

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Instream Habitat Analysis with System for Environmental Flow Analysis (SEFA)

Southwest Florida
Water Management District

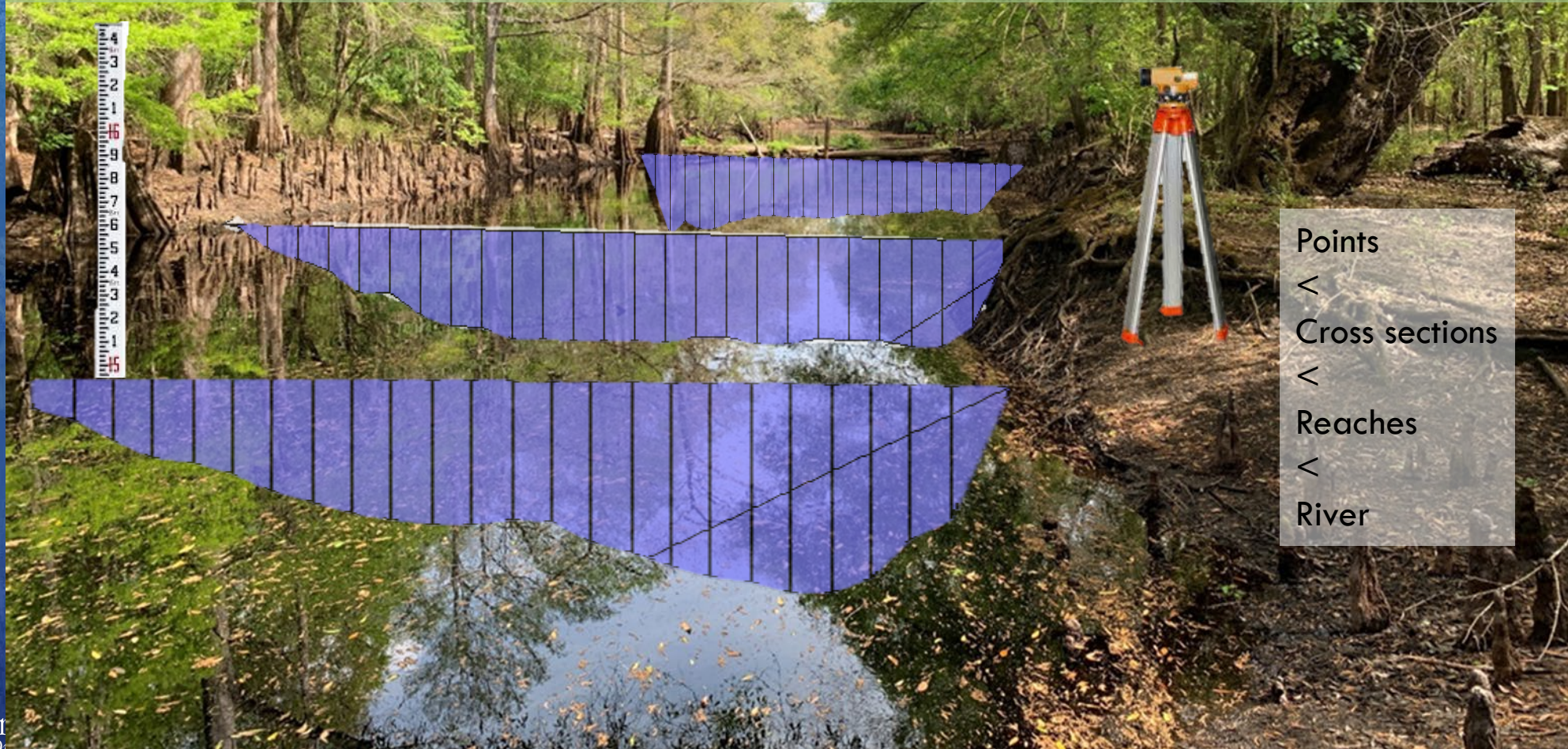


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Lead Environmental Scientist
Natural Systems and Restoration

How Does Habitat Change with Flow?

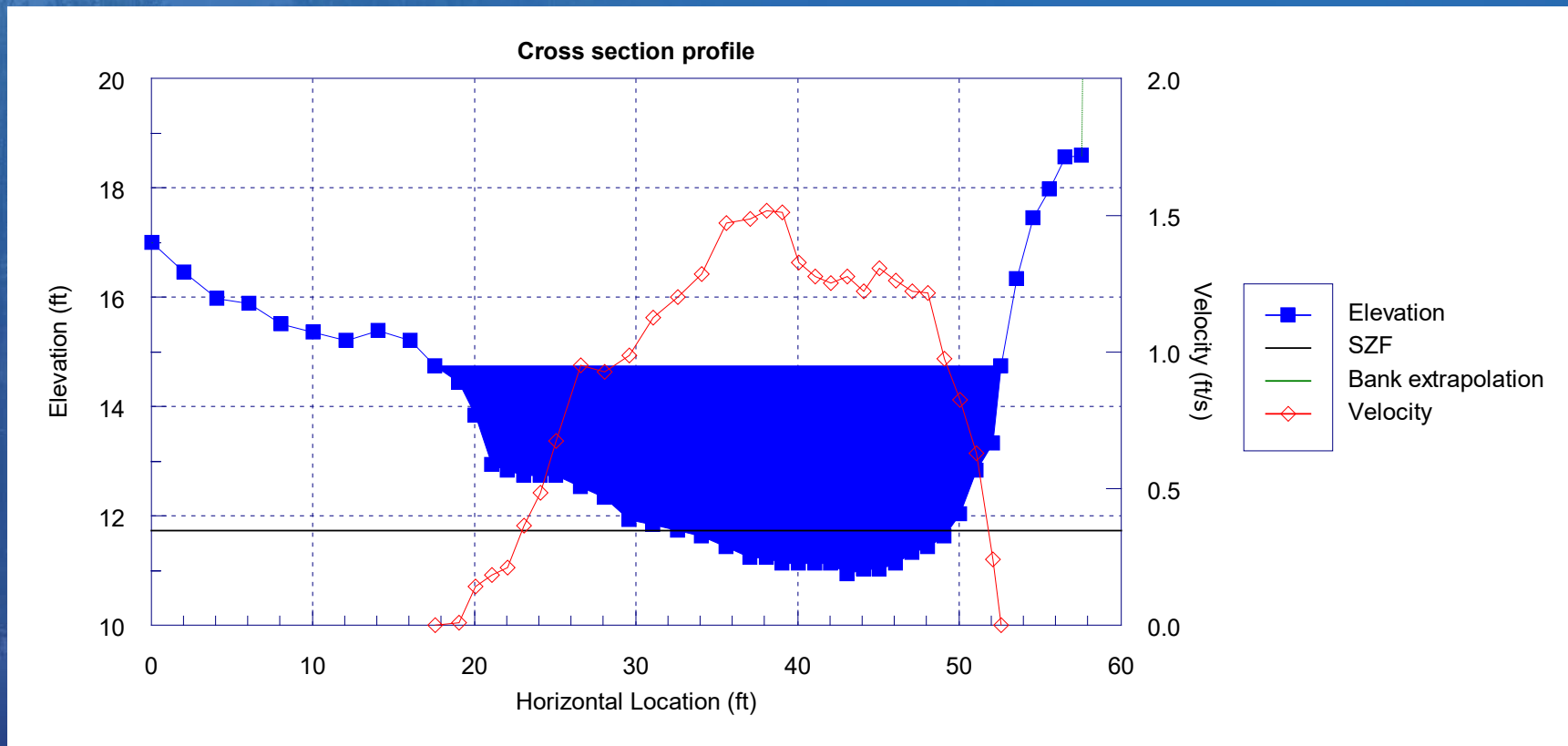


Sampling Physical Characteristics

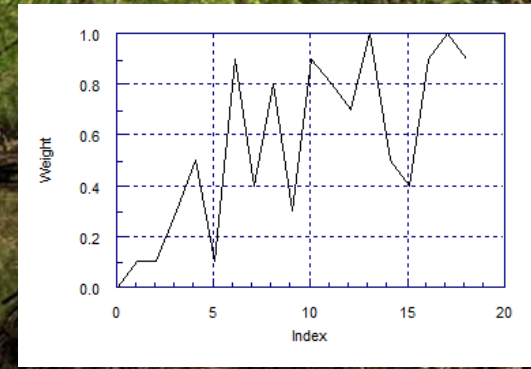
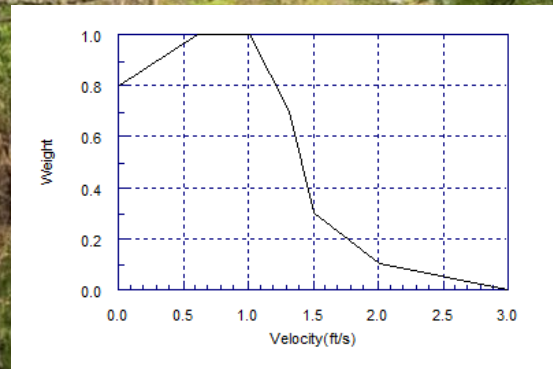
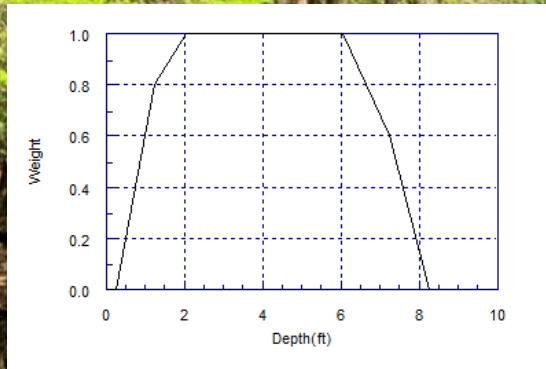


- Points
- <
- Cross sections
- <
- Reaches
- <
- River

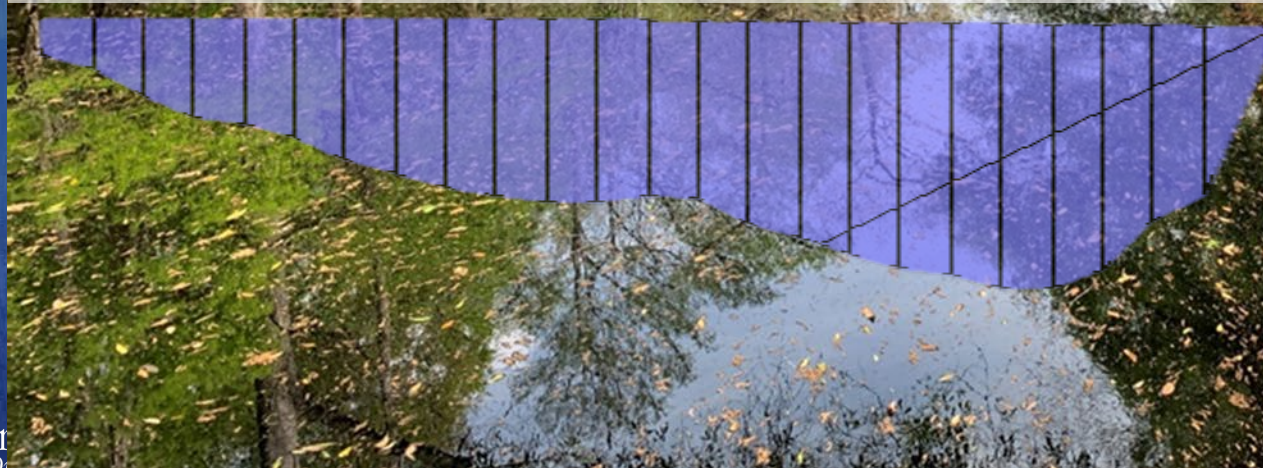
Measured Depth and Velocity



Area Weighted Suitability

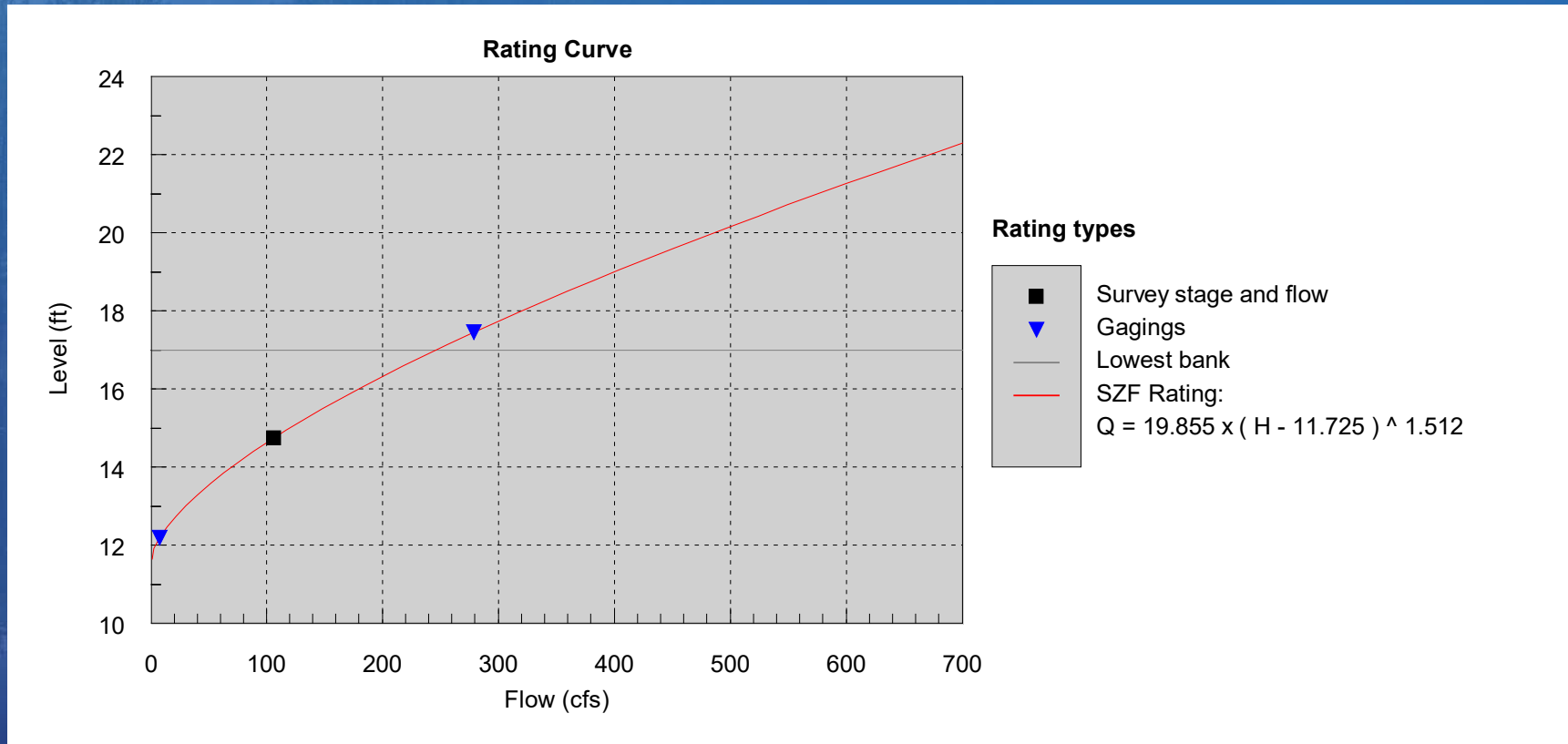


Optimal = 1, Highly Suitable = 0.75, Suitable = 0.5, Somewhat Suitable = 0.25, Unsuitable = 0

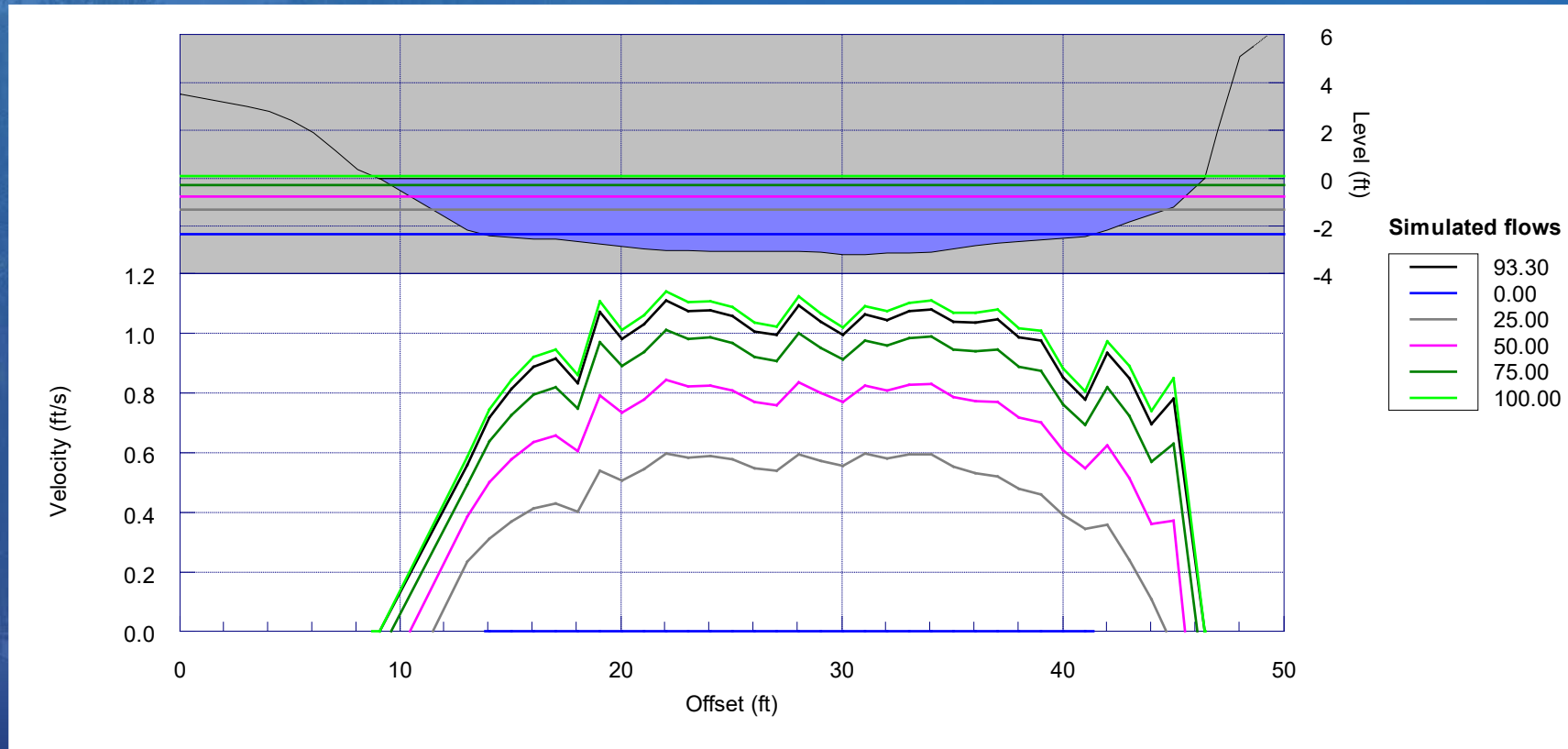


Depth Weight x
Velocity Weight x
Substrate Weight x
Proportion of cross section
(area)
Summed across points

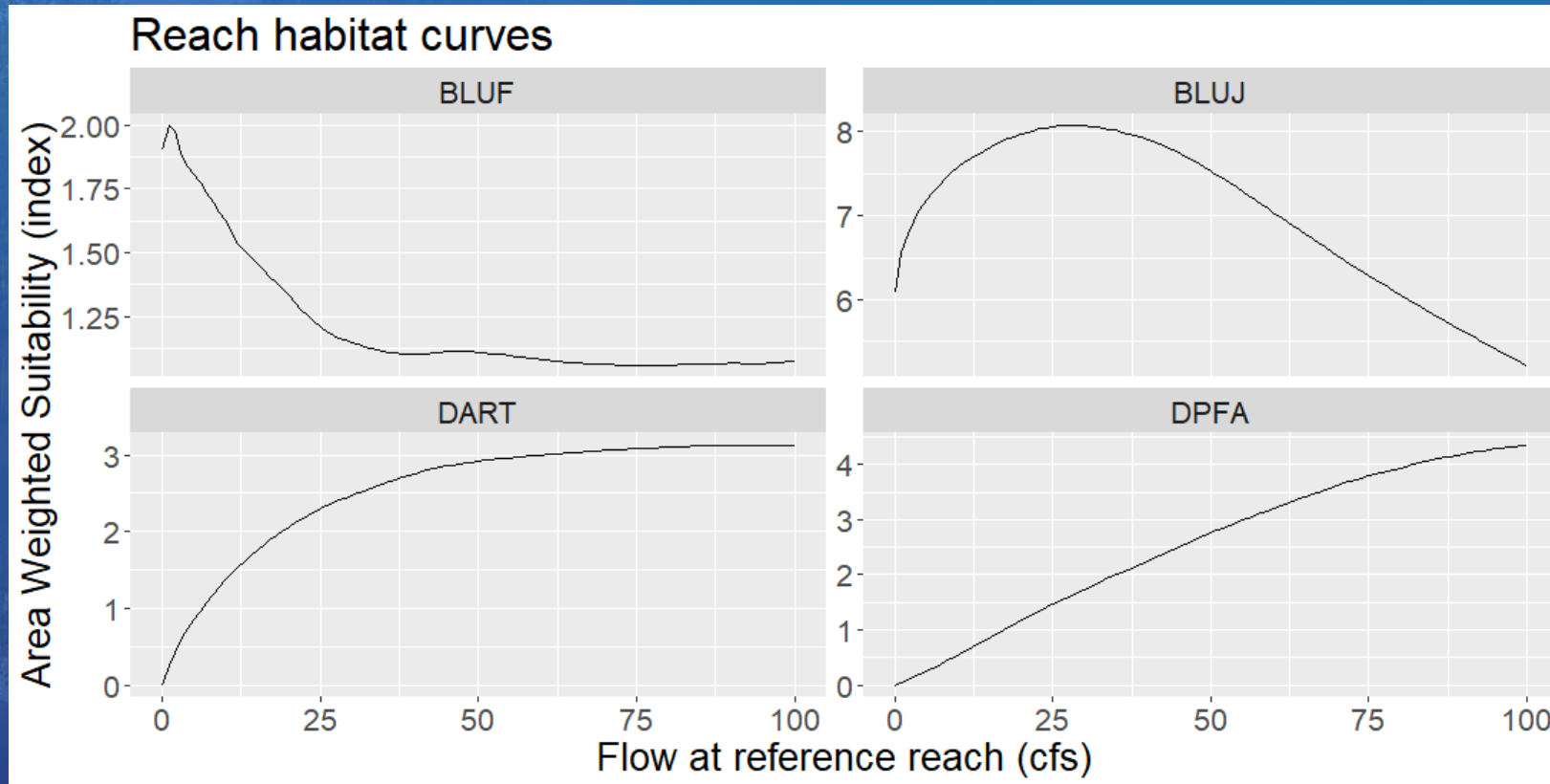
What are physical effects of flow?



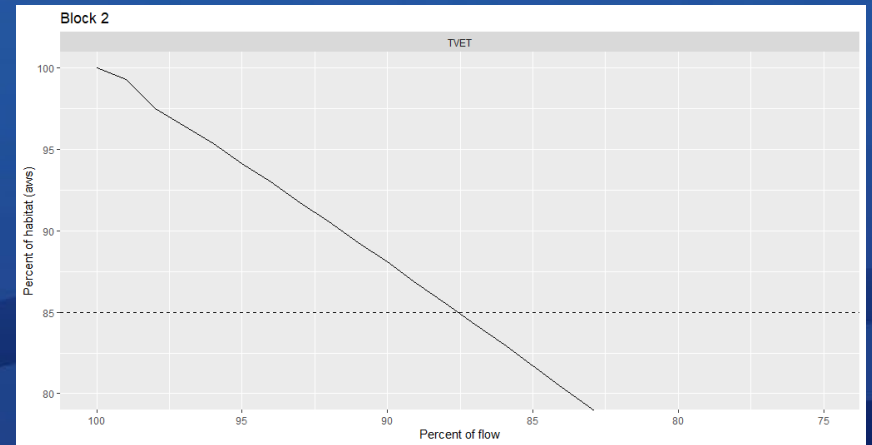
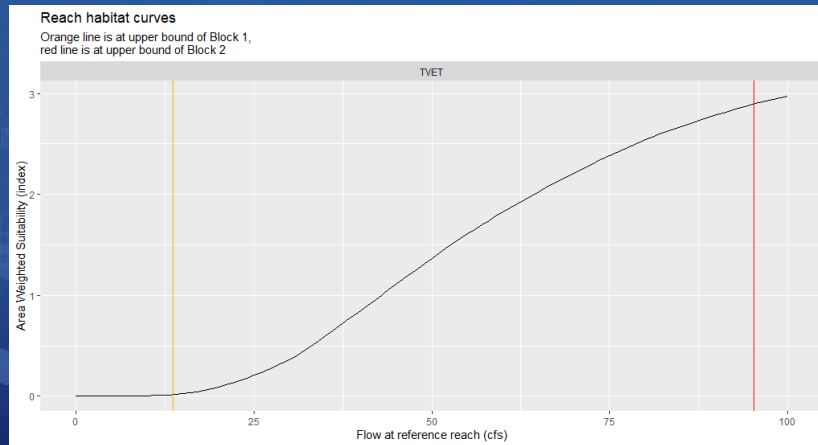
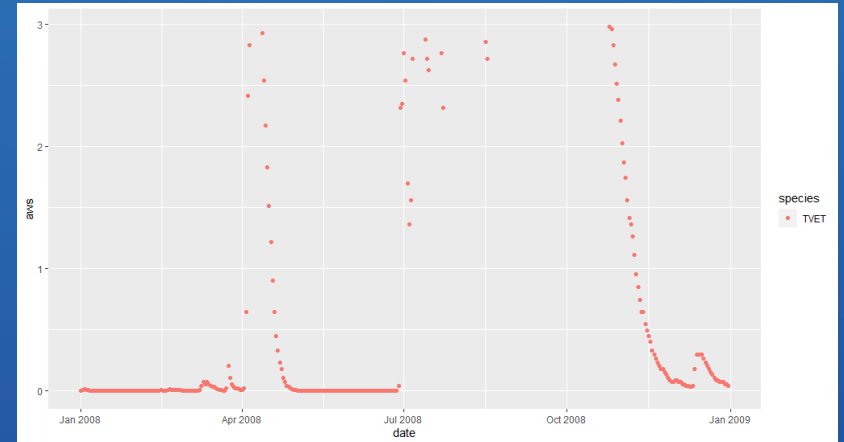
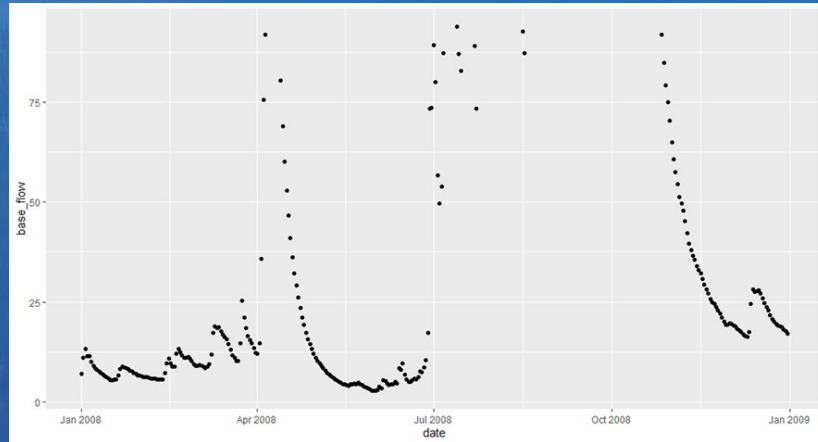
Simulated Depth and Velocity



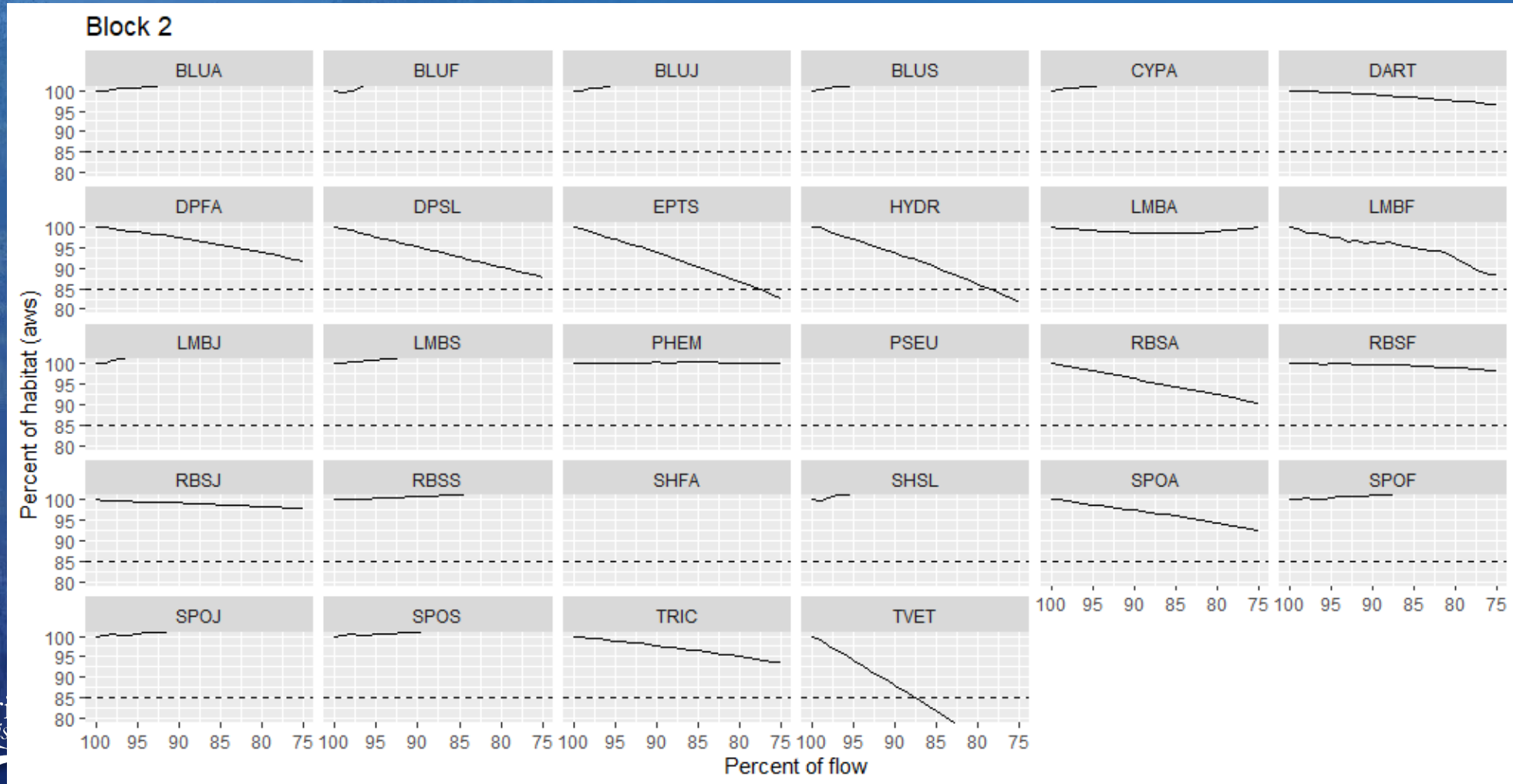
AWS – Flow Curves



Converting Flow to Habitat



Results



Questions

- Which mesohabitats (pool, run, shoal) are most sensitive?
- How many transects are necessary?
- Should more sensitive habitats be sampled more intensively?
- How much does field substrate/cover coding matter?

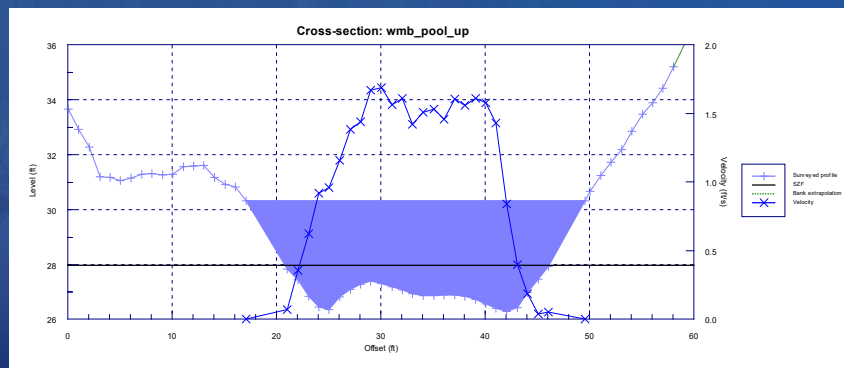
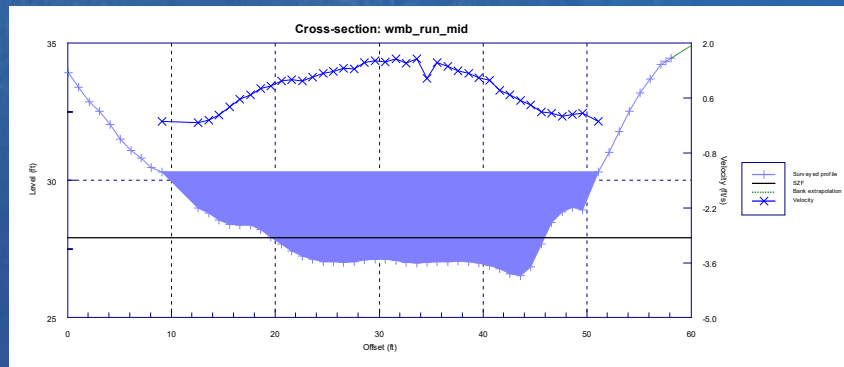
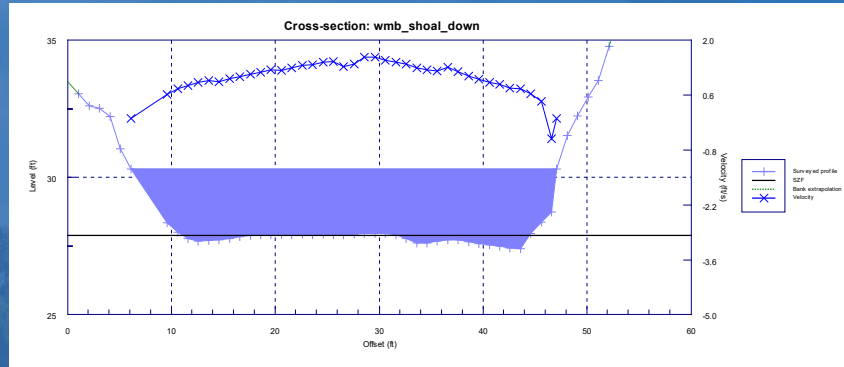
Questions



EXTRA SLIDES

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Mesohabitat comparison



Sections	Species	Block	Min
All	HYDR	1	95
	TVET	2	90
Shoals	HYDR	1	94
	TVET	2	91
Runs	HYDR	1	94
	TVET	2	90
Pools	HYDR	1	96
	TVET	2	88

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

CODE	DESCRIPTION
0	Delimiter
1	No cover and silt or terrestrial vegetation
2	No cover and sand
3	No cover and gravel
4	No cover and cobble
5	No cover and small boulder
6	No cover and boulder, angled bedrock, or woody debris
7	No cover and mud or flat bedrock
8	Overhead vegetation and terrestrial vegetation
9	Overhead vegetation and gravel
10	Overhead vegetation and cobble
11	Overhead vegetation and small boulder, boulder, angled bedrock, or woody debris
12	Instream cover and cobble
13	Instream cover and small boulder, boulder, angled bedrock, or woody debris
14	Proximal instream cover and cobble
15	Proximal instream cover and small boulder, boulder, angled bedrock, or woody debris
16	Instream cover or proximal instream cover and gravel
17	Overhead vegetation or instream cover or proximal instream cover and silt or sand
18	Aquatic Vegetation – macrophytes
100	Delimiter