

Appendix 1 – Data description and complementation (completed from Matutini et al 2020)

1.1. Opportunistic presence data (calibration dataset)

Database name	Type	General website	Data proportion
Faune_anjou	Citizen bases with validation process by professionals	https://www.faune-anjou.org/	25%
Faune_maine		https://www.faune-maine.org/	10%
Faune_vendee		https://www.faune-vendee.org/	10%
Faune_loire_atlantique		https://www.faune-loire-atlantique.org/	11%
Biolovision		https://data.biolovision.net/	18%
URCPIE	Professional & volunteers	http://urcpie-paysdelaloire.org/	12%
Bretagne Vivante	Naturalist group	https://www.bretagne-vivante.org/	2%
ONF_BDN	Professional	https://www.onf.fr/	3%
SICEN	Professional	http://www.cenpaysdelaloire.fr/	3%
BASEPARC PNRMP / OPN	Professional	https://pnr.parc-marais-poitevin.fr/	2%
Naturalistes en lutte	Naturalist group	https://naturalistesenlutte.wordpress.com/	2%
Sterne 2.0	Professional	http://www.sterne2.com/	1%
Les naturalistes vendeens	Naturalist group	http://naturalistes-vendeens.org/	1%
Gouret_FLA	Naturalist individual base	-	<1%
Cap Atlantique	Professional	https://www.cap-atlantique.fr/accueil	<1%
Undragon.org	Citizen base	http://undragon.org/	<1%
ONCFS	Professional	http://www.oncfs.gouv.fr/	<1%

Table 1. Data sources for model calibration

Species	Opportunistic presence-only dataset (model calibration and cross-validation)	
	Total nb of presence	Nb of 500m presence-cells
Anourens:		
<i>Bufo spinosus</i>	8320	4127
<i>Hyla arborea arborea</i>	6344	3353
<i>Pelodytes punctatus</i>	2711	1103
<i>Rana dalmatina</i>	9073	3752
<i>Rana temporaria</i>	1525	477
Urodeles:		
<i>Salamandra Salamandra terrestris</i>	4916	2242
<i>Triturus marmoratus</i>	1478	629
<i>Triturus cristatus</i>	1791	766
<i>Lissotriton helveticus</i>	7047	2835

Table 2. Description of the presence-only data used for each of nine species for calibration of habitat suitability models.

1.2. Standardised detection-nondetection data (external validation dataset)

Name of the citizen science program: “Un Dragon dans mon Jardin”

Coordination: URCPIE – “Union régionale des centres d’initiatives pour l’environnement ».

For external SDM validation, we extracted detection-nondetection_amphibian data from a regional citizen science database. This database contained 576 monitored aquatic sites for the period 2013-2019, with observations made in the context of a programme aiming to estimate amphibian population trends (regionally called “Un Dragon dans mon Jardin”). Observers had to follow a standard protocol; each site had to be monitored three times separated by at least one month - one diurnal between January and March and two nocturnal between March and June – to cover different species’ breeding periods, during good weather conditions (no frost, no rain, no or weak wind). For each survey, three complementary methods were used to detect amphibians: an acoustic survey (5 min at 5 metres from the site without light) to detect breeding calls of male Anurans specie; an active visual survey using a flashlight torch (500-1000 lumens) to observe individuals and eggs and a catching survey using a net (3 net sweeps per site) if the observer had specific authorization. These methods are commonly used for amphibian community surveys. If the protocol was not respected and/or if the observer was not sufficiently experienced, only the presence data were considered valid (exclusion of the absence data). In addition, a threshold value for minimum sampling effort required were used to validate non-detection as absence data. See Matutini et al. 2020

	EVAL		EVAL_STRAT	
	Nb of DET	Nb of NoDET	Nb data/strat for s2	Nb data/strat for s3
Anourans:				
<i>Bufo spinosus</i>	97	187	37	23
<i>Hyla arborea arborea</i>	136	204	42	23
<i>Pelodytes punctatus</i>	40	249	29	8
<i>Rana dalmatina</i>	186	162	38	30
<i>Rana temporaria</i>	17	231	8	15
Urodeles:				
<i>Salamandra Salamandra terrestris</i>	79	186	23	25
<i>Triturus marmoratus</i>	62	213	13	16
<i>Triturus cristatus</i>	52	241	37	25
<i>Lissotriton helveticus</i>	176	164	26	13

Table 5. Description of the filtered datasets for each of nine species used for external validation of habitat suitability models. DET: 500m cells with detection of the species; NoDET: 500m nondetection-cells. Results for 1 interaction

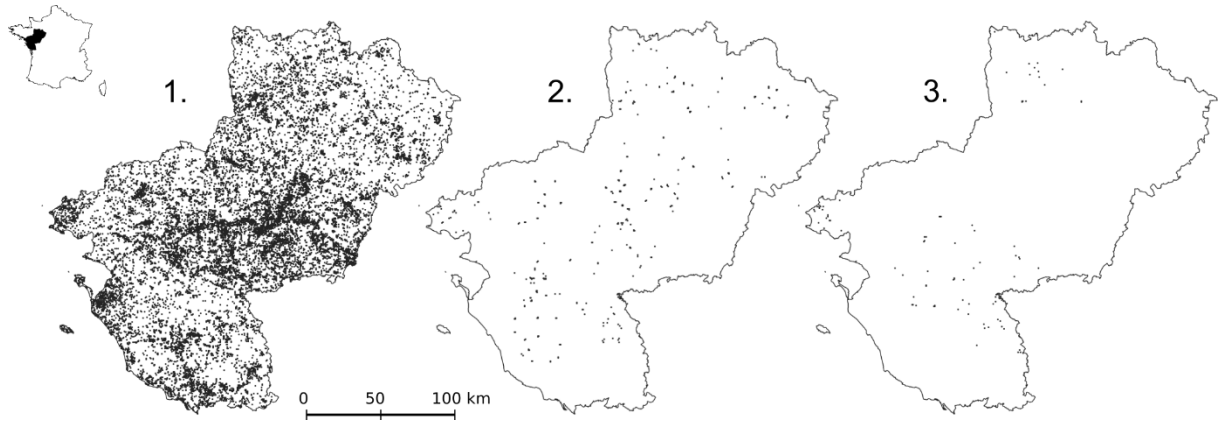


Figure 4. Distribution of the 500m² cells with data for the opportunistic dataset and the external evaluation dataset (e.g. *CS.1+ABS+SUP*). (1) All 500m² cells with at least one opportunistic observation (all species); (2) 500m² cells used as presence-absence data (with at least three surveys performed by an expert observer or six surveys by an intermediate observer) for external validation; (3) 500m² cells used only as presence if the species had been detected (sampling effort too weak for absence data) for external validation. The external dataset for validation is a compilation of (2) (presence-absence) and (3) (presence).