Radinger J. and C. Wolter. 2015. **Disentangling the effects of habitat suitability, dispersal and fragmentation on the distribution of river fishes. Ecological Applications** 25:914-927.

Appendix B

Dispersal parameters of the stationary (σ_{stat}) and the mobile component (σ_{mob}) for 17 modeled fish species and graphical description of the fish dispersal model FIDIMO (*Ecological Archives* A025-055).

TABLE B1: Dispersal parameters (mean movement distance) of the stationary (σ_{stat}) and mobile component (σ_{mob}) of a fish population based on species-specific common length (L) and aspect ratio of the caudal fin (AR) extracted from Fishbase.org (Froese and Pauly 2011). Dispersal parameters are exemplarily calculated for stream order = 6 and nine time intervals (1 year - 9 years) using the R-package *'fishmove'* (Radinger and Wolter 2014) and applied in the fish dispersal model FIDIMO (Radinger et al. 2013).

Species	L (mm)	AR	1 year		2 years		3 years		4 years	
			σ_{stat}	σ_{mob}	σ_{stat}	σ_{mob}	σ_{stat}	σ_{mob}	σ_{stat}	σ_{mob}
Anguilla	350	1.00	209.66	5036.22	281.82	7386.73	335.06	9241.93	378.83	10834.45
Cobienia	50	0.85	7.42	277.83	9.97	407.50	11.86	509.84	13.40	597.69
Blicrkna	200	2.49	351.07	5337.87	471.84	7829.20	560.93	9795.56	634.18	11483.51
Gobiobio	120	1.37	51.55	1329.98	69.29	1950.70	82.37	2440.62	93.13	2861.18
Leucatus	60	3.40	116.99	1597.14	157.21	2342.57	186.89	2930.92	211.28	3435.97
Leucscus	150	1.29	68.60	1748.23	92.21	2564.16	109.62	3208.16	123.94	3760.97
Phoxinus	70	1.38	21.47	614.34	28.86	901.06	34.31	1127.36	38.79	1321.62
Rutiilus	250	1.48	191.40	4092.78	257.27	6002.97	305.86	7510.64	345.82	8804.84
Tincinca	200	1.45	128.87	2913.72	173.22	4273.61	205.94	5346.94	232.84	6268.30
Esoxcius	400	1.39	380.01	7660.45	510.79	11235.78	607.29	14057.7	686.62	16480.07
Gastatus	51	1.69	17.21	465.82	23.13	683.22	27.49	854.82	31.08	1002.11
Pungtius	65	1.17	15.53	488.59	20.88	716.63	24.82	896.61	28.06	1051.10
Gymnrnua	120	0.84	30.96	977.64	41.61	1433.92	49.47	1794.05	55.93	2103.19
Percilis	250	1.40	177.22	3906.86	238.20	5730.28	283.20	7169.46	320.19	8404.87
Lampilis	350	1.00	209.66	5036.22	281.82	7386.73	335.06	9241.93	378.83	10834.45
Lampneri	160	0.56	37.94	1259.24	51.00	1846.94	60.63	2310.80	68.55	2708.98
Salmario	200	1.25	106.31	2594.06	142.89	3804.76	169.88	4760.34	192.07	5580.61

	5 years		6 years		7 years		8 years		9 years	
	σ_{stat}	σ_{mob}	σ_{stat}	σ_{mob}	σ_{stat}	σ_{mob}	σ_{stat}	σ_{mob}	σ_{stat}	σ_{mob}
Anguilla	416.69	12256.40	450.41	13555.69	481.05	14761.13	509.27	15891.65	535.53	16960.51
Cobienia	14.74	676.13	15.94	747.81	17.02	814.30	18.02	876.67	18.95	935.63
Blicrkna	697.52	12990.66	753.94	14367.82	805.20	15645.49	852.41	16843.76	896.34	17976.67
Gobiobio	102.44	3236.68	110.72	3579.8	118.25	3898.13	125.19	4196.68	131.64	4478.94
Leucatus	232.37	3886.92	251.16	4298.98	268.23	4681.27	283.95	5039.80	298.57	5378.77
Leucscus	136.32	4254.57	147.35	4705.59	157.37	5124.03	166.60	5516.47	175.19	5887.50
Phoxinus	42.67	1495.07	46.12	1653.56	49.26	1800.60	52.14	1938.50	54.83	2068.88
Rutiilus	380.37	9960.42	411.15	11016.32	439.11	11995.95	464.86	12914.70	488.83	13783.33
Tincinca	256.10	7090.97	276.82	7842.68	295.64	8540.09	312.98	9194.16	329.12	9812.55
Esoxcius	755.23	18642.98	816.35	20619.33	871.87	22452.92	923.01	24172.55	970.60	25798.38
Gastatus	34.19	1133.63	36.95	1253.80	39.47	1365.30	41.78	1469.86	43.93	1568.72
Pungtius	30.86	1189.05	33.36	1315.10	35.63	1432.05	37.72	1541.72	39.66	1645.41
Gymnrnua	61.52	2379.21	66.50	2631.43	71.02	2865.42	75.18	3084.88	79.06	3292.36
Percilis	352.18	9507.95	380.68	10515.88	406.56	11451.01	430.41	12328.02	452.60	13157.19
Lampilis	416.69	12256.40	450.41	13555.69	481.05	14761.13	509.27	15891.65	535.53	16960.51
Lampneri	75.40	3064.50	81.50	3389.37	87.05	3690.76	92.15	3973.42	96.91	4240.67
Salmario	211.26	6313.03	228.35	6982.27	243.88	7603.17	258.19	8185.47	271.50	8736.02

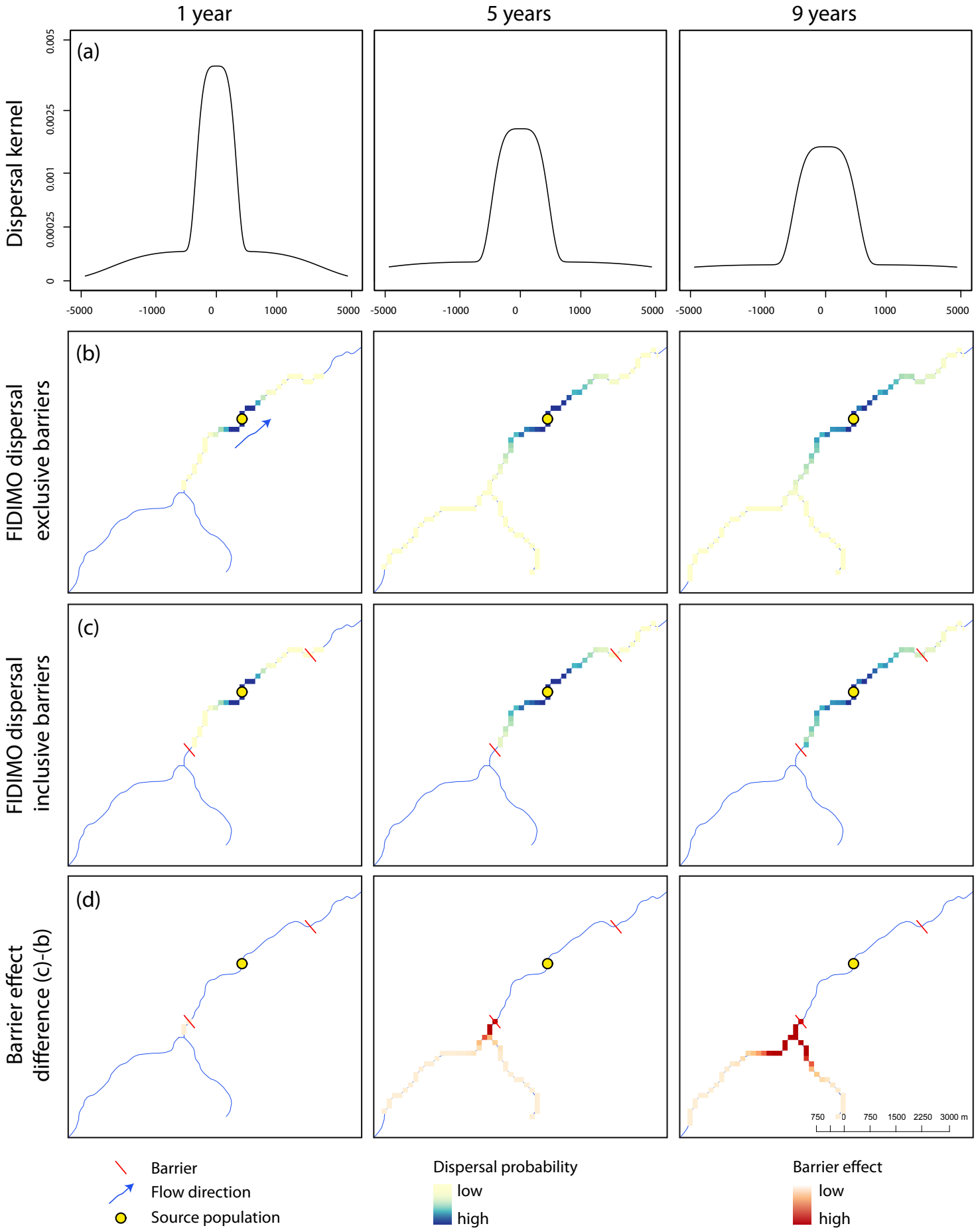

FIG. B1: (a) Dispersal kernels (Radinger and Wolter 2013) and (b) corresponding dispersal probabilities (bright to dark = low to high dispersal probability) modelled with FIDIMO without considering barriers (Radinger et al. 2013). (c) FIDIMO allows considering barriers with different passability in upstream (impassable) and downstream direction (fully passable). The barrier effect maps (d) illustrate the differences between models (b) excluding and (c) including barriers (bright to dark = low to high barrier effect). All models are exemplarily calculated for a single source population (e.g. *Leuciscus leuciscus*, fish length = 150 mm, aspect ratio of the caudal fin = 1.286) and for three time intervals (1 year, 3 years, 9 years) using the FIDIMO example dataset (Radinger et al. 2013).

Literature Cited

Froese R. and Pauly D. (2011). FishBase (06/2014). [Online]. available: http://www.fishbase.org.
Radinger J. and Wolter C. (2013). Patterns and predictors of fish dispersal in rivers. Fish and Fisheries. 15:456–473. DOI: 10.1111/faf.12028.
Radinger J., Kail J., and Wolter C. (2013). FIDIMO – A Free and Open Source GIS based dispersal model for riverine fish. Ecological Informatics. 1–10. DOI: 10.1016/j.ecoinf.2013.06.002.