

**Standard Aquatic Vegetation Summary Sheet**

Lake Name: Pentwater  
 County: Oceana  
 Surveyor: Rick Buteyn, Luke Aaron  
 Survey Date: 31-Aug-22  
 Total Number of AVAS Sites: 106

Code No	Plant Name	Occurrence per Density Category				Relative Density Calculations				Relative Density for Entire Littoral Zone		Code No	Plant Name
		A	B	C	D	A x 1	B x10	C x 40	D x 80	Sum	%		
1	Eurasian milfoil	7	5			7	50	0	0	57	0.5	1	<i>Myriophyllum spicatum</i>
2	Curly leaf pondweed		2	1		0	20	40	0	60	0.6	2	<i>Potamogeton crispus</i>
3	Chara		7	7	3	0	70	280	240	590	5.6	3	<i>Chara sp.</i>
4	Thinleaf pondweed		9	1		0	90	40	0	130	1.2	4	<i>Potamogeton sp.</i>
5	Flatstem pondweed	8	21	3		8	210	120	0	338	3.2	5	<i>Potamogeton zosteriformis</i>
6	Robbins pondweed					0	0	0	0	0	0.0	6	<i>Potamogeton robbinsii</i>
7	Variable pondweed					0	0	0	0	0	0.0	7	<i>Potamogeton gramineus</i>
8	Whitestem pondweed	1	8	2		1	80	80	0	161	1.5	8	<i>Potamogeton praelongus</i>
9	Richardsons pondweed	4	24	4		4	240	160	0	404	3.8	9	<i>Potamogeton richardsonii</i>
10	Illinois pondweed					0	0	0	0	0	0.0	10	<i>Potamogeton illinoensis</i>
11	Large leaf pondweed					0	0	0	0	0	0.0	11	<i>Potamogeton amplifolius</i>
12	American pondweed					0	0	0	0	0	0.0	12	<i>Potamogeton americanus</i>
13	Floating leaf pondweed					0	0	0	0	0	0.0	13	<i>Potamogeton natans</i>
14	Water stargrass	4	8	5		4	80	200	0	284	2.7	14	<i>Heteranthera dubia</i>
15	Wild celery		31	34	5	0	310	1,360	400	2,070	19.5	15	<i>Vallisneria americana</i>
16	Sagittaria					0	0	0	0	0	0.0	16	<i>Sagittaria sp.</i>
17	Northern milfoil					0	0	0	0	0	0.0	17	<i>Myriophyllum sibiricum</i>
18	M. verticillatum					0	0	0	0	0	0.0	18	<i>Myriophyllum verticillatum</i>
19	M. heterophyllum					0	0	0	0	0	0.0	19	<i>Myriophyllum heterophyllum</i>
20	Coontail	6	29	28	7	6	290	1,120	560	1,976	18.6	20	<i>Ceratophyllum demersum</i>
21	Elodea		1	3		0	10	120	0	130	1.2	21	<i>Elodea canadensis</i>
22	Utricularia spp.	1	3	1		1	30	40	0	71	0.7	22	<i>Utricularia vulgaris</i>
23	Bladderwort-mini					0	0	0	0	0	0.0	23	<i>Utricularia minor</i>
24	Buttercup					0	0	0	0	0	0.0	24	<i>Ranunculus sp.</i>
25	Najas flexilis	1	17	4	1	1	170	160	80	411	3.9	25	<i>Najas flexilis</i>
26	Brittle naiad					0	0	0	0	0	0.0	26	<i>Najas minor</i>
27	Sago pondweed		5			0	50	0	0	50	0.5	27	<i>Stuckenia pectinata</i>
28						0	0	0	0	0	0.0	28	
29						0	0	0	0	0	0.0	29	
30	Nymphaea		1			0	10	0	0	10	0.1	30	<i>Nymphaea odorata</i>
31	Nuphar		4	1		0	40	40	0	80	0.8	31	<i>Nuphar sp.</i>
32	Brasenia					0	0	0	0	0	0.0	32	<i>Brasenia schreberi</i>
33	Lemna minor	3	18	1		3	180	40	0	223	2.1	33	<i>Lemna minor</i>
34	Spirodella					0	0	0	0	0	0.0	34	<i>Spirodela polyrhiza</i>
35	Watermeal					0	0	0	0	0	0.0	35	<i>Wolffia punctata</i>
36	Arrowhead					0	0	0	0	0	0.0	36	<i>Sagittaria latifolia</i>
37	Pickerelweed					0	0	0	0	0	0.0	37	<i>Pontederia cordata</i>
38	Arrow arum					0	0	0	0	0	0.0	38	<i>Peltandra virginica</i>
39	Cattails	2	1	1	1	2	10	40	80	132	1.2	39	<i>Typha sp.</i>
40	Bulrushes	3	1	1		3	10	40	0	53	0.5	40	<i>Schoenoplectus sp.</i>
41	Iris					0	0	0	0	0	0.0	41	<i>Iris sp.</i>
42	Swamp loosestrife					0	0	0	0	0	0.0	42	<i>Decodon verticillatus</i>
43	Purple loosestrife	1				1	0	0	0	1	0.0	43	<i>Lythrum salicaria</i>
44	Starry stonewort		11	20	22	0	110	800	1,760	2,670	25.2	44	<i>Nitellopsis obtusa</i>
45	Phragmites		2			0	20	0	0	20	0.2	45	<i>Phragmites australis</i>
68	European frog-bit		4			0	40	0	0	40	0.4	68	<i>Hydrocharis morsus-ranae</i>

Total: 94.0

EGLE Number	EGLE Name	Common Name	Scientific Name
1	Eurasian milfoil	Eurasian milfoil	Myriophyllum spicatum
2	Curly leaf pondweed	Curly-leaf pondweed	Potamogeton crispus
3	Chara	Chara	Chara sp.
4	Thinleaf pondweed	Thin-leaf pondweed	Potamogeton sp.
5	Flatstem pondweed	Flat-stem pondweed	Potamogeton zosteriformis
6	Robbins pondweed	Robbins pondweed	Potamogeton robbinsii
7	Variable pondweed	Variable pondweed	Potamogeton gramineus
8	Whitestem pondweed	Whitestem pondweed	Potamogeton praelongus
9	Richardsons pondweed	Richardson's pondweed	Potamogeton richardsonii
10	Illinois pondweed	Illinois pondweed	Potamogeton illinoensis
11	Large leaf pondweed	Large-leaf pondweed	Potamogeton amplifolius
12	American pondweed	American pondweed	Potamogeton americanus
13	Floating leaf pondweed	Floating-leaf pondweed	Potamogeton natans
14	Water stargrass	Water stargrass	Heteranthera dubia
15	Wild celery	Wild celery	Vallisneria americana
16	Sagittaria	Underwater arrowhead	Sagittaria sp.
17	Northern milfoil	Northern milfoil	Myriophyllum sibiricum
18	M. verticillatum	Green milfoil	Myriophyllum verticillatum
19	M. heterophyllum	Variable-leaf milfoil	Myriophyllum heterophyllum
20	Coontail	Coontail	Ceratophyllum demersum
21	Elodea	Elodea	Elodea canadensis
22	Utricularia spp.	Bladderwort	Utricularia vulgaris
23	Bladderwort-mini	Mini bladderwort	Utricularia minor
24	Buttercup	Buttercup	Ranunculus sp.
25	Najas flexilis	Slender naiad	Najas flexilis
26	Brittle naiad	Brittle-leaf naiad	Najas minor
27	Sago pondweed	Sago pondweed	Stuckenia pectinata
28			
29			
30	Nymphaea	White waterlily	Nymphaea odorata
31	Nuphar	Yellow waterlily	Nuphar sp.
32	Brasenia	Water shield	Brasenia schreberi
33	Lemna minor	Duckweed	Lemna minor
34	Spirodella	Big duckweed	Spirodela polyrhiza
35	Watermeal	Watermeal	Wolffia punctata
36	Arrowhead	Arrowhead	Sagittaria latifolia
37	Pickerelweed	Pickerelweed	Pontederia cordata
38	Arrow arum	Arrow arum	Peltandra virginica
39	Cattails	Cattail	Typha sp.
40	Bulrushes	Bulrush	Schoenoplectus sp.
41	Iris	Iris	Iris sp.
42	Swamp loosestrife	Swamp loosestrife	Decodon verticillatus
43	Purple loosestrife	Purple loosestrife	Lythrum salicaria
44	Starry stonewort	Starry stonewort	Nitellopsis obtusa
45	Phragmites	Phragmites	Phragmites australis
46	Carolina fanwort	Carolina fanwort	Cabomba caroliniana
47	Southern naiad	Southern naiad	Najas guadalupensis
48	Spiny naiad	Spiny naiad	Najas marina
49	Nitella	Nitella	Nitella
50	Water smartweed	Water smartweed	Persicaria amphibia var. stipulacea
51	Slender milfoil	Slender milfoil	Myriophyllum tenellum
52	Water marigold	Water marigold	Bidens beckii
53	Variable-leaf pondweed	Variable-leaf pondweed	Potamogeton diversifolius
54	Ribbon-leaf pondweed	Ribbon-leaf pondweed	Potamogeton epihydrus
55	Leafy pondweed	Leafy pondweed	Potamogeton foliosus
56	Clasping-leaf pondweed	Clasping-leaf pondweed	Potamogeton perfoliatus
57	Small pondweed	Small pondweed	Potamogeton pusillus
58	Horned pondweed	Horned pondweed	Zannichellia palustris
59	Submersed bulrush	Submersed bulrush	Schoenoplectus subterminalis
60	American lotus	American lotus	Nelumbo lutea
61	Lake sedge	Lake sedge	Carex lacustris
62	Small bur-reed	Small bur-reed	Sparganium natans
63	Buttonbush	Buttonbush	Cephalanthus occidentalis
64	Southern wild rice	Southern wild rice	Zizania aquatica
65	Northern wild rice	Northern wild rice	Zizania palustris
66	Water smartweed	Water smartweed	Persicaria amphibia var. emersa
67	Flowering rush	Flowering rush	Butomus umbellatus
68	European frog-bit	European frog-bit	Hydrocharis morsus-ranae
69	Star Duckweed	Star Duckweed	Lemna trisulca

☐ = 1 ACRE

OUTLET TO LAKE MICHIGAN

# PENTWATER LAKE OCEANA COUNTY, MICHIGAN AQUATIC PLANT SURVEY MAP

Date: 8-31-22

Crew: RCB LJA

Weather: \_\_\_\_\_

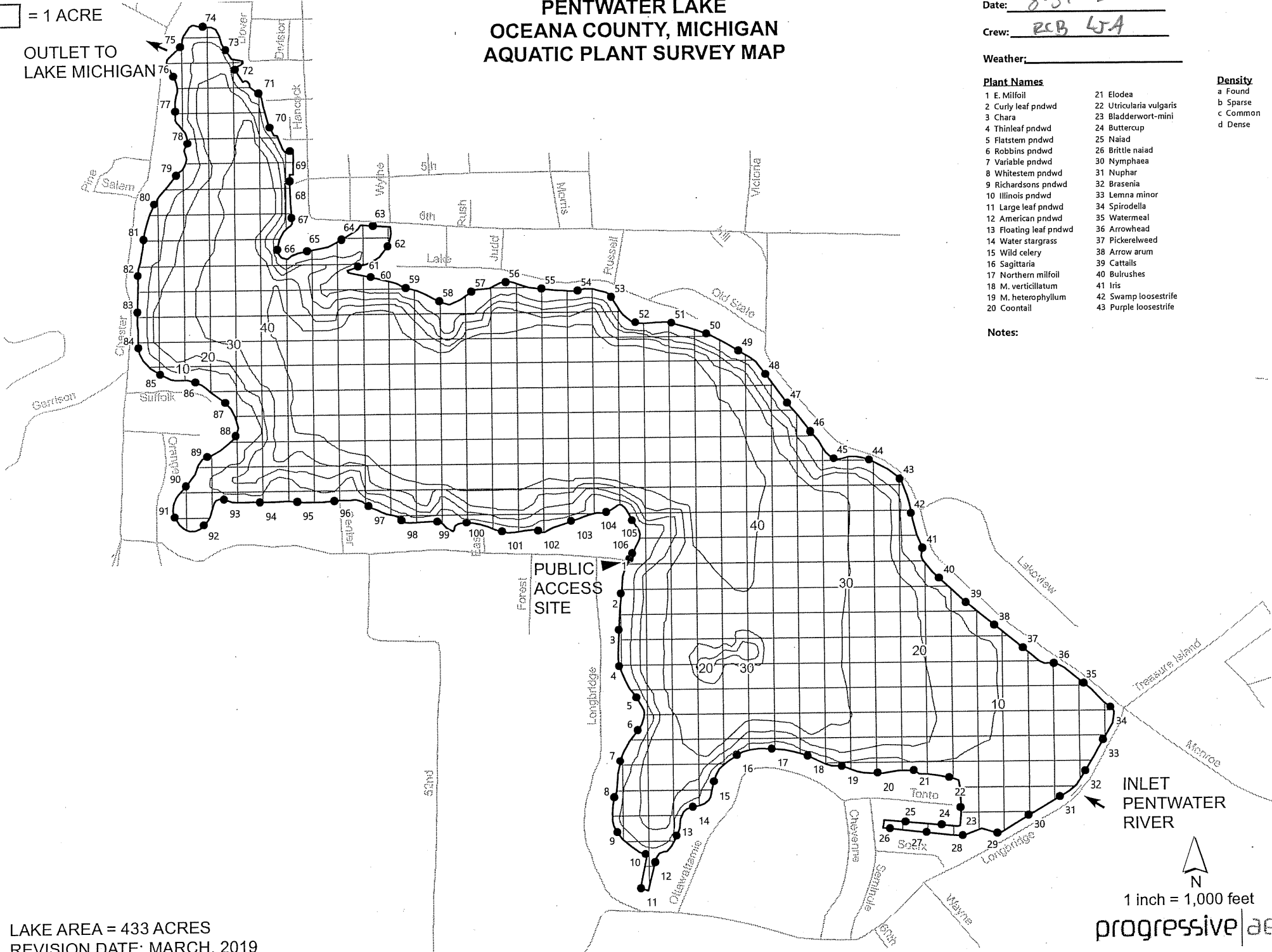
### Plant Names

- |                        |                         |
|------------------------|-------------------------|
| 1 E. Milfoil           | 21 Elodea               |
| 2 Curly leaf pndwd     | 22 Utricularia vulgaris |
| 3 Chara                | 23 Bladderwort-mini     |
| 4 Thinleaf pndwd       | 24 Buttercup            |
| 5 Flatstem pndwd       | 25 Naiad                |
| 6 Robbins pndwd        | 26 Brittle naiad        |
| 7 Variable pndwd       | 30 Nymphaea             |
| 8 Whitestem pndwd      | 31 Nuphar               |
| 9 Richardsons pndwd    | 32 Brasenia             |
| 10 Illinois pndwd      | 33 Lemna minor          |
| 11 Large leaf pndwd    | 34 Spirodella           |
| 12 American pndwd      | 35 Watermeal            |
| 13 Floating leaf pndwd | 36 Arrowhead            |
| 14 Water stargrass     | 37 Pickerelweed         |
| 15 Wild celery         | 38 Arrow arum           |
| 16 Sagittaria          | 39 Cattails             |
| 17 Northern milfoil    | 40 Bulrushes            |
| 18 M. verticillatum    | 41 Iris                 |
| 19 M. heterophyllum    | 42 Swamp loosestrife    |
| 20 Coontail            | 43 Purple loosestrife   |

### Density

- a Found
- b Sparse
- c Common
- d Dense

Notes:



LAKE AREA = 433 ACRES  
REVISION DATE: MARCH, 2019

N  
1 inch = 1,000 feet  
progressive|ae

# Pentwater Lake

# August 31, 2022

AVAS	1	2	3	4	5	6	7	8	9	10	11	12
1	14a	25b	1a	44d	15b	3b						
2	5a	20b	3c									
3	44d	5b	20b	3b	33b							
4	31c	20c	15c	44b	22b	5b						
5	31b	15b	5a	20c	44b							
6	20d	15b	5a									
7	5b	1b	33b	44d	20c	15c	4b					
8	20d	25b	3b									
9	20d	3b	4b									
10	20d											
11	20b	33b	25b									
12	20c	15b										
13	20c	3c	44c	15b								
14	44d	20c	25b	1a	15c							
15	33b	20c	15c	25c	44c							
16	25d	44b	20c	15b								
17	25b	3b	20c	40c								
18	25c	15c	20c									
19	44c	20b	14a	15b								
20	44c	1a	20c	33b								
21	20c											
22	20c											
23	2c	8c	5c	31b	33b							
24	5b	20b	8b	33a								
25	5b	33b	8b									

# Pentwater Lake

# August 31, 2022

AVAS	1	2	3	4	5	6	7	8	9	10	11	12
26	33b	20b	8b	5b								
27	33a	20b	5b									
28	8b	20b	33b	5b	68b							
29	8c	5c	22c	1b	68b	33b	20b	21c	14b			
30	14c	20c	1b	22b	15c	9b						
31	15d	14b	20b	22a	9b	25b						
32	15d	14c	20b	25b	8b	9b						
33	15c	14c	20c	9b	2b	21c						
34	1b	20c	22b	21c	68b	39b	5b	9b	14b	2b		
35	33c	1b	20d	8b	9b	14c	5b					
36	14c	5c	20c	33b	68b	15b	9b					
37	20c	9b	15c	33a	44d							
38	44d	20c	15c	33b	21b							
39	20d	15c										
40	15b	20c										
41	44c											
42	39d	44c	20b	15c	9b							
43	39c	45b	15c	20d								
44	39a	15d	20c									
45	5a	44c										
46	44d	14a										
47	44c	20a	40b									
48	44c	5b	20b	40a								
49	14b	15b	20b	44b								
50	44b	20c	15c	27b	5b							

# Pentwater Lake

# August 31, 2022

AVAS	1	2	3	4	5	6	7	8	9	10	11	12
51	15c	20c										
52	44b	20b										
53	20c	15c	44b	33b								
54	44d	15b	20b	27b								
55	44d	4b	20a									
56	44c	15b										
57	9b	44c	5b	15b								
58	3d	44b	20b									
59	5b	20b	33b	15c								
60	15c	20c	33b	9b	14b							
61	15c	20c	14b									
62	15c	20c	14b	5b	33b	1a	8b					
63	1a	8b	2c	33b	43a	14a	15b					
64	No vegetation present											
65	No vegetation present											
66	15c	4b	25a									
67	No vegetation present											
68	15b											
69	15c	5b	9b	1a	20a							
70	15b											
71	15b											
72	15b											
73	15b	9b										
74	9b	20b	15c									
75	No vegetation present											

# Pentwater Lake

# August 31, 2022

AVAS	1	2	3	4	5	6	7	8	9	10	11	12
76	15c											
77	15b	9b	4b									
78	9c	4c	15c									
79	44c	5b	25c	9b	15b	20b						
80	44d	4b	5a	20b								
81	44d	5b	4b									
82	15c	9b	44c	1a	27b	20b						
83	15c	20b	44b									
84	15b	44b	9b									
85	15d	44d	9b	25b	20b	27b						
86	9b	27b	44c	25c	4b							
87	44d	25b	4b	15b	3c							
88	3d	8a	9a									
89	44c	15b										
90	44c	20b	5a	9a								
91	5b	15d	9b	30b								
92	15c	9b	31b									
93	44d	31b	5a	15b	25b							
94	44d	25b	20a	15b								
95	3d	25b	44b	20a	9a	15c						
96	44d	3c	25b	15c	20b							
97	44d	39a	15b									
98	44d	15c	9c	25b								
99	44d	5b	9b									
100	44d	15b	20b	9b								

# Pentwater Lake

## August 31, 2022

AVAS	1	2	3	4	5	6	7	8	9	10	11	12
101	44d	5a	15c	40a	3b	20b						
102	44d	3c	25b	5b	9c	15c						
103	44c	3b	25b	9a	15b	20a						
104	44c	45b										
105	44c	15c	9c	3c								
106	44c	3c	25b	15c	20b	14b	5b					