

APPENDIX A.

Table A1. Summary of linear models fit to within-module strength (A), participation coefficient (B), and patch strength (C). Three models were fit to each network metric: a habitat only model, connectivity only model, and a habitat x connectivity model (see methods for details).

Independent variables are the surface area of each pond (m²), hydroperiod, number of ponds within 300 m of a focal pond, and percent forest land cover within 300 m of a focal pond.

Connectivity is a connectivity index calculated from an incidence function. *Beta* is the parameter estimate for each independent variable, *SE* is the standard error of the beta estimate, and *P* is the *P*-value. Significant parameter estimates ($P \leq 0.05$) are bolded. Only the percentage of forest land cover was a significant predictor of a pond's contribution to gene flow across the landscape (patch strength), and this relationship was strengthened when pond connectivity was included.

A. Within-module strength

	Habitat only			Connectivity only			Habitat x Connectivity		
	<i>B</i>	<i>SE</i>	<i>P</i>	<i>B</i>	<i>SE</i>	<i>P</i>	<i>B</i>	<i>SE</i>	<i>P</i>
(Intercept)	-4.25	0.09	<0.01	-4.25	0.09	<0.01	-4.25	0.09	<0.01
Area	-0.03	0.12	0.783				-0.03	0.12	0.793
Hydroperiod	0.08	0.11	0.469				0.08	0.12	0.486
Ponds 300m	-0.05	0.11	0.652				-0.05	0.12	0.684
Forest 300m	-0.10	0.13	0.467				-0.10	0.14	0.491
Connectivity				0.01	0.09	0.919			
R ² / adj. R ²	0.05 / -0.15			0.00 / -0.04			0.04 / -0.16		
F-statistics	0.24			0.01			0.19		

B. Participation coefficient

	Habitat only			Connectivity only			Habitat x Connectivity		
	<i>Beta</i>	<i>SE</i>	<i>P</i>	<i>Beta</i>	<i>SE</i>	<i>P</i>	<i>Beta</i>	<i>SE</i>	<i>P</i>
(Intercept)	0.44	0.06	<0.01	0.44	0.06	<0.01	0.44	0.06	<0.01
Area	-0.08	0.08	0.317				-0.09	0.08	0.273
Hydroperiod	0.02	0.07	0.795				0.00	0.08	0.965
Ponds 300m	-0.04	0.08	0.584				-0.07	0.08	0.370
Forest 300m	-0.07	0.09	0.433				-0.10	0.09	0.312
Connectivity				-0.05	0.06	0.396			
R ² / adj. R ²	0.06 / -0.13			0.03 / -0.01			0.11 / -0.07		

F-statistics	0.32	0.75	0.59
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C. Patch strength

	Habitat only			Connectivity only			Habitat x Connectivity		
	<i>Beta</i>	<i>SE</i>	<i>P</i>	<i>Beta</i>	<i>SE</i>	<i>P</i>	<i>Beta</i>	<i>SE</i>	<i>P</i>
(Intercept)	30.54	2.60	<0.01	30.54	2.67	<0.01	30.54	2.35	<0.01
Area	-3.53	3.54	0.331				-4.32	3.10	0.179
Hydroperiod	0.14	3.26	0.965				-0.81	3.08	0.796
Ponds 300m	-4.59	3.29	0.178				-6.26	3.03	0.052
Forest 300m	-9.49	3.77	0.020				-10.95	3.72	0.008
Connectivity				-4.80	2.73	0.092			
R ² / adj. R ²	0.27 / 0.13			0.12 / 0.08			0.41 / 0.29		
F-statistics	1.88			3.10			3.42		
