石組み設置による棲息環境および避難環境の創出

日本大学理工学部土木工学科
環境水理研究室
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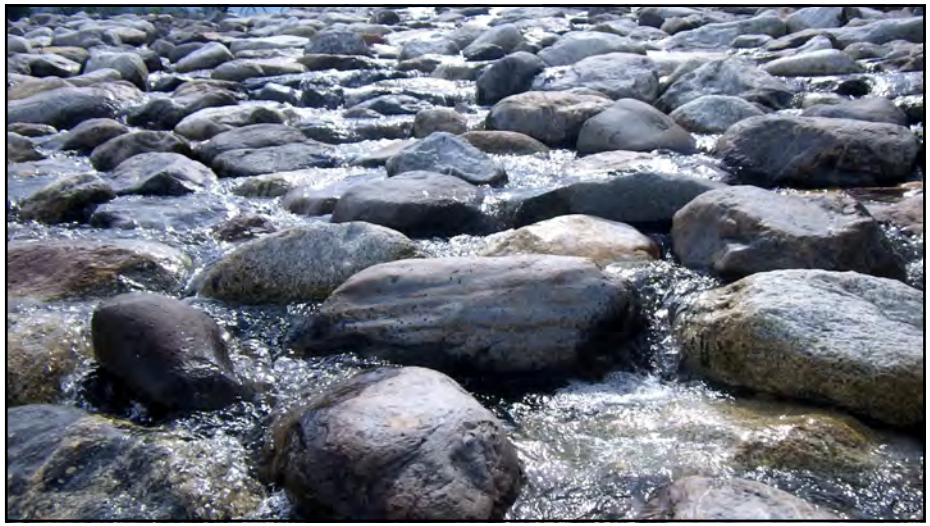

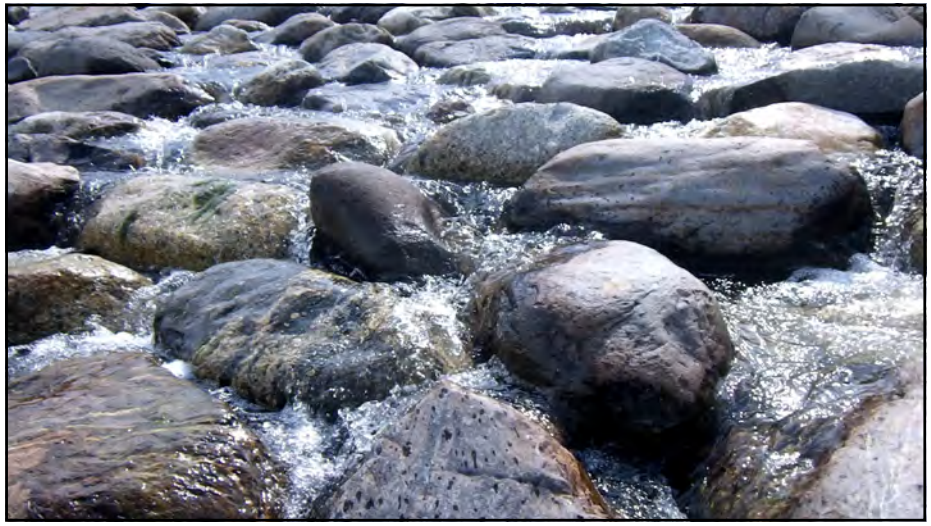

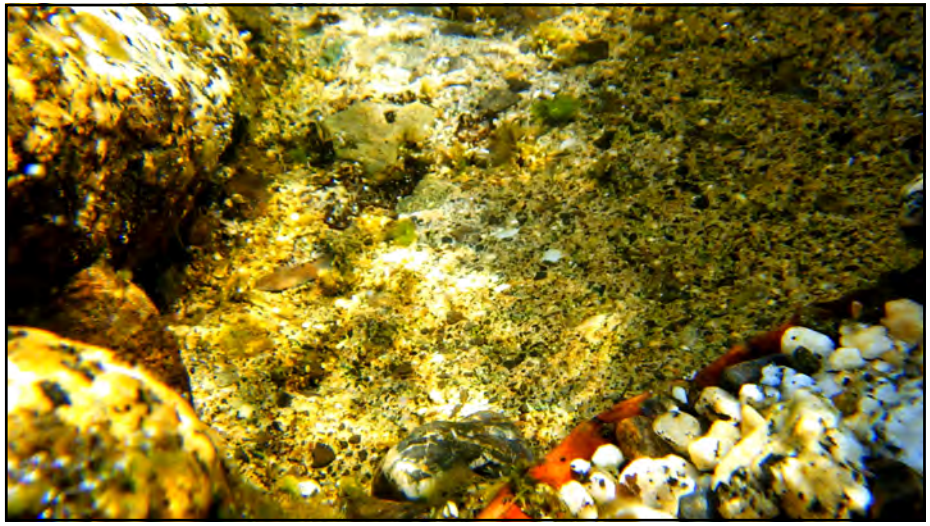


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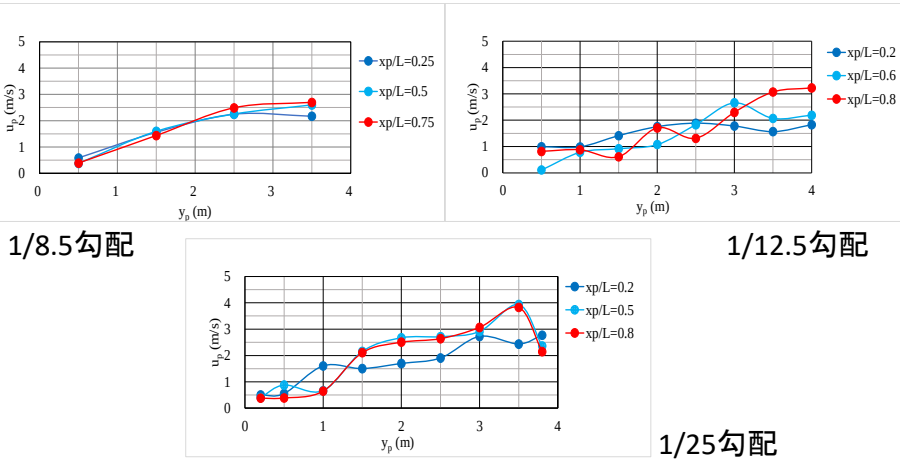
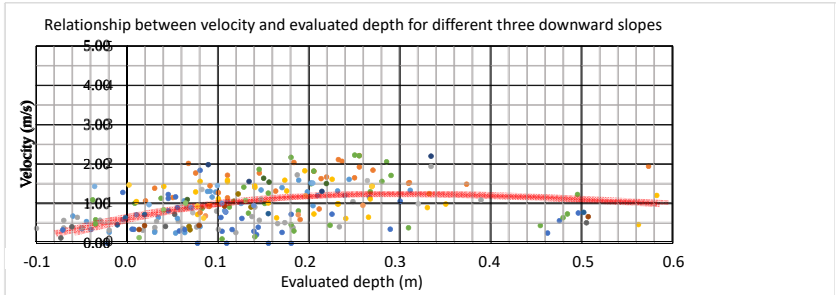
Case1	刃形堰	撮影時刻	8:52-8:54	備考
	越流水深	流量	原形流量	遡上可能 安定
	(m)	(m^3/s)	(m^3/s)	
	0.0217	0.00618	6.94	
Case2	刃形堰	撮影時刻	9:20-9:31	備考
	越流水深	流量	原形流量	小規模 洪水 安定
	(m)	(m^3/s)	(m^3/s)	
	0.0537	0.02338	26.25	
Case3	刃形堰	撮影時刻	10:15-10:17	備考
	越流水深	流量	原形流量	中規模 洪水 安定
	(m)	(m^3/s)	(m^3/s)	
	0.0823	0.04444	49.89	
Case4	刃形堰	撮影時刻	10:52-11:04	備考
	越流水深	流量	原形流量	大規模 洪水 1つ礫流出
	(m)	(m^3/s)	(m^3/s)	
	0.1005	0.06021	67.60	
Case5	刃形堰	撮影時刻	12:16-12:25	備考
	越流水深	流量	原形流量	計画洪水 3つ礫流出
	(m)	(m^3/s)	(m^3/s)	
	0.1339	0.09353	105.01	

斜路勾配	Case	B, h_d (m)	原型換算流量(想定幅 B_p=4m)Q_p(m^3/s)
1/25	1	0.40, 0.035	0.451
	4	0.40, 0.057	0.986
	2	0.40, 0.070	1.88
	3	0.40, 0.087	3.25
1/12.5	1	0.80, 0.079	1.10
	2	0.80, 0.089	1.76
	3	0.80, 0.098	2.66
1/8.5	1	0.40, 0.075	1.10
	2	0.40, 0.088	2.00
	3	0.40, 0.097	3.00

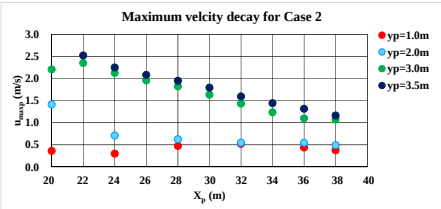
h_d：魚道からの流れが沿うための斜路下流側の最小下流水深
（粗礫斜路下流端の基盤を基準とする）



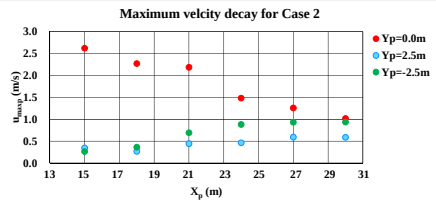
遡上経路における流速と評価水深との関係



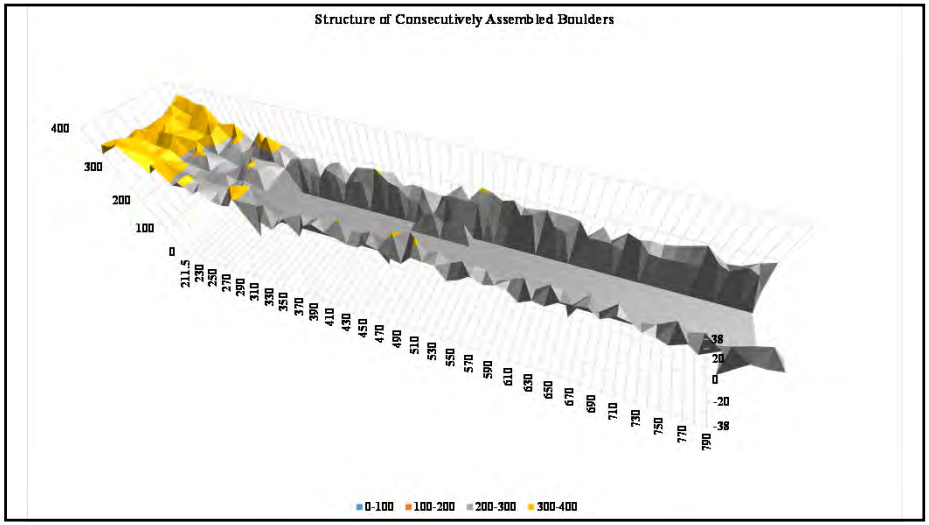
粗礫斜路下流側の主流の流速減衰状況

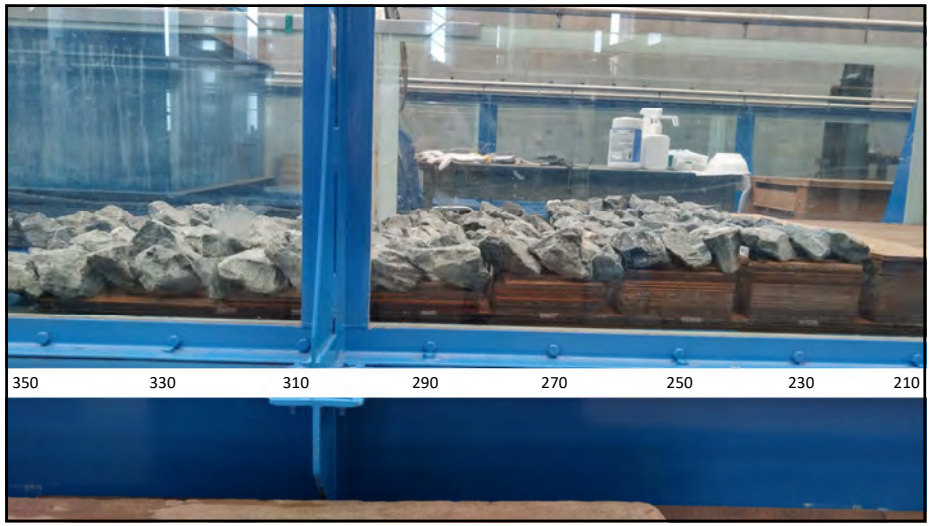


1/8.5 slope, Case 2

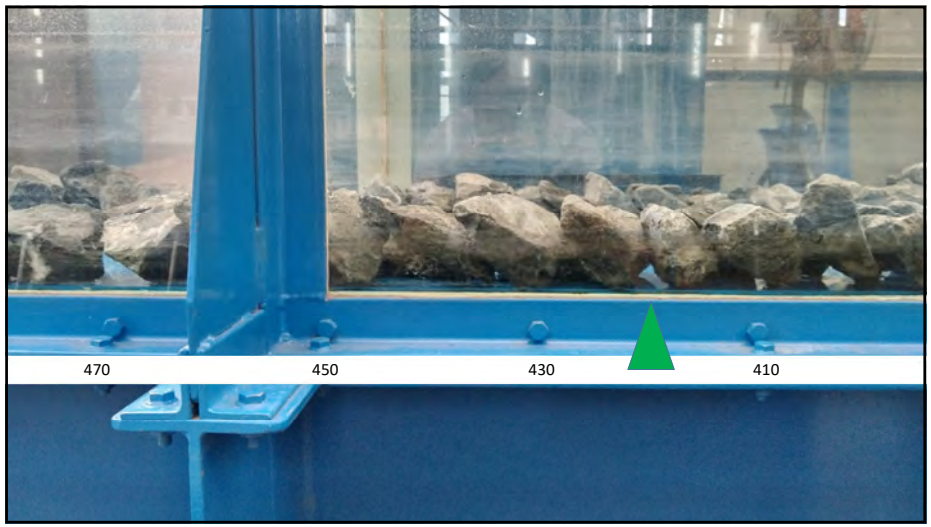


1/12.5 slope, Case 2

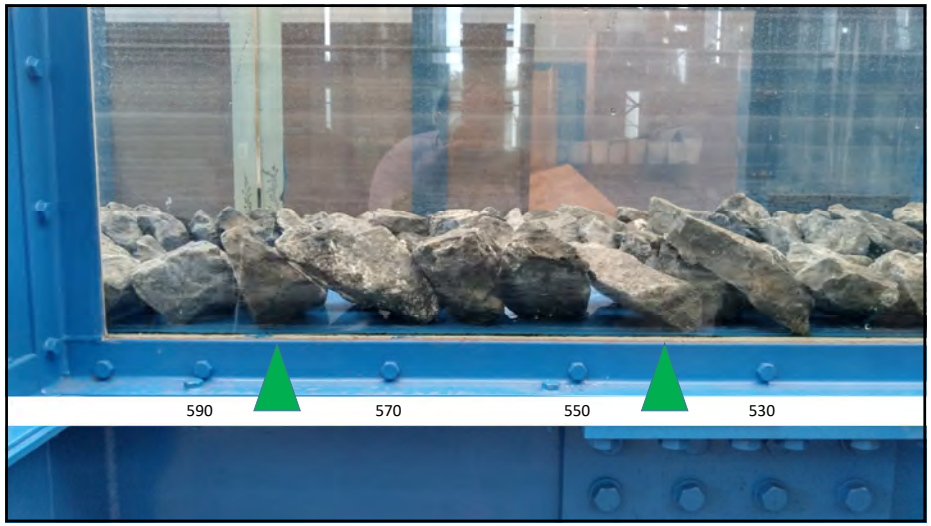



350
330
310
290
270
250
230
210

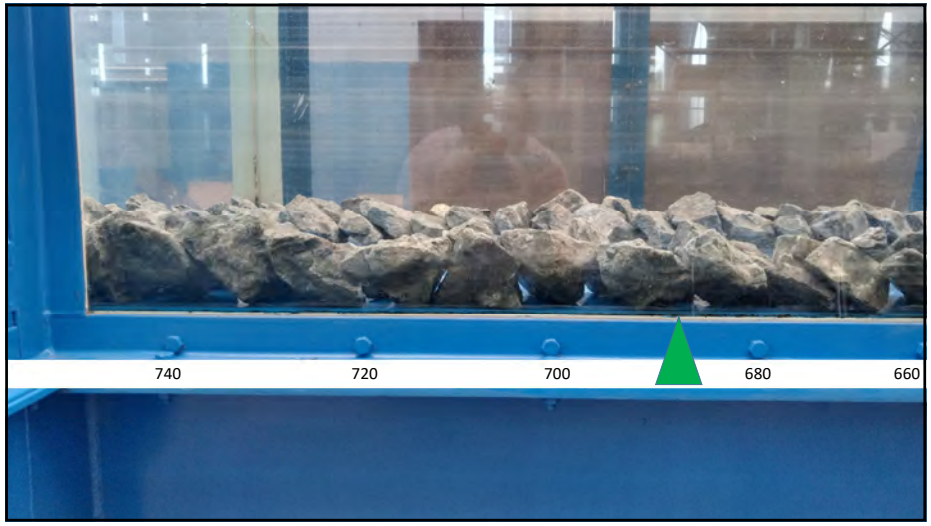

410
390
370
350


470
450
430
410

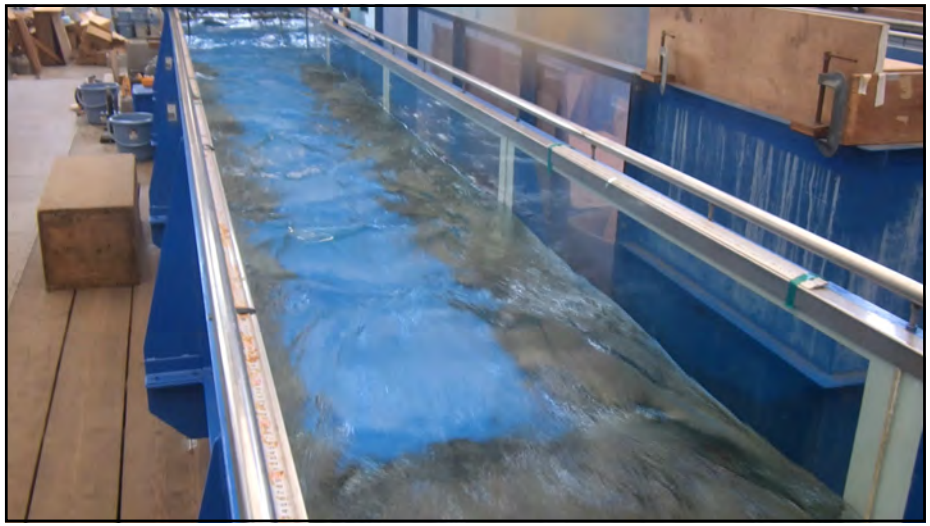

530
510
490
470


590
570
550
530


680
660
640
620


740
720
700
680
660

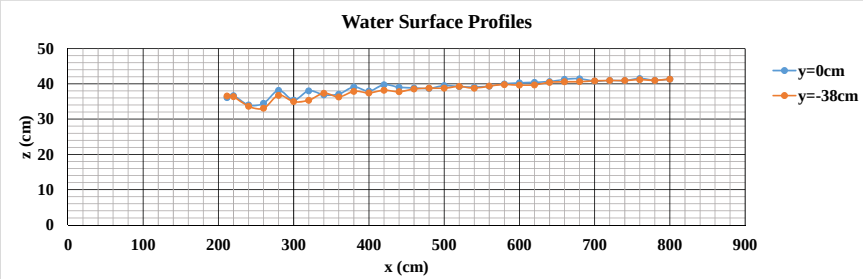

770



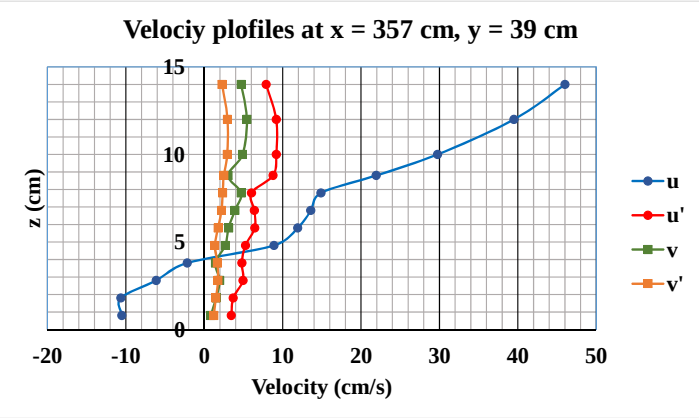
Released Aquatic animals

Technical name (Linnaean name of animals)	English Name	Japanese Name	number of animals
Oryzias latipes	Japanese killifish	MEDAKA	15
Nipponocypris temminckii	Dark chub	KAWAMUTSU	7
Opsariichthys platypus	Pale chub	OIKAWA	18
Misgurnus anguillicaudatus	Weather loach	DOJOU	6
Plecoglossus altivelis altivelis	Sweet fish	AYU	25
Pseudorasbora parva	Topmouth gudgeon	MOTSUGO	6
Rhinogobius sp.OR	Freshwater goby	KURODAHAZE TOUYOSHINOBORI	6
Hemibarbus barbus	Japanese barbel	NIGOI	1
Carassius buergeri subsp Carassius auratus langsdorfii Carassius cuvieri	Japanese crucian carp	GINBUNA KINBUNA GENGOROUBUNA	16
			100

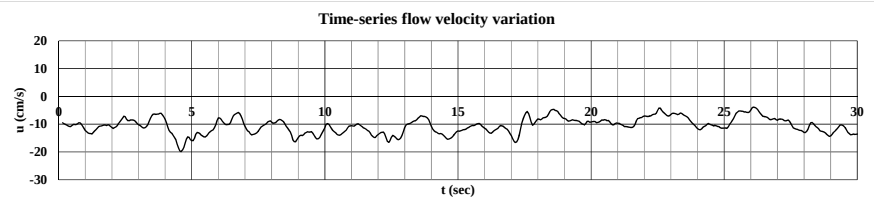
i = 1/100, Q = 0.147 m^3/s

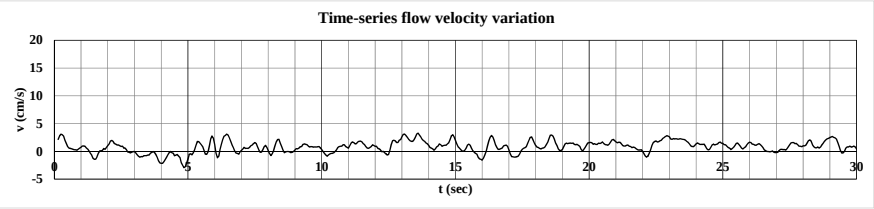


Space use for aquatic animals

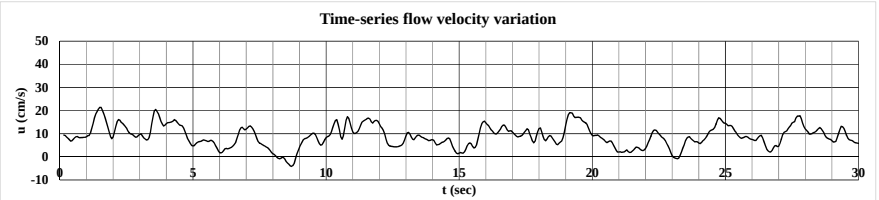


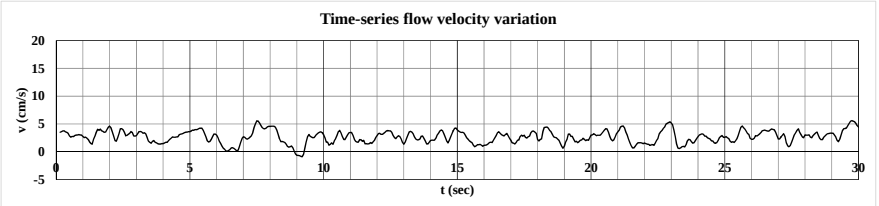
x = 357 cm, y = 39 cm, z = 0.8 cm



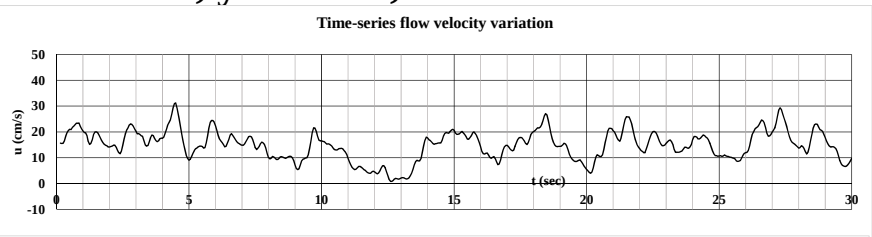


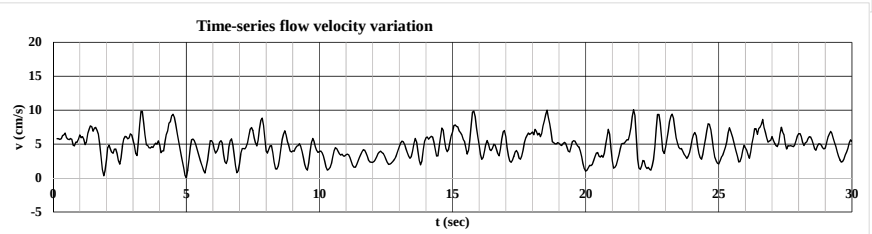
x = 357 cm, y = 39 cm, z = 4.8 cm



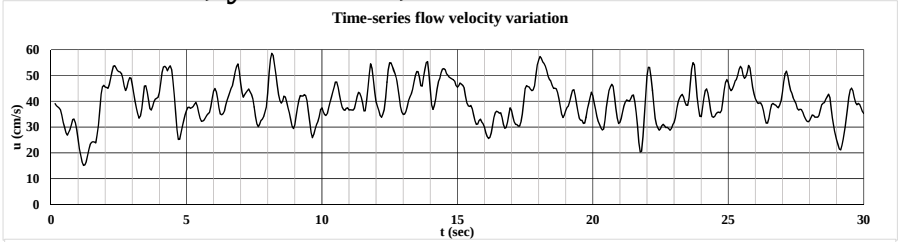


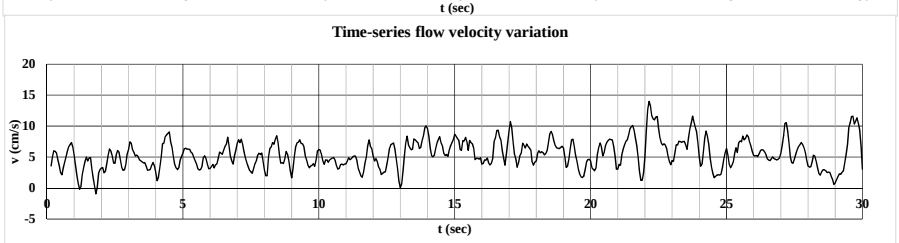
x = 357 cm, y = 39 cm, z = 7.8 cm

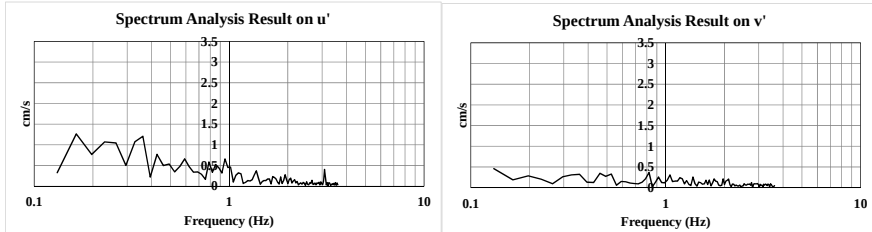


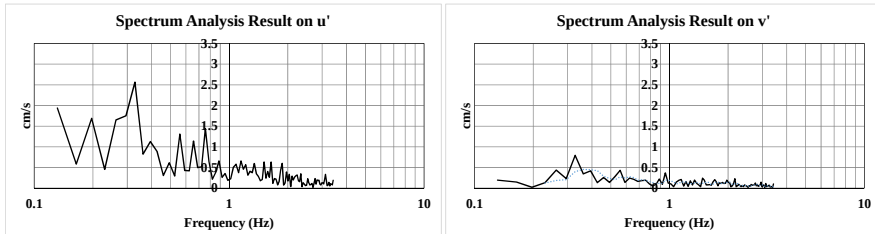


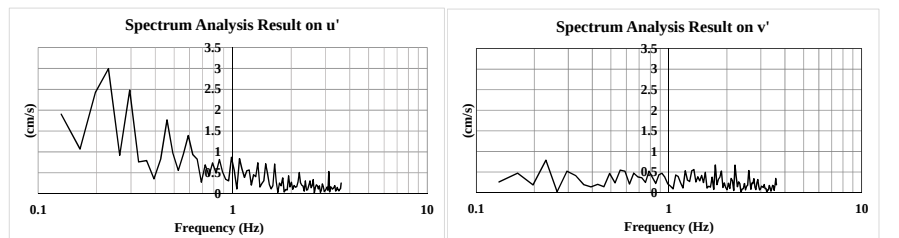
x = 357 cm, y = 39 cm, z = 12 cm

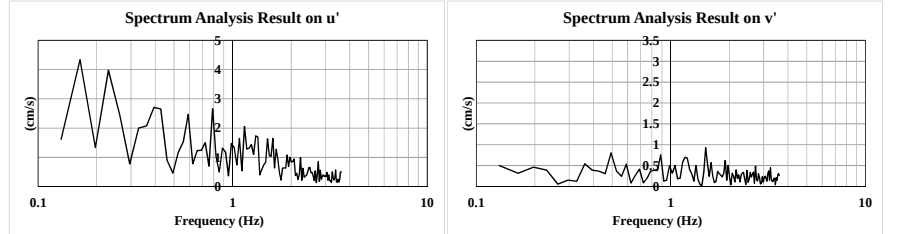




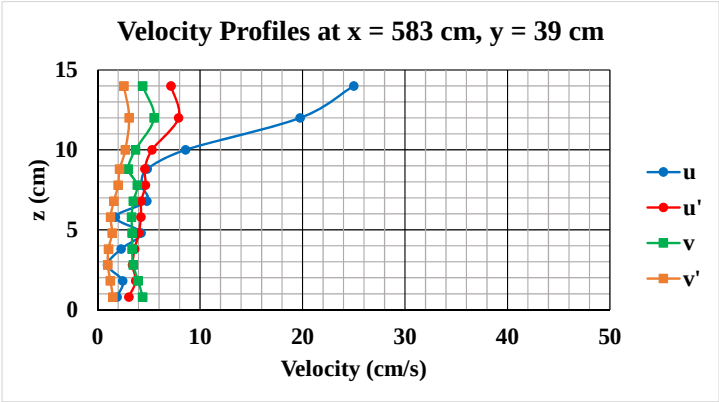




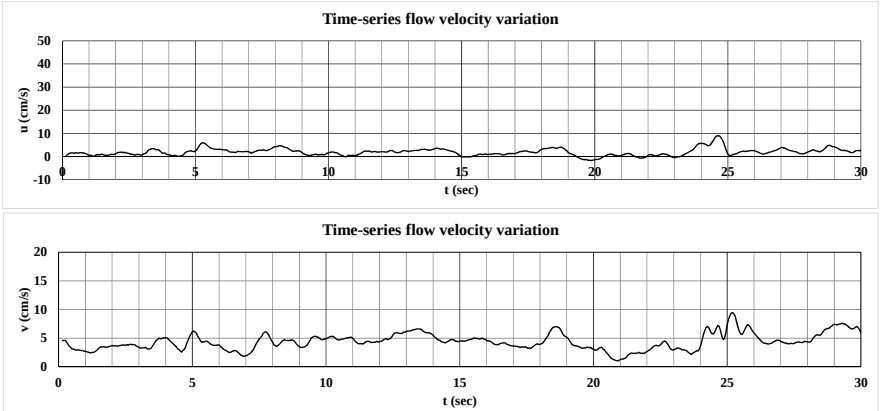




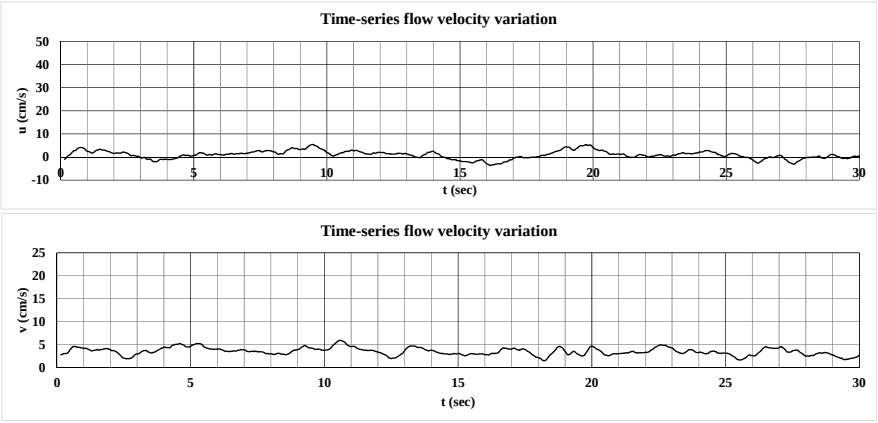
Space use for aquatic animals



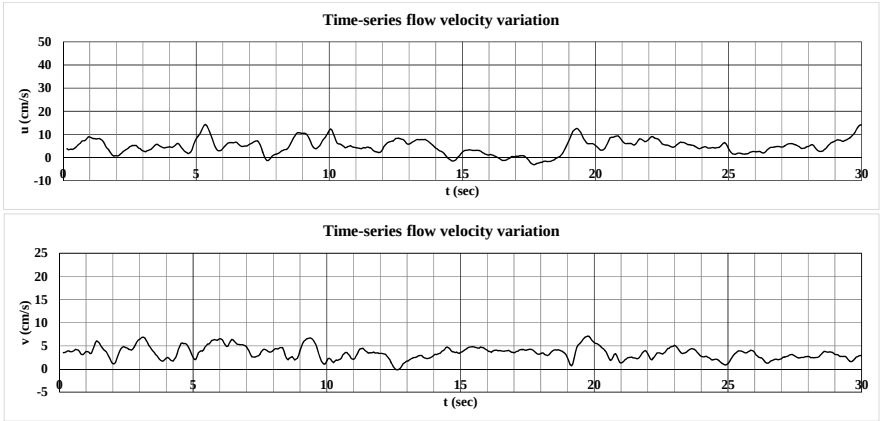
x = 583 cm, y = 39 cm, z = 0.8 cm



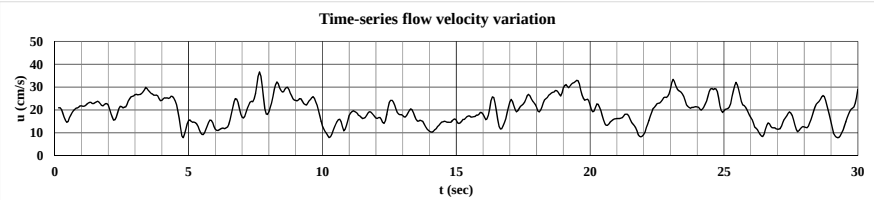
x = 583 cm, y = 39 cm, z = 2.8 cm

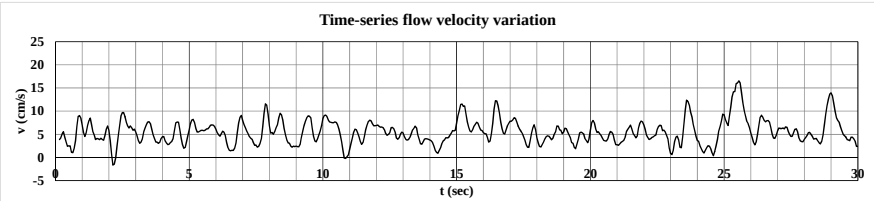


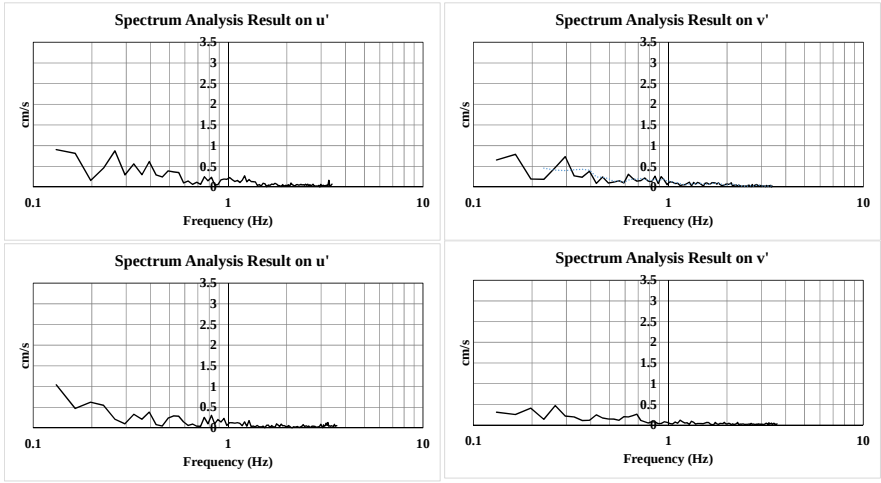
x = 583 cm, y = 39 cm, z = 6.8 cm

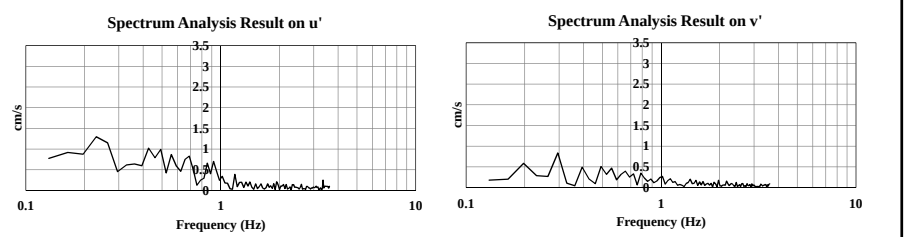


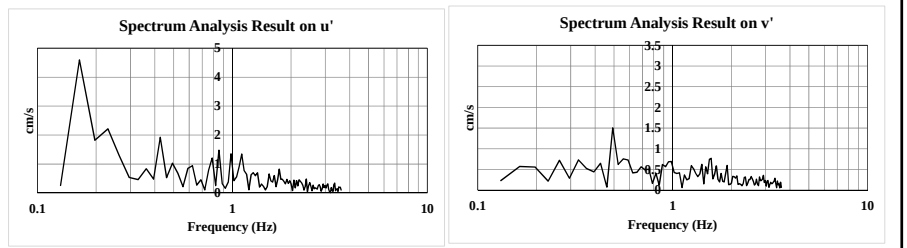
x = 583 cm, y = 39 cm, z = 12 cm



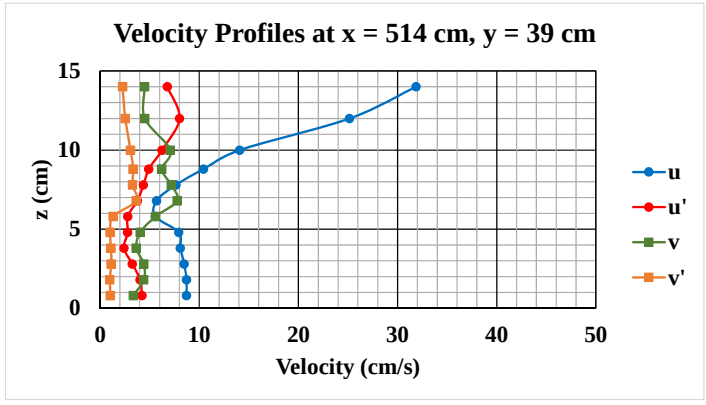




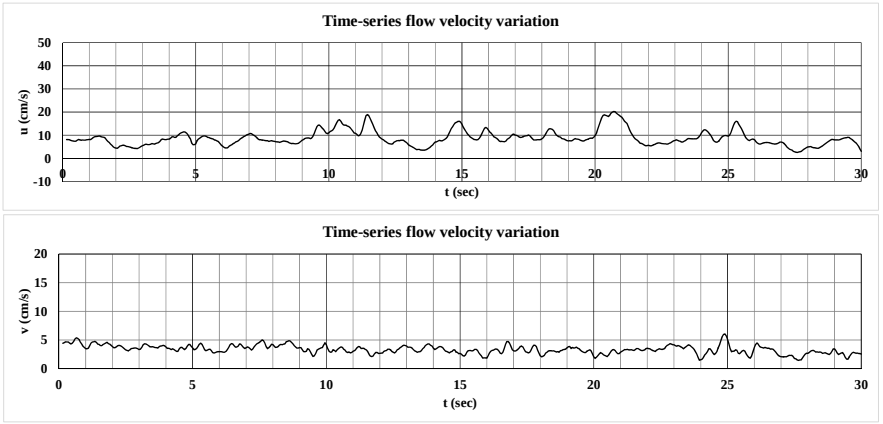




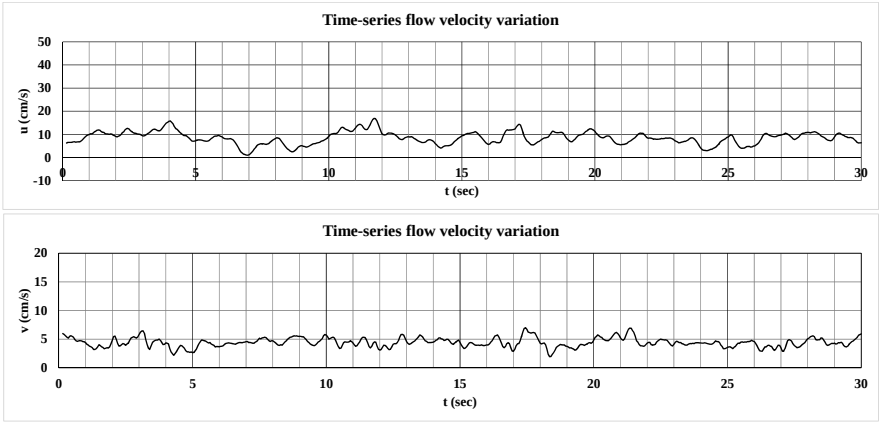
Space not yet utilization for the released fishes



x = 514 cm, y = 39 cm, z = 0.8 cm



x = 514 cm, y = 39 cm, z = 2.8 cm



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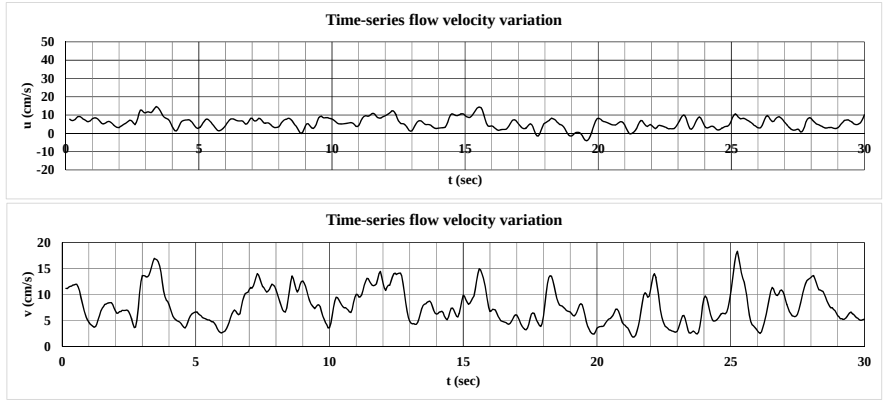
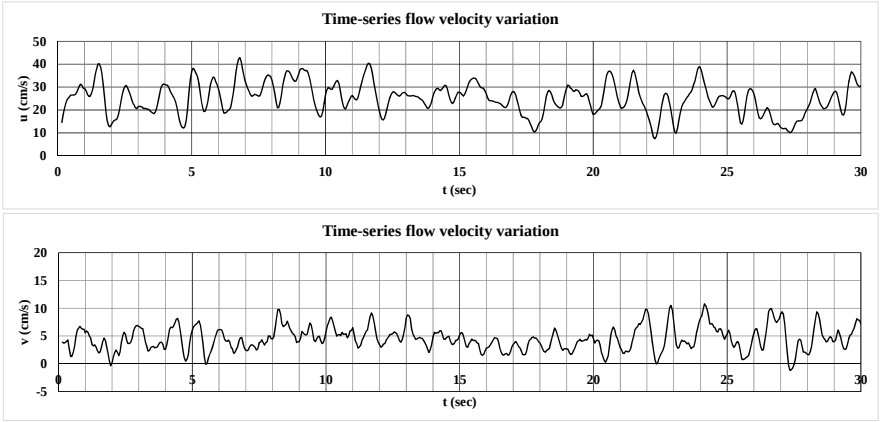
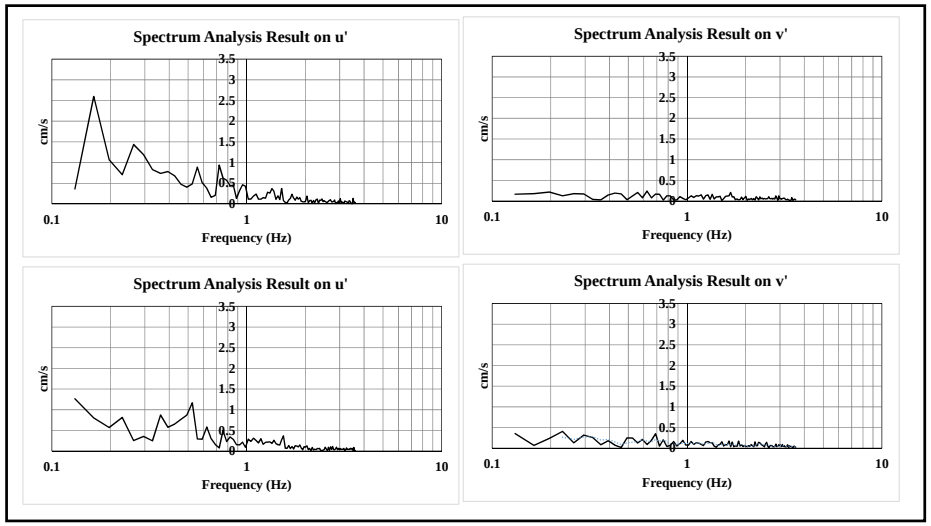
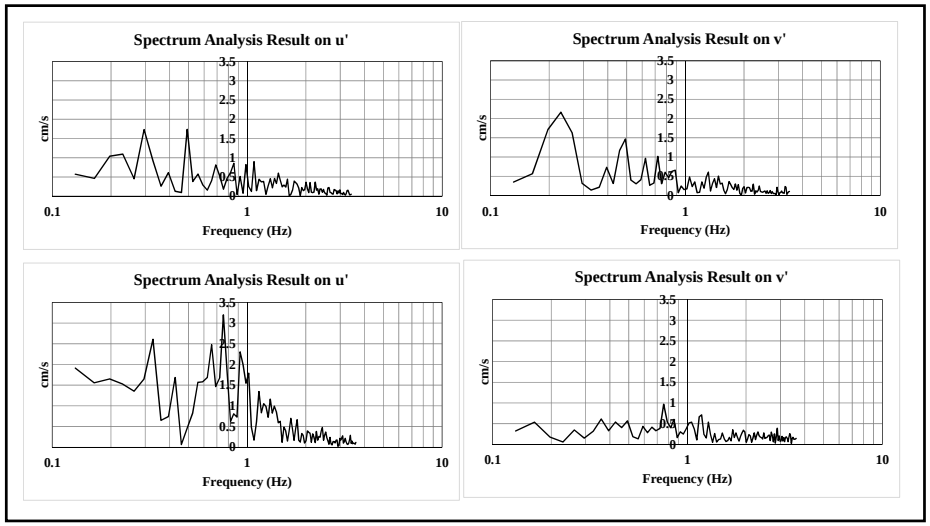


x = 514 cm, y = 39 cm, z = 12 cm




Spectrum Analysis Result on u'
Spectrum Analysis Result on v'
Spectrum Analysis Result on u'
Spectrum Analysis Result on v'
cm/s
Frequency (Hz)
0.1
1
10
0
0.5
1
1.5
2
2.5
3
3.5


Spectrum Analysis Result on u'
Spectrum Analysis Result on v'
Spectrum Analysis Result on u'
Spectrum Analysis Result on v'
cm/s
Frequency (Hz)
0.1
1
10
0
0.5
1
1.5
2
2.5
3
3.5


Thank you for your attention!
2022/02/02 14:29