

Supplementary information

Raphaël Leprince*, Etienne Debenest, Christophe Lartigau, Victor Turpaud-Fizzala, Cyrille Poirel, Nicolas Lachaussee, Marie Donnez & Pierrick Bocher 2022: Influence of habitat quality and diversity on two populations of Eurasian curlew (*Numenius arquata*) with contrasting dynamics in Western France. — *Ornis Fennica* 99: 00–00.

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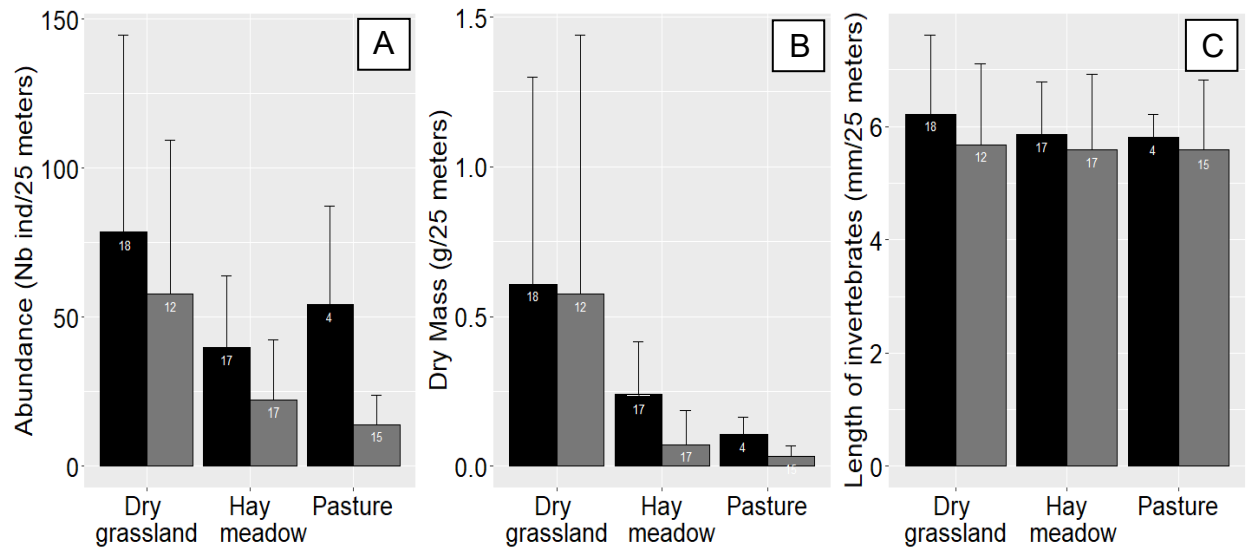


Fig. S1. Abundance of invertebrates per transect ($\pm$ sd) (A), Dry Mass per transect ($\pm$ sd) (B), Length of invertebrates per transect ($\pm$ sd) (C) in the different habitats sampled for mowed and grazed meadows (dark grey) and non-mowed and non-grazed meadows (black). The number of samples per habitat is indicated on the top of each bar.

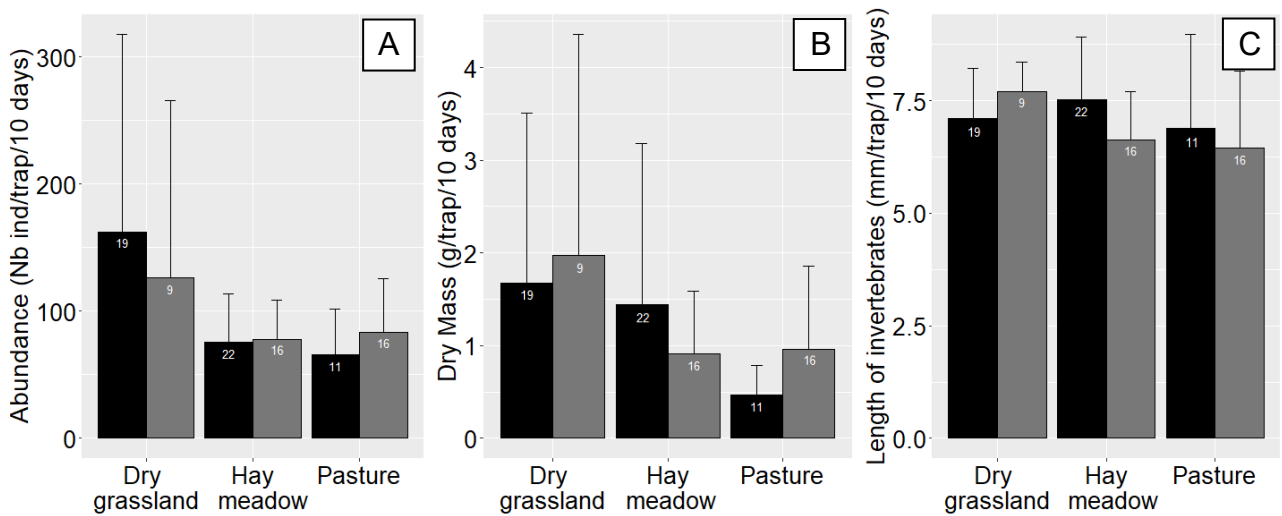


Fig. S2. Abundance of invertebrates per trap ($\pm$ sd) (A), Dry Mass per trap ($\pm$ sd) (B), Length of invertebrates per trap ($\pm$ sd) (C) in the different habitats sampled for mowed and grazed meadows (dark grey) and non-mowed and non-grazed meadows (black). The number of samples per habitat is indicated on the top of each bar.

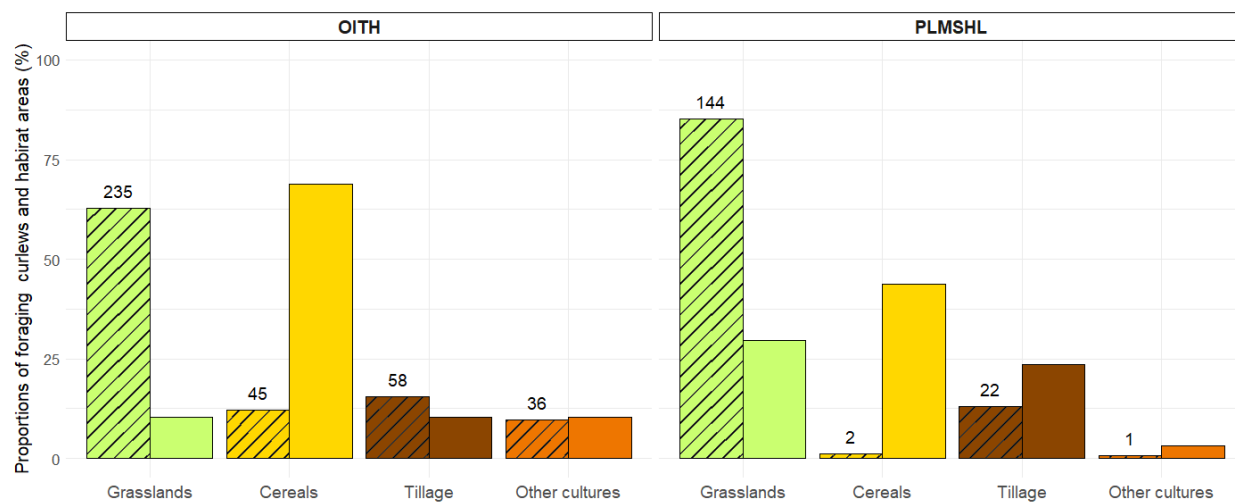


Fig. S3. Comparison between the proportion of foraging curlew in each habitat (hatched) and the proportion of habitat areas (no pattern) in OITH and PLMSHL. The numbers above the bars represent the number of observations.

Table S1. Average invertebrate abundance per pitfall trap in each sampled habitat type for each sampling session (sessions 1–3). Total means ($\pm$ SE) per taxa are represented. Orders representing potential prey of breeding Eurasian curlew are displayed and the rest was gathered in the “other” category.

Session 1					
Taxa	OITH Wheat	Dry grassland	PLMSHL Tillage	Hay meadow	Pasture
Arachnida					
Araneae	4.5 $\pm$ 1.6	11.5 $\pm$ 2.3	5.6 $\pm$ 1.7	20.7 $\pm$ 3.0	21.9 $\pm$ 3.9
Opiliones	7.6 $\pm$ 2.8	5.2 $\pm$ 2.2	2.0 $\pm$ 0.3	3.5 $\pm$ 1.5	0
Clitellata					
Haplotaxida					
Lumbricidae	0	1.0 $\pm$ 0	9.0 $\pm$ 0	1.3 $\pm$ 0.3	1.5 $\pm$ 0.5
Insecta					
Coleoptera	14.7 $\pm$ 3.9	12.3 $\pm$ 3.4	22.9 $\pm$ 7.2	8.1 $\pm$ 2.5	10.0 $\pm$ 2.7
Dermaptera	3.0 $\pm$ 2.0	1.5 $\pm$ 0.2	1.8 $\pm$ 0.4	6.0 $\pm$ 2.0	1.3 $\pm$ 0.3
Diptera	9.7 $\pm$ 4.8	7.4 $\pm$ 3.0	11.0 $\pm$ 2.9	3.8 $\pm$ 1.5	3.3 $\pm$ 1.0
Hemiptera	0	2.0 $\pm$ 0.0	1.2 $\pm$ 0.2	2.0 $\pm$ 0.6	0
Hymenoptera	2.0 $\pm$ 0	23.6 $\pm$ 11.4	2.8 $\pm$ 1.1	7.0 $\pm$ 1.5	29.8 $\pm$ 14.4
Odonata	0	0	0	0	0
Orthoptera	1.0 $\pm$ 0	1.0 $\pm$ 0	1.0 $\pm$ 0	2.3 $\pm$ 0.5	1.0 $\pm$ 0
Neuroptera	0	0	0	0	0
Larva of insect	1.0 $\pm$ 0	2.0 $\pm$ 1.0	2.0 $\pm$ 0	1.5 $\pm$ 0.5	5.5 $\pm$ 2.1
Malacostraca					
Isopoda	15.6 $\pm$ 11.9	35.3 $\pm$ 22.4	10.8 $\pm$ 8.3	14.7 $\pm$ 5.2	7.3 $\pm$ 2.7
Gastropoda	2.5 $\pm$ 0.5	11.6 $\pm$ 8.1	1.0 $\pm$ 0	3.2 $\pm$ 0.8	8.3 $\pm$ 3.9
Other	4.5 $\pm$ 1.8	5.1 $\pm$ 1.8	2.0 $\pm$ 0.7	7.8 $\pm$ 4.2	1.0 $\pm$ 0
All invertebrates	53.8 $\pm$ 10.7	100.4 $\pm$ 24.8	53.5 $\pm$ 14.6	59.8 $\pm$ 6.6	72.3 $\pm$ 15.5
Session 2					
Taxa	OITH Wheat	Dry grassland	PLMSHL Tillage	Hay meadow	Pasture
Arachnida					
Araneae	15.6 $\pm$ 3.3	11.0 $\pm$ 2.2	8.6 $\pm$ 1.6	24.1 $\pm$ 3.6	18.3 $\pm$ 2.0
Opiliones	15.3 $\pm$ 4.9	3.2 $\pm$ 1.1	5.3 $\pm$ 1.6	3.5 $\pm$ 1.3	2.8 $\pm$ 1.2
Clitellata					
Haplotaxida					
Lumbricidae	0	0	9.0 $\pm$ 0	1.3 $\pm$ 0.2	3.0 $\pm$ 0
Insecta					
Coleoptera	33.1 $\pm$ 6.4	11.0 $\pm$ 2.0	17.8 $\pm$ 3.0	10.0 $\pm$ 1.5	13.7 $\pm$ 2.3
Dermaptera	1.3 $\pm$ 0.3	5.0 $\pm$ 2.3	1.0 $\pm$ 0	3.0 $\pm$ 1.3	3.0 $\pm$ 0.6
Diptera	19.9 $\pm$ 2.8	2.7 $\pm$ 0.7	6.3 $\pm$ 1.4	5.1 $\pm$ 1.0	6.2 $\pm$ 2.3
Hemiptera	0	1.0 $\pm$ 0.0	0	1.6 $\pm$ 0.3	1.7 $\pm$ 0.3
Hymenoptera	2.0 $\pm$ 0.7	24.8 $\pm$ 9.7	1.5 $\pm$ 0.3	10.0 $\pm$ 1.2	18.6 $\pm$ 4.7
Odonata	0	0	0	0	0
Orthoptera	1.0 $\pm$ 0	1.0 $\pm$ 0	5.0 $\pm$ 3.7	4.7 $\pm$ 1.8	2.3 $\pm$ 0.9
Neuroptera	0	0	0	0	0
Larva of insect	1.8 $\pm$ 0.2	3.0 $\pm$ 1.4	2.0 $\pm$ 0.7	1.0 $\pm$ 0	4.9 $\pm$ 1.6
Malacostraca					
Isopoda	38.2 $\pm$ 17.2	106.5 $\pm$ 52.7	21.3 $\pm$ 4.3	42.4 $\pm$ 21.1	3.3 $\pm$ 0.5
Gastropoda	0	42.0 $\pm$ 38.7	3.0 $\pm$ 0	5.7 $\pm$ 2.0	3.3 $\pm$ 1.1
Other	6.4 $\pm$ 3.5	2.0 $\pm$ 0.7	4.1 $\pm$ 1.5	8.6 $\pm$ 4.3	2.0 $\pm$ 0
All invertebrates	121.5 $\pm$ 13.6	171.3 $\pm$ 55.3	68.3 $\pm$ 6.8	101.9 $\pm$ 21.6	65.8 $\pm$ 9.2

Session 3					
Taxa	OITH		PLMSHL		
	Wheat	Dry grassland	Tillage	Hay meadow	Pasture
Arachnida					
Araneae	10.5 ± 3.4	5.4 ± 1.1	7.9 ± 2.1	19.3 ± 3.6	48.3 ± 10.8
Opiliones	3.8 ± 1.3	4.5 ± 3.2	3.2 ± 1.5	3.0 ± 2.0	0
Clitellata					
Haplotaxida					
Lumbricidae	0	0	0	0	0
Insecta					
Coleoptera	19.0 ± 3.6	14.0 ± 2.9	7.0 ± 1.7	14.6 ± 5.0	12.5 ± 3.0
Dermaptera	1.0 ± 0	2.6 ± 0.9	1.5 ± 0.5	1.0 ± 0	1.0 ± 0
Diptera	12.5 ± 2.8	5.1 ± 1.8	3.4 ± 0.8	2.8 ± 0.6	1.6 ± 0.3
Hemiptera	1.0 ± 0	2.5 ± 0.8	1.0 ± 0	7.3 ± 3.8	2.4 ± 0.4
Hymenoptera	6.7 ± 2.1	42.8 ± 19.6	1.9 ± 0.4	22.6 ± 4.4	21.1 ± 8.5
Odonata	0	0	0	0	0
Orthoptera	1.7 ± 0.3	2.0 ± 0.7	2.5 ± 0.5	5.3 ± 2.3	2.5 ± 1.2
Neuroptera	0	0	0	0	0
Larva of insect	4.0 ± 2.7	3.4 ± 2.1	1.2 ± 0.2	3.1 ± 2.1	2.4 ± 0.6
Malacostraca					
Isopoda	24.0 ± 11.4	101.1 ± 37.3	8.0 ± 2.9	26.5 ± 10.4	2.3 ± 0.6
Gastropoda	0	2.0 ± 1.0	0	3.1 ± 1.1	2.3 ± 0.6
Other	1.5 ± 0.5	2.0 ± 0.7	2.3 ± 0.3	9.0 ± 3.5	1.7 ± 0.3
All invertebrates	73.5 ± 5.2	172.7 ± 46.7	27.1 ± 4.8	101.6 ± 13.5	87.5 ± 13.0

Table S2. Average invertebrate abundance per transect (sweep-net) in each sampled habitat type for each sampling session. Total means ($\pm$ SE) per taxa are represented. Orders representing potential prey of breeding Eurasian curlew are displayed and the rest was gathered in the “other” category.

Session 1					
Taxa	OITH Wheat	Dry grassland	PLMSHL Tillage	Hay meadow	Pasture
Arachnida					
Araneae	2.0 $\pm$ 0.4	4.3 $\pm$ 1.7	NA	3.9 $\pm$ 1.0	1.8 $\pm$ 0.8
Opiliones	0	1.0 $\pm$ 0	NA	0	0
Insecta					
Coleoptera	1.2 $\pm$ 0.2	5.1 $\pm$ 0.8	NA	4.4 $\pm$ 1.0	3.0 $\pm$ 0.7
Dermaptera	0	0	NA	0	0
Diptera	1.7 $\pm$ 0.3	3.0 $\pm$ 1.1	NA	4.4 $\pm$ 1.3	5.5 $\pm$ 1.8
Hemiptera	1.7 $\pm$ 0.7	4.0 $\pm$ 1.9	NA	5.3 $\pm$ 1.9	4.5 $\pm$ 1.0
Hymenoptera	1.3 $\pm$ 0.3	2.6 $\pm$ 1.1	NA	3.2 $\pm$ 0.8	3.6 $\pm$ 2.1
Lepidoptera	4.9 $\pm$ 0.8	2.5 $\pm$ 1.5	NA	2.7 $\pm$ 0.9	2.0 $\pm$ 0.6
Odonata	0	0	NA	0	0
Orthoptera	0	3.4 $\pm$ 1.0	NA	3.4 $\pm$ 2.1	1.0 $\pm$ 0
Neuroptera	0	0	NA	0	0
Larva of insect	0	8.3 $\pm$ 5.5	NA	1.0 $\pm$ 0.0	1.0 $\pm$ 0.0
Malacostraca					
Isopoda	0	0	NA	0	0
Gastropoda	0	14.4 $\pm$ 7.5	NA	1.0 $\pm$ 0	1.0 $\pm$ 0
Other	0	0	NA	1.7 $\pm$ 0.3	0
All invertebrates	7.9 $\pm$ 1.2	30.0 $\pm$ 8.2	NA	23.5 $\pm$ 4.0	17.3 $\pm$ 5.1
Session 2					
Taxa	OITH Wheat	Dry grassland	PLMSHL Tillage	Hay meadow	Pasture
Arachnida					
Araneae	3.4 $\pm$ 0.5	5.0 $\pm$ 1.8	1.8 $\pm$ 0.6	4.6 $\pm$ 1.1	2.4 $\pm$ 0.7
Opiliones	0	0	0	0	0
Insecta					
Coleoptera	5.1 $\pm$ 1.3	6.1 $\pm$ 1.8	1.3 $\pm$ 0.3	12.6 $\pm$ 2.5	7.3 $\pm$ 3.3
Dermaptera	0	0	0	1.0 $\pm$ 0	1.0 $\pm$ 0
Diptera	4.5 $\pm$ 1.8	7.3 $\pm$ 1.7	2.3 $\pm$ 0.9	5.8 $\pm$ 1.1	12.6 $\pm$ 4.2
Hemiptera	13.7 $\pm$ 2.4	6.8 $\pm$ 1.7	9.7 $\pm$ 7.2	11.1 $\pm$ 1.7	6.1 $\pm$ 1.0
Hymenoptera	7.6 $\pm$ 2.9	2.3 $\pm$ 0.5	1.0 $\pm$ 0	4.5 $\pm$ 1.9	3.3 $\pm$ 1.1
Lepidoptera	2.0 $\pm$ 0	2.0 $\pm$ 1.0	0	1.0 $\pm$ 0	4.0 $\pm$ 0
Odonata	0	1.0 $\pm$ 0	0	1.5 $\pm$ 0.5	1.0 $\pm$ 0
Orthoptera	2.0 $\pm$ 0	4.2 $\pm$ 1.6	0	2.2 $\pm$ 0.4	2.3 $\pm$ 1.3
Neuroptera	0	0	0	0	0
Larva of insect	9.7 $\pm$ 2.3	10.8 $\pm$ 7.5	13.0 $\pm$ 0	3.4 $\pm$ 1.5	5.8 $\pm$ 3.1
Malacostraca					
Isopoda	0	0	0	0	0
Gastropoda	2.0 $\pm$ 0	21.6 $\pm$ 11.3	0	4.5 $\pm$ 2.8	1.0 $\pm$ 0
Other	1.0 $\pm$ 0	1.0 $\pm$ 0	0	1.0 $\pm$ 0	1.0 $\pm$ 0
All invertebrates	42.8 $\pm$ 37	50.9 $\pm$ 7.7	7.2 $\pm$ 5.1	43.5 $\pm$ 7.6	34.9 $\pm$ 10.6

Session 3					
Taxa	OITH Wheat	Dry grassland	PLMSHL Tillage	Hay meadow	Pasture
Arachnida					
Araneae	3.5 ± 0.7	16.6 ± 7.2	1.5 ± 0.36	1.5 ± 0.5	1.3 ± 0.3
Opiliones	4.0 ± 0	1.0 ± 0	0	0	0
Insecta					
Coleoptera	2.8 ± 0.6	32.1 ± 12.8	2.3 ± 0.9	10.3 ± 3.9	4.4 ± 2.2
Dermaptera	2.3 ± 0.9	2.0 ± 0	0	0	0
Diptera	2.8 ± 1.0	5.4 ± 0.8	1.5 ± 0.5	5.8 ± 1.7	2.3 ± 0.8
Hemiptera	6.4 ± 1.8	23.9 ± 6.1	3.8 ± 1.5	12.7 ± 3.0	3.7 ± 1.1
Hymenoptera	1.5 ± 0.5	3.0 ± 1.0	2.0 ± 0	2.5 ± 0.65	1.0 ± 0
Lepidoptera	0	3.3 ± 1.0	0	0	0
Odonata	0	0	0	0	0
Orthoptera	3.3 ± 0.9	13.8 ± 3.2	0	1.6 ± 0.4	2.0 ± 1.0
Neuroptera	0	0	0	2.5 ± 1.5	1.0 ± 0
Larva of insect	1.0 ± 0	6.6 ± 2.7	0	4.5 ± 0.6	2.0 ± 0
Malacostraca					
Isopoda	1.0 ± 0	1.5 ± 0.5	0	1.0 ± 0	0
Gastropoda	3.3 ± 0.9	37.0 ± 20.6	0	1.0 ± 0	0
Other	14.0 ± 12.0	3.5 ± 2.5	0	0	1.0 ± 0
All invertebrates	19.6 ± 5.2	130.3 ± 23.7	5.9 ± 1.1	26.5 ± 6.8	11.3 ± 4.3