover from Predators



*Dates mapped: 9-8-21, 9-9-21, 9-10-21, & 9-15-21

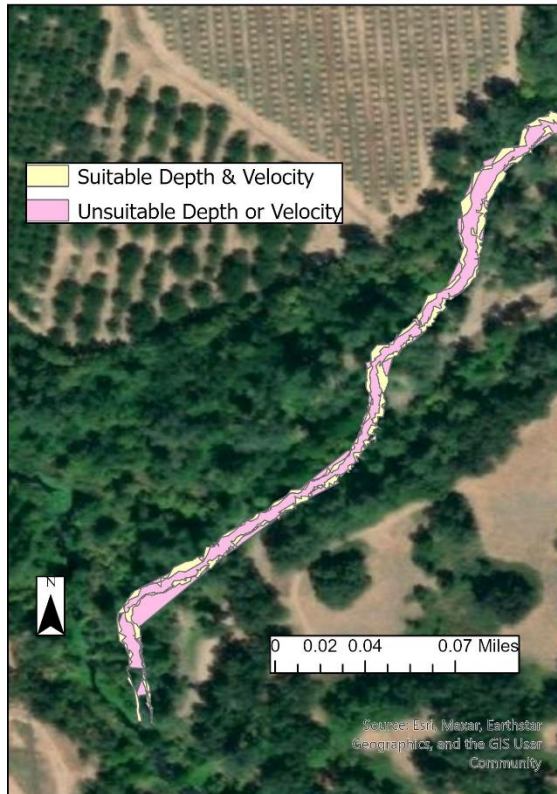
Fish Locations Among Optimal & Suitable Habitat



*Dates snorkeled: 10-12-21
*Keswick flow during snorkel: 6800 CFS

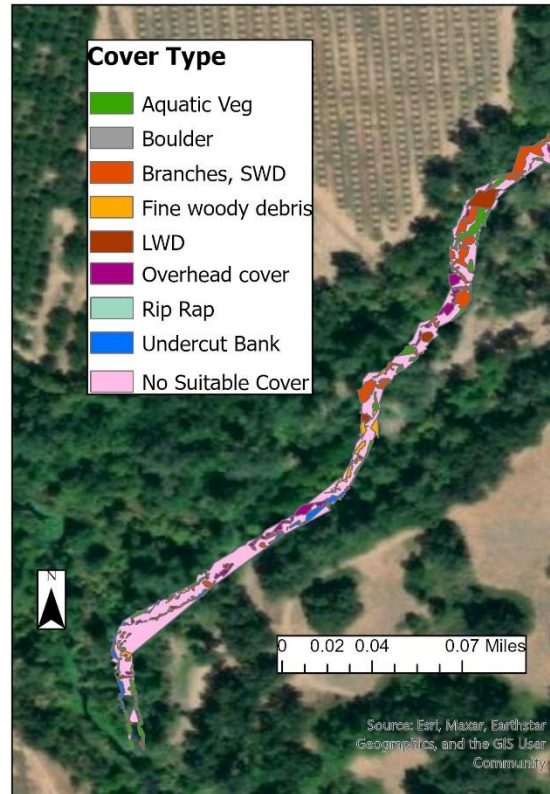
Post Restoration Site Habitat Mapping: Reading Island (Lower) Keswick Release 6,800 CFS

Depth & Velocity Mapping



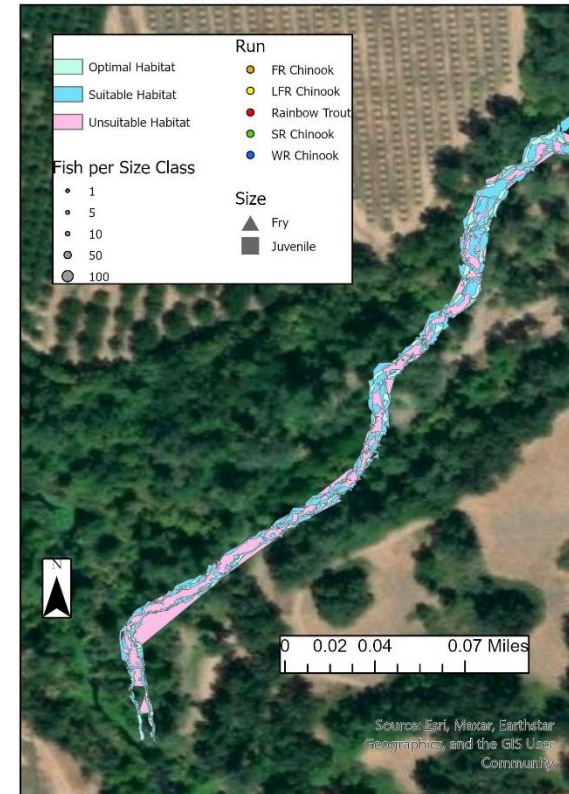
*Dates mapped: 9-8-21, 9-9-21, & 9-10-21

Cover from Predators



*Dates mapped: 9-8-21, 9-9-21, 9-10-21, & 9-15-21

Fish Locations Among Optimal & Suitable Habitat

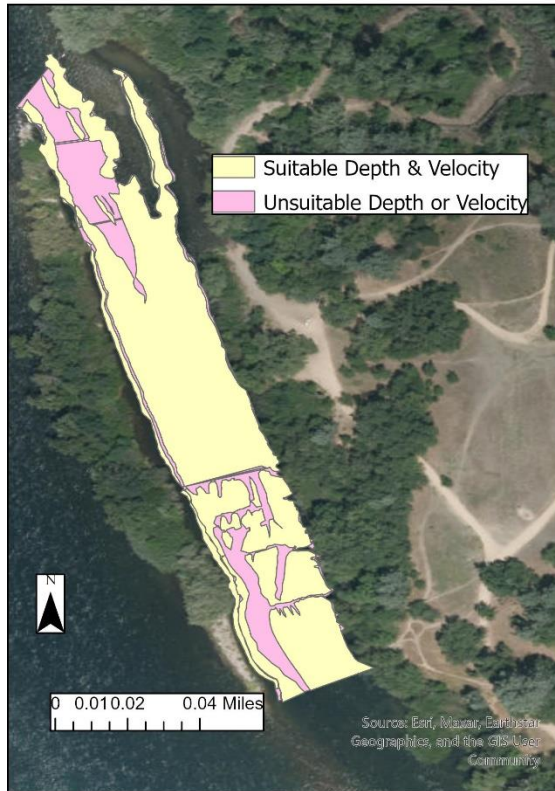


*Dates snorkeled: 10-12-21
*Keswick flow during snorkel: 6800 CFS

Painters

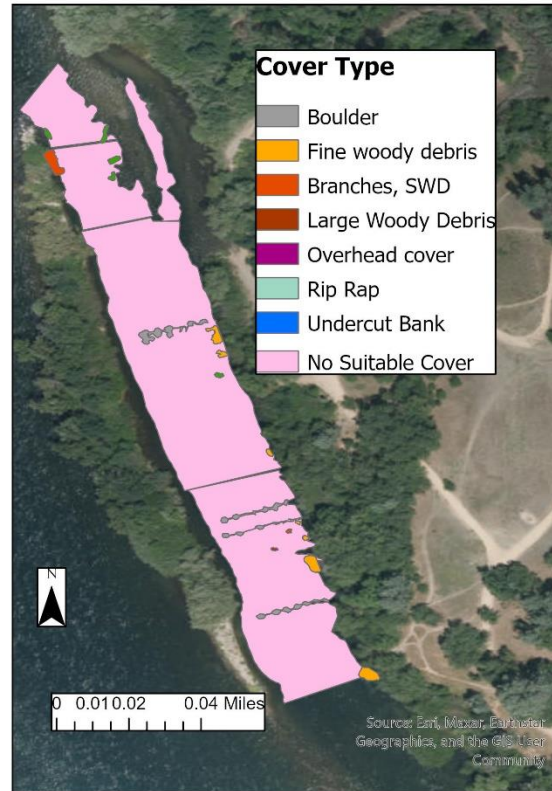
**Post Restoration Habitat Mapping: Painters
Keswick Release 3,250 CFS**

Depth & Velocity Mapping



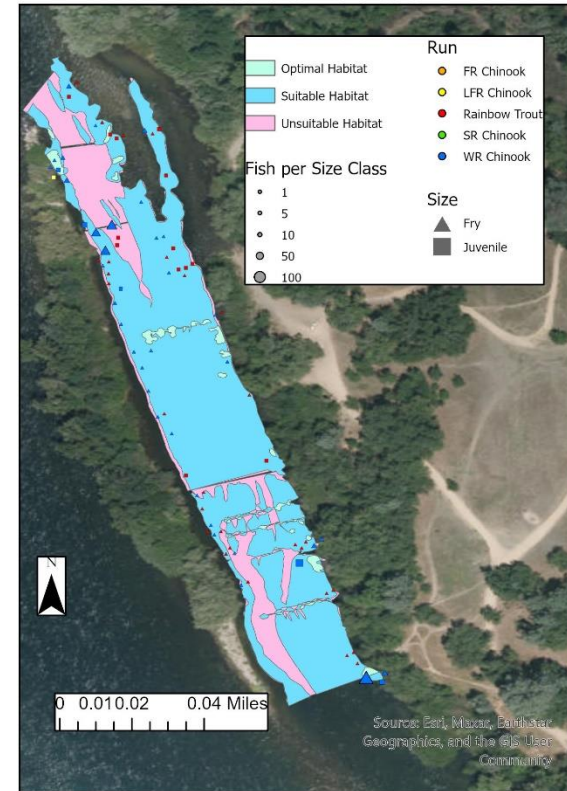
*Dates mapped: 12-28-21

Cover from Predators



*Dates mapped: 3-8-22

Fish Locations Among Optimal & Suitable Habitat

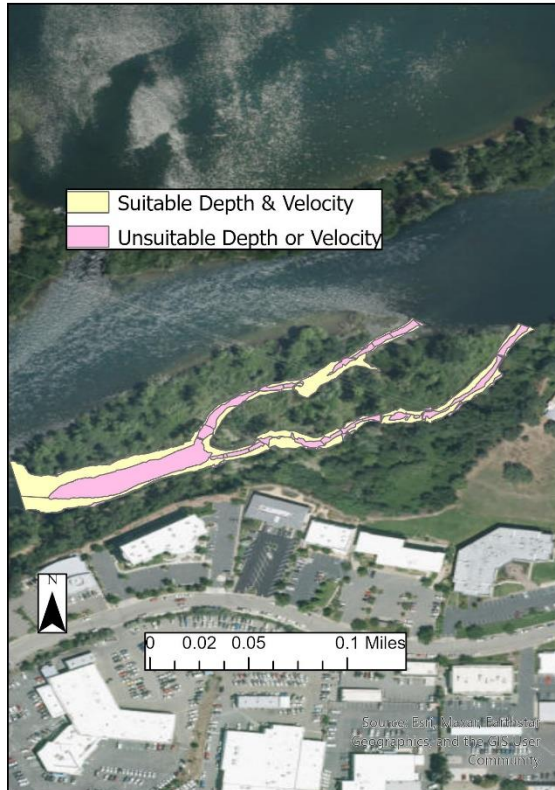


*Dates snorkeled: 9-19-22, 9-22-22, & 9-26-22
*Keswick flow during snorkel: 3600 CFS

North Cypress

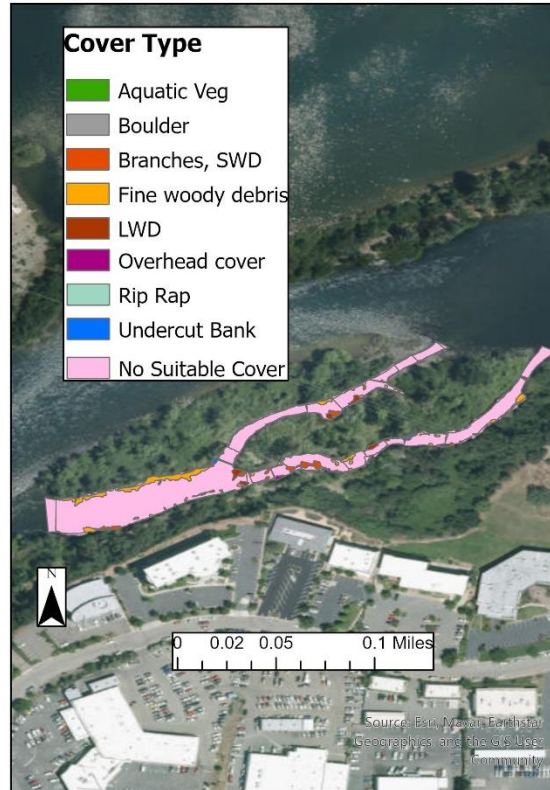
**Post Restoration Habitat Mapping: North Cypress (Upper)
Keswick Release 3,250 CFS**

Depth & Velocity Mapping



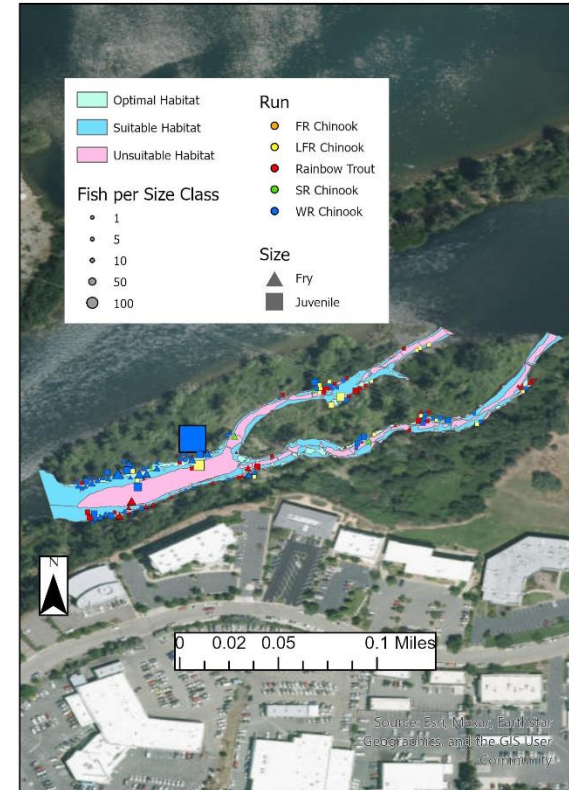
*Dates mapped: 12-29-21

Cover from Predators



*Dates mapped: 3-17-22, & 3-21-22

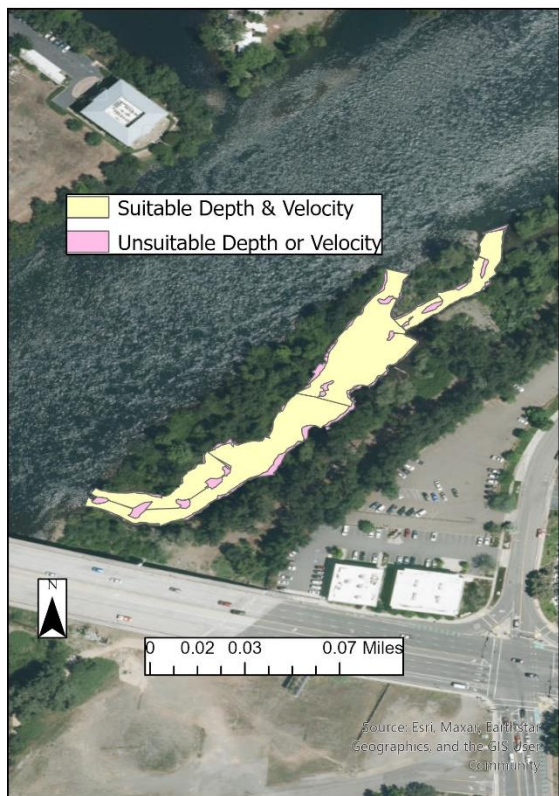
Fish Locations Among Optimal & Suitable Habitat



*Dates snorkeled: 10-6-21, 10-7-21, 10-13-21, & 10-14-21 Keswick flow during snorkel: 4100 CFS

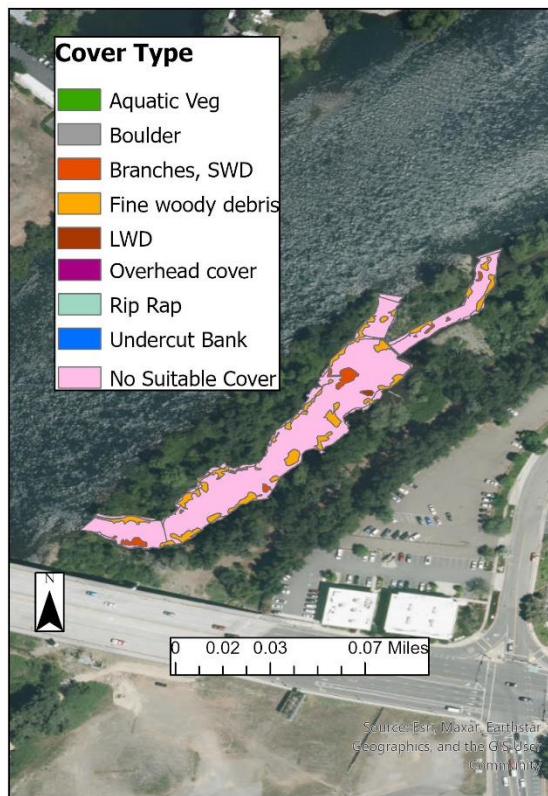
Post Restoration Habitat Mapping: North Cypress (Lower) Keswick Release 3,250 CFS

Depth & Velocity Mapping



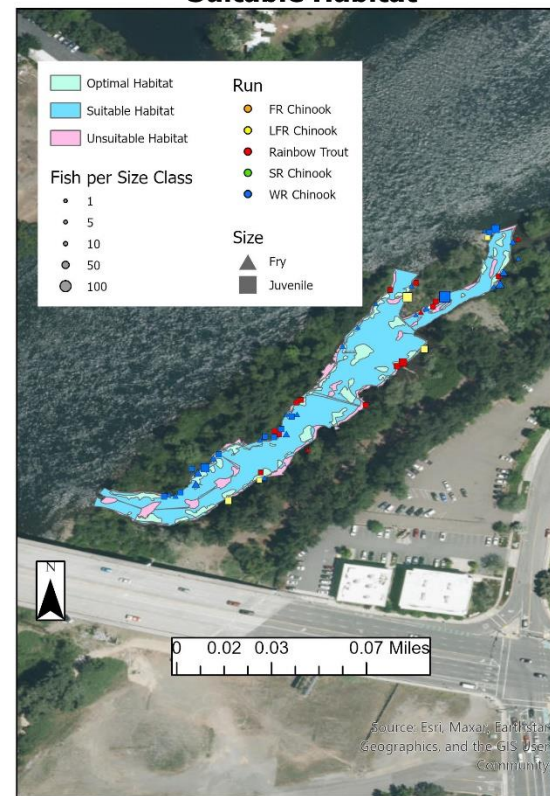
*Dates mapped: 12-29-21

Cover from Predators



*Dates mapped: 3-17-22, & 3-21-22

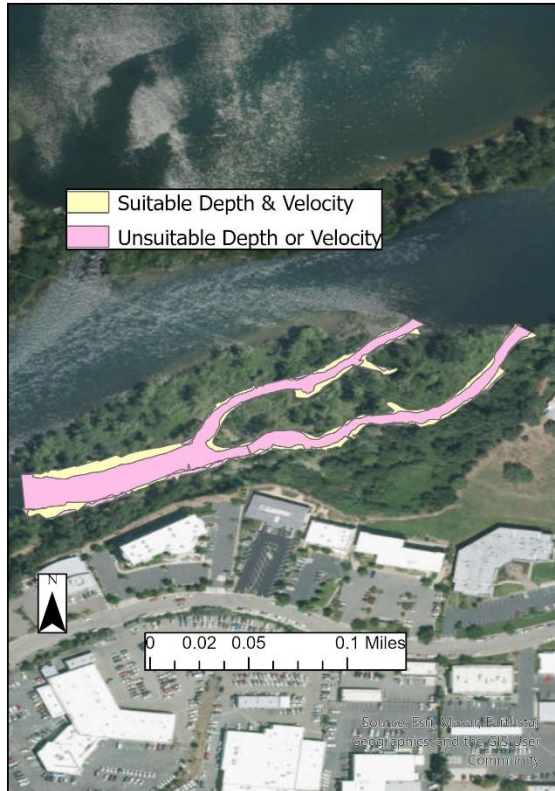
Fish Locations Among Optimal & Suitable Habitat



*Dates snorkeled: 10-6-21, 10-7-21, 1-13-21, & 10-14-21 Keswick flow during snorkel: 4100 CFS

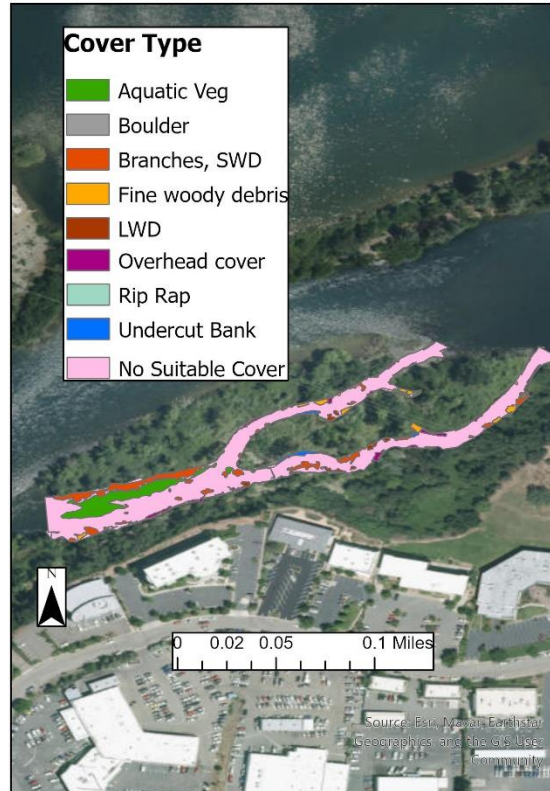
Post Restoration Habitat Mapping: North Cypress (Upper) Keswick Release 6,900 CFS

Depth & Velocity Mapping



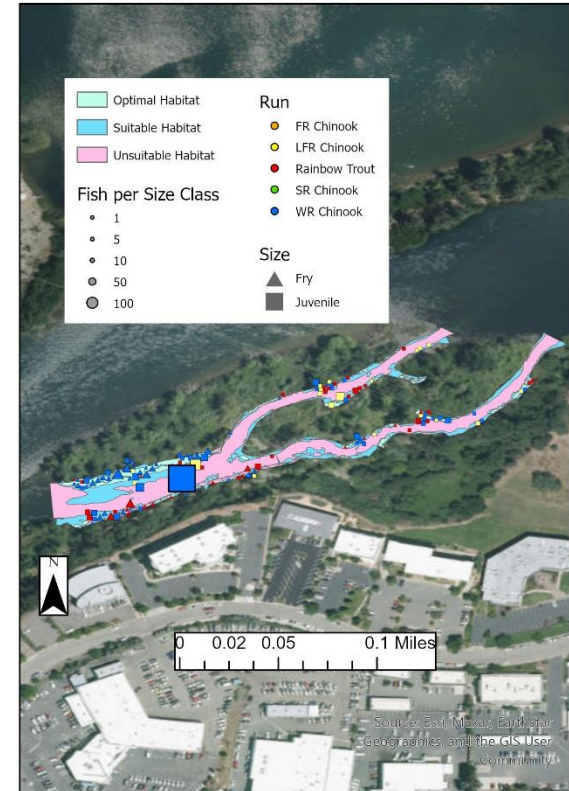
*Dates mapped: 9-29-21, & 9-30-21

Cover from Predators



*Dates mapped: 9-29-21, 9-30-21, & 10-4-21

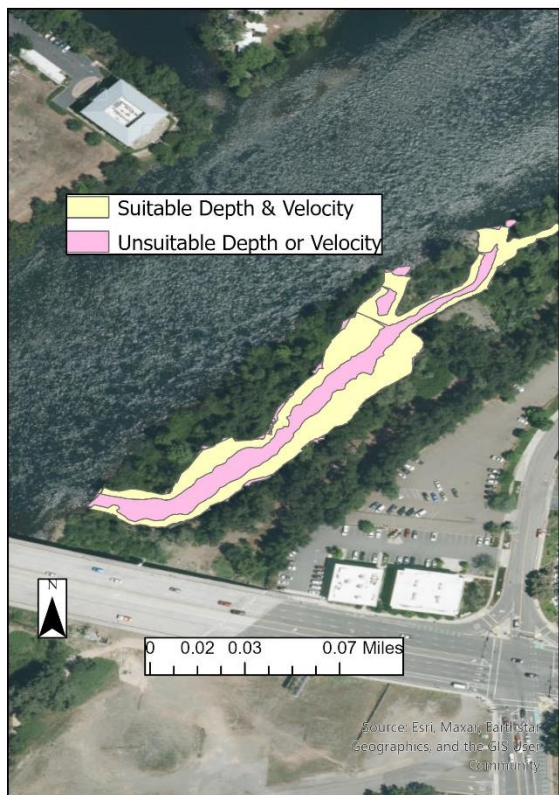
Fish Locations Among Optimal & Suitable Habitat



*Dates snorkeled: 10-6-21, 10-7-21, 10-13-21, & 10-14-21 Keswick flow during snorkel: 6800 CFS

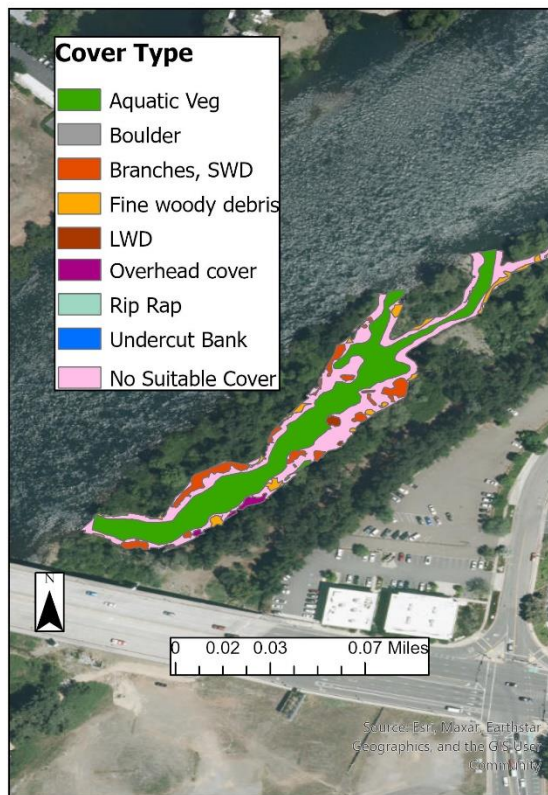
Post Restoration Habitat Mapping: North Cypress (Lower) Keswick Release 6,900 CFS

Depth & Velocity Mapping



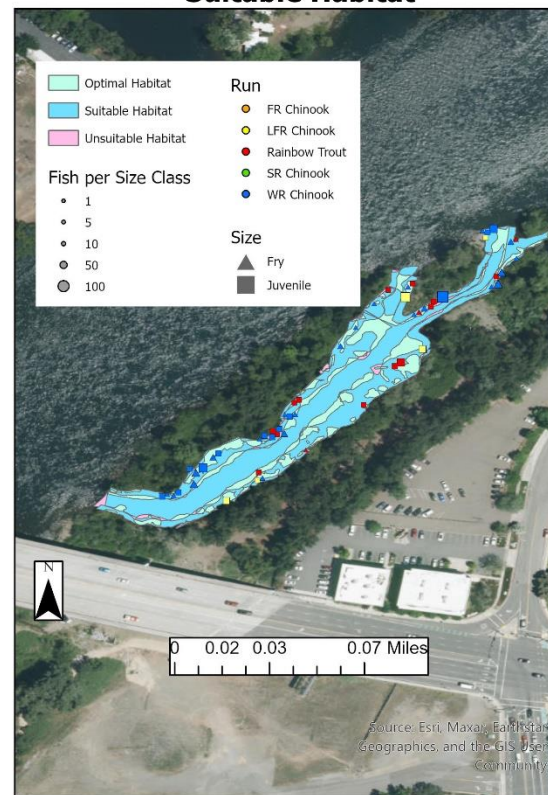
*Dates mapped: 9-29-21, & 9-30-21

Cover from Predators



*Dates mapped: 9-29-21, 9-30-21, & 10-4-21

Fish Locations Among Optimal & Suitable Habitat



*Dates snorkeled: 10-6-21, 10-7-21, 10-13-21, & 10-14-21 Keswick flow during snorkel: 6800 CFS

Lake California

**Post Restoration Habitat Mapping: Lake California (Upper)
Keswick Release 3,250 CFS**

Depth & Velocity Mapping



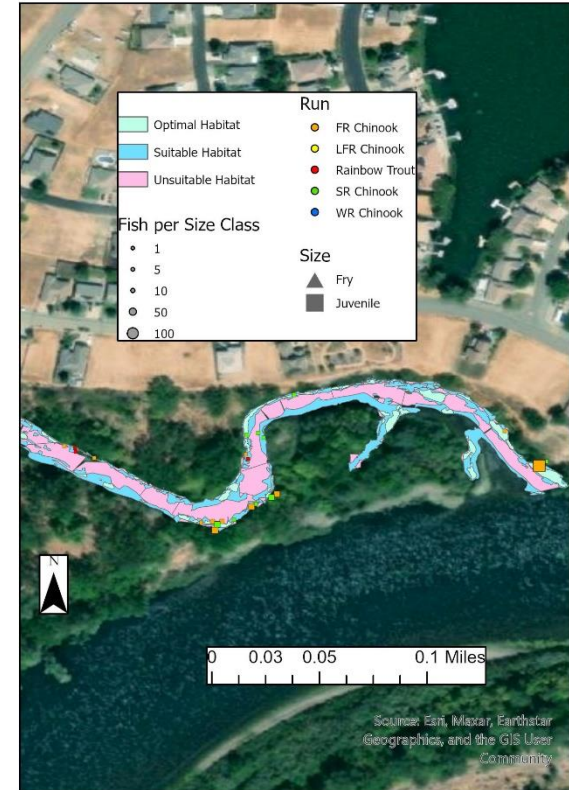
*Dates mapped: 1-18-22, & 1-19-22

Cover from Predators



*Dates mapped: 2-8-22, 2-9-22, & 2-10-22

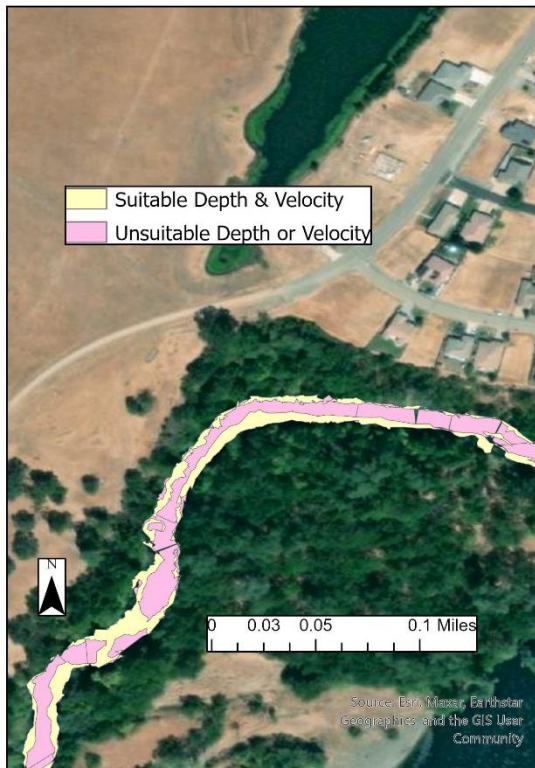
Fish Locations Among Optimal & Suitable Habitat



*Dates snorkeled: 4-21-21, 4-22-21, 4-27-21, & 4-28-21 Keswick flow during snorkel: 3250 CFS

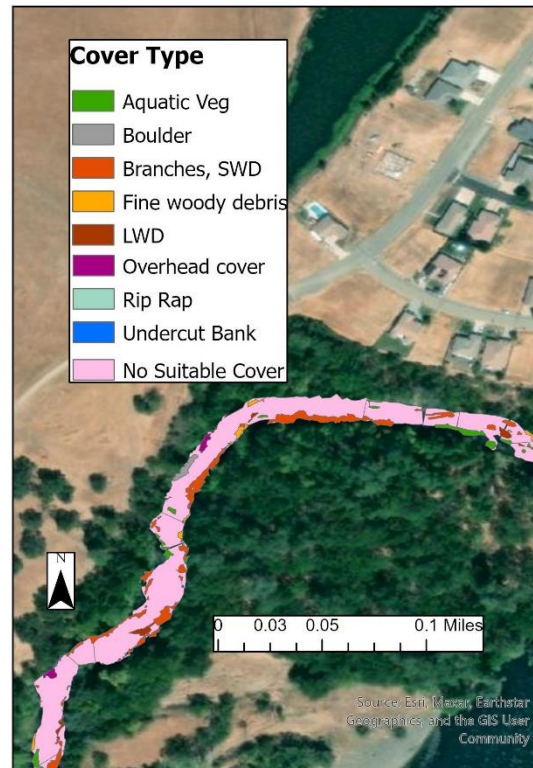
Post Restoration Habitat Mapping: Lake California (Middle) Keswick Release 3,250 CFS

Depth & Velocity Mapping



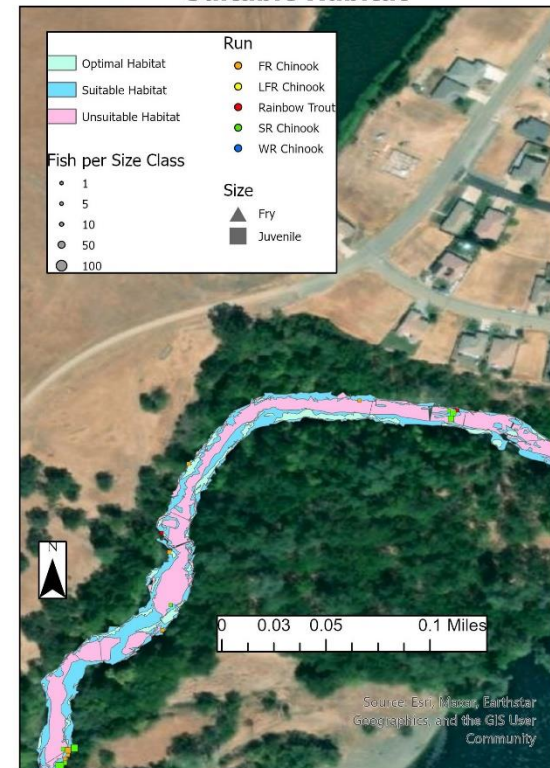
*Dates mapped: 1-18-22, & 1-19-22

Cover from Predators



*Dates mapped: 2-8-22, 2-9-22, & 2-10-22

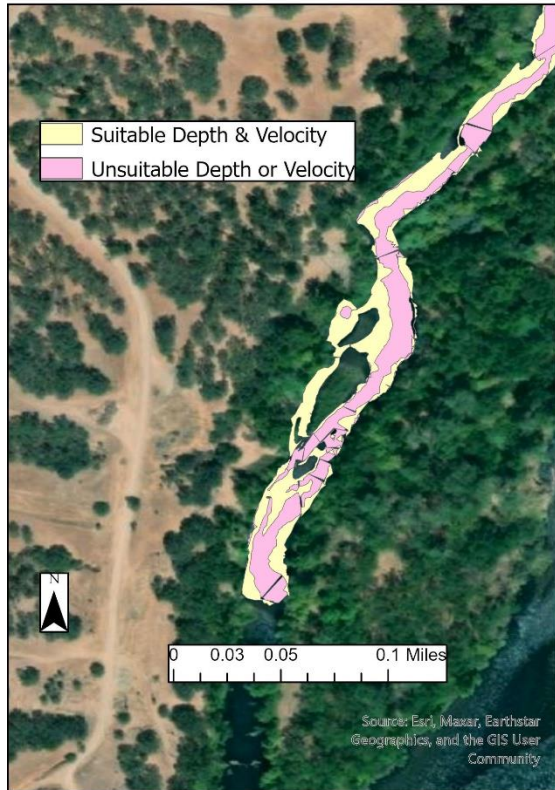
Fish Locations Among Optimal & Suitable Habitat



*Dates snorkeled: 4-21-21, 4-22-21, 4-27-21, & 4-28-21 Keswick flow during snorkel: 3250 CFS

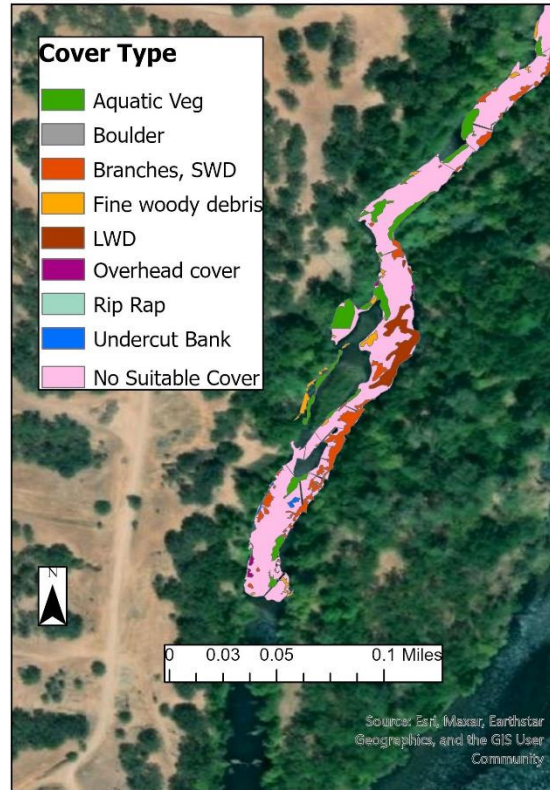
Post Restoration Habitat Mapping: Lake California (Lower) Keswick Release 3,250 CFS

Depth & Velocity Mapping



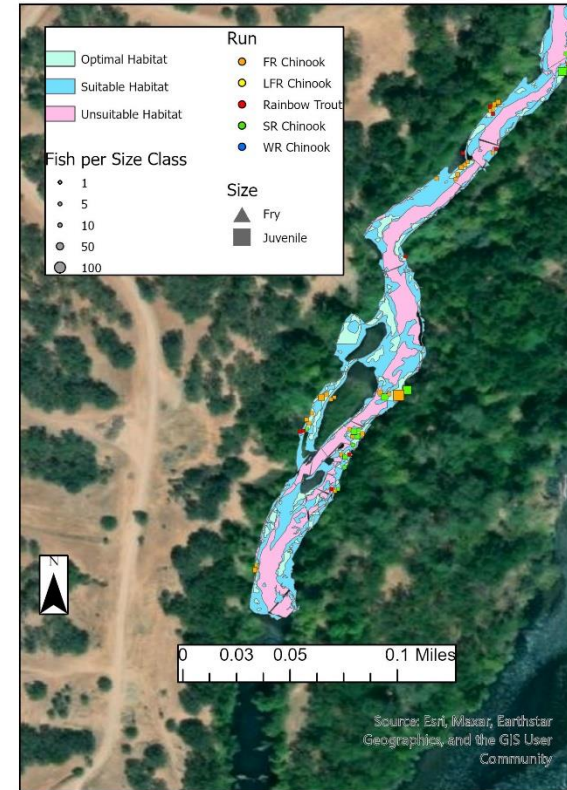
*Dates mapped: 1-18-22, & 1-19-22

Cover from Predators



*Dates mapped: 2-8-22, 2-9-22, & 2-10-22

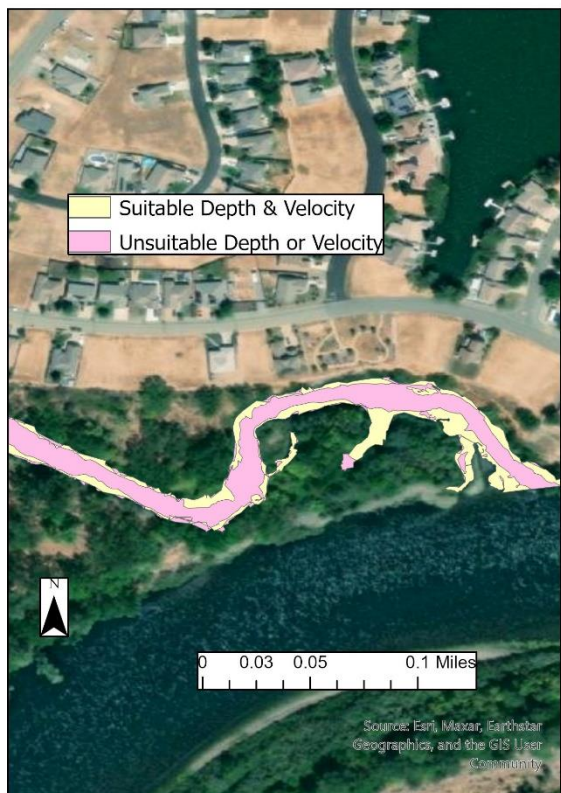
Fish Locations Among Optimal & Suitable Habitat



*Dates snorkeled: 4-21-21, 4-22-21, 4-27-21, & 4-28-21 Keswick flow during snorkel: 3250 CFS

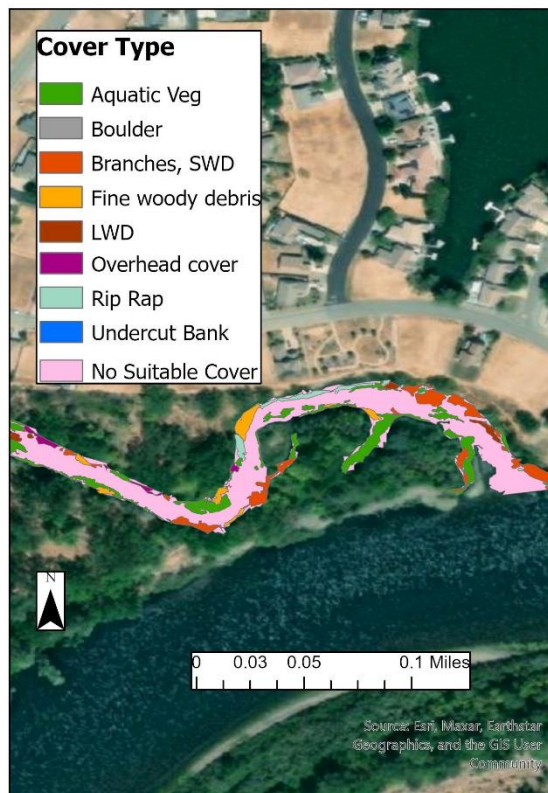
Post Restoration Habitat Mapping: Lake California (Upper) Keswick Release 6,800 CFS

Depth & Velocity Mapping



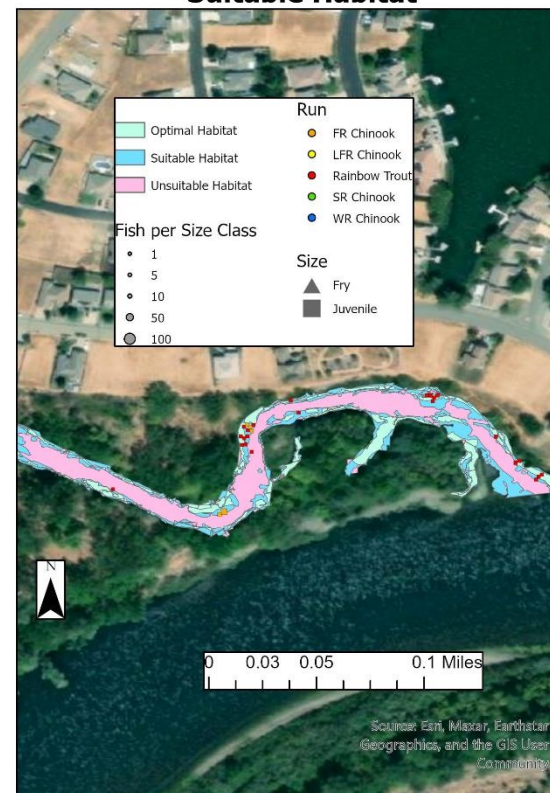
*Dates mapped: 9-20-21, 9-22-21, & 9-27-21

Cover from Predators



*Dates mapped: 9-7-21, 9-16-21, 9-21-21, & 9-22-21

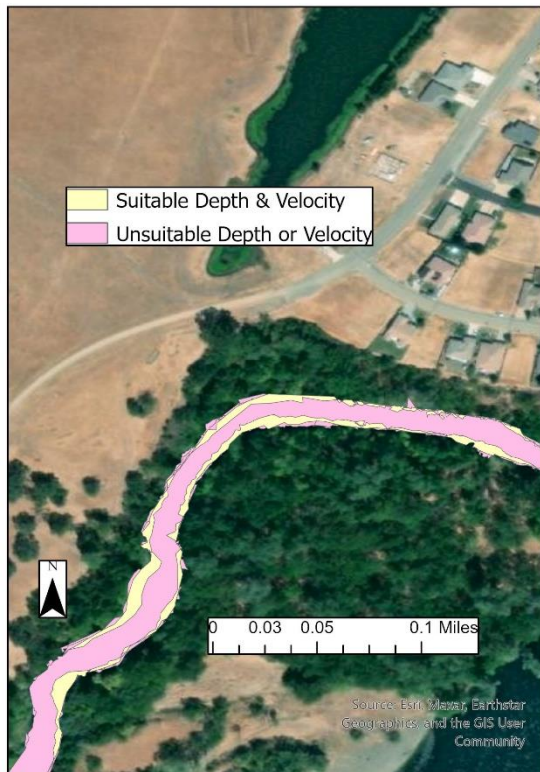
Fish Locations Among Optimal & Suitable Habitat



*Dates snorkeled: 7-27-21, 7-28-21, & 7-29-21
*Keswick flow during snorkel: 9200 CFS

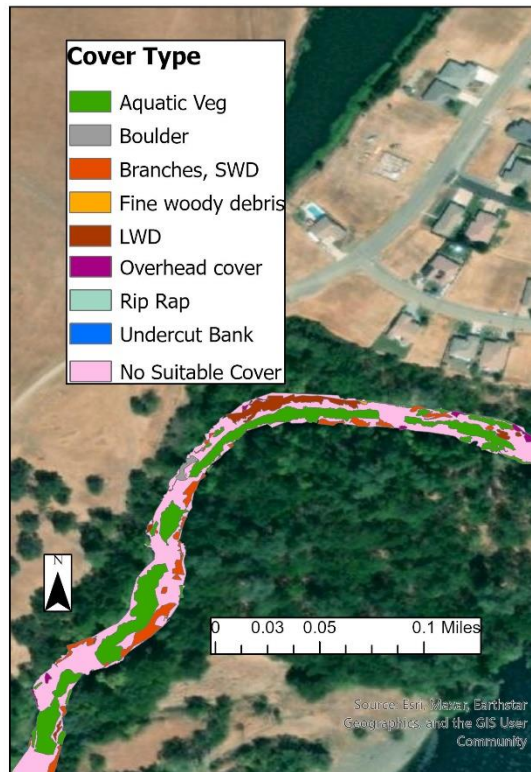
Post Restoration Habitat Mapping: Lake California (Middle) Keswick Release 6,800 CFS

Depth & Velocity Mapping



*Dates mapped: 9-20-21, 9-22-21, & 9-27-21

Cover from Predators



*Dates mapped: 9-7-21, 9-16-21, 9-21-21, & 9-22-21

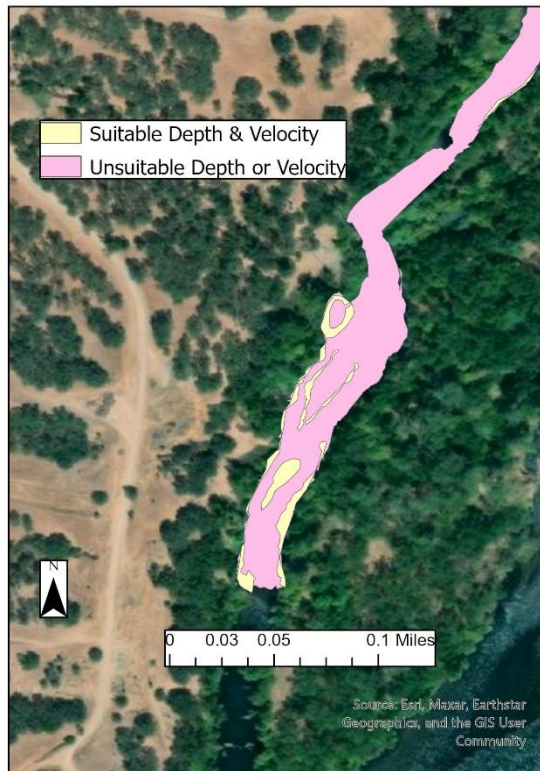
Fish Locations Among Optimal & Suitable Habitat



*Dates snorkeled: 7-27-21, 7-28-21, & 7-29-21
*Keswick flow during snorkel: 9200 CFS

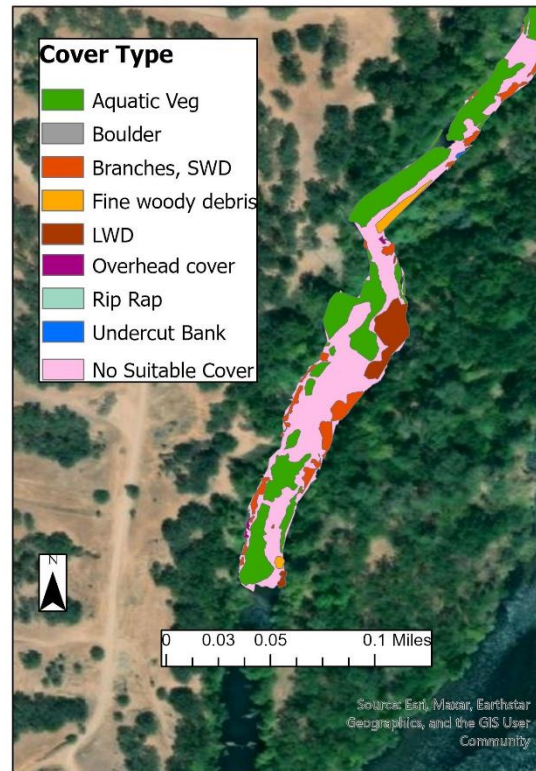
Post Restoration Habitat Mapping: Lake California (Lower) Keswick Release 6,800 CFS

Depth & Velocity Mapping



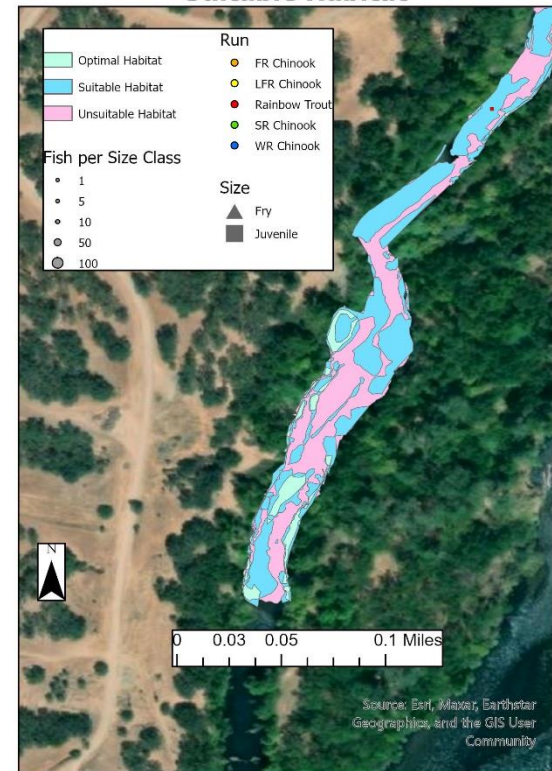
*Dates mapped: 9-20-21, 9-22-21, & 9-27-21

Cover from Predators



*Dates mapped: 9-7-21, 9-16-21, 9-21-21, & 9-22-21

Fish Locations Among Optimal & Suitable Habitat

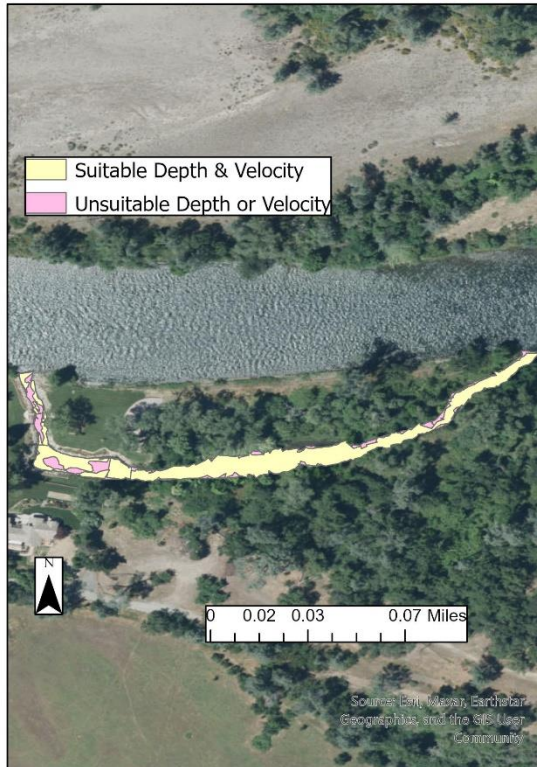


*Dates snorkeled: 7-27-21, 7-28-21, & 7-29-21
*Keswick flow during snorkel: 9200 CFS

Kapusta

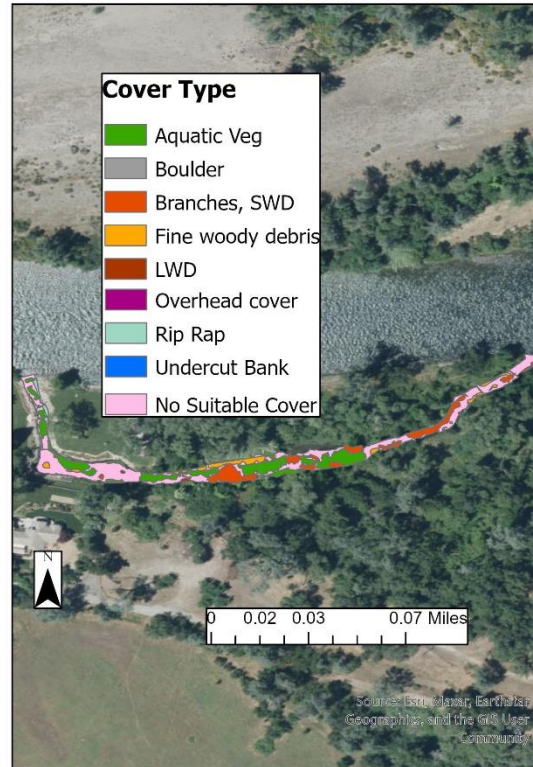
**Post Restoration Habitat Mapping: Kapusta
Keswick Release 3,250 CFS**

Depth & Velocity Mapping



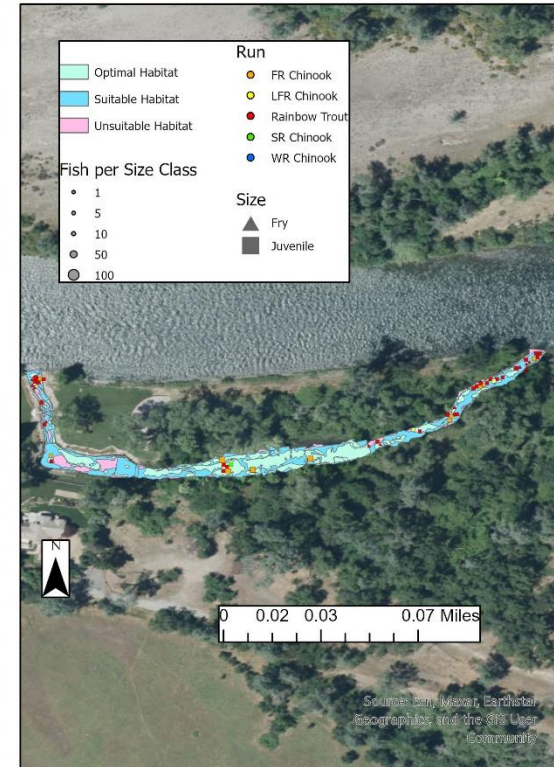
*Dates mapped: 1-12-22

Cover from Predators



*Dates mapped: 2-22-22

Fish Locations Among Optimal & Suitable Habitat

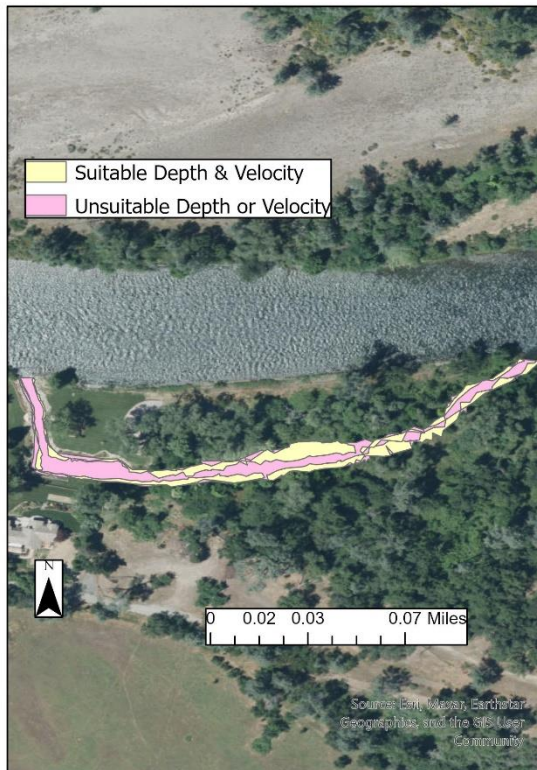


*Dates snorkeled: 5-26-22

*Keswick flow during snorkel: 3800 CFS

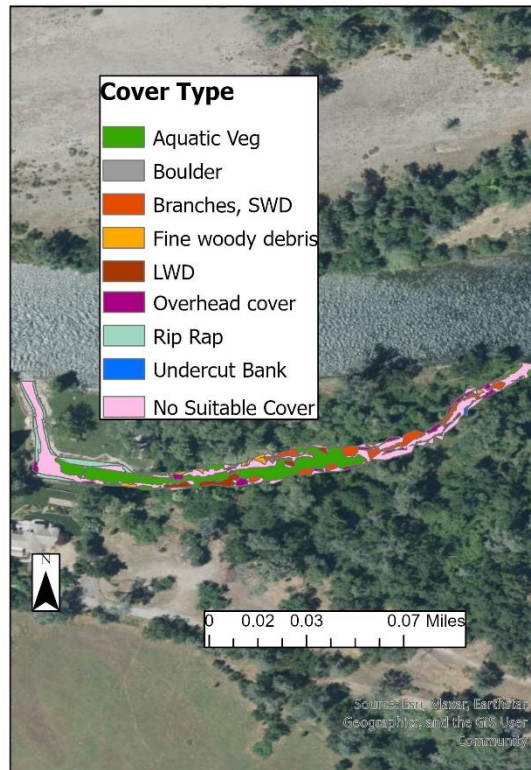
Post Restoration Habitat Mapping: Kapusta Keswick Release 6,800 CFS

Depth & Velocity Mapping



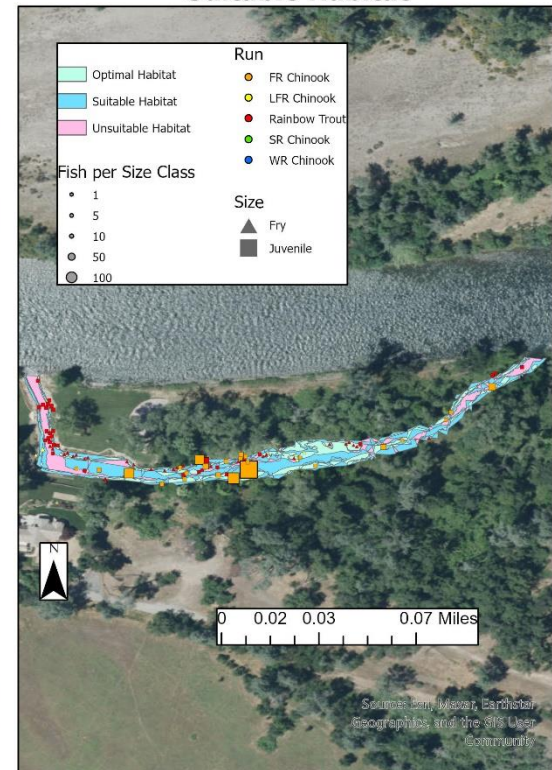
*Dates mapped: 8-31-21, & 9-1-21

Cover from Predators



*Dates mapped: 8-31-21, & 9-1-21

Fish Locations Among Optimal & Suitable Habitat

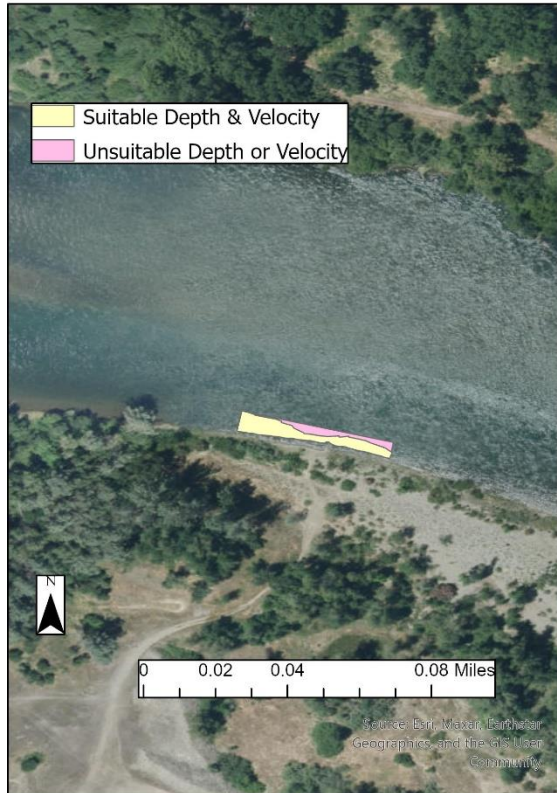


*Dates snorkeled: 5-26-21, & 5-27-21
*Keswick flow during snorkel: 7400 CFS

Kapusta 1B

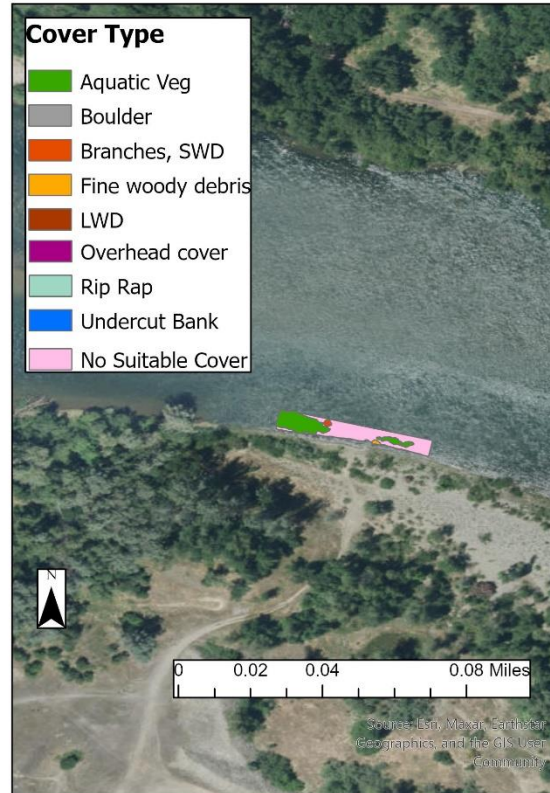
**Pre Restoration Habitat Mapping: Kapusta 1B (Top)
Keswick Release 6,800 CFS**

Depth & Velocity Mapping



*Dates mapped: 8-27-21

Cover from Predators



*Dates mapped: 8-27-21

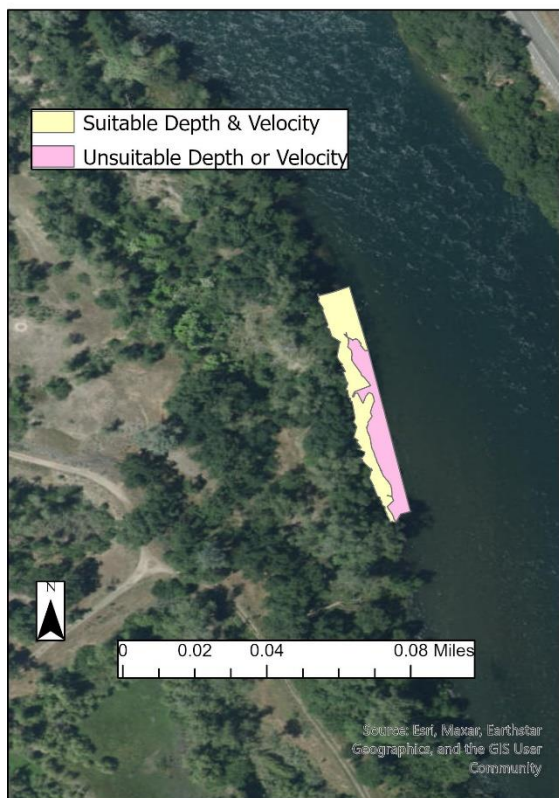
Fish Locations Among Optimal & Suitable Habitat



Microhabitat snorkel surveys not performed on mainstem sites.

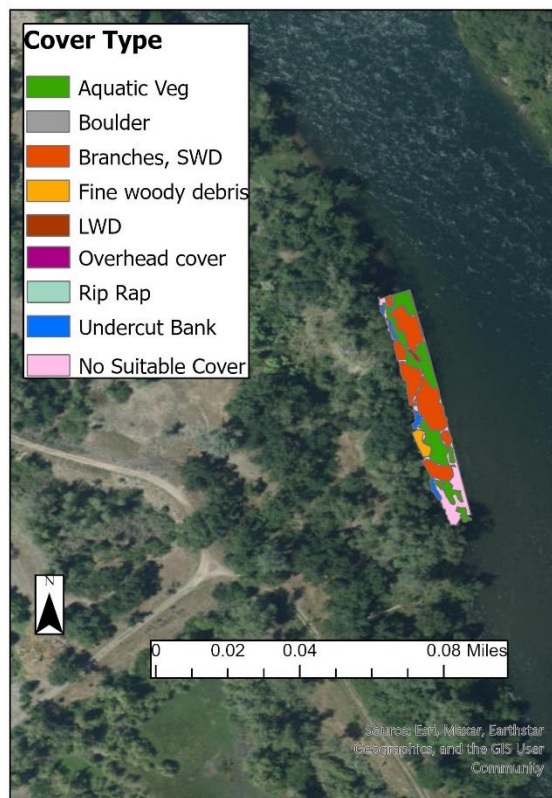
Pre Restoration Habitat Mapping: Kapusta 1B (Bottom) Keswick Release 6,800 CFS

Depth & Velocity Mapping



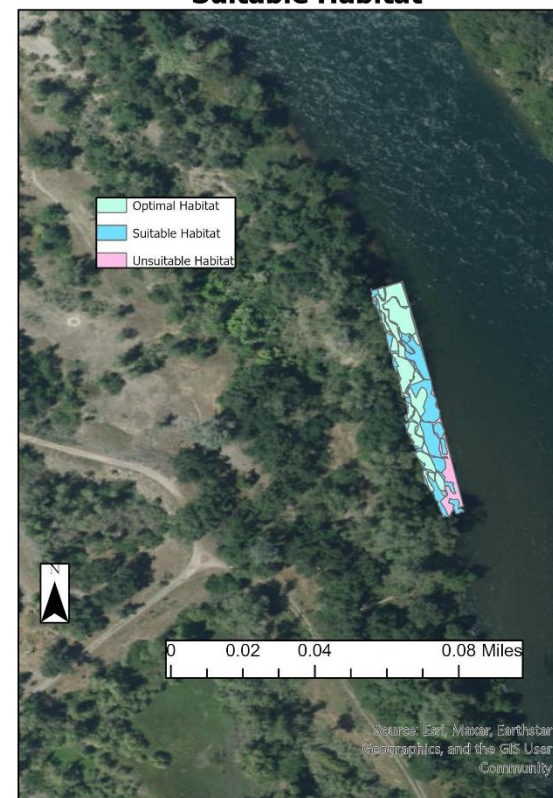
*Dates mapped: 8-27-21

Cover from Predators



*Dates mapped: 8-27-21

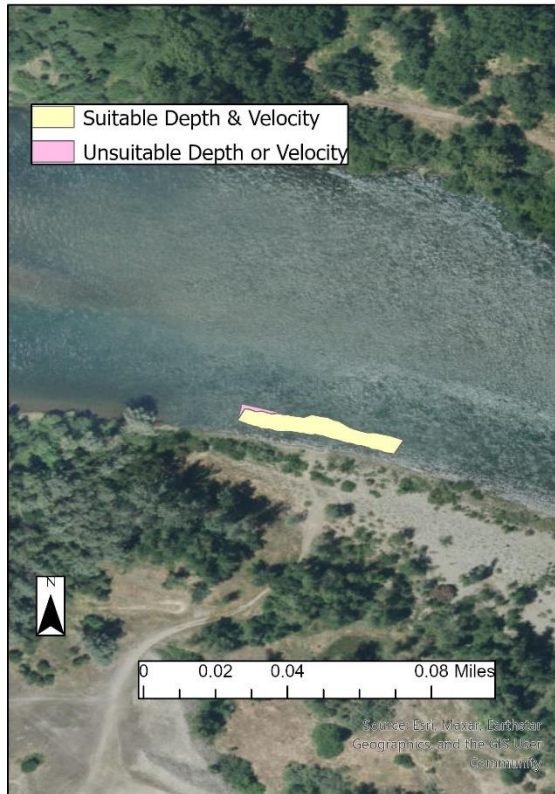
Fish Locations Among Optimal & Suitable Habitat



Microhabitat snorkel surveys not performed on mainstem sites.

Pre Restoration Habitat Mapping: Kapusta 1B (Top) Keswick Release 3,500 CFS

Depth & Velocity Mapping



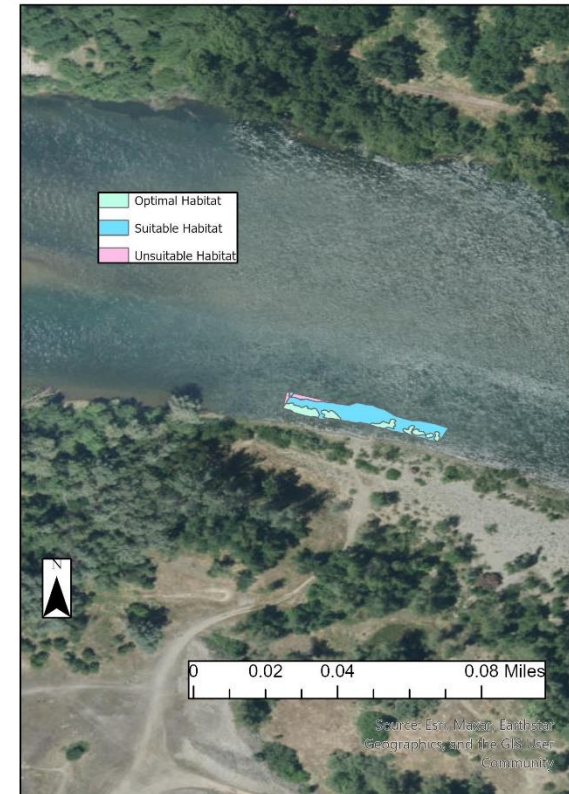
*Dates mapped: 4-1-21

Cover from Predators



*Dates mapped: 4-1-21

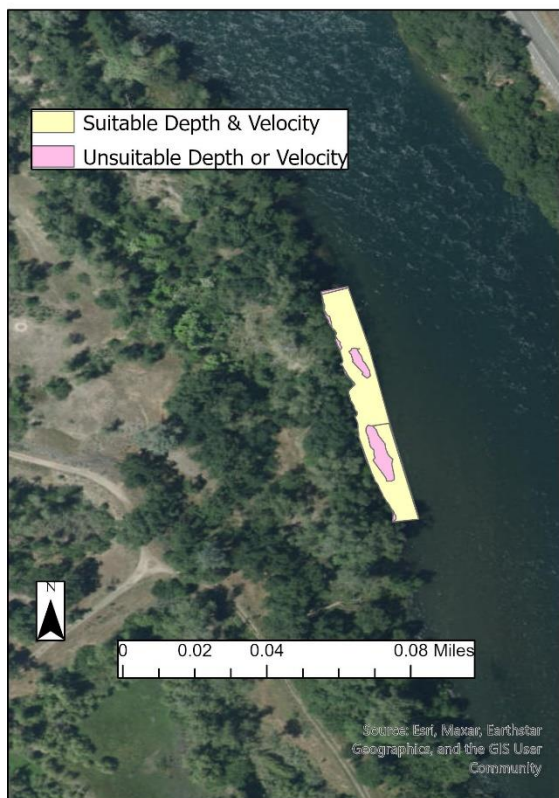
Fish Locations Among Optimal & Suitable Habitat



Microhabitat snorkel surveys not performed on mainstem sites.

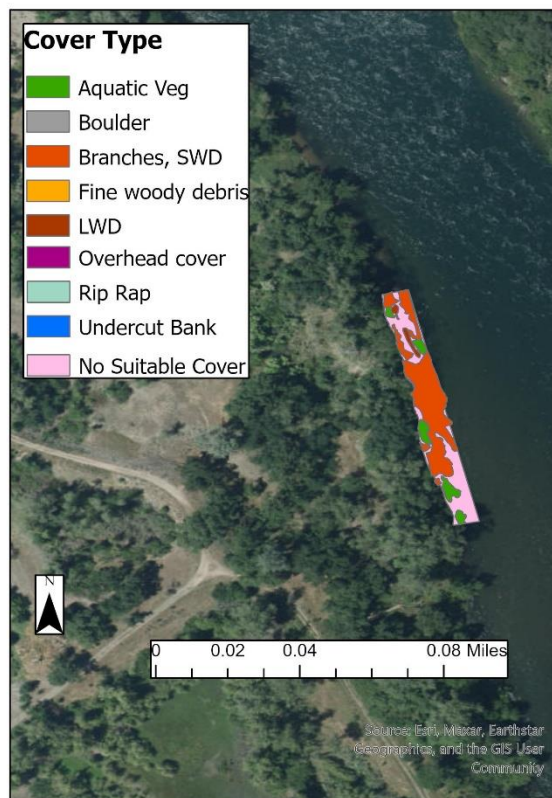
Pre Restoration Habitat Mapping: Kapusta 1B (Bottom) Keswick Release 3,500 CFS

Depth & Velocity Mapping



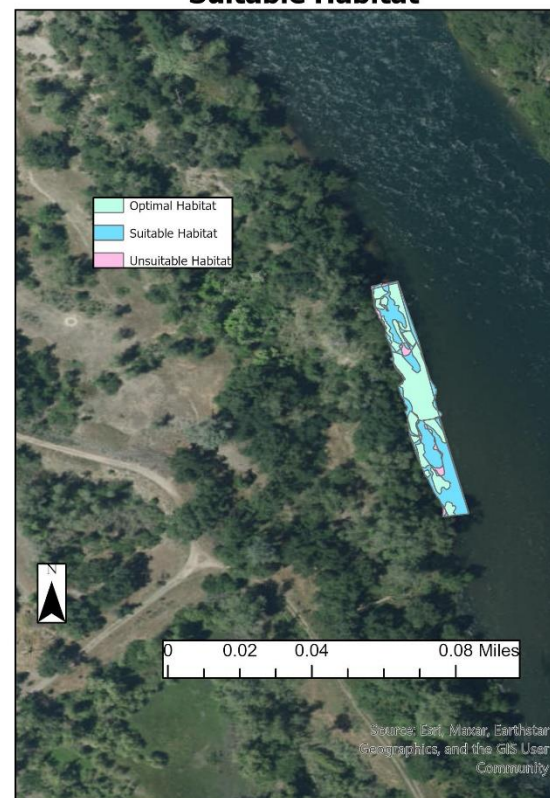
*Dates mapped: 4-1-21

Cover from Predators



*Dates mapped: 4-1-21

Fish Locations Among Optimal & Suitable Habitat

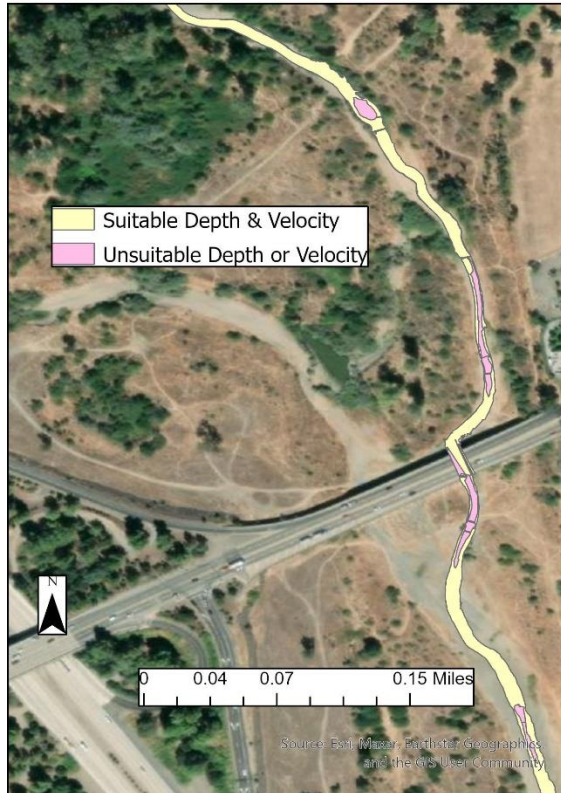


Microhabitat snorkel surveys not performed on mainstem sites.

East Sand Slough

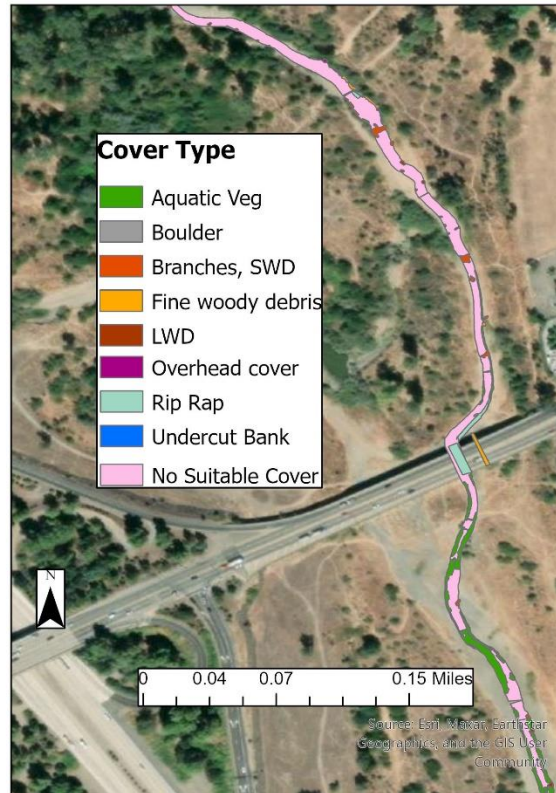
**Post Restoration Habitat Mapping: East Sand Slough (Upper-Middle)
Keswick Release 3,300 CFS**

Depth & Velocity Mapping



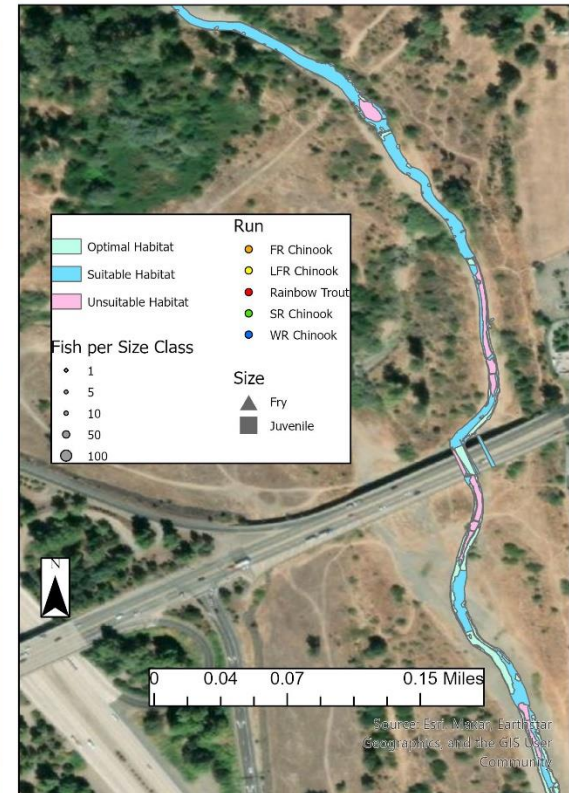
*Dates mapped: 1-25-22 & 1-26-22

Cover from Predators



*Dates mapped: 1-26-22, 1-27-22, 1-31-22,
2-1-22, 2-2-22, & 2-3-22

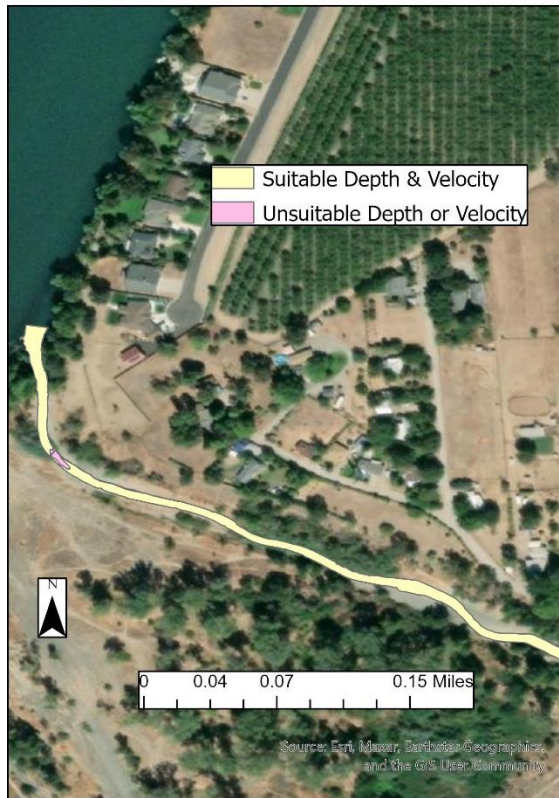
Fish Locations Among Optimal & Suitable Habitat



*Dates snorkeled: 5-5-22
*Keswick flow during snorkel: 3250 CFS

Post Restoration Habitat Mapping: East Sand Slough (Top) Keswick Release 3,300 CFS

Depth & Velocity Mapping



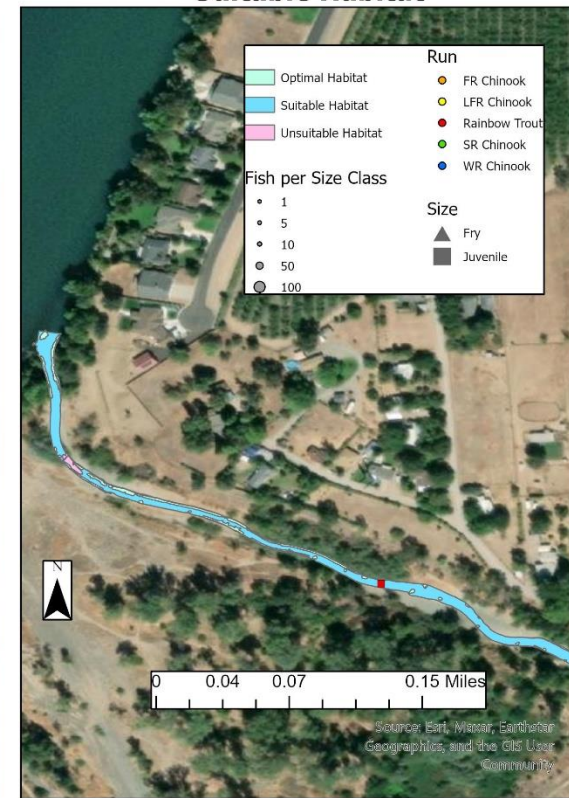
*Dates mapped: 1-25-22 & 1-26-22

Cover from Predators



*Dates mapped: 1-26-22, 1-27-22, 1-31-22,
2-1-22, 2-2-22, & 2-3-22

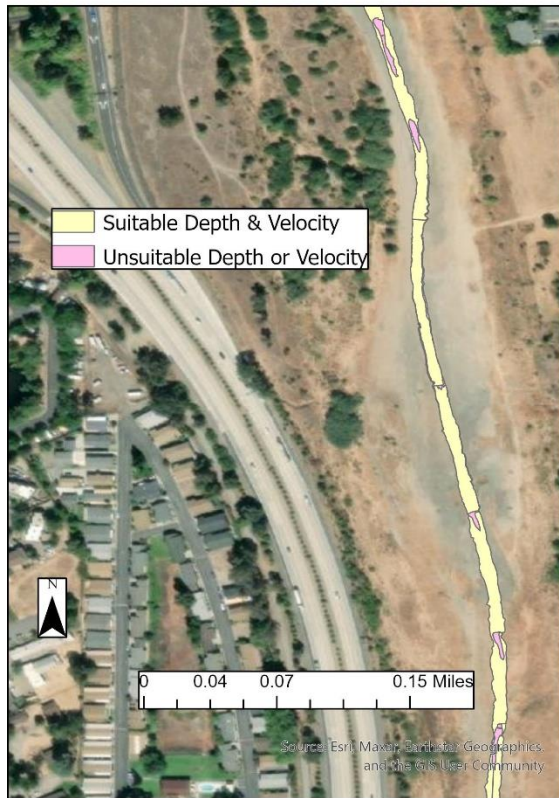
Fish Locations Among Optimal & Suitable Habitat



*Dates snorkeled: 5-5-22
*Keswick flow during snorkel: 3250 CFS

Post Restoration Habitat Mapping: East Sand Slough (Middle) Keswick Release 3,300 CFS

Depth & Velocity Mapping



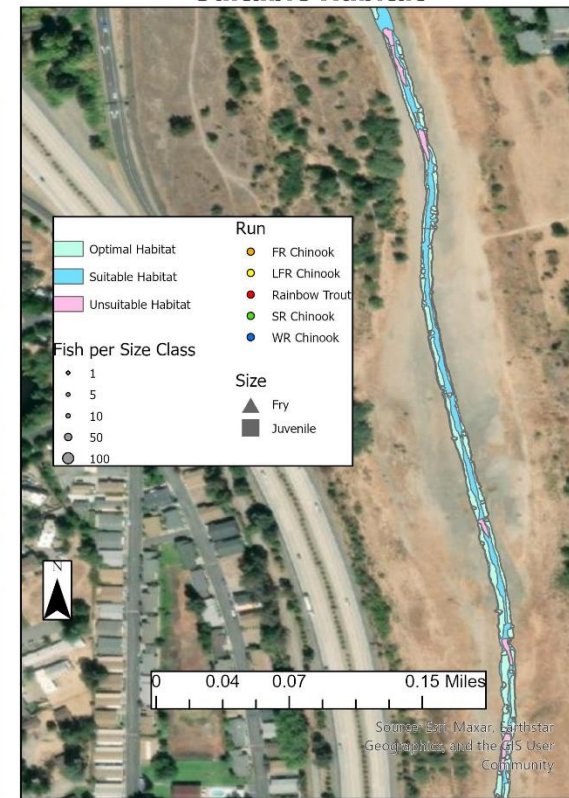
*Dates mapped: 1-25-22 & 1-26-22

Cover from Predators



*Dates mapped: 1-26-22, 1-27-22, 1-31-22,
2-1-22, 2-2-22, & 2-3-22

Fish Locations Among Optimal & Suitable Habitat



*Dates snorkeled: 5-5-22
*Keswick flow during snorkel: 3250 CFS

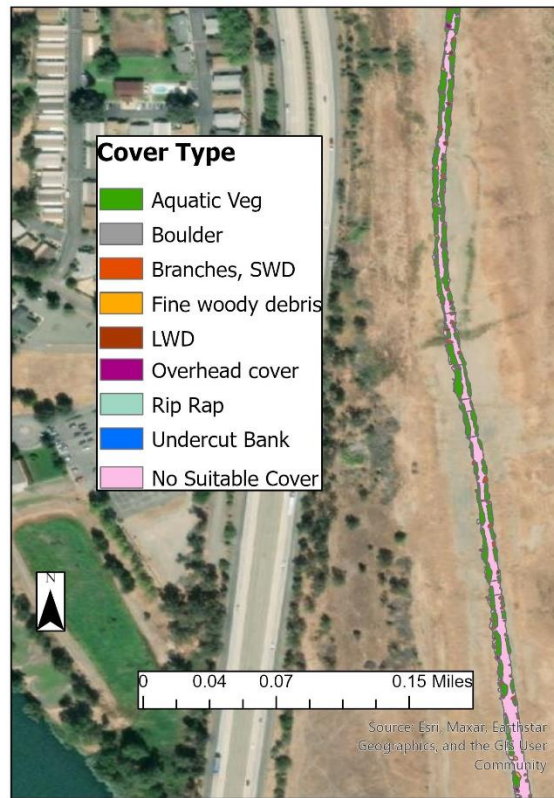
Post Restoration Habitat Mapping: East Sand Slough (Lower-Middle) Keswick Release 3,300 CFS

Depth & Velocity Mapping



*Dates mapped: 1-25-22 & 1-26-22

Cover from Predators



*Dates mapped: 1-26-22, 1-27-22, 1-31-22,
2-1-22, 2-2-22, & 2-3-22

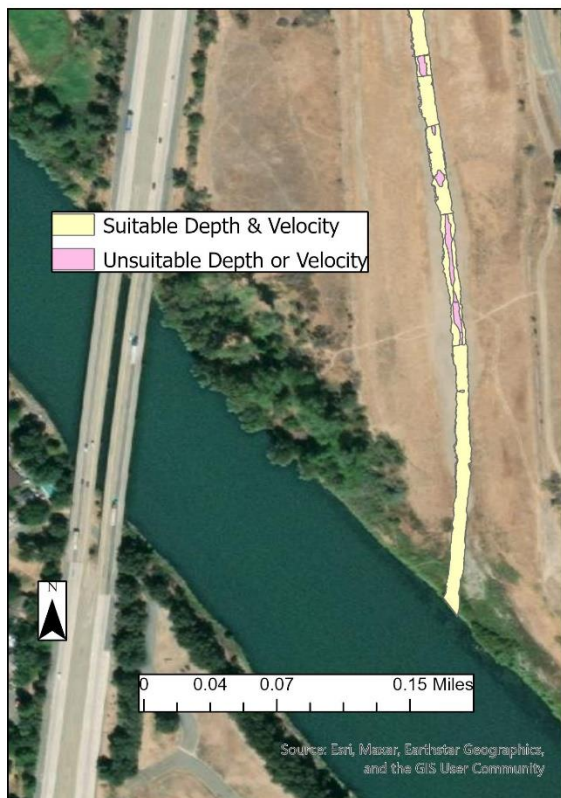
Fish Locations Among Optimal & Suitable Habitat



*Dates snorkeled: 5-5-22
*Keswick flow during snorkel: 3250 CFS

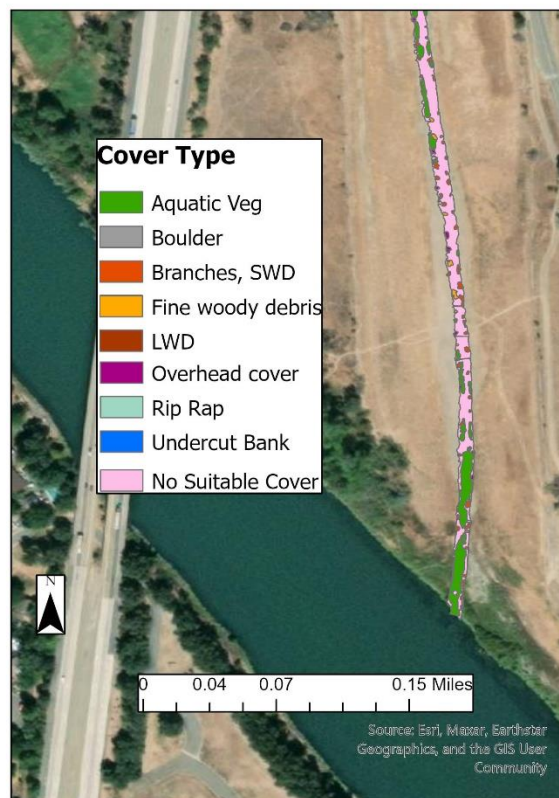
Post Restoration Habitat Mapping: East Sand Slough (Bottom) Keswick Release 3,300 CFS

Depth & Velocity Mapping



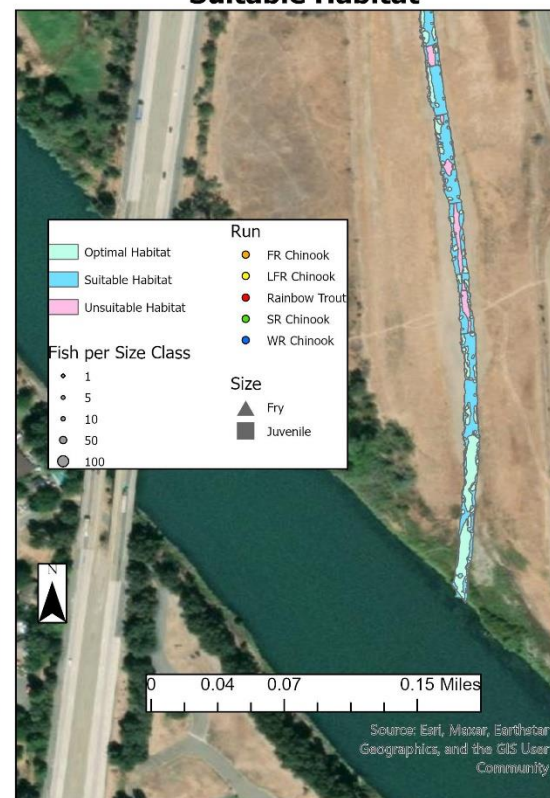
*Dates mapped: 1-25-22 & 1-26-22

Cover from Predators



*Dates mapped: 1-26-22, 1-27-22, 1-31-22,
2-1-22, 2-2-22, & 2-3-22

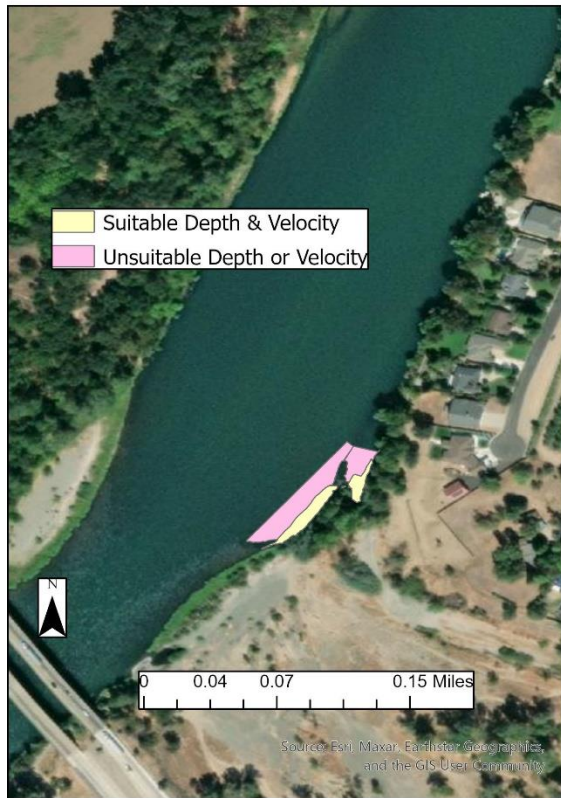
Fish Locations Among Optimal & Suitable Habitat



*Dates snorkeled: 5-5-22
*Keswick flow during snorkel: 3250 CFS

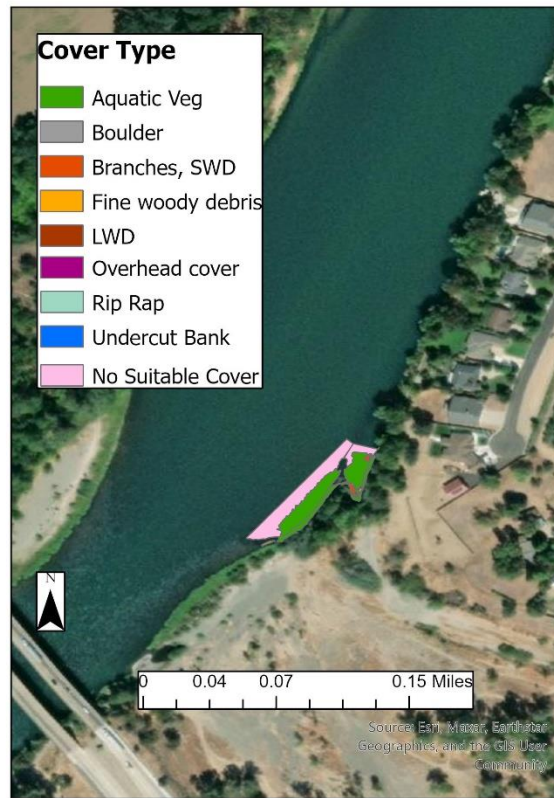
Pre Restoration Habitat Mapping: East Sand Slough (Top) Keswick Release 8,400 CFS

Depth & Velocity Mapping



*Dates mapped: 8-17-21 & 8-18-21

Cover from Predators



*Dates mapped: 9-1-21 & 9-2-21

Fish Locations Among Optimal & Suitable Habitat



*Microhabitat snorkel surveys not performed on mainstem sites

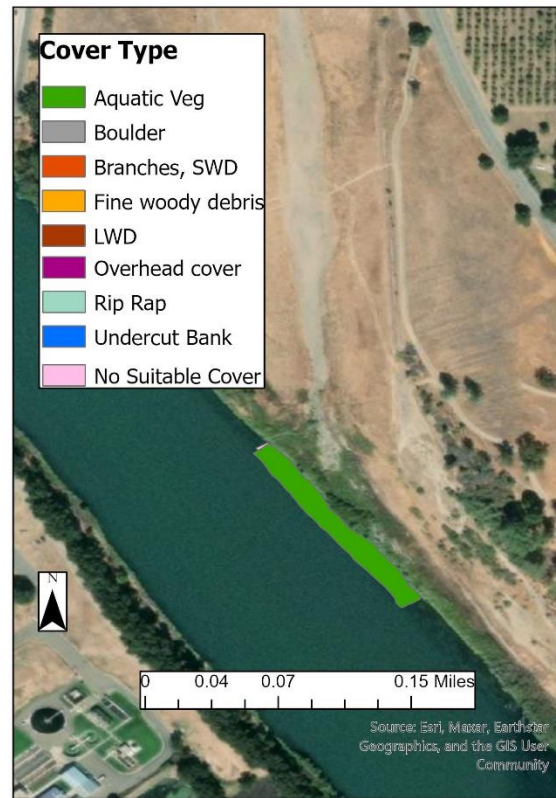
Pre Restoration Habitat Mapping: East Sand Slough (Bottom) Keswick Release 8,400 CFS

Depth & Velocity Mapping



*Dates mapped: 8-17-21 & 8-18-21

Cover from Predators



*Dates mapped: 9-1-21 & 9-2-21

Fish Locations Among Optimal & Suitable Habitat

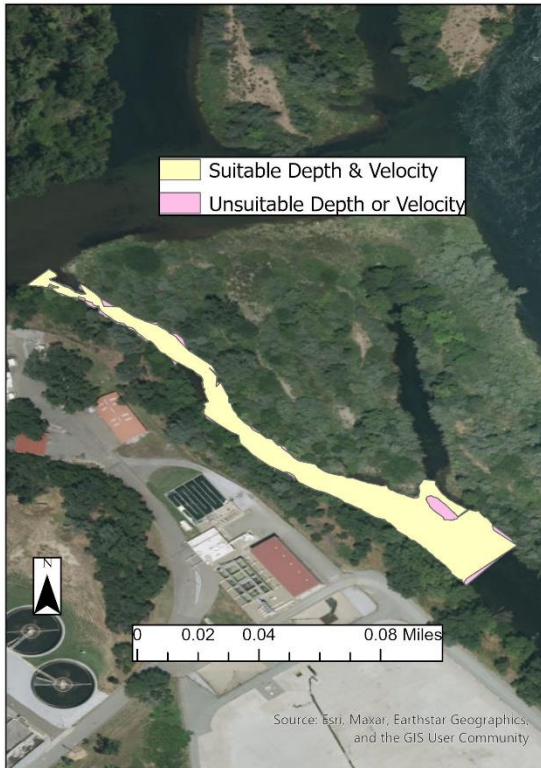


*Microhabitat snorkel surveys not performed on mainstem sites

Clear Creek

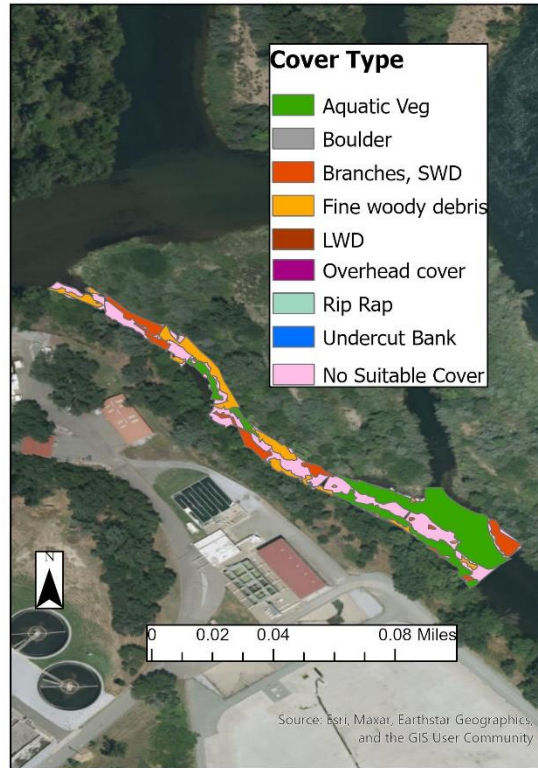
**Control Site Habitat Mapping: Clear Creek
Keswick Release 3,250 CFS**

Depth & Velocity Mapping



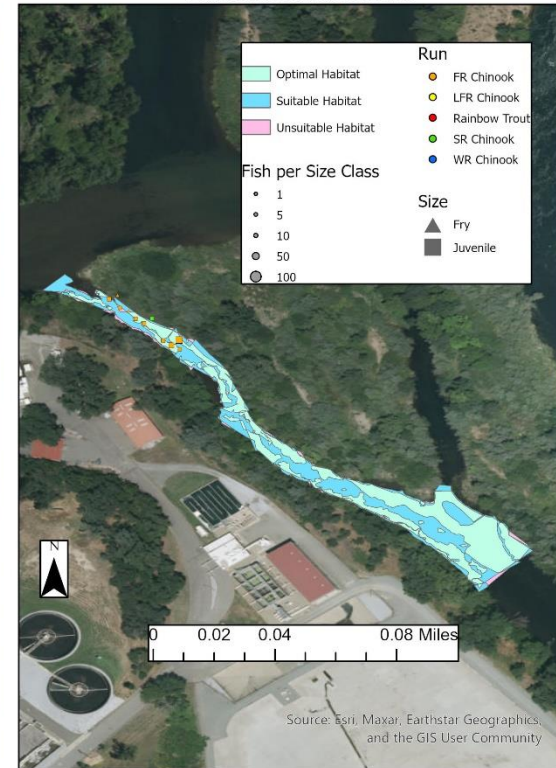
*Date mapped: 1-12-22

Cover from Predators



*Date mapped: 2-22-22

Fish Locations Among Optimal & Suitable Habitat

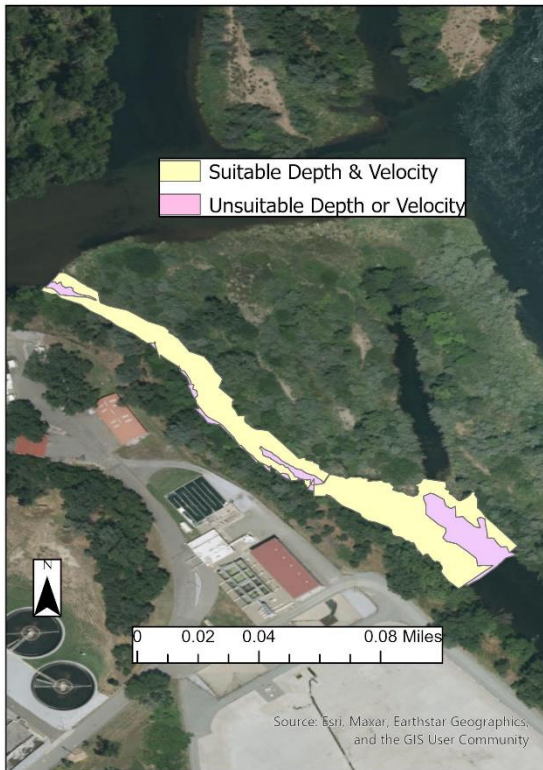


*Date snorkeled: 5-18-22

*Keswick flow during snorkel: 3600 CFS

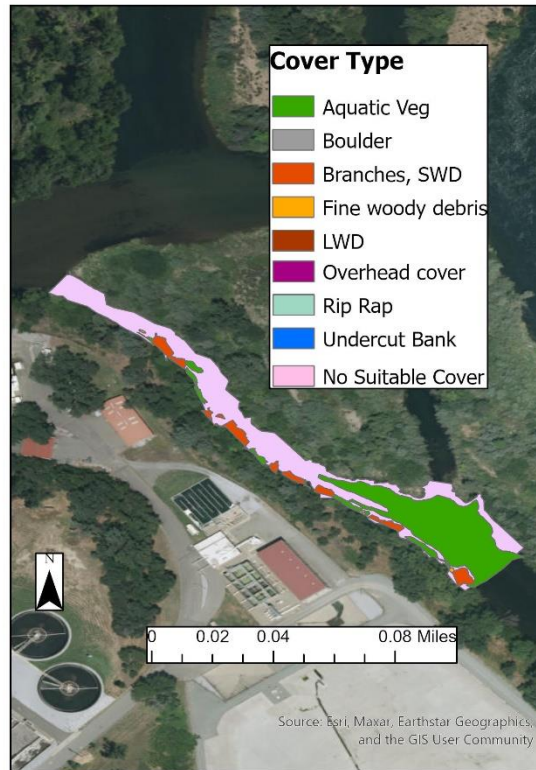
Control Site Habitat Mapping: Clear Creek Keswick Release 6,900 CFS

Depth & Velocity Mapping



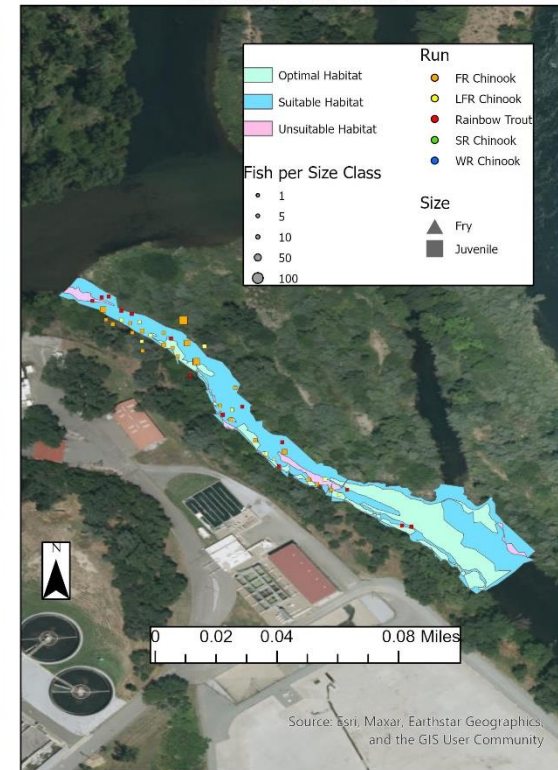
*Date mapped: 9-28-21

Cover from Predators



*Date mapped: 9-28-21

Fish Locations Among Optimal & Suitable Habitat



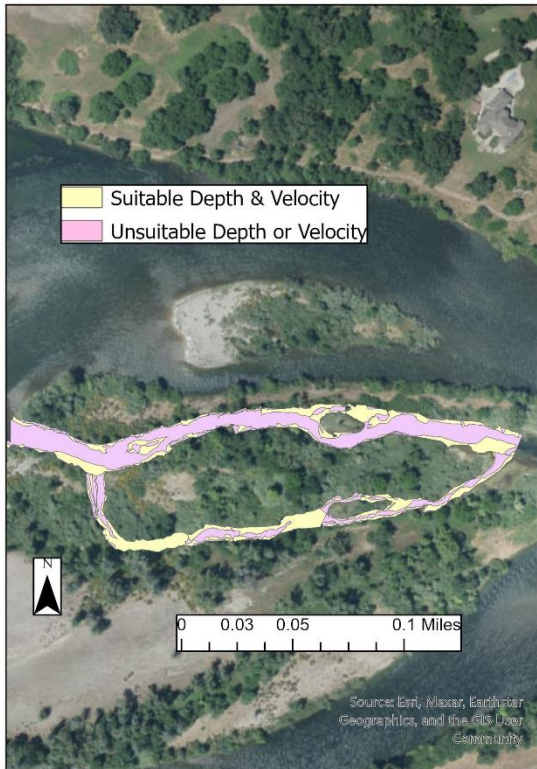
*Date snorkeled: 6-28-21, & 6-29-21

*Keswick flow during snorkel: 8500 CFS

Bourbon & Kapusta Island

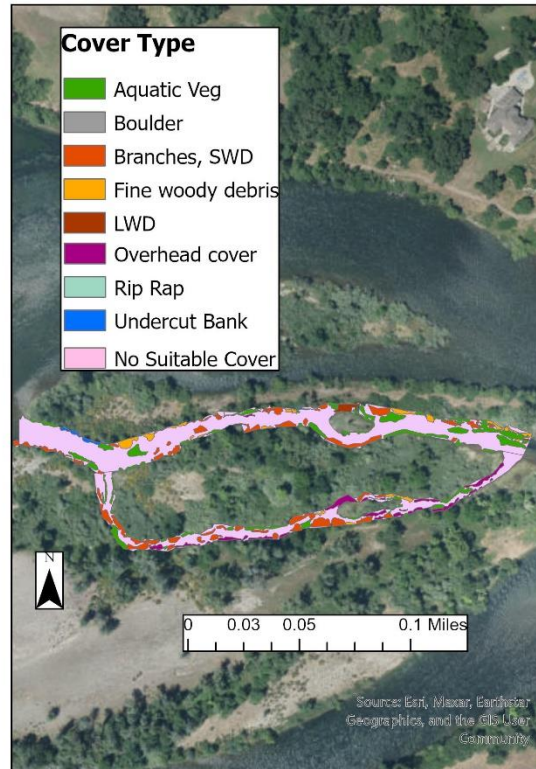
**Control Site Habitat Mapping: Bourbon (Top Channel)
Pre Restoration Habitat Mapping: Kapusta Island (Bottom Channel)
Keswick Release 6,800 CFS**

Depth & Velocity Mapping



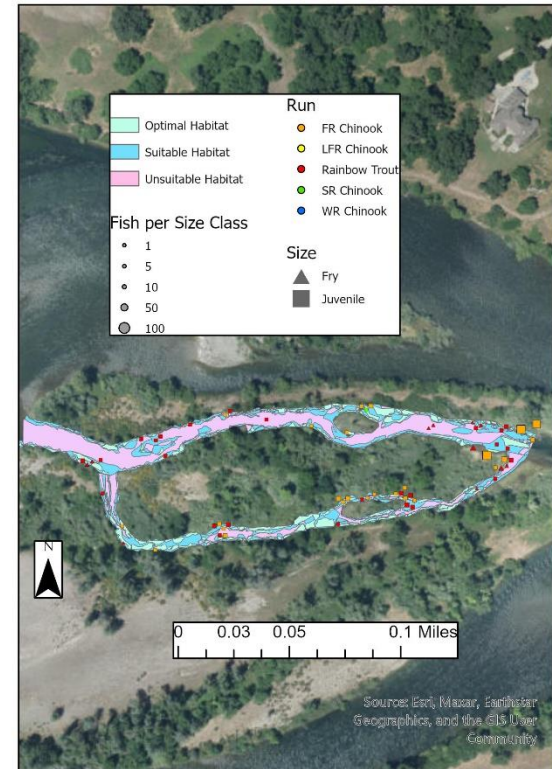
*Bourbon dates mapped: 9-27-21, & 9-28-21
*Kapusta Island dates mapped: 8-30-21

Cover from Predators



*Bourbon dates mapped: 9-27-21
*Kapusta Island dates mapped: 8-30-21

Fish Locations Among Optimal & Suitable Habitat

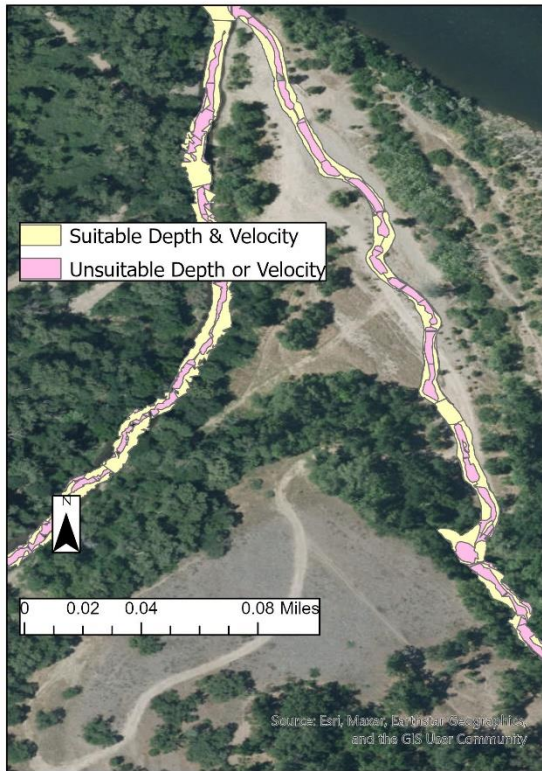


*Dates snorkeled: 7-6-21, 7-7-21, & 7-8-21.
*Keswick flow during snorkel: 9300 CFS

Anderson River Park

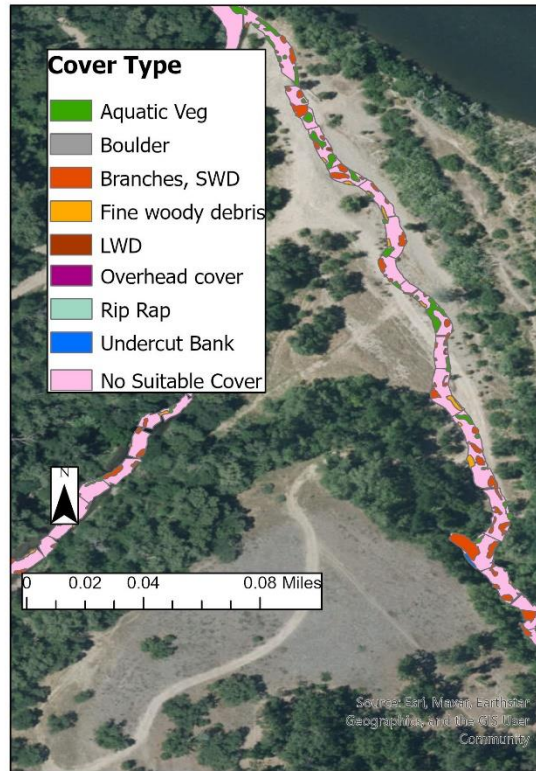
**Post Restoration Habitat Mapping: Anderson River Park Phase 3 (Upper)
Keswick Release 3,250 CFS**

Depth & Velocity Mapping



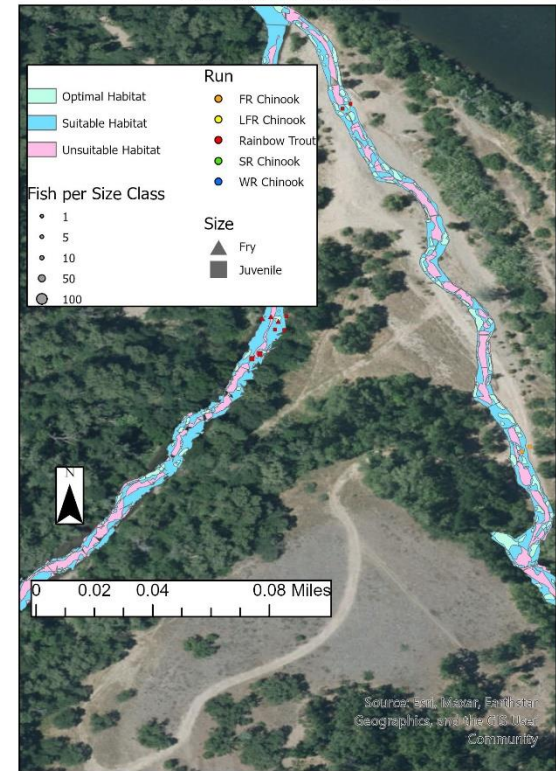
*Dates mapped: 1-10-22 & 1-11-22

Cover from Predators



*Dates mapped: 2-17-22

Fish Locations Among Optimal & Suitable Habitat

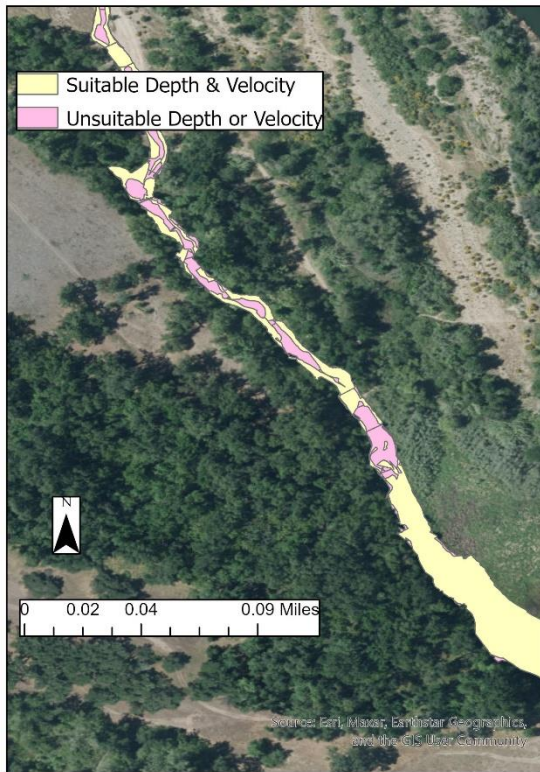


*Dates snorkeled: 4-21-22

*Keswick flow during snorkel: 3250 CFS

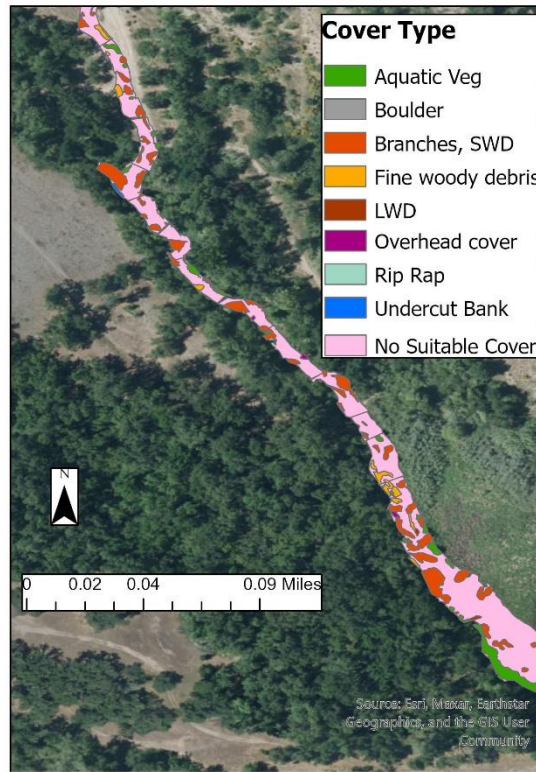
Post Restoration Habitat Mapping: Anderson River Park Phase 3 (Lower) Keswick Release 3,250 CFS

Depth & Velocity Mapping



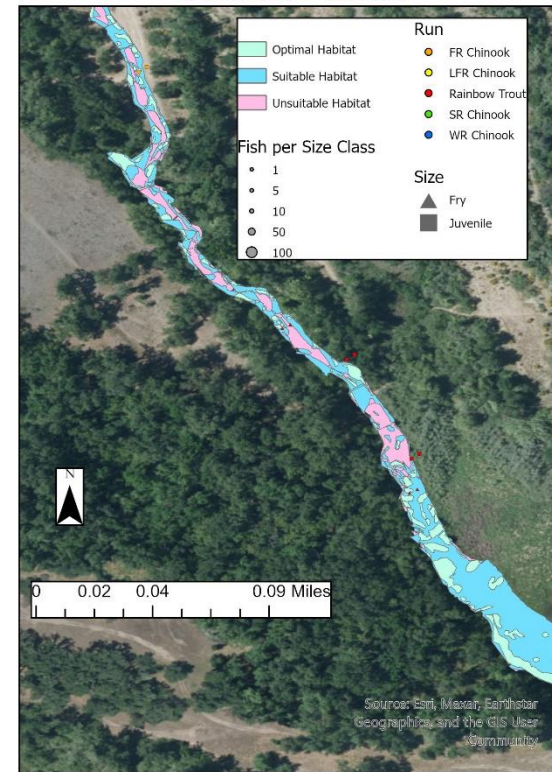
*Dates mapped: 1-10-22 & 1-11-22

Cover from Predators



*Dates mapped: 2-17-22

Fish Locations Among Optimal & Suitable Habitat

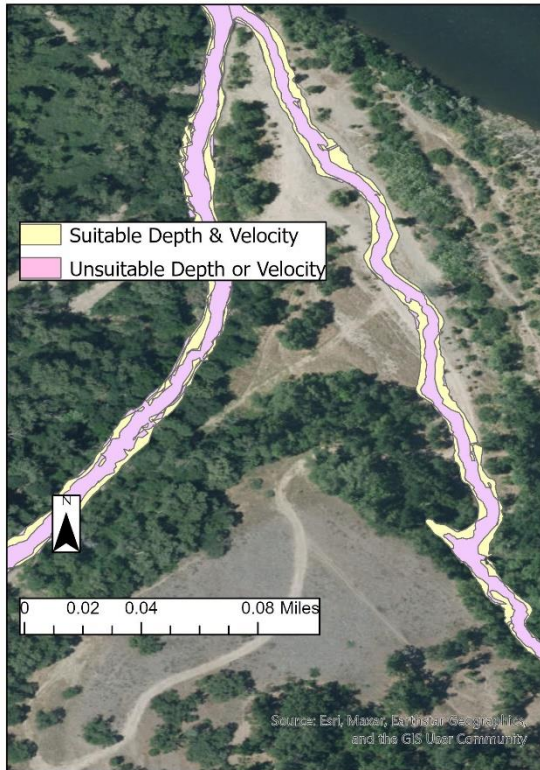


*Dates snorkeled: 4-21-22

*Keswick flow during snorkel: 3250 CFS

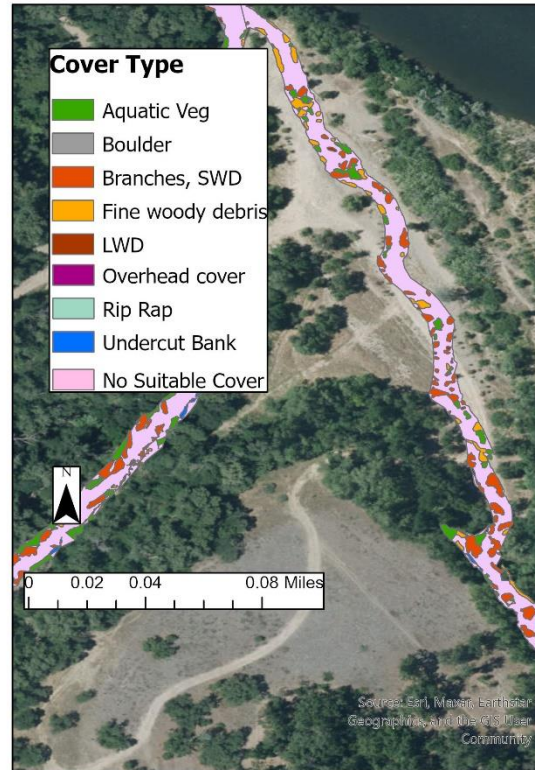
Post Restoration Habitat Mapping: Anderson River Park Phase 3 (Upper) Keswick Release 7,000 CFS

Depth & Velocity Mapping



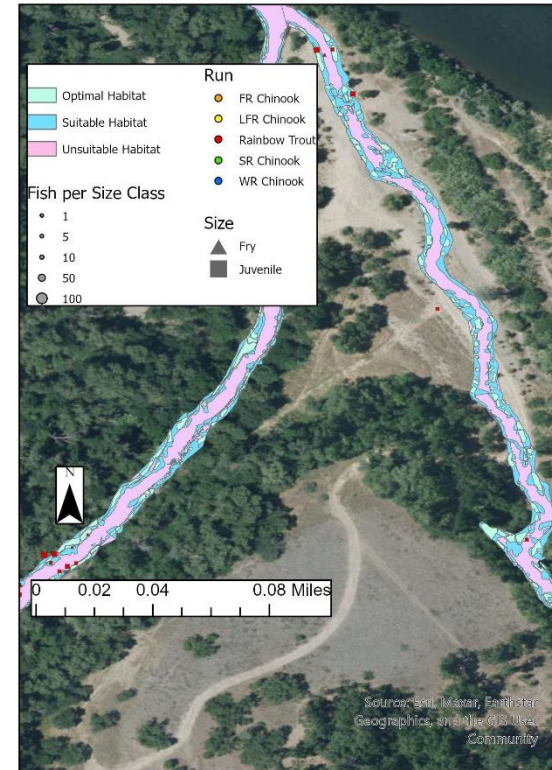
*Dates mapped: 8-25-21 & 8-26-21

Cover from Predators



*Dates mapped: 8-24-21, 8-25-21, & 8-26-21

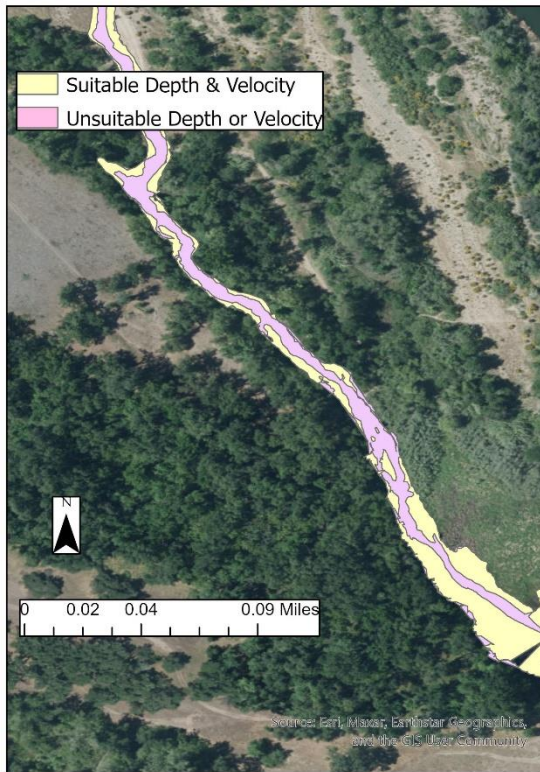
Fish Locations Among Optimal & Suitable Habitat



*Dates snorkeled: 6-15-21
*Keswick flow during snorkel: 7600 CFS

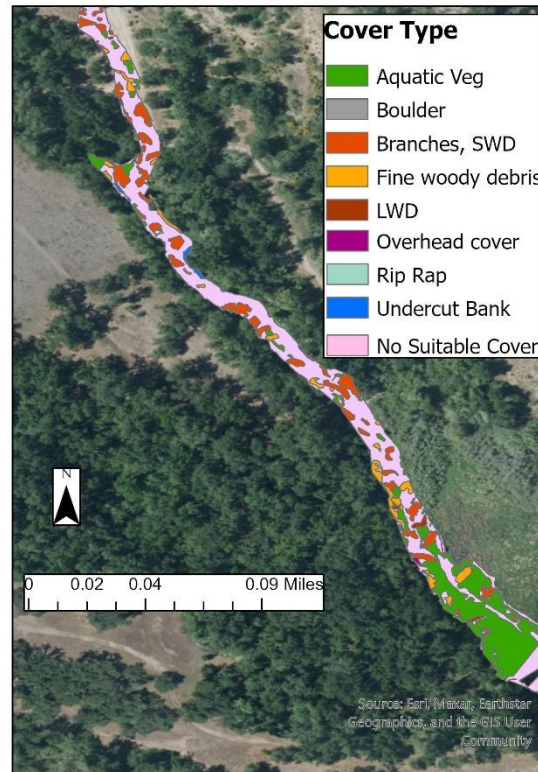
Post Restoration Habitat Mapping: Anderson River Park Phase 3 (Lower) Keswick Release 7,000 CFS

Depth & Velocity Mapping



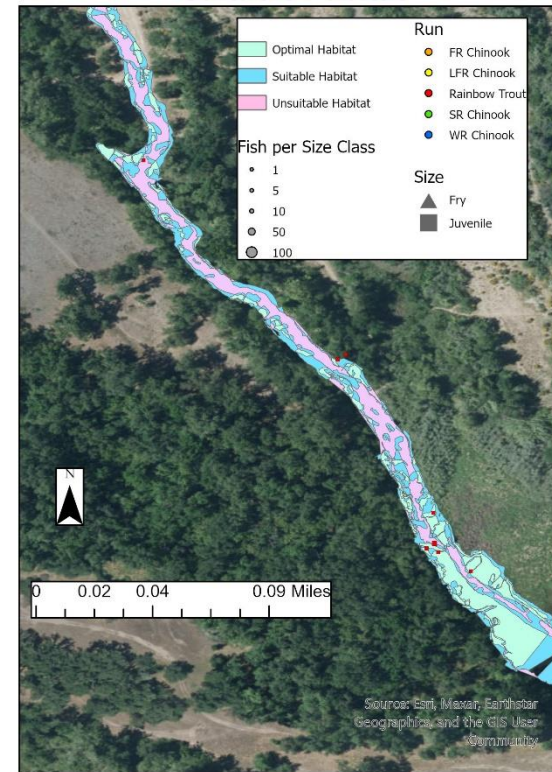
*Dates mapped: 8-25-21, & 8-26-21

Cover from Predators



*Dates mapped: 8-24-21, 8-25-21, & 8-26-21

Fish Locations Among Optimal & Suitable Habitat

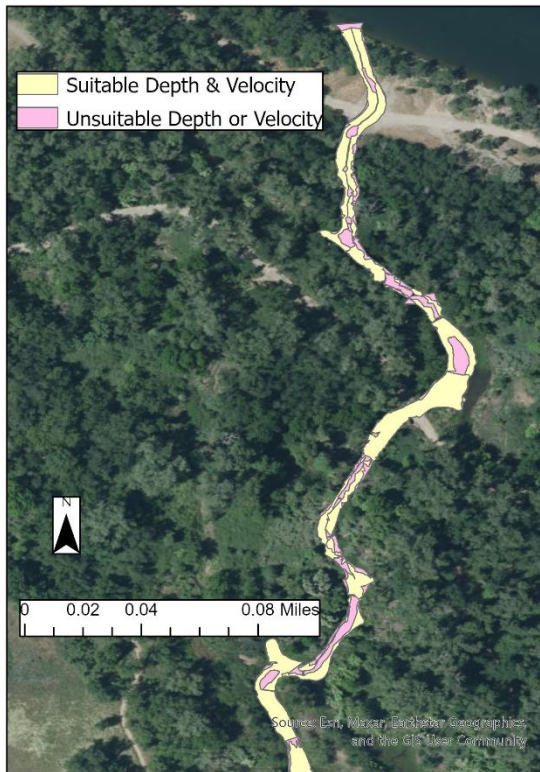


*Dates snorkeled: 6-15-21

*Keswick flow during snorkel: 7600 CFS

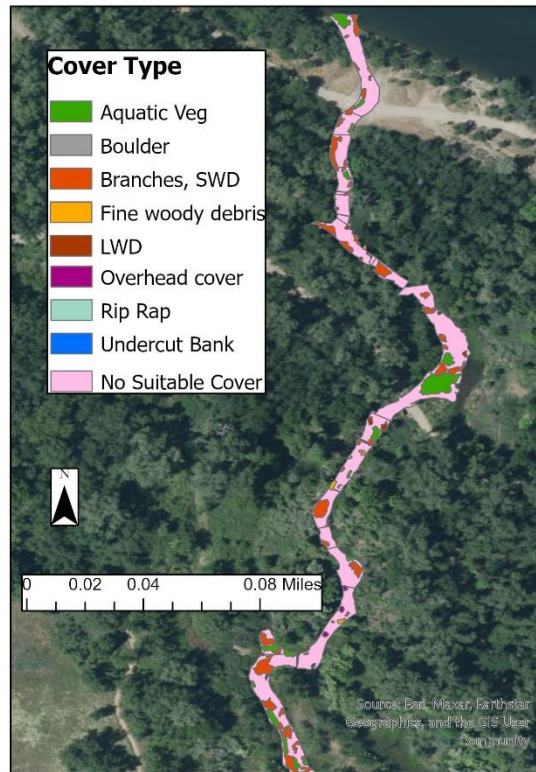
Post Restoration Habitat Mapping: Anderson River Park Phase 2 (Upper) Keswick Release 3,300 CFS

Depth & Velocity Mapping



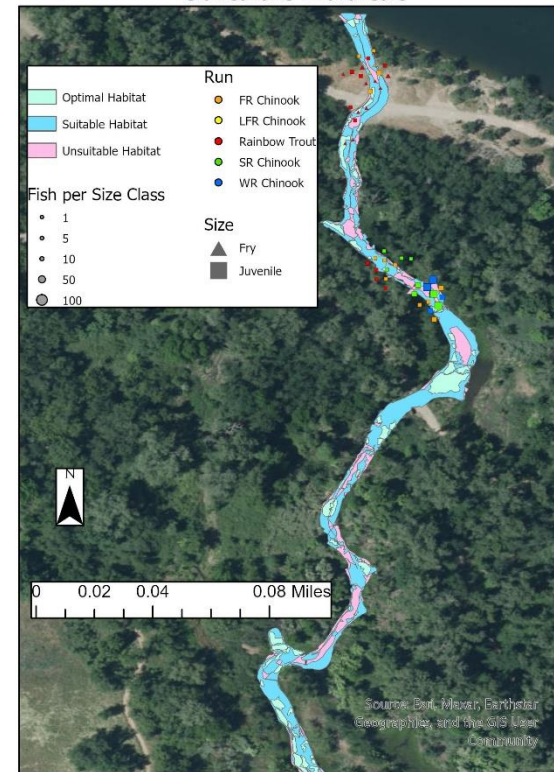
*Dates mapped: 1-5-22, 1-6-22, & 1-10-22

Cover from Predators



*Dates mapped: 2-10-22, 2-16-22, & 2-17-22

Fish Locations Among Optimal & Suitable Habitat

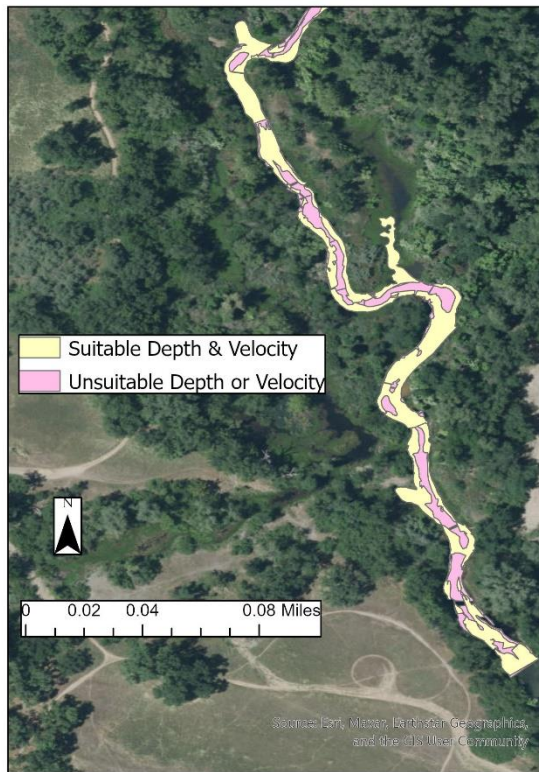


*Dates snorkeled: 4-20-22

*Keswick flow during snorkel: 3250 CFS

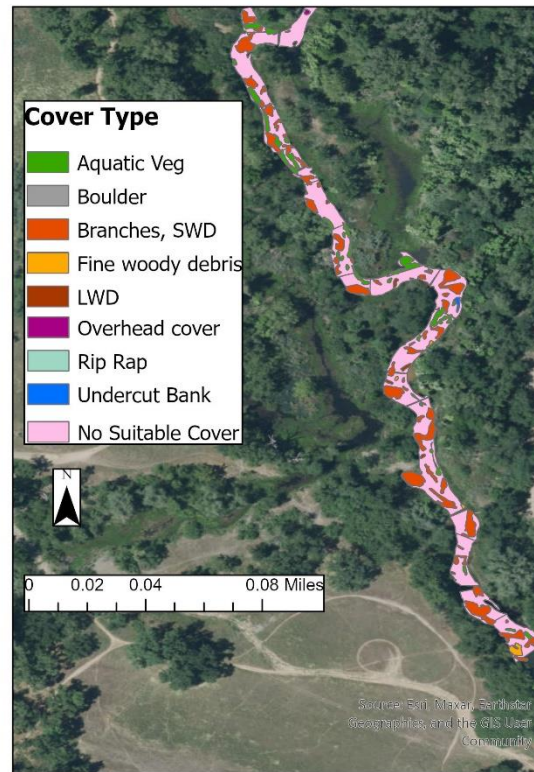
Post Restoration Habitat Mapping: Anderson River Park Phase 2 (Lower) Keswick Release 3,300 CFS

Depth & Velocity Mapping



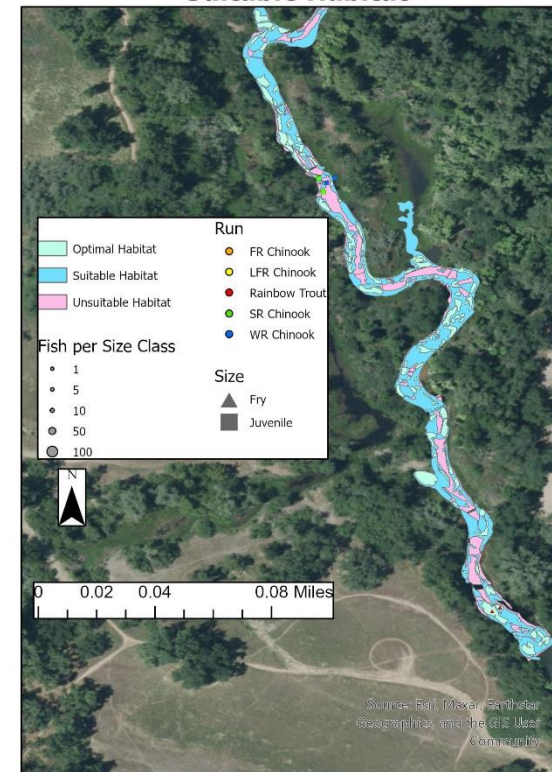
*Dates mapped: 1-5-22, 1-6-22, & 1-10-22

Cover from Predators



*Dates mapped: 2-10-22, 2-16-22, & 2-17-22

Fish Locations Among Optimal & Suitable Habitat



*Dates snorkeled: 4-20-22

*Keswick flow during snorkel: 3250 CFS

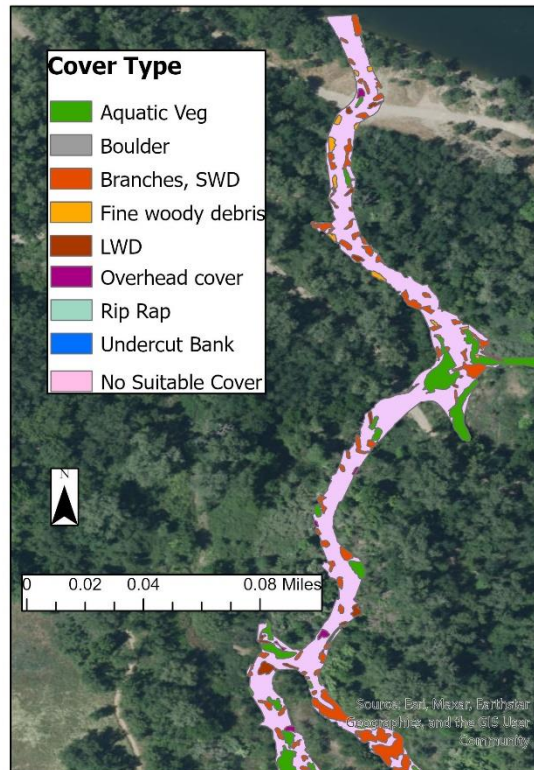
Post Restoration Habitat Mapping: Anderson River Park Phase 2 (Upper) Keswick Release 8,700 CFS

Depth & Velocity Mapping



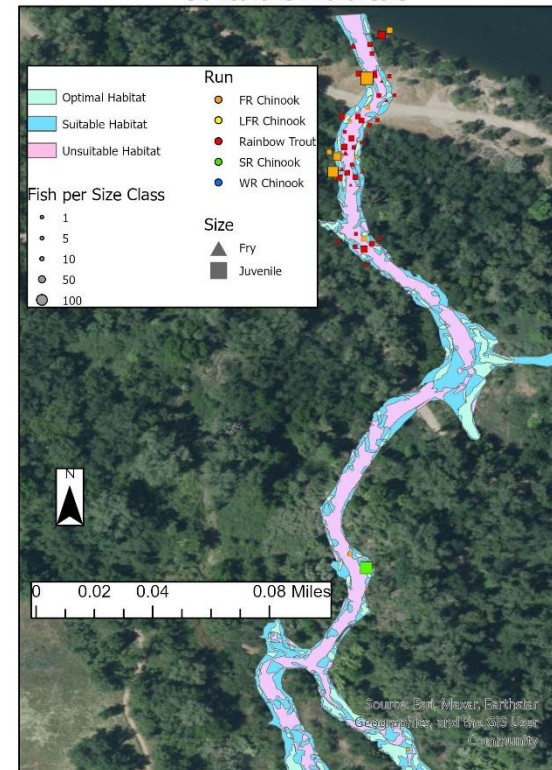
*Dates mapped: 8-5-21, 8-9-21, & 8-10-21

Cover from Predators



*Dates mapped: 8-5-21, 8-9-21, & 8-11-21

Fish Locations Among Optimal & Suitable Habitat

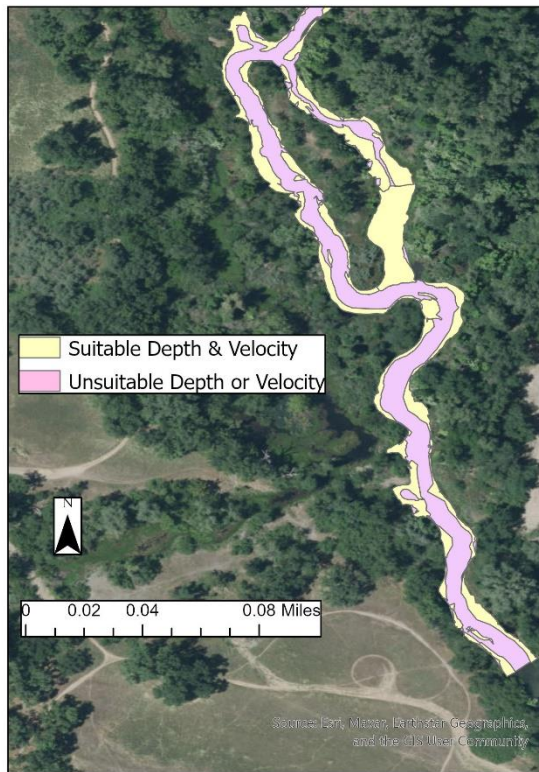


*Dates snorkeled: 5-27-21, 6-1-21, & 6-2-21

*Keswick flow during snorkel: 7100 CFS

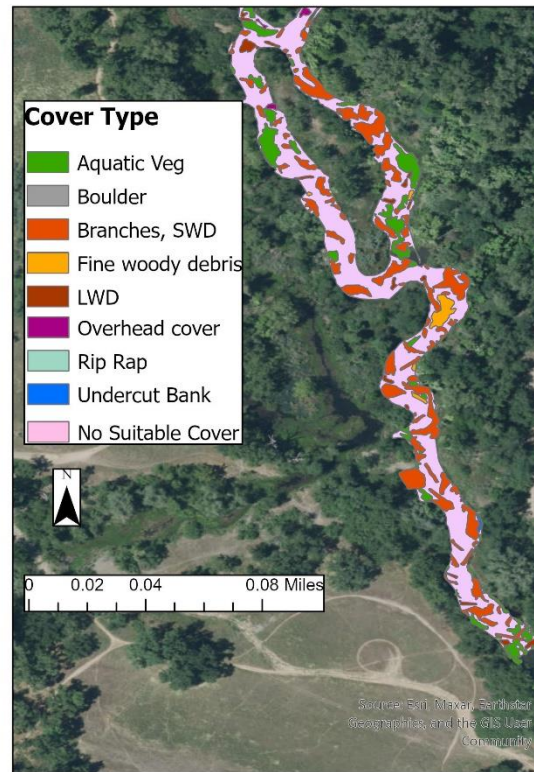
Post Restoration Habitat Mapping: Anderson River Park Phase 2 (Lower) Keswick Release 8,700 CFS

Depth & Velocity Mapping



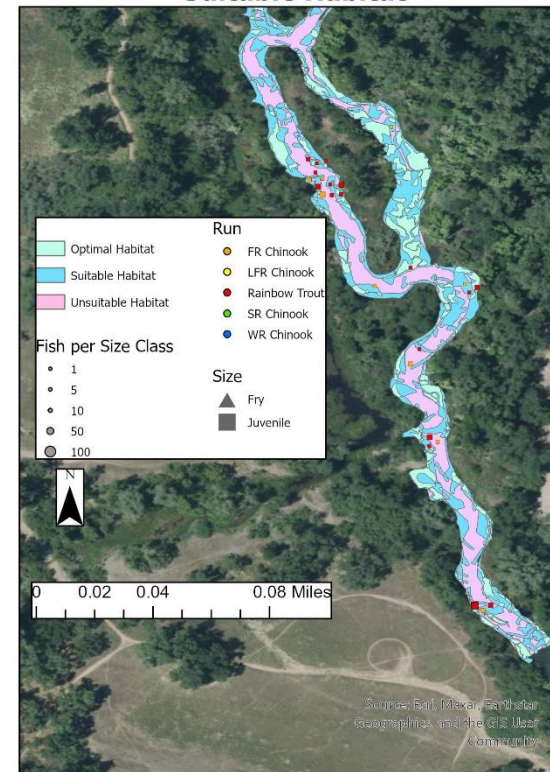
*Dates mapped: 8-5-21, 8-9-21, & 8-10-21

Cover from Predators



*Dates mapped: 8-5-21, 8-9-21, & 8-11-21

Fish Locations Among Optimal & Suitable Habitat



*Dates snorkeled: 5-27-21, 6-1-21, & 6-2-21
*Keswick flow during snorkel: 7100 CFS

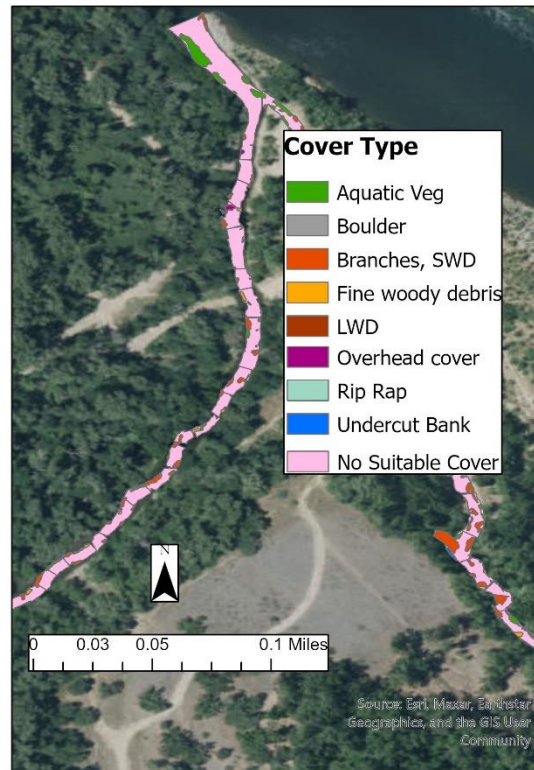
Post Restoration Habitat Mapping: Anderson River Park Phase 1 (Upper) Keswick Release 3,300 CFS

Depth & Velocity Mapping



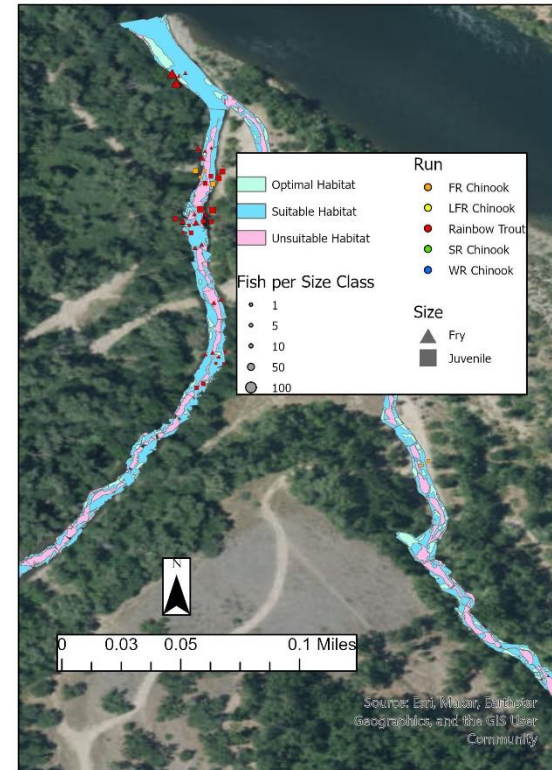
*Dates mapped: 1-5-22, & 1-6-22

Cover from Predators



*Dates mapped: 2-10-22, 2-16-22, & 2-17-22

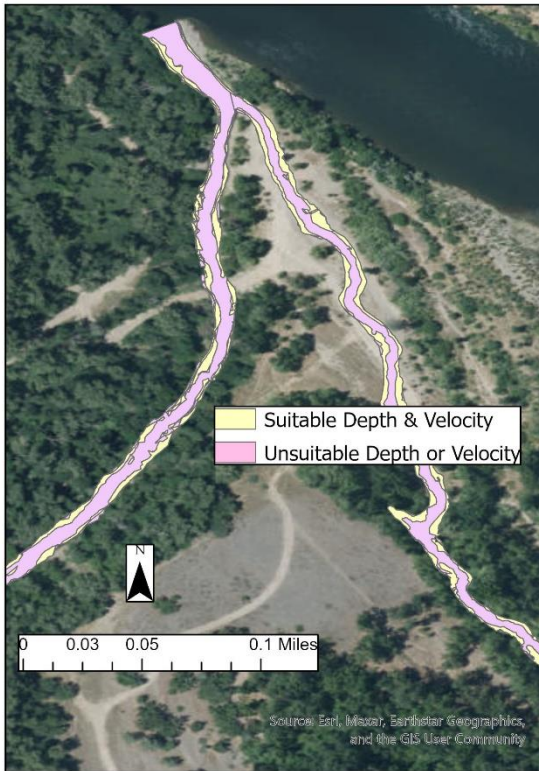
Fish Locations Among Optimal & Suitable Habitat



*Dates snorkeled: 4-21-22
Keswick flow during snorkel: 3250 CFS

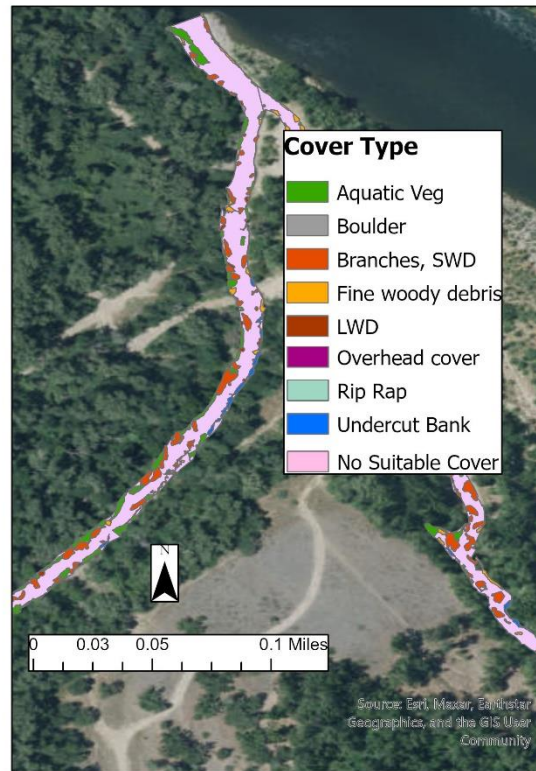
Post Restoration Habitat Mapping: Anderson River Park Phase 1 (Upper) Keswick Release 7,800 CFS

Depth & Velocity Mapping



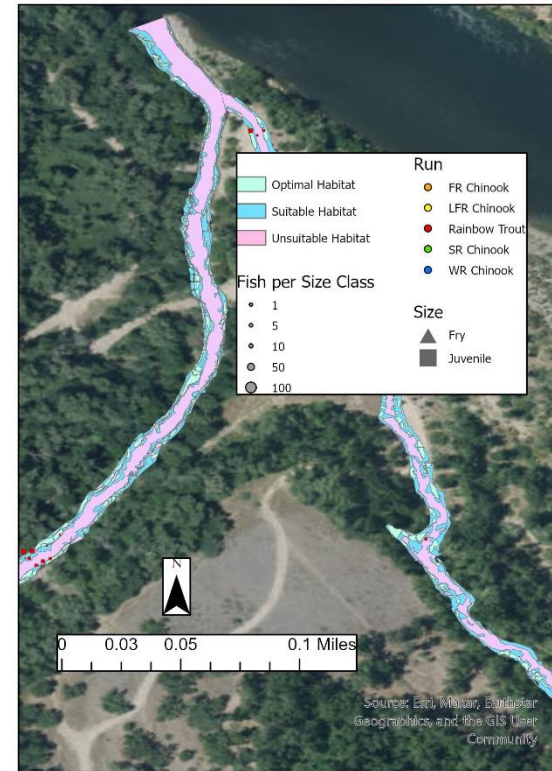
*Dates mapped: 8-11-21, 8-24-21, & 8-26-21

Cover from Predators



*Dates mapped: 8-24-21, 8-25-21, & 8-26-21

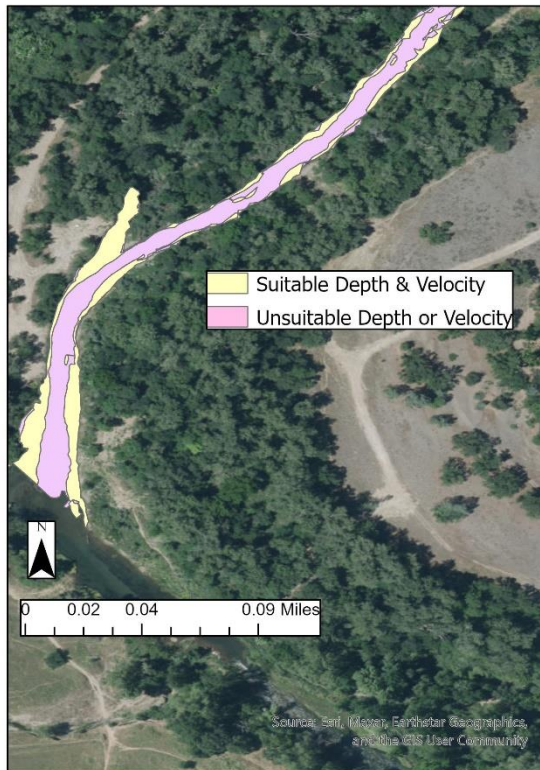
Fish Locations Among Optimal & Suitable Habitat



*Dates snorkeled: 6-3-21
Keswick flow during snorkel: 7100 CFS

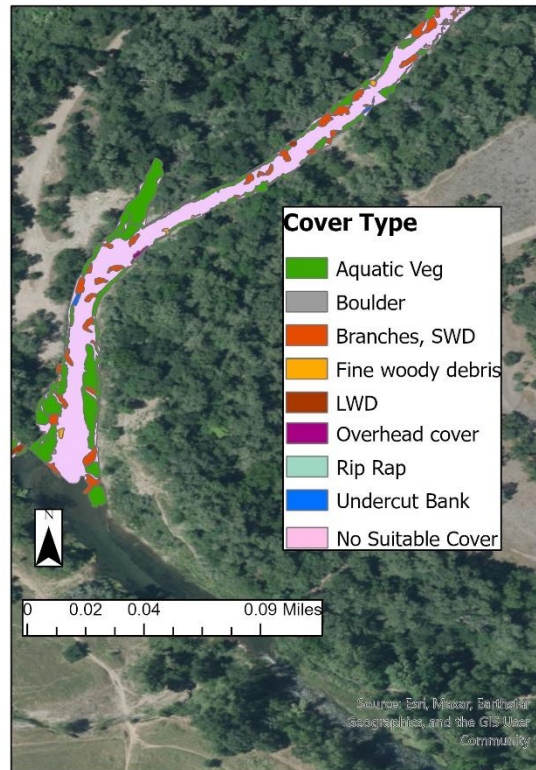
Post Restoration Habitat Mapping: Anderson River Park Phase 1 (Lower) Keswick Release 7,800 CFS

Depth & Velocity Mapping



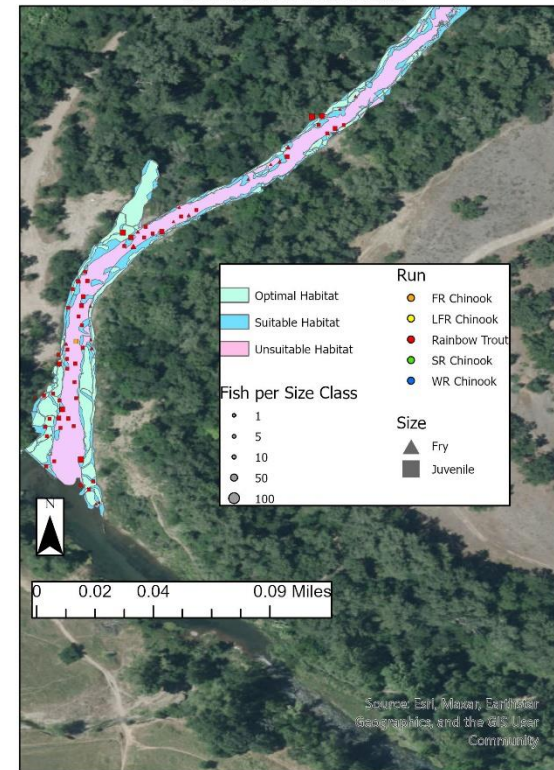
*Dates mapped: 8-11-21, 8-24-21, & 8-26-21

Cover from Predators



*Dates mapped: 8-24-21, 8-25-21, & 8-26-21

Fish Locations Among Optimal & Suitable Habitat

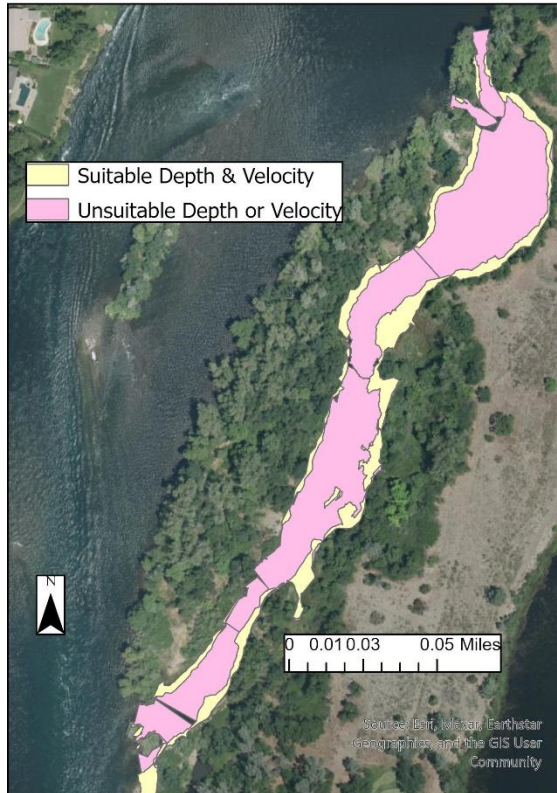


*Dates snorkeled: 6-3-21
Keswick flow during snorkel: 7100 CFS

Wyndham

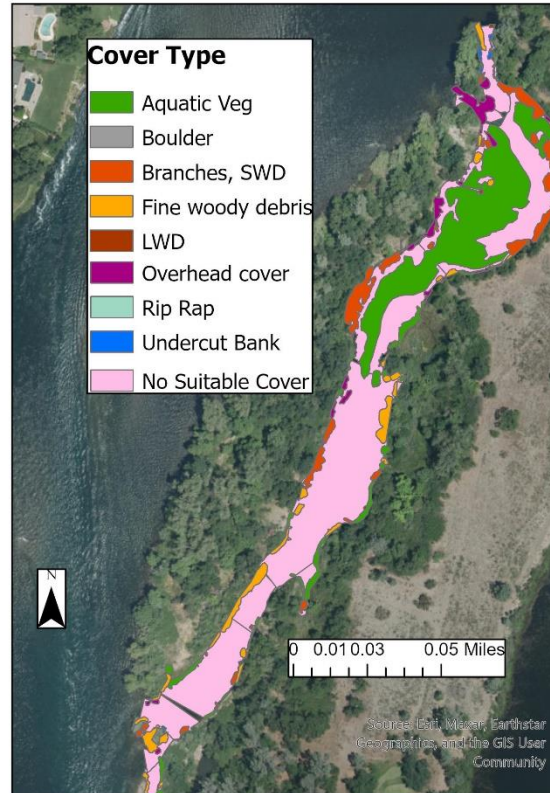
**Control Site Habitat Mapping: Wyndham
Keswick Release 9,300 CFS**

Depth & Velocity Mapping



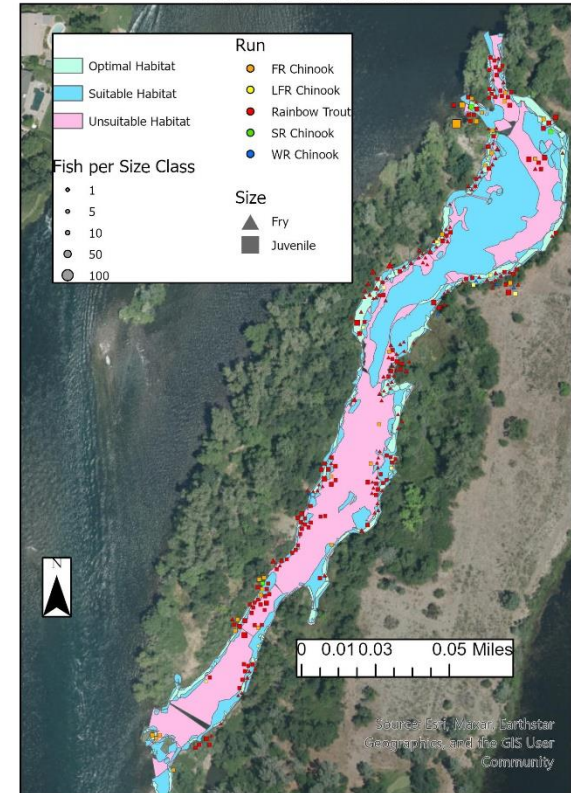
*Dates mapped: 7-13-21 & 7-15-21

Cover from Predators



*Dates mapped: 7-14-21, 7-15-21, 7-19-21, & 7-22-22

Fish Locations Among Optimal & Suitable Habitat



*Dates snorkeled: 7-12-21 through 7-20-21
*Keswick flow during snorkel: 9300 CFS

APPENDIX B: MAPPED SIDE CHANNEL HABITAT VALUES

Displayed are the habitat compositions for rearing of juvenile salmonids of all mapped side channels over the duration of the project. Each row characterizes a snapshot of habitat in a side channel at a given time. Please refer to past annual reports for details on mapping procedures.

Side Channel	Channel Status	Cover Excluded	Keswick Release Flows (CFS)	Date Mapped	Optimal Habitat Area (m ²)	Percent Optimal Habitat	Suitable Habitat Area (m ²)	Percent Suitable Habitat	Suitable Cover Area (m ²)	Percent Cover	Suitable Depth Velocity Area (m ²)	Percent Depth Velocity	Total Area (m ²)
Bourbon	Control	Veg, Cobble	3,250	2/26/18	310	5.8%	2540	47.4%	562	10.5%	2599	48.5%	5360
Bourbon	Control	Cobble	3,250	2/26/18	498	9.3%	2480	46.3%	1010	18.8%	2599	48.5%	5360
Bourbon	Control	Veg, Cobble	7,500	10/9/18	263	4.4%	2174	36.1%	971	16.1%	1737	28.8%	6021
Bourbon	Control	Cobble	7,500	10/9/18	718	11.9%	2283	37.9%	2006	33.3%	1737	28.8%	6021
Bourbon	Control	Veg, Cobble	10,500	7/18/17, 7/19/17	149	2.0%	957	12.9%	769	10.4%	511	6.9%	7401
Bourbon	Control	Cobble	10,500	7/18/17, 7/19/17	179	2.4%	1011	13.7%	889	12.0%	511	6.9%	7401
Bourbon	Control	Veg, Cobble	3,500	3/15/21, 3/16/21, 3/17/21	559	9.4%	3221	54.3%	1016	17.1%	3328	56.1%	5934
Bourbon	Control	Cobble	3,500	3/15/21, 3/16/21, 3/17/21	714	12.0%	3150	53.1%	1254	21.1%	3328	56.1%	5934
Bourbon	Control	Veg, Cobble	6,900	9/27/21, 9/28/21	467	7.8%	2216	36.9%	1022	17.0%	2128	35.5%	6000
Bourbon	Control	Cobble	6,900	9/27/21, 9/28/21	944	15.7%	2260	37.7%	2020	33.7%	2128	35.5%	6000
Clear Creek	Control	Veg, Cobble	3,250	2/28/18	325	9.4%	2396	69.0%	435	12.5%	2636	75.9%	3474
Clear Creek	Control	Cobble	3,250	2/28/18	325	9.4%	2396	69.0%	435	12.5%	2636	75.9%	3474
Clear Creek	Control	Veg, Cobble	7,500	10/9/18	453	8.9%	2346	46.1%	784	15.4%	2468	48.5%	5092
Clear Creek	Control	Cobble	7,500	10/9/18	750	14.7%	2476	48.6%	2279	44.8%	2468	48.5%	5092
Clear Creek	Control	Veg, Cobble	10,200	8/23/19, 8/26/19, 8/27/19, 8/28/19	669	13.4%	2145	42.9%	1018	20.4%	2466	49.4%	4995
Clear Creek	Control	Cobble	10,200	8/23/19, 8/26/19, 8/27/19, 8/28/19	1149	23.0%	1727	34.6%	1559	31.2%	2466	49.4%	4995
Clear Creek	Control	Veg, Cobble	10,500	7/20/17	311	6.6%	1159	24.7%	620	13.2%	1251	26.6%	4701
Clear Creek	Control	Cobble	10,500	7/20/17	541	11.5%	966	20.5%	889	18.9%	1251	26.6%	4701
Clear Creek	Control	Veg, Cobble	3,500	3/11/21, 3/23/21	944	28.1%	2392	71.3%	1034	30.8%	3246	96.8%	3354
Clear Creek	Control	Cobble	3,500	3/11/21, 3/23/21	1804	53.8%	1674	49.9%	2036	60.7%	3246	96.8%	3354
Clear Creek	Control	Veg, Cobble	6,900	9/28/21	274	6.7%	3223	78.6%	325	7.9%	3446	84.0%	4100

Clear Creek	Control	Cobble	6,900	9/28/21	1387	33.8%	2701	65.9%	2029	49.5%	3446	84.0%	4100
Clear Creek	Control	Veg, Cobble	3,250	1/12/22, 2/24/22	811	25.0%	2561	79.1%	951	29.4%	3232	99.8%	3239
Clear Creek	Control	Cobble	3,250	1/12/22, 2/24/22	2013	62.1%	1471	45.4%	2264	69.9%	3232	99.8%	3239
Wyndham	Control	Veg, Cobble	3,100	3/7/18, 3/9/18	509	4.6%	5374	48.6%	923	8.4%	5480	49.6%	11049
Wyndham	Control	Cobble	3,100	3/7/18, 3/9/18	1472	13.3%	4432	40.1%	1911	17.3%	5480	49.6%	11049
Wyndham	Control	Veg, Cobble	5,000	11/4/19, 11/5/19, 11/7/19, 11/21/19	434	3.4%	5705	44.5%	958	7.5%	5614	43.8%	12812
Wyndham	Control	Cobble	5,000	11/4/19, 11/5/19, 11/7/19, 11/21/19	2072	16.2%	6630	51.7%	5159	40.3%	5614	43.8%	12812
Wyndham	Control	Veg, Cobble	7,500	10/9/18	323	2.6%	6623	52.9%	710	5.7%	6559	52.4%	12517
Wyndham	Control	Cobble	7,500	10/9/18	1462	11.7%	8007	64.0%	4386	35.0%	6559	52.4%	12517
Wyndham	Control	Veg, Cobble	10,500	7/26/17, 7/31/17	219	1.7%	1912	14.9%	1063	8.3%	1206	9.4%	12817
Wyndham	Control	Cobble	10,500	7/26/17, 7/31/17	298	2.3%	1995	15.6%	1304	10.2%	1206	9.4%	12817
Wyndham	Control	Veg, Cobble	3,400	3/2/21, 3/3/21, 3/4/21, 3/9/21	775	6.2%	6708	53.9%	1157	9.3%	7106	57.1%	12452
Wyndham	Control	Cobble	3,400	3/2/21, 3/3/21, 3/4/21, 3/9/21	2281	18.3%	5472	43.9%	2929	23.5%	7106	57.1%	12452
Wyndham	Control	Veg, Cobble	9,300	7/7/21, 7/12/21, 7/13/21, 7/14/21, 7/15/21, 7/19/21, 7/22/21	1036	7.9%	3528	27.0%	2257	17.3%	3344	25.6%	13049
Wyndham	Control	Cobble	9,300	7/7/21, 7/12/21, 7/13/21, 7/14/21, 7/15/21, 7/19/21, 7/22/21	1489	11.4%	6286	48.2%	5920	45.4%	3344	25.6%	13049
Lake California	Restored	Veg, Cobble	3,250	2/13/18, 2/15/18, 2/20/18	1666	6.9%	11386	47.1%	4480	18.5%	10246	42.4%	24193
Lake California	Restored	Cobble	3,250	2/13/18, 2/15/18, 2/20/18	2251	9.3%	9850	40.7%	5238	21.7%	10246	42.4%	24193
Lake California	Restored	Veg, Cobble	6,700	10/7/19, 10/9/19, 10/14/19, 10/16/19, 10/17/19, 10/25/19, 10/29/19	1563	5.1%	11333	37.3%	4603	15.1%	10531	34.7%	30389

Lake California	Restored	Cobble	6,700	10/7/19, 10/9/19, 10/14/19, 10/16/19, 10/17/19, 10/25/19, 10/29/19	1845	6.1%	11445	37.7%	3927	12.9%	10531	34.7%	30389
Lake California	Restored	Veg, Cobble	7,500	10/8/18, 10/10/18	1012	3.5%	12984	45.4%	3264	11.4%	11758	41.1%	28600
Lake California	Restored	Cobble	7,500	10/8/18, 10/10/18	2219	7.8%	12398	43.3%	5105	17.8%	11758	41.1%	28600
Lake California	Restored	Veg, Cobble	9,000	8/30/17, 9/11/17, 9/13/17, 9/14/17	1059	3.3%	9531	29.3%	5947	18.3%	7511	23.1%	32518
Lake California	Restored	Cobble	9,000	8/30/17, 9/11/17, 9/13/17, 9/14/17	1583	4.9%	9524	29.3%	6090	18.7%	7511	23.1%	32518
Lake California	Restored	Veg, Cobble	6,700	9/21/20, 9/22/20, 9/23/20, 9/24/20, 9/28/20, 10/13/20	2248	6.8%	15225	46.0%	7503	22.7%	12220	36.9%	33097
Lake California	Restored	Cobble	6,700	9/21/20, 9/22/20, 9/23/20, 9/24/20, 9/28/20, 10/13/21	3933	11.9%	14588	44.1%	10231	30.9%	12220	36.9%	33097
Lake California	Restored	Veg, Cobble	3,250	1/5/21, 1/6/21, 1/7/21, 1/13/21, 1/14/21	2373	10.9%	18176	83.7%	3611	16.6%	19331	89.0%	21716
Lake California	Restored	Cobble	3,250	1/5/21, 1/6/21, 1/7/21, 1/13/21, 1/14/21	5125	23.6%	15650	72.1%	6589	30.3%	19331	89.0%	21716
Lake California	Restored	Veg, Cobble	6,800	9/2/21, 9/7/21, 9/16/21, 9/20/21, 9/21/21, 9/22/21	1767	5.4%	10615	32.7%	5984	18.4%	8166	25.1%	32482
Lake California	Restored	Cobble	6,800	9/2/21, 9/7/21, 9/16/21, 9/20/21, 9/21/21, 9/22/21	4618	14.2%	15156	46.7%	16227	50.0%	8166	25.1%	32482
Lake California	Restored	Veg, Cobble	3,250	1/18/22, 1/19/22, 2/8/22, 2/9/22, 2/10/22	2646	10.9%	12284	50.6%	4955	20.4%	12620	52.0%	24266
Lake California	Restored	Cobble	3,250	1/18/22, 1/19/22, 2/8/22,	3724	15.3%	11761	48.5%	6589	27.2%	12620	52.0%	24266

				2/9/22, 2/10/22									
North Cypress	Restored	Veg, Cobble	3,700	2/9/18, 2/12/18	808	7.6%	4726	44.3%	1097	10.3%	5308	49.7%	10678
North Cypress	Restored	Cobble	3,700	2/9/18, 2/12/18	808	7.6%	4726	44.3%	1097	10.3%	5308	49.7%	10678
North Cypress	Restored	Veg, Cobble	5,000	11/4/19, 11/6/19, 11/14/19	706	5.7%	5224	42.2%	995	8.0%	5640	45.5%	12392
North Cypress	Restored	Cobble	5,000	11/4/19, 11/6/19, 11/14/19	1677	13.5%	5126	41.4%	2840	22.9%	5640	45.5%	12392
North Cypress	Restored	Veg, Cobble	6,000	10/24/18	1218	9.5%	4774	37.2%	1509	11.8%	5700	44.4%	12826
North Cypress	Restored	Cobble	6,000	10/24/18	2438	19.0%	5169	40.3%	4370	34.1%	5700	44.4%	12826
North Cypress	Restored	Veg, Cobble	8,000	10/11/17, 10/12/17	1215	8.6%	3150	22.3%	1796	12.7%	3795	26.9%	14100
North Cypress	Restored	Cobble	8,000	10/11/17, 10/12/17	1215	8.6%	3150	22.3%	1796	12.7%	3795	26.9%	14100
North Cypress	Restored	Veg, Cobble	6,900	9/29/21, 9/30/21, 10/4/21	1482	11.0%	4942	36.7%	2128	15.8%	5778	42.9%	13464
North Cypress	Restored	Cobble	6,900	9/29/21, 9/30/21, 10/4/21	2491	18.5%	6268	46.6%	5472	40.6%	5778	42.9%	13464
North Cypress	Restored	Veg, Cobble	3,250	12/29/21, 3/17/22, 3/21/22	1247	11.8%	6710	63.6%	1494	14.2%	7709	73.1%	10551
North Cypress	Restored	Cobble	3,250	12/29/21, 3/17/22, 3/21/22	1247	11.8%	6710	63.6%	1494	14.2%	7709	73.1%	10551
Painters	Restored	Veg, Cobble	3,700	2/12/2018 , 3/29/18	67	1.0%	2511	38.3%	212	3.2%	2436	37.2%	6554
Painters	Restored	Cobble	3,700	2/12/2018 , 1/29/18	67	1.0%	2511	38.3%	212	3.2%	2436	37.2%	6554
Painters	Restored	Veg, Cobble	5,000	12/5/17	42	0.5%	2182	26.4%	292	3.5%	2141	25.9%	8271
Painters	Restored	Cobble	5,000	12/5/17	255	3.1%	2096	25.3%	477	5.8%	2141	25.9%	8271
Painters	Restored	Veg, Cobble	7,400	9/26/18, 10/10/18	110	1.2%	2103	22.9%	186	2.0%	1978	21.6%	9164
Painters	Restored	Cobble	7,400	9/26/18, 10/10/18	42	0.5%	2182	23.8%	292	3.2%	1978	21.6%	9164
Painters	Restored	Veg, Cobble	7,800	10/28/19, 10/30/19	131	1.6%	1418	17.6%	232	2.9%	1448	18.0%	8057
Painters	Restored	Cobble	7,800	10/28/19, 10/30/19	203	2.5%	1468	18.2%	426	5.3%	1448	18.0%	8057
Painters	Restored	Veg, Cobble	3,250	2/23/21, 2/24/21, 3/1/21	95	1.4%	4894	72.1%	277	4.1%	4809	70.8%	6791
Painters	Restored	Cobble	3,250	2/23/21, 2/24/21, 3/1/21	95	1.4%	4894	72.1%	277	4.1%	4809	70.8%	6791
Painters	Restored	Veg, Cobble	3,250	3/8/22	110	1.7%	5226	79.1%	154	2.3%	5292	80.1%	6610
Painters	Restored	Cobble	3,250	3/8/22	130	2.0%	5206	78.8%	174	2.6%	5292	80.1%	6610
Kapusta	Restored	Veg, Cobble	6,600	10/2/19, 10/3/19	427	16.8%	1397	55.0%	633	24.9%	1617	63.7%	2539
Kapusta	Restored	Cobble	6,600	10/2/19, 10/3/19	730	28.8%	1512	59.6%	1356	53.4%	1617	63.7%	2539

Kapusta	Restored	Veg, Cobble	7,500	10/17/18	190	7.4%	1025	39.9%	574	22.4%	832	32.4%	2568
Kapusta	Restored	Cobble	7,500	10/17/18	491	19.1%	1017	39.6%	1244	48.4%	832	32.4%	2568
Kapusta	Restored	Veg, Cobble	11,000	8/6/20	299	11.6%	1119	43.4%	776	30.1%	941	36.5%	2578
Kapusta	Restored	Cobble	11,000	8/6/20	536	20.8%	1454	56.4%	1586	61.5%	941	36.5%	2578
Kapusta	Restored	Veg, Cobble	3,250	2/9/21, 2/10/21, 2/11/21	234	12.0%	1421	72.9%	301	15.4%	1588	81.4%	1950
Kapusta	Restored	Cobble	3,250	2/9/21, 2/10/21, 2/11/21	608	31.2%	1083	55.5%	712	36.5%	1588	81.4%	1950
Kapusta	Restored	Veg, Cobble	6,800	8/31/21, 9/1/21	471	18.4%	1229	48.1%	887	34.7%	1285	50.3%	2553
Kapusta	Restored	Cobble	6,800	8/31/21, 9/1/21	739	28.9%	1483	58.1%	1676	65.6%	1285	50.3%	2553
Kapusta	Restored	Veg, Cobble	3,250	1/12/22, 1/14/22, 2/22/22	499	25.6%	1408	72.1%	625	32.0%	1781	91.2%	1952
Kapusta	Restored	Cobble	3,250	1/12/22, 1/14/22, 2/22/22	887	45.5%	1073	55.0%	1067	54.6%	1781	91.2%	1952
Rio Vista	Unrestored	Veg, Cobble	3,250	1/24/19	111	2.9%	3579	94.8%	122	3.2%	3679	97.4%	3777
Rio Vista	Unrestored	Cobble	3,250	1/24/19	493	13.1%	3266	86.5%	572	15.1%	3679	97.4%	3777
Rio Vista	Unrestored	Veg, Cobble	8,600	9/11/19, 9/12/19	581	6.3%	6746	73.7%	1140	12.5%	6768	73.9%	9154
Rio Vista	Unrestored	Cobble	8,600	9/11/19, 9/12/19	4852	53.0%	3471	37.9%	6407	70.0%	6768	73.9%	9154
Rio Vista	Restored	Veg, Cobble	5,000	11/18/19, 11/20/19	650	6.1%	6841	63.9%	863	8.1%	7278	67.9%	10711
Rio Vista	Restored	Cobble	5,000	11/18/19, 11/20/19	3663	34.2%	4044	37.8%	4051	37.8%	7278	67.9%	10711
Rio Vista	Restored	Veg, Cobble	10,500	8/14/20	348	2.2%	6206	39.6%	1435	9.2%	5467	34.9%	15663
Rio Vista	Restored	Cobble	10,500	8/14/20	2550	16.3%	5691	36.3%	5324	34.0%	5467	34.9%	15663
Rio Vista	Restored	Veg, Cobble	3,250	12/31/20, 1/4/21	679	8.9%	6770	88.5%	815	10.7%	7314	95.6%	7650
Rio Vista	Restored	Cobble	3,250	12/31/20, 1/4/21	4411	57.7%	5181	67.7%	5175	67.6%	7314	95.6%	7650
Rio Vista	Restored	Veg, Cobble	9,000	7/1/21, 7/5/21, 7/6/21	513	3.8%	7021	52.5%	1270	9.5%	6776	50.7%	13373
Rio Vista	Restored	Cobble	9,000	7/1/21, 7/5/21, 7/6/21	5166	38.6%	4725	35.3%	8280	61.9%	6776	50.7%	13373
Rio Vista	Restored	Veg, Cobble	3,250	1/13/22, 2/7/22	694	6.6%	6759	64.3%	844	8.0%	7302	69.5%	10505
Rio Vista	Restored	Cobble	3,250	1/13/22, 2/7/22	2561	24.4%	5833	55.5%	3652	34.8%	7302	69.5%	10505
Anderson River Park Phase 1	Unrestored	Veg, Cobble	3,250	1/22/19	38	1.1%	2896	85.0%	55	1.6%	2916	85.6%	3407
Anderson River Park Phase 1	Unrestored	Cobble	3,250	1/22/19	1832	53.8%	1548	45.4%	2297	67.4%	2916	85.6%	3407
Anderson River Park Phase 1	Restored	Veg, Cobble	5,000	1/9/20, 1/15/2020	648	9.7%	2740	40.9%	898	13.4%	3126	46.6%	6706
Anderson River Park Phase 1	Restored	Cobble	5,000	1/9/20, 1/15/2020	682	10.2%	2712	40.4%	937	14.0%	3126	46.6%	6706

Anderson River Park Phase 1	Restored	Veg, Cobble	10,500	8/11/20, 8/12/20	484	5.3%	2610	28.7%	1674	18.4%	1905	20.9%	9105
Anderson River Park Phase 1	Restored	Cobble	10,500	8/11/20, 8/12/20	906	10.0%	2832	31.1%	2740	30.1%	1905	20.9%	9105
Anderson River Park Phase 1	Restored	Veg, Cobble	7,650	8/11/21, 8/12/21, 8/24/21, 8/25/21, 8/26/21	661	7.3%	3428	37.9%	1256	13.9%	3495	38.6%	9046
Anderson River Park Phase 1	Restored	Cobble	7,650	8/11/21, 8/12/21, 8/24/21, 8/25/21, 8/26/21	2060	22.8%	2545	28.1%	3169	35.0%	3495	38.6%	9046
Anderson River Park Phase 1	Restored	Veg, Cobble	3,300	1/5/22, 1/6/22, 2/16/22, 2/17/22	395	6.9%	4218	73.3%	495	8.6%	4471	77.7%	5752
Anderson River Park Phase 1	Restored	Cobble	3,300	1/5/22, 1/6/22, 2/16/22, 2/17/22	735	12.8%	4152	72.2%	1109	19.3%	4471	77.7%	5752
Anderson River Park Phase 2	Unrestored	Veg, Cobble	7,000	10/1/20, 10/2/20, 10/5/20	278	5.8%	2949	61.9%	388	8.1%	3118	65.5%	4761
Anderson River Park Phase 2	Unrestored	Cobble	7,000	10/1/20, 10/2/20, 10/5/20	2405	50.5%	1451	30.5%	3142	66.0%	3118	65.5%	4761
Anderson River Park Phase 2	Restored	Veg, Cobble	3,250	1/28/21, 2/4/21, 2/9/21, 2/11/21	811	12.1%	4180	62.1%	1318	19.6%	4550	67.6%	6730
Anderson River Park Phase 2	Restored	Cobble	3,250	1/28/21, 2/4/21, 2/9/21, 2/11/21	811	12.1%	3904	58.0%	1318	19.6%	4550	67.6%	6730
Anderson River Park Phase 2	Restored	Veg, Cobble	8,600	8/5/21, 8/9/21, 8/10/21, 8/11/21	1521	12.5%	5423	44.5%	3026	24.8%	5440	44.6%	12191
Anderson River Park Phase 2	Restored	Cobble	8,600	8/5/21, 8/9/21, 8/10/21, 8/11/21	2409	19.8%	5177	42.5%	4555	37.4%	5440	44.6%	12191
Anderson River Park Phase 2	Restored	Veg, Cobble	3,300	1/5/22, 1/6/22, 1/10/22, 2/10/22, 2/16/22, 2/17/22	1026	15.0%	4610	67.4%	1524	22.3%	5181	75.7%	6845
Anderson River Park Phase 2	Restored	Cobble	3,300	1/5/22, 1/6/22, 1/10/22, 2/10/22, 2/16/22, 2/17/23	1493	21.8%	4234	61.9%	2082	30.4%	5181	75.7%	6845
Anderson River Park Phase 3	Unrestored	Veg, Cobble	7,000	9/30/20, 10/6/20, 10/7/20	114	2.5%	3359	73.8%	154	3.4%	3434	75.5%	4549
Anderson River Park Phase 3	Unrestored	Cobble	7,000	9/30/20, 10/6/20, 10/7/20	2706	59.5%	1846	40.6%	3823	84.0%	3434	75.5%	4549

Anderson River Park Phase 3	Restored	Veg, Cobble	3,250	1/20/21, 1/28/21, 2/3/21, 2/4/21, 2/8/21	1089	12.2%	4086	45.7%	1997	22.3%	6731	75.3%	8938
Anderson River Park Phase 3	Restored	Cobble	3,250	1/20/21, 1/28/21, 2/3/21, 2/4/21, 2/8/21	1262	14.1%	4457	49.9%	2439	27.3%	6731	75.3%	8938
Anderson River Park Phase 3	Restored	Veg, Cobble	7,000	8/24/21, 8/25/21, 8/26/21	938	8.5%	6123	55.3%	1688	15.2%	6312	57.0%	11074
Anderson River Park Phase 3	Restored	Cobble	7,000	8/24/21, 8/25/21, 8/26/21	2200	19.9%	5233	47.3%	3320	30.0%	6312	57.0%	11074
Anderson River Park Phase 3	Restored	Veg, Cobble	3,250	1/10/22, 1/11/22, 2/17/22	1207	14.6%	5949	72.1%	1550	18.8%	6811	82.6%	8248
Anderson River Park Phase 3	Restored	Cobble	3,250	1/10/22, 1/11/22, 2/17/22	1938	23.5%	5378	65.2%	2442	29.6%	6811	82.6%	8248
Shae Island	Unrestored	Veg, Cobble	7,400	9/28/18, 10/9/18, 10/22/18	857	5.3%	12470	77.3%	983	6.1%	13200	81.8%	16137
Shae Island	Unrestored	Cobble	7,400	9/28/18, 10/9/18, 10/22/18	3472	21.5%	10111	62.7%	3858	23.9%	13200	81.8%	16137
Shae Island	Unrestored	Veg, Cobble	9,000	9/3/19, 9/5/19, 9/10/19	457	3.0%	7557	50.4%	624	4.2%	7847	52.3%	14996
Shae Island	Unrestored	Cobble	9,000	9/3/19, 9/5/19, 9/10/19	2357	15.7%	6175	41.2%	3041	20.3%	7847	52.3%	14996
Shae Island	Unrestored	Veg, Cobble	3,250	2/10/21, 2/16/21	142	1.4%	9764	99.4%	190	1.9%	9821	100.0%	9821
Shae Island	Unrestored	Cobble	3,250	2/10/21, 2/16/21	6280	63.9%	4073	41.5%	6775	69.0%	9821	100.0%	9821
Shae Island	Unrestored	Veg, Cobble	6,800	9/1/21, 9/2/21	363	2.8%	11021	85.4%	426	3.3%	11320	87.7%	12912
Shae Island	Unrestored	Cobble	6,800	9/1/21, 9/2/21	6108	47.3%	5859	45.4%	6755	52.3%	11320	87.7%	12912
Reading Island	Unrestored	Veg, Cobble	3,250	2/7/19	292	2.2%	7839	58.7%	366	2.7%	8058	60.3%	13365
Reading Island	Unrestored	Cobble	3,250	2/7/19	4300	32.2%	4419	33.1%	4962	37.1%	8058	60.3%	13365
Reading Island	Restored	Veg, Cobble	8,000	8/31/20, 9/2/20	929	5.8%	6245	39.0%	2876	17.9%	5227	32.6%	16030
Reading Island	Restored	Cobble	8,000	8/31/20, 9/2/20	2312	14.4%	9105	56.8%	8530	53.2%	5227	32.6%	16030
Reading Island	Restored	Veg, Cobble	3,100	1/19/21, 1/20/21, 1/21/21, 1/25/21, 1/26/21, 1/27/21	924	7.2%	6495	50.9%	3081	24.1%	7300	57.2%	12771
Reading Island	Restored	Cobble	3,100	1/19/21, 1/20/21, 1/21/21, 1/25/21, 1/26/21, 1/27/21	2278	17.8%	9358	73.3%	8645	67.7%	7300	57.2%	12771

Reading Island	Restored	Veg, Cobble	6,800	9/8/21, 9/9/21, 9/10/21, 9/15/21	1363	8.6%	7055	44.6%	3737	23.6%	6044	38.2%	15824
Reading Island	Restored	Cobble	6,800	9/8/21, 9/9/21, 9/10/21, 9/15/21	3499	22.1%	9086	57.4%	10041	63.4%	6044	38.2%	15824
South Cypress	Unrestored	Veg, Cobble	6,500	10/15/20, 10/21/20	166	8.7%	1665	87.5%	169	8.9%	1828	96.1%	1902
South Cypress	Unrestored	Cobble	6,500	10/15/20, 10/21/20	1588	83.5%	294	15.5%	1641	86.3%	1828	96.1%	1902
South Cypress	Restored	Veg, Cobble	9,000	7/28/21, 7/29/21, 8/2/21, 8/3/21, 8/4/21	1292	4.5%	9219	31.8%	2525	8.7%	9279	32.0%	28986
South Cypress	Restored	Cobble	9,000	7/28/21, 7/29/21, 8/2/21, 8/3/21, 8/4/21	5879	20.3%	8371	28.9%	10848	37.4%	9279	32.0%	28986
South Cypress	Restored	Veg, Cobble	3,250	12/30/21, 1/3/22, 1/4/22, 3/10/22, 3/14/22	1995	8.9%	11474	51.4%	2749	12.3%	12715	57.0%	22318
South Cypress	Restored	Cobble	3,250	12/30/21, 1/3/22, 1/4/22, 3/10/22, 3/14/22	4887	21.9%	9232	41.4%	6290	28.2%	12715	57.0%	22318
East Sand Slough	Unrestored	Veg, Cobble	3,250	3/10/21, 3/23/21	196	5.9%	1755	52.8%	234	7.0%	1912	57.5%	3323
East Sand Slough	Unrestored	Cobble	3,250	3/10/21, 3/23/21	1103	33.2%	1001	30.1%	1295	39.0%	1912	57.5%	3323
East Sand Slough	Unrestored	Veg, Cobble	8,400	8/17/21, 8/18/21	37	0.8%	2015	42.6%	66	1.4%	2024	42.8%	4732
East Sand Slough	Unrestored	Cobble	8,400	8/17/21, 8/18/21	1926	40.7%	2281	48.2%	4110	86.9%	2024	42.8%	4732
East Sand Slough	Restored	Veg, Cobble	3,300	1/25/22, 1/26/22, 1/27/22, 1/31/22, 2/1/22, 2/2/22, 2/3/22	1606	6.7%	11474	47.9%	1904	8.0%	21808	91.1%	23931
East Sand Slough	Restored	Cobble	3,300	1/25/22, 1/26/22, 1/27/22, 1/31/22, 2/1/22, 2/2/22, 2/3/22	8541	35.7%	13900	58.1%	9173	38.3%	21808	91.1%	23931
Kapusta Island	Unrestored	Veg, Cobble	3,500	3/17/21, 3/22/21	918	32.9%	1907	68.4%	1284	46.1%	2458	88.2%	2787
Kapusta Island	Unrestored	Cobble	3,500	3/17/21, 3/22/21	1078	38.7%	1809	64.9%	1508	54.1%	2458	88.2%	2787
Kapusta Island	Unrestored	Veg, Cobble	6,800	8/30/21	744	20.4%	1615	44.4%	1127	31.0%	1977	54.3%	3641
Kapusta Island	Unrestored	Cobble	6,800	8/30/21	1000	27.5%	1455	40.0%	1479	40.6%	1977	54.3%	3641

Kapusta 1B	Unrestored	Veg. Cobble	3,500	4/1/21	594	42.3%	786	55.9%	596	42.4%	1378	98.1%	1405
Kapusta 1B	Unrestored	Cobble	3,500	4/1/21	749	53.3%	631	44.9%	751	53.5%	1378	98.1%	1405
Kapusta 1B	Unrestored	Veg. Cobble	6,800	8/27/21	359	21.1%	735	43.2%	554	32.6%	900	52.9%	1701
Kapusta 1B	Unrestored	Cobble	6,800	8/27/21	654	38.4%	619	36.4%	1027	60.4%	900	52.9%	1701