Supplementary files for Janáč et al.: Fish in newly created ponds: factors affecting colonization and assemblage structure

Table S1. Backward stepwise regression procedure determining best model predicting presence of fish in the newly built ponds. Final model (m6) parameters in bold. P stands for P value of likelihood ratio tests between the corresponding model and the nearest model, within which it is nested. M. = model, Area = pond area, depth = maximal depth, sett. = distance to the nearest settlement, litt. = littoral width, age = pond age, slope = bank slope, bare = percentage of bare bank, cond. = conductivity, road = road distance, water = distance from the nearest water source.

m.	predictors										AIC	AICc	P
m1	area	depth	sett.	litt.	age	slope	bare	cond.	road	water	152.6	155.4	
m2	area	depth	sett.	litt.	age	slope	bare	cond.	road		151.3	153.7	0.393
m3	area	depth	sett.	litt.	age	slope	bare	cond.			149.3	151.3	0.881
m4	area	depth	sett.	litt.	age	slope	bare				147.5	149.1	0.654
m5	area	depth	sett.	litt.	age	slope					145.8	147.1	0.599
m6	area	depth	sett.	litt.	age						144.0	145.0	0.650
m7	**area**	**depth**	**sett.**	**litt.**							**142.3**	**143.0**	**0.600**
m8	area	depth	sett.								145.8	146.3	0.019
m9	area	depth		litt.							147.4	147.9	0.007
m10	area		sett.	litt.							148.2	148.7	0.005
m11		depth	sett.	litt.							148.8	148.4	0.003

Table S2. Backward stepwise regression procedure determining best model predicting presence of fish in the newly built ponds, performed on a reduced dataset (n = 28), which covered all ponds with water bird surveys. Final model (m4) parameters in bold. P stands for P value of likelihood ratio tests between the corresponding model and the nearest model, within which it is nested. M. = model, Area = pond area, depth = maximal depth, sett. = distance to the nearest settlement, litt. = littoral width, birds = water-bird diversity.

m.	predictors					AIC	AICc	P
m1	sett.	litt.	depth	area	birds	39.2	44.8	
m2	sett.	litt.	depth	area		37.7	41.7	0.493
m3	sett.	litt.	depth			35.8	38.5	0.738
m4	**sett.**	**litt.**				**34.8**	**36.5**	**0.313**
m5	sett.					40.6	41.6	0.006
m6		litt.				38.3	39.3	<0.001

Table S3. Results of vector fitting of the predictors to NMDS ordination of fish assemblages based on quantitative Bray-Curtis dissimilarities. Coordinates of predictor projection on the first two ordination axes (NMDS1, NMDS2), R^2 and P value obtained by 999 permutations are shown. Significant predictors are in bold.

Predictor	NMDS1	NMDS2	R^2	Pr(>r)
Pond age	**0.566**	**-0.825**	**0.151**	**0.002**
Road distance	-0.112	-0.994	0.029	0.365
Pond area	**-0.369**	**0.929**	**0.090**	**0.038**
Settlement distance	**0.830**	**-0.558**	**0.122**	**0.013**
Maximal depth	0.196	-0.981	0.021	0.483
Bank slope	0.763	-0.646	0.077	0.067
Conductivity	-0.999	0.045	0.014	0.626
Littoral width	0.800	-0.600	0.042	0.228
Percentage of bare bank	-0.427	0.904	0.043	0.236
Water source distance	-0.437	-0.899	0.045	0.217

Table S4. Results of PERMANOVA and P-value of permutational betadispersion test for differences in fish assemblage structure among three groups of sites.

tests	Df	F	P	betadispersion
overall	2,69	8.625	0.001	0.005
native - invasive	1,56	7.560	0.001	0.136
native – stocked	1,31	9.172	0.001	0.113
invasive – stocked	1,51	9.586	0.001	0.002

Table S5. Backward stepwise regression procedure determining best model predicting water transparency and proportion of submerged vegetation in the newly built ponds with fish. Final model parameters in bold. P stands for P value of likelihood ratio tests between the corresponding model and the nearest model, within which it is nested. Assem. = assemblage type, assem:biomass = interaction between assemblage type and biomass.

response	predictors			AIC	AICc	P
transparency	assem.	biomass	assem:biomass	661.9	664.2	
	assem.	biomass		659.3	660.6	0.492
	assem.			**660.8**	**661.6**	**0.063**
		biomass		679.6	680.2	<0.001
subm. veg.	assem.	biomass	assem:biomass	561.5	563.8	
	assem.	biomass		559.4	560.6	0.402
	assem.			**557.7**	**558.6**	**0.567**
		biomass		570.8	570.8	<0.001

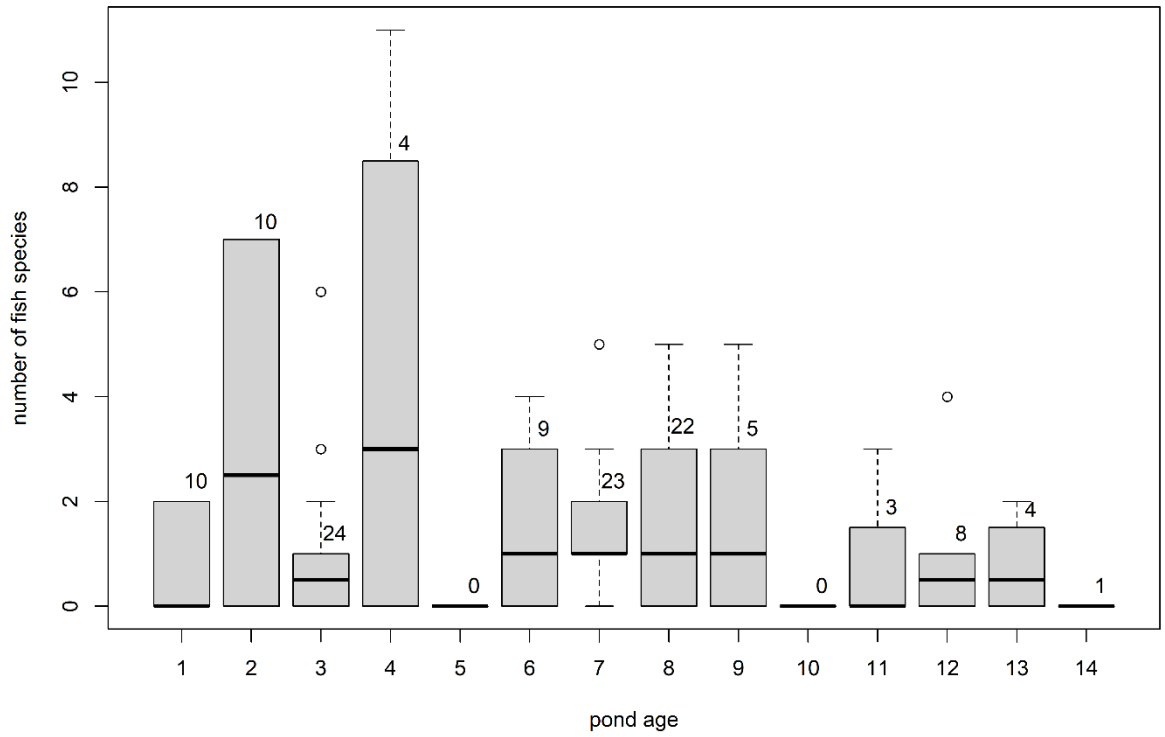

Figure S1. Number of fish species in relation to pond age. The number of ponds sampled in each age category is shown above the bars. Horizontal line = median, boxes = interquartile range, whiskers = non-outlier range, points = outliers.

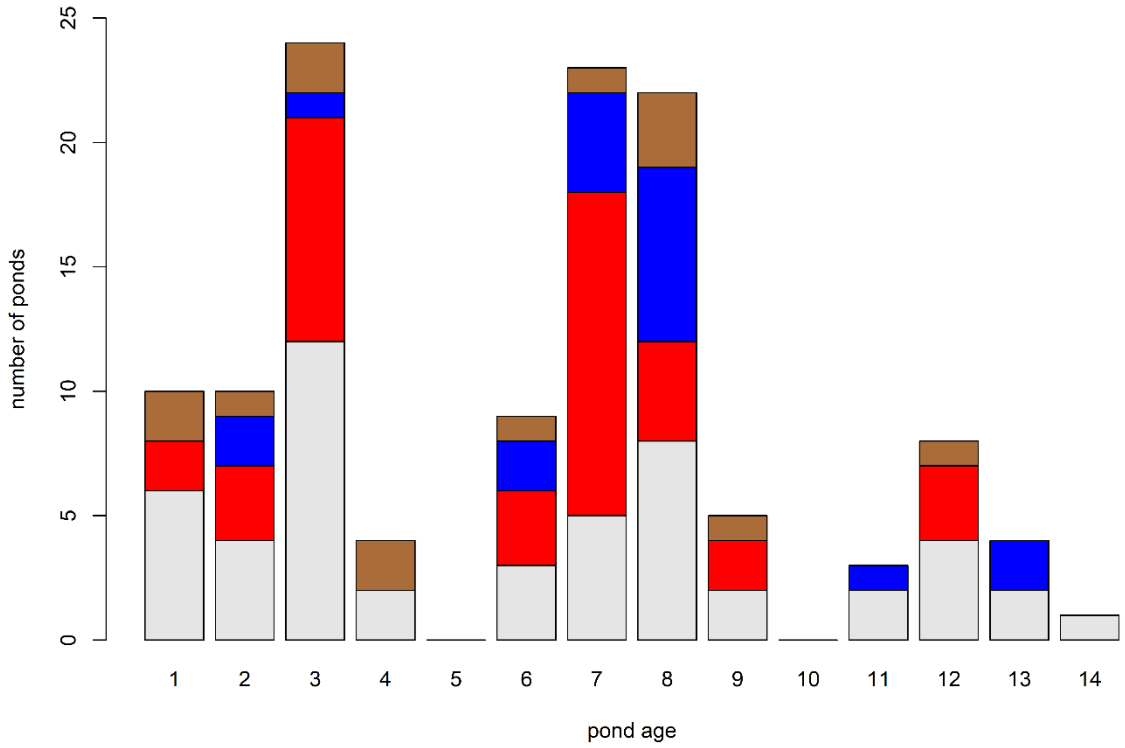

Figure S2. Number of fishless ponds (grey), ponds resided by native fish (blue), invasive fish (red) and stocked fish (brown) assemblages in relation to pond age.