

The Canadian Field-Naturalist

SUPPLEMENTARY MATERIALS:

A baseline study of the fishes in the north-flowing section of the Rideau River-Canal system, Ontario, 1998–2000

ANNE PHELPS, CLAUDE B. RENAUD, and NOEL R. ALFONSO

TABLE S1. Habitat characteristics of 14 sites along the Rideau River in 1998.

TABLE S1a. Type and percent substrate type. At each site, the type and percentage of substrate type was visually estimated within a 1 m radius of the sampling point at three plots along the shoreline. The values were calculated by averaging the three plots at each site.

	Site													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Sand	40	80	85	20	50	0	100	50	100	35	35	35	0	50
Boulder	40	10	0	20	50	0	0	0	0	0	0	0	50	0
Bedrock	10	0	0	20	0	0	0	0	0	0	0	0	0	50
Rubble	10	0	15	20	0	0	0	0	0	0	0	0	0	0
Gravel	0	10	0	20	0	0	0	0	0	0	0	0	0	0
Clay	0	0	0	0	0	100	0	50	0	30	30	30	50	0
Detritus	0	0	0	0	0	0	0	0	0	35	35	35	0	0
Bank height (m)	0.86	5.18	2.21	1.44	4.03	2.60	0.20	0.30	0.28	0.86	1.72	4.00	1.29	3.38
Shannon Wiener Index	0.00	0.55	0.45	0.52	0.28	0.00	0.00	0.30	0.00	0.48	0.55	0.48	0.30	0.46
Substrate														

TABLE S1b. Description of substrate classification based on particle size. The descriptions were used to determine particle size in the field. Adapted from Meador *et al.* (1993).

Substrate type	Description	Particle size
Bedrock	Continuous rock surface	
Boulder	Round stones or slabs	>25 cm in length or diameter
Rubble	Stones	5 cm–25 cm diameter
Gravel	Smaller stones	0.2 cm–5.0 cm diameter
Sand	Feels gritty when rubbed between fingers	0.05 mm–2.00 mm diameter
Clay	Feels smooth, greasy, or sticky	<0.05 mm diameter
Detritus	Un-decomposed organic matter	
Large wood debris	Tree stumps, logs, sticks	

TABLE S1c. Summary of type and percent vegetation cover in deep and shallow water. At each site, the percentage of plant material (total cover) and the percentage of each plant species were visually estimated within a 1 m radius of the sampling point at three plots at a distance of 7 m from the shoreline towards the river for the deep water plots and along the shoreline for the shallow water plots. The trap net lead was used to measure the distance from the shoreline. The values for total cover and each aquatic plant were calculated by averaging the three plots.

	Site													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Deep water														
<i>Vallisneria americana</i> Michaux	100	100	70	75	50	0	65	60	25	60	40	80	35	60
<i>Myriophyllum spicatum</i> L.	0	0	10	0	0	0	10	20	0	0	40	5	30	20
<i>Ceratophyllum demersum</i> L.	0	0	10	0	25	0	0	0	0	5	0	0	0	0
<i>Potamogeton</i> L.	0	0	10	25	25	100	25	20	0	5	5	5	0	0
<i>Nuphar variegata</i> Engelmann ex Durand and/or <i>Nymphaea odorata</i> Aiton	0	0	0	0	0	0	0	0	10	0	5	10	35	20
<i>Lemna</i> L., <i>Spirodela</i> spp. and/or <i>Wolffia</i> spp.	0	0	0	0	0	0	0	0	65	25	5	0	0	0
<i>Elodea</i> Michaux	0	0	0	0	0	0	0	0	0	5	5	0	0	0
Total vegetation covering area	10	20	100	50	50	60	60	100	100	70	70	65	50	80
Shannon Wiener Index Deep Vegetation	0.00	0.00	0.54	0.29	0.41	0.00	0.61	0.48	0.48	0.75	0.76	0.46	0.48	0.42
Shallow water														
<i>Vallisneria americana</i> Michaux	35	30	0	20	30	0	0	0	30	0	35	40	0	0
<i>Myriophyllum spicatum</i> L.	0	0	0	0	0	0	0	0	10	0	35	5	0	0
<i>Potamogeton</i> L.	5	15	0	15	0	0	0	0	0	0	30	5	0	0
<i>Nuphar variegata</i> Engelmann ex Durand and/or <i>Nymphaea odorata</i> Aiton	5	5	10	0	0	0	0	0	0	0	5	10	0	0
<i>Lemna</i> L., <i>Spirodela</i> spp. and/or <i>Wolffia</i> spp.	0	0	0	0	0	0	0	0	25	0	10	0	0	0
<i>Elodea</i> Michaux	5	5	0	0	0	0	0	0	0	0	5	0	0	0
Algae	35	30	0	5	30	0	0	0	0	0	0	0	0	0
<i>Typha latifolia</i>	0	0	20	10	25	0	100	100	15	30	0	0	0	0
<i>Juncus</i> spp. and/or <i>Carex</i> spp.	5	0	5	10	15	50	0	0	0	0	0	0	0	0
<i>Sagittaria latifolia</i>	5	0	20	10	0	0	0	0	0	0	0	0	0	0
<i>Lythrum salicaire</i>	0	0	10	20	0	0	0	0	0	0	0	0	0	0
Large woody debris	5	15	0	10	0	50	0	0	20	70	10	40	1	0
Total vegetation covering area	60	100	60	50	20	20	80	100	100	20	70	60	30	0
Shannon Wiener Index Shallow Vegetation	0.67	0.73	0.65	0.82	0.58	0.30	0.00	0.00	0.70	0.30	0.76	0.68	0.00	0.00

Literature Cited
Meador, M.R., C.R. Hupp, T.F. Cuffney, and M.E. Gurtz. 1993. Methods for characterizing stream habitat as part of the national water-quality assessment program. U.S. Geological Survey. Open-File Report 93-408, Raleigh, North Carolina, USA.