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Management effects on amphibian populations in amphibian breeding sites of national importance

Master Thesis

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Submission: 2nd of Mai 2016

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Abstract

Amphibians are the most endangered animal taxa and are currently experiencing a dramatic biodiversity decline worldwide. Despite conservation efforts in Switzerland, persistence of almost all amphibian species is decreasing. The ongoing habitat fragmentation and habitat loss are two of the main driving factors. Thus, most amphibians are dependent on protected habitats. The inventory of amphibian breeding sites of national importance (IANB) provides a network of protected sites. The aim of this study was to investigate the effect of IANB objects and its conservation measures on amphibian species. Two main analyses were conducted. First, based on presence/absence data of the updated Swiss Red List for amphibians, persistence probability in IANB and non-IANB objects were compared to see if IANB-status has an effect. In the second analysis, I investigated the effect of different conservation measures and population size on persistence probability of each species. For the second analysis, presence/absence data from the “Monitoring the Effectiveness of Habitat Conservation in Switzerland” (“Wirkungskontrolle Biotopschutz Schweiz”, WBS) were used. I connected these amphibian data with three conservation measures reported for the monitoring of effectiveness (Erfolgskontrolle) of IANB. These consisted of protection by owner, maintenance of habitat and establishment of buffer zones. Site occupancy models were used to estimate the effects of IANB-status, conservation measures and population size on persistence probability of each species. While no overall IANB effect was found, population size seemed to play a crucial role. Larger populations had a higher persistence probability for most species. However, no clear pattern was found for the effect of the three conservation measures. I suggest that the lack of conservation measures is due to the too general information given on the taken conservation measures. Future monitoring of effectiveness should include more specific information about how and for which target-species habitat quality in IANB objects was maintained.

1. Introduction

Declining biodiversity and an increasing number of endangered species are a big concern in conservation biology. While the pressure on biodiversity is increasing worldwide, biodiversity itself is decreasing (Butchart et al. 2010). Driving factors of biodiversity decline consist of fragmentation, pollution, overexploitation, neophytes and climate change. There exist local successes in maintaining biodiversity such as in protected habitats (Butchart et al. 2010). Thus, protected areas are of fundamental importance for conservation. Many species nowadays live in protected habitats and are dependent on appropriate habitat management (Cook et al. 2009). There is increasing interest in evaluating and monitoring protected habitats (Hockings et al. 2009). Monitoring the effectiveness of conservation management in protected sites is crucial and highly relevant for decision making in conservation (Grant et al. 2013).

Amphibians are the most endangered taxonomic group of animals and therefore especially vulnerable. Globally 32% of all amphibian species are on the IUCN Red List (Stuart et al. 2004). Main driving factors for the decline of amphibian populations are fragmentation and habitat destruction due to drainage in agriculture and urban development (Cushman 2006, Hamer and McDonnell 2008). As a consequence, isolated amphibian populations get locally extinct or cannot colonize suitable habitats (Schmidt and Zumbach 2005). Furthermore, threats such as climate change (Grant et al. 2013) road kill, diseases (Martel et al. 2014), and water pollution by toxic substances and pesticides are constantly endangering amphibians (Butchart et al. 2010). The worldwide trend of dramatically declining amphibian diversity also occurs in Switzerland. 70% of the 20 amphibian species in Switzerland are on the national Red List (Schmidt and Zumbach 2005). From those 14 species, nine are endangered (EN), four are vulnerable (VU) and one is regionally extinct (RE). The Red List uses parameters such as population size, change of population size, change of occupied area or number of inhabited geographic units to define the conservation status of a species (Schmidt and Zumbach 2005, Baillie et al. 2004). In Switzerland almost all amphibian species are declining in their distribution and abundance (Schmidt and Zumbach 2005). In a recent report of the KARCH (Koordinationsstelle für Amphibien- und Reptilienschutz in der Schweiz), the species richness in objects of the inventory of amphibian breeding sites of national importance (“Inventar der Amphibienlaichgebiete von nationaler Bedeutung”, IANB) declined from 2001 to 2014 (Pellet and Schmidt 2016). On average, one species went extinct within a period of only ten years. This is a dramatic decrease considering that the average number of amphibian species per site is only about five to six species. Especially endangered species have further declined in distribution and abundance since 2003/2004 while common species persisted or even colonized new habitats (Pellet and Schmidt 2016). Due to this alarming negative trend, it is crucial to protect amphibian populations and stop ongoing local extinctions. An effective protection of remaining populations and their breeding sites is crucial for their long-term persistence. Amphibian conservation in Switzerland focuses mainly on habitat protection at the reproduction sites such as ponds and wetlands. The IANB aims to protect a minimal number of breeding sites distributed across Switzerland. Amphibian breeding sites are one of five biotope types of national interest that are protected by law, consisting of alluvial areas, dry meadows and pastures, as well as bogs and fens (http://www.wsl.ch/biotopschutz/index_EN). The IANB sites were chosen and defined based on a set of criteria including species richness, rarity of species and Red List status (Ryser 2002). With this method, the 10% most important amphibian breeding sites (currently around 900 objects) were selected for the IANB and put under protection (Borgula et al. 2010). In the context of the project “Monitoring the Effectiveness of Habitat Conservation in Switzerland” (“Wirkungskontrolle Biotopschutz Schweiz”, WBS) 201 of the IANB

objects were visited and occurrence data for each species was collected in 2011-2015 (http://www.wsl.ch/biotopschutz/index_DE). WBS is a monitoring project of the FOEN (Federal office of the environment) and WSL (Eidg. Forschungsanstalt für Wald, Schnee und Landschaft) and investigates the development of quality of biotopes of national interest. Aims of IANB include the long term persistence of amphibian species at a specific site. In each IANB object species should persist and their population size should be maintained to their initial state when the objects were inventoried. Federation and cantons use the WBS monitoring data as an early warning system for negative developments and to implement conservation measures (http://www.wsl.ch/biotopschutz/index_DE). The cantonal authorities are responsible for the implementation of different protection measures in IANB objects. In 2010 and 2014 they had to report on the measures they had taken (Borgula et al. 2010). The conservation measures considered in the present study consist of protection by owner (“Grundeigentümerverbindlicher Schutz”) and maintenance (“Pflege und Unterhalt”) of the object as well as the establishment of ecologically buffer zones (“Ökologisch ausreichende Pufferzone”). However, an evaluation of the effectiveness of the different measures is still missing. Evaluating conservation measures for their effectiveness could help to adapt management strategies and thus might be essential for a successful conservation (Smith et al. 2014).

Until now, the existing data about the taken conservation measures in IANB were hardly put in context to amphibian occurrence data. In this study, I connected information on amphibian occurrence data with the IANB-status and with the undertaken conservation measures per IANB object. According to the following research questions, two main data analyses were conducted per species for analyzing the effect of IANB status and the conservation measures in IANB:

(i) Did amphibian populations in IANB objects have higher persistence probabilities than in non-IANB objects? With site occupancy models, I estimated persistence probabilities in IANB objects and non-IANB objects for each species. My hypothesis was that each species should have a higher persistence probability in IANB objects, because IANB objects are protected sites.

(ii) Did conservation measures and population size have a positive effect on species persistence within IANB objects? I connected presence/absence data with the reported conservation measures obtained from the cantons and with initial population sizes. I hypothesized that sites where maintenance was done, protection by owner was guaranteed or buffer zones were established, persistence probability of amphibians was higher. Moreover, I hypothesized that large populations persisted better in IANB sites than small populations.

2. Materials and Methods

2.1 Analysis of persistence in IANB vs. non-IANB objects

In this study, IANB objects versus non-IANB objects were compared to see if there is a difference in persistence and apparent colonization rates of each amphibian species. I used the presence/absence data from the updated amphibian Red List in Switzerland (Schmidt and Zumbach 2005). The total number of included amphibian breeding sites was 289, out of which 100 were IANB objects. This allows a comparison of persistence data between IANB and non-IANB. This is further referred to as “IANB/non-IANB” data set.

2.1.1 Fieldwork presence/absence data 2003/2004

To analyze question (i), I used the data set from the updated amphibian Red List in Switzerland (Schmidt and Zumbach 2005). Field work was conducted in the years 2003 and 2004 to determine the actual Red List status of amphibian species in Switzerland. Most objects were visited four times. During one hour the observer noted all detected species. Thus, site occupancy (presence/absence data) of each species was investigated. Some objects at high altitudes were visited only twice due to the short alpine vegetation period and the difficult accessibility of the sites. For each species a representative random sample, stratified by biogeographic regions was taken (Schmidt and Zumbach 2005). Therefore, each amphibian species had a different number of selected objects in its distribution range (Table 1). In some cases none of the four visits were conducted during the breeding time of a species, so that no presence/absence data were existent for this species at this site. In the analysis of that specific species, these sites were then automatically removed by R package “unmarked” (Fiske and Chandler 2001; see chapter statistical analysis below).

In the 1970s and 1980s, all known amphibian breeding sites in Switzerland were mapped and all occurring species were noted (Grossenbacher 1988). For the data collection of the updated amphibian Red List in 2003/2004 researchers selected breeding sites specific for every species from the database of the KARCH (the Swiss Amphibian and Reptile Conservation Programme; part of the Centre Suisse de Cartographie de la Faune CSCF). On those breeding sites the particular species was observed and its presence was also known from the past (Schmidt and Zumbach 2005). These sites were then revisited in 2003/2004 and investigated if the species was still present or absent at this site. Persistence rates could then be derived with site occupancy models. Analogous, apparent colonization rates were estimated by resurveying sites where the species was not known from the past. However, the present study will focus on persistence rates and not further discuss apparent colonization.

Table 1: The IANB/non-IANB data set includes 14 amphibian species. Given is their Red List status in Switzerland: EN (endangered), VU (vulnerable), LC (least concern) and NT (potentially endangered) and the number of investigated objects per species (Schmidt and Zumbach 2005).

Species	German name	Red List status	Number of objects
<i>Alytes obstetricans</i>	Geburtshelferkröte	EN	211
<i>Bombina variegata</i>	Gelbbauchunke	EN	207
<i>Bufo bufo</i>	Erdkröte	VU	277
<i>Epidalea calamita</i>	Kreuzkröte	EN	192
<i>Hyla arborea</i>	Europäischer Laubfrosch	EN	178
<i>Hyla intermedia</i>	Italienischer Laubfrosch	EN	40
<i>Ichthyosaura alpestris</i>	Bergmolch	LC	277
<i>Lissotriton helveticus</i>	Fadenmolch	VU	212
<i>Lissotriton vulgaris</i>	Teichmolch	EN	253
<i>Pelophylax esculentus aggr.*</i>	Teichfrosch	NT	253
<i>Rana dalmatina</i>	Springfrosch	EN	228
<i>Rana temporaria</i>	Grasfrosch	LC	277
<i>Triturus carnifex</i>	Italienischer Kammmolch	EN	47
<i>Triturus cristatus</i>	Nördlicher Kammmolch	EN	211

*Because the two species *Rana esculenta* and *Rana lessonae* are hard to distinguish, they were grouped together as *Pelophylax esculenta*-aggr.

2.1.2 Statistical analysis of IANB vs. non-IANB objects

For statistical analysis, the site occupancy model of MacKenzie et al. (2002) was used. Site occupancy models estimate persistence probability, which is the parameter of interest in this study, when detection probability of a species is less than 100%. Detection probability is the probability that a species is detected if present. Detection probabilities were estimated in the site occupancy models to account for overseen populations. However, it will not further be discussed in the present study. For the analysis of site occupancy models, I used the R package “unmarked” (Fiske and Chandler 2011). As site-specific binary model parameters “ianb” (0= non-IANB, 1=IANB) and “previous occurrence state” (POS; 0=presence not confirmed from the past, 1=previous presence confirmed) were used for each of the 14 species. As response variable I got the estimated persistence probability of a specific species in IANB objects and non-IANB objects based on presence/absence data from the four visits. Both model parameters ianb and previous occurrence state were defined as numeric because these parameters were binary and thus site occupancy model returns the same predicted occupancy as if it was defined as a factor. The function occu() from the “unmarked” R package estimated the persistence probability per species.

A model-average approach (with function fitList; Fiske and Chandler 2011) of the following eight models (fm1 - fm8) was used to estimate persistence probability and apparent colonisation:

- fm1 = occu(~POS ~POS)
- fm2 = occu(~POS ~POS + ianb)
- fm3 = occu(~POS ~ianb)
- fm4 = occu(~POS ~1)
- fm5 = occu(~1 ~POS)
- fm6 = occu(~1 ~POS + ianb)
- fm7 = occu(~1 ~ianb)
- fm8 = occu(~1 ~1)

With the function `modavg()` from R package “AICcmodavg” (Mazerolle 2015) an estimate of the effect of parameter `ianb` on persistence probability was computed, based on the model-average of selected models. I defined the effect of a parameter to be significant on the persistence probability, when the 95% confidence interval of the parameter estimate did not include zero.

2.2 Analysis of effect of conservation measures on persistence

In this analysis, I connected the amphibian presence/absence WBS data from the project “Monitoring the Effectiveness of Habitat Conservation in Switzerland” (“Wirkungskontrolle Biotopschutz Schweiz”, WBS) in 2011-2015 with the reported management options in the IANB to investigate the effect of the conservation measures on persistence probability. *Pelophylax ridibundus* and *Rana latastei* were also included in this analysis. They were not included in the fieldwork 2003/2004 from the analysis above because *P. ridibundus* is not native to Switzerland and *R. latastei* had existing long-term monitoring data (Schmidt and Zumbach 2005).

2.2.1 Fieldwork presence/absence data 2011-2015

For the following analysis, I used the WBS occupancy data set from 2011-2015. For this data collection, the same observation method as for the updated Red List data set was used (Bergamini et al. 2013). The four visits took place from March to June. The data set of WBS consists of 201 randomly chosen IANB objects. Data on population sizes were taken from the object description when the object was implemented either in 2001, 2003 or 2007.

The population size classes were defined based on Grossenbacher (1988):

- Popsiz 1 = small or not known
- Popsiz 2 = middle sized
- Popsiz 3 = large
- Popsiz 4 = very large
- Popsiz 0 = no data available, because species not present

For more detailed information about which category consists of how many individuals per species see Grossenbacher (1988). To account for the distribution range and biogeographical barriers of each species, sites in biogeographic regions where a particular species does not naturally occur were excluded for the analysis (Table 2). For the Ticino-species (*H. intermedia*, *T. carnifex*, *R. latastei*), I analyzed only the WBS objects in biogeographic region “Südalpen” (SA; n=39). *R. temporaria* and *R. dalmatina* occurred in all regions (n= 201). For the other species all biogeographic regions except SA were included in the analysis (n=162).

Table 2: The number of WBS sites analyzed for each species is indicated. The WBS data set of IANB includes 16 amphibian species. The dataset for species occurring in all biogeographic regions except in the southern alps (region SA) encompasses 162 sites, species only occurring in Ticino (SA) have 39 sites, and two species have a natural distribution range across Switzerland and include all 201 WBS sites.

Species	Number of WBS sites
<i>Alytes obstetricans</i>	162
<i>Bombina variegata</i>	162
<i>Bufo bufo</i>	162
<i>Epidalea calamita</i>	162
<i>Hyla arborea</i>	162
<i>Hyla intermedia</i>	39
<i>Ichthyosaura alpestris</i>	162
<i>Lissotriton helveticus</i>	162
<i>Lissotriton vulgaris</i>	162
<i>Pelophylax esculentus-aggr.</i>	162
<i>Pelophylax ridibundus</i>	162
<i>Rana dalmatina</i>	201
<i>Rana latastei</i>	39
<i>Rana temporaria</i>	201
<i>Triturus carnifex</i>	39
<i>Triturus cristatus</i>	162

2.2.2 Reported conservation measures

In a questionnaire in 2010 and 2014 for the "monitoring the effectiveness" ("Erfolgskontrolle"), the cantonal authorities had to report their management measures taken in their IANB objects (Borgula et al. 2010). For each IANB object the cantons had to state which management measures were performed. In the present study, three conservation measures were evaluated for their effect on species persistence. These were maintenance, protection by owner and established buffer zones. For each object the cantons reported how they provided protection by owner ("Grundeigentümergebundlicher Schutz"), how they implemented maintenance ("Pflege und Unterhalt") and if a buffer zone was established ("Ökologisch ausreichende Pufferzone"). While protection by owner and maintenance contained 5 possible options (ms1-ms5), an established buffer zone (PZ) was binary. As the different management options are exclusive, only one option per object could be reported for a conservation measure. The data analysis was conducted for each conservation measure separately. See appendix A1 for an overview of translated conservation measures.

The five management options (ms1- ms5) for conservation measure 1, "Protection by owner" („Grundeigentümergebundlicher Schutz“):

- ms1 = Cantonal nature reserve (Kantonales Naturschutzgebiet)
- ms2 = Communal protection zone (Schutzzone aufgrund kommunaler Nutzungsplanung)
- ms3 = Agricultural zone with biotope-specific obligations on communal level (Landwirtschaftszone mit biotopspezifischen Auflagen in kommunaler Nutzungsplanung)
- ms4 = Others (Anderes)
- ms5 = No protection by owner (Kein grundeigentümergebundlicher Schutz)

Protection by owner is the first step for the formal protection of the IANB object and it is considered to be an important precondition for maintenance and implementation. Legal protection of IANB objects could be provided on communal or cantonal level or by agreement zones, depending on the history of protection of each site (Borgula et al. 2010).

The five management options (ms1- ms5) for conservation measure 2, “Maintenance” („Pflege und Unterhalt“):

- ms1 = Agreement zone (Vertragsfläche)
- ms2 = Silvicultural planning (Forstliche Planung)
- ms3 = Management plans (Schutz-, Unterhalts-, Pflege- bzw. Massnahmenplanung)
- ms4 = Others (Anderes)
- ms5 = Maintenance not guaranteed (Pflege bzw. Unterhalt nicht sichergestellt)

The cantons were asked if they had a management plan, which specifies the implementation of specific conservation measures to maintain habitat quality. No further information is available whether the reported management plans sufficiently consider the adequate habitat requirements for the target-species (Borgula et al. 2010). The exact meaning of silvicultural planning and agreement zone were not specified.

For the third conservation measure “ecological buffer zones” („Ökologisch ausreichende Pufferzonen“) the data set was binary per se with presence of buffer zones (1) or absence (0). The question if a buffer zone was established had only been asked in the survey 2014. For more information about the monitoring of effectiveness of IANB (Erfolgskontrolle) see Borgula et al. (2010).

I evaluated the effects of the reported conservation measures in 2010 and in 2014 separately. I defined conservation measure to have an effect on a species’ persistence, when the 95% confidence interval of the parameter estimate did not include zero.

2.2.3 Statistical analysis of conservation measures

Site occupancy models of MacKenzie et al. (2002) and the R package unmarked (Fiske and Chandler 2011) were used to estimate persistence probability. The occupancy model allowed to include covariates, which varied from site to site and potentially influenced the persistence and/or detection probability, by using a logistic model. By including population size classes 1- 4 as site-specific covariate, I could estimate persistence rates of populations per site. The model parameters population size (popgr) and undertaken management options (ms1-ms5) per conservation measure were estimated using the function occu() (MacKenzie et al. 2002). The function modavg() (R package “AICcmodavg”; Mazerolle 2015) was used to detect the effect of parameter estimates (positive, negative or no significant effect) on the persistence probability of a species. Due to calculation issues, the variable popgr (classes 1-4) was defined as numeric. Each management option was also defined as numeric.

With the function dredge the supplied “global” model (see below) generated all possible combinations of tested parameters (R package MuMIn; Barton 2015). Parameters to predict occupancy included all management options per conservation measure and the initial population size of a species.

The global model for maintenance and protection by owner was set as follows:

global model = dredge(~popgr ~popgr + ms1 + ms2 + ms3 + ms4 + ms5 + popgr:ms1 + popgr:ms2 + popgr:ms3 + popgr:ms4 + popgr:ms5). The first part describes model parameters for the detection probability. The second part describes parameters for the persistence probability.

The global model for buffer zones (PZ) was set in an analogous way:

Global model = dredge(~popgr ~popgr + PZ)

From all possible combinations of the global model, the best models for each species were selected based on the second-order Akaike's information criterion (AICc) weight ($w > 0.05$). In case there was no model with $w > 0.05$, I selected the three best models (in terms of highest AICc weights) of the dredge output. With the function predict(fitList) model-averaged predictions of persistence were computed (Fiske and Chandler 2011). In some cases, parameters had to be removed before the dredging process, because there was not enough or no data available to make appropriate estimations. When a parameter was removed, it was indicated by "NA" in Tables 5 and 6 (see chapter results). This indicated that no effect of this parameter could occur because it was not included in the selected models. For the different models selected for each species see appendix A2.

3. Results

3.1 IANB vs. non-IANB objects

Overall, the estimated persistence and apparent colonization probability for most species did not show a difference between IANB objects and non-IANB objects. Several species had a slightly higher persistence probability in IANB objects, but others a slightly lower compared to non-IANB (Table 3). However, the IANB effect was often not significant, except for *I. alpestris* and *R. temporaria*.

Table 3: The IANB effect on estimated persistence probability of each species. “+” and “-” signify that IANB has a positive or negative effect on persistence, respectively. Not significant effects of ianb (i.e. including zero in the 95% confidence interval) are indicated in brackets. Only significant negative effects were found for the persistence of *R. temporaria* and *I. alpestris*.

Species	German name	ianb
<i>Bombina variegata</i>	Gelbbauchunke	(+)
<i>Hyla arborea</i>	Europäischer Laubfrosch	(+)
<i>Triturus cristatus</i>	Nördlicher Kammmolch	(+)
<i>Alytes obstetricans</i>	Geburtshelferkröte	(+)
<i>Epidalea calamita</i>	Kreuzkröte	(+)
<i>Lissotriton vulgaris</i>	Teichmolch	(+)
<i>Rana dalmatina</i>	Springfrosch	(+)
<i>Lissotriton helveticus</i>	Fadenmolch	(+)
<i>Rana temporaria</i>	Grasfrosch	-
<i>Ichthyosaura alpestris</i>	Bergmolch	-
<i>Bufo bufo</i>	Erdkröte	(-)
<i>Hyla intermedia</i>	Italienischer Laubfrosch	(-)
<i>Pelophylax esculentus-aggr.</i>	Wasserfrosch-Komplex	(-)
<i>Triturus carnifex</i>	Alpen-Kammmolch	(-)

For most species, persistence rate and apparent colonization rate did not differ strongly in IANB and non-IANB objects (Table 4). In eight species the amphibian populations had a slightly better persistence in IANB objects than in non-IANB objects. Three of these species showed also a greater colonization rate in IANB sites. In five species the populations had a slightly lower persistence in IANB objects. All these species also colonized IANB objects in a lower rate than non-IANB objects. The differences of persistence and colonization rates between IANB and non-IANB objects are very small and only two differences included zero in their 95% confidence interval.

Table 4: Apparent colonization probability (Col.) and predicted persistence probability (Per.), with 95% confidence interval in IANB and non-IANB objects for each species.

Species		Persistence or colonization	Lower 95% CI	Upper 95% CI
<i>A. obstetricans</i>	Col. non-IANB	0.04	0.02	0.09
	Col. IANB	0.04	0.02	0.10
	Per. non-IANB	0.52	0.40	0.64
	Per. IANB	0.53	0.40	0.65
<i>B. variegata</i>	Col. non-IANB	0.11	0.54	0.20
	Col. IANB	0.14	0.07	0.26
	Per. non-IANB	0.46	0.33	0.59
	Per. IANB	0.53	0.39	0.65
<i>B. bufo</i>	Col. non-IANB	0.43	0.33	0.54
	Col. IANB	0.39	0.27	0.52
	Per. non-IANB	0.82	0.73	0.88
	Per. IANB	0.79	0.69	0.86
<i>E. calamita</i>	Col. non-IANB	0.06	0.02	0.13
	Col. IANB	0.06	0.03	0.14
	Per. non-IANB	0.48	0.31	0.65
	Per. IANB	0.50	0.33	0.66
<i>H. arborea</i>	Col. non-IANB	0.08	0.04	0.16
	Col. IANB	0.09	0.04	0.17
	Per. non-IANB	0.50	0.36	0.64
	Per. IANB	0.51	0.37	0.65
<i>H. intermedia</i>	Col. non-IANB	0.58	0.25	0.86
	Col. IANB	0.51	0.22	0.84
	Per. non-IANB	0.87	0.53	0.97
	Per. IANB	0.84	0.52	0.96
<i>I. alpestris</i>	Col. non-IANB	0.43	0.33	0.55
	Col. IANB	0.22	0.12	0.37
	Per. non-IANB	0.94	0.87	0.97
	Per. IANB	0.86	0.76	0.92
<i>L. helveticus</i>	Col. non-IANB	0.24	0.17	0.33
	Col. IANB	0.24	0.16	0.36
	Per. non-IANB	0.73	0.61	0.82
	Per. IANB	0.73	0.61	0.82
<i>L. vulgaris</i>	Col. non-IANB	0.03	0.01	0.07
	Col. IANB	0.03	0.01	0.08
	Per. non-IANB	0.52	0.35	0.69
	Per. IANB	0.55	0.38	0.70

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<i>P. esculentus</i>	Col. non-IANB	0.27	0.18	0.39
	Col. IANB	0.24	0.14	0.37
	Per. non-IANB	0.84	0.76	0.90
	Per. IANB	0.81	0.72	0.88
<i>R. dalmatina</i>	Col. non-IANB	0.03	0.01	0.08
	Col. IANB	0.03	0.01	0.09
	Per. non-IANB	0.71	0.55	0.84
	Per. IANB	0.75	0.58	0.86
<i>R. temporaria</i>	Col. non-IANB	0.74	0.60	0.84
	Col. IANB	0.44	0.25	0.66
	Per. non-IANB	0.96	0.90	0.98
	Per. IANB	0.87	0.78	0.93
<i>T. carnifex</i>	Col. non-IANB	0.07	0.01	0.35
	Col. IANB	0.06	0.01	0.33
	Per. non-IANB	0.66	0.33	0.88
	Per. IANB	0.62	0.34	0.84
<i>T. cristatus</i>	Col. non-IANB	0.49	0.17	0.63
	Col. IANB	0.53	0.21	0.67
	Per. non-IANB	0.40	0.25	0.57
	Per. IANB	0.46	0.31	0.62

Only in two species, *I. alpestris* and *R. temporaria*, a significant effect of IANB on persistence and apparent colonization could be found. The two species surprisingly showed a significantly lower colonization and population survival in IANB objects compared to non-IANB objects (Figure 1, 2). The figures of all other species are shown in the appendix A3.

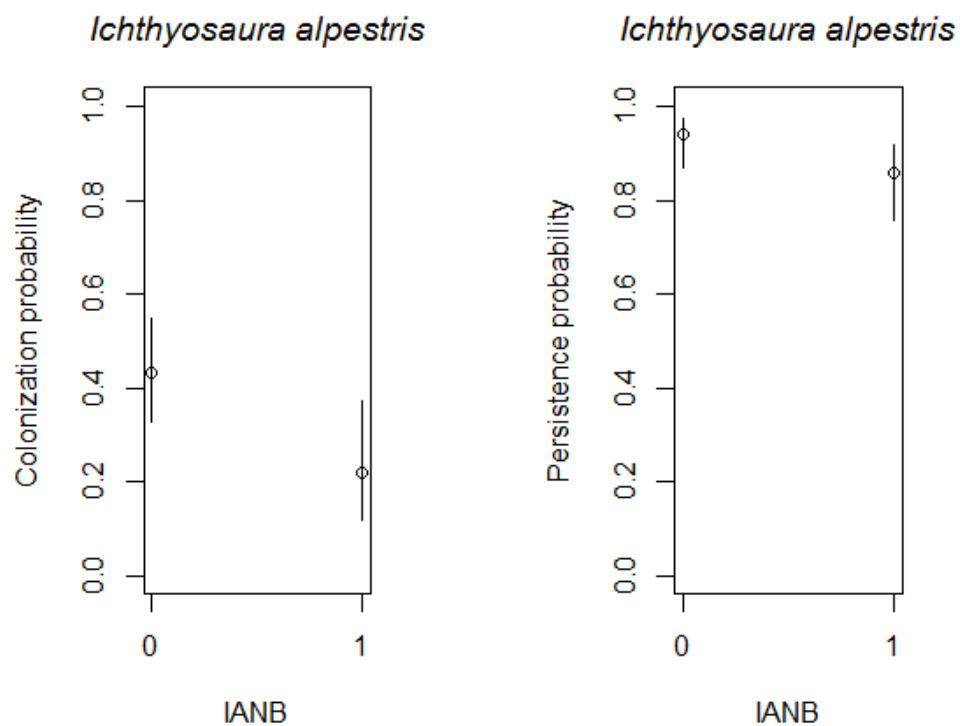


Figure 1: Estimated apparent colonization probability and persistence probability of *Ichthyosaura alpestris* in non-IANB objects and in IANB objects (0 and 1, respectively) with 95% confidence intervals.

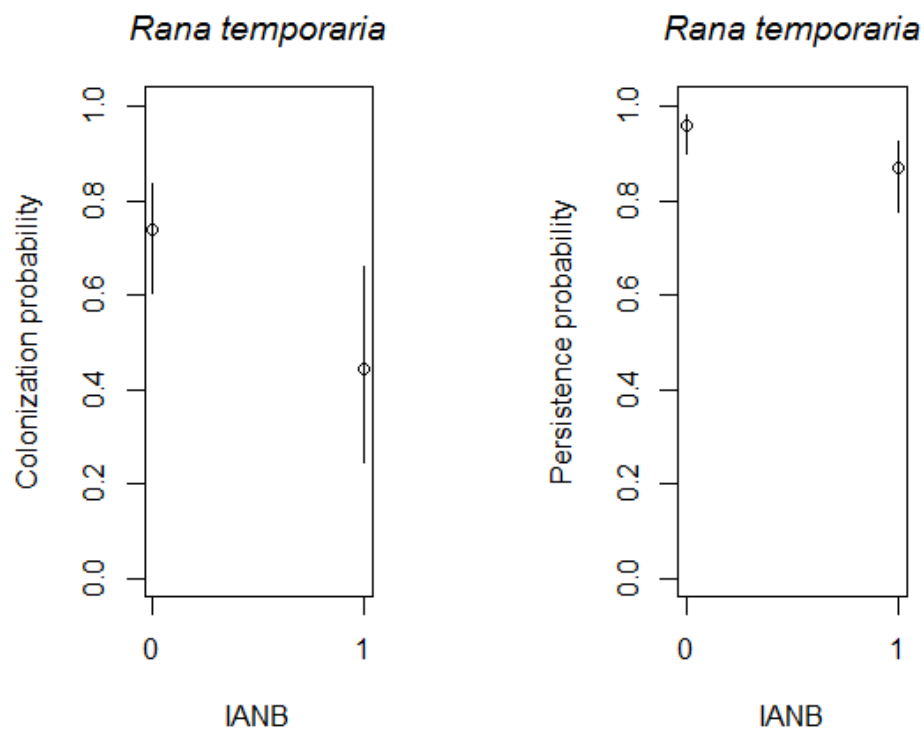


Figure 2: Estimated apparent colonization probability and persistence probability of *Rana temporaria* in non-IANB objects and in IANB objects (0 and 1, respectively) with 95% confidence intervals.

In summary, persistence did not significantly differ between IANB objects and non-IANB objects for the majority of the species. However, in eight species a positive trend was found and only in four species a negative trend.

3.2 Analysis of conservation measures

For each species the effect of different management options and of population size on persistence was analyzed. Population size (popgr) had a positive effect on persistence probability for almost all species. However, no clear pattern could be determined for the management effects on amphibian persistence. None of the three investigated conservation measures (protection by owner, maintenance and buffer zone) showed a clear pattern of effects. The used occupancy models were leading to uncertain estimates of the effect of the conservation measures, as the 95% confidence interval included zero in most cases. Thus, we found some trends of parameters, but they were not considered as significant effects. Only a few significant effects, positive and negative, were found.

3.2.1 Conservation measure 1: Protection by owner („Grundeigentümerverbindlicher Schutz“)

No general pattern for the effect of protection by owner reported in 2010 and 2014 on amphibian persistence was found. Only *A. obstetricans* responded positively to protection zone on communal level and to other options of protection by owner. Negative effects of cantonal nature reserve were found for *B. variegata* and *E. calamita*. Protection zone on communal level was negative for *I. alpestris* and other options for *B. calamita*. All other found effects, indicated in brackets in Table 5, were only trends. Due to not enough data, the management agricultural zone with biotope-specific obligations could not be evaluated.

Table 5: Overview of protection by owner (Grundeigentümerverbindlicher Schutz). Management effects of population size (popgr), “Cantonal nature reserve”, “Communal protection zone”, “Agricultural zone with biotope-specific obligations”, “Others” and “No protection by owner” on persistence of each species. The effect is positive (“+”), negative (“-”) or there is no effect (0) when the management option did not appear in the selected models. Estimated effects in brackets included zero in their 95% confidence interval and were only considered as trends and not as significant effects. Parameters with “NA” have been excluded from the models, because there was not enough or no data available for estimation. Interactions between population size and a management option are indicated with (i:-) or (i:+) for negative and positive interactions, respectively. Reported management from the survey in 2010 and 2014 were analyzed separately for each species.

Species	Year	Popgr	Cantonal nature reserve (ms1)	Communal protection zone (ms2)	Agricultural zone with biotope- specific obligations (ms3)	Others (ms4)	No protection by owner (ms5)
<i>A. obstetricans</i>	2010	+	0	+ (i: -)	NA	+ (i: -)	0
<i>A. obstetricans</i>	2014	+	0	0	NA	(-)	(-)
<i>B. variegata</i>	2010	+	-	0	NA	0	0
<i>B. variegata</i>	2014	+	0	0	NA	0	(+)
<i>B. bufo</i>	2010	+	(+)	(-)	NA	(+)(i: +)	0
<i>B. bufo</i>	2014	+	(+)	0	NA	(+)	0
<i>E. calamita</i>	2010	+	-	(-)(i: +)	NA	0	0
<i>E. calamita</i>	2014	+	(+)(i: -)	0	NA	-	0
<i>H. arborea</i>	2010	+	0	(-)	NA	(-)(i: +)	0
<i>H. arborea</i>	2014	+	0	0	NA	0	(+)
<i>H. intermedia</i>	2010	+	(-)	(-)	NA	NA	(-)
<i>H. intermedia</i>	2014	+	(-)	(+)	NA	NA	(-)
<i>I. alpestris</i>	2010	(+)	X*	-	NA	(+)	0
<i>I. alpestris</i>	2014	+	(-)	(-)	NA	(+)	(+)
<i>L. helveticus</i>	2010	+	(-)(i: +)	(-)	NA	(-)	(-)
<i>L. helveticus</i>	2014	+	(-)	(-)	NA	(-)	(-)
<i>L. vulgaris</i>	2010	+	(+)	(+)	NA	(-)	(+)
<i>L. vulgaris</i>	2014	+	0	0	NA	(-)	0
<i>P. esculentus</i>	2010	+	(+)(i: +)	0	Na	0	0
<i>P. esculentus</i>	2014	+	(+)	(-)	NA	(-)	(+)
<i>P. ridibundus</i>	2010	+	(-)(i: -)	(-)(i: -)	NA	0	(-)(i: +)
<i>P. ridibundus</i>	2014	+	(+)(i: -)	(+)(i: -)	NA	(-)(i: -)	0
<i>R. dalmatina</i>	2010	+	(-)(i: +)	(-)	NA	(-)(i: +)	0
<i>R. dalmatina</i>	2014	+	(-)	0	NA	0	0
<i>R. latastei</i>	2010	(+)	(+)	(+)	NA	NA	(+)
<i>R. latastei</i>	2014	(+)	(-)	(+)	NA	NA	(-)
<i>R. temporaria</i>	2010	+	(+)	(-)	NA	(+)	(-)
<i>R. temporaria</i>	2014	+	(+)	(-)	NA	0	0
<i>T. carnifex</i>	2010	(+)	(-)	(-)	NA	NA	(+)
<i>T. carnifex</i>	2014	(+)	(+)	(+)	NA	NA	(-)
<i>T. cristatus</i>	2010	+	(+)	(+)	NA	(-)	(-)
<i>T. cristatus</i>	2014	+	0	0	NA	(-)	(+)(i: +)

* In one case the parameter effect could not be estimated due to a statistical reason of a present interaction (Mazerolle 2015).

3.2.2 Conservation measure 2: Maintenance (“Pflege und Unterhalt”)

No general pattern for the effect of maintenance reported in 2010 and 2014 on amphibian persistence was found. Only *H. arborea* and *B. bufo* responded negatively to agreement zones and management plans, respectively. All other found effects, indicated in brackets in Table 6, were only trends.

Table 6: Overview of maintenance. Management effects of population size (popgr), “Agreement zone”, “Silvicultural planning”, “Management plans”, “Others” and “No maintenance” on persistence of each species. The effect is positive (“+”), negative (“-”) or there is no effect (0) when the management option did not appear in the selected models. Estimated effects in brackets included zero in their 95% confidence interval and were only trends and no significant effects. Parameters with “NA” have been excluded from the models, because there was not enough or no data available for estimation. Interactions between population size and management options are indicated with (i:-) or (i:+) for negative and positive interactions, respectively. Reported management from the survey in 2010 and 2014 were analyzed separately for each species.

			Agreement zone (ms1)	Silvicultural planning (ms2)	Management plans (ms3)	Others (ms4)	No maintenance (ms5)	
Species	Year	Popgr						
<i>A. obstetricans</i>	2010	+	(i:-)	0	(+)	0	(-)(i:-)	0
<i>A. obstetricans</i>	2014	+	(-)	0	0	0	(-)(i:-)	0
<i>B. variegata</i>	2010	+	0	0	0	0	0	0
<i>B. variegata</i>	2014	+	(-)(i: +)	0	0	0	(-)	0
<i>B. bufo</i>	2010	+	0	0	-	0	0	0
<i>B. bufo</i>	2014	+	(+)	0	0	0	0	0
<i>E. calamita</i>	2010	+	0	0	(-)(i: +)	0	0	0
<i>E. calamita</i>	2014	+	0	0	0	(-)	0	0
<i>H. arborea</i>	2010	+	0	0	0	0	0	0
<i>H. arborea</i>	2014	+	-	0	(+)	(+)	0	0
<i>H. intermedia</i>	2010	+	(-)(i: +)	NA	(-) (i:-)	NA	(+)	(+)
<i>H. intermedia</i>	2014	+	(-)	NA	(-)	NA	(+)	(+)
<i>I. alpestris</i>	2010	(+)	0	0	(-)	0	0	0
<i>I. alpestris</i>	2014	(+)	0	0	(-)	(+)	0	0
<i>L. helveticus</i>	2010	+	(+)(i: +)	0	0	0	(+)	(+)
<i>L. helveticus</i>	2014	+	0	(-)	0	0	(-) (i: +)	(-)
<i>L. vulgaris</i>	2010	+	0	(+)	0	(+)(i: +)	0	0
<i>L. vulgaris</i>	2014	+	(-)(i:-)	0	(-)	0	(-)	(-)
<i>P. esculentus</i>	2010	+	(-)(i: +)	(-)	0	(+)	0	0
<i>P. esculentus</i>	2014	+	0	0	(-)	(+)	0	0
<i>P. ridibundus</i>	2010	+	(-)	0	(-)(i:-)	0	(-)	(-)
<i>P. ridibundus</i>	2014	+	(-)(i: +)	0	0	0	0	0
<i>R. dalmatina</i>	2010	+	0	0	0	0	0	0
<i>R. dalmatina</i>	2014	+	0	0	0	0	(-)	(-)
<i>R. latastei</i>	2010	(+)	(+)(i:-)	NA	(+)(i: +)	NA	0	0
<i>R. latastei</i>	2014	(+)	(-)	NA	(+)	NA	(+)	(+)
<i>R. temporaria</i>	2010	(+)	0	0	(+)(i: +)	0	0	0
<i>R. temporaria</i>	2014	+	0	(-)	(-)	(+)	(+)	(+)
<i>T. carnifex</i>	2010	(+)	(-)	NA	(+)	NA	(+)	(+)
<i>T. carnifex</i>	2014	(+)	(-)	NA	(+)	NA	(+)	(+)
<i>T. cristatus</i>	2010	+	0	0	(+)	(+)(i: +)	(-)	(-)
<i>T. cristatus</i>	2014	+	0	0	0	0	(+)(i: +)	(+)

3.2.3 Conservation measure 3: Buffer zones („Ökologisch ausreichende Pufferzone“)

For most species, no significant effect and no clear trends of established buffer zones was found. Only for *B. variegata* and *R. temporaria* I found a negative effect on persistence probability (Table 7). For each species the buffer zone appeared as an explanatory variable in the tested model set. However, most effects were not significant (95% confidence interval includes zero).

Table 7: Management effects of population size and established buffer zones on persistence of each species. The effect is positive (“+”) or negative (“-”) or no effect (0). Estimated effects in brackets included zero in their 95% confidence interval and were only trends and no significant effects.

Species	Popgr	Buffer zone established
<i>A. obstetricans</i>	+	(+)
<i>B. variegata</i>	+	-
<i>B. bufo</i>	+	(-)
<i>E. calamita</i>	+	(-)
<i>H. arborea</i>	+	(-)
<i>H. intermedia</i>	+	(-)
<i>I. alpestris</i>	(+)	(-)
<i>L. helveticus</i>	+	(-)
<i>L. vulgaris</i>	+	(+)
<i>P. esculentus</i>	+	(-)
<i>P. ridibundus</i>	+	(+)
<i>R. dalmatina</i>	+	(+)
<i>R. latastei</i>	(+)	(-)
<i>R. temporaria</i>	+	-
<i>T. carnifex</i>	(+)	(+)
<i>T. cristatus</i>	+	(+)

In summary, all three conservation measures did not have an effect on many species. However, trends of positive and negative effects were found, but not considered as significant. The graphs of estimated persistence probabilities for each appearing effect (significant or not) are shown in appendix A4. Also the values of the estimated persistence probabilities are indicated in the appendix A5. Figure 3 shows an example for the effect of buffer zone on estimated persistence probability of *Triturus cristatus*. A positive trend is visible.

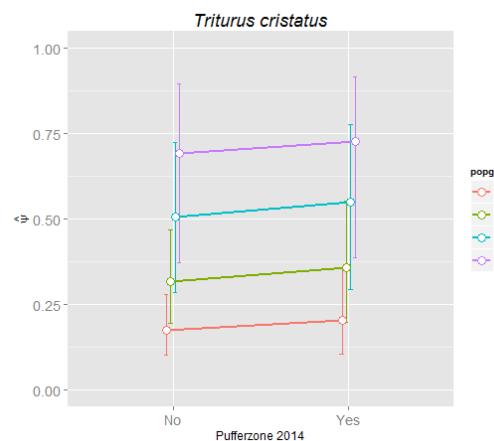


Figure.3: Estimated persistence probability (ψ) of *Triturus cristatus* as a function of population size and established buffer zone (No, Yes).

4. Discussion

4.1 Did amphibian populations in IANB objects have higher persistence probabilities than in non-IANB objects?

Overall, it had no effect on species persistence probability whether an amphibian breeding site was included in IANB. Only *R. temporaria* and *I. alpestris* had significantly lower persistence probabilities in IANB objects, but the effect was very small. Thus, hypothesis (i) was not confirmed.

Estimates of apparent colonization could be biased because species might have been overlooked during the first survey. Moreover, IANB sites might have been investigated more carefully than non-IANB sites and thus, the bias could be higher in non-IANB objects. In the present study, estimated apparent colonizations were not of a primary interest and are thus not further discussed.

Why was there no IANB effect?

My results show a relatively low persistence probability in both IANB and non-IANB objects. Persistence varied between 0.40 (*T. cristatus*) and 0.87 (*H. intermedia*). There are multiple non-mutually exclusive explanations for the persistence probability in general and the lack of a difference between IANB objects and non-IANB objects. First, non-IANB objects are often also protected nature reserves. That is, they are also protected and managed for amphibian conservation. Second, there may not have been enough time for an IANB effect to take place. The draft of IANB was sent to the cantons in 1994 and became legally binding in 2001. Field work took place in 2003 and 2004. Thus, time lags in amphibian population responses towards conservation management may have prevented an effect. One could also assume that IANB had no effect due to the fact that IANB objects are more fragile habitats. Indeed IANB objects are generally more fragile and per definition host more rare and endangered species (Ryser et al. 1994) and thus, are more vulnerable to loss of species. However, as the present analysis was conducted on a species level, the non-effect of IANB cannot be explained by the higher vulnerability of IANB objects. Because an endangered species has the same probability to go extinct in IANB and non-IANB objects, the higher vulnerability of IANB objects is not relevant on a species level.

Two species with negative effects of IANB

In two species, *I. alpestris* and *R. temporaria*, the persistence probability was slightly lower in IANB objects compared to non-IANB objects. It is striking that both species had especially high persistence in non-IANB objects (*I. alpestris* 0.94, *R. temporaria* 0.96) compared to all other amphibian species in the analysis. They are both not endangered having a Red List status LC (least concern). These two species seem to cope and persist well at all sites. Thus, they seem to be less dependent on conservation in IANB objects. Consequently, the protection in IANB objects might have disproportionately helped other amphibian species and thus supported direct competitors of *I. alpestris* and *R. temporaria*, leading to a slight decrease of these two species in IANB objects.

In summary, IANB did not show an effect on persistence probability of most species. Persistence is most probably influenced by many other factors than solely the IANB status. Potential other influencing factors might include population size, connectivity, surrounding habitats and land use. To investigate the effect of conservation measures and population size across IANB objects, I conducted a second analysis. This is discussed in the following section.

4.2 Did conservation measures and population size have a positive effect on persistence probability?

A positive effect of population size on occurrence probability was found for most species. Contrarily, no clear trends were found for none of the different conservation measures. Most conservation measures did not show an effect. Only a few effects were found across all species studied.

Why was there no clear trend in conservation measures?

A possible reason why there were only a few effects of conservation measures found, could be the time lag between implementation of conservation measures and response of amphibians (Adams et al. 2015). Possibly, IANB objects might not have had enough time to respond with an increased species persistence. Generally, the success of protected sites can be underestimated because surrounding threats (e.g. traffic, intensive agriculture, settlements) are not considered as explanatory factors in analysis (Adams et al. 2015).

In the present study, the estimates of parameter and persistence had large confidence intervals. Thus, most conservation effects appearing in the model selection ($w > 0.05$) included zero in their 95% confidence interval. Hence, trends of positive and negative effects were found, but were too weak to consider them as significant. However, the lack of statistical support does not automatically imply that there was actually no real trend (Schmidt and Meyer 2008). Thus, the lack of effects in the present study does not necessarily mean that the investigated conservation measures did not affect amphibian persistence per se. It rather indicates that the questions asked in the survey for the monitoring of measure effectiveness might not be precise enough to make clear predictions. Considering the few identified negative effects of conservation measures, it is doubtful that conservation efforts in IANB objects really were the cause for a lower species occurrence probability. Rather, the conservation measures might be a confounding factor, which correlates with both, the input and output of the model (Adams et al. 2015). One should also keep in mind that data analysis of monitoring data can miss the real effects or lead to spurious effects (Anderson et al. 2001). We have to cope with the limited information of monitoring data, which are not site-specific in general. However, by asking more precise questions for the analysis in the monitoring of effectiveness, it would eventually be possible to find the relevant and particularly successful conservation measures performed in IANB objects. Specific questions should mainly include management actions that were done in a certain minimal amount of IANB objects, in order to have enough data to make an estimate of the effect. The conservation measures will be discussed in the next sections.

Positive effect of large populations

Population size generally had a positive effect on amphibian persistence. Large populations persisted clearly better than small populations. Not a single negative effect of population size was found for none of the species, and only in a few cases the effect of population size included zero in the 95% confidence interval. I can therefore confirm my hypothesis that larger populations persist better. My results thus clearly indicate that it is crucial to undertake conservation measures that aim to enhance population size in IANB objects and in amphibian populations generally. Enhancing population size to a minimum threshold number might substantially enhance the short-term persistence probability (Schmidt and Pellet 2005). Setting priorities in conservation to find cost-efficient solutions is crucial for decision making, as money for conservation is often limited (Botrill et al. 2008, 2009). There is an ongoing debate about whether conservation should focus on small vs. large populations and on a few endangered vs. more but less endangered species (Rose et al. 2015). I suggest that conservation in

IANB objects should focus on preserving large populations and on augmenting the number of individuals in small populations. Population size always showed up as a positive explanatory factor in the model selection. Thus, my results highlight that it is crucial to include the parameter population size in models when evaluating the success of conservation in future.

Conservation measure 1: Protection by owner (Grundeigentümerverbindlicher Schutz)

Protection by owner did not have an effect on amphibian persistence in most species. Only two positive and four negative effects were found across the different management options. Thus, the hypothesis (ii) was not confirmed for the conservation measure “protection by owner”. The general lack of effects might be due to the too broad questions in the monitoring of effectiveness. For example, although protection by owner is an important prerequisite for successful protection, it might be less important for persistence than specific conservation measures that aim to enhance habitat quality. Hence, more specific information about whether protection by owner really meant that specific conservation measures were performed, would eventually reveal an effect. My results suggest that the relevant factors for explaining persistence might have been missed in the very general nature of the question about formal protection. Relevant information might include specific questions on how habitat quality was enhanced in IANB objects. Habitat quality is discussed in the next section.

Conservation measure 2: Maintenance (Pflege und Unterhalt)

For most species, no effect of reported maintenance on persistence was found. Some trends of positive and negative effects were found, but most of them were not significant. For maintenance negative significant effects were found for two species. Hypothesis (ii) was thus not confirmed for the conservation measure “maintenance”. Similarly as before, one reason for the lacking effects of maintenance might be that the questions on maintenance in the monitoring of effectiveness were not enough specific to find an effect. To ask whether maintenance was done or not seems to be a too general question incorporating various different management options. One should ask specifically how habitat quality was enhanced. Eventually, an effect of maintenance would then be found for a particular management action. Furthermore, questions could include more specific information about whether maintenance was done in terrestrial or aquatic habitat. A successful maintenance of aquatic habitats consists of a big water area, diversity of structure, high water temperatures, early stage of succession, periodic drying waters and no predation from fish (Ryser 2002). These habitat requirements vary among species. Thus, it is crucial to know for which species or species assemblage these specific maintenance measures were done, because a good maintenance of habitat quality depends on the different needs of target-species.

Although no effect of silvicultural planning was found in the present analysis, different forestry strategies provide different microhabitats, which are important for amphibians (DeMaynadier and Hunter 1995). Suitable microhabitats in forests include litter layers for hiding. Thus, silviculture can have an effect on amphibian persistence and should not be neglected. There might be a particular potential to enhance the inclusion of amphibian-friendly management in forests close to IANB objects. To see a potential effect of forest management one would need to ask specifically for the conservation measures done in the forests. Silvicultural planning per se without specification of what exactly was done, did not reveal an effect. This is probably also due to the fact that the cantons had

different understandings of what a silvicultural agreement zone is and thus, a lot of different management options were grouped into this variable.

The following reported conflicting interests in IANB objects were summarized in the monitoring of effectiveness and can potentially outweigh conservation efforts on habitat quality: Road and traffic, introduced fish, agriculture, recreational areas, neophytes, construction zones, spatial isolation, groundwater depression and water deficiency (Borgula et al. 2010). However, most of these conflicts were only reported in a general way. It would be interesting to take into account the actual conflicts per IANB object. For example, a suitable conservation measure might have enhanced habitat quality, but the presence of fish might nevertheless have led to a decline of the local amphibian populations. I suggest to systematically elevate these conflicts in IANB. It is potentially important to include other threats in conservation (Ficetola 2015). My results emphasize that management plans did not automatically lead to an implemented maintenance and higher persistence. This is consistent with the stated deficit of implementation in IANB objects. In only about 55% of the objects an actual enhancement of habitat quality was undertaken (Borgula et al. 2010). In summary, the monitoring of effectiveness should include information about specific measures, which were done for specific target-species to enhance habitat quality.

Conservation measure 3: Buffer zones

IANB objects with an established buffer zone did not show an overall effect. Only for two species a negative effect of buffer zones was found. The non-effect of buffer zones is consistent with previous studies (Semlitsch and Bodie 2003). The surrounding landscape on a large spatial scale was shown to be more predictive for amphibian occurrence than buffer zones around the breeding site (Zanini et al. 2008, 2009). A review of studies about the effects of buffer zones on amphibians and reptiles revealed that buffer zones of 15-30m were not effective (Semlitsch and Bodie 2003). It is often neglected that buffer zones around breeding sites cover only a part of amphibian habitats. Furthermore, terrestrial habitats around the breeding sites are important for amphibians for food availability, overwintering and hiding and are thus essential for amphibian conservation (Semlitsch and Bodie 2003). A monitoring program on *B. calamita* in Great Britain found that grazing of the terrestrial habitat by livestock and an increasing pond number had a positive effect on populations (Buckley et al. 2014). However, management of amphibians often underestimates the effect of surrounding terrestrial habitat and its land use. Favorable terrestrial habitats are areas with low human activities such as extensive agriculture and forests in a closely natural state (Ryser 2002). Reconnecting landscapes in urbanized areas and allowing connectivity between suitable habitats is crucial for the long-term persistence of amphibians (Hamer and McDonnell 2008). Connecting terrestrial habitat was reported to be at least as important as the connectivity of ponds (Marsh 2001, Cushman 2006). The data set used in the present study did not have specific information about the terrestrial land-use outside the buffer zone. Including such information in the monitoring of effectiveness could enhance the validity of the evaluation of IANB effectiveness. Protection on larger spatial scales would be needed to ensure the long-term persistence of amphibian populations and potentially even metapopulations in IANB objects.

Considering the lack of effects of all three investigated conservation measures for most species, the relevant factors and conservation measures that influence persistence might have been missed in the monitoring questionnaire. The questions in the monitoring of effectiveness were likely too general to

find an effect. For example, if we specifically tested the effect of extensive vs. intensive agriculture, enhancing water area, removing fish or providing early succession stage, we might find the relevant effects that actually influence amphibian persistence. Furthermore, my results emphasize that population size should always be included in the site occupancy models when the success of conservation is being evaluated.

4.3 Further research and outlook

The applied site occupancy model is widely used in monitoring programs (MacKenzie et al. 2002). However, presence/absence data of species are not sensitive to the reduction of population size. Working with abundance and reproduction data by collecting data on eggs and/or juveniles could improve the informative value of population development in IANB objects. Reproduction at a site was shown to positively correlate with habitat quality (Unglaub et al. 2015). In future, one might include information on breeding populations and abundance (information on population classes already exist) in IANB objects. Since population size was a good predictor for persistence, reduction of population size could be used to rapidly detect negative developments in IANB objects.

5. Conclusion and recommendations for conservation

My first analysis revealed no difference in amphibian persistence probability between IANB and non-IANB objects. The rather low persistence of amphibians at all investigated sites indicates that the decline of amphibian diversity in Switzerland could not be stopped by now. But it also suggests that regional and local conservation efforts (in non-IANB objects) seem to have worked equally well.

Additionally, the results of the second analysis clearly showed that in future amphibian conservation should focus on enhancing population sizes, in order to reduce extinction risk, as larger populations clearly showed higher persistence than smaller populations. The overall lack of effects of all three investigated conservation measures indicates that the questions of the monitoring of effectiveness were not specific enough to detect effective conservation measures. By including more specific management actions in the site occupancy models, relevant conservation measures might show up as significant effects. The monitoring of effectiveness should thus include more precise questions about how the cantons enhanced and managed quality of aquatic and terrestrial habitats and how the surrounding land use and connectivity looks like.

I specifically suggest to include the following questions in the monitoring of effectiveness for a future evaluation of the management effects in IANB objects:

Aquatic habitat quality:

- For which target-species (or species assemblage) was maintenance done to specifically enhance habitat quality?
- Was the water area enhanced?
- Are conservation efforts done to keep an optimum succession state of the pond?
- Are fish present in the IANB object?
- Is there reproduction of amphibians?

Terrestrial habitat quality and surroundings land use:

- What is the distance of the closest road to the IANB object?
- Is there intensive or extensive agriculture close to the IANB object?
- Are settlements close to the IANB object?

Connectivity:

- At which distance is the next breeding site (not necessarily an IANB object) of which species?
- Is there a closer assumed barrier between these breeding sites (e.g. road, urbanized area, intensive agriculture)?

It is essential to manage both breeding sites and terrestrial habitats for long-term persistence of amphibians. In conclusion, future monitoring of effectiveness should ask more specific questions about the undertaken maintenance on habitat quality to evaluate the effects of conservation measures in IANB objects.

Acknowledgements

I would like to express my gratitude to both of my supervisors, Dr. Benedikt Schmidt and Prof. Dr. Rolf Holderegger, for introducing me to the topic and for their helpful advice. I am also grateful for the interesting discussions and their valuable comments on the text. Further, I would like to thank KARCH for providing the data and supplementary information.

Last but not least, I would like to thank my family and friends for their helpful inputs on the thesis and for their continuous support.

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Appendix

Appendix A1

Translations of the three investigated conservation measures Grundeigentümerverbindlicher Schutz (Protection by owner), Pflege und Unterhalt (Maintenance) and Ökologisch ausreichende Pufferzonen (ecological buffer zones) reported in the monitoring of effectiveness (Erfolgskontrolle).

German	English
Kantonales Naturschutzgebiet	Cantonal nature reserve
Schutzzone aufgrund kommunaler Nutzungsplanung	Communal protection zone
Landwirtschaftszone mit biotopspezifischen Auflagen in kommunaler Nutzungsplanung	Agricultural zone with biotope-specific obligations on communal level
Anderes	Others
Kein grundeigentümerverbindlicher Schutz	No protection by owner
Vertragsfläche	Agreement zone
Forstliche Planung	Silvicultural planning
Schutz-, Unterhalts-, Pflege- bzw. Massnahmenplanung	Management plans
Anderes	Others
Pflege bzw. Unterhalt nicht sichergestellt	Maintenance not guaranteed
Ökologisch ausreichende Pufferzonen	Ecological buffer zones

Appendix A2

Selected models ($w > 0.05$ or three best models) for each investigated conservation measure and species.

Protection by owner (Grundeigentümerv verbindlicher Schutz)			
Species	Year	Models	AICc weight
<i>A. obstetricans</i>	2010	occu(~1 ~ ms2 + ms4 + popgr + ms2:popgr + ms4:popgr, data = umf3)	0.076
<i>A. obstetricans</i>	2014	bm1=occu(~1 ~ ms4 + ms5 + popgr, data = umf3)	0.061
<i>B. variegata</i>	2010	bm1=occu(formula = ~1 ~ ms1 + popgr, data = umf3)	0.116
<i>B. variegata</i>	2014	bm1=occu(~1 ~ popgr, data = umf3) bm2=occu(~1 ~ ms5 + popgr, data = umf3)	0.120 0.053
<i>B. bufo</i>	2010	bm1=occu(~popgr ~ ms4 + popgr, data = umf3) bm2=occu(~popgr ~ ms4 + popgr + ms4:popgr, data = umf3) bm3=occu(~popgr ~ ms1 + ms4 + popgr, data = umf3) bm4=occu(~popgr ~ ms2 + ms4 + popgr, data = umf3)	0.094 0.062 0.052 0.052
<i>B. bufo</i>	2014	bm1=occu(~popgr ~ ms1 + ms4 + popgr, data = umf3) bm2=occu(~popgr ~ popgr, data = umf3) bm3=occu(~popgr ~ ms1 + popgr, data = umf3)	0.080 0.061 0.056
<i>E. calamita</i>	2010	bm1=occu(~popgr ~ ms1 + ms2 + popgr + ms2:popgr, data = umf3) bm2=occu(~1 ~ ms1 + ms2 + popgr + ms2:popgr, data = umf3)	0.079 0.076
<i>E. calamita</i>	2014	bm1=occu(~popgr ~ ms1 + ms4 + popgr + ms1:popgr, data = umf3) bm2=occu(~1 ~ ms1 + ms4 + popgr + ms1:popgr, data = umf3)	0.122 0.103
<i>H. arborea</i>	2010	bm1=occu(~popgr ~ ms4 + popgr + ms4:popgr, data = umf3) bm2=occu(~popgr ~ popgr, data = umf3) bm3=occu(~popgr ~ ms2 + popgr, data = umf3)	0.042 0.033 0.031
<i>H. arborea</i>	2014	bm1=occu(~popgr ~ popgr, data = umf3) bm2=occu(~popgr ~ ms5 + popgr, data = umf3) bm3=occu(~1 ~ popgr, data = umf3)	0.088 0.061 0.057
<i>H. intermedia</i>	2010	bm1=occu(~1 ~ popgr, data = umf3) bm2=occu(~1 ~ ms5 + popgr, data = umf3) bm3=occu(~1 ~ ms2 + ms5 + popgr, data = umf3) bm4=occu(~1 ~ ms1 + popgr, data = umf3)	0.167 0.147 0.052 0.050
<i>H. intermedia</i>	2014	bm1=occu(~1 ~ popgr, data = umf3) bm2=occu(~1 ~ ms1 + popgr, data = umf3) bm3=occu(~1 ~ ms5 + popgr, data = umf3) bm4=occu(~popgr + 1 ~ popgr, data = umf3) bm5=occu(~1 ~ ms2 + popgr, data = umf3)	0.285 0.087 0.086 0.084 0.082
<i>I. alpestris</i>	2010	bm1=occu(~popgr ~ ms1 + ms2 + popgr + ms1:popgr, data = umf3) bm2=occu(~popgr ~ ms4 + popgr, data = umf3) bm3=occu(~popgr ~ ms4, data = umf3)	0.044 0.040 0.040
<i>I. alpestris</i>	2014	bm1=occu(~popgr ~ ms4 + ms5 + popgr + ms5:popgr, data = umf3) bm2=occu(~popgr ~ ms1 + ms2 + ms5 + popgr + ms5:popgr, data = umf3) bm3=occu(~popgr ~ ms5 + popgr + ms5:popgr, data = umf3)	0.093 0.073 0.056
<i>L. helveticus</i>	2010	bm1=occu(~popgr ~ ms1 + popgr + ms1:popgr, data = umf3) bm2=occu(~popgr ~ ms1 + ms4 + popgr + ms1:popgr, data = umf3) bm3=occu(~popgr ~ ms1 + ms5 + popgr + ms1:popgr, data = umf3) bm4=occu(~popgr ~ ms1 + ms2 + popgr + ms1:popgr, data = umf3) bm5=occu(~1 ~ ms1 + popgr + ms1:popgr, data = umf3)	0.232 0.079 0.078 0.078 0.067
<i>L. helveticus</i>	2014	bm1=occu(~popgr ~ popgr, data = umf3) bm2=occu(~popgr ~ ms1 + popgr, data = umf3) bm3=occu(~popgr ~ ms2 + popgr, data = umf3) bm4=occu(~popgr ~ ms5 + popgr, data = umf3) bm5=occu(~popgr ~ ms4 + popgr, data = umf3)	0.253 0.094 0.089 0.088 0.087
<i>L. vulgaris</i>	2010	bm1=occu(~1 ~ popgr, data = umf3) bm2=occu(~1 ~ ms4 + popgr, data = umf3) bm3=occu(~1 ~ ms1 + popgr, data = umf3) bm4=occu(~1 ~ ms5 + popgr, data = umf3) bm5=occu(~1 ~ ms1 + ms2 + ms5 + popgr, data = umf3)	0.107 0.085 0.065 0.061 0.056
<i>L. vulgaris</i>	2014	bm1=occu(~1 ~ popgr, data = umf3) bm2=occu(~1 ~ ms4 + popgr, data = umf3)	0.064 0.053

<i>P. esculentus-aggr.</i>	2010	bm1=occu(~popgr ~ popgr, data = umf3) bm2=occu(~popgr ~ ms1 + popgr + ms1:popgr , data = umf3) bm3=occu(~popgr ~ ms1 + popgr , data = umf3)	0.115 0.096 0.052
<i>P. esculentus-aggr.</i>	2014	bm1=occu(~popgr ~ popgr, data = umf3) bm2=occu(~popgr ~ ms4 + popgr , data = umf3) bm3=occu(~popgr ~ ms5 + popgr , data = umf3) bm4=occu(~popgr ~ ms1 + popgr , data = umf3) bm5=occu(~popgr ~ ms2 + popgr , data = umf3)	0.147 0.091 0.068 0.055 0.053
<i>P. ridibundus</i>	2010	bm1=occu(~popgr ~ ms1 + ms2 + ms5 + popgr + ms1:popgr + ms2:popgr , data = umf3) bm2=occu(~popgr ~ ms1 + ms5 + popgr + ms5:popgr, data = umf3)	0.114 0.053
<i>P. ridibundus</i>	2014	bm1=occu(~popgr ~ ms4 + popgr + ms4:popgr , data = umf3) bm2=occu(~popgr ~ popgr , data = umf3) bm3=occu(~popgr ~ ms1 + ms2 + popgr + ms1:popgr + ms2:popgr, data = umf3)	0.073 0.065 0.060
<i>R. dalmatina</i>	2010	bm1=occu(~1 ~ ms1 + ms4 + popgr + ms1:popgr, data = umf3) bm2=occu(~1 ~ ms1 + ms4 + popgr + ms1:popgr + ms4:popgr, data = umf3) bm3=occu(~1 ~ ms1 + ms2 + popgr + ms1:popgr, data = umf3) bm4=occu(~popgr ~ ms1 + popgr + ms1:popgr, data = umf3) bm5=occu(~1 ~ ms1 + ms2 + ms4 + popgr + ms1:popgr, data = umf3)	0.144 0.075 0.064 0.064 0.060
<i>R. dalmatina</i>	2014	bm1=occu(~1 ~ ms1 + popgr, data = umf3) bm2=occu(~1 ~ popgr, data = umf3)	0.085 0.076
<i>R. latastei</i>	2010	bm1=occu(~popgr ~ ms1 + ms2 + ms5 + popgr, data = umf3) bm2=occu(~1 ~ popgr , data = umf3) bm3=occu(~1 ~ ms2 + popgr , data = umf3)	0.676 0.072 0.052
<i>R. latastei</i>	2014	bm1=occu(~1 ~ ms2 + popgr , data = umf3) bm2=occu(~1 ~ popgr , data = umf3) bm3=occu(~1 ~ ms1 + popgr , data = umf3) bm4=occu(~1 ~ ms5 + popgr , data = umf3) bm5=occu(~1 ~ ms1 + ms2 + popgr , data = umf3) bm6=occu(~1 ~ ms2 + ms5 + popgr , data = umf3) bm7=occu(~1 ~ ms1 + ms5 + popgr , data = umf3)	0.242 0.239 0.128 0.092 0.065 0.064 0.051
<i>R. temporaria</i>	2010	bm1=occu(~popgr ~ ms4 + popgr , data = umf3) bm2=occu(~popgr ~ ms2 + ms4 + popgr , data = umf3) bm3=occu(~popgr ~ ms1 + ms4 + popgr , data = umf3) bm4=occu(~popgr ~ ms4 + ms5 + popgr , data = umf3)	0.345 0.128 0.121 0.120
<i>R. temporaria</i>	2014	bm1=occu(~popgr ~ ms2 + popgr , data = umf3) bm2=occu(~popgr ~ popgr , data = umf3) bm3=occu(~popgr ~ ms1 + popgr , data = umf3)	0.076 0.068 0.055
<i>T. carnifex</i>	2010	bm1=occu(~1 ~ popgr , data = umf3) bm2=occu(~1 ~ ms1 + popgr , data = umf3) bm3=occu(~1 ~ ms5 + popgr, data = umf3) bm4=occu(~popgr ~ popgr , data = umf3) bm5=occu(~1 ~ ms2 + popgr , data = umf3)	0.250 0.112 0.103 0.086 0.072
<i>T. carnifex</i>	2014	bm1=occu(~1 ~ popgr , data = umf3) bm2=occu(~1 ~ ms5 + popgr , data = umf3) bm3=occu(formula = ~popgr ~ popgr , data = umf3) bm4=occu(~1 ~ ms1 + popgr , data = umf3) bm5=occu(~1 ~ ms2 + popgr , data = umf3)	0.291 0.103 0.101 0.095 0.084
<i>T. cristatus</i>	2010	bm1=occu(~popgr ~ popgr , data = umf3) bm2=occu(~popgr ~ ms1 + popgr , data = umf3) bm3=occu(~popgr ~ ms5 + popgr , data = umf3) bm4=occu(~popgr ~ ms4 + popgr , data = umf3) bm5=occu(~popgr ~ ms2 + popgr , data = umf3)	0.149 0.073 0.064 0.056 0.052
<i>T. cristatus</i>	2014	bm1=occu(~popgr ~ ms5 + popgr + ms5:popgr , data = umf3) bm2=occu(~popgr ~ ms5 + popgr , data = umf3) bm3=occu(~popgr ~ popgr , data = umf3) bm4=occu(~popgr ~ ms4 + ms5 + popgr + ms5:popgr,data = umf3)	0.127 0.076 0.059 0.051

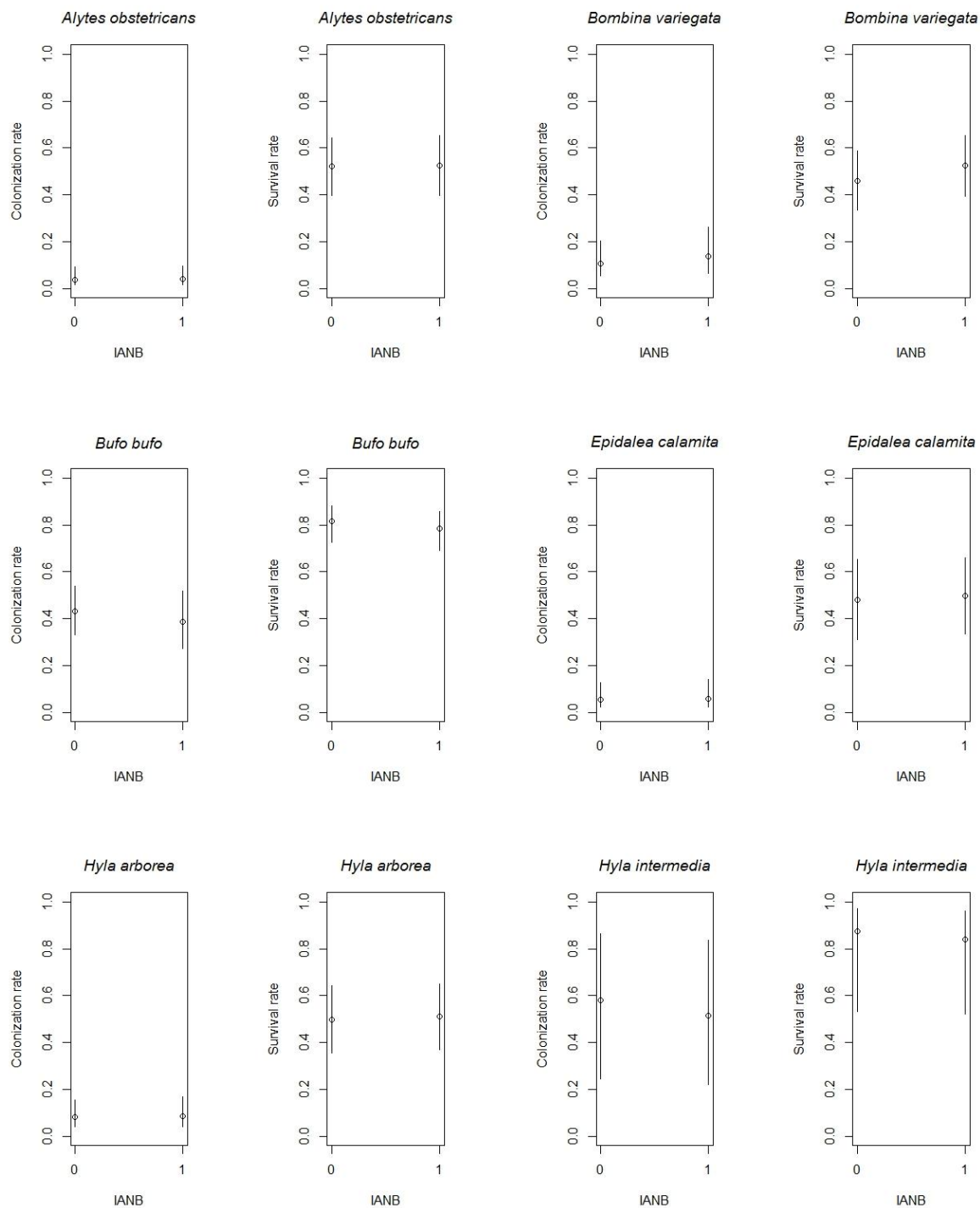
Maintenance (Pflege und Unterhalt)			
Species	Year	models	AICcweight
<i>A. obstetricans</i>	2010	bm1=occu(~1 ~ popgr)	0.034
		bm2=occu(~1 ~ ms4 + popgr + ms4:popgr)	0.030
		bm3=occu(~1 ~ ms2 + popgr)	0.029
<i>A. obstetricans</i>	2014	bm1=occu(~1 ~ ms1 + ms4 + popgr + ms4:popgr)	0.061
<i>B. variegata</i>	2010	bm1=occu(~1~popgr)	0.076
<i>B. variegata</i>	2014	bm1=occu(~1 ~ ms4 + popgr)	0.038
		bm2=occu(~1 ~ popgr)	0.025
		bm3=occu(~1 ~ ms1 + popgr + ms1:popgr)	0.021
<i>B. bufo</i>	2010	bm1=occu(~popgr~ms3+popgr)	0.062
<i>B. bufo</i>	2014	bm1=occu(~popgr~ms1+popgr)	0.077
<i>E. calamita</i>	2010	bm1=occu(~popgr ~ popgr , data = umf3)	0.028
		bm2=occu(~1 ~ popgr , data = umf3)	0.025
		bm3=occu(~popgr ~ ms3 + popgr + ms3:popgr , data = umf3)	0.024
<i>E. calamita</i>	2014	bm1=occu(~popgr ~ ms4 + popgr)	0.085
		bm2=occu(~1 ~ ms4 + popgr)	0.079
		bm3=occu(~popgr ~ popgr)	0.059
		bm4=occu(~1 ~ popgr)	0.052
<i>H. arborea</i>	2010	Bm1=occu(~popgr~popgr)	0.051
<i>H. arborea</i>	2014	bm1=occu(~popgr ~ ms1 + ms3 + ms4 + popgr , data = umf3)	0.068
		bm2=occu(~popgr ~ ms1 + popgr , data = umf3)	0.062
		bm3=occu(~popgr ~ ms3 + ms4 + popgr , data = umf3)	0.059
		bm4=occu(~popgr ~ ms1 + ms4 + popgr , data = umf3)	0.054
<i>H. intermedia</i>	2010	bm1=occu(~1 ~ ms1 + ms3 + popgr , data = umf3)	0.207
		bm2=occu(~1 ~ ms1 + ms3 + popgr + ms1:popgr , data = umf3)	0.095
		bm3=occu(~1 ~ ms1 + ms3 + popgr + ms3:popgr , data = umf3)	0.094
		bm4=occu(~1 ~ ms5 + popgr , data = umf3)	0.060
		bm5=occu(~1 ~ popgr , data = umf3)	0.055
		bm6=occu(~popgr ~ ms1 + ms3 + popgr , data = umf3)	0.051
		bm7=occu(~1 ~ ms1 + ms3 + ms5 + popgr , data = umf3)	0.051
<i>H. intermedia</i>	2014	bm1=occu(~1 ~ ms1 + popgr , data = umf3)	0.194
		bm2=occu(~1 ~ popgr , data = umf3)	0.193
		bm3=occu(~1 ~ ms1 + ms3 + popgr , data = umf3)	0.148
		bm4=occu(~1 ~ ms3 + popgr + 1, data = umf3)	0.074
		bm5=occu(~1 ~ ms5 + popgr , data = umf3)	0.060
		bm6=occu(~popgr ~ popgr , data = umf3)	0.057
		bm7=occu(~1 ~ ms1 + ms5 + popgr , data = umf3)	0.054
		bm8=occu(~popgr ~ ms1 + popgr , data = umf3)	0.053
<i>I. alpestris</i>	2010	bm1=occu(~popgr ~ ms3 , data = umf3)	0.051
		bm2=occu(~popgr ~ ms3 + popgr , data = umf3)	0.051
<i>I. alpestris</i>	2014	bm1=occu(~popgr ~ ms3 + popgr , data = umf3)	0.037
		bm2=occu(formula = ~popgr ~ ms3 , data = umf3)	0.033
		bm3=occu(formula = ~popgr ~ ms3 + ms4 + popgr , data = umf3)	0.025
<i>L. helveticus</i>	2010	bm1=occu(~popgr ~ ms1 + ms5 + popgr + ms5:popgr , data = umf3)	0.036
		bm2=occu(~popgr ~ ms1 + popgr , data = umf3)	0.032
		bm3=occu(~popgr ~ ms1 + popgr + ms1:popgr , data = umf3)	0.026
<i>L. helveticus</i>	2014	bm1=occu(~popgr ~ ms2 + ms5 + popgr + ms5:popgr , data = umf3)	0.035
		bm2=occu(~popgr ~ ms2 + popgr , data = umf3)	0.032
		bm3=occu(~popgr ~ ms5 + popgr + ms5:popgr , data = umf3)	0.028
<i>L. vulgaris</i>	2010	bm1=occu(~1 ~ popgr , data = umf3)	0.083
		bm2=occu(~1 ~ ms2 + popgr , data = umf3)	0.068
		bm3=occu(~1 ~ ms4 + popgr + ms4:popgr , data = umf3)	0.064
		bm4=occu(~1 ~ ms2 + ms4 + popgr , data = umf3)	0.058
<i>L. vulgaris</i>	2014	bm1=occu(~1 ~ ms1 + ms5 + popgr + ms1:popgr , data = umf3)	0.031
		bm2=occu(~1 ~ ms1 + popgr + ms1:popgr , data = umf3)	0.026
		bm3=occu(~1 ~ ms1 + ms3 + ms5 + popgr + ms1:popgr , data = umf3)	0.026
<i>P. esculentus-aggr.</i>	2010	bm1=occu(~popgr ~ ms1 + popgr + ms1:popgr , data = umf3)	0.082
		bm2=occu(~popgr ~ ms1 + ms2 + popgr + ms1:popgr , data = umf3)	0.069
		bm3=occu(~popgr ~ ms1 + ms4 + popgr + ms1:popgr , data = umf3)	0.068
		bm4=occu(~popgr ~ ms1 + ms2 + ms4 + popgr + ms1:popgr , data = umf3)	0.052

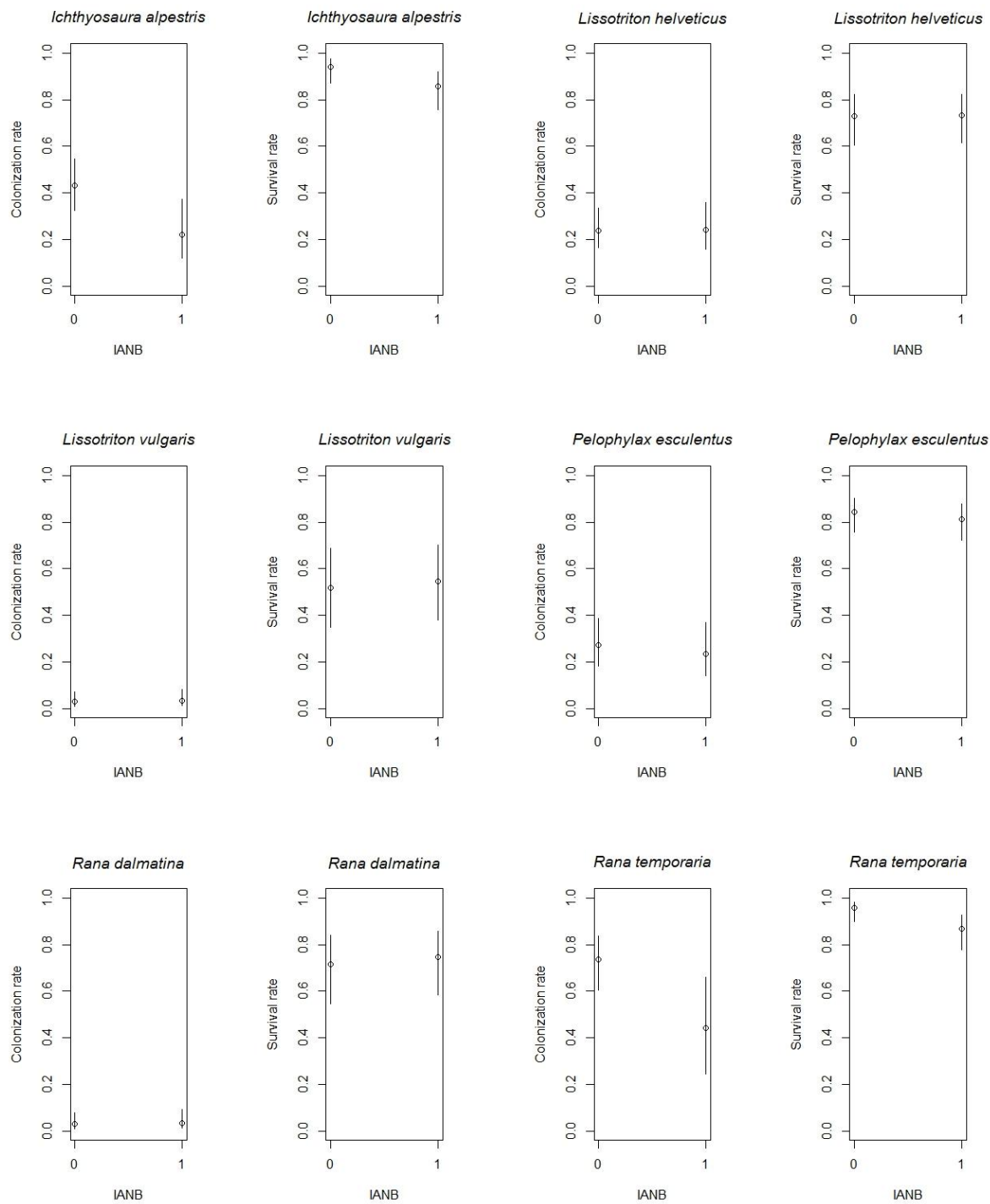
<i>P. esculentus-aggr.</i>	2014	bm1=occu(~popgr ~ popgr , data = umf3) bm2=occu(~popgr ~ ms4 + popgr , data = umf3) bm3=occu(~popgr ~ ms3 + popgr , data = umf3)	0.099 0.075 0.050
<i>P. ridibundus</i>	2010	bm1=occu(~popgr ~ ms5 + popgr , data = umf3) bm2=occu(~popgr ~ ms1 + ms3 + ms5 + popgr + ms3:popgr , data = umf3) bm3=occu(~popgr ~ popgr , data = umf3)	0.031 0.030 0.030
<i>P. ridibundus</i>	2014	bm1=occu(~popgr ~ ms1 + popgr + ms1:popgr , data = umf3)	0.064
<i>R. dalmatina</i>	2010	bm1=occu(~1 ~ popgr , data = umf3)	0.066
<i>R. dalmatina</i>	2014	bm1=occu(~1 ~ popgr , data = umf3) bm2=occu(~1 ~ ms5 + popgr , data = umf3)	0.119 0.104
<i>R. latastei</i>	2010	bm1=occu(~popgr ~ ms1 + ms3 + popgr , data = umf3) bm2=occu(~1 ~ ms1 + ms3 + popgr + ms1:popgr , data = umf3) bm3=occu(~1 ~ ms1 + ms3 + popgr + ms3:popgr , data = umf3)	0.557 0.126 0.125
<i>R. latastei</i>	2014	bm1=occu(~1 ~ ms5 + popgr , data = umf3) bm2=occu(~1 ~ ms3 + ms5 + popgr , data = umf3) bm3=occu(~1 ~ ms1 + ms5 + popgr , data = umf3) bm4=occu(~1 ~ popgr , data = umf3)	0.425 0.142 0.131 0.073
<i>R. temporaria</i>	2010	occu(~popgr ~ ms3 + popgr + ms3:popgr)	0.096
<i>R. temporaria</i>	2014	bm1=occu(~popgr ~ ms4 + ms5 + popgr) bm2=occu(~popgr ~ ms4 + popgr) bm3=occu(~popgr ~ ms2 + ms4 + popgr) bm4=occu(~popgr ~ ms2 + ms4 + ms5 + popgr) bm5=occu(~popgr ~ ms3 + ms4 + popgr)	0.131 0.125 0.075 0.074 0.063
<i>T. carnifex</i>	2010	bm1=occu(~1 ~ ms5 + popgr , data = umf3) bm2=occu(~popgr ~ ms5 + popgr , data = umf3) bm3=occu(~1 ~ ms3 + ms5 + popgr , data = umf3) bm4=occu(~1 ~ ms1 + ms5 + popgr , data = umf3) bm5=occu(~1 ~ popgr , data = umf3)	0.321 0.109 0.108 0.101 0.090
<i>T. carnifex</i>	2014	bm1=occu(~1 ~ ms1 + popgr , data = umf3) bm2=occu(~1 ~ popgr , data = umf3) bm3=occu(~1 ~ ms3 + popgr , data = umf3) bm4=occu(~1 ~ ms3 + ms5 + popgr , data = umf3) bm5=occu(~1 ~ ms1 + ms3 + popgr , data = umf3) bm6=occu(~popgr ~ ms1 + popgr , data = umf3) bm7=occu(~popgr ~ popgr , data = umf3) bm8=occu(~1 ~ ms1 + ms5 + popgr , data = umf3) bm9=occu(~1 ~ ms5 + popgr , data = umf3)	0.201 0.184 0.108 0.070 0.070 0.066 0.064 0.054 0.053
<i>T. cristatus</i>	2010	bm1=occu(~popgr ~ ms4 + ms5 + popgr + ms4:popgr , data = umf3) bm2=occu(~popgr ~ ms3 + ms4 + ms5 + popgr + ms4:popgr , data = umf3)	0.130 0.058
<i>T. cristatus</i>	2014	bm1=occu(~popgr ~ popgr , data = umf3) bm2=occu(~popgr ~ ms5 + popgr + ms5:popgr , data = umf3)	0.096 0.063

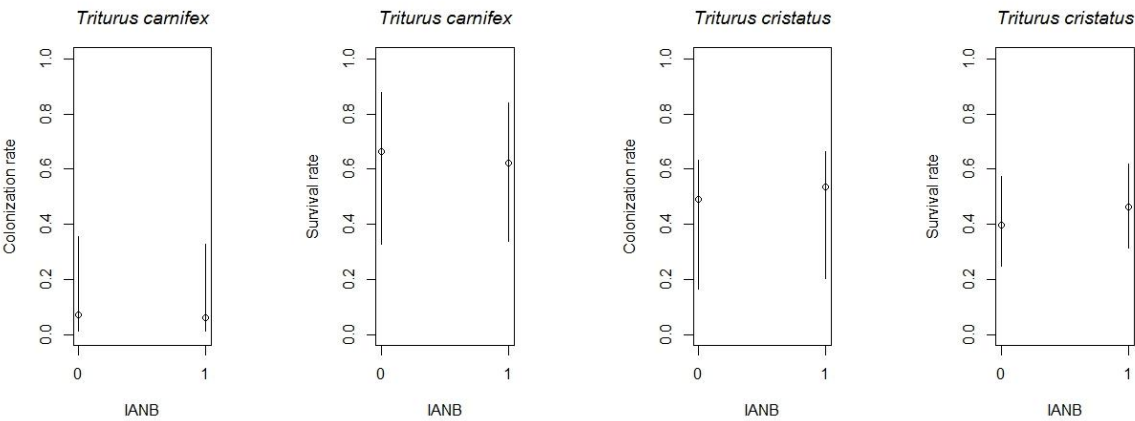
Buffer zone in 2014		
Species	models	AICc weight
<i>A. obstetricans</i>	Bm1=occu(~1 ~ popgr , data = umf3)	0.543
	bm2=occu(~popgr ~ popgr + PZ , data = umf3)	0.199
	bm3=occu(~1 ~ popgr + PZ , data = umf3)	0.190
<i>B. variegata</i>	bm1=occu(~1 ~ popgr + PZ , data = umf3)	0.571
	bm2=occu(~popgr ~ popgr + PZ , data = umf3)	0.219
	bm3=occu(~1 ~ popgr , data = umf3)	0.150
	bm4=occu(~popgr ~ popgr , data = umf3)	0.060
<i>B. bufo</i>	bm1=occu(~popgr ~ popgr , data = umf3)	0.650
	bm2=occu(~popgr ~ popgr + PZ , data = umf3)	0.227
	bm3=occu(~popgr ~ 1, data = umf3)	0.085
<i>E. calamita</i>	bm1=occu(~popgr ~ popgr + PZ , data = umf3)	0.394
	bm2=occu(~1 ~ popgr , data = umf3)	0.348
	bm3=occu(~popgr ~ popgr + PZ , data = umf3)	0.136
	bm4=occu(~1 ~ popgr + PZ , data = umf3)	0.122
<i>H. arborea</i>	bm1=occu(~popgr ~ popgr , data = umf3)	0.447
	bm2=occu(~1 ~ popgr , data = umf3)	0.288
	bm3=occu(~popgr ~ popgr + PZ , data = umf3)	0.160
	bm4=occu(~1 ~ popgr + PZ , data = umf3)	0.104
<i>H. intermedia</i>	bm1=occu(~1 ~ popgr , data = umf3)	0.594
	bm2=occu(~popgr ~ popgr , data = umf3)	0.175
	bm3=occu(~1 ~ popgr + PZ , data = umf3)	0.173
<i>I. alpestris</i>	Bm1=occu(~popgr ~ PZ , data = umf3)	0.270
	Bm2=occu(~popgr ~ 1, data = umf3)	0.252
	Bm3=occu(~popgr ~ popgr + PZ , data = umf3)	0.244
	bm4=occu(~popgr ~ popgr + PZ , data = umf3)	0.205
<i>L. helveticus</i>	bm1=occu(~popgr ~ popgr , data = umf3)	0.636
	bm2=occu(~popgr ~ popgr + PZ , data = umf3)	0.219
	bm3=occu(~1 ~ popgr , data = umf3)	0.107
<i>L. vulgaris</i>	bm1=occu(~1 ~ popgr , data = umf3)	0.524
	bm2=occu(~popgr ~ popgr + PZ , data = umf3)	0.216
	bm3=occu(~1 ~ popgr + PZ , data = umf3)	0.185
	bm4=occu(~popgr ~ popgr + PZ , data = umf3)	0.075
<i>P. esculentus-aggr.</i>	bm1=occu(~popgr ~ popgr , data = umf3)	0.643
	bm2=occu(~popgr ~ popgr + PZ , data = umf3)	0.356
<i>P. ridibundus</i>	bm1=occu(~popgr ~ popgr , data = umf3)	0.521
	bm2=occu(~popgr ~ popgr + PZ , data = umf3)	0.310
	bm3=occu(~1 ~ popgr , data = umf3)	0.105
	bm4=occu(~1 ~ popgr + PZ , data = umf3)	0.063
<i>R. dalmatina</i>	bm1=occu(~1 ~ popgr , data = umf3)	0.515
	bm2=occu(~1 ~ popgr + PZ , data = umf3)	0.218
	bm3=occu(~popgr ~ popgr , data = umf3)	0.188
	bm4=occu(formula = ~popgr ~ popgr + PZ , data = umf3)	0.079
<i>R. latastei</i>	bm1=occu(~1 ~ popgr , data = umf3)	0.642
	bm2=occu(~1 ~ popgr + PZ , data = umf3)	0.187
	bm3=occu(~popgr ~ popgr , data = umf3)	0.068
<i>R. temporaria</i>	bm2=occu(~popgr ~ popgr + PZ , data = umf3)	0.880
	bm1=occu(~1 ~ popgr + PZ , data = umf3)	0.068
<i>T. carnifex</i>	bm1=occu(~1 ~ popgr , data = umf3)	0.445
	bm2=occu(~1 ~ popgr + PZ , data = umf3)	0.303
	bm3=occu(~popgr ~ popgr , data = umf3)	0.154
	bm4=occu(~popgr ~ popgr + PZ , data = umf3)	0.097
<i>T. cristatus</i>	bm1=occu(~popgr ~ popgr , data = umf3)	0.610
	bm2=occu(~popgr ~ popgr + PZ , data = umf3)	0.299

Appendix A3

Overview of estimated persistence and colonization probabilities in IANB and non-IANB objects for each species.



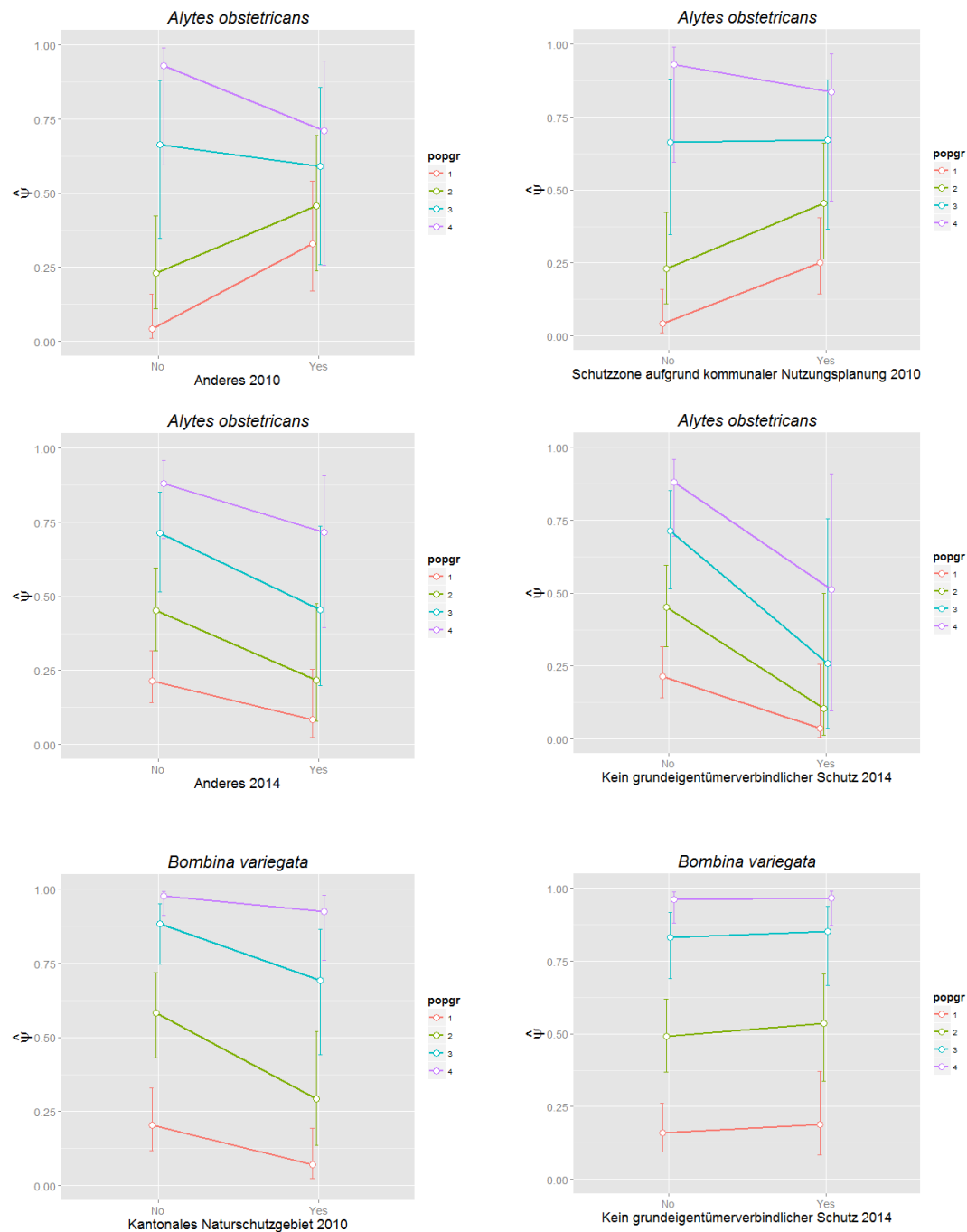


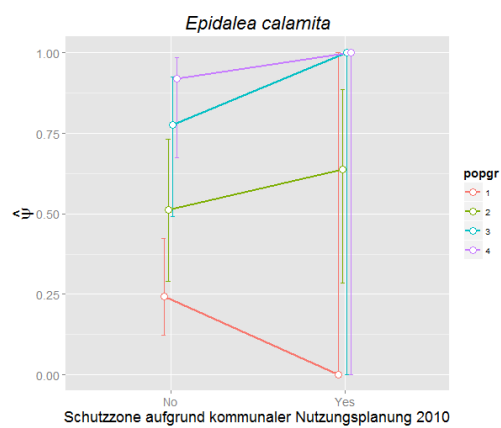
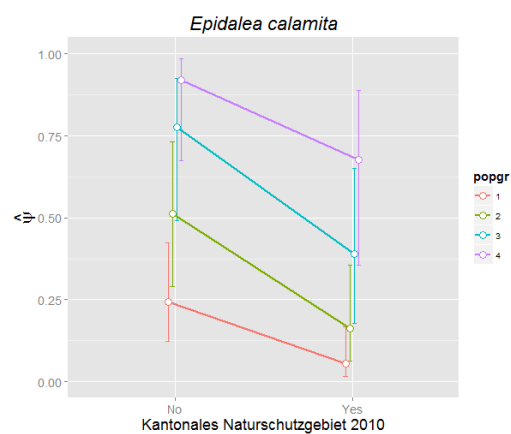
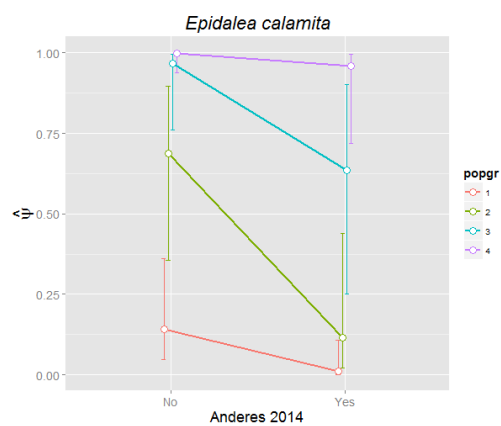
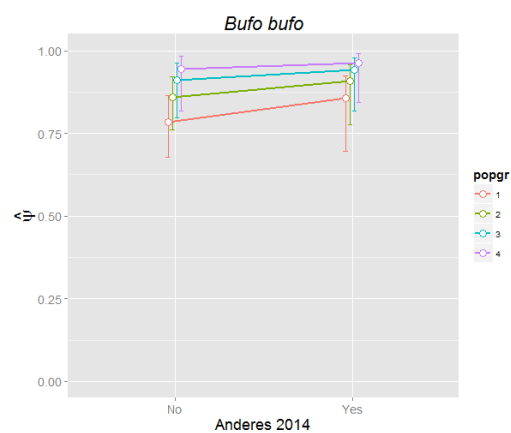
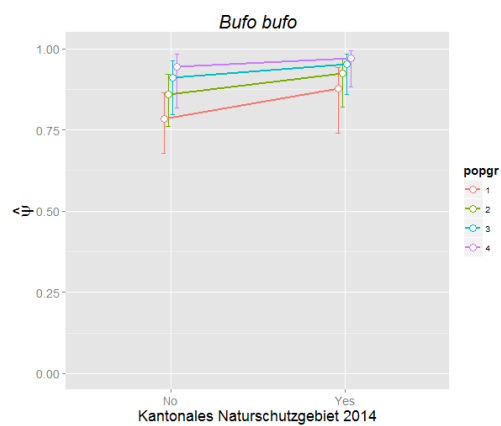
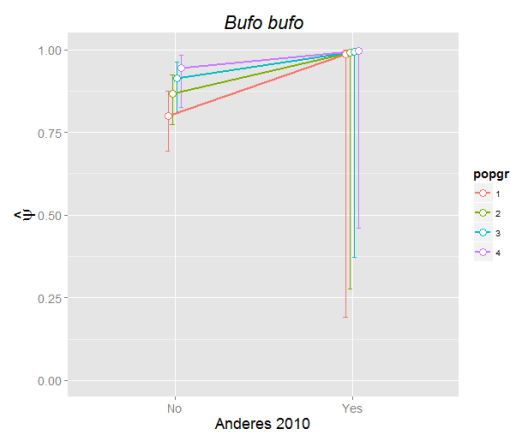
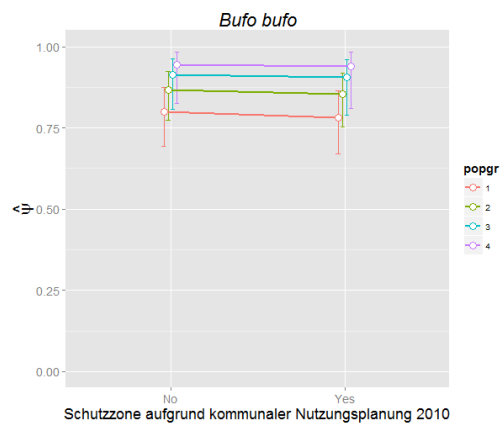
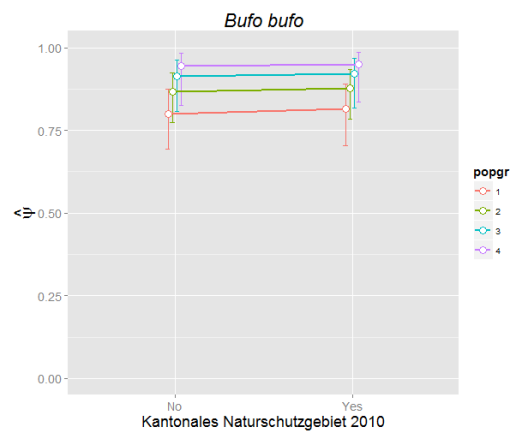


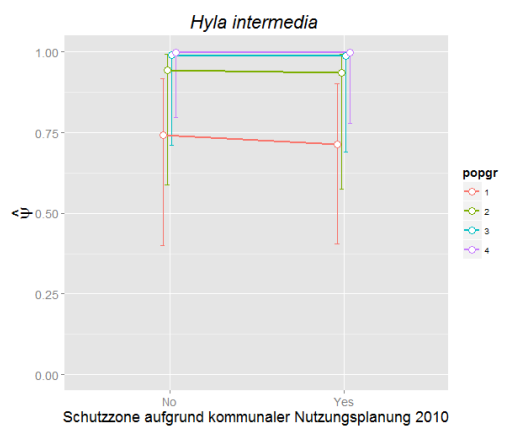
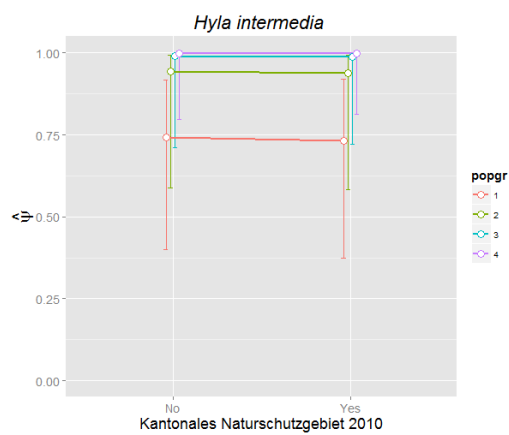
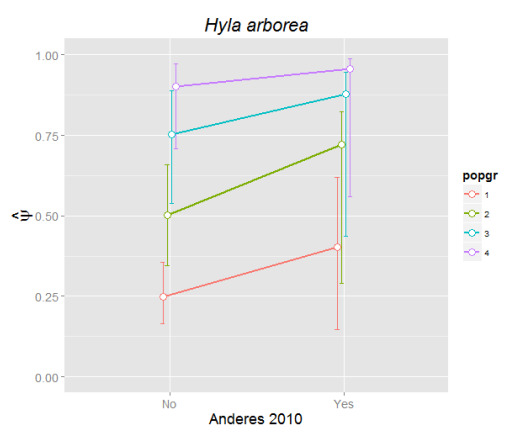
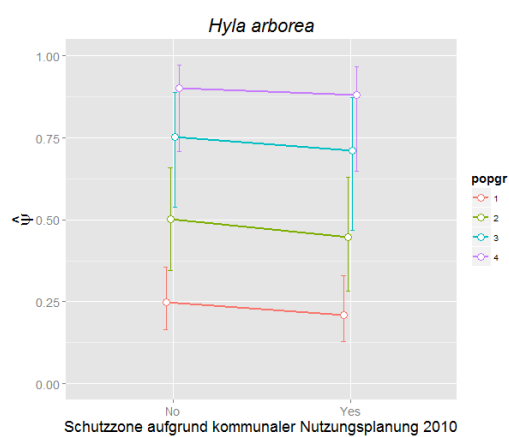
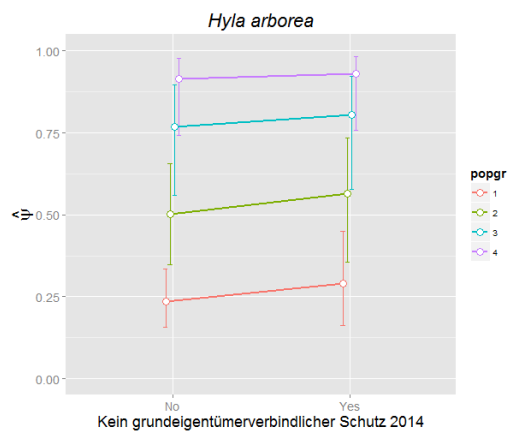
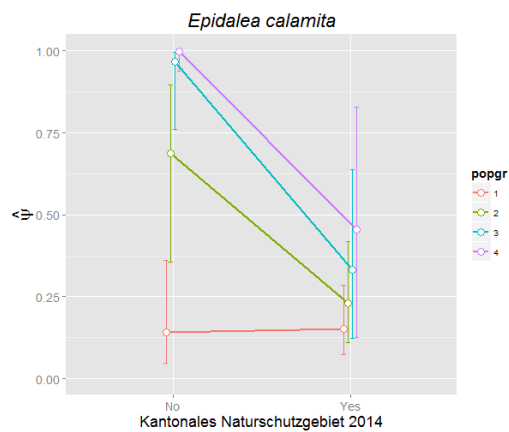
Appendix A4

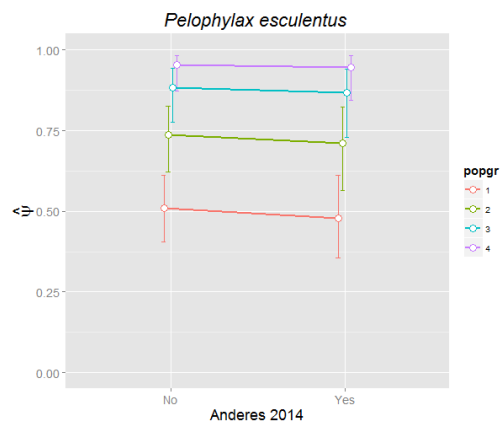
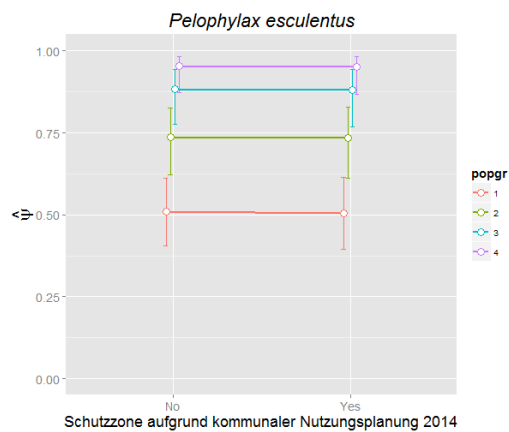
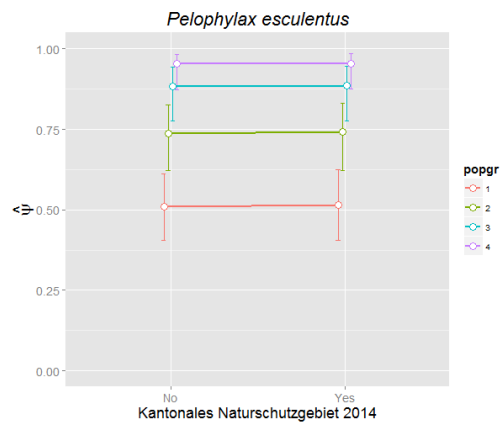
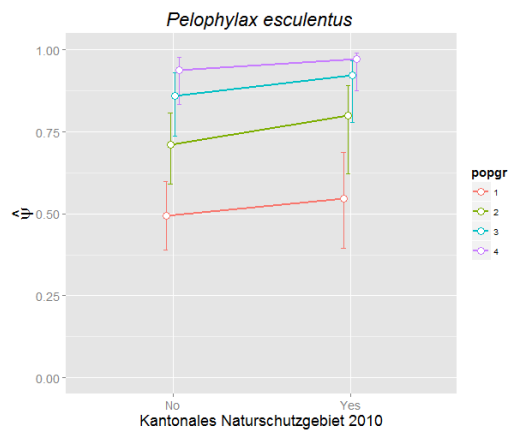
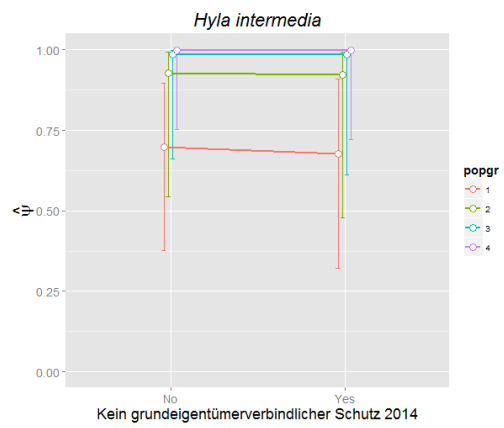
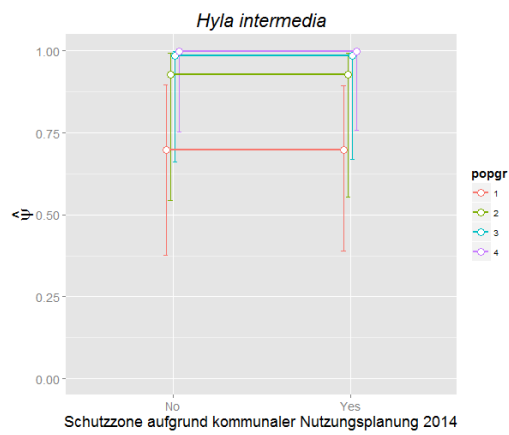
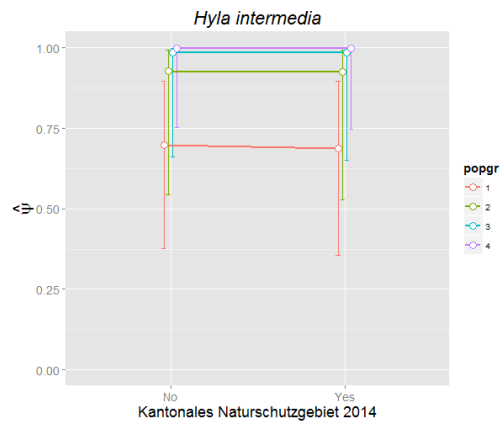
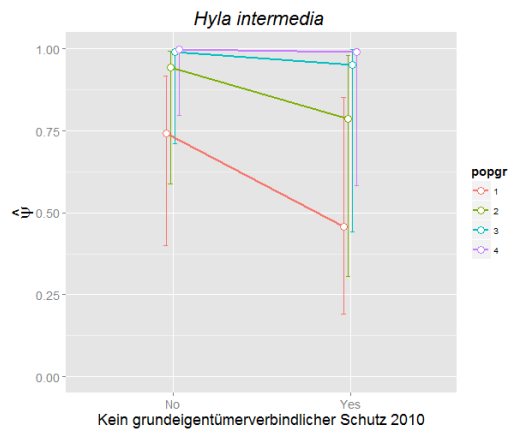
Overview of the estimated occurrence probabilities (ψ) of each species as a function of popgr and the reported management (No, Yes) in 2010 and 2014. Only the management options, which appeared in the selected models as explanatory variables (mostly not significant effects), are shown.

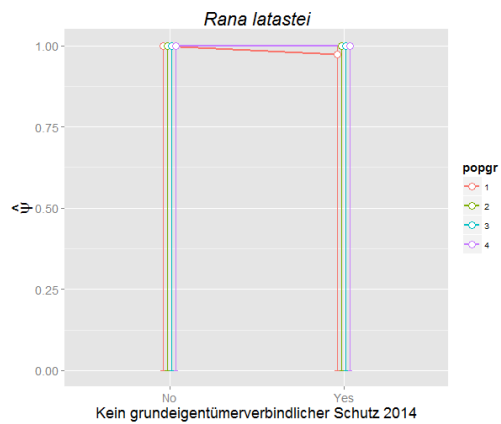
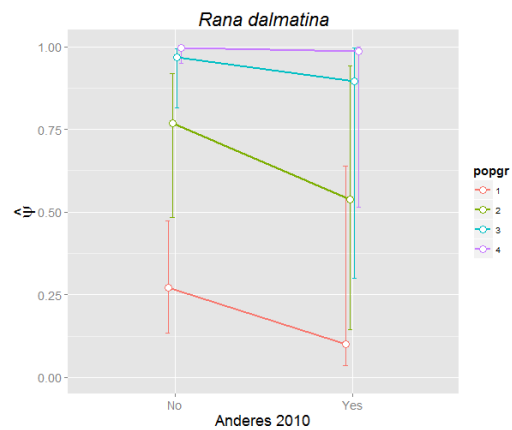
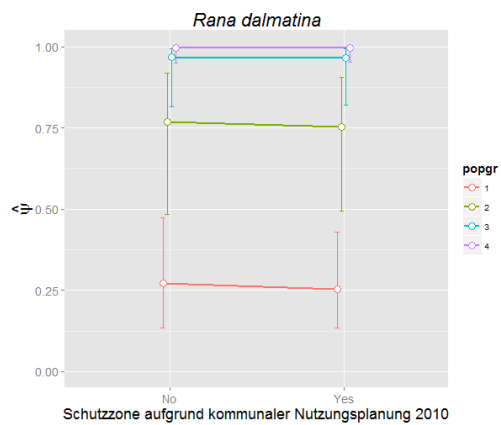
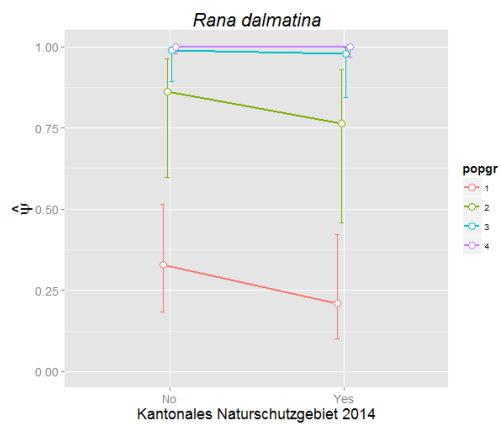
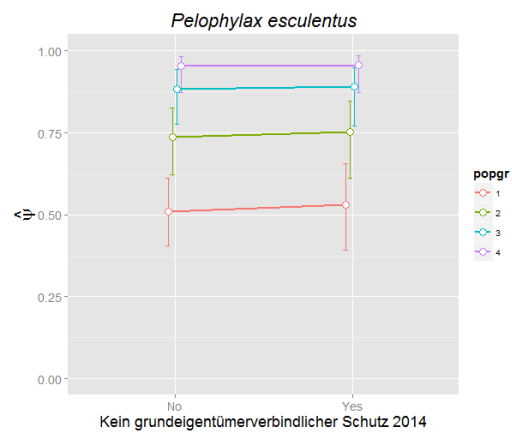
Protection by owner (Grundeigentümerverbindlicher Schutz)

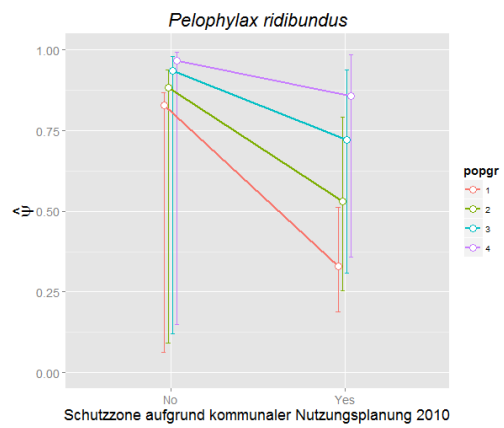
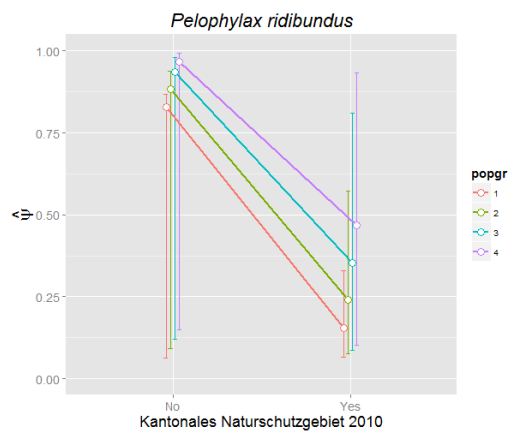
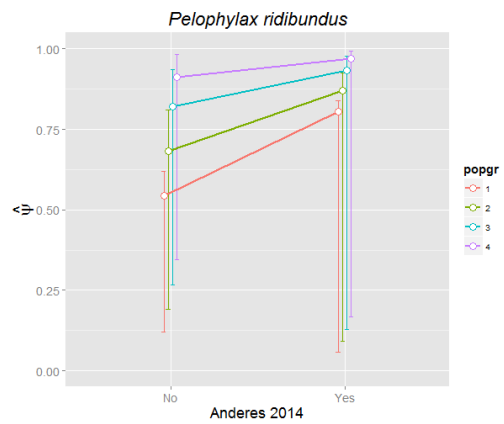
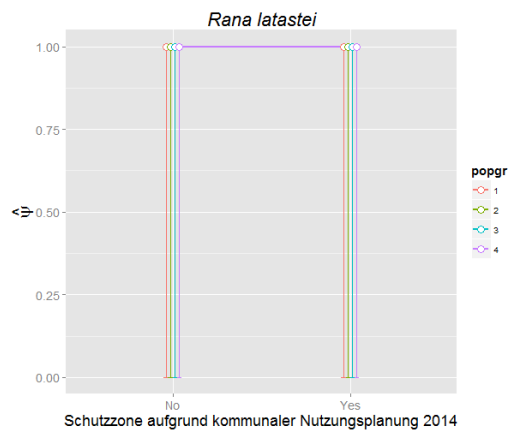
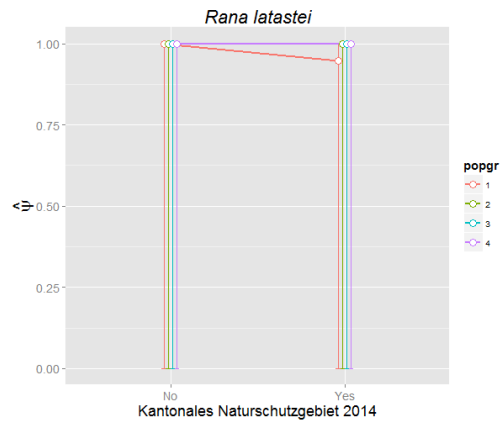
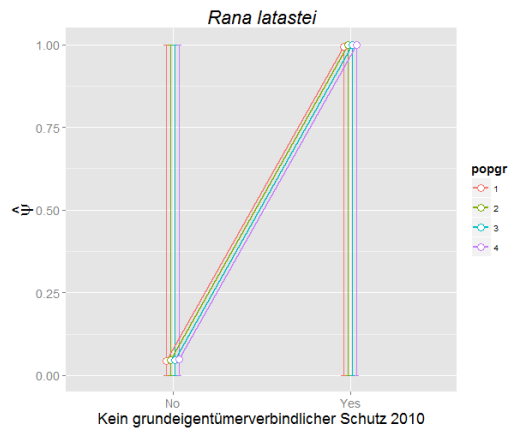
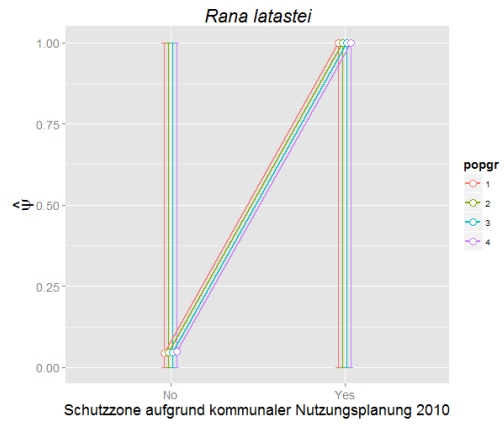
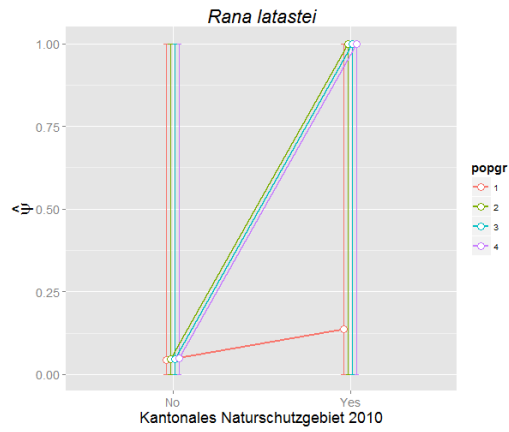


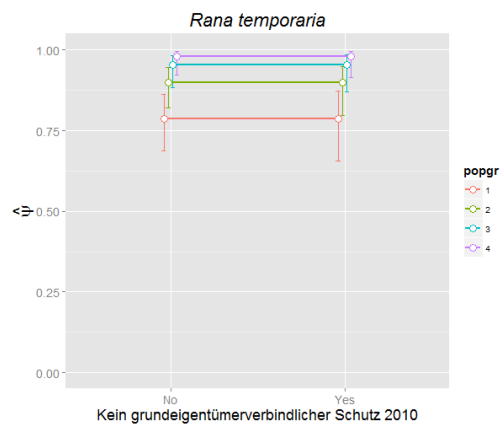
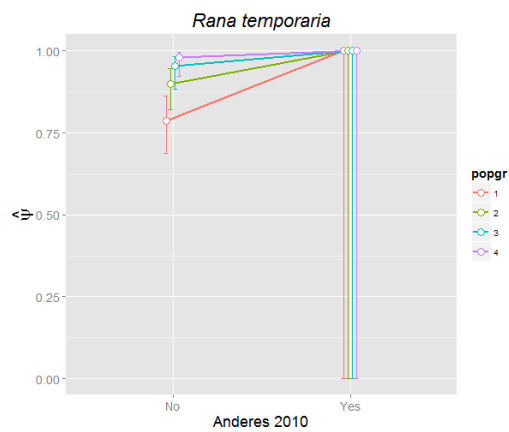
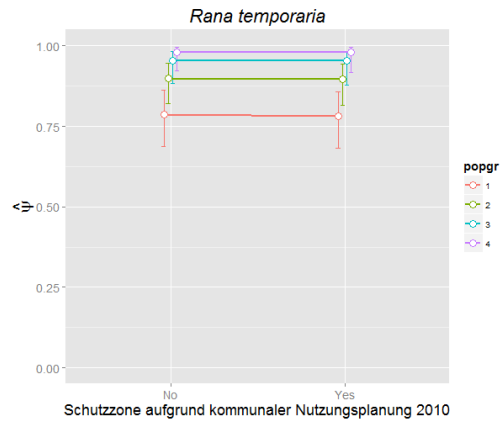
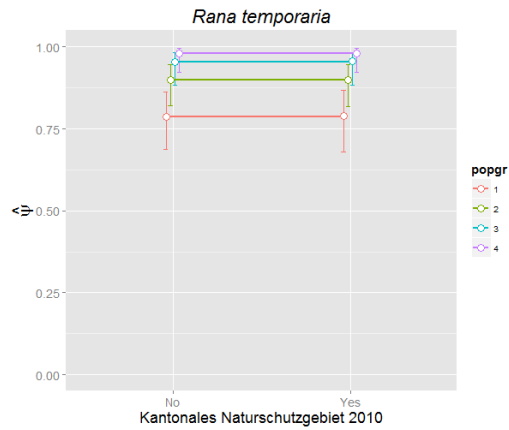
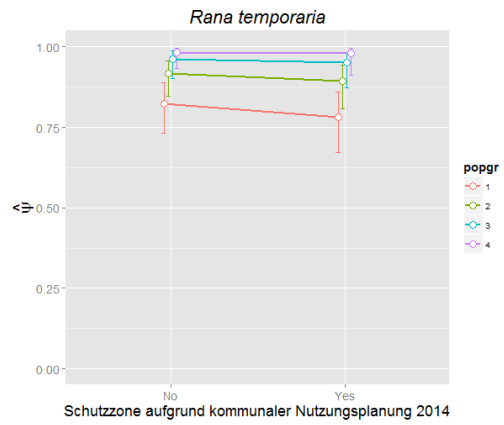
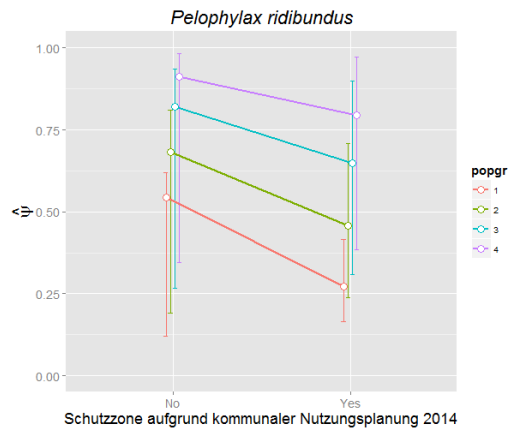
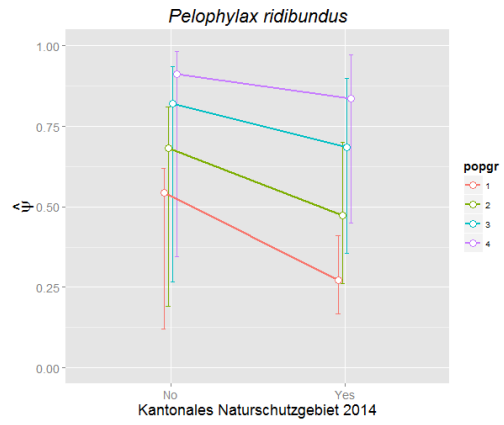
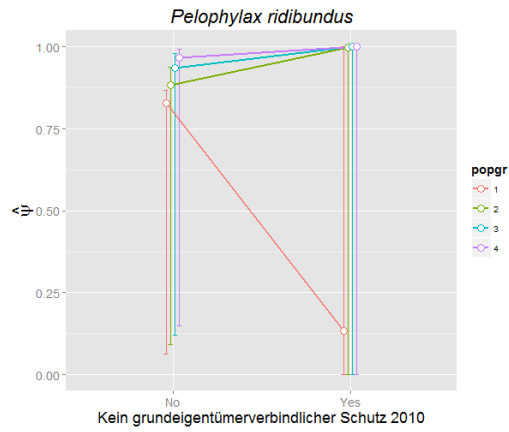


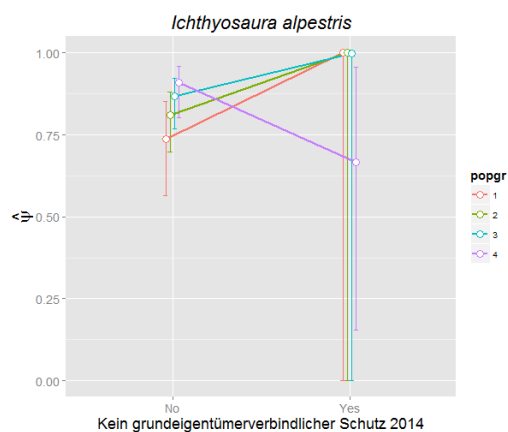
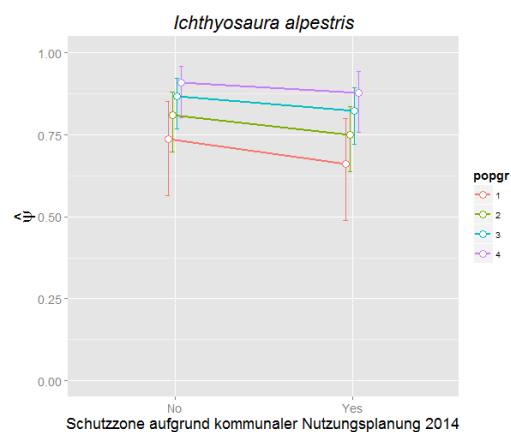
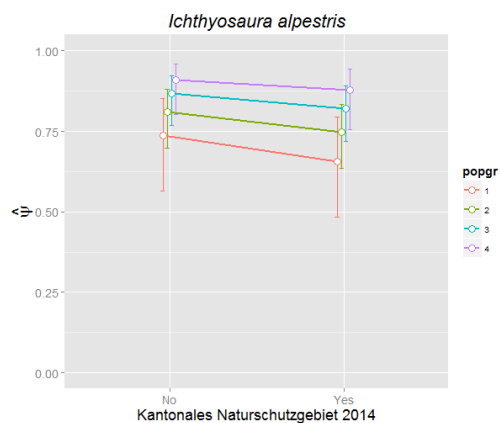
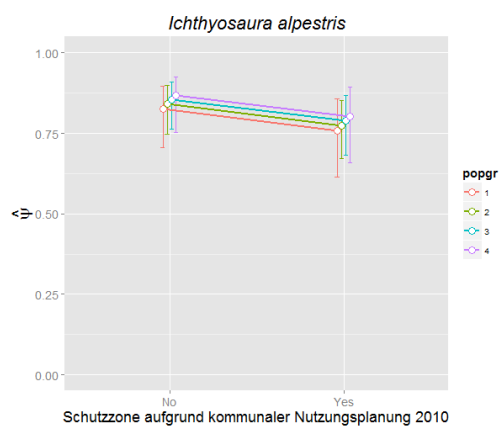
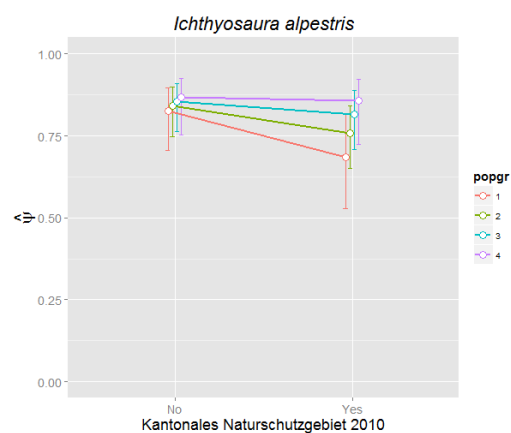
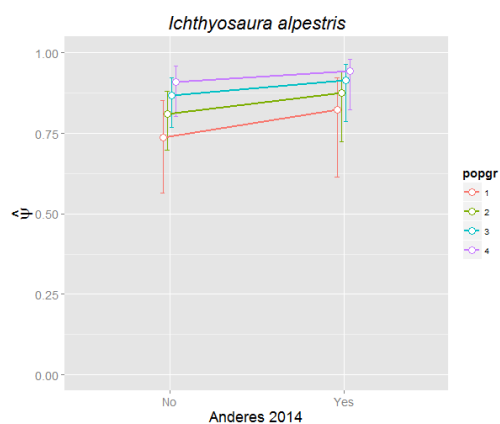
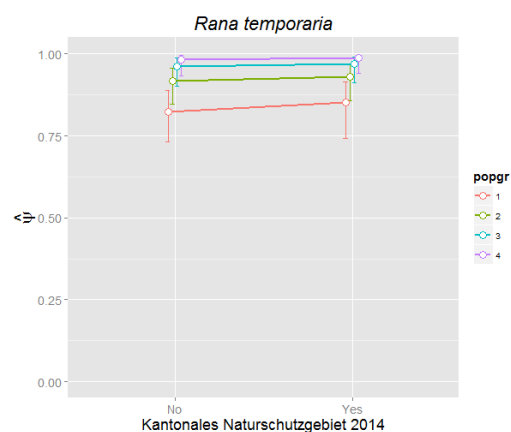


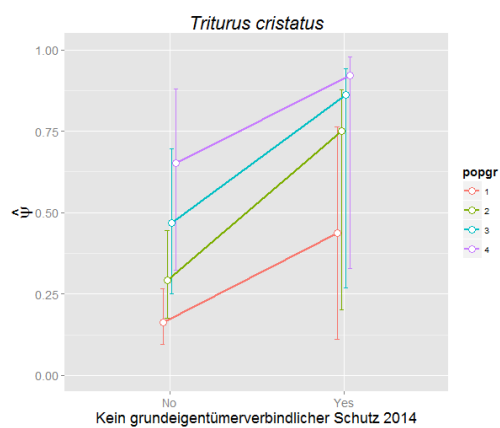
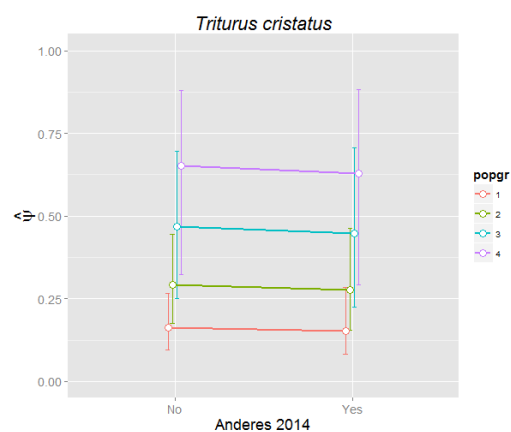
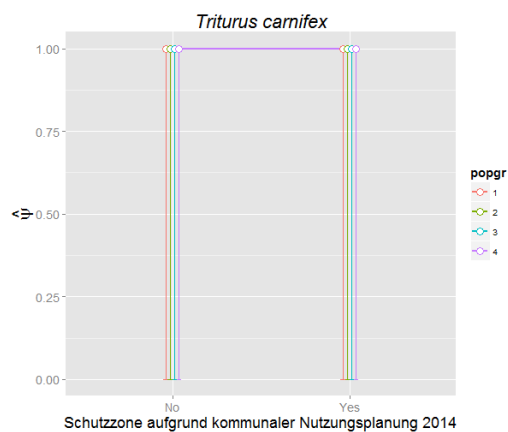
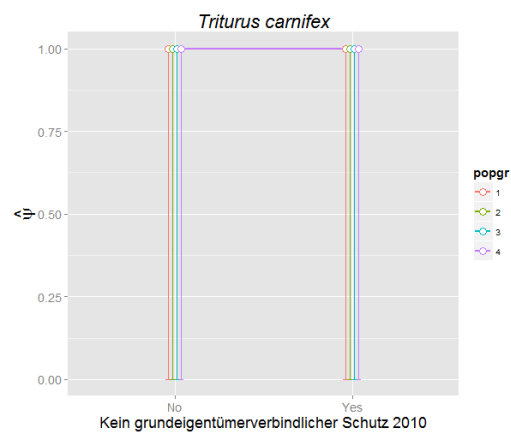
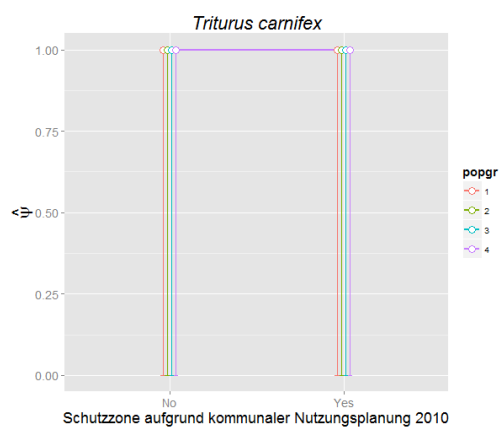
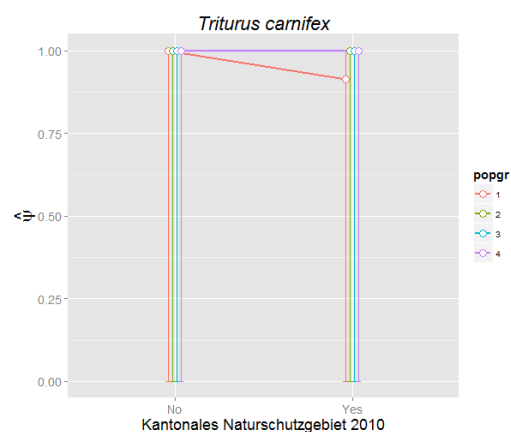
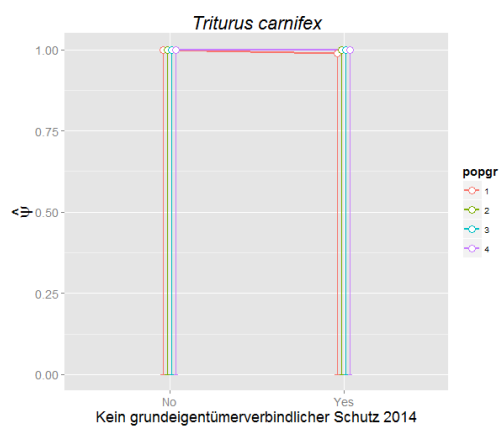
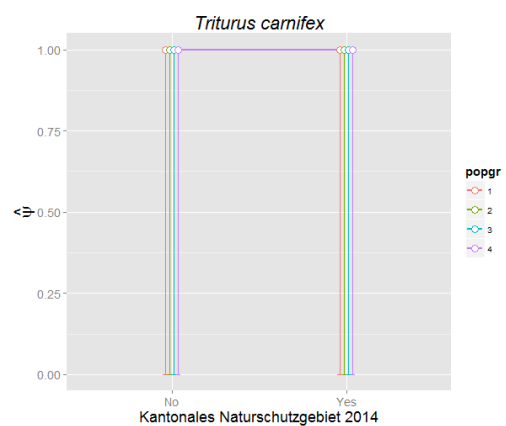


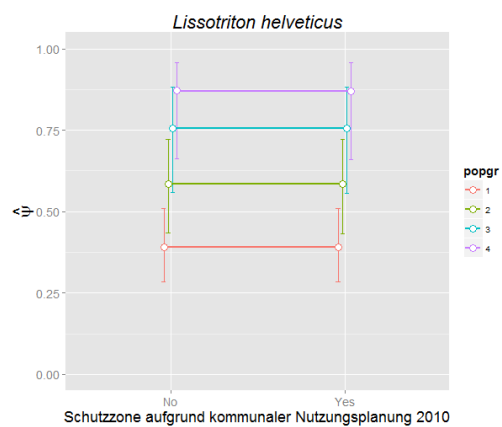
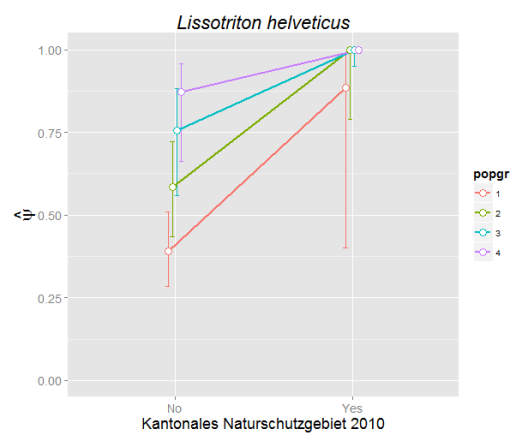
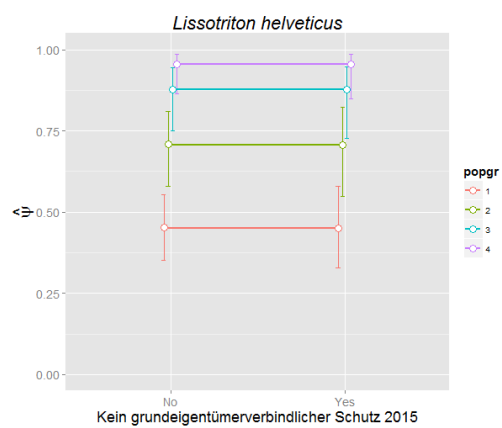
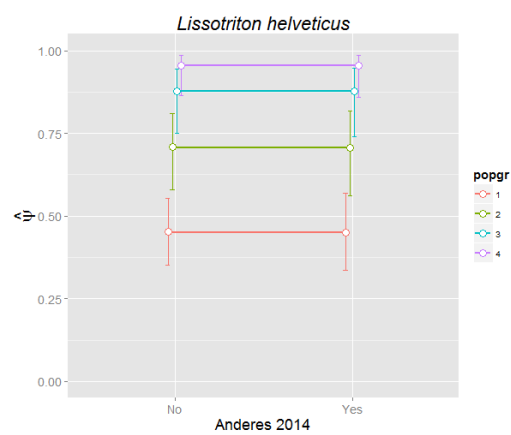
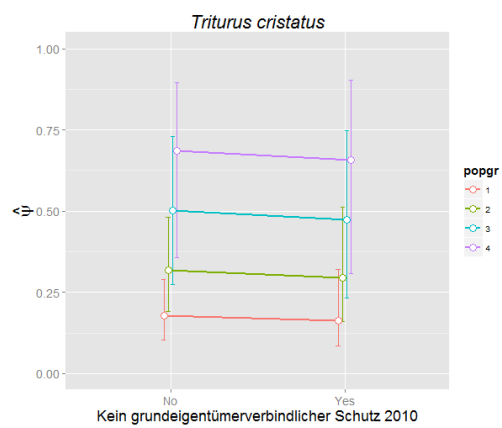
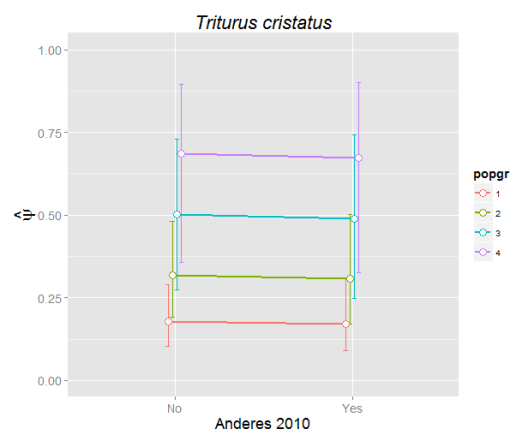
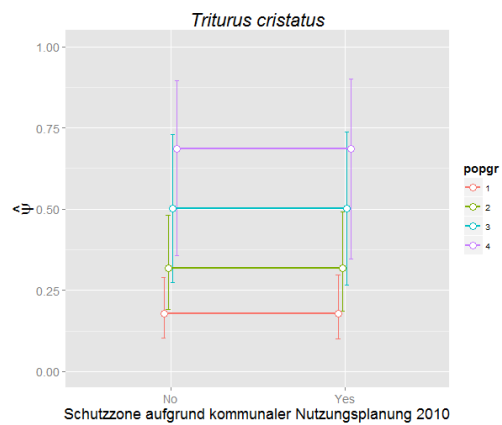
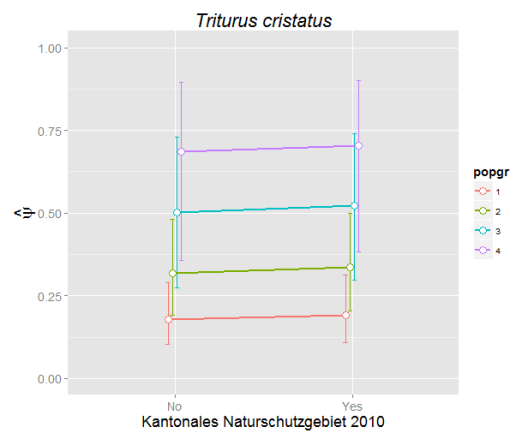


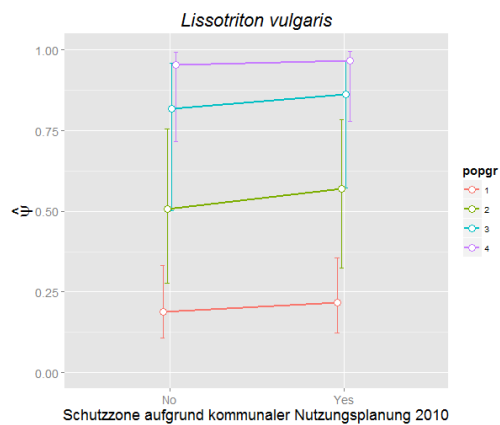
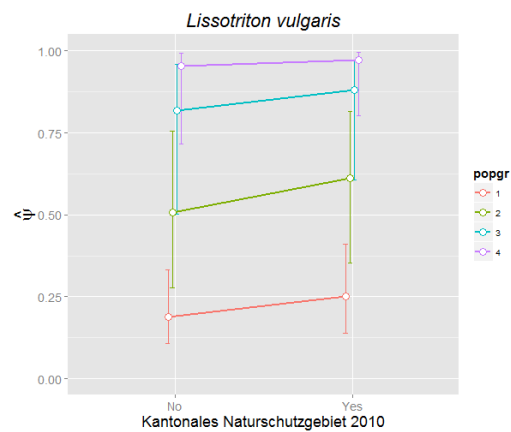
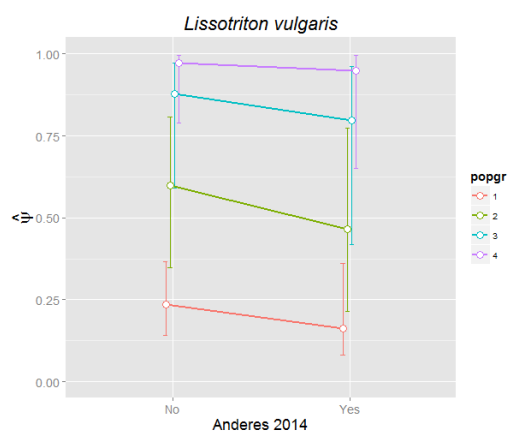
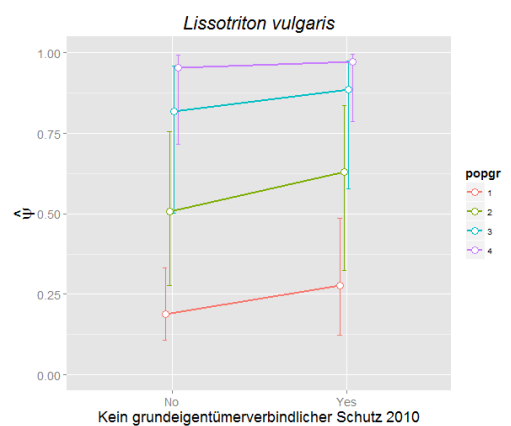
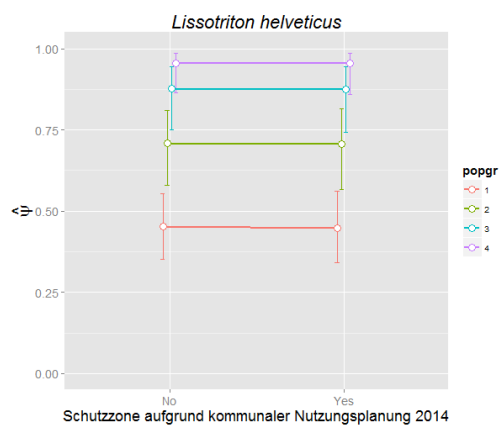
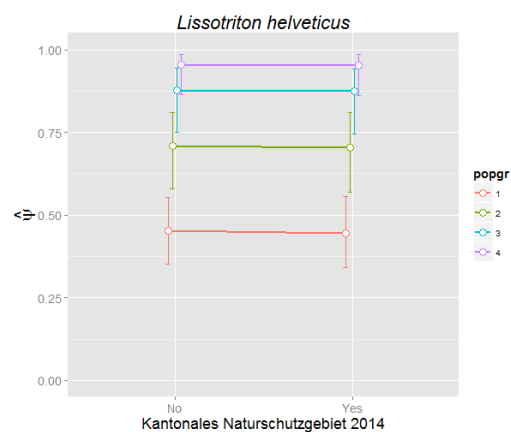
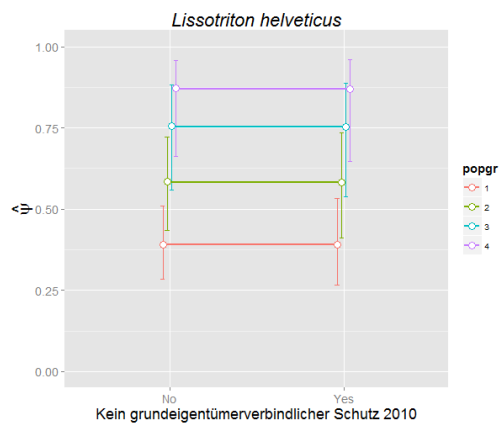
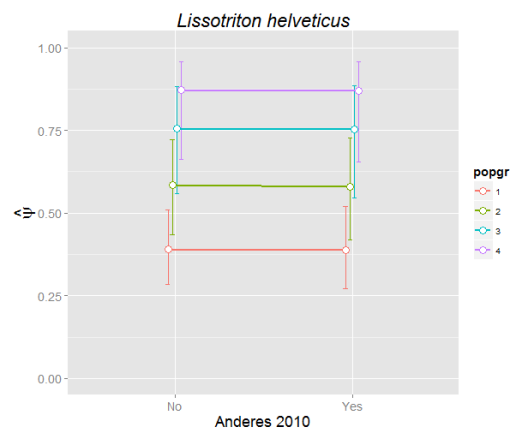






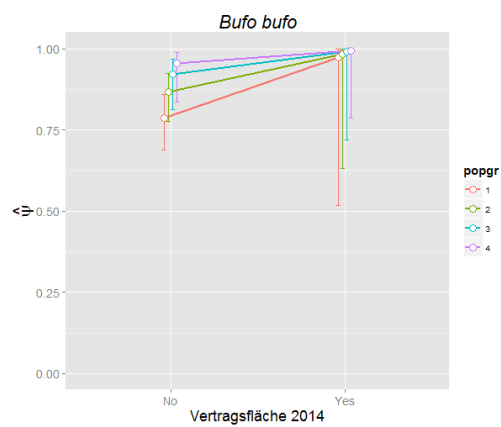
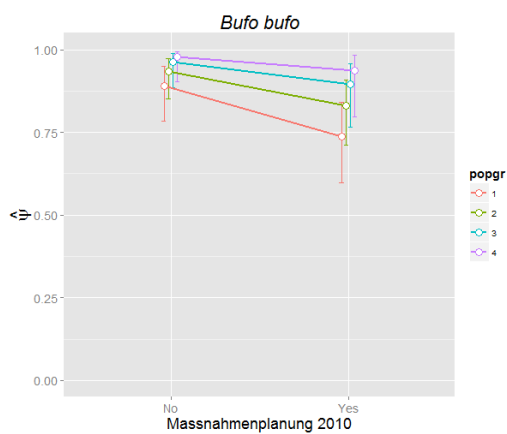
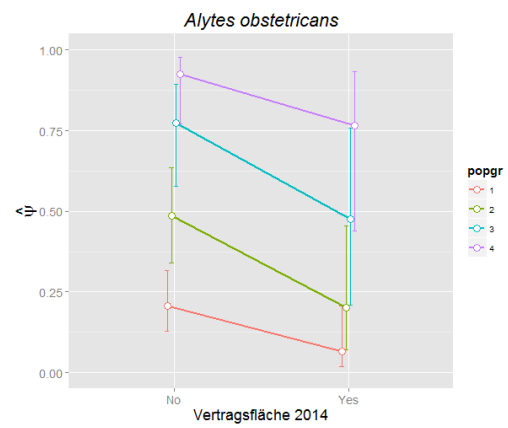
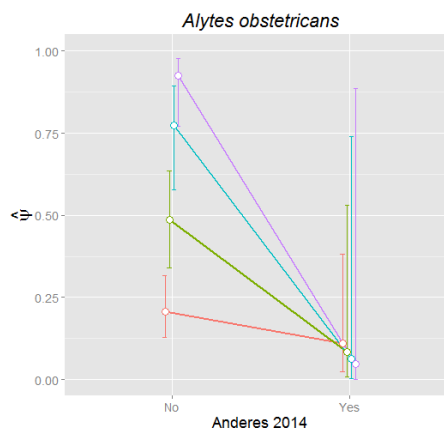
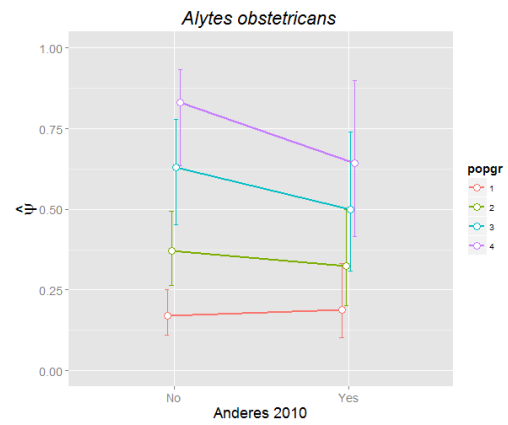
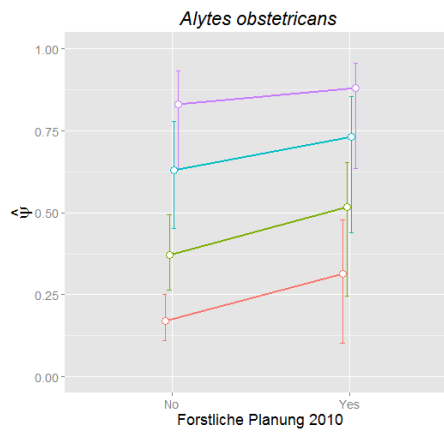
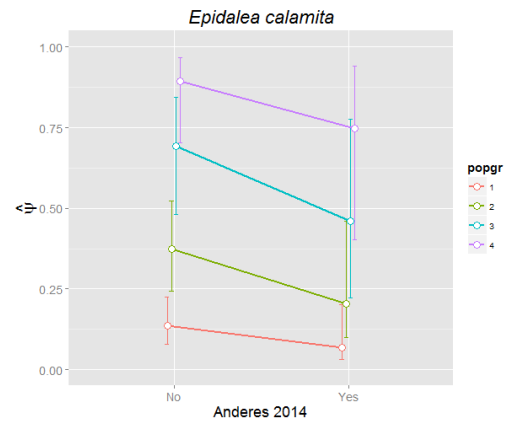
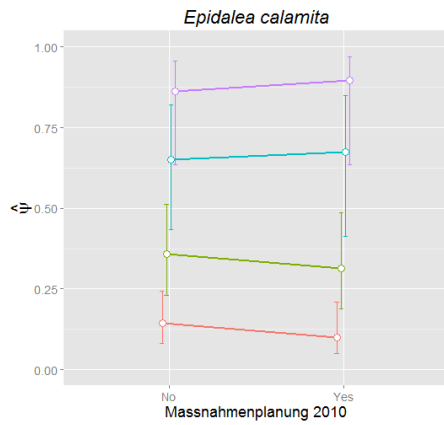


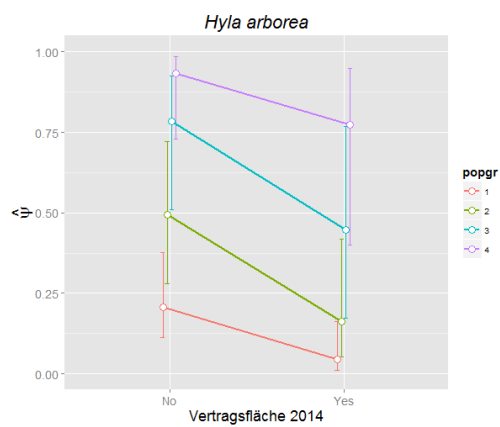
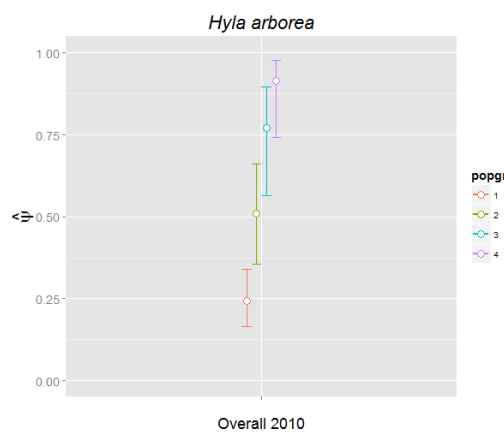
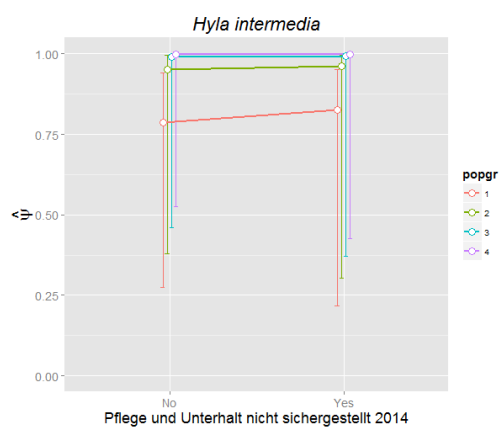
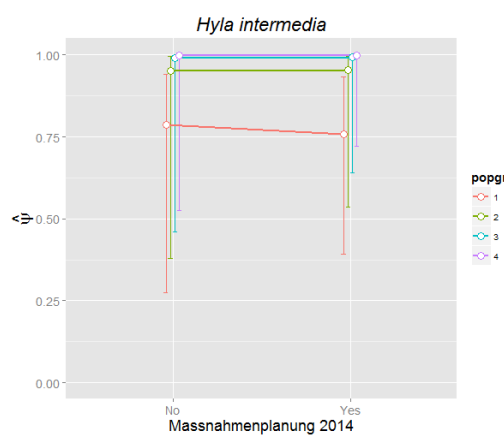
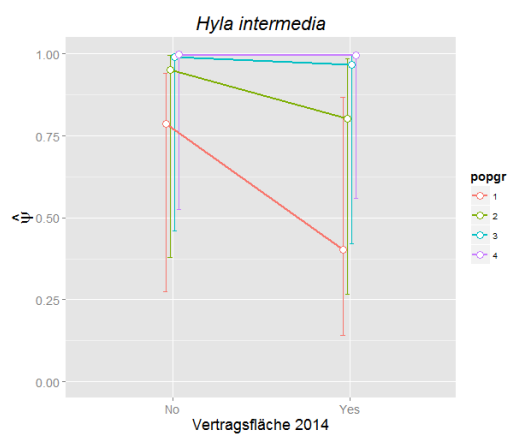
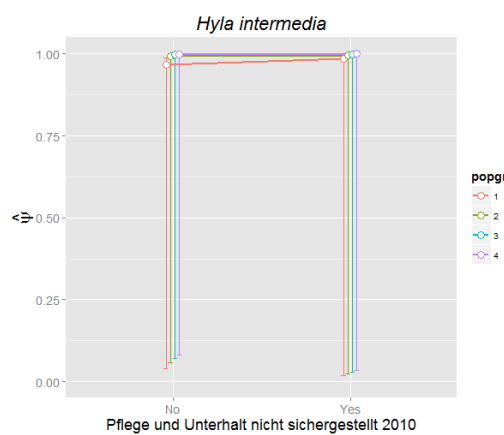
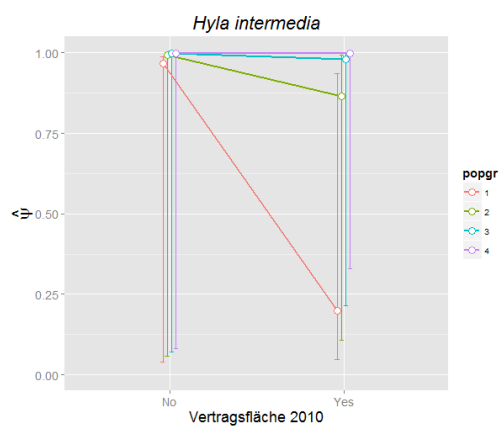
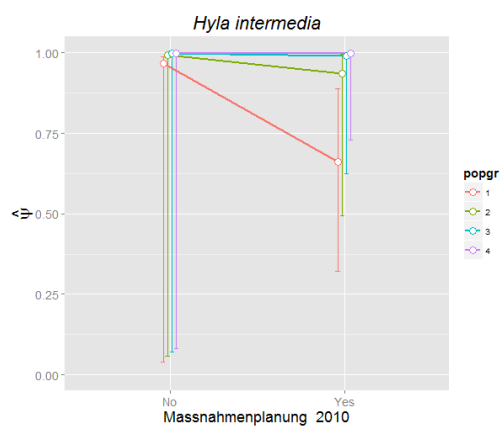


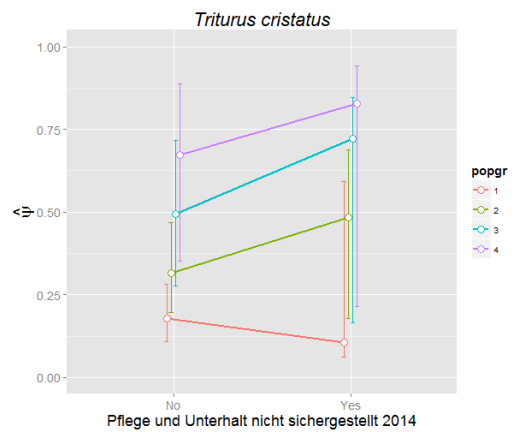
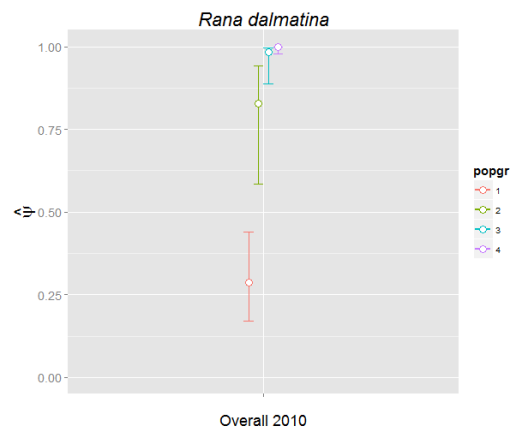
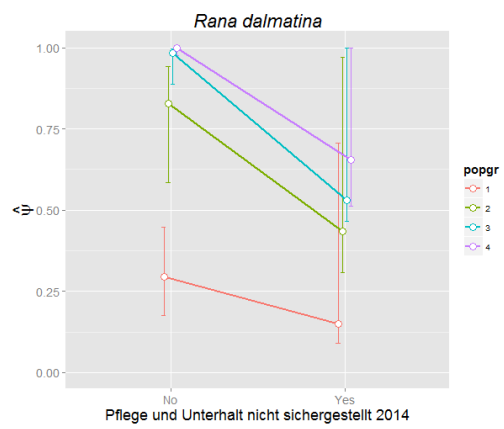
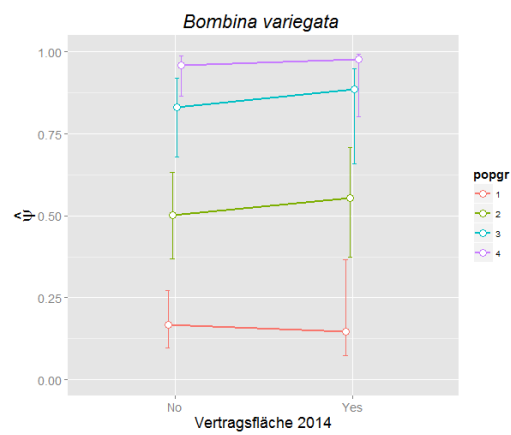
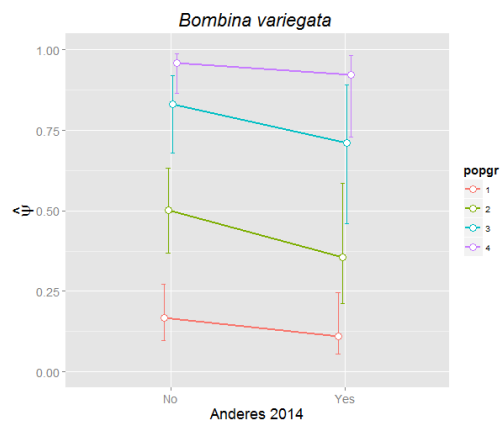
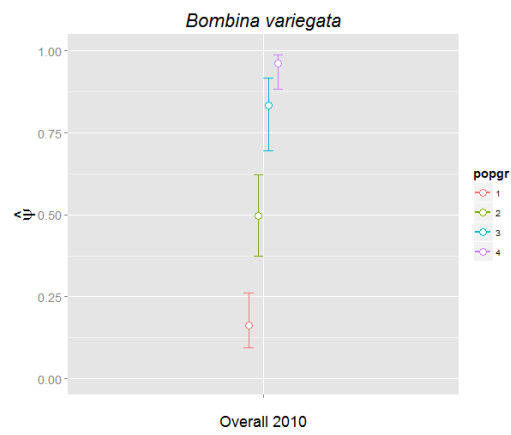
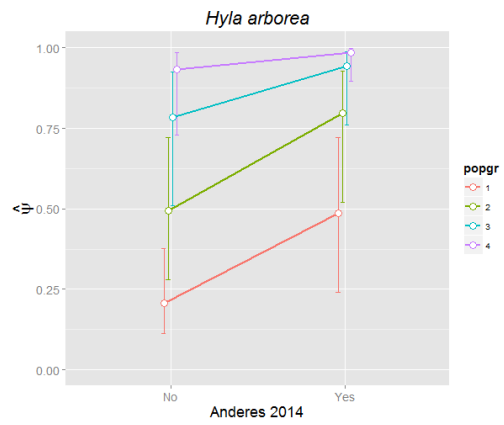
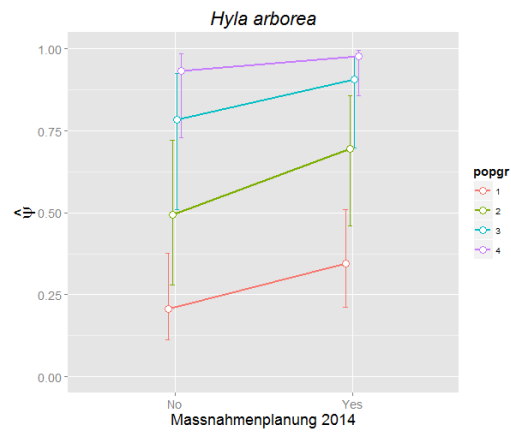


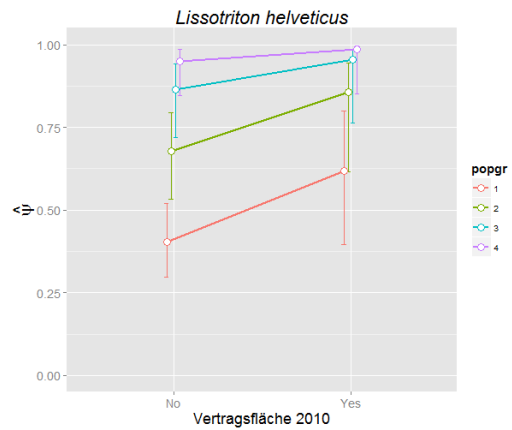
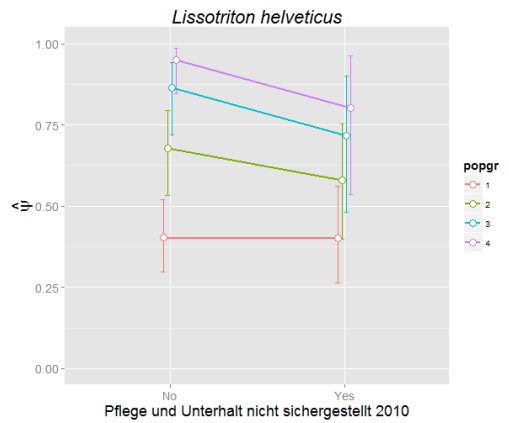
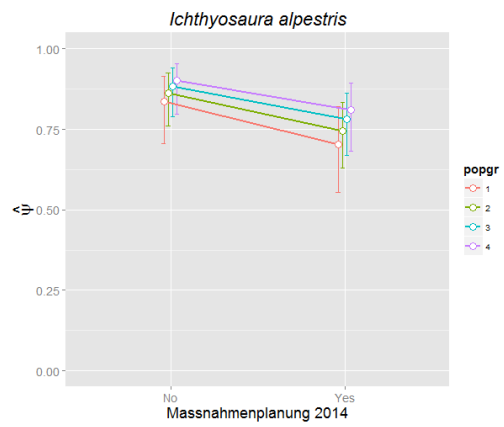
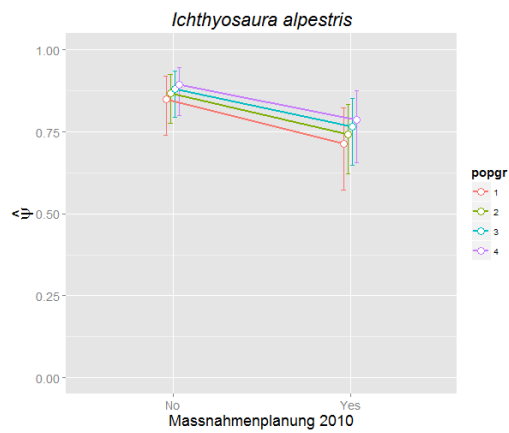
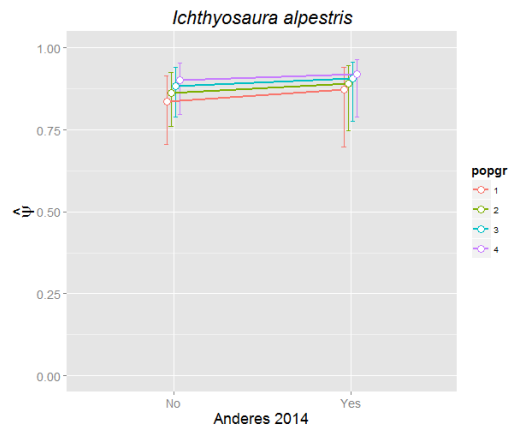
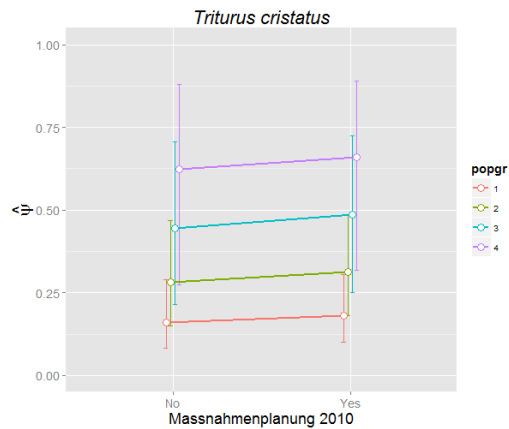
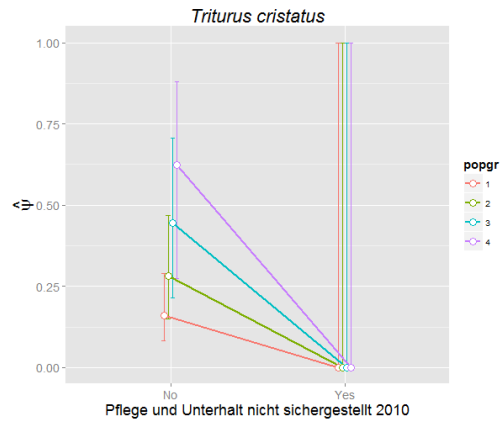
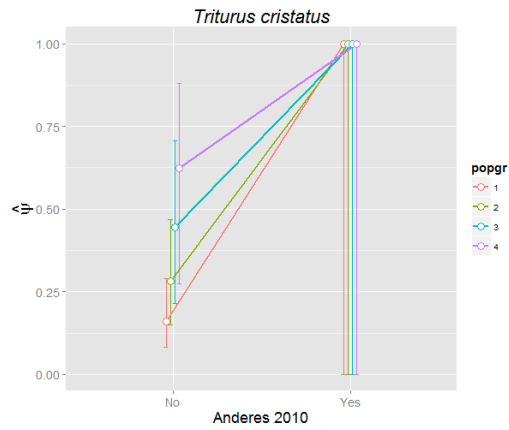


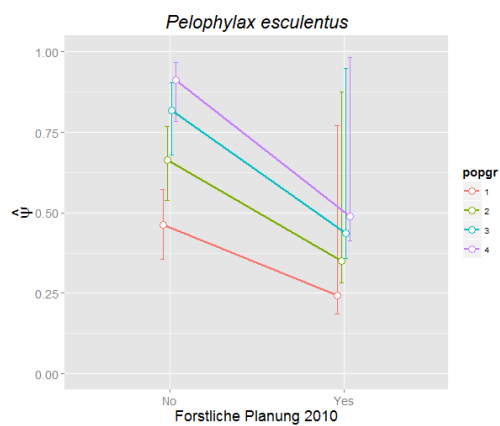
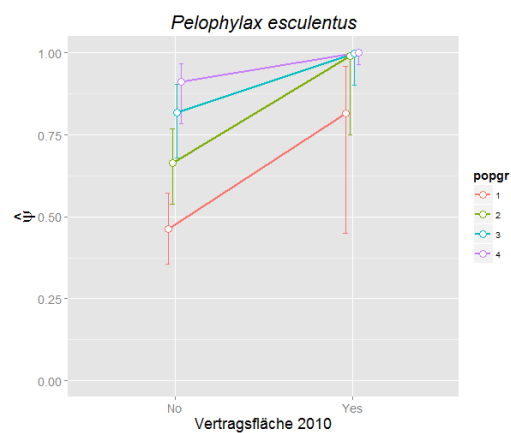
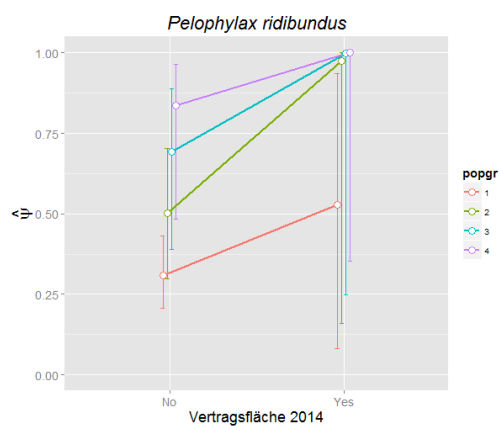
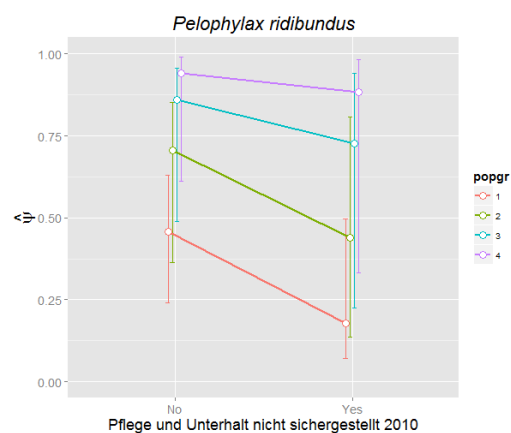
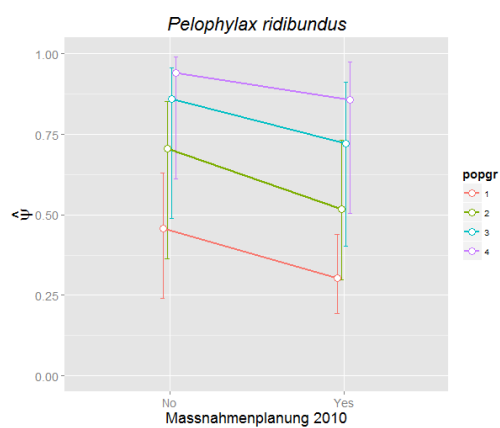
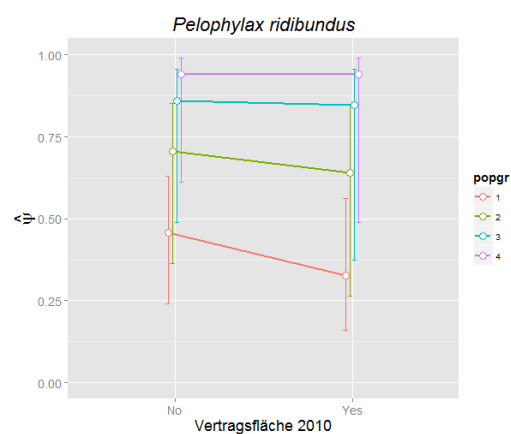
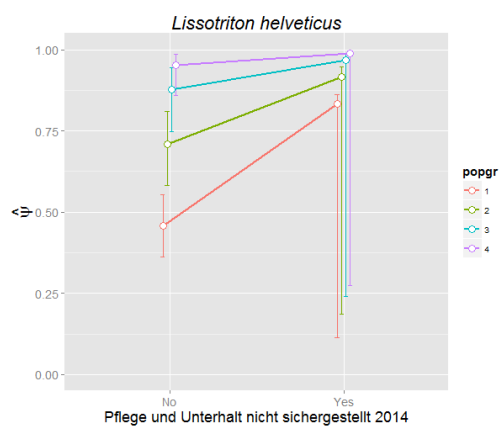
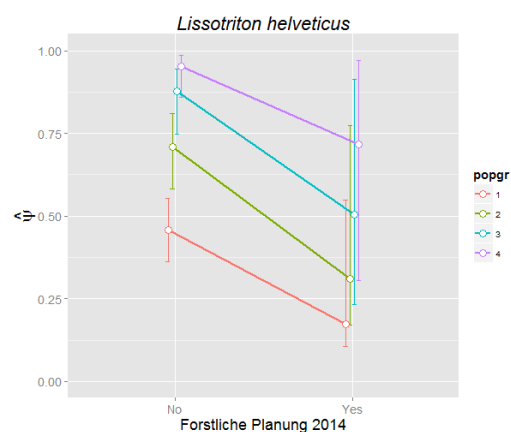
Maintenance (Pflege und Unterhalt)

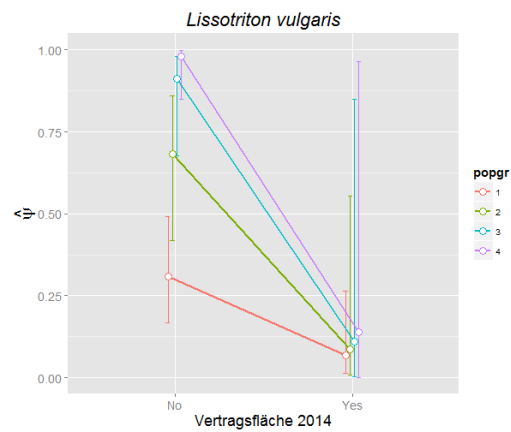
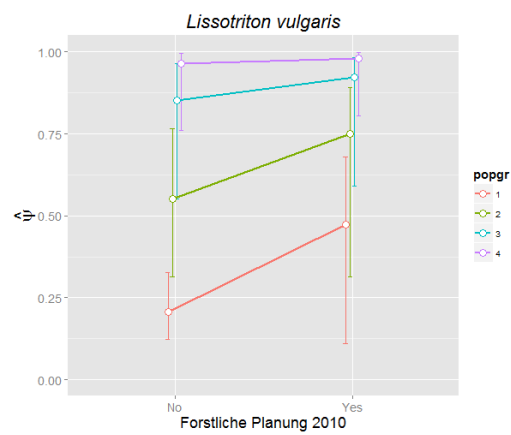
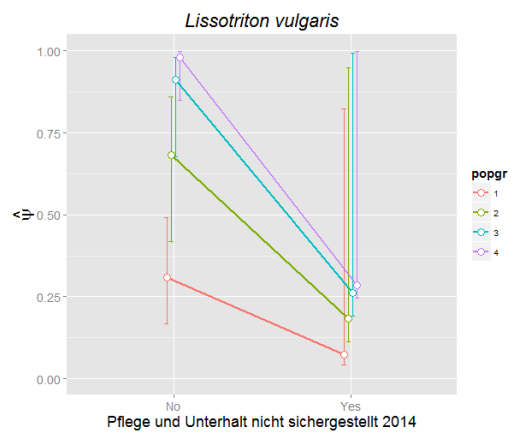
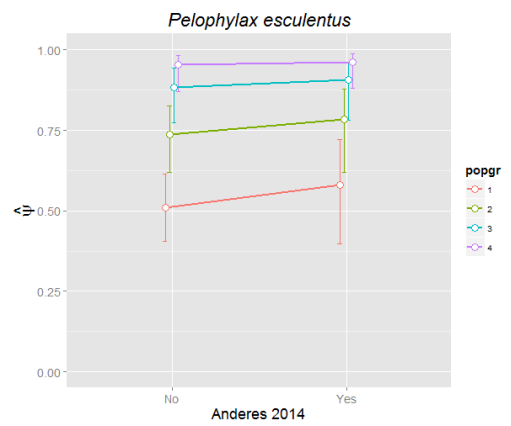
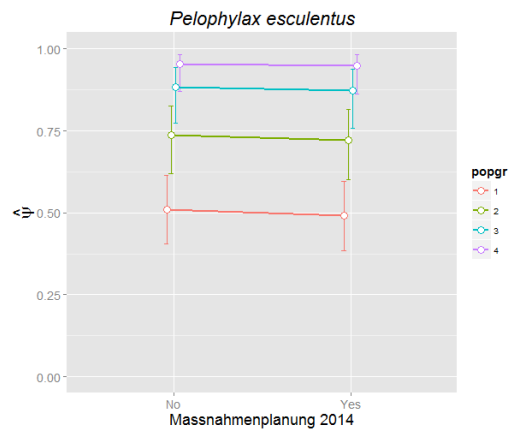
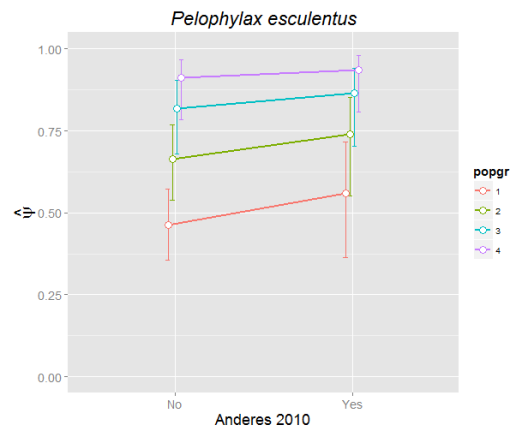


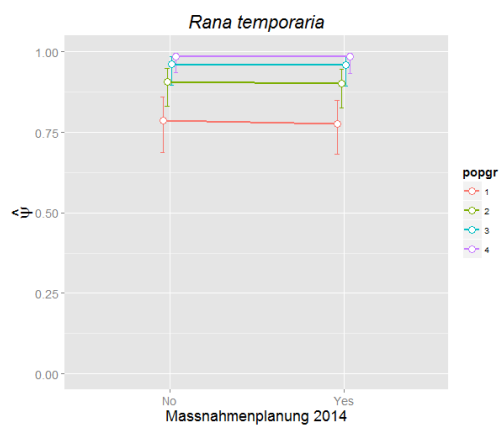
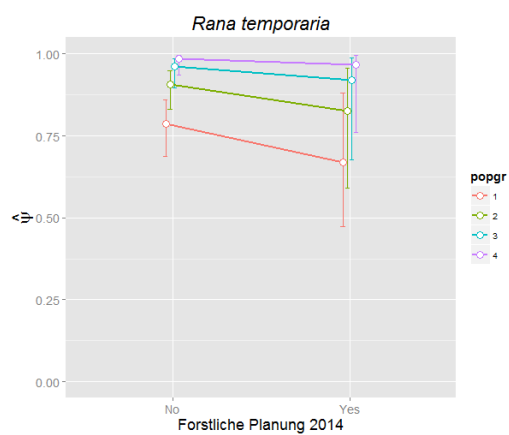
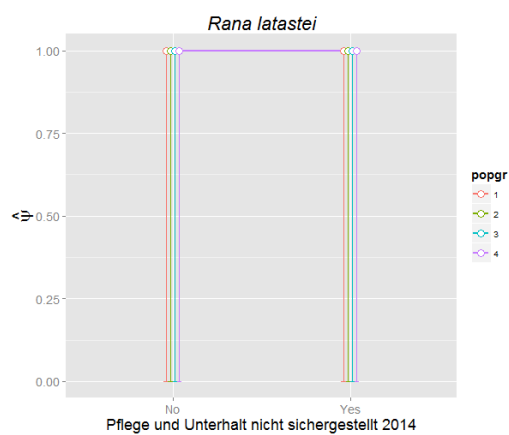
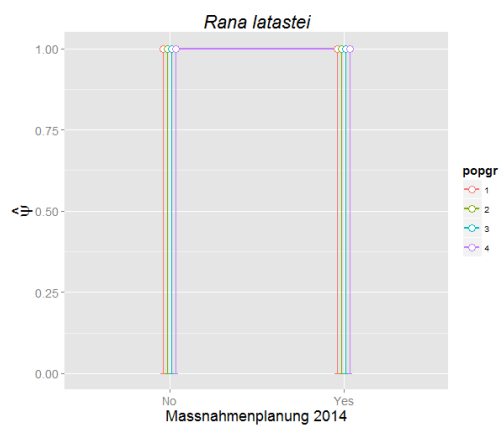
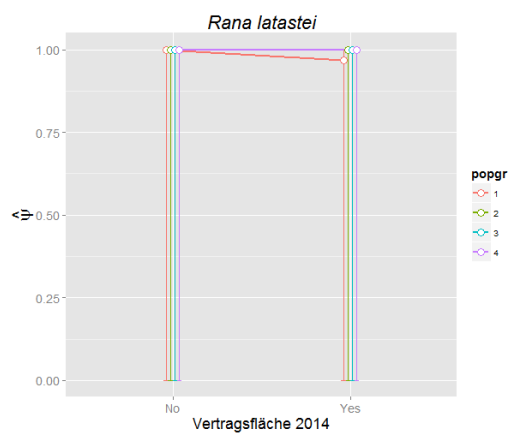
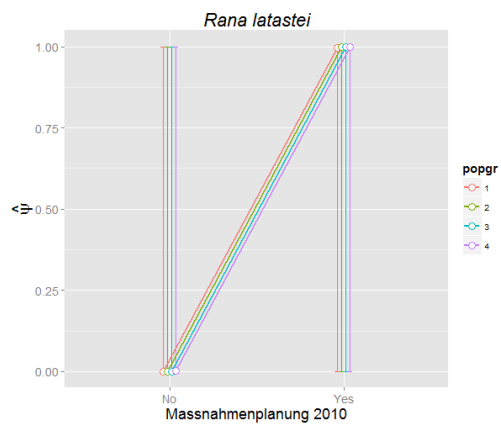
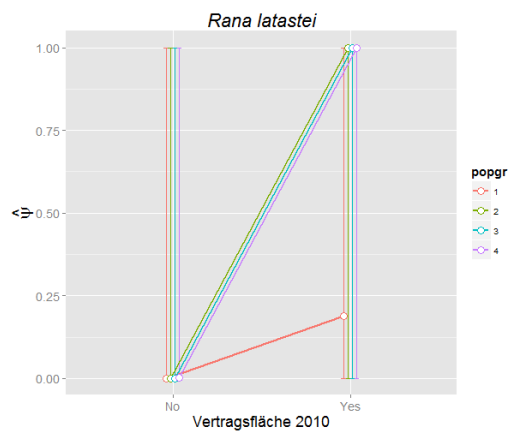


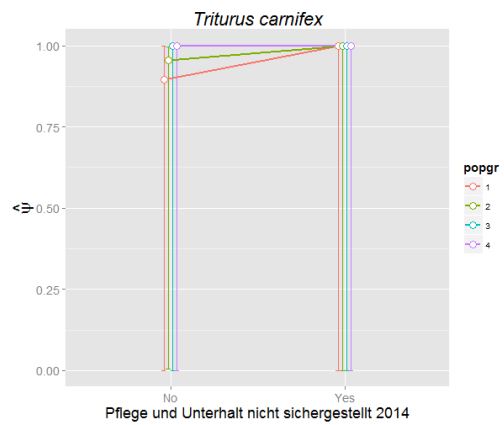
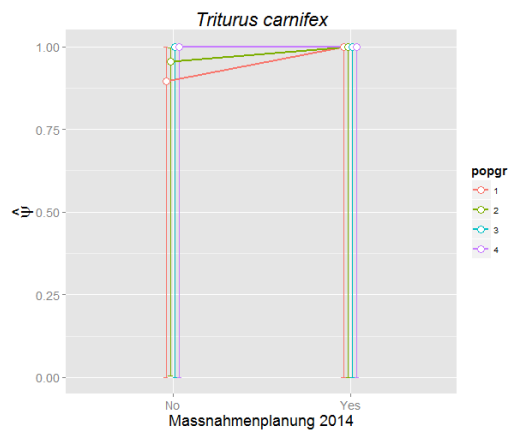
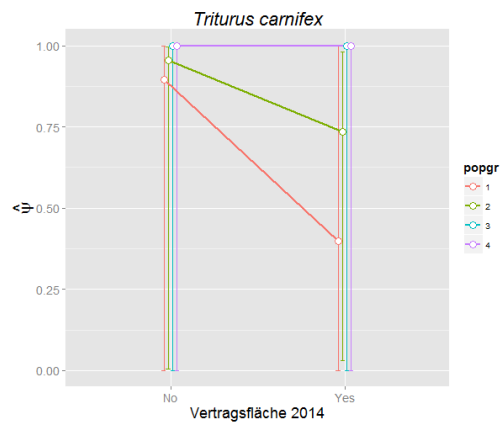
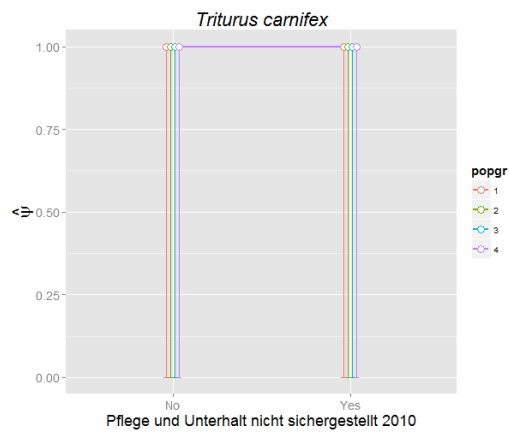
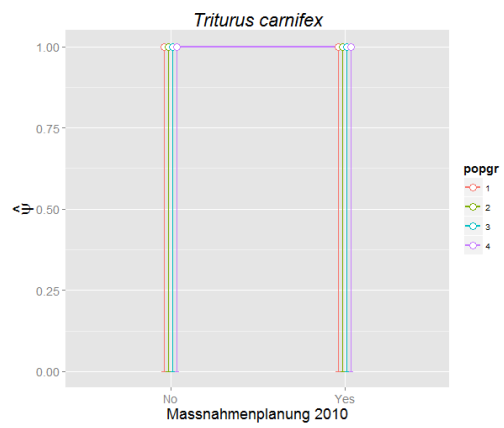
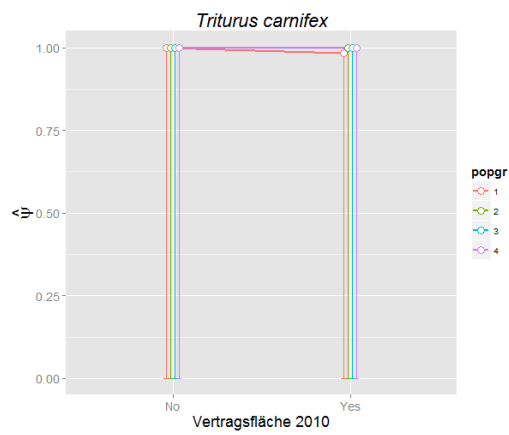
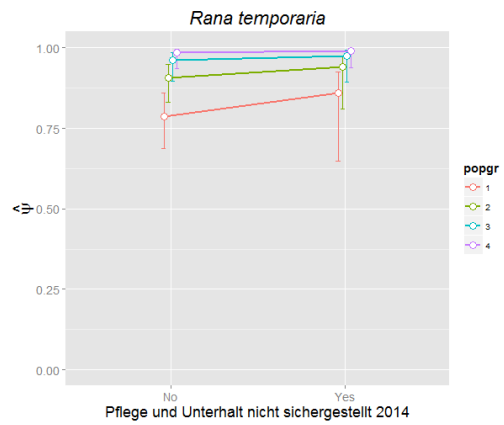
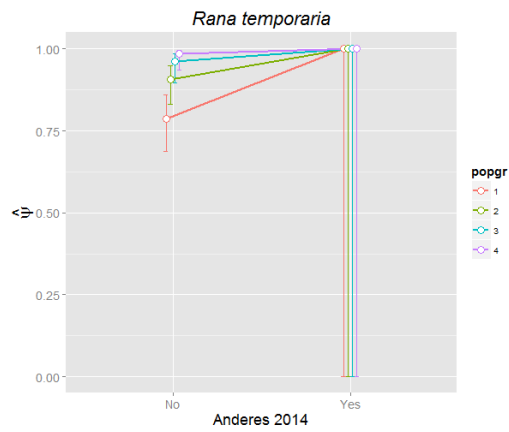




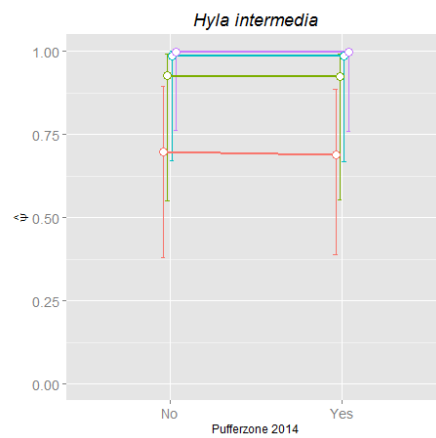
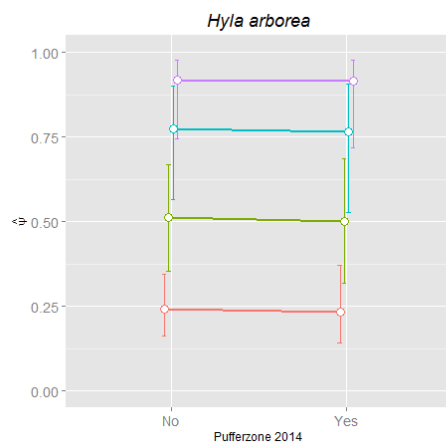
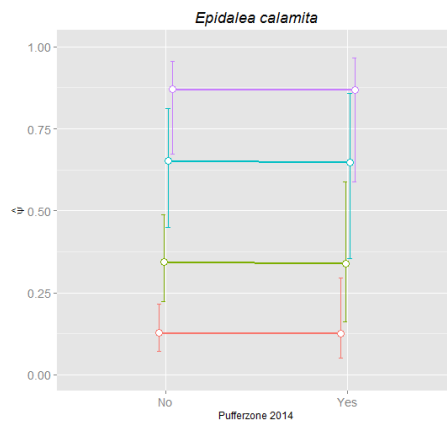
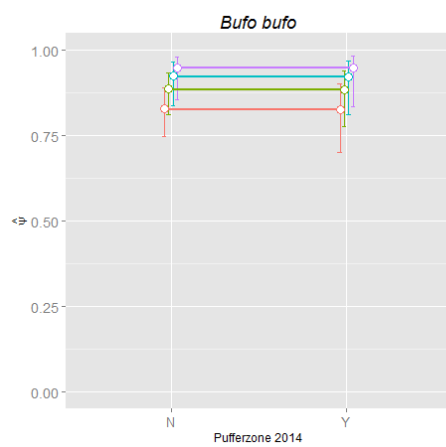
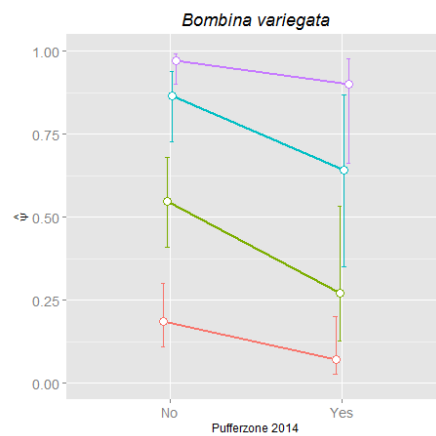
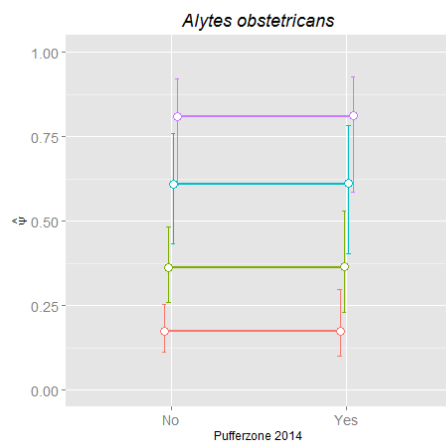


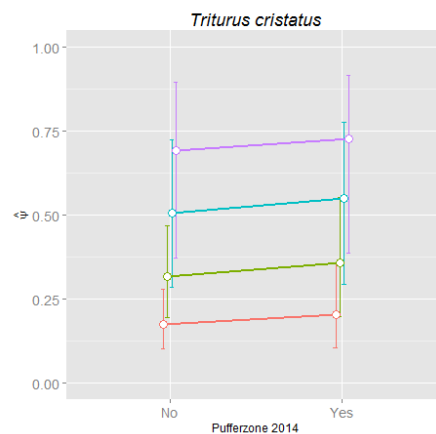
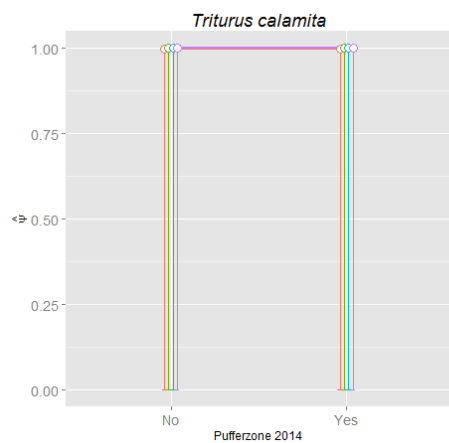
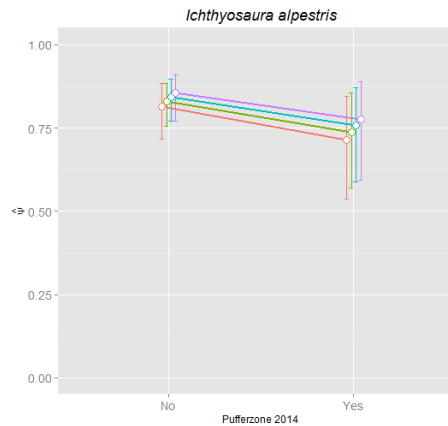
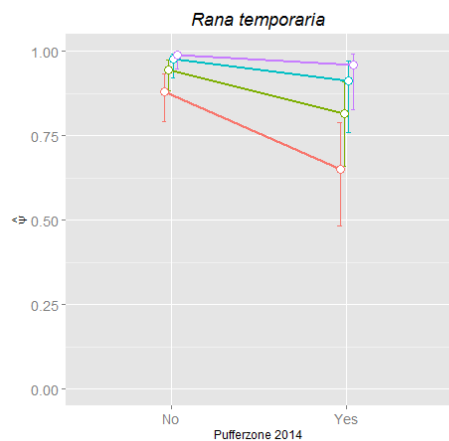
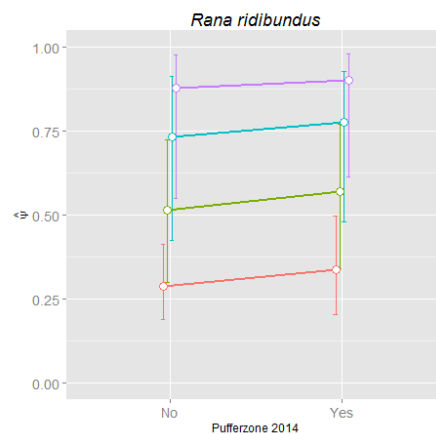
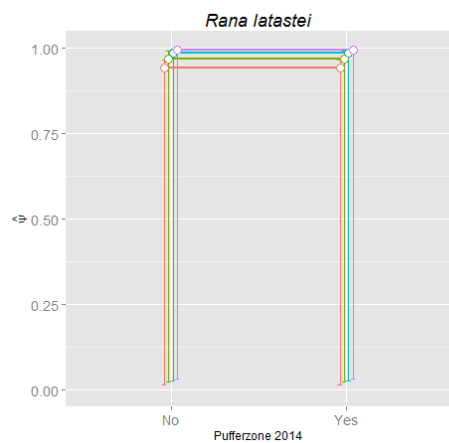
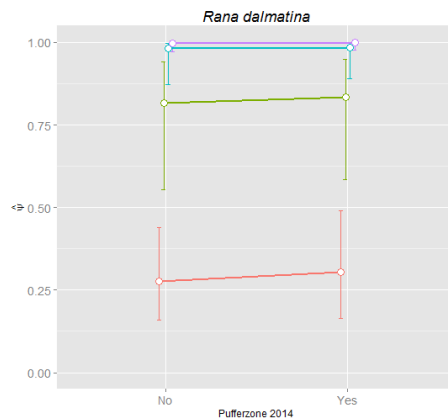
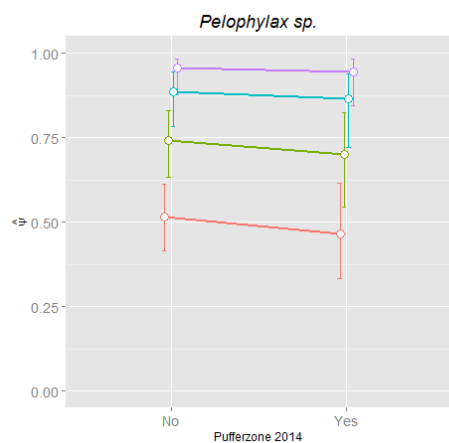


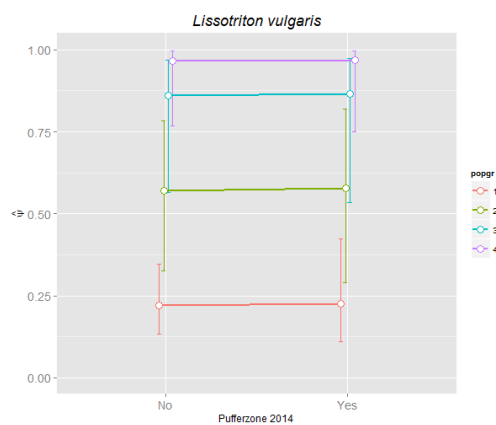
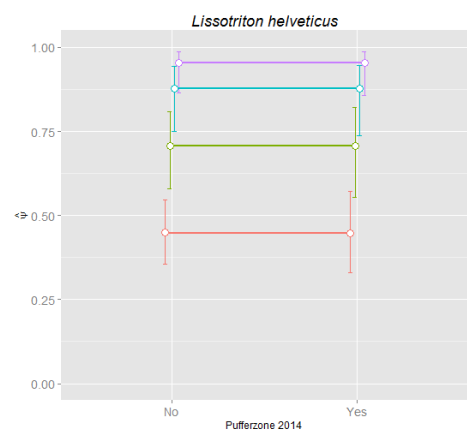




Established buffer zones







Appendix A5

Estimated persistence probabilities (“Predicted”) with standard error (SE) and 95% confidence interval (upper- lower) of each species per conservation measure and year.

Protection by owner (Grundeigentümerverbindlicher Schutz) 2010 und 2014**A. *obstretricans* 2010:**

	Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.04329863	0.03011350	0.01076975	0.1583503	0	0	0	0	0	1
2	0.04329863	0.03011350	0.01076975	0.1583503	1	0	0	0	0	1
3	0.25230720	0.06764450	0.14317840	0.4052707	0	1	0	0	0	1
4	0.04329863	0.03011350	0.01076975	0.1583503	0	0	1	0	0	1
5	0.33013565	0.09863310	0.17055023	0.5415513	0	0	0	1	0	1
6	0.04329863	0.03011350	0.01076975	0.1583503	0	0	0	0	1	1
7	0.23068512	0.08086933	0.10933387	0.4227901	0	0	0	0	0	2
8	0.23068512	0.08086933	0.10933387	0.4227901	1	0	0	0	0	2
9	0.45445263	0.10708737	0.26322554	0.6601311	0	1	0	0	0	2
10	0.23068512	0.08086933	0.10933387	0.4227901	0	0	1	0	0	2
11	0.45729714	0.12601406	0.23750275	0.6950768	0	0	0	1	0	2
12	0.23068512	0.08086933	0.10933387	0.4227901	0	0	0	0	1	2
13	0.66518273	0.14922558	0.34824591	0.8807669	0	0	0	0	0	3
14	0.66518273	0.14922558	0.34824591	0.8807669	1	0	0	0	0	3
15	0.67281681	0.14220399	0.36698830	0.8794323	0	1	0	0	0	3
16	0.66518273	0.14922558	0.34824591	0.8807669	0	0	1	0	0	3
17	0.59027792	0.17526370	0.25822176	0.8563698	0	0	0	1	0	3
18	0.66518273	0.14922558	0.34824591	0.8807669	0	0	0	0	1	3
19	0.92939287	0.07343658	0.59484389	0.9915974	0	0	0	0	0	4
20	0.92939287	0.07343658	0.59484389	0.9915974	1	0	0	0	0	4
21	0.83542879	0.12455901	0.46230694	0.9677127	0	1	0	0	0	4
22	0.92939287	0.07343658	0.59484389	0.9915974	0	0	1	0	0	4
23	0.71124891	0.20547094	0.25741789	0.9459534	0	0	0	1	0	4
24	0.92939287	0.07343658	0.59484389	0.9915974	0	0	0	0	1	4

A. *obstretricans* 2014:

	Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.21577357	0.04468297	0.140878088	0.3158477	0	0	0	0	0	1
2	0.21577357	0.04468297	0.140878088	0.3158477	1	0	0	0	0	1
3	0.21577357	0.04468297	0.140878088	0.3158477	0	1	0	0	0	1
4	0.21577357	0.04468297	0.140878088	0.3158477	0	0	1	0	0	1
5	0.08482679	0.05123685	0.024793098	0.2525762	0	0	0	1	0	1
6	0.03721404	0.04007438	0.004297838	0.2571272	0	0	0	0	1	1
7	0.45237534	0.07328470	0.316288866	0.5959755	0	0	0	0	0	2
8	0.45237534	0.07328470	0.316288866	0.5959755	1	0	0	0	0	2
9	0.45237534	0.07328470	0.316288866	0.5959755	0	1	0	0	0	2
10	0.45237534	0.07328470	0.316288866	0.5959755	0	0	1	0	0	2
11	0.21770150	0.10312661	0.078281275	0.4769435	0	0	0	1	0	2
12	0.10398088	0.10222545	0.013331041	0.4991825	0	0	0	0	1	2
13	0.71265472	0.08834551	0.515680601	0.8524418	0	0	0	0	0	3
14	0.71265472	0.08834551	0.515680601	0.8524418	1	0	0	0	0	3
15	0.71265472	0.08834551	0.515680601	0.8524418	0	1	0	0	0	3
16	0.71265472	0.08834551	0.515680601	0.8524418	0	0	1	0	0	3
17	0.45519027	0.15258315	0.200105272	0.7361774	0	0	0	1	0	3
18	0.25838791	0.21317151	0.037879685	0.7550992	0	0	0	0	1	3
19	0.88160346	0.06310962	0.694802268	0.9605601	0	0	0	0	0	4
20	0.88160346	0.06310962	0.694802268	0.9605601	1	0	0	0	0	4
21	0.88160346	0.06310962	0.694802268	0.9605601	0	1	0	0	0	4
22	0.88160346	0.06310962	0.694802268	0.9605601	0	0	1	0	0	4
23	0.71497471	0.13989954	0.395117462	0.9059527	0	0	0	1	0	4
24	0.51125461	0.29054738	0.096740455	0.9108478	0	0	0	0	1	4

B. variegata 2010:

Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.20337548	0.05435298	0.11682307	0.3300864	0	0	0	0	1
2	0.07043818	0.03840551	0.02343982	0.1930433	1	0	0	0	1
3	0.20337548	0.05435298	0.11682307	0.3300864	0	1	0	0	1
4	0.20337548	0.05435298	0.11682307	0.3300864	0	0	1	0	1
5	0.20337548	0.05435298	0.11682307	0.3300864	0	0	0	1	1
6	0.20337548	0.05435298	0.11682307	0.3300864	0	0	0	0	1
7	0.58187378	0.07586299	0.43028918	0.7194251	0	0	0	0	2
8	0.29231272	0.10151455	0.13634515	0.5193971	1	0	0	0	2
9	0.58187378	0.07586299	0.43028918	0.7194251	0	1	0	0	2
10	0.58187378	0.07586299	0.43028918	0.7194251	0	0	1	0	2
11	0.58187378	0.07586299	0.43028918	0.7194251	0	0	0	1	2
12	0.58187378	0.07586299	0.43028918	0.7194251	0	0	0	0	2
13	0.88352778	0.04910831	0.74856043	0.9508084	0	0	0	0	3
14	0.69245495	0.11337201	0.44231174	0.8647164	1	0	0	0	3
15	0.88352778	0.04910831	0.74856043	0.9508084	0	1	0	0	3
16	0.88352778	0.04910831	0.74856043	0.9508084	0	0	1	0	3
17	0.88352778	0.04910831	0.74856043	0.9508084	0	0	0	1	3
18	0.88352778	0.04910831	0.74856043	0.9508084	0	0	0	0	3
19	0.97638719	0.01636866	0.91137525	0.9940215	0	0	0	0	4
20	0.92466045	0.04785177	0.76153699	0.9792394	1	0	0	0	4
21	0.97638719	0.01636866	0.91137525	0.9940215	0	1	0	0	4
22	0.97638719	0.01636866	0.91137525	0.9940215	0	0	1	0	4
23	0.97638719	0.01636866	0.91137525	0.9940215	0	0	0	1	4
24	0.97638719	0.01636866	0.91137525	0.9940215	0	0	0	0	4

B. variegata 2014:

Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.1598063	0.04244494	0.09304213	0.2607412	0	0	0	0	1
2	0.1598063	0.04244494	0.09304213	0.2607412	1	0	0	0	1
3	0.1598063	0.04244494	0.09304213	0.2607412	0	1	0	0	1
4	0.1598063	0.04244494	0.09304213	0.2607412	0	0	1	0	1
5	0.1598063	0.04244494	0.09304213	0.2607412	0	0	0	1	1
6	0.1878981	0.08356135	0.08500426	0.3714390	0	0	0	0	1
7	0.4927883	0.06562220	0.36801351	0.6185053	0	0	0	0	2
8	0.4927883	0.06562220	0.36801351	0.6185053	1	0	0	0	2
9	0.4927883	0.06562220	0.36801351	0.6185053	0	1	0	0	2
10	0.4927883	0.06562220	0.36801351	0.6185053	0	0	1	0	2
11	0.4927883	0.06562220	0.36801351	0.6185053	0	0	0	1	2
12	0.5366832	0.11662008	0.33685565	0.7051064	0	0	0	0	2
13	0.8322920	0.05741901	0.68942884	0.9173263	0	0	0	0	3
14	0.8322920	0.05741901	0.68942884	0.9173263	1	0	0	0	3
15	0.8322920	0.05741901	0.68942884	0.9173263	0	1	0	0	3
16	0.8322920	0.05741901	0.68942884	0.9173263	0	0	1	0	3
17	0.8322920	0.05741901	0.68942884	0.9173263	0	0	0	1	3
18	0.8534384	0.06968824	0.66539535	0.9375652	0	0	0	0	3
19	0.9620542	0.02311026	0.88009171	0.9887110	0	0	0	0	4
20	0.9620542	0.02311026	0.88009171	0.9887110	1	0	0	0	4
21	0.9620542	0.02311026	0.88009171	0.9887110	0	1	0	0	4
22	0.9620542	0.02311026	0.88009171	0.9887110	0	0	1	0	4
23	0.9620542	0.02311026	0.88009171	0.9887110	0	0	0	1	4
24	0.9673149	0.02356736	0.87388495	0.9913914	0	0	0	0	4

B. bufo 2010:

Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.7991414	0.04995436	0.6932858	0.8746448	0	0	0	0	1
2	0.8157034	0.05044561	0.7051410	0.8893564	1	0	0	0	1
3	0.7826198	0.05411116	0.6690520	0.8651552	0	1	0	0	1
4	0.7991414	0.04995436	0.6932858	0.8746448	0	0	1	0	1
5	0.9853325	0.04056787	0.1901558	0.9998996	0	0	0	1	1
6	0.7991414	0.04995436	0.6932858	0.8746448	0	0	0	0	1
7	0.8664323	0.03979272	0.7746328	0.9242915	0	0	0	0	2
8	0.8781936	0.03957405	0.7842198	0.9335894	1	0	0	0	2
9	0.8544006	0.04382077	0.7537883	0.9183209	0	1	0	0	2
10	0.8664323	0.03979272	0.7746328	0.9242915	0	0	1	0	2
11	0.9909964	0.02481182	0.2776366	0.9999354	0	0	0	1	2
12	0.8664323	0.03979272	0.7746328	0.9242915	0	0	0	0	2
13	0.9136481	0.03818377	0.8081931	0.9636976	0	0	0	0	3
14	0.9215466	0.03667420	0.8179407	0.9681374	1	0	0	0	3
15	0.9053690	0.04210436	0.7898340	0.9605946	0	1	0	0	3
16	0.9136481	0.03818377	0.8081931	0.9636976	0	0	1	0	3
17	0.9944794	0.01522985	0.3714225	0.9999599	0	0	0	1	3
18	0.9136481	0.03818377	0.8081931	0.9636976	0	0	0	0	3
19	0.9452408	0.03447423	0.8267981	0.9842346	0	0	0	0	4
20	0.9503481	0.03239563	0.8367562	0.9861163	1	0	0	0	4
21	0.9397639	0.03808213	0.8100819	0.9828042	0	1	0	0	4
22	0.9452408	0.03447423	0.8267981	0.9842346	0	0	1	0	4
23	0.9966210	0.00937934	0.4592744	0.9999760	0	0	0	1	4
24	0.9452408	0.03447423	0.8267981	0.9842346	0	0	0	0	4

B. bufo 2014:

Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.7851546	0.05766688	0.6775774	0.8643928	0	0	0	0	1
2	0.8777927	0.05833268	0.7402191	0.9427135	1	0	0	0	1
3	0.7851546	0.05766688	0.6775774	0.8643928	0	1	0	0	1
4	0.7851546	0.05766688	0.6775774	0.8643928	0	0	1	0	1
5	0.8573988	0.07395572	0.6953700	0.9246032	0	0	0	1	1
6	0.7851546	0.05766688	0.6775774	0.8643928	0	0	0	0	1
7	0.8590500	0.04552739	0.7618142	0.9208806	0	0	0	0	2
8	0.9227256	0.04008489	0.8191812	0.9667366	1	0	0	0	2
9	0.8590500	0.04552739	0.7618142	0.9208806	0	1	0	0	2
10	0.8590500	0.04552739	0.7618142	0.9208806	0	0	1	0	2
11	0.9079880	0.05328738	0.7757528	0.9562938	0	0	0	1	2
12	0.8590500	0.04552739	0.7618142	0.9208806	0	0	0	0	2
13	0.9105072	0.04193750	0.7976065	0.9634153	0	0	0	0	3
14	0.9520857	0.03012129	0.8586703	0.9840901	1	0	0	0	3
15	0.9105072	0.04193750	0.7976065	0.9634153	0	1	0	0	3
16	0.9105072	0.04193750	0.7976065	0.9634153	0	0	1	0	3
17	0.9419585	0.04103648	0.8175733	0.9795181	0	0	0	1	3
18	0.9105072	0.04193750	0.7976065	0.9634153	0	0	0	0	3
19	0.9444172	0.03664680	0.8184666	0.9846661	0	0	0	0	4
20	0.9706626	0.02302847	0.8813098	0.9930609	1	0	0	0	4
21	0.9444172	0.03664680	0.8184666	0.9846661	0	1	0	0	4
22	0.9444172	0.03664680	0.8184666	0.9846661	0	0	1	0	4
23	0.9639384	0.03152952	0.8435967	0.9912047	0	0	0	1	4
24	0.9444172	0.03664680	0.8184666	0.9846661	0	0	0	0	4

***E. calamita* 2010:**

	Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.2429802888	7.788227e-02	1.228057e-01	0.4239237	0	0	0	0	0	1
2	0.0555748107	3.318419e-02	1.678351e-02	0.1686674	1	0	0	0	0	1
3	0.0001819149	5.437763e-03	6.477979e-30	1.0000000	0	1	0	0	0	1
4	0.2429802888	7.788227e-02	1.228057e-01	0.4239237	0	0	1	0	0	1
5	0.2429802888	7.788227e-02	1.228057e-01	0.4239237	0	0	0	1	0	1
6	0.2429802888	7.788227e-02	1.228057e-01	0.4239237	0	0	0	0	1	1
7	0.5133653400	1.212860e-01	2.895089e-01	0.7319363	0	0	0	0	0	2
8	0.1620107601	7.241417e-02	6.365308e-02	0.3547758	1	0	0	0	0	2
9	0.6382813514	1.749891e-01	2.854543e-01	0.8862843	0	1	0	0	0	2
10	0.5133653400	1.212860e-01	2.895089e-01	0.7319363	0	0	1	0	0	2
11	0.5133653400	1.212860e-01	2.895089e-01	0.7319363	0	0	0	1	0	2
12	0.5133653400	1.212860e-01	2.895089e-01	0.7319363	0	0	0	0	1	2
13	0.7760974668	1.135941e-01	4.907138e-01	0.9256466	0	0	0	0	0	3
14	0.3885368397	1.312057e-01	1.771574e-01	0.6522025	1	0	0	0	0	3
15	0.9999415739	1.748675e-03	5.697828e-22	1.0000000	0	1	0	0	0	3
16	0.7760974668	1.135941e-01	4.907138e-01	0.9256466	0	0	1	0	0	3
17	0.7760974668	1.135941e-01	4.907138e-01	0.9256466	0	0	0	1	0	3
18	0.7760974668	1.135941e-01	4.907138e-01	0.9256466	0	0	0	0	1	3
19	0.9192384825	6.444959e-02	6.753062e-01	0.9841512	0	0	0	0	0	4
20	0.6761761297	1.486882e-01	3.558280e-01	0.8875156	1	0	0	0	0	4
21	0.9999999940	3.604450e-07	1.958050e-43	1.0000000	0	1	0	0	0	4
22	0.9192384825	6.444959e-02	6.753062e-01	0.9841512	0	0	1	0	0	4
23	0.9192384825	6.444959e-02	6.753062e-01	0.9841512	0	0	0	1	0	4
24	0.9192384825	6.444959e-02	6.753062e-01	0.9841512	0	0	0	0	1	4

***E. calamita* 2014:**

	Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.142239041	0.076287724	0.0464504563	0.3607971	0	0	0	0	0	1
2	0.151229289	0.052612087	0.0739482044	0.2844573	1	0	0	0	0	1
3	0.142239041	0.076287724	0.0464504563	0.3607971	0	1	0	0	0	1
4	0.142239041	0.076287724	0.0464504563	0.3607971	0	0	1	0	0	1
5	0.009830236	0.012433875	0.0008113534	0.1082400	0	0	0	1	0	1
6	0.142239041	0.076287724	0.0464504563	0.3607971	0	0	0	0	1	1
7	0.687147995	0.151436199	0.3557685433	0.8972810	0	0	0	0	0	2
8	0.229407139	0.079949624	0.1092948622	0.4193700	1	0	0	0	0	2
9	0.687147995	0.151436199	0.3557685433	0.8972810	0	1	0	0	0	2
10	0.687147995	0.151436199	0.3557685433	0.8972810	0	0	1	0	0	2
11	0.116221187	0.093677583	0.0215364203	0.4399972	0	0	0	1	0	2
12	0.687147995	0.151436199	0.3557685433	0.8972810	0	0	0	0	1	2
13	0.966773019	0.036338519	0.7601372766	0.9962705	0	0	0	0	0	3
14	0.332202754	0.143001696	0.1232923070	0.6376375	1	0	0	0	0	3
15	0.966773019	0.036338519	0.7601372766	0.9962705	0	1	0	0	0	3
16	0.966773019	0.036338519	0.7601372766	0.9962705	0	0	1	0	0	3
17	0.635306256	0.195210044	0.2504448375	0.9008091	0	0	0	1	0	3
18	0.966773019	0.036338519	0.7601372766	0.9962705	0	0	0	0	1	3
19	0.997412030	0.004273813	0.9375723875	0.9998989	0	0	0	0	0	4
20	0.453931395	0.221824384	0.1258074532	0.8276225	1	0	0	0	0	4
21	0.997412030	0.004273813	0.9375723875	0.9998989	0	1	0	0	0	4
22	0.997412030	0.004273813	0.9375723875	0.9998989	0	0	1	0	0	4
23	0.958459299	0.044798315	0.7178246216	0.9952439	0	0	0	1	0	4
24	0.997412030	0.004273813	0.9375723875	0.9998989	0	0	0	0	1	4

***H. arborea* 2010:**

	Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.2481292	0.05420907	0.1646664	0.3556068	0	0	0	0	0	1
2	0.2481292	0.05420907	0.1646664	0.3556068	1	0	0	0	0	1
3	0.2101254	0.06119474	0.1295036	0.3304517	0	1	0	0	0	1
4	0.2481292	0.05420907	0.1646664	0.3556068	0	0	1	0	0	1
5	0.4038977	0.23974190	0.1463981	0.6187389	0	0	0	1	0	1
6	0.2481292	0.05420907	0.1646664	0.3556068	0	0	0	0	1	1
7	0.5023655	0.09369866	0.3443326	0.6593636	0	0	0	0	0	2
8	0.5023655	0.09369866	0.3443326	0.6593636	1	0	0	0	0	2
9	0.4464880	0.10567740	0.2820772	0.6298223	0	1	0	0	0	2
10	0.5023655	0.09369866	0.3443326	0.6593636	0	0	1	0	0	2
11	0.7223069	0.22838330	0.2909258	0.8229135	0	0	0	1	0	2
12	0.5023655	0.09369866	0.3443326	0.6593636	0	0	0	0	1	2
13	0.7536959	0.10088882	0.5378903	0.8896120	0	0	0	0	0	3
14	0.7536959	0.10088882	0.5378903	0.8896120	1	0	0	0	0	3
15	0.7098128	0.11782493	0.4670872	0.8741455	0	1	0	0	0	3
16	0.7536959	0.10088882	0.5378903	0.8896120	0	0	1	0	0	3
17	0.8780844	0.12203632	0.4360229	0.9475285	0	0	0	1	0	3
18	0.7536959	0.10088882	0.5378903	0.8896120	0	0	0	0	1	3
19	0.9021224	0.06568090	0.7071514	0.9726089	0	0	0	0	0	4
20	0.9021224	0.06568090	0.7071514	0.9726089	1	0	0	0	0	4
21	0.8815067	0.07852781	0.6491958	0.9679858	0	1	0	0	0	4
22	0.9021224	0.06568090	0.7071514	0.9726089	0	0	1	0	0	4
23	0.9559629	0.05258200	0.5600426	0.9879599	0	0	0	1	0	4
24	0.9021224	0.06568090	0.7071514	0.9726089	0	0	0	0	1	4

***H. arborea* 2014:**

	Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.2351447	0.04592133	0.1582538	0.3346519	0	0	0	0	0	1
2	0.2351447	0.04592133	0.1582538	0.3346519	1	0	0	0	0	1
3	0.2351447	0.04592133	0.1582538	0.3346519	0	1	0	0	0	1
4	0.2351447	0.04592133	0.1582538	0.3346519	0	0	1	0	0	1
5	0.2351447	0.04592133	0.1582538	0.3346519	0	0	0	1	0	1
6	0.2896028	0.10368535	0.1626602	0.4503253	0	0	0	0	1	1
7	0.5023788	0.08225077	0.3477905	0.6565401	0	0	0	0	0	2
8	0.5023788	0.08225077	0.3477905	0.6565401	1	0	0	0	0	2
9	0.5023788	0.08225077	0.3477905	0.6565401	0	1	0	0	0	2
10	0.5023788	0.08225077	0.3477905	0.6565401	0	0	1	0	0	2
11	0.5023788	0.08225077	0.3477905	0.6565401	0	0	0	1	0	2
12	0.5645640	0.12660342	0.3569262	0.7349308	0	0	0	0	1	2
13	0.7682445	0.08762710	0.5594156	0.8964073	0	0	0	0	0	3
14	0.7682445	0.08762710	0.5594156	0.8964073	1	0	0	0	0	3
15	0.7682445	0.08762710	0.5594156	0.8964073	0	1	0	0	0	3
16	0.7682445	0.08762710	0.5594156	0.8964073	0	0	1	0	0	3
17	0.7682445	0.08762710	0.5594156	0.8964073	0	0	0	1	0	3
18	0.8060804	0.09788669	0.5766727	0.9221047	0	0	0	0	1	3
19	0.9158561	0.05268101	0.7411742	0.9763939	0	0	0	0	0	4
20	0.9158561	0.05268101	0.7411742	0.9763939	1	0	0	0	0	4
21	0.9158561	0.05268101	0.7411742	0.9763939	0	1	0	0	0	4
22	0.9158561	0.05268101	0.7411742	0.9763939	0	0	1	0	0	4
23	0.9158561	0.05268101	0.7411742	0.9763939	0	0	0	1	0	4
24	0.9310431	0.05086137	0.7589612	0.9822864	0	0	0	0	1	4

H. intermedia 2010:

	Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.7436598	0.146182763	0.4007277	0.9169075	0	0	0	0	0	1
2	0.7322286	0.163089056	0.3747420	0.9195750	1	0	0	0	0	1
3	0.7142567	0.137650681	0.4058676	0.9013127	0	1	0	0	0	1
4	0.7436598	0.146182763	0.4007277	0.9169075	0	0	1	0	0	1
5	0.7436598	0.146182763	0.4007277	0.9169075	0	0	0	1	0	1
6	0.4577102	0.301308305	0.1896827	0.8523426	0	0	0	0	1	1
7	0.9429454	0.068298026	0.5879613	0.9944837	0	0	0	0	0	2
8	0.9394087	0.072059621	0.5831949	0.9940616	1	0	0	0	0	2
9	0.9346095	0.074363884	0.5738676	0.9933596	0	1	0	0	0	2
10	0.9429454	0.068298026	0.5879613	0.9944837	0	0	1	0	0	2
11	0.9429454	0.068298026	0.5879613	0.9944837	0	0	0	1	0	2
12	0.7862783	0.256218057	0.3057076	0.9796791	0	0	0	0	1	2
13	0.9896041	0.019325947	0.7120378	0.9997127	0	0	0	0	0	3
14	0.9889527	0.020118803	0.7214150	0.9996784	1	0	0	0	0	3
15	0.9878989	0.022030470	0.6903084	0.9996515	0	1	0	0	0	3
16	0.9896041	0.019325947	0.7120378	0.9997127	0	0	1	0	0	3
17	0.9896041	0.019325947	0.7120378	0.9997127	0	0	0	1	0	3
18	0.9504391	0.091518045	0.4429994	0.9982539	0	0	0	0	1	3
19	0.9981810	0.004565936	0.7984582	0.9999856	0	0	0	0	0	4
20	0.9980732	0.004745144	0.8127080	0.9999840	1	0	0	0	0	4
21	0.9978567	0.005321463	0.7778198	0.9999824	0	1	0	0	0	4
22	0.9981810	0.004565936	0.7984582	0.9999856	0	0	1	0	0	4
23	0.9981810	0.004565936	0.7984582	0.9999856	0	0	0	1	0	4
24	0.9907961	0.022172423	0.5839678	0.9998831	0	0	0	0	1	4

H. intermedia 2014:

	Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.6977452	0.144769971	0.3772803	0.8971628	0	0	0	0	0	1
2	0.6863285	0.155094913	0.3547106	0.8974525	1	0	0	0	0	1
3	0.6984452	0.138127743	0.3907781	0.8927836	0	1	0	0	0	1
4	0.6977452	0.144769971	0.3772803	0.8971628	0	0	1	0	0	1
5	0.6977452	0.144769971	0.3772803	0.8971628	0	0	0	1	0	1
6	0.6767149	0.198821566	0.3219259	0.9100248	0	0	0	0	1	1
7	0.9288763	0.080860597	0.5426986	0.9930131	0	0	0	0	0	2
8	0.9251946	0.085349918	0.5276555	0.9927357	1	0	0	0	0	2
9	0.9291003	0.079127855	0.5541380	0.9927565	0	1	0	0	0	2
10	0.9288763	0.080860597	0.5426986	0.9930131	0	0	1	0	0	2
11	0.9288763	0.080860597	0.5426986	0.9930131	0	0	0	1	0	2
12	0.9214647	0.100840792	0.4790579	0.9935625	0	0	0	0	1	2
13	0.9866442	0.024433916	0.6605708	0.9996388	0	0	0	0	0	3
14	0.9859161	0.025715779	0.6512839	0.9996175	1	0	0	0	0	3
15	0.9866895	0.024119202	0.6688514	0.9996280	0	1	0	0	0	3
16	0.9866442	0.024433916	0.6605708	0.9996388	0	0	1	0	0	3
17	0.9866442	0.024433916	0.6605708	0.9996388	0	0	0	1	0	3
18	0.9851643	0.028499195	0.6107355	0.9996452	0	0	0	0	1	3
19	0.9976121	0.005975832	0.7527840	0.9999823	0	0	0	0	0	4
20	0.9974827	0.006280049	0.7469273	0.9999811	1	0	0	0	0	4
21	0.9976204	0.005919829	0.7586095	0.9999818	0	1	0	0	0	4
22	0.9976121	0.005975832	0.7527840	0.9999823	0	0	1	0	0	4
23	0.9976121	0.005975832	0.7527840	0.9999823	0	0	0	1	0	4
24	0.9973524	0.006737501	0.7227644	0.9999815	0	0	0	0	1	4

***I. alpestris* 2010:**

	Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.8260364	0.09446060	0.7054882	0.8958055	0	0	0	0	0	1
2	0.6856371	0.11935054	0.5274996	0.8168368	1	0	0	0	0	1
3	0.7574063	0.06877848	0.6150712	0.8575804	0	1	0	0	0	1
4	0.8260364	0.09446060	0.7054882	0.8958055	0	0	1	0	0	1
5	0.9444130	0.04704473	0.7496441	0.9877056	0	0	0	1	0	1
6	0.8260364	0.09446060	0.7054882	0.8958055	0	0	0	0	1	1
7	0.8418318	0.07930979	0.7486699	0.8982092	0	0	0	0	0	2
8	0.7593215	0.05760218	0.6500840	0.8428638	1	0	0	0	0	2
9	0.7744595	0.04817371	0.6706040	0.8522530	0	1	0	0	0	2
10	0.8418318	0.07930979	0.7486699	0.8982092	0	0	1	0	0	2
11	0.9485713	0.04141453	0.7804503	0.9867597	0	0	0	1	0	2
12	0.8418318	0.07930979	0.7486699	0.8982092	0	0	0	0	1	2
13	0.8556005	0.07096205	0.7623541	0.9105170	0	0	0	0	0	3
14	0.8165871	0.04911803	0.7072328	0.8886388	1	0	0	0	0	3
15	0.7894748	0.05189759	0.6821452	0.8672591	0	1	0	0	0	3
16	0.8556005	0.07096205	0.7623541	0.9105170	0	0	1	0	0	3
17	0.9519804	0.03945578	0.7946704	0.9874765	0	0	0	1	0	3
18	0.8556005	0.07096205	0.7623541	0.9105170	0	0	0	0	1	3
19	0.8673646	0.06999807	0.7540241	0.9258848	0	0	0	0	0	4
20	0.8566054	0.06607760	0.7242366	0.9229434	1	0	0	0	0	4
21	0.8024740	0.06935547	0.6594432	0.8931825	0	1	0	0	0	4
22	0.8673646	0.06999807	0.7540241	0.9258848	0	0	1	0	0	4
23	0.9547875	0.04033095	0.7940790	0.9896385	0	0	0	1	0	4
24	0.8673646	0.06999807	0.7540241	0.9258848	0	0	0	0	1	4

***I. alpestris* 2014:**

	Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.7380889	1.150139e-01	5.637144e-01	0.8523590	0	0	0	0	0	1
2	0.6564677	8.733229e-02	4.845746e-01	0.7959619	1	0	0	0	0	1
3	0.6606728	8.628625e-02	4.880928e-01	0.7994953	0	1	0	0	0	1
4	0.7380889	1.150139e-01	5.637144e-01	0.8523590	0	0	1	0	0	1
5	0.8229162	9.695804e-02	6.132091e-01	0.9236744	0	0	0	1	0	1
6	1.0000000	4.471865e-08	2.316556e-29	1.0000000	0	0	0	0	1	1
7	0.8113257	8.080804e-02	6.979384e-01	0.8806591	0	0	0	0	0	2
8	0.7476666	5.501000e-02	6.362306e-01	0.8338080	1	0	0	0	0	2
9	0.7512364	5.422514e-02	6.385733e-01	0.8373737	0	1	0	0	0	2
10	0.8113257	8.080804e-02	6.979384e-01	0.8806591	0	0	1	0	0	2
11	0.8761620	7.089581e-02	7.230143e-01	0.9419417	0	0	0	1	0	2
12	0.9999994	1.983172e-05	6.521502e-20	1.0000000	0	0	0	0	1	2
13	0.8682653	6.190674e-02	7.689730e-01	0.9234100	0	0	0	0	0	3
14	0.8213206	4.598128e-02	7.189109e-01	0.8918778	1	0	0	0	0	3
15	0.8241272	4.547574e-02	7.203623e-01	0.8946448	0	1	0	0	0	3
16	0.8682653	6.190674e-02	7.689730e-01	0.9234100	0	0	1	0	0	3
17	0.9150009	5.403263e-02	7.869955e-01	0.9632723	0	0	0	1	0	3
18	0.9995496	9.044113e-03	1.773613e-10	1.0000000	0	0	0	0	1	3
19	0.9101910	5.164060e-02	8.014267e-01	0.9599596	0	0	0	0	0	4
20	0.8770177	4.686291e-02	7.555130e-01	0.9427054	1	0	0	0	0	4
21	0.8790944	4.640498e-02	7.568349e-01	0.9442930	0	1	0	0	0	4
22	0.9101910	5.164060e-02	8.014267e-01	0.9599596	0	0	1	0	0	4
23	0.9424463	4.243149e-02	8.227868e-01	0.9801831	0	0	0	1	0	4
24	0.6677243	2.722374e-01	1.535525e-01	0.9570091	0	0	0	0	1	4

***L. helveticus* 2010:**

Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.3913450	5.840382e-02	0.2847393	0.5095923	0	0	0	0	1
2	0.8850738	1.269514e-01	0.4000358	0.9888421	1	0	0	0	1
3	0.3906610	5.851922e-02	0.2839463	0.5091976	0	1	0	0	1
4	0.3913450	5.840382e-02	0.2847393	0.5095923	0	0	1	0	1
5	0.3875102	6.599077e-02	0.2703275	0.5213172	0	0	0	1	1
6	0.3899284	7.090160e-02	0.2659098	0.5331946	0	0	0	0	1
7	0.5847425	7.516877e-02	0.4343812	0.7207425	0	0	0	0	2
8	0.9983350	4.293204e-03	0.7904735	0.9999893	1	0	0	0	2
9	0.5840432	7.596918e-02	0.4322479	0.7213388	0	1	0	0	2
10	0.5847425	7.516877e-02	0.4343812	0.7207425	0	0	1	0	2
11	0.5807827	8.209949e-02	0.4183705	0.7274224	0	0	0	1	2
12	0.5832870	8.695140e-02	0.4116488	0.7361400	0	0	0	0	2
13	0.7551238	8.423213e-02	0.5582593	0.8826404	0	0	0	0	3
14	0.9999786	8.538939e-05	0.9489401	1.0000000	1	0	0	0	3
15	0.7545882	8.514478e-02	0.5555436	0.8831500	0	1	0	0	3
16	0.7551238	8.423213e-02	0.5582593	0.8826404	0	0	1	0	3
17	0.7520682	8.868757e-02	0.5451267	0.8845865	0	0	0	1	3
18	0.7540041	9.174708e-02	0.5381920	0.8887266	0	0	0	0	3
19	0.8709987	7.061480e-02	0.6636053	0.9585040	0	0	0	0	4
20	0.9999997	1.487378e-06	0.9888513	1.0000000	1	0	0	0	4
21	0.8706709	7.129365e-02	0.6609398	0.9587311	0	1	0	0	4
22	0.8709987	7.061480e-02	0.6636053	0.9585040	0	0	1	0	4
23	0.8691224	7.313099e-02	0.6539303	0.9588519	0	0	0	1	4
24	0.8703117	7.449520e-02	0.6481401	0.9603612	0	0	0	0	4

***L. helveticus* 2014:**

Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.4515764	0.05251834	0.3524192	0.5547003	0	0	0	0	1
2	0.4456160	0.05656928	0.3408034	0.5561592	1	0	0	0	1
3	0.4485728	0.05720727	0.3420358	0.5605775	0	1	0	0	1
4	0.4515764	0.05251834	0.3524192	0.5547003	0	0	1	0	1
5	0.4504985	0.06139573	0.3369500	0.5703654	0	0	0	1	1
6	0.4493112	0.06764497	0.3276263	0.5800043	0	0	0	0	1
7	0.7081427	0.06027707	0.5783475	0.8109144	0	0	0	0	2
8	0.7030888	0.06254890	0.5692302	0.8092343	1	0	0	0	2
9	0.7055933	0.06449471	0.5667795	0.8141276	0	1	0	0	2
10	0.7081427	0.06027707	0.5783475	0.8109144	0	0	1	0	2
11	0.7072322	0.06671090	0.5626738	0.8183345	0	0	0	1	2
12	0.7062116	0.07308757	0.5478349	0.8240287	0	0	0	0	2
13	0.8772917	0.04768273	0.7502329	0.9444436	0	0	0	0	3
14	0.8746528	0.04867681	0.7454678	0.9432448	1	0	0	0	3
15	0.8759447	0.04986047	0.7421332	0.9452548	0	1	0	0	3
16	0.8772917	0.04768273	0.7502329	0.9444436	0	0	1	0	3
17	0.8768133	0.05033146	0.7404729	0.9462922	0	0	0	1	3
18	0.8762683	0.05388610	0.7264893	0.9482126	0	0	0	0	3
19	0.9546821	0.02661102	0.8633061	0.9859543	0	0	0	0	4
20	0.9536281	0.02707287	0.8611402	0.9855463	1	0	0	0	4
21	0.9541358	0.02750957	0.8586830	0.9861127	0	1	0	0	4
22	0.9546821	0.02661102	0.8633061	0.9859543	0	0	1	0	4
23	0.9544890	0.02748078	0.8584421	0.9863199	0	0	0	1	4
24	0.9542664	0.02893185	0.8490321	0.9868280	0	0	0	0	4

***L. vulgaris* 2010:**

	Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.1890531	0.07707144	0.10765165	0.3314252	0	0	0	0	0	1
2	0.2510038	0.07955048	0.13825423	0.4097938	1	0	0	0	0	1
3	0.2171209	0.06221159	0.12311017	0.3561126	0	1	0	0	0	1
4	0.1890531	0.07707144	0.10765165	0.3314252	0	0	1	0	0	1
5	0.1504376	0.09162391	0.07591056	0.3460852	0	0	0	1	0	1
6	0.2773948	0.13171794	0.12426347	0.4862822	0	0	0	0	1	1
7	0.5081037	0.16950230	0.27841427	0.7566521	0	0	0	0	0	2
8	0.6119259	0.13556962	0.35320082	0.8158523	1	0	0	0	0	2
9	0.5689156	0.13015167	0.32306455	0.7851310	0	1	0	0	0	2
10	0.5081037	0.16950230	0.27841427	0.7566521	0	0	1	0	0	2
11	0.4318728	0.21799528	0.20279389	0.7562774	0	0	0	1	0	2
12	0.6311415	0.17014751	0.32420389	0.8360084	0	0	0	0	1	2
13	0.8169473	0.14098720	0.50168022	0.9582848	0	0	0	0	0	3
14	0.8812969	0.08655957	0.60628558	0.9722484	1	0	0	0	0	3
15	0.8624092	0.09476746	0.57260401	0.9669868	0	1	0	0	0	3
16	0.8169473	0.14098720	0.50168022	0.9582848	0	0	1	0	0	3
17	0.7566877	0.21179823	0.38707314	0.9550024	0	0	0	1	0	3
18	0.8848975	0.09655005	0.57867188	0.9742451	0	0	0	0	1	3
19	0.9533355	0.05415851	0.71574620	0.9945679	0	0	0	0	0	4
20	0.9722968	0.03015913	0.80380938	0.9966019	1	0	0	0	0	4
21	0.9674611	0.03451566	0.78019467	0.9959648	0	1	0	0	0	4
22	0.9533355	0.05415851	0.71574620	0.9945679	0	0	1	0	0	4
23	0.9314783	0.09055569	0.60007695	0.9935997	0	0	0	1	0	4
24	0.9725734	0.03277991	0.78693162	0.9967594	0	0	0	0	1	4

***L. vulgaris* 2014:**

	Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.2363930	0.05983612	0.14178617	0.3668972	0	0	0	0	0	1
2	0.2363930	0.05983612	0.14178617	0.3668972	1	0	0	0	0	1
3	0.2363930	0.05983612	0.14178617	0.3668972	0	1	0	0	0	1
4	0.2363930	0.05983612	0.14178617	0.3668972	0	0	1	0	0	1
5	0.1623882	0.09080505	0.08020536	0.3614358	0	0	0	1	0	1
6	0.2363930	0.05983612	0.14178617	0.3668972	0	0	0	0	1	1
7	0.5988788	0.12915189	0.34691417	0.8067984	0	0	0	0	0	2
8	0.5988788	0.12915189	0.34691417	0.8067984	1	0	0	0	0	2
9	0.5988788	0.12915189	0.34691417	0.8067984	0	1	0	0	0	2
10	0.5988788	0.12915189	0.34691417	0.8067984	0	0	1	0	0	2
11	0.4652651	0.20181232	0.21375708	0.7746441	0	0	0	1	0	2
12	0.5988788	0.12915189	0.34691417	0.8067984	0	0	0	0	1	2
13	0.8777703	0.08897635	0.59022874	0.9726839	0	0	0	0	0	3
14	0.8777703	0.08897635	0.59022874	0.9726839	1	0	0	0	0	3
15	0.8777703	0.08897635	0.59022874	0.9726839	0	1	0	0	0	3
16	0.8777703	0.08897635	0.59022874	0.9726839	0	0	1	0	0	3
17	0.7969310	0.16852115	0.41748594	0.9617542	0	0	0	1	0	3
18	0.8777703	0.08897635	0.59022874	0.9726839	0	0	0	0	1	3
19	0.9718782	0.03125834	0.78925347	0.9968551	0	0	0	0	0	4
20	0.9718782	0.03125834	0.78925347	0.9968551	1	0	0	0	0	4
21	0.9718782	0.03125834	0.78925347	0.9968551	0	1	0	0	0	4
22	0.9718782	0.03125834	0.78925347	0.9968551	0	0	1	0	0	4
23	0.9489854	0.06262636	0.64964715	0.9950696	0	0	0	1	0	4
24	0.9718782	0.03125834	0.78925347	0.9968551	0	0	0	0	1	4

P. esculentus-aggr. 2010:

	Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.4938417	0.05555708	0.3892317	0.5991522	0	0	0	0	0	1
2	0.5463071	0.08544308	0.3940501	0.6863206	1	0	0	0	0	1
3	0.4938417	0.05555708	0.3892317	0.5991522	0	1	0	0	0	1
4	0.4938417	0.05555708	0.3892317	0.5991522	0	0	1	0	0	1
5	0.4938417	0.05555708	0.3892317	0.5991522	0	0	0	1	0	1
6	0.4938417	0.05555708	0.3892317	0.5991522	0	0	0	0	1	1
7	0.7111701	0.06096902	0.5906207	0.8079277	0	0	0	0	0	2
8	0.8009062	0.09293113	0.6234102	0.8918906	1	0	0	0	0	2
9	0.7111701	0.06096902	0.5906207	0.8079277	0	1	0	0	0	2
10	0.7111701	0.06096902	0.5906207	0.8079277	0	0	1	0	0	2
11	0.7111701	0.06096902	0.5906207	0.8079277	0	0	0	1	0	2
12	0.7111701	0.06096902	0.5906207	0.8079277	0	0	0	0	1	2
13	0.8603740	0.05420650	0.7359335	0.9318378	0	0	0	0	0	3
14	0.9232970	0.05652577	0.7785769	0.9674506	1	0	0	0	0	3
15	0.8603740	0.05420650	0.7359335	0.9318378	0	1	0	0	0	3
16	0.8603740	0.05420650	0.7359335	0.9318378	0	0	1	0	0	3
17	0.8603740	0.05420650	0.7359335	0.9318378	0	0	0	1	0	3
18	0.8603740	0.05420650	0.7359335	0.9318378	0	0	0	0	1	3
19	0.9385574	0.03643448	0.8351406	0.9788961	0	0	0	0	0	4
20	0.9714778	0.02731287	0.8765451	0.9908529	1	0	0	0	0	4
21	0.9385574	0.03643448	0.8351406	0.9788961	0	1	0	0	0	4
22	0.9385574	0.03643448	0.8351406	0.9788961	0	0	1	0	0	4
23	0.9385574	0.03643448	0.8351406	0.9788961	0	0	0	1	0	4
24	0.9385574	0.03643448	0.8351406	0.9788961	0	0	0	0	1	4

P. esculentus-aggr. 2014:

	Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.5098862	0.05504580	0.4062879	0.6126376	0	0	0	0	0	1
2	0.5158828	0.05840894	0.4057470	0.6240473	1	0	0	0	0	1
3	0.5053881	0.05891534	0.3957350	0.6148939	0	1	0	0	0	1
4	0.5098862	0.05504580	0.4062879	0.6126376	0	0	1	0	0	1
5	0.4781275	0.07937911	0.3546874	0.6108865	0	0	0	1	0	1
6	0.5310724	0.07854404	0.3919646	0.6564971	0	0	0	0	1	1
7	0.7370609	0.05348857	0.6223869	0.8265917	0	0	0	0	0	2
8	0.7416711	0.05487316	0.6230614	0.8324850	1	0	0	0	0	2
9	0.7335175	0.05698607	0.6114740	0.8277960	0	1	0	0	0	2
10	0.7370609	0.05348857	0.6223869	0.8265917	0	0	1	0	0	2
11	0.7098544	0.07748475	0.5645995	0.8236589	0	0	0	1	0	2
12	0.7522006	0.06552723	0.6106217	0.8478310	0	0	0	0	1	2
13	0.8831083	0.04168463	0.7751176	0.9430516	0	0	0	0	0	3
14	0.8855485	0.04164000	0.7768018	0.9449425	1	0	0	0	0	3
15	0.8812026	0.04365272	0.7675532	0.9432777	0	1	0	0	0	3
16	0.8831083	0.04168463	0.7751176	0.9430516	0	0	1	0	0	3
17	0.8674853	0.05655569	0.7305305	0.9406400	0	0	0	1	0	3
18	0.8908196	0.04494238	0.7707197	0.9499282	0	0	0	0	1	3
19	0.9531963	0.02480506	0.8731336	0.9836787	0	0	0	0	0	4
20	0.9542470	0.02448754	0.8747075	0.9841858	1	0	0	0	0	4
21	0.9523692	0.02572360	0.8687068	0.9836912	0	1	0	0	0	4
22	0.9531963	0.02480506	0.8731336	0.9836787	0	0	1	0	0	4
23	0.9461566	0.03211483	0.8451332	0.9826044	0	0	0	1	0	4
24	0.9564720	0.02508355	0.8728790	0.9855620	0	0	0	0	1	4

***P. ridibundus* 2010:**

	Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.8273530	2.535682e-01	6.344646e-02	0.8668056	0	0	0	0	0	1
2	0.1555373	6.694467e-02	6.493452e-02	0.3283312	1	0	0	0	0	1
3	0.3299755	8.719108e-02	1.888017e-01	0.5122319	0	1	0	0	0	1
4	0.8273530	2.535682e-01	6.344646e-02	0.8668056	0	0	1	0	0	1
5	0.8273530	2.535682e-01	6.344646e-02	0.8668056	0	0	0	1	0	1
6	0.1338524	4.055749e+00	1.406158e-22	1.0000000	0	0	0	0	1	1
7	0.8845221	1.743847e-01	9.280714e-02	0.9382565	0	0	0	0	0	2
8	0.2416166	1.443798e-01	7.470469e-02	0.5733701	1	0	0	0	0	2
9	0.5312373	1.570706e-01	2.541504e-01	0.7930818	0	1	0	0	0	2
10	0.8845221	1.743847e-01	9.280714e-02	0.9382565	0	0	1	0	0	2
11	0.8845221	1.743847e-01	9.280714e-02	0.9382565	0	0	0	1	0	2
12	0.9991157	2.788724e-02	2.174361e-19	1.0000000	0	0	0	0	1	2
13	0.9351987	1.054527e-01	1.216731e-01	0.9793514	0	0	0	0	0	3
14	0.3518800	2.557882e-01	8.531306e-02	0.8099013	1	0	0	0	0	3
15	0.7225965	1.864084e-01	3.080095e-01	0.9395731	0	1	0	0	0	3
16	0.9351987	1.054527e-01	1.216731e-01	0.9793514	0	0	1	0	0	3
17	0.9351987	1.054527e-01	1.216731e-01	0.9793514	0	0	0	1	0	3
18	0.9999998	7.383240e-06	7.302740e-31	1.0000000	0	0	0	0	1	3
19	0.9682367	5.765371e-02	1.500190e-01	0.9940564	0	0	0	0	0	4
20	0.4679864	3.682893e-01	1.015395e-01	0.9340988	1	0	0	0	0	4
21	0.8568214	1.534693e-01	3.583653e-01	0.9847526	0	1	0	0	0	4
22	0.9682367	5.765371e-02	1.500190e-01	0.9940564	0	0	1	0	0	4
23	0.9682367	5.765371e-02	1.500190e-01	0.9940564	0	0	0	1	0	4
24	1.0000000	2.347279e-09	5.455005e-46	1.0000000	0	0	0	0	1	4

***P. ridibundus* 2014:**

	Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.5435871	0.33336520	0.12163437	0.6197707	0	0	0	0	0	1
2	0.2716032	0.06610042	0.16807744	0.4106481	1	0	0	0	0	1
3	0.2712935	0.06864435	0.16488157	0.4170338	0	1	0	0	0	1
4	0.5435871	0.33336520	0.12163437	0.6197707	0	0	1	0	0	1
5	0.8051817	0.28204865	0.05674610	0.8385047	0	0	0	1	0	1
6	0.5435871	0.33336520	0.12163437	0.6197707	0	0	0	0	1	1
7	0.6824175	0.24941138	0.19175500	0.8112860	0	0	0	0	0	2
8	0.4743650	0.12882557	0.26077198	0.7015679	1	0	0	0	0	2
9	0.4567844	0.14595065	0.23747356	0.7077557	0	1	0	0	0	2
10	0.6824175	0.24941138	0.19175500	0.8112860	0	0	1	0	0	2
11	0.8711022	0.19089902	0.09136906	0.9259233	0	0	0	1	0	2
12	0.6824175	0.24941138	0.19175500	0.8112860	0	0	0	0	1	2
13	0.8197645	0.17205905	0.26686416	0.9363780	0	0	0	0	0	3
14	0.6836374	0.16377909	0.35444889	0.8984970	1	0	0	0	0	3
15	0.6483029	0.20360873	0.30986813	0.9004543	0	1	0	0	0	3
16	0.8197645	0.17205905	0.26686416	0.9363780	0	0	1	0	0	3
17	0.9325481	0.10781051	0.12896784	0.9774559	0	0	0	1	0	3
18	0.8197645	0.17205905	0.26686416	0.9363780	0	0	0	0	1	3
19	0.9132467	0.10441995	0.34402024	0.9822523	0	0	0	0	0	4
20	0.8366254	0.14009933	0.44917510	0.9718043	1	0	0	0	0	4
21	0.7943617	0.20442197	0.38309288	0.9720001	0	1	0	0	0	4
22	0.9132467	0.10441995	0.34402024	0.9822523	0	0	1	0	0	4
23	0.9704814	0.05289066	0.16669706	0.9942847	0	0	0	1	0	4
24	0.9132467	0.10441995	0.34402024	0.9822523	0	0	0	0	1	4

R. dalmatina 2010:

	Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.2725872	9.296419e-02	1.355984e-01	0.4724450	0	0	0	0	0	1
2	0.9997763	5.812842e-03	1.713275e-14	1.0000000	1	0	0	0	0	1
3	0.2545662	7.734046e-02	1.352672e-01	0.4285868	0	1	0	0	0	1
4	0.2725872	9.296419e-02	1.355984e-01	0.4724450	0	0	1	0	0	1
5	0.1013440	1.216960e-01	3.644509e-02	0.6392088	0	0	0	1	0	1
6	0.2725872	9.296419e-02	1.355984e-01	0.4724450	0	0	0	0	1	1
7	0.7693050	1.164104e-01	4.846644e-01	0.9196380	0	0	0	0	0	2
8	1.0000000	7.847315e-11	8.388099e-44	1.0000000	1	0	0	0	0	2
9	0.7542030	1.088831e-01	4.937721e-01	0.9061836	0	1	0	0	0	2
10	0.7693050	1.164104e-01	4.846644e-01	0.9196380	0	0	1	0	0	2
11	0.5370964	1.827311e+00	1.458450e-01	0.9428618	0	0	0	1	0	2
12	0.7693050	1.164104e-01	4.846644e-01	0.9196380	0	0	0	0	1	2
13	0.9675306	3.086941e-02	8.148668e-01	0.9949063	0	0	0	0	0	3
14	1.0000000	7.065457e-19	2.213500e-78	1.0000000	1	0	0	0	0	3
15	0.9650298	3.093837e-02	8.213522e-01	0.9940018	0	1	0	0	0	3
16	0.9675306	3.086941e-02	8.148668e-01	0.9949063	0	0	1	0	0	3
17	0.8967391	1.877658e-01	3.004522e-01	0.9953207	0	0	0	1	0	3
18	0.9675306	3.086941e-02	8.148668e-01	0.9949063	0	0	0	0	1	3
19	0.9962607	5.023910e-03	9.506323e-01	0.9997207	0	0	0	0	0	4
20	1.0000000	5.383591e-27	2.886512e-108	1.0000000	1	0	0	0	0	4
21	0.9959784	5.154278e-03	9.524838e-01	0.9996734	0	1	0	0	0	4
22	0.9962607	5.023910e-03	9.506323e-01	0.9997207	0	0	1	0	0	4
23	0.9865829	3.043989e-02	5.146003e-01	0.9996662	0	0	0	1	0	4
24	0.9962607	5.023910e-03	9.506323e-01	0.9997207	0	0	0	0	1	4

R. dalmatina 2014:

	Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.3291297	0.096306468	0.1834557	0.5147417	0	0	0	0	0	1
2	0.2098036	0.107552575	0.1001090	0.4223838	1	0	0	0	0	1
3	0.3291297	0.096306468	0.1834557	0.5147417	0	1	0	0	0	1
4	0.3291297	0.096306468	0.1834557	0.5147417	0	0	1	0	0	1
5	0.3291297	0.096306468	0.1834557	0.5147417	0	0	0	1	0	1
6	0.3291297	0.096306468	0.1834557	0.5147417	0	0	0	0	1	1
7	0.8625376	0.090970816	0.5987037	0.9614761	0	0	0	0	0	2
8	0.7628384	0.141696345	0.4576801	0.9281830	1	0	0	0	0	2
9	0.8625376	0.090970816	0.5987037	0.9614761	0	1	0	0	0	2
10	0.8625376	0.090970816	0.5987037	0.9614761	0	0	1	0	0	2
11	0.8625376	0.090970816	0.5987037	0.9614761	0	0	0	1	0	2
12	0.8625376	0.090970816	0.5987037	0.9614761	0	0	0	0	1	2
13	0.9876213	0.014419188	0.8935544	0.9985528	0	0	0	0	0	3
14	0.9770425	0.024455583	0.8429956	0.9970650	1	0	0	0	0	3
15	0.9876213	0.014419188	0.8935544	0.9985528	0	1	0	0	0	3
16	0.9876213	0.014419188	0.8935544	0.9985528	0	0	1	0	0	3
17	0.9876213	0.014419188	0.8935544	0.9985528	0	0	0	1	0	3
18	0.9876213	0.014419188	0.8935544	0.9985528	0	0	0	0	1	3
19	0.9990142	0.001582052	0.9785318	0.9999486	0	0	0	0	0	4
20	0.9982539	0.002590364	0.9691787	0.9999028	1	0	0	0	0	4
21	0.9990142	0.001582052	0.9785318	0.9999486	0	1	0	0	0	4
22	0.9990142	0.001582052	0.9785318	0.9999486	0	0	1	0	0	4
23	0.9990142	0.001582052	0.9785318	0.9999486	0	0	0	1	0	4
24	0.9990142	0.001582052	0.9785318	0.9999486	0	0	0	0	1	4

R. latastei 2010:

Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.04503780	8.601973e-02	2.102362e-34	1	0	0	0	0	1
2	0.13751763	4.116557e+00	2.102362e-34	1	1	0	0	0	1
3	0.99966109	3.932930e-03	8.244871e-07	1	0	1	0	0	1
4	0.04503780	8.601973e-02	2.102362e-34	1	0	0	1	0	1
5	0.04503780	8.601973e-02	2.102362e-34	1	0	0	0	1	1
6	0.99285448	5.781820e-02	1.640473e-05	1	0	0	0	0	1
7	0.04504546	8.603273e-02	2.271774e-36	1	0	0	0	0	2
8	0.99960632	1.883932e-02	4.493573e-38	1	1	0	0	0	2
9	0.99999999	3.357104e-07	6.049798e-12	1	0	1	0	0	2
10	0.04504546	8.603273e-02	2.271774e-36	1	0	0	1	0	2
11	0.04504546	8.603273e-02	2.271774e-36	1	0	0	0	1	2
12	0.99999968	5.681367e-06	1.966416e-09	1	0	0	0	0	2
13	0.04504559	8.603272e-02	1.234434e-25	1	0	0	0	0	3
14	0.99999998	8.612938e-07	4.607853e-35	1	1	0	0	0	3
15	1.00000000	2.202616e-11	4.362845e-17	1	0	1	0	0	3
16	0.04504559	8.603272e-02	1.234434e-25	1	0	0	1	0	3
17	0.04504559	8.603272e-02	1.234434e-25	1	0	0	0	1	3
18	1.00000000	4.029776e-10	2.893984e-14	1	0	0	0	0	3
19	0.04800272	1.111055e-01	1.420346e-18	1	0	0	0	0	4
20	1.00000000	4.110671e-11	4.809883e-34	1	1	0	0	0	4
21	1.00000000	1.293638e-15	3.132664e-22	1	0	1	0	0	4
22	0.04800272	1.111055e-01	1.420346e-18	1	0	0	1	0	4
23	0.04800272	1.111055e-01	1.420346e-18	1	0	0	0	1	4
24	1.00000000	2.466167e-14	2.851371e-19	1	0	0	0	0	4

R. latastei 2014:

Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.9998146	1.061026e-02	3.435949e-33	1	0	0	0	0	1
2	0.9480111	5.009143e+00	3.435949e-33	1	1	0	0	0	1
3	0.9999221	3.660570e-03	3.435949e-33	1	0	1	0	0	1
4	0.9998146	1.061026e-02	3.435949e-33	1	0	0	1	0	1
5	0.9998146	1.061026e-02	3.435949e-33	1	0	0	0	1	1
6	0.9725419	3.532593e+00	1.865986e-33	1	0	0	0	0	1
7	1.0000000	9.159926e-08	5.286956e-64	1	0	0	0	0	2
8	0.9999995	7.748535e-05	5.286956e-64	1	1	0	0	0	2
9	1.0000000	9.144411e-08	5.286956e-64	1	0	1	0	0	2
10	1.0000000	9.159926e-08	5.286956e-64	1	0	0	1	0	2
11	1.0000000	9.159926e-08	5.286956e-64	1	0	0	0	1	2
12	0.9999998	3.380087e-05	2.353256e-64	1	0	0	0	0	2
13	1.0000000	1.804202e-12	8.414251e-95	1	0	0	0	0	3
14	1.0000000	9.190338e-10	8.414251e-95	1	1	0	0	0	3
15	1.0000000	1.804202e-12	8.414251e-95	1	0	1	0	0	3
16	1.0000000	1.804202e-12	8.414251e-95	1	0	0	1	0	3
17	1.0000000	1.804202e-12	8.414251e-95	1	0	0	0	1	3
18	1.0000000	4.546965e-10	2.955424e-95	1	0	0	0	0	3
19	1.0000000	3.250964e-17	1.385446e-125	1	0	0	0	0	4
20	1.0000000	1.119617e-14	1.385446e-125	1	1	0	0	0	4
21	1.0000000	3.250964e-17	1.385446e-125	1	0	1	0	0	4
22	1.0000000	3.250964e-17	1.385446e-125	1	0	0	1	0	4
23	1.0000000	3.250964e-17	1.385446e-125	1	0	0	0	1	4
24	1.0000000	7.420062e-15	3.707816e-126	1	0	0	0	0	4

R. temporaria 2010:

	Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.7880423	0.0446657916	6.882317e-01	0.8618824	0	0	0	0	0	1
2	0.7904099	0.0483111619	6.803824e-01	0.8684622	1	0	0	0	0	1
3	0.7824867	0.0456149666	6.810590e-01	0.8581596	0	1	0	0	0	1
4	0.7880423	0.0446657916	6.882317e-01	0.8618824	0	0	1	0	0	1
5	0.9999300	0.0019033492	1.660039e-16	1.0000000	0	0	0	1	0	1
6	0.7863854	0.0558454740	6.567696e-01	0.8726637	0	0	0	0	1	1
7	0.8991225	0.0306908543	8.214738e-01	0.9451438	0	0	0	0	0	2
8	0.9004092	0.0316618382	8.188697e-01	0.9471872	1	0	0	0	0	2
9	0.8960738	0.0322305345	8.144241e-01	0.9441037	0	1	0	0	0	2
10	0.8991225	0.0306908543	8.214738e-01	0.9451438	0	0	1	0	0	2
11	0.9999708	0.0007935160	3.982325e-16	1.0000000	0	0	0	1	0	2
12	0.8982172	0.0367064663	7.984472e-01	0.9495384	0	0	0	0	1	2
13	0.9552952	0.0225367466	8.838038e-01	0.9836030	0	0	0	0	0	3
14	0.9559020	0.0225029201	8.838945e-01	0.9840107	1	0	0	0	0	3
15	0.9538443	0.0236884062	8.783064e-01	0.9833466	0	1	0	0	0	3
16	0.9552952	0.0225367466	8.838038e-01	0.9836030	0	0	1	0	0	3
17	0.9999879	0.0003308376	9.503841e-16	1.0000000	0	0	0	1	0	3
18	0.9548679	0.0249888361	8.701244e-01	0.9847425	0	0	0	0	1	3
19	0.9808552	0.0140946273	9.217288e-01	0.9955315	0	0	0	0	0	4
20	0.9811224	0.0139258230	9.225288e-01	0.9956065	1	0	0	0	0	4
21	0.9802108	0.0147761789	9.177352e-01	0.9954663	0	1	0	0	0	4
22	0.9808552	0.0140946273	9.217288e-01	0.9955315	0	0	1	0	0	4
23	0.9999949	0.0001379462	2.256352e-15	1.0000000	0	0	0	1	0	4
24	0.9806672	0.0150502538	9.136953e-01	0.9957952	0	0	0	0	1	4

R. temporaria 2014:

	Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.8241445	0.04867457	0.7320044	0.8886645	0	0	0	0	0	1
2	0.8512015	0.05038884	0.7434341	0.9152355	1	0	0	0	0	1
3	0.7810552	0.05605424	0.6729972	0.8610724	0	1	0	0	0	1
4	0.8241445	0.04867457	0.7320044	0.8886645	0	0	1	0	0	1
5	0.8241445	0.04867457	0.7320044	0.8886645	0	0	0	1	0	1
6	0.8241445	0.04867457	0.7320044	0.8886645	0	0	0	0	1	1
7	0.9169299	0.03057114	0.8475285	0.9561945	0	0	0	0	0	2
8	0.9310253	0.02875990	0.8584190	0.9667700	1	0	0	0	0	2
9	0.8936374	0.03777940	0.8067888	0.9441995	0	1	0	0	0	2
10	0.9169299	0.03057114	0.8475285	0.9561945	0	0	1	0	0	2
11	0.9169299	0.03057114	0.8475285	0.9561945	0	0	0	1	0	2
12	0.9169299	0.03057114	0.8475285	0.9561945	0	0	0	0	1	2
13	0.9630233	0.02047258	0.9007588	0.9867826	0	0	0	0	0	3
14	0.9696222	0.01782960	0.9113937	0.9898497	1	0	0	0	0	3
15	0.9519524	0.02621499	0.8723462	0.9829159	0	1	0	0	0	3
16	0.9630233	0.02047258	0.9007588	0.9867826	0	0	1	0	0	3
17	0.9630233	0.02047258	0.9007588	0.9867826	0	0	0	1	0	3
18	0.9630233	0.02047258	0.9007588	0.9867826	0	0	0	0	1	3
19	0.9840018	0.01238998	0.9328496	0.9963423	0	0	0	0	0	4
20	0.9869367	0.01040806	0.9416664	0.9971597	1	0	0	0	0	4
21	0.9790607	0.01613111	0.9128454	0.9952399	0	1	0	0	0	4
22	0.9840018	0.01238998	0.9328496	0.9963423	0	0	1	0	0	4
23	0.9840018	0.01238998	0.9328496	0.9963423	0	0	0	1	0	4
24	0.9840018	0.01238998	0.9328496	0.9963423	0	0	0	0	1	4

T. carnifex 2010:

Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.9997663	8.584760e-03	1.551766e-27	1	0	0	0	0	1
2	0.9145161	4.246665e+00	1.551765e-27	1	1	0	0	0	1
3	0.9997631	8.701730e-03	1.546616e-27	1	0	1	0	0	1
4	0.9997663	8.584760e-03	1.551766e-27	1	0	0	1	0	1
5	0.9997663	8.584760e-03	1.551766e-27	1	0	0	0	1	1
6	0.9998007	7.346468e-03	1.912185e-27	1	0	0	0	1	1
7	1.0000000	4.745065e-07	4.144750e-53	1	0	0	0	0	2
8	0.9999965	3.713495e-04	4.144750e-53	1	1	0	0	0	2
9	1.0000000	4.815251e-07	4.140773e-53	1	0	1	0	0	2
10	1.0000000	4.745065e-07	4.144750e-53	1	0	0	1	0	2
11	1.0000000	4.745065e-07	4.144750e-53	1	0	0	0	1	2
12	1.0000000	4.256677e-07	4.499410e-53	1	0	0	0	1	2
13	1.0000000	2.032128e-11	1.207196e-78	1	0	0	0	0	3
14	1.0000000	1.112593e-08	1.207196e-78	1	1	0	0	0	3
15	1.0000000	2.063598e-11	1.206894e-78	1	0	1	0	0	3
16	1.0000000	2.032128e-11	1.207196e-78	1	0	0	1	0	3
17	1.0000000	2.032128e-11	1.207196e-78	1	0	0	0	1	3
18	1.0000000	1.887805e-11	1.241642e-78	1	0	0	0	1	3
19	1.0000000	7.951477e-16	3.610745e-104	1	0	0	0	0	4
20	1.0000000	3.275375e-13	3.610745e-104	1	1	0	0	0	4
21	1.0000000	8.076817e-16	3.610515e-104	1	0	1	0	0	4
22	1.0000000	7.951477e-16	3.610745e-104	1	0	0	1	0	4
23	1.0000000	7.951477e-16	3.610745e-104	1	0	0	0	1	4
24	1.0000000	7.572214e-16	3.644090e-104	1	0	0	0	1	4

T. carnifex 2014:

Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.9997922	8.230282e-03	1.404510e-27	1	0	0	0	0	1
2	0.9998105	7.511436e-03	1.404748e-27	1	1	0	0	0	1
3	0.9997944	8.121893e-03	1.404510e-27	1	0	1	0	0	1
4	0.9997922	8.230282e-03	1.404510e-27	1	0	0	1	0	1
5	0.9997922	8.230282e-03	1.404510e-27	1	0	0	0	1	1
6	0.9875395	1.068157e+00	1.404510e-27	1	0	0	0	1	1
7	1.0000000	4.192642e-07	4.251906e-53	1	0	0	0	0	2
8	1.0000000	3.917579e-07	4.251907e-53	1	1	0	0	0	2
9	1.0000000	4.152352e-07	4.251906e-53	1	0	1	0	0	2
10	1.0000000	4.192642e-07	4.251906e-53	1	0	0	1	0	2
11	1.0000000	4.192642e-07	4.251906e-53	1	0	0	0	1	2
12	0.9999999	2.079284e-05	4.251906e-53	1	0	0	0	1	2
13	1.0000000	1.747942e-11	1.288456e-78	1	0	0	0	0	3
14	1.0000000	1.669079e-11	1.288456e-78	1	1	0	0	0	3
15	1.0000000	1.736700e-11	1.288456e-78	1	0	1	0	0	3
16	1.0000000	1.747942e-11	1.288456e-78	1	0	0	1	0	3
17	1.0000000	1.747942e-11	1.288456e-78	1	0	0	0	1	3
18	1.0000000	3.192350e-10	1.288456e-78	1	0	0	0	1	3
19	1.0000000	6.842604e-16	3.899597e-104	1	0	0	0	0	4
20	1.0000000	6.641609e-16	3.899597e-104	1	1	0	0	0	4
21	1.0000000	6.814707e-16	3.899597e-104	1	0	1	0	0	4
22	1.0000000	6.842604e-16	3.899597e-104	1	0	0	1	0	4
23	1.0000000	6.842604e-16	3.899597e-104	1	0	0	0	1	4
24	1.0000000	4.804472e-15	3.899597e-104	1	0	0	0	1	4

T. cristatus 2010:

Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.1771312	0.04843212	0.10274763	0.2887950	0	0	0	0	1
2	0.1904265	0.05395112	0.10856007	0.3125630	1	0	0	0	1
3	0.1776508	0.05131257	0.10012163	0.2975907	0	1	0	0	1
4	0.1771312	0.04843212	0.10274763	0.2887950	0	0	1	0	1
5	0.1702997	0.05642922	0.09139163	0.3094391	0	0	0	1	1
6	0.1630793	0.06109139	0.08626027	0.3210379	0	0	0	0	1
7	0.3178105	0.07805292	0.19127591	0.4801858	0	0	0	0	2
8	0.3368917	0.07892172	0.20534867	0.4991862	1	0	0	0	2
9	0.3185824	0.08338788	0.18526143	0.4925314	0	1	0	0	2
10	0.3178105	0.07805292	0.19127591	0.4801858	0	0	1	0	2
11	0.3073418	0.09205026	0.17054660	0.5027823	0	0	0	1	2
12	0.2955382	0.10125220	0.16106383	0.5129629	0	0	0	0	2
13	0.5016737	0.12846589	0.27495431	0.7296692	0	0	0	0	3
14	0.5234738	0.12242024	0.29705807	0.7403625	1	0	0	0	3
15	0.5025505	0.13419327	0.26709358	0.7382923	0	1	0	0	3
16	0.5016737	0.12846589	0.27495431	0.7296692	0	0	1	0	3
17	0.4891350	0.14524749	0.24803421	0.7424895	0	0	0	1	3
18	0.4735621	0.15935059	0.23390195	0.7474934	0	0	0	0	3
19	0.6846787	0.15474304	0.35571114	0.8965880	0	0	0	0	4
20	0.7039242	0.14290088	0.38326569	0.9009203	1	0	0	0	4
21	0.6854149	0.15891789	0.34729922	0.9001321	0	1	0	0	4
22	0.6846787	0.15474304	0.35571114	0.8965880	0	0	1	0	4
23	0.6734543	0.17101192	0.32532935	0.9009777	0	0	0	1	4
24	0.6578764	0.18899116	0.30654940	0.9024543	0	0	0	0	4

T. cristatus 2014:

Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.1632405	0.04423808	0.09471862	0.2668169	0	0	0	0	1
2	0.1632405	0.04423808	0.09471862	0.2668169	1	0	0	0	1
3	0.1632405	0.04423808	0.09471862	0.2668169	0	1	0	0	1
4	0.1632405	0.04423808	0.09471862	0.2668169	0	0	1	0	1
5	0.1526640	0.05277805	0.08188222	0.2840528	0	0	0	1	1
6	0.4379608	0.26701432	0.11207852	0.7634807	0	0	0	0	1
7	0.2931019	0.07167200	0.17642197	0.4453516	0	0	0	0	2
8	0.2931019	0.07167200	0.17642197	0.4453516	1	0	0	0	2
9	0.2931019	0.07167200	0.17642197	0.4453516	0	1	0	0	2
10	0.2931019	0.07167200	0.17642197	0.4453516	0	0	1	0	2
11	0.2765926	0.08713779	0.15414800	0.4637933	0	0	0	1	2
12	0.7511785	0.26266385	0.20183144	0.8783309	0	0	0	0	2
13	0.4682233	0.12512858	0.25212969	0.6972690	0	0	0	0	3
14	0.4682233	0.12512858	0.25212969	0.6972690	1	0	0	0	3
15	0.4682233	0.12512858	0.25212969	0.6972690	0	1	0	0	3
16	0.4682233	0.12512858	0.25212969	0.6972690	0	0	1	0	3
17	0.4468738	0.14497795	0.22382464	0.7066468	0	0	0	1	3
18	0.8609894	0.18311562	0.26977282	0.9416313	0	0	0	0	3
19	0.6508743	0.16117076	0.32453328	0.8791530	0	0	0	0	4
20	0.6508743	0.16117076	0.32453328	0.8791530	1	0	0	0	4
21	0.6508743	0.16117076	0.32453328	0.8791530	0	1	0	0	4
22	0.6508743	0.16117076	0.32453328	0.8791530	0	0	1	0	4
23	0.6291312	0.18353425	0.29269550	0.8812861	0	0	0	1	4
24	0.9219510	0.11656280	0.32784637	0.9785063	0	0	0	0	4

Maintenance (Pflege und Unterhalt) 2010 und 2014

A. obstetricians 2010:

	Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.1693116	0.03600142	0.1100544	0.2515268	0	0	0	0	0	1
2	0.1693116	0.03600142	0.1100544	0.2515268	1	0	0	0	0	1
3	0.3135195	0.24655510	0.1031956	0.4772707	0	1	0	0	0	1
4	0.1693116	0.03600142	0.1100544	0.2515268	0	0	1	0	0	1
5	0.1890314	0.06487655	0.1014260	0.3317534	0	0	0	1	0	1
6	0.1693116	0.03600142	0.1100544	0.2515268	0	0	0	0	1	1
7	0.3715983	0.06139074	0.2639551	0.4935250	0	0	0	0	0	2
8	0.3715983	0.06139074	0.2639551	0.4935250	1	0	0	0	0	2
9	0.5176931	0.22220337	0.2471500	0.6544132	0	1	0	0	0	2
10	0.3715983	0.06139074	0.2639551	0.4935250	0	0	1	0	0	2
11	0.3246347	0.09154032	0.2010345	0.4990822	0	0	0	1	0	2
12	0.3715983	0.06139074	0.2639551	0.4935250	0	0	0	0	1	2
13	0.6310075	0.09124574	0.4522165	0.7792099	0	0	0	0	0	3
14	0.6310075	0.09124574	0.4522165	0.7792099	1	0	0	0	0	3
15	0.7312470	0.15709543	0.4386464	0.8537495	0	1	0	0	0	3
16	0.6310075	0.09124574	0.4522165	0.7792099	0	0	1	0	0	3
17	0.4987141	0.18791365	0.3086561	0.7395426	0	0	0	1	0	3
18	0.6310075	0.09124574	0.4522165	0.7792099	0	0	0	0	1	3
19	0.8307392	0.07905401	0.6343948	0.9324412	0	0	0	0	0	4
20	0.8307392	0.07905401	0.6343948	0.9324412	1	0	0	0	0	4
21	0.8808761	0.09153057	0.6342044	0.9563413	0	1	0	0	0	4
22	0.8307392	0.07905401	0.6343948	0.9324412	0	0	1	0	0	4
23	0.6433415	0.26804411	0.4146632	0.8981942	0	0	0	1	0	4
24	0.8307392	0.07905401	0.6343948	0.9324412	0	0	0	0	1	4

A. obstetricians 2014:

	Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.20765452	0.04760151	0.1294127949	0.3160287	0	0	0	0	0	1
2	0.06508001	0.04098272	0.0182530028	0.2067410	1	0	0	0	0	1
3	0.20765452	0.04760151	0.1294127949	0.3160287	0	1	0	0	0	1
4	0.20765452	0.04760151	0.1294127949	0.3160287	0	0	1	0	0	1
5	0.10904244	0.08039751	0.0236026202	0.3825811	0	0	0	1	0	1
6	0.20765452	0.04760151	0.1294127949	0.3160287	0	0	0	0	1	1
7	0.48630277	0.07816717	0.3389264001	0.6361001	0	0	0	0	0	2
8	0.20092481	0.09817042	0.0705061570	0.4545983	1	0	0	0	0	2
9	0.48630277	0.07816717	0.3389264001	0.6361001	0	1	0	0	0	2
10	0.48630277	0.07816717	0.3389264001	0.6361001	0	0	1	0	0	2
11	0.08293164	0.09817147	0.0071525205	0.5316530	0	0	0	1	0	2
12	0.48630277	0.07816717	0.3389264001	0.6361001	0	0	0	0	1	2
13	0.77373394	0.08171439	0.5780312619	0.8951383	0	0	0	0	0	3
14	0.47596725	0.15770744	0.2082557075	0.7582413	1	0	0	0	0	3
15	0.77373394	0.08171439	0.5780312619	0.8951383	0	1	0	0	0	3
16	0.77373394	0.08171439	0.5780312619	0.8951383	0	0	1	0	0	3
17	0.06263367	0.11235283	0.0015678311	0.7398041	0	0	0	1	0	3
18	0.77373394	0.08171439	0.5780312619	0.8951383	0	0	0	0	1	3
19	0.92510608	0.04614344	0.7700346428	0.9785252	0	0	0	0	0	4
20	0.76640358	0.13051412	0.4401088252	0.9319444	1	0	0	0	0	4
21	0.92510608	0.04614344	0.7700346428	0.9785252	0	1	0	0	0	4
22	0.92510608	0.04614344	0.7700346428	0.9785252	0	0	1	0	0	4
23	0.04704887	0.11581581	0.0003122982	0.8864001	0	0	0	1	0	4
24	0.92510608	0.04614344	0.7700346428	0.9785252	0	0	0	0	1	4

B. variegata 2010:

Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.1622013	0.04225634	0.09522868	0.2626038	0	0	0	0	1
2	0.1622013	0.04225634	0.09522868	0.2626038	1	0	0	0	1
3	0.1622013	0.04225634	0.09522868	0.2626038	0	1	0	0	1
4	0.1622013	0.04225634	0.09522868	0.2626038	0	0	1	0	1
5	0.1622013	0.04225634	0.09522868	0.2626038	0	0	0	1	1
6	0.1622013	0.04225634	0.09522868	0.2626038	0	0	0	0	1
7	0.4973058	0.06429630	0.37405365	0.6208862	0	0	0	0	2
8	0.4973058	0.06429630	0.37405365	0.6208862	1	0	0	0	2
9	0.4973058	0.06429630	0.37405365	0.6208862	0	1	0	0	2
10	0.4973058	0.06429630	0.37405365	0.6208862	0	0	1	0	2
11	0.4973058	0.06429630	0.37405365	0.6208862	0	0	0	1	2
12	0.4973058	0.06429630	0.37405365	0.6208862	0	0	0	0	2
13	0.8348483	0.05629626	0.69426069	0.9183890	0	0	0	0	3
14	0.8348483	0.05629626	0.69426069	0.9183890	1	0	0	0	3
15	0.8348483	0.05629626	0.69426069	0.9183890	0	1	0	0	3
16	0.8348483	0.05629626	0.69426069	0.9183890	0	0	1	0	3
17	0.8348483	0.05629626	0.69426069	0.9183890	0	0	0	1	3
18	0.8348483	0.05629626	0.69426069	0.9183890	0	0	0	0	3
19	0.9627287	0.02264836	0.88230524	0.9888891	0	0	0	0	4
20	0.9627287	0.02264836	0.88230524	0.9888891	1	0	0	0	4
21	0.9627287	0.02264836	0.88230524	0.9888891	0	1	0	0	4
22	0.9627287	0.02264836	0.88230524	0.9888891	0	0	1	0	4
23	0.9627287	0.02264836	0.88230524	0.9888891	0	0	0	1	4
24	0.9627287	0.02264836	0.88230524	0.9888891	0	0	0	0	4

B. variegata 2014:

Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.1672016	0.04494867	0.09689380	0.2731057	0	0	0	0	1
2	0.1463743	0.07107403	0.07381652	0.3650754	1	0	0	0	1
3	0.1672016	0.04494867	0.09689380	0.2731057	0	1	0	0	1
4	0.1672016	0.04494867	0.09689380	0.2731057	0	0	1	0	1
5	0.1098495	0.07070981	0.05506258	0.2457784	0	0	0	1	1
6	0.1672016	0.04494867	0.09689380	0.2731057	0	0	0	0	1
7	0.5011278	0.07880795	0.36950571	0.6326171	0	0	0	0	2
8	0.5548098	0.10352296	0.37495704	0.7090075	1	0	0	0	2
9	0.5011278	0.07880795	0.36950571	0.6326171	0	1	0	0	2
10	0.5011278	0.07880795	0.36950571	0.6326171	0	0	1	0	2
11	0.3547761	0.16192900	0.21249688	0.5865683	0	0	0	1	2
12	0.5011278	0.07880795	0.36950571	0.6326171	0	0	0	0	2
13	0.8304321	0.07185213	0.67846905	0.9192882	0	0	0	0	3
14	0.8858513	0.07338542	0.65937906	0.9500478	1	0	0	0	3
15	0.8304321	0.07185213	0.67846905	0.9192882	0	1	0	0	3
16	0.8304321	0.07185213	0.67846905	0.9192882	0	0	1	0	3
17	0.7112199	0.16281065	0.45985637	0.8910725	0	0	0	1	3
18	0.8304321	0.07185213	0.67846905	0.9192882	0	0	0	0	3
19	0.9587842	0.03042624	0.86600135	0.9882733	0	0	0	0	4
20	0.9768988	0.02196792	0.80154386	0.9937040	1	0	0	0	4
21	0.9587842	0.03042624	0.86600135	0.9882733	0	1	0	0	4
22	0.9587842	0.03042624	0.86600135	0.9882733	0	0	1	0	4
23	0.9229358	0.06441500	0.72952494	0.9820692	0	0	0	1	4
24	0.9587842	0.03042624	0.86600135	0.9882733	0	0	0	0	4

B. bufo 2010:

	Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.8915652	0.04004866	0.7849767	0.9487657	0	0	0	0	0	1
2	0.8915652	0.04004866	0.7849767	0.9487657	1	0	0	0	0	1
3	0.8915652	0.04004866	0.7849767	0.9487657	0	1	0	0	0	1
4	0.7378743	0.06304559	0.5977459	0.8420840	0	0	1	0	0	1
5	0.8915652	0.04004866	0.7849767	0.9487657	0	0	0	1	0	1
6	0.8915652	0.04004866	0.7849767	0.9487657	0	0	0	0	1	1
7	0.9347471	0.02860440	0.8510492	0.9729108	0	0	0	0	0	2
8	0.9347471	0.02860440	0.8510492	0.9729108	1	0	0	0	0	2
9	0.9347471	0.02860440	0.8510492	0.9729108	0	1	0	0	0	2
10	0.8306336	0.04963996	0.7106502	0.9073505	0	0	1	0	0	2
11	0.9347471	0.02860440	0.8510492	0.9729108	0	0	0	1	0	2
12	0.9347471	0.02860440	0.8510492	0.9729108	0	0	0	0	1	2
13	0.9614757	0.02245313	0.8838170	0.9879346	0	0	0	0	0	3
14	0.9614757	0.02245313	0.8838170	0.9879346	1	0	0	0	0	3
15	0.9614757	0.02245313	0.8838170	0.9879346	0	1	0	0	0	3
16	0.8952287	0.04613815	0.7651595	0.9572797	0	0	1	0	0	3
17	0.9614757	0.02245313	0.8838170	0.9879346	0	0	0	1	0	3
18	0.9614757	0.02245313	0.8838170	0.9879346	0	0	0	0	1	3
19	0.9775192	0.01722236	0.9034633	0.9950745	0	0	0	0	0	4
20	0.9775192	0.01722236	0.9034633	0.9950745	1	0	0	0	0	4
21	0.9775192	0.01722236	0.9034633	0.9950745	0	1	0	0	0	4
22	0.9370546	0.03994574	0.7978823	0.9824989	0	0	1	0	0	4
23	0.9775192	0.01722236	0.9034633	0.9950745	0	0	0	1	0	4
24	0.9775192	0.01722236	0.9034633	0.9950745	0	0	0	0	1	4

B. bufo 2014:

	Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.7870489	0.043801630	0.6889055	0.8604999	0	0	0	0	0	1
2	0.9732218	0.046803919	0.5182583	0.9991862	1	0	0	0	0	1
3	0.7870489	0.043801630	0.6889055	0.8604999	0	1	0	0	0	1
4	0.7870489	0.043801630	0.6889055	0.8604999	0	0	1	0	0	1
5	0.7870489	0.043801630	0.6889055	0.8604999	0	0	0	1	0	1
6	0.7870489	0.043801630	0.6889055	0.8604999	0	0	0	0	1	1
7	0.8677678	0.037036572	0.7770837	0.9251159	0	0	0	0	0	2
8	0.9847403	0.027835084	0.6310232	0.9995895	1	0	0	0	0	2
9	0.8677678	0.037036572	0.7770837	0.9251159	0	1	0	0	0	2
10	0.8677678	0.037036572	0.7770837	0.9251159	0	0	1	0	0	2
11	0.8677678	0.037036572	0.7770837	0.9251159	0	0	0	1	0	2
12	0.8677678	0.037036572	0.7770837	0.9251159	0	0	0	0	1	2
13	0.9209629	0.036510719	0.8134231	0.9688892	0	0	0	0	0	3
14	0.9913482	0.016606111	0.7204197	0.9998038	1	0	0	0	0	3
15	0.9209629	0.036510719	0.8134231	0.9688892	0	1	0	0	0	3
16	0.9209629	0.036510719	0.8134231	0.9688892	0	0	1	0	0	3
17	0.9209629	0.036510719	0.8134231	0.9688892	0	0	0	1	0	3
18	0.9209629	0.036510719	0.8134231	0.9688892	0	0	0	0	1	3
19	0.9538953	0.031423763	0.8360617	0.9882266	0	0	0	0	0	4
20	0.9951089	0.009948027	0.7874225	0.9999105	1	0	0	0	0	4
21	0.9538953	0.031423763	0.8360617	0.9882266	0	1	0	0	0	4
22	0.9538953	0.031423763	0.8360617	0.9882266	0	0	1	0	0	4
23	0.9538953	0.031423763	0.8360617	0.9882266	0	0	0	1	0	4
24	0.9538953	0.031423763	0.8360617	0.9882266	0	0	0	0	1	4

***E. calamita* 2010:**

	Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.14501673	0.04678777	0.08209982	0.2428282	0	0	0	0	0	1
2	0.14501673	0.04678777	0.08209982	0.2428282	1	0	0	0	0	1
3	0.14501673	0.04678777	0.08209982	0.2428282	0	1	0	0	0	1
4	0.09914739	0.05098780	0.05097425	0.2080055	0	0	1	0	0	1
5	0.14501673	0.04678777	0.08209982	0.2428282	0	0	0	1	0	1
6	0.14501673	0.04678777	0.08209982	0.2428282	0	0	0	0	1	1
7	0.35917049	0.07729695	0.22960574	0.5123564	0	0	0	0	0	2
8	0.35917049	0.07729695	0.22960574	0.5123564	1	0	0	0	0	2
9	0.35917049	0.07729695	0.22960574	0.5123564	0	1	0	0	0	2
10	0.31449345	0.08586175	0.18749180	0.4854228	0	0	1	0	0	2
11	0.35917049	0.07729695	0.22960574	0.5123564	0	0	0	1	0	2
12	0.35917049	0.07729695	0.22960574	0.5123564	0	0	0	0	1	2
13	0.65176692	0.10364335	0.43357783	0.8201749	0	0	0	0	0	3
14	0.65176692	0.10364335	0.43357783	0.8201749	1	0	0	0	0	3
15	0.65176692	0.10364335	0.43357783	0.8201749	0	1	0	0	0	3
16	0.67393301	0.12225835	0.41424565	0.8489311	0	0	1	0	0	3
17	0.65176692	0.10364335	0.43357783	0.8201749	0	0	0	1	0	3
18	0.65176692	0.10364335	0.43357783	0.8201749	0	0	0	0	1	3
19	0.86187680	0.07837040	0.63562889	0.9570535	0	0	0	0	0	4
20	0.86187680	0.07837040	0.63562889	0.9570535	1	0	0	0	0	4
21	0.86187680	0.07837040	0.63562889	0.9570535	0	1	0	0	0	4
22	0.89692465	0.07699494	0.63423454	0.9699273	0	0	1	0	0	4
23	0.86187680	0.07837040	0.63562889	0.9570535	0	0	0	1	0	4
24	0.86187680	0.07837040	0.63562889	0.9570535	0	0	0	0	1	4

***E. calamita* 2014:**

	Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.13563260	0.03774750	0.07788751	0.2256705	0	0	0	0	0	1
2	0.13563260	0.03774750	0.07788751	0.2256705	1	0	0	0	0	1
3	0.13563260	0.03774750	0.07788751	0.2256705	0	1	0	0	0	1
4	0.13563260	0.03774750	0.07788751	0.2256705	0	0	1	0	0	1
5	0.06880985	0.05585832	0.03125169	0.2003467	0	0	0	1	0	1
6	0.13563260	0.03774750	0.07788751	0.2256705	0	0	0	0	1	1
7	0.37336479	0.07757705	0.24355306	0.5239171	0	0	0	0	0	2
8	0.37336479	0.07757705	0.24355306	0.5239171	1	0	0	0	0	2
9	0.37336479	0.07757705	0.24355306	0.5239171	0	1	0	0	0	2
10	0.37336479	0.07757705	0.24355306	0.5239171	0	0	1	0	0	2
11	0.20320851	0.13934199	0.10051696	0.4611084	0	0	0	1	0	2
12	0.37336479	0.07757705	0.24355306	0.5239171	0	0	0	0	1	2
13	0.69218445	0.10162095	0.48083793	0.8442689	0	0	0	0	0	3
14	0.69218445	0.10162095	0.48083793	0.8442689	1	0	0	0	0	3
15	0.69218445	0.10162095	0.48083793	0.8442689	0	1	0	0	0	3
16	0.69218445	0.10162095	0.48083793	0.8442689	0	0	1	0	0	3
17	0.45961709	0.22922208	0.22304985	0.7765110	0	0	0	1	0	3
18	0.69218445	0.10162095	0.48083793	0.8442689	0	0	0	0	1	3
19	0.89402579	0.06387531	0.70432655	0.9673087	0	0	0	0	0	4
20	0.89402579	0.06387531	0.70432655	0.9673087	1	0	0	0	0	4
21	0.89402579	0.06387531	0.70432655	0.9673087	0	1	0	0	0	4
22	0.89402579	0.06387531	0.70432655	0.9673087	0	0	1	0	0	4
23	0.74637074	0.19426616	0.40387845	0.9402379	0	0	0	1	0	4
24	0.89402579	0.06387531	0.70432655	0.9673087	0	0	0	0	1	4

***H. arborea* 2010:**

	Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.2424783	0.04501722	0.1652751	0.3410118	0	0	0	0	0	1
2	0.2424783	0.04501722	0.1652751	0.3410118	1	0	0	0	0	1
3	0.2424783	0.04501722	0.1652751	0.3410118	0	1	0	0	0	1
4	0.2424783	0.04501722	0.1652751	0.3410118	0	0	1	0	0	1
5	0.2424783	0.04501722	0.1652751	0.3410118	0	0	0	1	0	1
6	0.2424783	0.04501722	0.1652751	0.3410118	0	0	0	0	1	1
7	0.5093329	0.08030206	0.3560752	0.6608562	0	0	0	0	0	2
8	0.5093329	0.08030206	0.3560752	0.6608562	1	0	0	0	0	2
9	0.5093329	0.08030206	0.3560752	0.6608562	0	1	0	0	0	2
10	0.5093329	0.08030206	0.3560752	0.6608562	0	0	1	0	0	2
11	0.5093329	0.08030206	0.3560752	0.6608562	0	0	0	1	0	2
12	0.5093329	0.08030206	0.3560752	0.6608562	0	0	0	0	1	2
13	0.7709727	0.08587632	0.5647806	0.8972501	0	0	0	0	0	3
14	0.7709727	0.08587632	0.5647806	0.8972501	1	0	0	0	0	3
15	0.7709727	0.08587632	0.5647806	0.8972501	0	1	0	0	0	3
16	0.7709727	0.08587632	0.5647806	0.8972501	0	0	1	0	0	3
17	0.7709727	0.08587632	0.5647806	0.8972501	0	0	0	1	0	3
18	0.7709727	0.08587632	0.5647806	0.8972501	0	0	0	0	1	3
19	0.9160837	0.05213467	0.7428967	0.9763278	0	0	0	0	0	4
20	0.9160837	0.05213467	0.7428967	0.9763278	1	0	0	0	0	4
21	0.9160837	0.05213467	0.7428967	0.9763278	0	1	0	0	0	4
22	0.9160837	0.05213467	0.7428967	0.9763278	0	0	1	0	0	4
23	0.9160837	0.05213467	0.7428967	0.9763278	0	0	0	1	0	4
24	0.9160837	0.05213467	0.7428967	0.9763278	0	0	0	0	1	4

***H. arborea* 2014:**

	Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.20714051	0.12526614	0.11216521	0.3773642	0	0	0	0	0	1
2	0.04380194	0.03352578	0.01148453	0.1627393	1	0	0	0	0	1
3	0.20714051	0.12526614	0.11216521	0.3773642	0	1	0	0	0	1
4	0.34598853	0.08278972	0.21217781	0.5088779	0	0	1	0	0	1
5	0.48647258	0.16371393	0.24146326	0.7219760	0	0	0	1	0	1
6	0.20714051	0.12526614	0.11216521	0.3773642	0	0	0	0	1	1
7	0.49509695	0.20986706	0.27934343	0.7206906	0	0	0	0	0	2
8	0.16230758	0.09960381	0.05291119	0.4187132	1	0	0	0	0	2
9	0.49509695	0.20986706	0.27934343	0.7206906	0	1	0	0	0	2
10	0.69413702	0.11018295	0.45988193	0.8568021	0	0	1	0	0	2
11	0.79683210	0.11913660	0.52026467	0.9277596	0	0	0	1	0	2
12	0.49509695	0.20986706	0.27934343	0.7206906	0	0	0	0	1	2
13	0.78338840	0.16205810	0.50893936	0.9256769	0	0	0	0	0	3
14	0.44762673	0.18996012	0.17389682	0.7672707	1	0	0	0	0	3
15	0.78338840	0.16205810	0.50893936	0.9256769	0	1	0	0	0	3
16	0.90672388	0.06318042	0.69903136	0.9757003	0	0	1	0	0	3
17	0.94267195	0.04915575	0.76013623	0.9876705	0	0	0	1	0	3
18	0.78338840	0.16205810	0.50893936	0.9256769	0	0	0	0	1	3
19	0.93434014	0.06870445	0.72832926	0.9866574	0	0	0	0	0	4
20	0.77344596	0.15649370	0.40060439	0.9475624	1	0	0	0	0	4
21	0.93434014	0.06870445	0.72832926	0.9866574	0	1	0	0	0	4
22	0.97657238	0.02289912	0.85817441	0.9964767	0	0	1	0	0	4
23	0.98589928	0.01573252	0.89598021	0.9981636	0	0	0	1	0	4
24	0.93434014	0.06870445	0.72832926	0.9866574	0	0	0	0	1	4

H. intermedia 2010:

	Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.9667877	0.0626277183	0.04026250	0.9873246	0	0	0	0	0	1
2	0.1992806	0.2923857633	0.04680314	0.9363848	1	0	0	0	0	1
3	0.9667877	0.0626277183	0.04026250	0.9873246	0	1	0	0	0	1
4	0.6607079	0.1627914123	0.32076090	0.8888016	0	0	1	0	0	1
5	0.9667877	0.0626277183	0.04026250	0.9873246	0	0	0	1	0	1
6	0.9866336	0.0268109831	0.01739357	0.9949245	0	0	0	0	1	1
7	0.9926101	0.0170542213	0.05884513	0.9992122	0	0	0	0	0	2
8	0.8643084	0.2379125008	0.10620995	0.9931628	1	0	0	0	0	2
9	0.9926101	0.0170542213	0.05884513	0.9992122	0	1	0	0	0	2
10	0.9361892	0.0825060836	0.49440127	0.9952828	0	0	1	0	0	2
11	0.9926101	0.0170542213	0.05884513	0.9992122	0	0	0	1	0	2
12	0.9968165	0.0076296818	0.02442613	0.9996515	0	0	0	0	1	2
13	0.9987121	0.0037401870	0.07194500	0.9999632	0	0	0	0	0	3
14	0.9794116	0.0509363569	0.21330645	0.9996481	1	0	0	0	0	3
15	0.9987121	0.0037401870	0.07194500	0.9999632	0	1	0	0	0	3
16	0.9908876	0.0192110792	0.62408595	0.9998449	0	0	1	0	0	3
17	0.9987121	0.0037401870	0.07194500	0.9999632	0	0	0	1	0	3
18	0.9993969	0.0017891803	0.02937880	0.9999818	0	0	0	0	1	3
19	0.9997854	0.0007578331	0.08187306	0.9999983	0	0	0	0	0	4
20	0.9974483	0.0080226719	0.32986867	0.9999876	1	0	0	0	0	4
21	0.9997854	0.0007578331	0.08187306	0.9999983	0	1	0	0	0	4
22	0.9987417	0.0036263446	0.72907998	0.9999949	0	0	1	0	0	4
23	0.9997854	0.0007578331	0.08187306	0.9999983	0	0	0	1	0	4
24	0.9998914	0.0003884021	0.03325068	0.9999991	0	0	0	0	1	4

H. intermedia 2014:

	Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.7858222	0.190037124	0.2744840	0.9403817	0	0	0	0	0	1
2	0.4021673	0.314939040	0.1410942	0.8682908	1	0	0	0	0	1
3	0.7858222	0.190037124	0.2744840	0.9403817	0	1	0	0	0	1
4	0.7583462	0.152668661	0.3909699	0.9323147	0	0	1	0	0	1
5	0.7858222	0.190037124	0.2744840	0.9403817	0	0	0	1	0	1
6	0.8248711	0.199691004	0.2169195	0.9523278	0	0	0	0	1	1
7	0.9525503	0.074672325	0.3797868	0.9960036	0	0	0	0	0	2
8	0.8030535	0.249500844	0.2660869	0.9861770	1	0	0	0	0	2
9	0.9525503	0.074672325	0.3797868	0.9960036	0	1	0	0	0	2
10	0.9540622	0.064418205	0.5362042	0.9962944	0	0	1	0	0	2
11	0.9525503	0.074672325	0.3797868	0.9960036	0	0	0	1	0	2
12	0.9609438	0.068802912	0.3038718	0.9967220	0	0	0	0	1	2
13	0.9914935	0.019082250	0.4602407	0.9997752	0	0	0	0	0	3
14	0.9680294	0.064249065	0.4217266	0.9993408	1	0	0	0	0	3
15	0.9914935	0.019082250	0.4602407	0.9997752	0	1	0	0	0	3
16	0.9924127	0.016210726	0.6400372	0.9998191	0	0	1	0	0	3
17	0.9914935	0.019082250	0.4602407	0.9997752	0	0	0	1	0	3
18	0.9930019	0.016813202	0.3713315	0.9998118	0	0	0	0	1	3
19	0.9985345	0.004225756	0.5257961	0.9999878	0	0	0	0	0	4
20	0.9955822	0.012004175	0.5606265	0.9999752	1	0	0	0	0	4
21	0.9985345	0.004225756	0.5257961	0.9999878	0	1	0	0	0	4
22	0.9987475	0.003546359	0.7220768	0.9999911	0	0	1	0	0	4
23	0.9985345	0.004225756	0.5257961	0.9999878	0	0	0	1	0	4
24	0.9987993	0.003631354	0.4260353	0.9999897	0	0	0	0	1	4

***I.alpestris* 2010:**

	Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.8501750	0.05076807	0.7387060	0.9194829	0	0	0	0	0	1
2	0.8501750	0.05076807	0.7387060	0.9194829	1	0	0	0	0	1
3	0.8501750	0.05076807	0.7387060	0.9194829	0	1	0	0	0	1
4	0.7137045	0.07553025	0.5713156	0.8242500	0	0	1	0	0	1
5	0.8501750	0.05076807	0.7387060	0.9194829	0	0	0	1	0	1
6	0.8501750	0.05076807	0.7387060	0.9194829	0	0	0	0	1	1
7	0.8675994	0.03734585	0.7771205	0.9249028	0	0	0	0	0	2
8	0.8675994	0.03734585	0.7771205	0.9249028	1	0	0	0	0	2
9	0.8675994	0.03734585	0.7771205	0.9249028	0	1	0	0	0	2
10	0.7414772	0.05468531	0.6231696	0.8326416	0	0	1	0	0	2
11	0.8675994	0.03734585	0.7771205	0.9249028	0	0	0	1	0	2
12	0.8675994	0.03734585	0.7771205	0.9249028	0	0	0	0	1	2
13	0.8820267	0.03597777	0.7948534	0.9351190	0	0	0	0	0	3
14	0.8820267	0.03597777	0.7948534	0.9351190	1	0	0	0	0	3
15	0.8820267	0.03597777	0.7948534	0.9351190	0	1	0	0	0	3
16	0.7660916	0.05426171	0.6488693	0.8529037	0	0	1	0	0	3
17	0.8820267	0.03597777	0.7948534	0.9351190	0	0	0	1	0	3
18	0.8820267	0.03597777	0.7948534	0.9351190	0	0	0	0	1	3
19	0.8937977	0.04106489	0.7997187	0.9457280	0	0	0	0	0	4
20	0.8937977	0.04106489	0.7997187	0.9457280	1	0	0	0	0	4
21	0.8937977	0.04106489	0.7997187	0.9457280	0	1	0	0	0	4
22	0.7873676	0.06652616	0.6549027	0.8763315	0	0	1	0	0	4
23	0.8937977	0.04106489	0.7997187	0.9457280	0	0	0	1	0	4
24	0.8937977	0.04106489	0.7997187	0.9457280	0	0	0	0	1	4

***I.alpestris* 2014:**

	Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.8356271	0.06102850	0.7064178	0.9152522	0	0	0	0	0	1
2	0.8356271	0.06102850	0.7064178	0.9152522	1	0	0	0	0	1
3	0.8356271	0.06102850	0.7064178	0.9152522	0	1	0	0	0	1
4	0.7044298	0.08059604	0.5550120	0.8208995	0	0	1	0	0	1
5	0.8723706	0.06541507	0.6969003	0.9412983	0	0	0	1	0	1
6	0.8356271	0.06102850	0.7064178	0.9152522	0	0	0	0	1	1
7	0.8624643	0.04270227	0.7615070	0.9249575	0	0	0	0	0	2
8	0.8624643	0.04270227	0.7615070	0.9249575	1	0	0	0	0	2
9	0.8624643	0.04270227	0.7615070	0.9249575	0	1	0	0	0	2
10	0.7450744	0.05309205	0.6309766	0.8332496	0	0	1	0	0	2
11	0.8916747	0.05355215	0.7469331	0.9470986	0	0	0	1	0	2
12	0.8624643	0.04270227	0.7615070	0.9249575	0	0	0	0	1	2
13	0.8842884	0.03864718	0.7883627	0.9399665	0	0	0	0	0	3
14	0.8842884	0.03864718	0.7883627	0.9399665	1	0	0	0	0	3
15	0.8842884	0.03864718	0.7883627	0.9399665	0	1	0	0	0	3
16	0.7804846	0.05085447	0.6699469	0.8615376	0	0	1	0	0	3
17	0.9071214	0.04962596	0.7757058	0.9558524	0	0	0	1	0	3
18	0.8842884	0.03864718	0.7883627	0.9399665	0	0	0	0	1	3
19	0.9016982	0.04216841	0.7979311	0.9542508	0	0	0	0	0	4
20	0.9016982	0.04216841	0.7979311	0.9542508	1	0	0	0	0	4
21	0.9016982	0.04216841	0.7979311	0.9542508	0	1	0	0	0	4
22	0.8104060	0.06377853	0.6811247	0.8934563	0	0	1	0	0	4
23	0.9193092	0.05005047	0.7906994	0.9640808	0	0	0	1	0	4
24	0.9016982	0.04216841	0.7979311	0.9542508	0	0	0	0	1	4

***L. helveticus* 2010:**

	Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.4034225	0.05746709	0.2976802	0.5189789	0	0	0	0	0	1
2	0.6195009	0.11189131	0.3951428	0.7984215	1	0	0	0	0	1
3	0.4034225	0.05746709	0.2976802	0.5189789	0	1	0	0	0	1
4	0.4034225	0.05746709	0.2976802	0.5189789	0	0	1	0	0	1
5	0.4034225	0.05746709	0.2976802	0.5189789	0	0	0	1	0	1
6	0.4018183	0.07910501	0.2633588	0.5603342	0	0	0	0	1	1
7	0.6778023	0.07395058	0.5322625	0.7947946	0	0	0	0	0	2
8	0.8569238	0.08316563	0.6147275	0.9454938	1	0	0	0	0	2
9	0.6778023	0.07395058	0.5322625	0.7947946	0	1	0	0	0	2
10	0.6778023	0.07395058	0.5322625	0.7947946	0	0	1	0	0	2
11	0.6778023	0.07395058	0.5322625	0.7947946	0	0	0	1	0	2
12	0.5789295	0.13250338	0.3972251	0.7538511	0	0	0	0	1	2
13	0.8654861	0.06128097	0.7202185	0.9410965	0	0	0	0	0	3
14	0.9539171	0.03829717	0.7632780	0.9867847	1	0	0	0	0	3
15	0.8654861	0.06128097	0.7202185	0.9410965	0	1	0	0	0	3
16	0.8654861	0.06128097	0.7202185	0.9410965	0	0	1	0	0	3
17	0.8654861	0.06128097	0.7202185	0.9410965	0	0	0	1	0	3
18	0.7178327	0.19462737	0.4824311	0.8994791	0	0	0	0	1	3
19	0.9507913	0.03449267	0.8453432	0.9854925	0	0	0	0	0	4
20	0.9857263	0.01499428	0.8508924	0.9969811	1	0	0	0	0	4
21	0.9507913	0.03449267	0.8453432	0.9854925	0	1	0	0	0	4
22	0.9507913	0.03449267	0.8453432	0.9854925	0	0	1	0	0	4
23	0.9507913	0.03449267	0.8453432	0.9854925	0	0	0	1	0	4
24	0.8015893	0.22418075	0.5347057	0.9640405	0	0	0	0	1	4

***L. helveticus* 2010:**

	Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.4567142	0.05014426	0.3616807	0.5550031	0	0	0	0	0	1
2	0.4567142	0.05014426	0.3616807	0.5550031	1	0	0	0	0	1
3	0.1721907	0.18203286	0.1054007	0.5483611	0	1	0	0	0	1
4	0.4567142	0.05014426	0.3616807	0.5550031	0	0	1	0	0	1
5	0.4567142	0.05014426	0.3616807	0.5550031	0	0	0	1	0	1
6	0.8323611	0.23270832	0.1129514	0.8626486	0	0	0	0	1	1
7	0.7096899	0.06052947	0.5831174	0.8102597	0	0	0	0	0	2
8	0.7096899	0.06052947	0.5831174	0.8102597	1	0	0	0	0	2
9	0.3116068	0.28715993	0.1710478	0.7749330	0	1	0	0	0	2
10	0.7096899	0.06052947	0.5831174	0.8102597	0	0	1	0	0	2
11	0.7096899	0.06052947	0.5831174	0.8102597	0	0	0	1	0	2
12	0.9156628	0.11917593	0.1859006	0.9460897	0	0	0	0	1	2
13	0.8762281	0.04995598	0.7484478	0.9439169	0	0	0	0	0	3
14	0.8762281	0.04995598	0.7484478	0.9439169	1	0	0	0	0	3
15	0.5034204	0.36112426	0.2323521	0.9128593	0	1	0	0	0	3
16	0.8762281	0.04995598	0.7484478	0.9439169	0	0	1	0	0	3
17	0.8762281	0.04995598	0.7484478	0.9439169	0	0	0	1	0	3
18	0.9670743	0.04915189	0.2396308	0.9856612	0	0	0	0	1	3
19	0.9533001	0.02879552	0.8584463	0.9856471	0	0	0	0	0	4
20	0.9533001	0.02879552	0.8584463	0.9856471	1	0	0	0	0	4
21	0.7181126	0.31493344	0.3054496	0.9706648	0	1	0	0	0	4
22	0.9533001	0.02879552	0.8584463	0.9856471	0	0	1	0	0	4
23	0.9533001	0.02879552	0.8584463	0.9856471	0	0	0	1	0	4
24	0.9887160	0.01823692	0.2732897	0.9966946	0	0	0	0	1	4

***L. vulgaris* 2010:**

Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.2064524	0.05369196	0.1227508	0.3262008	0	0	0	0	1
2	0.2064524	0.05369196	0.1227508	0.3262008	1	0	0	0	1
3	0.4742257	0.33844519	0.1109234	0.6794541	0	1	0	0	1
4	0.2064524	0.05369196	0.1227508	0.3262008	0	0	1	0	1
5	0.3210868	0.18214552	0.1293440	0.5316047	0	0	0	1	1
6	0.2064524	0.05369196	0.1227508	0.3262008	0	0	0	0	1
7	0.5510959	0.12638879	0.3139310	0.7671914	0	0	0	0	2
8	0.5510959	0.12638879	0.3139310	0.7671914	1	0	0	0	2
9	0.7502497	0.21871779	0.3129801	0.8918337	0	1	0	0	2
10	0.5510959	0.12638879	0.3139310	0.7671914	0	0	1	0	2
11	0.6771538	0.18930071	0.3092101	0.8545639	0	0	0	1	2
12	0.5510959	0.12638879	0.3139310	0.7671914	0	0	0	0	2
13	0.8527239	0.09986209	0.5524922	0.9645619	0	0	0	0	3
14	0.8527239	0.09986209	0.5524922	0.9645619	1	0	0	0	3
15	0.9217027	0.09294709	0.5912682	0.9832998	0	1	0	0	3
16	0.8527239	0.09986209	0.5524922	0.9645619	0	0	1	0	3
17	0.9023137	0.09364106	0.5225201	0.9783799	0	0	0	1	3
18	0.8527239	0.09986209	0.5524922	0.9645619	0	0	0	0	3
19	0.9646655	0.03770379	0.7601808	0.9957794	0	0	0	0	4
20	0.9646655	0.03770379	0.7601808	0.9957794	1	0	0	0	4
21	0.9810802	0.02876596	0.8062307	0.9979594	0	1	0	0	4
22	0.9646655	0.03770379	0.7601808	0.9957794	0	0	1	0	4
23	0.9772674	0.02994191	0.6908361	0.9974261	0	0	0	1	4
24	0.9646655	0.03770379	0.7601808	0.9957794	0	0	0	0	4

***L. vulgaris* 2014:**

Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.30950839	0.10744991	0.167553340	0.4911200	0	0	0	0	1
2	0.06702674	0.05147568	0.014110145	0.2650432	1	0	0	0	1
3	0.30950839	0.10744991	0.167553340	0.4911200	0	1	0	0	1
4	0.24342927	0.07090039	0.137760101	0.3951200	0	0	1	0	1
5	0.30950839	0.10744991	0.167553340	0.4911200	0	0	0	1	1
6	0.07240217	0.10585911	0.042966270	0.8227579	0	0	0	0	1
7	0.68149142	0.13185548	0.418114893	0.8603797	0	0	0	0	2
8	0.08607793	0.10349301	0.007097156	0.5537797	1	0	0	0	2
9	0.68149142	0.13185548	0.418114893	0.8603797	0	1	0	0	2
10	0.61136044	0.12965509	0.362368536	0.8143358	0	0	1	0	2
11	0.68149142	0.13185548	0.418114893	0.8603797	0	0	0	1	2
12	0.18442066	0.26636573	0.113559971	0.9493923	0	0	0	0	2
13	0.91254865	0.06803269	0.676261468	0.9809509	0	0	0	0	3
14	0.10990618	0.19094225	0.002685405	0.8499024	1	0	0	0	3
15	0.91254865	0.06803269	0.676261468	0.9809509	0	1	0	0	3
16	0.88460070	0.08324869	0.619629247	0.9732518	0	0	1	0	3
17	0.91254865	0.06803269	0.676261468	0.9809509	0	0	0	1	3
18	0.26178597	0.37612843	0.191336914	0.9934384	0	0	0	0	3
19	0.98094023	0.02138571	0.850853999	0.9978394	0	0	0	0	4
20	0.13932505	0.31531910	0.000934340	0.9655411	1	0	0	0	4
21	0.98094023	0.02138571	0.850853999	0.9978394	0	1	0	0	4
22	0.97397051	0.02835895	0.814418115	0.9968973	0	0	1	0	4
23	0.98094023	0.02138571	0.850853999	0.9978394	0	0	0	1	4
24	0.28577050	0.47134200	0.245684808	0.9993042	0	0	0	0	4

P. esculentus-aggr. 2010:

Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.4621296	5.789685e-02	0.3556965	0.5722170	0	0	0	0	1
2	0.8144212	1.300027e-01	0.4484703	0.9594891	1	0	0	0	1
3	0.2424708	2.322011e-01	0.1858721	0.7715240	0	1	0	0	1
4	0.4621296	5.789685e-02	0.3556965	0.5722170	0	0	1	0	1
5	0.5598136	1.347841e-01	0.3631631	0.7158297	0	0	0	1	1
6	0.4621296	5.789685e-02	0.3556965	0.5722170	0	0	0	0	1
7	0.6631048	6.065323e-02	0.5396419	0.7677700	0	0	0	0	2
8	0.9909524	1.643010e-02	0.7510914	0.9997485	1	0	0	0	2
9	0.3503921	3.340315e-01	0.2835902	0.8759942	0	1	0	0	2
10	0.6631048	6.065323e-02	0.5396419	0.7677700	0	0	1	0	2
11	0.7400315	1.033618e-01	0.5525675	0.8524851	0	0	0	1	2
12	0.6631048	6.065323e-02	0.5396419	0.7677700	0	0	0	0	2
13	0.8184772	5.806741e-02	0.6794417	0.9056228	0	0	0	0	3
14	0.9996343	1.062645e-03	0.9016731	0.9999988	1	0	0	0	3
15	0.4353706	4.200975e-01	0.3582438	0.9497459	0	1	0	0	3
16	0.8184772	5.806741e-02	0.6794417	0.9056228	0	0	1	0	3
17	0.8654234	6.955145e-02	0.7022862	0.9408084	0	0	0	1	3
18	0.8184772	5.806741e-02	0.6794417	0.9056228	0	0	0	0	3
19	0.9117379	4.344139e-02	0.7835480	0.9672035	0	0	0	0	4
20	0.9999853	5.865847e-05	0.9639790	1.0000000	1	0	0	0	4
21	0.4895011	5.013575e-01	0.4138818	0.9826142	0	1	0	0	4
22	0.9117379	4.344139e-02	0.7835480	0.9672035	0	0	1	0	4
23	0.9360665	4.211933e-02	0.8089568	0.9793402	0	0	0	1	4
24	0.9117379	4.344139e-02	0.7835480	0.9672035	0	0	0	0	4

P. esculentus-aggr. 2014:

Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.5099854	0.05835821	0.4044139	0.6141332	0	0	0	0	1
2	0.5099854	0.05835821	0.4044139	0.6141332	1	0	0	0	1
3	0.5099854	0.05835821	0.4044139	0.6141332	0	1	0	0	1
4	0.4904164	0.05708186	0.3855503	0.5965981	0	0	1	0	1
5	0.5809533	0.11909204	0.3969333	0.7211460	0	0	0	1	1
6	0.5099854	0.05835821	0.4044139	0.6141332	0	0	0	0	1
7	0.7365238	0.05618485	0.6197993	0.8269985	0	0	0	0	2
8	0.7365238	0.05618485	0.6197993	0.8269985	1	0	0	0	2
9	0.7365238	0.05618485	0.6197993	0.8269985	0	1	0	0	2
10	0.7212527	0.05715528	0.6012008	0.8162777	0	0	1	0	2
11	0.7849995	0.08285536	0.6192469	0.8788452	0	0	0	1	2
12	0.7365238	0.05618485	0.6197993	0.8269985	0	0	0	0	2
13	0.8825017	0.04311177	0.7728853	0.9430171	0	0	0	0	3
14	0.8825017	0.04311177	0.7728853	0.9430171	1	0	0	0	3
15	0.8825017	0.04311177	0.7728853	0.9430171	0	1	0	0	3
16	0.8743467	0.04510434	0.7591655	0.9388851	0	0	1	0	3
17	0.9067814	0.04819819	0.7816698	0.9602814	0	0	0	1	3
18	0.8825017	0.04311177	0.7728853	0.9430171	0	0	0	0	3
19	0.9528066	0.02548368	0.8715027	0.9836200	0	0	0	0	4
20	0.9528066	0.02548368	0.8715027	0.9836200	1	0	0	0	4
21	0.9528066	0.02548368	0.8715027	0.9836200	0	1	0	0	4
22	0.9492852	0.02703065	0.8628696	0.9823590	0	0	1	0	4
23	0.9631063	0.02452309	0.8819207	0.9885119	0	0	0	1	4
24	0.9528066	0.02548368	0.8715027	0.9836200	0	0	0	0	4

***P. ridibundus* 2010:**

	Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.4563457	0.20285430	0.24000141	0.6304522	0	0	0	0	0	1
2	0.3257482	0.11649101	0.16085497	0.5628202	1	0	0	0	0	1
3	0.4563457	0.20285430	0.24000141	0.6304522	0	1	0	0	0	1
4	0.3025914	0.06601303	0.19478178	0.4384467	0	0	1	0	0	1
5	0.4563457	0.20285430	0.24000141	0.6304522	0	0	0	1	0	1
6	0.1786337	0.12859628	0.07196662	0.4966210	0	0	0	0	1	1
7	0.7065998	0.20851329	0.36276937	0.8521611	0	0	0	0	0	2
8	0.6409704	0.20330586	0.26298881	0.8472543	1	0	0	0	0	2
9	0.7065998	0.20851329	0.36276937	0.8521611	0	1	0	0	0	2
10	0.5169245	0.12924764	0.29820847	0.7312020	0	0	1	0	0	2
11	0.7065998	0.20851329	0.36276937	0.8521611	0	0	0	1	0	2
12	0.4397604	0.25827116	0.13647366	0.8074891	0	0	0	0	1	2
13	0.8613126	0.13850343	0.48919592	0.9570674	0	0	0	0	0	3
14	0.8472402	0.14022243	0.37442473	0.9568558	1	0	0	0	0	3
15	0.8613126	0.13850343	0.48919592	0.9570674	0	1	0	0	0	3
16	0.7208267	0.15542641	0.40264848	0.9114202	0	0	1	0	0	3
17	0.8613126	0.13850343	0.48919592	0.9570674	0	0	0	1	0	3
18	0.7261359	0.24345020	0.22373971	0.9412595	0	0	0	0	1	3
19	0.9422670	0.07425766	0.61235858	0.9894080	0	0	0	0	0	4
20	0.9398846	0.07406129	0.48978988	0.9893995	1	0	0	0	0	4
21	0.9422670	0.07425766	0.61235858	0.9894080	0	1	0	0	0	4
22	0.8582972	0.12805802	0.50484544	0.9754132	0	0	1	0	0	4
23	0.9422670	0.07425766	0.61235858	0.9894080	0	0	0	1	0	4
24	0.8836459	0.14549361	0.33101032	0.9839291	0	0	0	0	1	4

***P. ridibundus* 2014:**

	Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.3085407	0.058177346	0.20727665	0.4322981	0	0	0	0	0	1
2	0.5282092	0.324497742	0.08023323	0.9349353	1	0	0	0	0	1
3	0.3085407	0.058177346	0.20727665	0.4322981	0	1	0	0	0	1
4	0.3085407	0.058177346	0.20727665	0.4322981	0	0	1	0	0	1
5	0.3085407	0.058177346	0.20727665	0.4322981	0	0	0	1	0	1
6	0.3085407	0.058177346	0.20727665	0.4322981	0	0	0	0	1	1
7	0.5011276	0.109378189	0.29880328	0.7030834	0	0	0	0	0	2
8	0.9758997	0.064236441	0.16084933	0.9998831	1	0	0	0	0	2
9	0.5011276	0.109378189	0.29880328	0.7030834	0	1	0	0	0	2
10	0.5011276	0.109378189	0.29880328	0.7030834	0	0	1	0	0	2
11	0.5011276	0.109378189	0.29880328	0.7030834	0	0	0	1	0	2
12	0.5011276	0.109378189	0.29880328	0.7030834	0	0	0	0	1	2
13	0.6933805	0.137217516	0.38959472	0.8890387	0	0	0	0	0	3
14	0.9993177	0.002919010	0.24952645	0.9999998	1	0	0	0	0	3
15	0.6933805	0.137217516	0.38959472	0.8890387	0	1	0	0	0	3
16	0.6933805	0.137217516	0.38959472	0.8890387	0	0	1	0	0	3
17	0.6933805	0.137217516	0.38959472	0.8890387	0	0	0	1	0	3
18	0.6933805	0.137217516	0.38959472	0.8890387	0	0	0	0	1	3
19	0.8358176	0.118824251	0.48258269	0.9652619	0	0	0	0	0	4
20	0.9999811	0.000110553	0.35420386	1.0000000	1	0	0	0	0	4
21	0.8358176	0.118824251	0.48258269	0.9652619	0	1	0	0	0	4
22	0.8358176	0.118824251	0.48258269	0.9652619	0	0	1	0	0	4
23	0.8358176	0.118824251	0.48258269	0.9652619	0	0	0	1	0	4
24	0.8358176	0.118824251	0.48258269	0.9652619	0	0	0	0	1	4

R. dalmatina 2010:

	Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.2871725	0.069730837	0.1712489	0.4399139	0	0	0	0	0	1
2	0.2871725	0.069730837	0.1712489	0.4399139	1	0	0	0	0	1
3	0.2871725	0.069730837	0.1712489	0.4399139	0	1	0	0	0	1
4	0.2871725	0.069730837	0.1712489	0.4399139	0	0	1	0	0	1
5	0.2871725	0.069730837	0.1712489	0.4399139	0	0	0	1	0	1
6	0.2871725	0.069730837	0.1712489	0.4399139	0	0	0	0	1	1
7	0.8278350	0.089289525	0.5847902	0.9425813	0	0	0	0	0	2
8	0.8278350	0.089289525	0.5847902	0.9425813	1	0	0	0	0	2
9	0.8278350	0.089289525	0.5847902	0.9425813	0	1	0	0	0	2
10	0.8278350	0.089289525	0.5847902	0.9425813	0	0	1	0	0	2
11	0.8278350	0.089289525	0.5847902	0.9425813	0	0	0	1	0	2
12	0.8278350	0.089289525	0.5847902	0.9425813	0	0	0	0	1	2
13	0.9828739	0.016939803	0.8886923	0.9975818	0	0	0	0	0	3
14	0.9828739	0.016939803	0.8886923	0.9975818	1	0	0	0	0	3
15	0.9828739	0.016939803	0.8886923	0.9975818	0	1	0	0	0	3
16	0.9828739	0.016939803	0.8886923	0.9975818	0	0	1	0	0	3
17	0.9828739	0.016939803	0.8886923	0.9975818	0	0	0	1	0	3
18	0.9828739	0.016939803	0.8886923	0.9975818	0	0	0	0	1	3
19	0.9985422	0.002046629	0.9775482	0.9999072	0	0	0	0	0	4
20	0.9985422	0.002046629	0.9775482	0.9999072	1	0	0	0	0	4
21	0.9985422	0.002046629	0.9775482	0.9999072	0	1	0	0	0	4
22	0.9985422	0.002046629	0.9775482	0.9999072	0	0	1	0	0	4
23	0.9985422	0.002046629	0.9775482	0.9999072	0	0	0	1	0	4
24	0.9985422	0.002046629	0.9775482	0.9999072	0	0	0	0	1	4

R. dalmatina 2014:

	Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.2939853	0.071342644	0.17559955	0.4487167	0	0	0	0	0	1
2	0.2939853	0.071342644	0.17559955	0.4487167	1	0	0	0	0	1
3	0.2939853	0.071342644	0.17559955	0.4487167	0	1	0	0	0	1
4	0.2939853	0.071342644	0.17559955	0.4487167	0	0	1	0	0	1
5	0.2939853	0.071342644	0.17559955	0.4487167	0	0	0	1	0	1
6	0.1506740	0.152087612	0.08977681	0.7063763	0	0	0	0	1	1
7	0.8290987	0.089044042	0.58605656	0.9432565	0	0	0	0	0	2
8	0.8290987	0.089044042	0.58605656	0.9432565	1	0	0	0	0	2
9	0.8290987	0.089044042	0.58605656	0.9432565	0	1	0	0	0	2
10	0.8290987	0.089044042	0.58605656	0.9432565	0	0	1	0	0	2
11	0.8290987	0.089044042	0.58605656	0.9432565	0	0	0	1	0	2
12	0.4354002	0.424261449	0.30657481	0.9698984	0	0	0	0	1	2
13	0.9826182	0.017225080	0.88679457	0.9975549	0	0	0	0	0	3
14	0.9826182	0.017225080	0.88679457	0.9975549	1	0	0	0	0	3
15	0.9826182	0.017225080	0.88679457	0.9975549	0	1	0	0	0	3
16	0.9826182	0.017225080	0.88679457	0.9975549	0	0	1	0	0	3
17	0.9826182	0.017225080	0.88679457	0.9975549	0	0	0	1	0	3
18	0.5307952	0.882874361	0.46589474	0.9987323	0	0	0	0	1	3
19	0.9984833	0.002133456	0.97656244	0.9999039	0	0	0	0	0	4
20	0.9984833	0.002133456	0.97656244	0.9999039	1	0	0	0	0	4
21	0.9984833	0.002133456	0.97656244	0.9999039	0	1	0	0	0	4
22	0.9984833	0.002133456	0.97656244	0.9999039	0	0	1	0	0	4
23	0.9984833	0.002133456	0.97656244	0.9999039	0	0	0	1	0	4
24	0.6552194	3.994988381	0.51247722	0.9999514	0	0	0	0	1	4

R. latastei 2010:

	Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.0009306727	1.024118e-02	4.037286e-48	1	0	0	0	0	0	1
2	0.1898016451	4.434524e+00	1.862609e-21	1	1	0	0	0	0	1
3	0.0009306727	1.024118e-02	4.037286e-48	1	0	1	0	0	0	1
4	0.9976782326	2.662902e-02	6.967840e-08	1	0	0	1	0	0	1
5	0.0009306727	1.024118e-02	4.037286e-48	1	0	0	0	1	0	1
6	0.0009306727	1.024118e-02	4.037286e-48	1	0	0	0	0	1	1
7	0.0010166483	2.031229e-03	1.564675e-36	1	0	0	0	0	0	2
8	0.9988599456	3.319115e-02	1.909774e-22	1	1	0	0	0	0	2
9	0.0010166483	2.031229e-03	1.564675e-36	1	0	1	0	0	0	2
10	0.9999994681	1.219671e-05	5.644145e-14	1	0	0	1	0	0	2
11	0.0010166483	2.031229e-03	1.564675e-36	1	0	0	0	1	0	2
12	0.0010166483	2.031229e-03	1.564675e-36	1	0	0	0	0	1	2
13	0.0010172158	2.031331e-03	1.235035e-26	1	0	0	0	0	0	3
14	0.9999996892	1.107498e-05	6.684266e-21	1	1	0	0	0	0	3
15	0.0010172158	2.031331e-03	1.235035e-26	1	0	1	0	0	0	3
16	0.9999999999	4.177938e-09	4.498073e-20	1	0	0	1	0	0	3
17	0.0010172158	2.031331e-03	1.235035e-26	1	0	0	0	1	0	3
18	0.0010172158	2.031331e-03	1.235035e-26	1	0	0	0	0	1	3
19	0.0033699719	4.895838e-02	2.094514e-20	1	0	0	0	0	0	4
20	0.9999999999	6.634869e-09	2.410998e-22	1	1	0	0	0	0	4
21	0.0033699719	4.895838e-02	2.094514e-20	1	0	1	0	0	0	4
22	1.0000000000	1.272608e-12	3.570176e-26	1	0	0	1	0	0	4
23	0.0033699719	4.895838e-02	2.094514e-20	1	0	0	0	1	0	4
24	0.0033699719	4.895838e-02	2.094514e-20	1	0	0	0	0	1	4

R. latastei 2014:

	Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.9998913	7.036530e-03	5.927258e-34	1	0	0	0	0	0	1
2	0.9684359	6.382305e+00	5.927258e-34	1	1	0	0	0	0	1
3	0.9998913	7.036530e-03	5.927258e-34	1	0	1	0	0	0	1
4	0.9999547	3.272434e-03	5.927258e-34	1	0	0	1	0	0	1
5	0.9998913	7.036530e-03	5.927258e-34	1	0	0	0	1	0	1
6	0.9999875	5.371582e-04	5.927258e-34	1	0	0	0	0	1	1
7	1.0000000	2.401526e-08	7.475058e-65	1	0	0	0	0	0	2
8	1.0000000	1.170523e-05	7.475058e-65	1	1	0	0	0	0	2
9	1.0000000	2.401526e-08	7.475058e-65	1	0	1	0	0	0	2
10	1.0000000	2.342548e-08	7.475058e-65	1	0	0	1	0	0	2
11	1.0000000	2.401526e-08	7.475058e-65	1	0	0	0	1	0	2
12	1.0000000	1.415006e-08	7.475058e-65	1	0	0	0	0	1	2
13	1.0000000	3.055162e-13	9.387830e-96	1	0	0	0	0	0	3
14	1.0000000	1.576029e-11	9.387830e-96	1	1	0	0	0	0	3
15	1.0000000	3.055162e-13	9.387830e-96	1	0	1	0	0	0	3
16	1.0000000	3.055101e-13	9.387830e-96	1	0	0	1	0	0	3
17	1.0000000	3.055162e-13	9.387830e-96	1	0	0	0	1	0	3
18	1.0000000	2.815347e-13	9.387830e-96	1	0	0	0	0	1	3
19	1.0000000	5.023599e-18	1.177778e-126	1	0	0	0	0	0	4
20	1.0000000	2.474966e-17	1.177778e-126	1	1	0	0	0	0	4
21	1.0000000	5.023599e-18	1.177778e-126	1	0	1	0	0	0	4
22	1.0000000	5.023590e-18	1.177778e-126	1	0	0	1	0	0	4
23	1.0000000	5.023599e-18	1.177778e-126	1	0	0	0	1	0	4
24	1.0000000	4.960532e-18	1.177778e-126	1	0	0	0	0	1	4

R. tempora ria 2010:

Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.9983921	0.006617745	0.1613044	0.9999995	0	0	0	0	1
2	0.9983921	0.006617745	0.1613044	0.9999995	1	0	0	0	1
3	0.9983921	0.006617745	0.1613044	0.9999995	0	1	0	0	1
4	0.6998687	0.056653131	0.5788495	0.7982341	0	0	1	0	1
5	0.9983921	0.006617745	0.1613044	0.9999995	0	0	0	1	1
6	0.9983921	0.006617745	0.1613044	0.9999995	0	0	0	0	1
7	0.9934309	0.016662602	0.5036112	0.9999556	0	0	0	0	2
8	0.9934309	0.016662602	0.5036112	0.9999556	1	0	0	0	2
9	0.9934309	0.016662602	0.5036112	0.9999556	0	1	0	0	2
10	0.8697040	0.045458988	0.7525178	0.9361120	0	0	1	0	2
11	0.9934309	0.016662602	0.5036112	0.9999556	0	0	0	1	2
12	0.9934309	0.016662602	0.5036112	0.9999556	0	0	0	0	2
13	0.9735670	0.028952759	0.8023848	0.9970158	0	0	0	0	3
14	0.9735670	0.028952759	0.8023848	0.9970158	1	0	0	0	3
15	0.9735670	0.028952759	0.8023848	0.9970158	0	1	0	0	3
16	0.9502642	0.030964303	0.8410316	0.9857143	0	0	1	0	3
17	0.9735670	0.028952759	0.8023848	0.9970158	0	0	0	1	3
18	0.9735670	0.028952759	0.8023848	0.9970158	0	0	0	0	3
19	0.8997022	0.100234326	0.5042100	0.9875191	0	0	0	0	4
20	0.8997022	0.100234326	0.5042100	0.9875191	1	0	0	0	4
21	0.8997022	0.100234326	0.5042100	0.9875191	0	1	0	0	4
22	0.9820436	0.016520188	0.8971102	0.9970934	0	0	1	0	4
23	0.8997022	0.100234326	0.5042100	0.9875191	0	0	0	1	4
24	0.8997022	0.100234326	0.5042100	0.9875191	0	0	0	0	4

R. tempora ria 2014:

Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.7867222	0.0470848395	6.876651e-01	0.8596057	0	0	0	0	1
2	0.7867222	0.0470848395	6.876651e-01	0.8596057	1	0	0	0	1
3	0.6680376	0.2254395025	4.733984e-01	0.8818675	0	1	0	0	1
4	0.7772782	0.0446575457	6.815182e-01	0.8505644	0	0	1	0	1
5	0.9999009	0.0022084019	8.652407e-12	1.0000000	0	0	0	1	1
6	0.8610081	0.0890784043	6.489757e-01	0.9265195	0	0	0	0	1
7	0.9063545	0.0303012371	8.310580e-01	0.9497315	0	0	0	0	2
8	0.9063545	0.0303012371	8.310580e-01	0.9497315	1	0	0	0	2
9	0.8256149	0.1749926255	5.917876e-01	0.9564078	0	1	0	0	2
10	0.9015781	0.0300742342	8.265828e-01	0.9462439	0	0	1	0	2
11	0.9999624	0.0008393537	2.279278e-11	1.0000000	0	0	0	1	2
12	0.9402947	0.0431488248	8.114310e-01	0.9736678	0	0	0	0	2
13	0.9621468	0.0202680415	8.964927e-01	0.9867123	0	0	0	0	3
14	0.9621468	0.0202680415	8.964927e-01	0.9867123	1	0	0	0	3
15	0.9210281	0.1010126709	6.770353e-01	0.9874474	0	1	0	0	3
16	0.9600774	0.0208527387	8.928831e-01	0.9857922	0	0	1	0	3
17	0.9999857	0.0003190799	5.956951e-11	1.0000000	0	0	0	1	3
18	0.9759729	0.0211114012	8.949794e-01	0.9928836	0	0	0	0	3
19	0.9852443	0.0114808967	9.347841e-01	0.9967860	0	0	0	0	4
20	0.9852443	0.0114808967	9.347841e-01	0.9967860	1	0	0	0	4
21	0.9675130	0.0482421212	7.608230e-01	0.9966384	0	1	0	0	4
22	0.9844073	0.0119867560	9.321188e-01	0.9965668	0	0	1	0	4
23	0.9999946	0.0001213298	1.544622e-10	1.0000000	0	0	0	1	4
24	0.9906066	0.0101037518	9.395943e-01	0.9982347	0	0	0	0	4

T. carnifex 2010:

Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.9996757	5.631449e-02	3.220423e-28	1	0	0	0	0	1
2	0.9840245	2.927525e+00	3.220423e-28	1	1	0	0	0	1
3	0.9996757	5.631449e-02	3.220423e-28	1	0	1	0	0	1
4	0.9999138	4.649037e-03	3.220423e-28	1	0	0	1	0	1
5	0.9996757	5.631449e-02	3.220423e-28	1	0	0	0	1	1
6	0.9999769	8.344423e-04	3.220423e-28	1	0	0	0	0	1
7	1.0000000	1.582436e-07	9.811729e-54	1	0	0	0	0	2
8	1.0000000	8.037884e-06	9.811729e-54	1	1	0	0	0	2
9	1.0000000	1.582436e-07	9.811729e-54	1	0	1	0	0	2
10	1.0000000	1.016407e-07	9.811729e-54	1	0	0	1	0	2
11	1.0000000	1.582436e-07	9.811729e-54	1	0	0	0	1	2
12	1.0000000	5.403310e-08	9.811729e-54	1	0	0	0	0	2
13	1.0000000	3.266402e-12	2.973533e-79	1	0	0	0	0	3
14	1.0000000	1.999215e-11	2.973533e-79	1	1	0	0	0	3
15	1.0000000	3.266402e-12	2.973533e-79	1	0	1	0	0	3
16	1.0000000	3.224314e-12	2.973533e-79	1	0	0	1	0	3
17	1.0000000	3.266402e-12	2.973533e-79	1	0	0	0	1	3
18	1.0000000	2.645428e-12	2.973533e-79	1	0	0	0	0	3
19	1.0000000	1.213582e-16	8.999608e-105	1	0	0	0	0	4
20	1.0000000	1.546296e-16	8.999608e-105	1	1	0	0	0	4
21	1.0000000	1.213582e-16	8.999608e-105	1	0	1	0	0	4
22	1.0000000	1.213240e-16	8.999608e-105	1	0	0	1	0	4
23	1.0000000	1.213582e-16	8.999608e-105	1	0	0	0	1	4
24	1.0000000	1.146328e-16	8.999608e-105	1	0	0	0	0	4

T. carnifex 2014:

Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.8949448	1.893447e-01	1.651984e-11	1.0000000	0	0	0	0	1
2	0.3971741	4.787693e-01	2.176137e-26	1.0000000	1	0	0	0	1
3	0.8949448	1.893447e-01	1.651984e-11	1.0000000	0	1	0	0	1
4	0.9997020	9.212958e-03	5.368147e-18	1.0000000	0	0	1	0	1
5	0.8949448	1.893447e-01	1.651984e-11	1.0000000	0	0	0	1	1
6	0.9991807	1.729572e-02	1.651984e-11	1.0000000	0	0	0	0	1
7	0.9542844	9.922804e-02	5.349866e-03	0.9966755	0	0	0	0	2
8	0.7355383	3.666343e-01	3.093618e-02	0.9807135	1	0	0	0	2
9	0.9542844	9.922804e-02	5.349866e-03	0.9966755	0	1	0	0	2
10	1.0000000	1.068628e-06	1.405063e-33	1.0000000	0	0	1	0	2
11	0.9542844	9.922804e-02	5.349866e-03	0.9966755	0	0	0	1	2
12	1.0000000	1.198091e-06	1.463173e-23	1.0000000	0	0	0	0	2
13	0.9999949	1.898314e-04	2.802844e-28	1.0000000	0	0	0	0	3
14	0.9999722	8.117938e-04	3.647549e-17	1.0000000	1	0	0	0	3
15	0.9999949	1.898314e-04	2.802844e-28	1.0000000	0	1	0	0	3
16	1.0000000	1.071299e-10	3.907921e-49	1.0000000	0	0	1	0	3
17	0.9999949	1.898314e-04	2.802844e-28	1.0000000	0	0	0	1	3
18	1.0000000	1.141104e-10	2.184495e-38	1.0000000	0	0	0	0	3
19	1.0000000	2.350975e-08	1.283762e-53	1.0000000	0	0	0	0	4
20	1.0000000	1.112930e-07	9.840400e-33	1.0000000	1	0	0	0	4
21	1.0000000	2.350975e-08	1.283762e-53	1.0000000	0	1	0	0	4
22	1.0000000	1.033543e-14	1.088918e-64	1.0000000	0	0	1	0	4
23	1.0000000	2.350975e-08	1.283762e-53	1.0000000	0	0	0	1	4
24	1.0000000	1.112047e-14	1.219036e-53	1.0000000	0	0	0	0	4

T. cristatus 2010:

	Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	1.592313e-01	5.436278e-02	8.319357e-02	0.2892172	0	0	0	0	0	1
2	1.592313e-01	5.436278e-02	8.319357e-02	0.2892172	1	0	0	0	0	1
3	1.592313e-01	5.436278e-02	8.319357e-02	0.2892172	0	1	0	0	0	1
4	1.815002e-01	5.333007e-02	1.006275e-01	0.3052218	0	0	1	0	0	1
5	9.999911e-01	2.766450e-03	1.789610e-193	1.0000000	0	0	0	1	0	1
6	6.204785e-06	5.813138e-04	9.891754e-79	1.0000000	0	0	0	0	1	1
7	2.806555e-01	8.742027e-02	1.505916e-01	0.4684286	0	0	0	0	0	2
8	2.806555e-01	8.742027e-02	1.505916e-01	0.4684286	1	0	0	0	0	2
9	2.806555e-01	8.742027e-02	1.505916e-01	0.4684286	0	1	0	0	0	2
10	3.138098e-01	8.245976e-02	1.799409e-01	0.4874672	0	0	1	0	0	2
11	1.000000e+00	7.617494e-09	0.000000e+00	1.0000000	0	0	0	1	0	2
12	1.283511e-05	1.201830e-03	2.046199e-78	1.0000000	0	0	0	0	1	2
13	4.452947e-01	1.423792e-01	2.141873e-01	0.7071032	0	0	0	0	0	3
14	4.452947e-01	1.423792e-01	2.141873e-01	0.7071032	1	0	0	0	0	3
15	4.452947e-01	1.423792e-01	2.141873e-01	0.7071032	0	1	0	0	0	3
16	4.853517e-01	1.330174e-01	2.511575e-01	0.7255427	0	0	1	0	0	3
17	1.000000e+00	2.200218e-14	0.000000e+00	1.0000000	0	0	0	1	0	3
18	2.655025e-05	2.484691e-03	4.227003e-78	1.0000000	0	0	0	0	1	3
19	6.227111e-01	1.812091e-01	2.752787e-01	0.8797933	0	0	0	0	0	4
20	6.227111e-01	1.812091e-01	2.752787e-01	0.8797933	1	0	0	0	0	4
21	6.227111e-01	1.812091e-01	2.752787e-01	0.8797933	0	1	0	0	0	4
22	6.604533e-01	1.647113e-01	3.168974e-01	0.8905491	0	0	1	0	0	4
23	1.000000e+00	6.277838e-20	0.000000e+00	1.0000000	0	0	0	1	0	4
24	5.491987e-05	5.136774e-03	8.720211e-78	1.0000000	0	0	0	0	1	4

T. cristatus 2014:

	Predicted	SE	lower	upper	ms1	ms2	ms3	ms4	ms5	popgr
1	0.1792694	0.04429144	0.10801160	0.2826485	0	0	0	0	0	1
2	0.1792694	0.04429144	0.10801160	0.2826485	1	0	0	0	0	1
3	0.1792694	0.04429144	0.10801160	0.2826485	0	1	0	0	0	1
4	0.1792694	0.04429144	0.10801160	0.2826485	0	0	1	0	0	1
5	0.1792694	0.04429144	0.10801160	0.2826485	0	0	0	1	0	1
6	0.1068694	0.16029461	0.06186836	0.5925691	0	0	0	0	1	1
7	0.3163248	0.07120796	0.19630276	0.4671469	0	0	0	0	0	2
8	0.3163248	0.07120796	0.19630276	0.4671469	1	0	0	0	0	2
9	0.3163248	0.07120796	0.19630276	0.4671469	0	1	0	0	0	2
10	0.3163248	0.07120796	0.19630276	0.4671469	0	0	1	0	0	2
11	0.3163248	0.07120796	0.19630276	0.4671469	0	0	0	1	0	2
12	0.4830320	0.24973437	0.17787276	0.6877082	0	0	0	0	1	2
13	0.4947882	0.12246061	0.27582086	0.7159676	0	0	0	0	0	3
14	0.4947882	0.12246061	0.27582086	0.7159676	1	0	0	0	0	3
15	0.4947882	0.12246061	0.27582086	0.7159676	0	1	0	0	0	3
16	0.4947882	0.12246061	0.27582086	0.7159676	0	0	1	0	0	3
17	0.4947882	0.12246061	0.27582086	0.7159676	0	0	0	1	0	3
18	0.7230106	0.25735498	0.16646473	0.8462739	0	0	0	0	1	3
19	0.6740253	0.15294490	0.35140107	0.8878919	0	0	0	0	0	4
20	0.6740253	0.15294490	0.35140107	0.8878919	1	0	0	0	0	4
21	0.6740253	0.15294490	0.35140107	0.8878919	0	1	0	0	0	4
22	0.6740253	0.15294490	0.35140107	0.8878919	0	0	1	0	0	4
23	0.6740253	0.15294490	0.35140107	0.8878919	0	0	0	1	0	4
24	0.8289722	0.18379307	0.21546346	0.9420726	0	0	0	0	1	4

Established buffer zones 2014

A. *obstetricians*:

	Predicted	SE	lower	upper	PZ	popgr
1	0.1728965	0.03576497	0.11352092	0.2544546	0	1
2	0.1745094	0.05020275	0.09920013	0.2979993	1	1
3	0.3634020	0.05849545	0.25806913	0.4837428	0	2
4	0.3659980	0.07964969	0.23093746	0.5295592	1	2
5	0.6092065	0.08652484	0.43333496	0.7606357	0	3
6	0.6118621	0.10252810	0.40439484	0.7837477	1	3
7	0.8097804	0.07958080	0.60730763	0.9213621	0	4
8	0.8114909	0.08646689	0.58646452	0.9280459	1	4

B. *variegata*:

	Predicted	SE	lower	upper	PZ	popgr
1	0.18688487	0.05018461	0.10936771	0.3006940	0	1
2	0.07118381	0.05376415	0.02807832	0.2009141	1	1
3	0.54858907	0.07563250	0.40897008	0.6805724	0	2
4	0.27039472	0.15033139	0.12751113	0.5336442	1	2
5	0.86499715	0.05434586	0.72683288	0.9389622	0	3
6	0.64100525	0.18298738	0.35103674	0.8670390	1	3
7	0.97126455	0.01932235	0.89969748	0.9921852	0	4
8	0.90149528	0.08056302	0.66272106	0.9778295	1	4

B. *bufo*:

	Predicted	SE	lower	upper	PZ	popgr
1	0.8310266	0.03780592	0.7475202	0.8909298	0	1
2	0.8263263	0.05296653	0.7005387	0.9019909	1	1
3	0.8872398	0.03102731	0.8125321	0.9345116	0	2
4	0.8839695	0.04074282	0.7762569	0.9404453	1	2
5	0.9251251	0.03359712	0.8388701	0.9663138	0	3
6	0.9229699	0.03897350	0.8134469	0.9684596	1	3
7	0.9495799	0.03308212	0.8545100	0.9818451	0	4
8	0.9482096	0.03601856	0.8363104	0.9825023	1	4

E. *calamita*:

	Predicted	SE	lower	upper	PZ	popgr
1	0.1267963	0.03593849	0.07146771	0.2151038	0	1
2	0.1242799	0.05809150	0.05081874	0.2946899	1	1
3	0.3430670	0.06872015	0.22319304	0.4869792	0	2
4	0.3379624	0.11882811	0.16095690	0.5882598	1	2
5	0.6525788	0.09613890	0.45006397	0.8117141	0	3
6	0.6473576	0.14380641	0.35411741	0.8578441	1	3
7	0.8710434	0.06791923	0.67397780	0.9566483	0	4
8	0.8683855	0.08941849	0.58772186	0.9670000	1	4

H. *arborea*:

	Predicted	SE	lower	upper	PZ	popgr
1	0.2423264	0.04625566	0.1635187	0.3435402	0	1
2	0.2338459	0.06015339	0.1413530	0.3720955	1	1
3	0.5125157	0.08265382	0.3548711	0.6676623	0	2
4	0.5005841	0.10152590	0.3169837	0.6866692	1	2
5	0.7755676	0.08652544	0.5663261	0.9013824	0	3
6	0.7669683	0.09954531	0.5281105	0.9059494	1	3
7	0.9190581	0.05134143	0.7463251	0.9776776	0	4
8	0.9153116	0.05710572	0.7196940	0.9783030	1	4

H. intermedia:

Predicted	SE	lower	upper	PZ	popgr
1 0.6970133	0.142334633	0.3809597	0.8942363	0	1
2 0.6904279	0.136800672	0.3894034	0.8863955	1	1
3 0.9278714	0.080000646	0.5520896	0.9925339	0	2
4 0.9257765	0.080995687	0.5534716	0.9920958	1	2
5 0.9862921	0.024563715	0.6711565	0.9996040	0	3
6 0.9858678	0.025191035	0.6686845	0.9995854	1	3
7 0.9975213	0.006093064	0.7625523	0.9999801	0	4
8 0.9974436	0.006271630	0.7588783	0.9999793	1	4

I. alpestris:

Predicted	SE	lower	upper	PZ	popgr
1 0.8195643	0.04267530	0.7317542	0.8829340	0	1
2 0.7308894	0.10293860	0.5683110	0.8512517	1	1
3 0.8299260	0.03373373	0.7564932	0.8844984	0	2
4 0.7454989	0.09104421	0.5900603	0.8576974	1	2
5 0.8388724	0.03503629	0.7664137	0.8917914	0	3
6 0.7588137	0.08623260	0.6016699	0.8678976	1	3
7 0.8464940	0.04148553	0.7665641	0.9009411	0	4
8 0.7707097	0.08722265	0.6050008	0.8786247	1	4

L. helveticus:

Predicted	SE	lower	upper	PZ	popgr
1 0.4488355	0.04942930	0.3550535	0.5464050	0	1
2 0.4471051	0.06448607	0.3289333	0.5730808	1	1
3 0.7075879	0.05953696	0.5798704	0.8091639	0	2
4 0.7061267	0.06966151	0.5551485	0.8208162	1	2
5 0.8778226	0.04779320	0.7509942	0.9447128	0	3
6 0.8770556	0.05162097	0.7368942	0.9473344	1	3
7 0.9551884	0.02662706	0.8639274	0.9861818	0	4
8 0.9548791	0.02777797	0.8575843	0.9866326	1	4

L. vulgaris:

Predicted	SE	lower	upper	PZ	popgr
1 0.2208481	0.05473135	0.1319715	0.3458456	0	1
2 0.2266496	0.08226689	0.1096206	0.4241200	1	1
3 0.5701651	0.12569096	0.3270651	0.7836098	0	2
4 0.5782406	0.15268043	0.2899341	0.8194268	1	2
5 0.8611984	0.09557521	0.5647971	0.9674081	0	3
6 0.8650971	0.10283377	0.5328236	0.9724297	1	3
7 0.9666750	0.03573442	0.7680283	0.9960840	0	4
8 0.9677288	0.03659583	0.7504806	0.9966045	1	4

P. esculentus-aggr.:

Predicted	SE	lower	upper	PZ	popgr
1 0.5147392	0.05170977	0.4158696	0.6124043	0	1
2 0.4659843	0.09201687	0.3318539	0.6153012	1	1
3 0.7430039	0.05161562	0.6317658	0.8296160	0	2
4 0.7018830	0.08603516	0.5438187	0.8247643	1	2
5 0.8873701	0.04036782	0.7824463	0.9452009	0	3
6 0.8645209	0.05919058	0.7209396	0.9403924	1	3
7 0.9554959	0.02379245	0.8783895	0.9845638	0	4
8 0.9455613	0.03231192	0.8435362	0.9824235	1	4

P. ridibundus:

Predicted	SE	lower	upper	PZ	popgr
1 0.2877360	0.06029739	0.1886183	0.4129619	0	1
2 0.3376995	0.08968574	0.2050478	0.4982400	1	1
3 0.5142583	0.11900687	0.3006586	0.7236510	0	2
4 0.5702793	0.12389474	0.3403345	0.7710407	1	2
5 0.7342651	0.13595841	0.4236560	0.9129261	0	3
6 0.7765358	0.11905280	0.4806489	0.9286383	1	3
7 0.8778742	0.09969873	0.5504844	0.9771946	0	4
8 0.9013060	0.07977163	0.6139706	0.9812966	1	4

R. dalmatina:

Predicted	SE	lower	upper	PZ	popgr
1 0.2775458	0.074332318	0.1587057	0.4401970	0	1
2 0.3044418	0.089955628	0.1649030	0.4910775	1	1
3 0.8168687	0.098798447	0.5548255	0.9413180	0	2
4 0.8353810	0.090596831	0.5844374	0.9477649	1	2
5 0.9810411	0.019417888	0.8718265	0.9974624	0	3
6 0.9833969	0.016650761	0.8894892	0.9977058	1	3
7 0.9983375	0.002402649	0.9727564	0.9999003	0	4
8 0.9985561	0.002035835	0.9775138	0.9999090	1	4

R. latastei:

Predicted	SE	lower	upper	PZ	popgr
1 0.9429119	0.10532331	0.01474916	0.9670207	0	1
2 0.9429021	0.10537630	0.01474916	0.9670207	1	1
3 0.9694734	0.06105125	0.02230170	0.9928272	0	2
4 0.9694734	0.06105125	0.02230170	0.9928272	1	2
5 0.9880441	0.02887073	0.02731085	0.9990908	0	3
6 0.9880441	0.02887073	0.02731085	0.9990908	1	3
7 0.9960642	0.01154057	0.03158779	0.9998985	0	4
8 0.9960642	0.01154057	0.03158779	0.9998985	1	4

R. temporaria:

Predicted	SE	lower	upper	PZ	popgr
1 0.8798844	0.035362119	0.7919210	0.9337279	0	1
2 0.6517201	0.080657323	0.4825735	0.7896750	1	1
3 0.9451773	0.022049479	0.8825308	0.9750661	0	2
4 0.8152143	0.063541451	0.6594454	0.9092283	1	2
5 0.9758826	0.014646064	0.9228258	0.9925410	0	3
6 0.9120508	0.048746811	0.7599851	0.9709660	1	3
7 0.9895572	0.008823045	0.9465230	0.9979408	0	4
8 0.9604884	0.031674853	0.8260005	0.9917880	1	4

T. carnifex:

Predicted	SE	lower	upper	PZ	popgr
1 0.9998034	8.626404e-03	1.397709e-27		1 0	1
2 0.9998614	5.032206e-03	1.397709e-27		1 1	1
3 1.0000000	3.118235e-07	4.231984e-53		1 0	2
4 1.0000000	3.117765e-07	4.231984e-53		1 1	2
5 1.0000000	1.463757e-11	1.282419e-78		1 0	3
6 1.0000000	1.463757e-11	1.282419e-78		1 1	3
7 1.0000000	6.130976e-16	3.881326e-104		1 0	4
8 1.0000000	6.130976e-16	3.881326e-104		1 1	4

T. cristatus:

Predicted	SE	lower	upper	PZ	popgr
1 0.1741309	0.04520345	0.1031699	0.2789615	0	1
2 0.2036913	0.07192245	0.1059072	0.3563010	1	1
3 0.3171366	0.07216383	0.1958793	0.4698043	0	2
4 0.3591189	0.10538837	0.1991483	0.5517689	1	2
5 0.5056947	0.12078459	0.2849658	0.7243129	0	3
6 0.5505686	0.14317311	0.2937025	0.7759065	1	3
7 0.6926871	0.14533512	0.3721436	0.8955564	0	4
8 0.7281554	0.14946670	0.3875840	0.9163230	1	4

Appendix A6

Declaration of originality



Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

Eigenständigkeitserklärung

Die unterzeichnete Eigenständigkeitserklärung ist Bestandteil jeder während des Studiums verfassten Semester-, Bachelor- und Master-Arbeit oder anderen Abschlussarbeit (auch der jeweils elektronischen Version).

Die Dozentinnen und Dozenten können auch für andere bei ihnen verfasste schriftliche Arbeiten eine Eigenständigkeitserklärung verlangen.

Ich bestätige, die vorliegende Arbeit selbständig und in eigenen Worten verfasst zu haben. Davon ausgenommen sind sprachliche und inhaltliche Korrekturvorschläge durch die Betreuer und Betreuerinnen der Arbeit.

Titel der Arbeit (in Druckschrift):

Management effects on amphibian populations in amphibian breeding sites of national importance

Verfasst von (in Druckschrift):

Bei Gruppenarbeiten sind die Namen aller Verfasserinnen und Verfasser erforderlich.

Name(n):

Siegrist

Vorname(n):

Mélanie

Ich bestätige mit meiner Unterschrift:

- Ich habe keine im Merkblatt „Zitier-Knigge“ beschriebene Form des Plagiats begangen.
- Ich habe alle Methoden, Daten und Arbeitsabläufe wahrheitsgetreu dokumentiert.
- Ich habe keine Daten manipuliert.
- Ich habe alle Personen erwähnt, welche die Arbeit wesentlich unterstützt haben.

Ich nehme zur Kenntnis, dass die Arbeit mit elektronischen Hilfsmitteln auf Plagiate überprüft werden kann.

Ort, Datum

Zürich, 2.5.2016

Unterschrift(en)

M. Siegrist

Bei Gruppenarbeiten sind die Namen aller Verfasserinnen und Verfasser erforderlich. Durch die Unterschriften bürgen sie gemeinsam für den gesamten Inhalt dieser schriftlichen Arbeit.