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1 Abstract and Zusammenfassung

1.1 Abstract

Biological invasions have become a widespread phenomenon and have impacts on the natural environment and human livelihoods all over the world. Since Europe's ecosystems are also harmed by invasive alien species (IAS), the European Union (EU) recently adopted a dedicated legislation to limit the negative impacts of biological invasions; the "Regulation (EU) No 1143/2014 on the prevention and management of the introduction and spread of invasive alien species" went into effect in 2014. This regulation obliges EU member states to enforce policies that should prevent the introduction or limiting the spread and impacts of a set of IAS, which have been included in the list of "Invasive Species of European Union Concern". For implementing IAS management and policies, public support is highly and increasingly important, especially when it comes to charismatic species and lethal methods. In New South Wales (Australia) for example, broad public opposition to the shooting of invasive alien feral horses recently terminated this scientifically-advocated management measure. Similarly, a programme to eliminate populations of the Grey Squirrels in Northern Italy was abandoned in the late 1990ies after protests of animal right groups.

Recognizing the importance of the interaction of public perception with acceptance of IAS management methods, this master thesis specifically addresses this question. In particular, I targeted three different groups of stakeholders (nature users, nature experts, general public) in Austria to evaluate potential differences in perception of IAS and management methods between these groups. To do so, I designed and used an online survey using the convenience sampling approach.

In total, I received 239 completed responses: 20 nature users (farmers, hunters), 91 nature experts (conservationists, biologists) and 128 from the general public. In general, respondents knew which species were invasive alien and which were native. Most participants were more likely to accept lethal management methods when it was an IAS. Chemical lethal methods received low rates of acceptance throughout all stakeholder groups, although nature users were rather open to accept such methods for plants. The results revealed that nature experts' acceptance of IAS management methods was rather similar to those of nature users, while the general public clearly preferred non-lethal methods. Most respondents (>50%) were not aware of the role of the EU in IAS topics nor did they know of the existence of the EU IAS regulation 1143/2014. However, more than 75% of respondents agreed that IAS measures and regulations should be implemented at EU level.

This study shows that knowledge about native versus invasive alien status has an influence on the acceptance of management methods. There is no clear evidence that aesthetic aspects have a similar influence. Nature users may have higher levels of acceptance of lethal methods because they are economically dependent on extracting resources from nature. Invasive alien species regulations on EU level are highly appreciated but there is low awareness for already taken EU actions.

Keywords: EU Regulation 1143/2014; IAS control; Management methods acceptance; Nature conservation; Species perception; Survey

1.2 Zusammenfassung

Biologische Invasionen haben sich zu einem globalen Phänomen entwickelt und betreffen Natur und Mensch auf der ganzen Welt. Auch Europas Ökosysteme werden durch invasive Neobiota beeinträchtigt. Als Reaktion hat die Europäische Union 2014 die „Verordnung (EU) Nr. 1143/2014 über die Prävention und das Management der Einbringung und Ausbreitung invasiver gebietsfremder Arten“ erlassen. Diese Verordnung verpflichtet die Mitgliedsstaaten dazu, Maßnahmen gegen die Einschleppung und Ausbreitung von invasiven Arten, die in der „Liste invasiver gebietsfremder Arten von unionsweiter Bedeutung“ verzeichnet sind, zu ergreifen. Die Unterstützung durch die Öffentlichkeit wird für die Umsetzung von Neobiota-Management immer wichtiger, insbesondere wenn es um charismatische Arten und tödliche Methoden geht. In New South Wales (AUS) beispielsweise hat eine breite öffentliche Ablehnung den von Experten geforderten Abschuss von invasiven Wildpferden gestoppt. In ähnlicher Weise wurde ein Programm zur Beseitigung der Grauhörnchen-Populationen in Norditalien Ende der 1990er Jahre nach Protesten von Tierrechtsgruppen aufgegeben.

Da die Relevanz der Interaktion der öffentlichen Wahrnehmung und der Akzeptanz von Managementmaßnahmen augenscheinlich ist, richtet sich diese Arbeit genau an die Erforschung dieser. Es wurden drei verschiedene Zielgruppen (Naturnutzer*innen, Naturexpert*innen, Allgemeinheit) in Österreich ausgewählt, um mögliche Unterschiede in deren Wahrnehmung von invasiven Neobiota und von Managementmethoden. Zu diesem Zweck entwarf und verwendete ich eine Online-Umfrage mit dem Convenience-Sampling-Ansatz.

Insgesamt habe ich 239 ausgefüllte Antworten erhalten: 20 Naturnutzer*innen, 91 Naturexpert*innen, 128 Allgemeinheit. Generell wussten die Befragten, welche Arten neobiotisch und welche heimisch sind. Der Großteil der Teilnehmer*innen war eher bereit, tödliche Maßnahmen (Abschuss, Rodung) zu akzeptieren, wenn es sich bei der Art um eine invasive handelte. Chemische Tötungsmittel wurden durchwegs negativ bewertet, auch wenn die Naturnutzer*innen (Landwirt*innen, Jäger*innen, ...) dies für Pflanzen eher akzeptieren würden. Die Ergebnisse zeigten, dass die Akzeptanz von Neobiota-Managementmaßnahmen von Naturexpert*innen ähnlich derer von Naturnutzer*innen ist, während die Laien im Allgemeinen nicht-tödliche Methoden bevorzugen.

Die meisten Befragten (<50%) kannten weder die Verordnung 1143/2014, noch maßen sie der EU eine große Rolle bei der Neobiota-Bekämpfung bei. Dennoch stimmte ein Großteil (>75%) Maßnahmen auf europäischer Ebene zu und befürwortete Reglements der EU zu diesem Thema.

Diese Studie zeigt, dass das Wissen, ob es eine invasive oder eine einheimische Art ist, einen Einfluss auf die Akzeptanz von Managementmethoden haben kann. Dass ästhetische Aspekte einen ähnlichen Einfluss haben, konnte nicht gezeigt werden. Naturnutzer*innen haben möglicherweise eine höhere Akzeptanz von tödlichen Methoden, da sie wirtschaftlich von der Natur abhängig sind. Regelungen zu Neobiota auf EU-Ebene werden generell als wichtig angesehen, es gibt aber kaum Bewusstsein zu bestehenden Maßnahmen.

Stichwörter: Akzeptanz von Managementmethoden; EU Verordnung 1143/2014; Naturschutz; Neobiota; Neobiota-Management; Umfrage; Wahrnehmung von Arten

2 Acknowledgements

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Also, I want to thank Univ.-Prof. Ing. Dr. phil. Verena Winiwarter for her fascinating lectures, which gave me the inspiration for this thesis' topic in the first place.

Special thanks to Markus and Thomas, who always had a good advice when I had no clue what to do.

3 Introduction

Biological invasions have become a widespread phenomenon and have impacts on the natural environment and human livelihoods all over the world (Vilà et al. 2011). For these reasons, one of the targets of the EU Biodiversity Strategy 2020 (European Commission 2011) is to “combat invasive species”, i.e. to halt – or at least to reduce – the negative impacts caused by biological invasions. To achieve this target, the “Regulation (EU) No 1143/2014 on the prevention and management of the introduction and spread of invasive alien species [IAS]” was adopted in 2014 (European Parliament 2014).

According to this regulation, “‘alien species’ is defined as any live specimen of a species, subspecies or lower taxon of animals, plants, fungi or micro-organisms introduced outside its natural range; it includes any part, gametes, seeds, eggs or propagules of such species, as well as any hybrids, varieties or breeds that might survive and subsequently reproduce” and “‘invasive alien species’ means an alien species whose introduction or spread has been found to threaten or adversely impact upon biodiversity and related ecosystem services” (Essl et al. 2018; European Parliament 2014)

One key component of the regulation is the “List of Invasive Alien Species of Union Concern” (Roy 2013). The European Commission and EU member states can propose candidate species for this list. Such candidate species have to undergo a risk assessment, and based on that, a decision whether to include these species into the list of IAS of EU concern is being made by the EU member states. Once approved, the listed species fall in the range of measurements of regulation 1143/2014. Currently, this list contains 23 plant species and 26 animal species (European Commission 2016) and has recently been expanded by another 16 species in spring 2019 (European Commission 2019). Generally, there are no specified recommendations for management measures in the regulation 1143/2014, but it is stated in article 19, that “lethal and non-lethal physical, chemical and biological actions aimed at the eradication, population control or containment of a population of an invasive alien species” (European Parliament 2014) should be taken into consideration. Article 25 specifies, that IAS management “should be proportional to the impact [of IAS] on the environment” and the operator “should take the necessary measures to spare avoidable pain, distress and suffering of animals during the process”. Moreover, “non-lethal methods should be considered and any action taken should minimise the impact on non-targeted species” (European Parliament 2014).

But if there is no way around, is it justified and appropriate to kill a cute animal for conservation reasons? On this point, scientific and general public’s opinions can differ tremendously (Bertolino & Genovesi 2003), and public opinion becomes increasingly important for IAS management (Crowley et al. 2017; Vaske et al. 2011; Verbrugge et al. 2013). A recent example for this is the Australian feral Brumby horse issue. In 2018, public pressure led to the termination of scientifically recommended conservation actions (Australian Academy of Science 2018; NSW Government Office of Environment & Heritage 2016), in this case shooting the feral horses. The government of New South Wales followed the public protesters’ and animal rights activists’ demand and protected an invasive alien horse (Brumby, *Equus caballus*) (Parliament of New South Wales 2018), although scientific evidence shows that Brumbies threaten habitats and native species (NSW Threatened Species Scientific

Committee 2016; Worboys & Pulsford 2013). A similar situation unfolded in Italy in the late 1990ies, when animal rights activists stopped the eradication of a population of invasive grey squirrels by taking the responsible conservation institute to court (Bertolino & Genovesi 2003). These examples open the question which reasons and mechanisms cause such a broad public opposition to population reduction measures of invasive animal species. This research question is being addressed in my thesis.

Aesthetic and charismatic species are often used as flagship species for increasing acceptance and engagement with and promotion of conservation programs (Caro & Girling 2010). Cultural ecosystem services like aesthetic appreciation or recreation are highly valued by people across all societies (WHO 2005). Thus, the (invasive alien) species' appearance might be one of the underlying motives for rejecting or accepting a specific management method. Further, different economic interests, value systems, preferences and biases may affect social perceptions of IAS and of management measures (Kapitza et al. 2019; Kueffer 2017; Shackleton et al. 2019a).

In my thesis, I have used an online survey targeted at three stakeholder groups. Specifically, I have addressed the following research questions: 1) What are the differences in perception of invasive alien plant and animal species and related native species? 2) What is the level of knowledge in identifying invasive alien and native species? 3) What are the differences in acceptance of different management measures? 4) Which institutions should play stronger roles in IAS management?

4 Materials and Methods

4.1 Survey design

I designed and applied an online survey to obtain answers on the mentioned research questions (Appendix 1 and 2). The online survey used species pairs consisting of one native – one invasive alien species (Figure 1). The survey had nine questions that referred to these species pairs and which dealt with the topics i) perception, ii) management measures, iii) knowledge on native / invasive alien status, iv) relevance of invasive alien species for Austria and iv) knowledge and performance of EU IAS policies. If not indicated otherwise, a Likert-type-scale approach was chosen for all questions, which captured the attitude of the recipients depending on the dis-/agreement to the respective statement (Likert 1932; Raab-Steiner & Benesch 2018).

4.2 Study species selection and description

A total of four species pairs (thus eight species in total) consisting of a native and invasive alien species have been selected. I selected two mammal species pairs and two vascular plant species pairs. All four invasive alien species are listed in the “EU List of IAS of Union Concern”. The invasive alien species were paired with species native to Austria which are related to the alien ones, which have a similar optical appearance (Figure 1) and occur in similar habitats (Table 1 and 2). In the survey, each species was shown by one picture. To maximize comparability among species, pictures have been selected to show one adult individual of the study species (for mammals) or a population in full flower (for plants). Moreover, I aimed to select pictures that show species in similar situations (Figure 1).

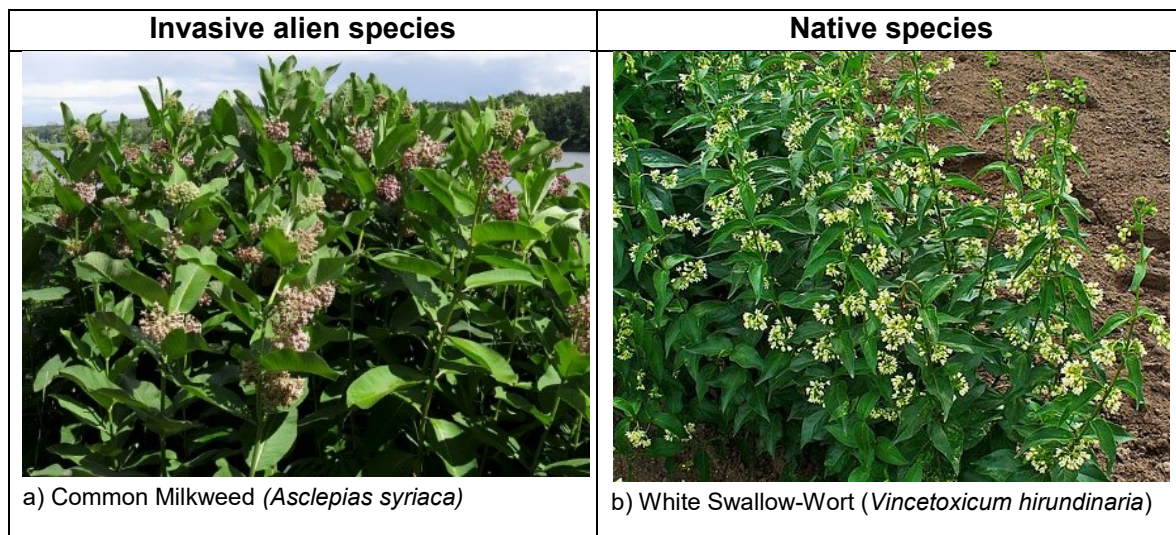




Figure 1: Pictures of the four pairs of native versus invasive alien study species used in the online survey

a) Picture by Аумауна хикару [CC0], from Wikimedia Commons

b) Picture by H. Zell [GFDL (<http://www.gnu.org/copyleft/fdl.html>) or CC BY-SA 3.0 (<https://creativecommons.org/licenses/by-sa/3.0/>)], from Wikimedia Commons

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Table 1: Overview of the distribution, region of origin, first records, and habitat affiliation of the invasive alien study species (Essl & Rabitsch 2002; Umweltbundesamt 2019)

	Common Milkweed (<i>Asclepias syriaca</i>)	Himalayan Balsam (<i>Impatiens glandulifera</i>)	Raccoon Dog (<i>Nyctereutes procyonoides</i>)	Raccoon (<i>Procyon lotor</i>)
Origin	North America	India, Himalaya	Siberia, Ussuri, Manchuria, Korea, Japan	North and Central America
Habitat	ruderal slopes, roadsides, fallows	riversides, floodplains, ruderal plains, wet fallows	broadleaf and mixed forests, near waterbodies	wet broadleaf forests, near waterbodies, near settlements
Distribution in Austria	Vienna, Lower Austria, Upper Austria, Styria, Burgenland, Carinthia	All of Austria	Lower Austria, Upper Austria, Styria, Burgenland, Salzburg	Vienna, Lower Austria, Upper Austria, Styria, Carinthia, Vorarlberg, Salzburg
Ecological impacts	displacement of native plants; overgrowing of large areas; high spreading	displacement of native plants (riverside vegetation); overgrowing of large areas; high spreading	predation of molluscs, insects and amphibians; transmitter of diseases	no detailed data, predation of bird nests, amphibians, reptilians and fish; transmitter of diseases
First record in Austria	unknown	1898	1963	1974

Table 2: Overview of the distribution and habitat affiliation of the native study species (Bellmann 2015; Fischer et al. 2005)

	White Swallow- Wort (<i>Vincetoxicum hirundinaria</i>)	Touch-me-not- Balsam (<i>Impatiens noli- tangere</i>)	Red fox (<i>Vulpes vulpes</i>)	Beech Marten (<i>Martes foina</i>)
Habitat	dry grasslands, open forests	riversides, floodplains, tall herb vegetation, broadleaf and mixed forests	cultural landscapes, settlements	parks, gardens, settlements, cultural landscapes
Distribution in Austria	widespread	widespread	widespread	widespread

4.3 Scope and questions of the survey

Perception of species

For every study species pair, the species pictures were shown together with six questions which referred to the emotions of the survey participant toward the species. These questions form a key-part of the survey. Both physical appearance and ecological impact of the species had to be assessed.

Management methods

For each study species, a list of different management methods was presented. The participants were asked to assess the acceptance of these management methods and if there is a need to reduce or halt the spread of the species. The questions and the answer options were identical for mammal and vascular plant species.

The presented management methods were chosen according to article 19 of the Regulation (EU) 1143/2014. As written in the regulation, the management option selection consists of “lethal and non-lethal physical, chemical and biological actions aimed at the eradication, population control or containment of a population of an invasive alien species” (European Parliament 2014). In addition, political measures (e.g. the regulation itself) were included. Furthermore, participants were invited to provide additional management methods that were deemed acceptably in a comments field.

Species knowledge

The eight study species were listed again, and the participants were asked to assess for each species if it was native or invasive alien.

Topic relevance

First, the participants were asked to give an assessment of the relevance of alien species and their management for Austria. Subsequently, the contribution of different stakeholders (e.g. EU, national government, NGOs, farmers, ...) to IAS management was asked (five-point verbal unipolar scale, scale range from no agreement to strong agreement (Raab-Steiner & Benesch 2018)).

Awareness of EU IAS policies

As the EU regulation 1143/2014 is a cornerstone of European IAS policies, participants were asked about their awareness of this regulation and if they believe that IAS policies indeed require an EU regulation. For these purposes, participants were asked to assess statements on the usefulness of the EU IAS legislation. Participants had the choice between “agree”, “no answer” and “disagree”.

Personal data

The following personal data of the participant was recorded: gender, age, size of municipality of residence, home country and highest completed level of education. These personal data were used to assess the characteristics of the sample of survey participants. These questions were presented with single-choice options.

4.4 Sampling design

For this research, the non-probability method of self-selective convenience sampling was chosen, i.e. there are no rules for selecting the potential participants (Saunders et al. 2009). In the handbook of web-surveys (Bethlehem & Biffignandi 2012), it is defined, that “elements are drawn for such a sample because of their convenient accessibility or proximity to the researcher. Convenience sampling is fast, simple, and cheap. Self-selection samples can be considered a form of convenience sampling” (Bethlehem & Biffignandi 2012). For a survey that includes large target groups, this is supposed to be an appropriate approach. My approach was partly self-selective, because it was distributed via pre-selected media channels (e. g. Facebook-posting, E-Mail, etc.).

An additional advantage of convenience sampling is that it allows to reach out to participants from stakeholder groups that are otherwise difficult to reach (Saunders et al. 2009), e.g. via selected media. The disadvantages are that results cannot be generalized to the entire stakeholder group (Bethlehem & Biffignandi 2012; Raab-Steiner & Benesch 2018; Schnell et al. 2018). In addition, response rates cannot be calculated accurately (Bethlehem & Biffignandi 2012). However, the collected personal data of the participants are helpful for interpreting the results and for identifying potential biases in participation.

4.5 Focal stakeholder groups

I selected participants from three pre-defined stakeholder groups. To do so, participants were asked to characterize themselves at the beginning of the survey as members of one of the following three target groups:

- “Nature-Users” (farmers, hunters, gardeners, landscape architects, etc.)
- “Nature-Experts” (e. g. biologists, environmental-NGO-staff, nature-conservationists, etc.)
- “General public” (everyone else who does not belong to the other groups)

The same set of questions was used for all three groups of participants.

4.6 Survey execution

For the online survey, the software Limesurvey 3.15 (<https://www.limesurvey.org/>) was used. It was installed on a server provided by the University of Vienna. The survey was held in German language, because the main target group were people living in Austria. The original survey and the translation to English can be found in the Appendices 1 and 2.

The survey was open from November 5th to December 25th, 2018. The following media have been used for distributing the survey: Facebook (<https://www.facebook.com/>), WhatsApp and E-mail. As the convenience sampling method was used, there was the possibility to choose specific channels of these media to get enough participants of the different stakeholder groups. On Facebook for example, the link to the survey was posted in different “groups” for Austrian biologists. A reminder was sent via E-mail or posted on the used social media two weeks after the first call. Several participants were contacted directly via E-mail or chat message.

4.7 Data analysis

Data preparation

In total, 967 participants started the survey, of which 239 (24.8%) fully completed it. Non-completed surveys (n=728) were excluded from the analysis.

The data export from Limesurvey provided variable-codes consisting of letters and numbers. In a first step, these have been transformed to numerical values for the statistical analysis in SPSS 24. The variables of the bipolar-scaled questions were converted to a one-step-scale from -2 (very negative/strongly disagree/no) to 2 (very positive/strongly agree/yes). The ones of the unipolar-scaled questions were converted to numbers starting by 1 (low) to 4 (high). The variables for neutral answer options (e.g. “neither disagree nor agree”) were converted to 0 whilst the “no answer” variables were displayed as no value. For analyses, the responses were pooled (by calculating the arithmetic mean) across the two taxonomic groups mammals and vascular plants. After that, the four resulting variables “native plant species”, “native mammal species”, “invasive alien plant species” and “invasive alien mammal species” were used in the statistical analyses.

Statistical analyses

For the graphical illustration of the results, box-plot-charts and bar-charts were created. The Kruskal-Wallis-Test (Kruskal & Wallis 1952) for ordinal scaled and independent samples was used to identify significant differences among the answers of the stakeholder groups. It was applied for the questions about perception and management methods and conducted for each of the four species groups (i.e. native plants, invasive alien plants, native animals, and invasive alien animals). Thus, the independent variable was the stakeholder group and the dependent variables were the coded answers for the species groups. Post-hoc, Dunn's pairwise tests (Dunn 1961) were carried out to assess the specific differences for the three pairs of stakeholder groups (i.e. nature users versus nature experts, nature users versus general public, and nature experts versus general public) and adjusted using the Bonferroni correction (Bonferroni 1935, 1936).

To detect significant differences between the species groups (i) native plants versus invasive alien plants and (ii) native animals versus invasive alien animals within the stakeholder groups, Wilcoxon-Tests (Raab-Steiner & Benesch 2018) were conducted. They were applied for the questions about species perception and management method acceptance. For each of the three stakeholder groups, each pair of species was tested. Spearman's Rho (Daniel 1990; Raab-Steiner & Benesch 2018) was used to assess correlations between species perception and the acceptance of management methods.

For nominal variables such as the questions regarding the EU actions and IAS relevance, χ^2 -test (Pearson 1900) and Fisher's exact test (for low case numbers) (Fisher 1970) were used to detect significant differences across stakeholder groups.

5 Results

5.1 Distribution of participants across stakeholder groups

Of the 239 respondents who had provided full replies, 128 participants (53.5%) were members of the “general public” (GP), 20 (8.4%) “nature users” (NU) and 91 (38,1%) “nature experts” (NE). Unless otherwise noted, these are the sample sizes used in the analyses. The majority of the participants was younger than 30 years, female and lived in a large city with more than 100,000 inhabitants. This was particularly the case for the “general public” stakeholder group. Comparable studies about perception of IAS have shown similar demographic patterns (Bremner & Park 2007; Lindemann-Matthies 2016). Apart from that, the demographic aspects were well-balanced (Appendix 3).

5.2 Survey results

Knowledge about the native / invasive alien status

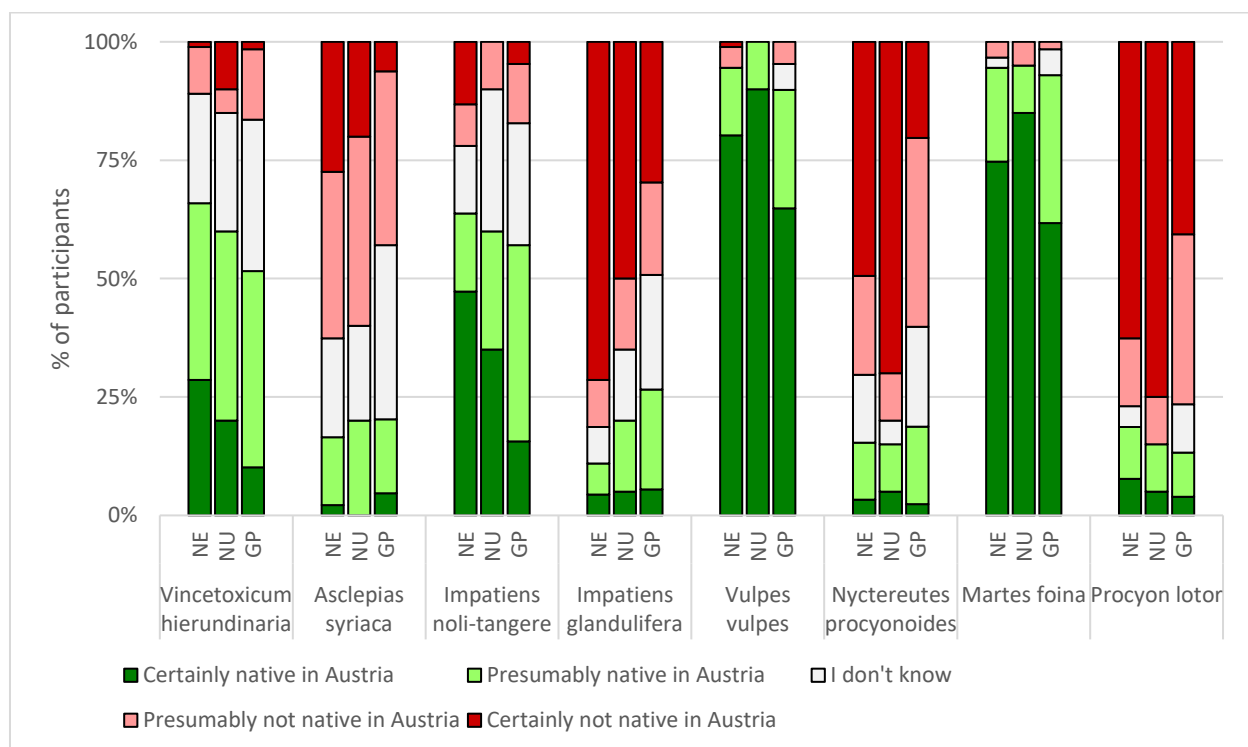


Figure 2: Participants' knowledge about the native / invasive alien status of the study species. Abbreviations: GU = general public; NU = nature users; NE = nature experts.

The assignment of the species, i.e. on whether they are natives or invasive aliens, was very similar among the stakeholder groups and identification was up to 100% correct (Figure 2). The species assignment for mammals was correct more often than for plants, for plants the proportion of “I don't know” answers was 10 to 25%.

Perception of species and management method acceptance

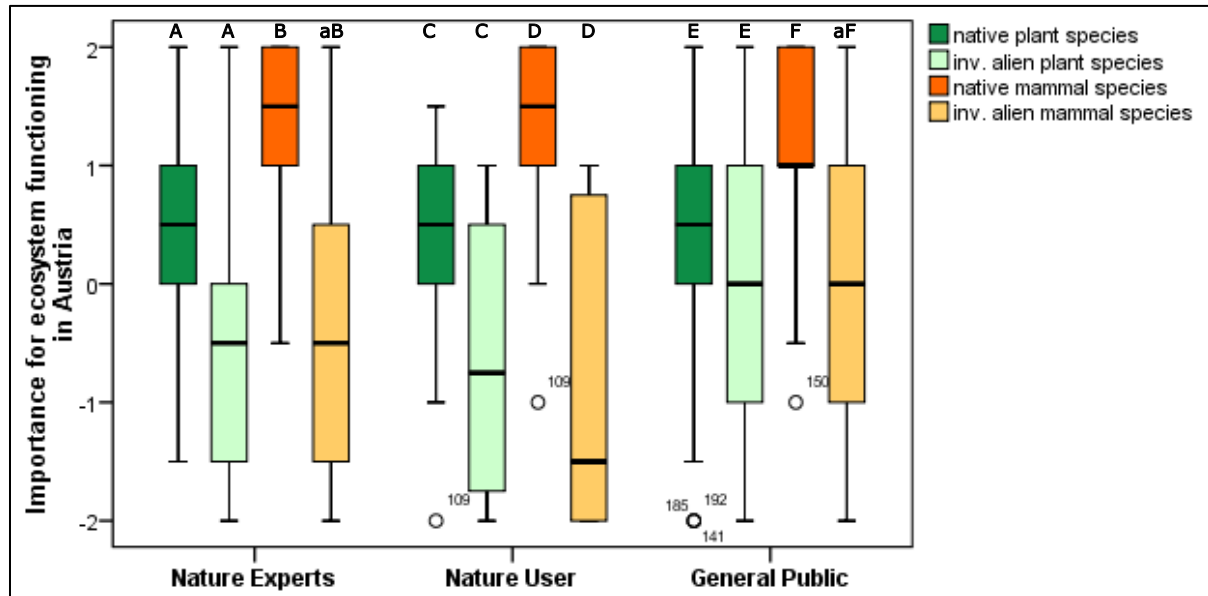


Figure 3: The perceived importance of native and invasive alien plant and mammal species for ecosystem functioning in Austria rated by the three stakeholder groups. Scale: -2 (very unimportant) to 2 (very important). Different letters represent significant differences by Kruskal-Wallis- Dunn-Bonferroni- and Wilcoxon-tests: lowercase letters are for comparisons across the stakeholder groups and capital letters are for comparisons within the stakeholder groups.

The assessment of the perceived importance of the native species for ecosystem functioning in Austria was similar across all the stakeholder groups. Interestingly, the overall trend was that native mammals were rated higher than each other species group. (Figure 3). However, invasive alien mammals were significantly better rated by the general public than by nature experts (Dunn-Bonferroni: $F = -2.54$; $p = 0.033$). There were significant differences between native and invasive alien plants within each stakeholder group (Wilcoxon tests: NE: $F = -6.46$; $p < 0.001$, NU: $F = -1.96$; $p = 0.05$, GP: $F = -4.06$; $p < 0.001$). Similar results were obtained for mammals (Wilcoxon tests: NE: $F = 7.31$; $p < 0.001$, NU: $F = 3.73$; $p = 0.004$, GP: $F = 7.95$; $p < 0.001$).

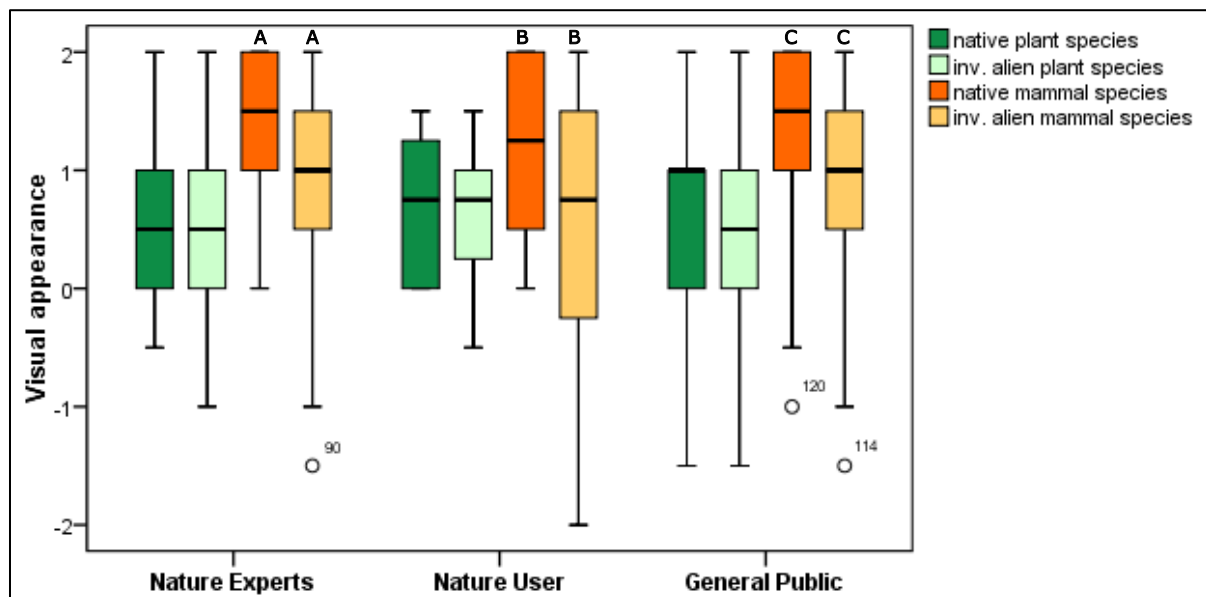


Figure 4: The visual appearance of native and invasive alien plant and mammal species rated by the three stakeholder groups. Scale: -2 (very unaesthetic) to 2 (very aesthetic). Different letters represent significant differences by Kruskal-Wallis- Dunn-Bonferroni- and Wilcoxon-tests: lowercase letters are for comparisons across the stakeholder groups and capital letters are for comparisons within the stakeholder groups.

The majority of the participants across the stakeholder groups rated the species as aesthetic or very aesthetic. Mammal species were rated a bit higher than plant species but without significant difference (Figure 4). There were no significant differences in the rating of the species between the three stakeholder groups. The comparison of native versus invasive alien mammal species within the stakeholder groups showed that invasive alien mammals were rated significantly lower than native ones (Wilcoxon test: NE: $Z = -5.92$; $p < 0.001$, NU: $Z = -2.91$; $p = 0.004$, GP: $Z = -4.35$; $p < 0.001$).

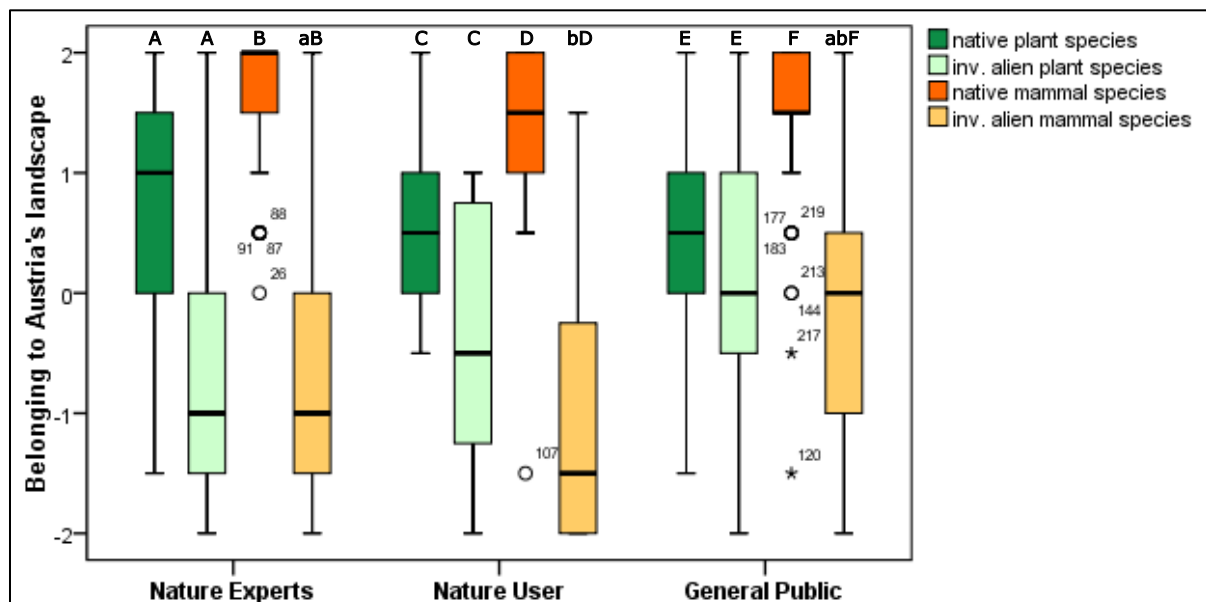


Figure 5: Species' belonging to the Austrian landscape rated by the three stakeholder groups. Scale: -2 (No) to 2 (Yes). Different letters represent significant differences by Kruskal-Wallis- Dunn-Bonferroni- and Wilcoxon-tests: lowercase letters are for comparisons across the stakeholder groups and capital letters are for comparisons within the stakeholder groups.

The assessment of the belonging to Austria's landscape was similar among all stakeholder groups. Furthermore, the native species were assessed to belong more likely to the Austrian landscape than

alien species (Figure 5). The general public's answers regarding alien mammal species were significantly more positive than those of the other two stakeholder groups (Dunn-Bonferroni: NU: $F = 3.28$; $p = 0.003$, NE: $F = 3.81$; $p = <0.001$). The same was stated for the alien plant species, but in this case, there is only a significant difference between nature experts and general public (Dunn-Bonferroni: $F = 4.98$; $p = <0.001$). Within the stakeholder groups, the native/invasive alien mammal/plant species were rated significantly different (Figure 5). However, the assessment of the animal species was more distinct than the assessment of plant species.

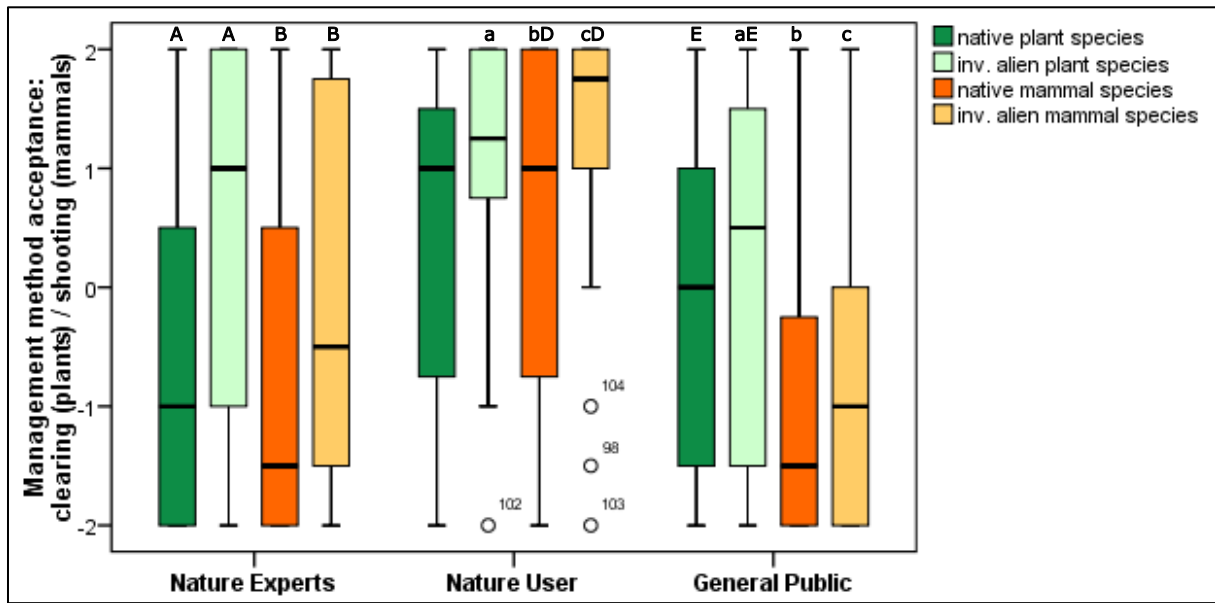


Figure 6: Assessment of the acceptance of the management method “clearing (plants) / shooting (mammals)”. Scale: -2 (not acceptable) to 2 (very acceptable). Different letters represent significant differences by Kruskal-Wallis- Dunn-Bonferroni- and Wilcoxon-tests: lowercase letters are for comparisons across the stakeholder groups and capital letters are for comparisons within the stakeholder groups.

The comparison of the different species across stakeholder groups showed that nature users had a significantly higher acceptance of clearing/shooting than the general public (Dunn-Bonferroni: IAS plants: $F = 2.55$; $p = 0.032$; native mammals: $F = 3.79$; $p = <0.001$; IAS mammals: $F = 4.95$; $p = <0.001$), except for native plants. The acceptance of shooting of alien mammals varied throughout the stakeholder groups (Kruskal-Wallis: $F = 29.94$; $p = <0.001$) (Figure 6). Within the nature expert group, the acceptance level for clearing/shooting showed significant differences between native and invasive alien species (plants: Wilcoxon: $F = 5.39$; $p = <0.001$, mammals: Wilcoxon: $F = 4.89$; $p = <0.001$). For nature users, shooting of invasive alien mammals is significantly more accepted than for native mammals (Wilcoxon: $F = 2.37$; $p = 0.018$). For general public, clearing of invasive alien plants is significantly more accepted than for native plants (Wilcoxon: $F = 3.65$; $p = <0.001$).

Nature experts' assessment of “belonging to Austria's landscape” (Figure 5) and “management method acceptance of clearing/shooting” (Figure 6) of alien species was significantly negatively correlated (mammals: Spearman-Rho = -0,56; $p = <0.001$, plants: Spearman-Rho = -0,55; $p = <0.001$). The participants had a lower acceptance for clearing/shooting when they assessed the species as belonging to the Austrian landscape (Spearman-Rho = -0,39; $p = <0.001$), except for native mammal species, where the participants were quite distinct about the belonging to the landscape but had a broad acceptance of the control method (Spearman-Rho = 0,17; $p = 0.106$). The answers to

these questions by the other stakeholder groups (i.e. general public and nature users) were not significantly correlated.

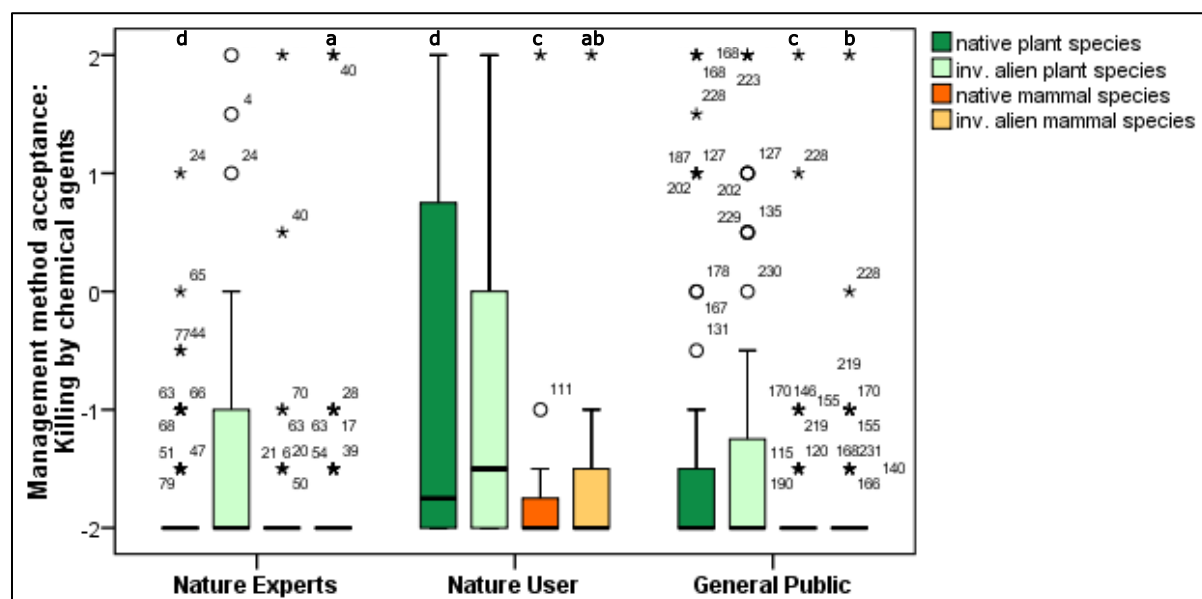


Figure 7: Assessment of the acceptance of the management method "killing by chemical agents". Scale: -2 (not acceptable) to 2 (very acceptable). Different letters represent significant differences by Kruskal-Wallis- Dunn-Bonferroni- and Wilcoxon-tests: lowercase letters are for comparisons across the stakeholder groups and capital letters are for comparisons within the stakeholder groups.

Most of the participants assessed killing by chemical agents as rather to absolutely not acceptable (Figure 7). Across stakeholder groups, for alien mammal species, nature users had a significantly higher acceptance of this method than the other two groups (Kruskal-Wallis: $F = 10.91$; $p = 0.004$). The same trend applied to native mammal species, but the only significant difference was between nature users and general public (Dunn-Bonferroni: $F = 2.42$; $p = 0.046$). The answers of the stakeholder groups regarding native plant species showed significant differences between nature users and nature experts (Dunn-Bonferroni: $F = 2.90$; $p = 0.011$).

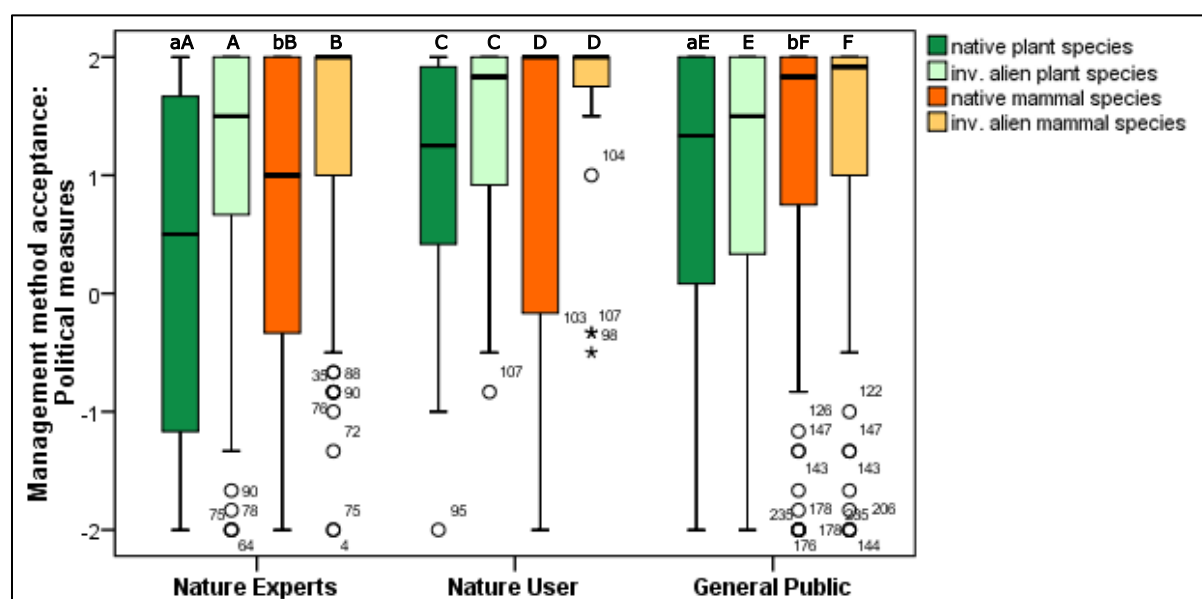


Figure 8: Assessment of the acceptance of the management method "political measures" (e.g. prohibition of keeping, trading and releasing, and import bans). Scale: -2 (not acceptable) to 2 (very acceptable). Different

letters represent significant differences by Kruskal-Wallis- Dunn-Bonferroni- and Wilcoxon-tests: lowercase letters are for comparisons across the stakeholder groups and capital letters are for comparisons within the stakeholder groups.

Political measures (such as prevention of introduction, prohibition of keeping, trading and releasing, and import bans) as management method for IAS are highly accepted among all stakeholder groups (Figure 8). However, nature experts' acceptance of these measures for native plant (Dunn-Bonferroni: $F = 3.21$; $p = 0.004$) and mammal species (Dunn-Bonferroni: $F = 2.85$; $p = 0.013$) was significantly lower than the general public's acceptance. The comparison of native versus invasive alien plant species within the stakeholder groups showed that the acceptance for these measures is significantly higher for invasive alien plants (Wilcoxon tests: NE: $F = 5.48$; $p = <0.001$, NU: $F = 1.96$; $p = 0.05$, GP: $F = 2.93$; $p = 0.003$). The same result was found for mammals (Wilcoxon tests: NE: $F = 4.69$; $p = <0.001$, NU: $F = 2.02$; $p = 0.043$, GP: $F = 2.56$; $p = 0.01$).

Contribution of different institutions and stakeholders to IAS management

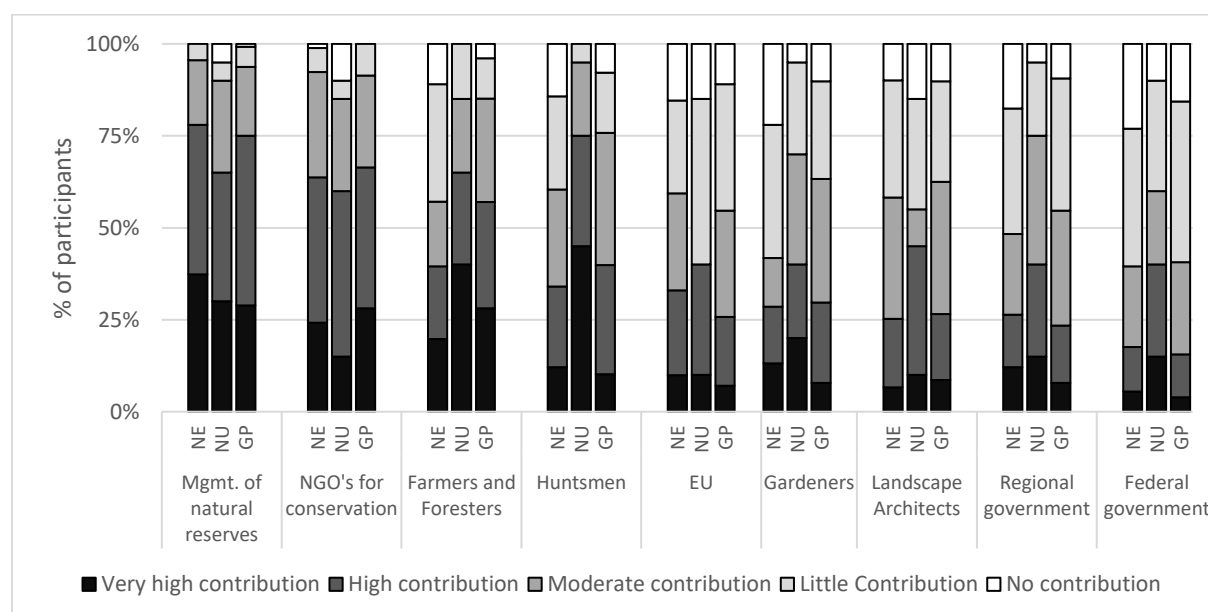


Figure 9: Assessment of the different stakeholder groups of the contribution to anti IAS actions of different stakeholders. Differences were tested for significance by χ^2 -test and Fisher's exact tests. Abbreviations: GU = general public; NU = nature users; NE = nature experts.

Generally, the three stakeholder groups had similarities in their assessment of different stakeholders' contribution to IAS management (Figure 9). Nevertheless, some significant differences were detected. Especially outstanding were "nature users" (i.e. farmers, hunters), who significantly (Kruskal-Wallis: $F = 2.01$; $p = <0.001$) attested themselves a higher contribution to these actions than the nature experts did. Taken together, these results show that the participants assumed that "experts" (e.g. NGO's and conservation area-managers) have the biggest contribution to IAS management while the contribution of political decision makers is small.

Assessment of the relevance of invasive alien species in Austria and EU policies

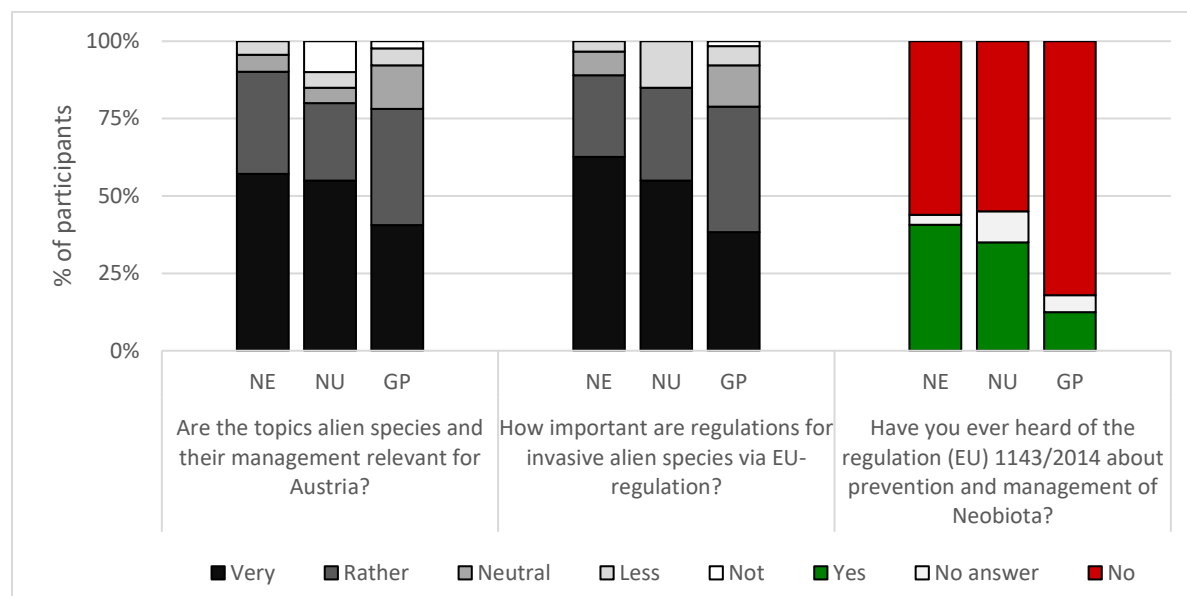


Figure 10: Relevance and awareness of the IAS topic and the EU regulation. Abbreviations: GU = general public; NU = nature users; NE = nature experts.

More than 75% of all participants believed that IAS and their management are a rather to very relevant topic for Austria and that it is rather to very important to manage them at EU level (Figure 10). However, more than 50 % of the respondents of all stakeholder groups were not aware of the EU IAS Regulation. In particular, with the large majority of more than 75 %, members of the general public were significantly less aware of this regulation as the other two groups (X^2 -test: $F = 25.06$; $p = <0.001$).

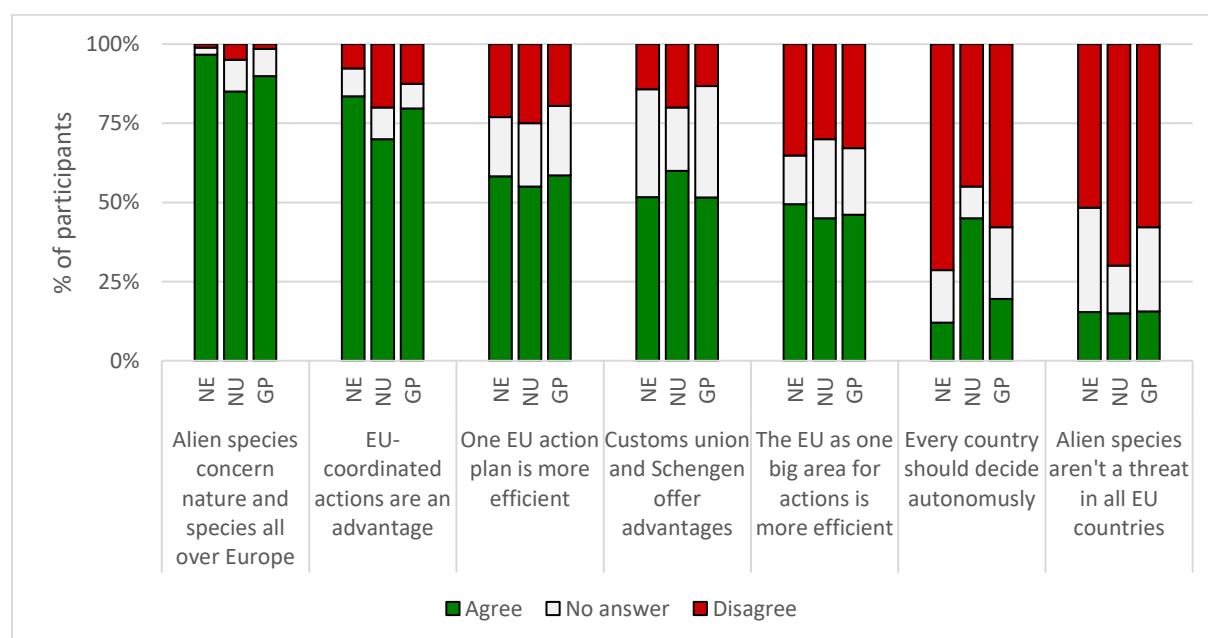


Figure 11: The importance of different IAS management and policy activities on the EU level for different stakeholder groups. Abbreviations: GU = general public; NU = nature users; NE = nature experts.

The results regarding the specific statements about EU IAS actions show that an overwhelming majority of participants agreed that IAS affect biodiversity in Europe (Figure 11). They disagreed the most with the statement that IAS are not a threat in all EU countries. Over 50 to 60% of the survey

participants of all three target groups agreed that EU coordination in this field is advantageous and that one action plan for all EU member states is more efficient. Basically, the answers of the different stakeholder groups were quite similar. Except the answers of the “nature expert” group to the statement “every country should decide autonomously”, where the agreement was significantly (X^2 -test: $F = 14.13$; $p = 0.007$) lower than for the nature users.

6 Discussion

Perception of species and acceptance of management methods

Since perceptions of IAS are diverse (García-Llorente et al. 2008) and some control methods can create highly emotional responses (Australian Academy of Science 2018; Bertolino & Genovesi 2003), it is necessary to include social perspectives in IAS research (Kapitza et al. 2019). This study should encourage further research projects to raise mutual understanding for general public's, nature users' and conservation experts' views to achieve a broader consensus for IAS control measures.

Since the participants had a distinct knowledge about the origin of the species, the assessments about their ecological function and their belonging to the landscape followed this pattern. Native species were more positively connoted than invasive alien ones among all three target groups. The visual appearance assessment showed that all species were rated "aesthetic" or "very aesthetic" by the majority of the participants. In this context, I was particularly interested to test if there is a significant relationship between the aesthetic appearance of species and the acceptance of different management methods. Previous studies have shown that acceptability of management measures often reflect aesthetic motivations (Fischer et al. 2014; Verbrugge et al. 2013) but also that information about the impact of IAS lowers the aesthetic attractiveness and raises the acceptance of management measures (Junge et al. 2019). However, as the rating of the visual appearance of the study species was rather similar among the stakeholder groups, it was not possible to identify significant relationships to the assessment of management methods.

However, there was a significant correlation between the assessment of the belonging to the Austrian landscape and the acceptance of lethal management of the species. When a species was considered as IAS, acceptance of lethal methods like shooting or clearing was significantly higher. Other studies had shown similar results for eradication of IAS with negative impacts on the environment (Fischer et al. 2014; García-Llorente et al. 2008; Lewis et al. 2019; Verbrugge et al. 2013).

It is important to note that the acceptance of lethal management is divergent between stakeholder groups, especially for mammal species. The acceptance of nature experts follows the described native/invasive alien-pattern, which confirms that better knowledge about IAS raises the acceptance of control measures (Bremner & Park 2007). Nature users had a significantly higher acceptance of lethal methods than the general public. This corresponds to the situation in New South Wales, where the general public opposed the killing of Brumbies (*Equus callabus*), while hunters and scientists supported it (Australian Academy of Science 2018; NSW Government Office of Environment & Heritage 2016; NSW Threatened Species Scientific Committee 2016; Parliament of New South Wales 2018). This finding also confirms the results of Verbrugge et al. (2013), who found that people are less likely to support eradication when it concerns a charismatic, aesthetically or otherwise attractive animal species, even if there is scientific evidence that it is invasive. Estévez et al. (2015) stated that "values systems and risk perceptions are understood as the fundamental basis of discrepancies" among the different stakeholders. These value systems include aesthetic attraction and emotional bonding as well as the utilisation of nature.

The overall rejection of chemicals as a method for killing invasive alien species was already shown in other studies (Verbrugge et al. 2013). Particularly for mammals, acceptance for this method is low. An exception are nature users, who expressed a significantly higher acceptance of this method, although it was still rather low. Generally, this group had higher acceptance levels for every management method than the other two stakeholder groups. This may reflect the fact that members of this stakeholder group are economically dependent on the environment, and thus negative impacts caused by IAS might be more evident for them. It has been shown already that personal interests (e.g. economic interests) influence opinion held on specific alien species (Shackleton et al. 2019a; 2019b). Further, García-Llorente et al. (2008) showed that conservation professionals and local citizens of the Donana region (SW Spain) considered effects of IAS to the local economy (while tourists considered the effects on threatened species) as incentives for IAS eradication. In a Swiss study, experts and members of the general public attribute a higher priority to ecological than to economic aspects (Junge et al. 2019). Further, utilisation can also be one value that influences the attitude of people towards nature (Estévez et al. 2015).

Since approximately 86% of the area of Austria is used for agriculture or forestry (Statistik Austria 2016), nature users are the dominant social actor in environmental management. Nature experts do not attribute a high contribution of nature users to IAS management, but as other studies have shown, nature user's knowledge and goals often don't differ fundamentally from their own (Badgley 2003). Badgley (2003) stated that "farmers can benefit from conservationists as advocates for farming practices that raise the quality of the landscape for farmers and for biodiversity and conservationists can benefit from farmers who enhance the ecological value of working landscapes for more native species." Considering this and the results of this thesis it is crucial for nature users and nature experts to appraise each other's valuation and to work jointly to address problems caused by IAS. Especially when there is resistance against IAS control methods from animal rights groups. In the presented cases of Italy (Bertolino & Genovesi 2003) and Australia (NSW Threatened Species Scientific Committee 2016), these groups rejected lethal methods and established a strong opposition to halt planned management measures. For Perry & Perry (2008), the solution is communication and increasing understanding between "managers" (i.e. nature users, nature experts) and animal rights groups. Perry & Perry (2008) "believe managers should be more open to exploring nonlethal alternatives, and animal rights groups should understand the motivation behind eradication attempts and be more involved in providing the extra funding necessary to support preventative measures" and that "cooperation between the two groups is possible and desirable and that prevention of species invasion is an obvious area in which to begin." This survey had no separate stakeholder group for animal rights activists, but it would be interesting to include them in a future study.

Political measures were received favourably by all three stakeholder groups. My interpretation is that these measures are neither lethal for IAS and they don't affect the daily life of most of the participants, so ethical conflicts are likely perceived to be minor.

Across stakeholder groups, the participants' knowledge whether study species are natives or invasive aliens was very high. The majority of the participants assigned the species to the correct category. As the level of knowledge affects understanding and behaviour of people (Shackleton et al. 2019b) as

well as perception of IAS (Eiswerth et al. 2011) and control measures (Bremner & Park 2007; Junge et al. 2019) this may have had an influence on the present assessment of the perception parameters as well as the management method acceptance parameters.

Relevance of EU IAS policies

It is very interesting to see that although the contribution of the EU to IAS management is rated very low (nearly 50% responded that there is currently low or no contribution by the EU) among all stakeholder groups, there is an overwhelming support for measures to be implemented by the EU. Most of the participants are not aware that such a regulation already exists. The majority of the participants also agreed to the advantages of IAS measures organized and regulated by the EU. Nearly 100% of the participants stated that alien species and their management concern Austria as well as Europe. Thus, there is a high awareness of IAS and the survey participants are aware of the advantages of tackling this problem on a European level. For comparison, in a swiss study only 40% of the participants belonging to the general public-stakeholder group knew the term IAS (Junge et al. 2019).

Representativeness of this survey

This online survey used the convenience sampling method, i.e. the survey was open to everyone interested as long as he/she belonged to one of the three stakeholder groups. This approach is useful and widely used in cases when the basic sample size is unknown or very large, as it is the case for the three stakeholder groups in this survey (Harvey et al. 2016; Lindemann-Matthies 2016). However, this approach comes with some limitations that have to be kept in mind when interpreting the results. First of all, it is unknown to which extent participants of the survey are fully representative for the respective stakeholder group, as biases such as willingness to participate or basic knowledge of the existence of the survey might be relevant (Etikan 2016). Secondly, sample sizes of the stakeholder groups differ substantially. When distributing the survey, I used a broad set of communication channels for spreading the survey widely, and thus reaching out to diverse audiences. In addition, the personal information of participants revealed that while some social strata (e.g. young urban populations) are somewhat overrepresented, the distribution among basic demographic and personal parameters is rather closely reflecting Austrian population composition. Thus, I conclude that this survey provides important insights into the perception of native and invasive alien species in Austria. Also, it is clear that full representativeness cannot be achieved with convenience sampling.

Conclusions

Since the majority of the participants agreed that IAS concern Austria and that there is a need to regulate them on a European level, this result indicates substantial awareness of this topic. The high level of knowledge whether it is a native or an IAS as well as the perception parameters in the survey emphasize this finding. As other studies have shown, one key to success of raising the general public's awareness and support for IAS control measures is education and knowledge transfer (Bremner & Park 2007; Eiswerth et al. 2011; Junge et al. 2019). But this can also cause polarization and trigger conflicts (Crowley et al. 2017), therefore it has to be done wisely.

When a species was considered as IAS, acceptance of lethal methods like shooting or clearing was significantly higher. However, I found that the acceptance of lethal methods differs between the stakeholder groups, especially for mammal species. Nature users had a significantly higher acceptance of lethal methods than the general public while the nature experts' acceptance was dependent on whether it was an IAS or not. The high acceptance levels of nature users may reflect that they are often economically dependent on an - for their purposes - intact environment. This finding is a perfect example why it is important to generate further knowledge about IAS perceptions of different stakeholders. As they have different approaches and preferences for IAS management, it is essential to find out the respective motives to discover synergies and/or avoid future conflicts.

7 References

7.1 Literature

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7.2 Software

- LimeSurvey GmbH: Limesurvey 3.15. <https://www.limesurvey.org/>
- IBM: IBM SPSS Statistics 24

7.3 Figures

Figure 1: Pictures of the four pairs of native versus invasive alien study species used in the online survey a) Picture by Аймаина хикари [CC0], from Wikimedia Commons b) Picture by H. Zell [GFDL (<http://www.gnu.org/copyleft/fdl.html>) or CC BY-SA 3.0 (<https://creativecommons.org/licenses/by-sa/3.0/>)], from Wikimedia Commons c) Picture by Donald Hobern from Copenhagen, Denmark [CC BY 2.0 (<https://creativecommons.org/licenses/by/2.0/>)], via Wikimedia Commons d) Picture by Malte [CC BY 3.0 (<https://creativecommons.org/licenses/by/3.0/>)], from Wikimedia Commons e) Picture by I, Pkuczynski [GFDL (<http://www.gnu.org/copyleft/fdl.html>) or CC-BY-SA-3.0 (<http://creativecommons.org/licenses/by-sa/3.0/>)], from Wikimedia Commons f) Picture by <http://www.nps.gov/acad/photos/redfox.htm> [Public domain], via Wikimedia Commons g) Picture by Bastique [GFDL (<http://www.gnu.org/copyleft/fdl.html>)], CC-BY-SA-3.0 (<http://creativecommons.org/licenses/by-sa/3.0/>) or CC BY-SA 2.5-2.0-1.0 (<https://creativecommons.org/licenses/by-sa/2.5-2.0-1.0/>)], from Wikimedia Commons h) By Zefram [GFDL (<http://www.gnu.org/copyleft/fdl.html>)], CC-BY-SA-3.0 (<http://creativecommons.org/licenses/by-sa/3.0/>) or CC BY 2.0 de (<https://creativecommons.org/licenses/by/2.0/de/deed.en/>)], from Wikimedia Commons 8

Figure 2: Participants' knowledge about the native / invasive alien status of the study species. Abbreviations: GU = general public; NU = nature users; NE = nature experts. 14

Figure 3: The perceived importance of native and invasive alien plant and mammal species for ecosystem functioning in Austria rated by the three stakeholder groups. Scale: -2 (very unimportant) to 2 (very important). Different letters represent significant differences by Kruskal-Wallis- Dunn-Bonferroni- and Wilcoxon-tests: lowercase letters are for comparisons across the stakeholder groups and capital letters are for comparisons within the stakeholder groups. 15

Figure 4: The visual appearance of native and invasive alien plant and mammal species rated by the three stakeholder groups. Scale: -2 (very unaesthetic) to 2 (very aesthetic). Different letters represent significant differences by Kruskal-Wallis- Dunn-Bonferroni- and Wilcoxon-tests: lowercase letters are for comparisons across the stakeholder groups and capital letters are for comparisons within the stakeholder groups. 16

Figure 5: Species' belonging to the Austrian landscape rated by the three stakeholder groups. Scale: -2 (No) to 2 (Yes). Different letters represent significant differences by Kruskal-Wallis- Dunn-Bonferroni- and Wilcoxon-tests: lowercase letters are for comparisons across the stakeholder groups and capital letters are for comparisons within the stakeholder groups. 16

Figure 6: Assessment of the acceptance of the management method "clearing (plants) / shooting (mammals)". Scale: -2 (not acceptable) to 2 (very acceptable). Different letters represent significant differences by Kruskal-Wallis- Dunn-Bonferroni- and Wilcoxon-tests: lowercase letters are for comparisons across the stakeholder groups and capital letters are for comparisons within the stakeholder groups. 17

Figure 7: Assessment of the acceptance of the management method "killing by chemical agents". Scale: -2 (not acceptable) to 2 (very acceptable). Different letters represent significant differences by Kruskal-Wallis- Dunn-Bonferroni- and Wilcoxon-tests: lowercase letters are for comparisons across the stakeholder groups and capital letters are for comparisons within the stakeholder groups. 18

Figure 8: Assessment of the acceptance of the management method "political measures" (e.g. prohibition of keeping, trading and releasing, and import bans). Scale: -2 (not acceptable) to 2 (very acceptable). Different letters represent significant differences by Kruskal-Wallis- Dunn-Bonferroni- and Wilcoxon-tests: lowercase letters are for comparisons across the stakeholder groups and capital letters are for comparisons within the stakeholder groups. 18

Figure 9: Assessment of the different stakeholder groups of the contribution to anti IAS actions of different stakeholders. Differences were tested for significance by X²-test and Fisher's exact tests. Abbreviations: GU = general public; NU = nature users; NE = nature experts. 19

Figure 10: Relevance and awareness of the IAS topic and the EU regulation. Abbreviations: GU = general public; NU = nature users; NE = nature experts. 20

Figure 11: The importance of different IAS management and policy activities on the EU level for different stakeholder groups. Abbreviations: GU = general public; NU = nature users; NE = nature experts. 20

8 Appendix

Appendix 1: Survey (English Version)

Stakeholder groups

Currently I'm working in the field of / get an education in ...

- *Ecology / Environmental protection / Nature protection / Natural reserves*
- *Agriculture / Forestry*
- *Landscape architecture / Gardening*
- *Hunting / Fishing*
- *None of the listed options*

Perception of species

„You will be shown pictures of plant or animal species that are common in Austria. Below you will find statements about the respective species. Please tick the point that most closely matches your personal feelings and your perception of this species. There is neither right nor wrong, your "gut instinct" counts.

[Picture native species] [Picture alien species]

Their function in our ecosystem is...	<i>very important</i>	☐ ☐ ☐ ☐ ☐ ☐	<i>very unimportant</i>
Affects our ecosystems...	<i>very positively</i>	☐ ☐ ☐ ☐ ☐ ☐	<i>very negatively</i>
Triggers ... emotions.	<i>very positive</i>	☐ ☐ ☐ ☐ ☐ ☐	<i>very negative</i>
Is visually...	<i>very aesthetic</i>	☐ ☐ ☐ ☐ ☐ ☐	<i>very unaesthetic</i>
Should be ... protected.	<i>much more</i>	☐ ☐ ☐ ☐ ☐ ☐	<i>much less</i>
Belongs to our landscape scenery.	<i>Yes</i>	☐ ☐ ☐ ☐ ☐ ☐	<i>No</i>
I know this species...	<i>very well</i>	☐ ☐ ☐ ☐ ☐ ☐	<i>not at all</i>

Perception of management methods

„Here you can see the animal and plant species shown before. Please answer the question regarding your personal opinion and acceptance. The technical feasibility is not relevant.“

[Picture native species] [Picture alien species]

Which of the following management methods would you accept to minimize/stop the dispersion of the species?

excavation and extermination	catch and appropriate killing
clearing	shooting
elimination/removal without killing	elimination/removal without killing
Prevention of further spread (e.g., establishment of quarantine zones around infested areas)	Prevention of further spread (e.g., establishment of quarantine zones around infested areas)
killing by chemical agents	killing by chemical agents
usage of natural enemies	usage of natural enemies
Killing by infection with species-specific diseases or fungal diseases	Killing by infection with species-specific diseases
prohibition of keeping and trading	prohibition of keeping and trading
prohibition of releasing into the environment	prohibition of releasing into the environment

import controls and bans	import controls and bans
--------------------------	--------------------------

Options: Very acceptable, Rather acceptable, Little acceptable, Not acceptable

² Management means that taken measures restrict or prevent the further dispersion of the species or that they are monitored.

Is there another option you would accept?

[please fill in an answer]

Species knowledge

Here you can see the animal and plant species shown before. In your opinion, which of these species are native to Austria and which have only arrived in Austria with the help of humans as neobiota²?

[Picture]

5-dotted scale: *Certainly native in Austria, Presumably native in Austria, I don't know, Presumably not native in Austria, Certainly not native in Austria*

² Neobiota are understood as plant, animal or fungal species that are not native to a particular area (such as Austria) and only arrived in this area after 1492 with the help of humans.

Topic relevance

Are the topics alien species² and their management³ relevant for Austria?

5-dotted scale: *Very important o o o o o Not important*

² Neobiota are understood as plant, animal or fungal species that are not native to a particular area (such as Austria) and only arrived in this area after 1492 with the help of humans. There is a possibility that they are a threat to native species. http://www.neobiota-austria.at/ms/neobiota-austria/neobiota_definition/

³ Management means that taken measures restrict or prevent the further dispersion of the species or that they are monitored.

Please assess the contribution to Neobiota-actions of different organisations/professions.

- Management of natural reserves
- NGOs for conservation
- Farmers and Foresters
- Hunters
- EU
- Gardeners
- Landscape Architects
- Regional government
- Federal government

5-dotted-scale: *No contribution, Little Contribution, Median contribution, High contribution, Very high contribution*

EU actions

How important are regulations for invasive alien species via EU-regulation?

5-dotted scale: *Very important o o o o o Not important*

"Here you can see statements about the EU alien species actions. Please tick a box, depending on your agreement"

- Alien species concern nature and species all over Europe
- EU-coordinated actions are an advantage
- One EU action plan is more efficient
- Customs union and Schengen offer advantages
- The EU as one big area for actions is more efficient
- Every country should decide autonomously
- Alien species aren't a threat in all EU countries

Scale: *Agree, No answer, Disagree*

Have you ever heard of the regulation (EU) 1143/2014 about prevention and management of Neobiota?

Yes, No, No answer

Demography and personal data

Sex

- *Female*
- *Male*
- *Different*
- *No answer*

Age

- *under 19*
- *20 - 29*
- *30 - 39*
- *40 - 49*
- *50 - 59*
- *plus 60*
- *No answer*

Population size of residence municipality

- *< 1000 Inhabitants*
- *1000 to 10.000 inhabitants*
- *10.000 to 100.000 inhabitants*
- *100.000 to 1 mil. inhabitants*
- *1 mil. inhabitants*
- *no answer*

Home country:

- *Austria*
- *EU*
- *non-EU country in Europe*
- *no answer*

Highest completed level of education

- *Mandatory school*
- *Professional school / Skilled worker exam*
- *Apprenticeship*
- *Higher School Certificate*
- *Bachelor*
- *Master / Magister*
- *PhD / Doctorate*
- *Other*
- *no answer*

Appendix 2: Survey (Original Version)

Lime Survey PDF export of the original survey.

Umfrage zur Wahrnehmung von Arten

Liebe Teilnehmerin! Lieber Teilnehmer!

Mein Name ist Raphael Höbart, ich studiere an der Universität Wien im Master Naturschutz und Biodiversitätsmanagement. Vielen Dank für Ihr Interesse an der Umfrage, die im Rahmen meiner Abschlussarbeit erstellt wurde.

Sowohl der praktische als auch der politische Natur- und Artenschutz sind sehr stark von gesellschaftlicher Akzeptanz abhängig. Naturschutzmaßnahmen stehen oft im Fokus öffentlicher Diskussion wobei die Wahrnehmung und Akzeptanz in der Gesellschaft von großer Bedeutung ist.

Der gesellschaftliche Wunsch nach dem Schutz einer besonders charismatischen Art kann genutzt werden, um mithilfe dieser Art ein ganzes Ökosystem zu schützen (Flagship-Species-Konzept). In meiner Arbeit will ich dieses Konzept erweitern und herausfinden, ob die Wahrnehmung von Arten einen Einfluss darauf hat, wie man mit diesen Arten umgehen bzw. sie managen soll. Ich will zudem untersuchen, wie politische und gesellschaftliche Zuständigkeiten in Bezug auf das Management von weniger erwünschten Arten gesehen werden.

Dazu werden Ihnen nun Fragen zu in Österreich vorkommenden Pflanzen- und Tierarten gestellt. Die eigene Wahrnehmung und das persönliche Empfinden zu diesen Arten stehen bei der Umfrage im Fokus. Es gibt kein Richtig oder Falsch. Aber nur die vollständige und eigenständige Beantwortung gewährleistet eine hohe Datenqualität.

Ich danke Ihnen vielmals, dass Sie sich für die Beantwortung der Fragen ca. 15 Minuten Zeit nehmen!

Alle Daten werden anonym, gemäß den geltenden Datenschutz-Bestimmungen und ausschließlich für Zwecke meiner Masterarbeit verwendet. Es kann keine Verbindung zwischen Beantwortenden und Antworten hergestellt werden. Für weitere Fragen können Sie sich gerne per E-Mail an mich wenden (raphael.hoebart@univie.ac.at).

In dieser Umfrage sind 48 Fragen enthalten.

Ich verfolge derzeit eine Ausbildung bzw. arbeite im Bereich... *

❗ Bitte wählen Sie eine der folgenden Antworten:

Bitte wählen Sie nur eine der folgenden Antworten aus:

- ☐ Ökologie / Umweltschutz / Naturschutz / Schutzgebiete
- ☐ Landwirtschaft / Forstwirtschaft
- ☐ Gartenbau / Landschaftsplanung
- ☐ Jagd / Fischerei
- ☐ Keine der oben genannten Optionen zutreffend

Bitte wählen Sie die für Sie zutreffendste Kategorie aus. Sollte keine zutreffend sein, wählen Sie bitte "Keine der oben genannten Optionen zutreffend" aus.

Ihre Funktion in unseren Ökosystemen ist... *

Bitte wählen Sie die zutreffende Antwort für jeden Punkt aus:

	...sehr wichtig	...eher wichtig	...weder wichtig noch unwichtig	...eher unwichtig	...sehr unwichtig	Ich weiß es nicht.
Gewöhnliche Seidenpflanze	☐	☐	☐	☐	☐	☐
Weißer Schwalbenwurz	☐	☐	☐	☐	☐	☐

Beeinflusst unsere Ökosysteme... *

Bitte wählen Sie die zutreffende Antwort für jeden Punkt aus:

	...sehr positiv	...eher positiv	...weder positiv noch negativ	...eher negativ	...sehr negativ	Ich weiß es nicht.
Gewöhnliche Seidenpflanze	☐	☐	☐	☐	☐	☐
Weißer Schwalbenwurz	☐	☐	☐	☐	☐	☐

Löst bei mir ... Emotionen aus. *

Bitte wählen Sie die zutreffende Antwort für jeden Punkt aus:

	sehr positive	eher positive	weder positive noch negative	eher negative	sehr negative
Gewöhnliche Seidenpflanze	☐	☐	☐	☐	☐
Weißer Schwalbenwurz	☐	☐	☐	☐	☐

Wirkt optisch... *

Bitte wählen Sie die zutreffende Antwort für jeden Punkt aus:

	...sehr ansprechend bzw. schön	...eher ansprechend bzw. schön	...weder schön noch hässlich	...eher unansprechend bzw. hässlich	...sehr unansprechend bzw. hässlich
Gewöhnliche Seidenpflanze	☐	☐	☐	☐	☐
Weißer Schwalbenwurz	☐	☐	☐	☐	☐

Sollte ... geschützt werden. *

Bitte wählen Sie die zutreffende Antwort für jeden Punkt aus:

	sehr viel besser/mehr	ein bisschen besser/mehr	weder mehr noch weniger	ein bisschen weniger/nicht	sehr viel weniger/nicht	Ich weiß es nicht.
Gewöhnliche Seidenpflanze	☐	☐	☐	☐	☐	☐
Weißer Schwalbenwurz	☐	☐	☐	☐	☐	☐

Gehört in unser Landschaftsbild. *

Bitte wählen Sie die zutreffende Antwort für jeden Punkt aus:

	Ja sehr	Eher ja	Weder ja noch nein	Eher nicht	Gar nicht
Gewöhnliche Seidenpflanze	☐	☐	☐	☐	☐
Weißer Schwalbenwurz	☐	☐	☐	☐	☐

Ich kenne diese Art... *

Bitte wählen Sie die zutreffende Antwort für jeden Punkt aus:

	...sehr gut	...eher gut	...eher nicht	...gar nicht
Gewöhnliche Seidenpflanze	☐	☐	☐	☐
Weißer Schwalbenwurz	☐	☐	☐	☐

Ihre Funktion in unseren Ökosystemen ist... *

Bitte wählen Sie die zutreffende Antwort für jeden Punkt aus:

[illegible]

Beeinflusst unsere Ökosysteme... *

Bitte wählen Sie die zutreffende Antwort für jeden Punkt aus:

[illegible]

Löst bei mir ... Emotionen aus. *

Bitte wählen Sie die zutreffende Antwort für jeden Punkt aus:

	sehr positive	eher positive	weder positive noch negative	eher negative	sehr negative
Drüsiges Springkraut	☐	☐	☐	☐	☐
Großes Springkraut	☐	☐	☐	☐	☐

Wirkt optisch... *

Bitte wählen Sie die zutreffende Antwort für jeden Punkt aus:

	...sehr ansprechend bzw. schön	...eher ansprechend bzw. schön	...weder schön noch hässlich	...eher unansprechend bzw. hässlich	...sehr unansprechend bzw. hässlich
Drüsiges Springkraut	☐	☐	☐	☐	☐
Großes Springkraut	☐	☐	☐	☐	☐

Sollte ... geschützt werden. *

Bitte wählen Sie die zutreffende Antwort für jeden Punkt aus:

[illegible]

Gehört in unser Landschaftsbild. *

Bitte wählen Sie die zutreffende Antwort für jeden Punkt aus:

	Ja sehr	Eher ja	Weder ja noch nein	Eher nicht	Gar nicht
Drüsiges Springkraut	☐	☐	☐	☐	☐
Großes Springkraut	☐	☐	☐	☐	☐

Ich kenne diese Art... *

Bitte wählen Sie die zutreffende Antwort für jeden Punkt aus:

	...sehr gut	...eher gut	...eher nicht	...gar nicht
Drüsiges Springkraut	☐	☐	☐	☐
Großes Springkraut	☐	☐	☐	☐

Ihre Funktion in unseren Ökosystemen ist... *

Bitte wählen Sie die zutreffende Antwort für jeden Punkt aus:

[illegible]

Beeinflusst unsere Ökosysteme... *

Bitte wählen Sie die zutreffende Antwort für jeden Punkt aus:

	...sehr positiv	...eher positiv	...weder positiv noch negativ	...eher negativ	...sehr negativ	Ich weiß es nicht.
Rotfuchs	☐	☐	☐	☐	☐	☐
Marderhund	☐	☐	☐	☐	☐	☐

Löst bei mir ... Emotionen aus. *

Bitte wählen Sie die zutreffende Antwort für jeden Punkt aus:

	sehr positive	eher positive	weder positive noch negative	eher negative	sehr negative
Rotfuchs	☐	☐	☐	☐	☐
Marderhund	☐	☐	☐	☐	☐

Wirkt optisch... *

Bitte wählen Sie die zutreffende Antwort für jeden Punkt aus:

	...sehr ansprechend bzw. schön	...eher ansprechend bzw. schön	...weder schön noch hässlich	...eher unansprechend bzw. hässlich	...sehr unansprechend bzw. hässlich
Rotfuchs	☐	☐	☐	☐	☐
Marderhund	☐	☐	☐	☐	☐

Sollte ... geschützt werden. *

Bitte wählen Sie die zutreffende Antwort für jeden Punkt aus:

	sehr viel besser/mehr	ein bisschen besser/mehr	weder mehr noch weniger	ein bisschen weniger/nicht	sehr viel weniger/nicht	Ich weiß es nicht.
Rotfuchs	☐	☐	☐	☐	☐	☐
Marderhund	☐	☐	☐	☐	☐	☐

Gehört in unser Landschaftsbild. *

Bitte wählen Sie die zutreffende Antwort für jeden Punkt aus:

	Ja sehr	Eher ja	Weder ja noch nein	Eher nicht	Gar nicht
Rotfuchs	☐	☐	☐	☐	☐
Marderhund	☐	☐	☐	☐	☐

Ich kenne diese Art... *

Bitte wählen Sie die zutreffende Antwort für jeden Punkt aus:

	...sehr gut	...eher gut	...eher nicht	...gar nicht
Rotfuchs	☐	☐	☐	☐
Marderhund	☐	☐	☐	☐

Ihre Funktion in unseren Ökosystemen ist... *

Bitte wählen Sie die zutreffende Antwort für jeden Punkt aus:

	...sehr wichtig	...eher wichtig	...weder wichtig noch unwichtig	...eher unwichtig	...sehr unwichtig	Ich weiß es nicht.
Steinmarder	☐	☐	☐	☐	☐	☐
Waschbär	☐	☐	☐	☐	☐	☐

Beeinflusst unsere Ökosysteme... *

Bitte wählen Sie die zutreffende Antwort für jeden Punkt aus:

	...sehr positiv	...eher positiv	...weder positiv noch negativ	...eher negativ	...sehr negativ	Ich weiß es nicht.
Steinmarder	☐	☐	☐	☐	☐	☐
Waschbär	☐	☐	☐	☐	☐	☐

Löst bei mir ... Emotionen aus. *

Bitte wählen Sie die zutreffende Antwort für jeden Punkt aus:

	sehr positive	eher positive	weder positive noch negative	eher negative	sehr negative
Steinmarder	☐	☐	☐	☐	☐
Waschbär	☐	☐	☐	☐	☐

Wirkt optisch... *

Bitte wählen Sie die zutreffende Antwort für jeden Punkt aus:

	...sehr ansprechend bzw. schön	...eher ansprechend bzw. schön	...weder schön noch hässlich	...eher unansprechend bzw. hässlich	...sehr unansprechend bzw. hässlich
Steinmarder	☐	☐	☐	☐	☐
Waschbär	☐	☐	☐	☐	☐

Sollte ... geschützt werden. *

Bitte wählen Sie die zutreffende Antwort für jeden Punkt aus:

	sehr viel besser/mehr	ein bisschen besser/mehr	weder mehr noch weniger	ein bisschen weniger/nicht	sehr viel weniger/nicht	Ich weiß es nicht.
Steinmarder	☐	☐	☐	☐	☐	☐
Waschbär	☐	☐	☐	☐	☐	☐

Gehört in unser Landschaftsbild. *

Bitte wählen Sie die zutreffende Antwort für jeden Punkt aus:

	Ja sehr	Eher ja	Weder ja noch nein	Eher nicht	Gar nicht
Steinmarder	☐	☐	☐	☐	☐
Waschbär	☐	☐	☐	☐	☐

Ich kenne diese Art... *

Bitte wählen Sie die zutreffende Antwort für jeden Punkt aus:

	...sehr gut	...eher gut	...eher nicht	...gar nicht
Steinmarder	☐	☐	☐	☐
Waschbär	☐	☐	☐	☐

Welche der folgenden Managementmaßnahmen* würden Sie persönlich akzeptieren, um nötigenfalls ihre Ausbreitung einzuschränken bzw. zu unterbinden? *

Bitte wählen Sie die zutreffende Antwort für jeden Punkt aus:

	Gewöhnliche Seidenpflanze					Weiße Schwalbenwurz			
	Sehr akzeptabel	Ziemlich akzeptabel	Wenig akzeptabel	Nicht akzeptabel		Sehr akzeptabel	Ziemlich akzeptabel	Wenig akzeptabel	Nicht akzeptabel
Ausgraben und Vernichtung	☐	☐	☐	☐		☐	☐	☐	☐
Rodung	☐	☐	☐	☐		☐	☐	☐	☐
Beseitigung/Entfernung ohne Abtötung	☐	☐	☐	☐		☐	☐	☐	☐
Verhinderung weiterer Ausbreitung (z.B. Errichtung von Quarantänezonen um Befallsgebiete)	☐	☐	☐	☐		☐	☐	☐	☐
Abtötung durch chemische Mittel	☐	☐	☐	☐		☐	☐	☐	☐
Einsatz von natürlichen Feinden	☐	☐	☐	☐		☐	☐	☐	☐
Abtötung durch Infektion mit artspezifischen Krankheiten oder Pilzkrankheiten	☐	☐	☐	☐		☐	☐	☐	☐
Verbot der Haltung und des Handels	☐	☐	☐	☐		☐	☐	☐	☐
Verbot der Freisetzung in die Umwelt	☐	☐	☐	☐		☐	☐	☐	☐
Einfuhrkontrollen; Verbot der Einfuhr	☐	☐	☐	☐		☐	☐	☐	☐

*Management bedeutet, dass durch gesetzte Maßnahmen die weitere Verbreitung und Vermehrung der Art eingeschränkt oder ausgeschlossen wird bzw. sie unter Beobachtung gestellt werden.

Gibt es eine weitere Managementoption, die sie akzeptieren würden?

Bitte geben Sie Ihre Antwort hier ein:

Welche der folgenden Managementmaßnahmen* würden Sie persönlich akzeptieren, um nötigenfalls ihre Ausbreitung einzuschränken bzw. zu unterbinden? *

Bitte wählen Sie die zutreffende Antwort für jeden Punkt aus:

	Drüsiges Springkraut					Großes Springkraut			
	Sehr akzeptabel	Ziemlich akzeptabel	Wenig akzeptabel	Nicht akzeptabel		Sehr akzeptabel	Ziemlich akzeptabel	Wenig akzeptabel	Nicht akzeptabel
Ausgraben und Vernichtung	☐	☐	☐	☐		☐	☐	☐	☐
Rodung	☐	☐	☐	☐		☐	☐	☐	☐
Beseitigung/Entfernung ohne Abtötung	☐	☐	☐	☐		☐	☐	☐	☐
Verhinderung weiterer Ausbreitung (z.B. Errichtung von Quarantänezonen um Befallsgebiete)	☐	☐	☐	☐		☐	☐	☐	☐
Abtötung durch chemische Mittel	☐	☐	☐	☐		☐	☐	☐	☐
Einsatz von natürlichen Feinden	☐	☐	☐	☐		☐	☐	☐	☐
Abtötung durch Infektion mit artspezifischen Krankheiten oder Pilzkrankheiten	☐	☐	☐	☐		☐	☐	☐	☐
Verbot der Haltung und des Handels	☐	☐	☐	☐		☐	☐	☐	☐
Verbot der Freisetzung in die Umwelt	☐	☐	☐	☐		☐	☐	☐	☐
Einfuhrkontrollen; Verbot der Einfuhr	☐	☐	☐	☐		☐	☐	☐	☐

*Management bedeutet, dass durch gesetzte Maßnahmen die weitere Verbreitung und Vermehrung der Art eingeschränkt oder ausgeschlossen wird bzw. sie unter Beobachtung gestellt werden.

Gibt es eine weitere Managementoption, die sie akzeptieren würden?

Bitte geben Sie Ihre Antwort hier ein:

Welche der folgenden Managementmaßnahmen* würden Sie persönlich akzeptieren, um nötigenfalls ihre Ausbreitung einzuschränken bzw. zu unterbinden? *

Bitte wählen Sie die zutreffende Antwort für jeden Punkt aus:

	Rotfuchs					Marderhund			
	Sehr akzeptabel	Ziemlich akzeptabel	Wenig akzeptabel	Nicht akzeptabel		Sehr akzeptabel	Ziemlich akzeptabel	Wenig akzeptabel	Nicht akzeptabel
Fang und artgerechte Tötung	☐	☐	☐	☐		☐	☐	☐	☐
Abschuss	☐	☐	☐	☐		☐	☐	☐	☐
Beseitigung/Entfernung ohne Tötung	☐	☐	☐	☐		☐	☐	☐	☐
Verhinderung weiterer Ausbreitung (z.B. Errichtung von Quarantänezonen um Befallsgebiete)	☐	☐	☐	☐		☐	☐	☐	☐
Tötung durch chemische Mittel	☐	☐	☐	☐		☐	☐	☐	☐
Einsatz von natürlichen Feinden	☐	☐	☐	☐		☐	☐	☐	☐
Tötung durch Infektion mit artspezifischen Krankheiten	☐	☐	☐	☐		☐	☐	☐	☐
Verbot der Haltung und des Handels	☐	☐	☐	☐		☐	☐	☐	☐
Verbot der Freisetzung in die Umwelt	☐	☐	☐	☐		☐	☐	☐	☐
Einfuhrkontrollen; Verbot der Einfuhr	☐	☐	☐	☐		☐	☐	☐	☐

*Management bedeutet, dass durch gesetzte Maßnahmen die weitere Verbreitung und Vermehrung der Art eingeschränkt oder ausgeschlossen wird bzw. sie unter Beobachtung gestellt werden.

Gibt es eine weitere Managementoption, die sie akzeptieren würden?

Bitte geben Sie Ihre Antwort hier ein:

Welche der folgenden Managementmaßnahmen* würden Sie persönlich akzeptieren, um nötigenfalls ihre Ausbreitung einzuschränken bzw. zu unterbinden? *

Bitte wählen Sie die zutreffende Antwort für jeden Punkt aus:

	Steinmarder					Waschbär			
	Sehr akzeptabel	Ziemlich akzeptabel	Wenig akzeptabel	Nicht akzeptabel		Sehr akzeptabel	Ziemlich akzeptabel	Wenig akzeptabel	Nicht akzeptabel
Fang und artgerechte Tötung	☐	☐	☐	☐		☐	☐	☐	☐
Abschuss	☐	☐	☐	☐		☐	☐	☐	☐
Beseitigung/Entfernung ohne Tötung	☐	☐	☐	☐		☐	☐	☐	☐
Verhinderung weiterer Ausbreitung (z.B. Errichtung von Quarantänezonen um Befallsgebiete)	☐	☐	☐	☐		☐	☐	☐	☐
Tötung durch chemische Mittel	☐	☐	☐	☐		☐	☐	☐	☐
Einsatz von natürlichen Feinden	☐	☐	☐	☐		☐	☐	☐	☐
Tötung durch Infektion mit artspezifischen Krankheiten	☐	☐	☐	☐		☐	☐	☐	☐
Verbot der Haltung und des Handels	☐	☐	☐	☐		☐	☐	☐	☐
Verbot der Freisetzung in die Umwelt	☐	☐	☐	☐		☐	☐	☐	☐
Einfuhrkontrollen; Verbot der Einfuhr	☐	☐	☐	☐		☐	☐	☐	☐

*Management bedeutet, dass durch gesetzte Maßnahmen die weitere Verbreitung und Vermehrung der Art eingeschränkt oder ausgeschlossen wird bzw. sie unter Beobachtung gestellt werden.

Gibt es eine weitere Managementoption, die sie akzeptieren würden?

Bitte geben Sie Ihre Antwort hier ein:

Hier sehen Sie nochmals die vorhin gezeigten Tier- und Pflanzenarten. Welche dieser Arten sind Ihrer Meinung nach in Österreich heimisch und welche sind erst mithilfe des Menschen als Neobiota* nach Österreich gelangt? *

Bitte wählen Sie die zutreffende Antwort für jeden Punkt aus:

	Sicher in Österreich heimisch	Vermutlich in Österreich heimisch	Ich weiß es nicht	Vermutlich Neobiot in Österreich	Sicher Neobiot in Österreich
Gewöhnliche Seidenpflanze - <i>Asclepias syriaca</i>  (https://commons.wikimedia.org/wiki/File:Asclepias_syriaca_Kiev2.JPG) By Аймаина хикари [CC0 (http://creativecommons.org/publicdomain/zero/1.0/deed.en)], from Wikimedia Commons (https://commons.wikimedia.org/wiki/File:Asclepias_syriaca_Kiev2.JPG)	☐	☐	☐	☐	☐
Weißer Schwalbenwurz - <i>Vincetoxicum hirundinaria</i>	☐	☐	☐	☐	☐

	Sicher in Österreich heimisch	Vermutlich in Österreich heimisch	Ich weiß es nicht	Vermutlich Neobiot in Österreich	Sicher Neobiot in Österreich
 (https://commons.wikimedia.org/wiki/File:Vincetoxicum_hirundinaria_001.JPG) By H. Zell [GFDL (http://www.gnu.org/copyleft/fdl.html) or CC BY-SA 3.0 (https://creativecommons.org/licenses/by-sa/3.0/)], from Wikimedia Commons (https://commons.wikimedia.org/wiki/File:Vincetoxicum_hirundinaria_001.JPG)					

	Sicher in Österreich heimisch	Vermutlich in Österreich heimisch	Ich weiß es nicht	Vermutlich Neobiot in Österreich	Sicher Neobiot in Österreich
Drüsiges Springkraut - <i>Impatiens glandulifera</i>  (https://commons.wikimedia.org/wiki/File:Impatiens_glandulifera_(19873628218).jpg) By Donald Hobern from Copenhagen, Denmark (Impatiens glandulifera) [CC BY 2.0 (https://creativecommons.org/licenses/by/2.0)], via Wikimedia Commons (https://commons.wikimedia.org/wiki/File:Impatiens_glandulifera_(19873628218).jpg)	☐	☐	☐	☐	☐
Großes Springkraut - <i>Impatiens noli-tangere</i>  (https://commons.wikimedia.org/wiki/File:MFG_1992-Impatiens_noli-tangere.JPG) By Malte [CC BY 3.0 (https://creativecommons.org/licenses/by/3.0)], from Wikimedia Commons (https://commons.wikimedia.org/wiki/File:MFG_1992-Impatiens_noli-tangere.JPG)	☐	☐	☐	☐	☐

	Sicher in Österreich heimisch	Vermutlich in Österreich heimisch	Ich weiß es nicht	Vermutlich Neobiot in Österreich	Sicher Neobiot in Österreich
Marderhund - <i>Nyctereutes procyonoides</i>  (https://commons.wikimedia.org/wiki/File:Nyctereutes_procyonoides_3_(Piotr_Kuczynski).jpg) I, Pkuczynski (/wiki/User:Pkuczynski) [GFDL (http://www.gnu.org/copyleft/fdl.html) or CC-BY-SA-3.0 (http://creativecommons.org/licenses/by-sa/3.0/)], from Wikimedia Commons (https://commons.wikimedia.org/wiki/File:Nyctereutes_procyonoides_3_(Piotr_Kuczynski).jpg)	☐	☐	☐	☐	☐
Rotfuchs - <i>Vulpes vulpes</i>  (https://commons.wikimedia.org/wiki/File:Vulpes_vulpes_sitting.jpg) See page for author [Public domain], via Wikimedia Commons (https://commons.wikimedia.org/wiki/File:Vulpes_vulpes_sitting.jpg)	☐	☐	☐	☐	☐

	Sicher in Österreich heimisch	Vermutlich in Österreich heimisch	Ich weiß es nicht	Vermutlich Neobiot in Österreich	Sicher Neobiot in Österreich
Waschbär - <i>Procyon lotor</i>  (https://commons.wikimedia.org/wiki/File:Procyon_lotor_(Common_raccoon).jpg) By Bastique [GFDL (http://www.gnu.org/copyleft/fdl.html), CC-BY-SA-3.0 (http://creativecommons.org/licenses/by-sa/3.0/) or CC BY-SA 2.5-2.0-1.0 (https://creativecommons.org/licenses/by-sa/2.5-2.0-1.0)], from Wikimedia Commons (https://commons.wikimedia.org/wiki/File:Procyon_lotor_(Common_raccoon).jpg)	☐	☐	☐	☐	☐
Steinmarder - <i>Martes foina</i>  (https://commons.wikimedia.org/wiki/File:Steinmarder_01.jpg) By Zefram [GFDL (http://www.gnu.org/copyleft/fdl.html), CC-BY-SA-3.0 (http://creativecommons.org/licenses/by-sa/3.0/) or CC BY 2.0 de (https://creativecommons.org/licenses/by/2.0/de/deed.en)], from Wikimedia Commons (https://commons.wikimedia.org/wiki/File:Steinmarder_01.jpg)	☐	☐	☐	☐	☐

*Als Neobiota werden Pflanzen-, Tier-, oder Pilzarten verstanden, die in einem bestimmten Gebiet (z.B. Österreich) nicht einheimisch sind und die erst nach 1492 unter Mithilfe des Menschen in

dieses Gebiet gelangt sind und dort wild leben.

Für wie relevant halten Sie die Themen Neobiota* und Neobiotamanagement für Österreich? ***

❗ Bitte wählen Sie eine der folgenden Antworten:

Bitte wählen Sie nur eine der folgenden Antworten aus:

- ☐ Sehr wichtig
- ☐ Eher wichtig
- ☐ Neutral
- ☐ Weniger wichtig
- ☐ Nicht Wichtig

* Als Neobiota werden Pflanzen-, Tier-, oder Pilzarten verstanden, die in einem bestimmten Gebiet (z.B. Österreich) nicht einheimisch sind und erst nach 1492 unter Mithilfe des Menschen in dieses Gebiet gelangt sind und dort wild leben. Unter Umständen können diese dann eine Bedrohung für die heimische Biodiversität darstellen. Siehe: http://www.neobiota-austria.at/ms/neobiota-austria/neobiota_definition/ (http://www.neobiota-austria.at/ms/neobiota-austria/neobiota_definition/)

** Management bedeutet, dass durch gesetzte Maßnahmen die weitere Verbreitung und Vermehrung der Neobiota eingeschränkt oder ausgeschlossen wird bzw. sie unter Beobachtung gestellt werden.

Wie schätzen Sie den Beitrag folgender Organisationen / Berufsgruppen zur Bekämpfung biodiversitätsgefährdender Neobiota* in Österreich ein? *

Bitte wählen Sie die zutreffende Antwort für jeden Punkt aus:

	Sehr großer Beitrag	Großer Beitrag	Mittlerer Beitrag	Wenig Beitrag	Kein Beitrag
Schutzgebietsverwaltungen	☐	☐	☐	☐	☐
NGOs für Umwelt-, Natur-, oder Artenschutz	☐	☐	☐	☐	☐
Land- und Forstwirte	☐	☐	☐	☐	☐
Gärtner*innen	☐	☐	☐	☐	☐
Jäger*innen	☐	☐	☐	☐	☐
Landschaftsplaner*innen	☐	☐	☐	☐	☐
Bundesregierung	☐	☐	☐	☐	☐
Landesregierungen	☐	☐	☐	☐	☐
Europäische Union	☐	☐	☐	☐	☐

* Als biodiversitätsgefährdend bzw. invasiv gelten Neobiota, die in zumindest einem Lebensraum so häufig vorkommen, dass eine Verdrängung heimischer Arten belegt oder zu vermuten ist.
 Siehe: http://www.neobiota-austria.at/ms/neobiota-austria/neobiota_definition/
 (http://www.neobiota-austria.at/ms/neobiota-austria/neobiota_definition/)

Wie wichtig sind Ihrer Meinung nach Regelungen zu Neobiota*, die unsere biologische Vielfalt gefährden, durch eine EU-Verordnung? *

❗ Bitte wählen Sie eine der folgenden Antworten:

Bitte wählen Sie nur eine der folgenden Antworten aus:

- ☐ Sehr wichtig
- ☐ Eher wichtig
- ☐ Neutral
- ☐ Weniger wichtig
- ☐ Nicht Wichtig

* Als Neobiota werden Pflanzen-, Tier-, oder Pilzarten verstanden, die in einem bestimmten Gebiet (z.B. Österreich) nicht einheimisch sind und erst nach 1492 unter Mithilfe des Menschen in dieses Gebiet gelangt sind und dort wild leben. Unter Umständen können diese dann eine Bedrohung für die heimische Biodiversität darstellen. Siehe: http://www.neobiota-austria.at/ms/neobiota-austria/neobiota_definition/ (http://www.neobiota-austria.at/ms/neobiota-austria/neobiota_definition/)

**Hier sehen Sie Aussagen zur EU-Verordnung über biodiversitätsgefährdende Neobiota.
Bitte kreuzen Sie an, ob Sie zustimmen oder widersprechen. ***

Bitte wählen Sie die zutreffende Antwort für jeden Punkt aus:

	Stimme zu	Keine Angabe	Widerspreche
Neobiota betreffen Natur und Arten in ganz Europa	☐	☐	☐
Gemeinsam koordiniertes, EU-weites Vorgehen ist von Vorteil	☐	☐	☐
Jedes Land sollte allein über diese Thematik entscheiden	☐	☐	☐
Die EU als ein einziger großer Anwendungsbereich ist effektiver	☐	☐	☐
Einheitlicher EU-Maßnahmenkatalog ist effizienter	☐	☐	☐
Neobiota stellen in manchen EU-Ländern keine Bedrohung dar	☐	☐	☐
Kontrollvorteile durch Zollunion und Schengengrenze	☐	☐	☐

Die Verordnung Nr. 1143/2014 des Europäischen Parlaments und des Rates über die Prävention und das Management der Einbringung und Ausbreitung invasiver gebietsfremder Arten (Neobiota)* war mir bisher schon bekannt. *

❗ Bitte wählen Sie eine der folgenden Antworten:

Bitte wählen Sie nur eine der folgenden Antworten aus:

- ☐ Ja
- ☐ Nein
- ☐ Keine Angabe

*Siehe auch: <https://eur-lex.europa.eu/legal-content/DE/TXT/?uri=CELEX%3A32014R1143>
(<https://eur-lex.europa.eu/legal-content/DE/TXT/?uri=CELEX%3A32014R1143>)

Geschlecht *

❗ Bitte wählen Sie eine der folgenden Antworten:

Bitte wählen Sie nur eine der folgenden Antworten aus:

- ☐ Weiblich
- ☐ Männlich
- ☐ Anderes
- ☐ Keine Angabe

Alter *

❗ Bitte wählen Sie eine der folgenden Antworten:

Bitte wählen Sie nur eine der folgenden Antworten aus:

- ☐ bis 19
- ☐ 20 - 29
- ☐ 30 - 39
- ☐ 40 - 49
- ☐ 50 - 59
- ☐ ab 60
- ☐ keine Angabe

Einwohnerzahl Ihrer Wohngemeinde *

❗ Bitte wählen Sie eine der folgenden Antworten:

Bitte wählen Sie nur eine der folgenden Antworten aus:

- ☐ Unter 1000 Einwohner*innen
- ☐ 1000 bis 10.000 Einwohner*innen
- ☐ 10.000 bis 100.000 Einwohner*innen
- ☐ 100.000 bis 1 Mio. Einwohner*innen
- ☐ Über 1 Mio. Einwohner*innen
- ☐ keine Angabe

Herkunftsland *

❗ Bitte wählen Sie eine der folgenden Antworten:

Bitte wählen Sie nur eine der folgenden Antworten aus:

- ☐ Österreich
- ☐ Sonstiger EU-Staat
- ☐ Nicht-EU-Staat in Europa
- ☐ Sonstiges
- ☐ Keine Angabe

Höchste abgeschlossene Ausbildung *

❗ Bitte wählen Sie eine der folgenden Antworten:

Bitte wählen Sie nur eine der folgenden Antworten aus:

- ☐ Pflichtschule
- ☐ Lehre
- ☐ Facharbeiter / Fachschule
- ☐ Matura
- ☐ Bachelor
- ☐ Master / Magister
- ☐ PhD / Doktorat
- ☐ Sonstige
- ☐ keine Angabe

Übermittlung Ihres ausgefüllten Fragebogens:
Vielen Dank für die Beantwortung des Fragebogens.

Appendix 3: Personal Data of Survey Participants

Demographical aspect		Stakeholder group			
		Nature Experts	Nature User	General Public	Total
Participants	<i>total</i>	91	20	128	239
	<i>relative</i>	38,1%	8,4%	53,5%	100,0%
Gender	<i>female</i>	62,6%	45,0%	66,4%	63,2%
	<i>male</i>	34,1%	50,0%	32,8%	34,7%
	<i>different</i>	3,3%	5,0%	0,8%	2,1%
Age	<i>under 19</i>	27,5%		6,3%	13,9%
	<i>20 - 29</i>	40,7%	35,0%	73,2%	57,6%
	<i>30 - 39</i>	15,4%	20,0%	11,8%	13,9%
	<i>40 - 49</i>	7,7%	25,0%	3,9%	7,1%
	<i>50 - 59</i>	6,6%	20,0%	4,7%	6,7%
	<i>over 60</i>	2,2%			0,8%
Population of residence municipality	<i>< 1000 Inhabitants</i>	14,3%	45,0%	10,2%	14,6%
	<i>1000 to 10.000 inhabitants</i>	29,7%	30,0%	25,0%	27,2%
	<i>10.000 to 100.000 inhabitants</i>	13,2%	10,0%	9,4%	10,9%
	<i>100.000 to 1 mil. inhabitants</i>	7,7%		8,6%	7,5%
	<i>> 1 mil. inhabitants</i>	34,1%	15,0%	43,8%	37,7%
	<i>no answer</i>	1,1%		3,1%	2,1%
Home country	<i>Austria</i>	75,8%	85,0%	83,5%	80,7%
	<i>EU</i>	24,2%	15,0%	15,0%	18,5%
	<i>non-EU country in europe</i>			1,6%	0,8%
Highest completed level of education	<i>Mandatory school</i>	20,9%		3,2%	9,5%
	<i>Apprenticeship</i>	1,2%	5,0%	2,4%	2,2%
	<i>Professional school / Skilled worker exam</i>		20,0%	5,6%	4,8%
	<i>Higher School Certificate</i>	11,6%	30,0%	39,2%	28,1%
	<i>Bachelor's degree</i>	31,4%	20,0%	26,4%	27,7%
	<i>Master's degree</i>	26,7%	15,0%	19,2%	21,6%
	<i>PhD</i>	5,8%	10,0%	0,8%	3,5%
	<i>other</i>	2,3%		3,2%	2,6%

Appendix 4: Survey results

Perception

Their function in our ecosystem is... [native plant species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
Their function in our ecosystem is... [native plant species]	very unimportant	0	1	3	4
	-1,50	3	0	1	4
	unimportant	3	1	8	12
	-,50	8	1	9	18
	neutral	18	1	23	42
	,50	16	5	15	36
	important	27	4	34	65
	1,50	7	1	6	14
	very important	3	0	4	7
Total		85	14	103	202

Their function in our ecosystem is... [alien plant species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
Their function in our ecosystem is... [alien plant species]	very unimportant	14	4	14	32
	-1,50	14	2	4	20
	unimportant	14	2	11	27
	-,50	12	2	7	21
	neutral	18	1	32	51
	,50	6	2	9	17
	important	7	3	23	33
	1,50	0	0	5	5
	very important	1	0	3	4
Total		86	16	108	210

Their function in our ecosystem is... [native mammal species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
Their function in our ecosystem is... [native mammal species]	unimportant	0	1	1	2
	-,50	1	0	4	5
	neutral	1	1	7	9
	,50	11	2	9	22
	important	23	3	43	69
	1,50	23	7	27	57
	very important	32	6	33	71
Total		91	20	124	235

Their function in our ecosystem is... [alien mammal species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
Their function in our	very unimportant	14	9	11	34

ecosystem is... [alien mammal species]	-1,50	14	1	8	23
	unimportant	8	0	15	23
	-,50	11	1	13	25
	neutral	13	2	18	33
	,50	10	1	18	29
	important	7	5	24	36
	1,50	5	0	5	10
	very important	1	0	3	4
Total		83	19	115	217

Affects our ecosystems... [native plant species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
Affects our ecosystems... [native plant species]	very negatively	0	1	2	3
	-1,50	2	0	0	2
	negatively	6	1	10	17
	-,50	9	2	9	20
	neutral	14	3	27	44
	,50	14	1	15	30
	positively	26	5	32	63
	1,50	11	1	6	18
	very positively	5	0	0	5
Total		87	14	101	202

Affects our ecosystems... [alien plant species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
Affects our ecosystems... [alien plant species]	very negatively	13	2	11	26
	-1,50	21	4	8	33
	negatively	20	4	13	37
	-,50	13	2	9	24
	neutral	8	2	27	37
	,50	8	0	13	21
	positively	4	1	18	23
	1,50	0	0	4	4
	very positively	0	0	1	1
Total		87	15	104	206

Affects our ecosystems... [native mammal species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
Affects our ecosystems... [native mammal species]	negatively	1	1	3	5
	-,50	0	2	3	5
	neutral	14	2	15	31
	,50	11	4	20	35
	positively	27	6	47	80
	1,50	16	2	21	39
	very positively	20	3	13	36
Total		89	20	122	231

Affects our ecosystems... [alien mammal species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
Affects our ecosystems... [alien mammal species]	very negatively	11	5	4	20
	-1,50	14	6	5	25
	negatively	18	1	19	38
	-,50	12	2	13	27
	neutral	16	2	30	48
	,50	8	2	11	21
	positively	4	1	25	30
	1,50	2	1	1	4
	very positively	1	0	3	4
Total		86	20	111	217

Triggers ... emotions. [native plant species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
Triggers ... emotions. [native plant species]	-1,50	1	1	0	2
	negative	0	1	3	4
	-,50	13	0	11	24
	neutral	22	4	41	67
	,50	28	12	41	81
	positive	17	1	19	37
	1,50	5	1	9	15
	very positive	5	0	4	9
Total		91	20	128	239

Triggers ... emotions. [alien plant species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
Triggers ... emotions. [alien plant species]	very negative	0	1	0	1
	-1,50	6	1	3	10
	negative	18	5	14	37
	-,50	23	4	21	48
	neutral	21	6	44	71
	,50	13	2	21	36
	positive	8	1	15	24
	1,50	1	0	8	9
	very positive	1	0	2	3
Total		91	20	128	239

Triggers ... emotions. [native mammal species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
Triggers ... emotions. [native mammal species]	-1,50	0	0	3	3
	negative	1	1	1	3
	-,50	2	3	9	14
	neutral	8	5	17	30
	,50	9	2	22	33
	positive	23	3	31	57
	1,50	19	2	18	39
	very positive	29	4	27	60

Total		91	20	128	239
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Triggers ... emotions. [alien mammal species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
Triggers ... emotions. [alien mammal species]	very negative	3	2	1	6
	-1,50	8	2	4	14
	negative	13	3	6	22
	-,50	6	3	11	20
	neutral	16	5	22	43
	,50	13	2	26	41
	positive	16	2	21	39
	1,50	9	1	17	27
	very positive	7	0	20	27
Total		91	20	128	239

Appears visually... [native plant species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
Appears visually... [native plant species]	-1,50	0	0	2	2
	unaesthetic	0	0	2	2
	-,50	4	0	8	12
	neutral	23	6	22	51
	,50	22	4	26	52
	aesthetic	23	5	42	70
	1,50	10	5	18	33
	very aesthetic	9	0	8	17
Total		91	20	128	239

Appears visually... [alien plant species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
Appears visually... [alien plant species]	-1,50	0	0	2	2
	unaesthetic	4	0	4	8
	-,50	13	1	10	24
	neutral	14	4	25	43
	,50	17	5	31	53
	aesthetic	24	7	28	59
	1,50	11	3	20	34
	very aesthetic	8	0	8	16
Total		91	20	128	239

Appears visually... [native mammal species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
Appears visually... [native mammal species]	unaesthetic	0	0	1	1
	-,50	0	0	2	2
	neutral	4	3	4	11
	,50	5	4	17	26
	aesthetic	19	3	29	51

	1,50	23	3	40	66
	very aesthetic	40	7	35	82
Total		91	20	128	239

Appears visually... [alien mammal species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
Appears visually... [alien mammal species]	very unaesthetic	0	2	0	2
	-1,50	1	2	1	4
	unaesthetic	3	0	2	5
	-,50	3	1	6	10
	neutral	11	4	16	31
	,50	17	1	24	42
	aesthetic	20	4	24	48
	1,50	18	5	27	50
	very aesthetic	18	1	28	47
Total		91	20	128	239

Should be ... protected. [native plant species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
Should be ... protected. [native plant species]	much less	2	0	1	3
	-1,50	1	1	1	3
	less	5	0	5	10
	-,50	10	2	6	18
	neither more nor less	18	3	29	50
	,50	14	5	8	27
	more	20	2	31	53
	1,50	7	0	6	13
	much more	4	0	3	7
Total		81	13	90	184

Should be ... protected. [alien plant species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
Should be ... protected. [alien plant species]	much less	31	5	18	54
	-1,50	6	0	1	7
	less	18	4	14	36
	-,50	9	4	5	18
	neither more nor less	11	0	27	38
	,50	6	1	9	16
	more	2	1	15	18
	1,50	1	0	5	6
	much more	1	0	1	2
Total		85	15	95	195

Should be ... protected. [native mammal species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
Should be ...	much less	0	4	3	7

protected. [native mammal species]	-1,50	1	1	1	3
	less	1	3	1	5
	-,50	5	0	6	11
	neither more nor less	15	6	17	38
	,50	13	1	18	32
	more	21	2	24	47
	1,50	20	2	17	39
	much more	14	1	34	49
Total		90	20	121	231

Should be ... protected. [alien mammal species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
Should be ... protected. [alien mammal species]	much less	24	10	12	46
	-1,50	7	1	1	9
	less	9	1	8	18
	-,50	6	1	6	13
	neither more nor less	16	3	25	44
	,50	5	1	11	17
	more	13	0	20	33
	1,50	6	1	11	18
	much more	3	0	17	20
Total		89	18	111	218

Belonging to our landscape. [native plant species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
Belonging to our landscape. [native plant species]	-1,50	2	0	1	3
	Rather no	2	0	3	5
	-,50	8	3	7	18
	Neither yes nor no	15	5	35	55
	,50	13	3	25	41
	Rather yes	19	5	32	56
	1,50	14	3	19	36
	Yes	18	1	6	25
Total		91	20	128	239

Belonging to our landscape. [alien plant species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
Belonging to our landscape. [alien plant species]	No	13	1	5	19
	-1,50	14	4	11	29
	Rather no	24	3	13	40
	-,50	11	3	12	26
	Neither yes nor no	11	3	32	46
	,50	7	1	19	27
	Rather yes	5	5	20	30
	1,50	4	0	14	18
	Yes	2	0	2	4
Total		91	20	128	239

Belonging to our landscape. [native mammal species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
Belonging to our landscape. [native mammal species]	-1,50	0	1	1	2
	-,50	0	0	1	1
	Neither yes nor no	1	0	2	3
	,50	8	1	5	14
	Rather yes	11	5	22	38
	1,50	12	4	40	56
	Yes	59	9	57	125
Total		91	20	128	239

Belonging to our landscape. [alien mammal species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
Belonging to our landscape. [alien mammal species]	No	21	6	7	34
	-1,50	13	6	14	33
	Rather no	16	2	22	40
	-,50	13	1	18	32
	Neither yes nor no	10	1	24	35
	,50	8	2	16	26
	Rather yes	6	1	16	23
	1,50	1	1	7	9
	Yes	3	0	4	7
Total		91	20	128	239

I know this species... [native plant species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
I know this species... [native plant species]	rather not	6	5	35	46
	-,50	12	6	24	42
	,00	23	1	33	57
	,50	22	2	26	50
	rather well	9	1	6	16
	1,50	12	4	3	19
	Very well	7	1	1	9
Total		91	20	128	239

I know this species... [alien plant species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
I know this species... [alien plant species]	rather not	10	3	35	48
	-,50	5	5	20	30
	,00	23	3	36	62
	,50	26	4	28	58
	rather well	16	3	6	25
	1,50	4	2	2	8
	Very well	7	0	1	8
Total		91	20	128	239

I know this species... [native mammal species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
I know this species... [native mammal species]	-,50	2	0	0	2
	,00	3	0	5	8
	,50	10	0	11	21
	rather well	23	2	46	71
	1,50	22	6	32	60
	Very well	31	12	34	77
Total		91	20	128	239

I know this species... [alien mammal species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
I know this species... [alien mammal species]	rather not	0	0	5	5
	-,50	8	0	13	21
	,00	18	4	22	44
	,50	19	2	39	60
	rather well	23	6	34	63
	1,50	12	4	9	25
	Very well	11	4	6	21
Total		91	20	128	239

Management method acceptance

excavation and extermination [native plant species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
excavation and extermination [native plant species]	Not acceptable	18	2	10	30
	-1,50	6	2	5	13
	Little acceptable	10	2	22	34
	-,50	6	0	2	8
	,00	8	0	12	20
	,50	2	2	4	8
	Rather acceptable	10	6	28	44
	1,50	8	2	13	23
	Very Acceptable	23	4	32	59
Total		91	20	128	239

excavation and extermination [alien plant species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
excavation and extermination [alien plant species]	Not acceptable	0	1	6	7
	-1,50	3	0	5	8
	Little acceptable	8	2	19	29
	,00	5	0	12	17
	,50	0	3	3	6
	Rather acceptable	9	4	29	42
	1,50	21	4	15	40
	Very Acceptable	45	6	39	90
Total		91	20	128	239

catch and appropriate killing [native mammal species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
catch and appropriate killing [native mammal species]	Not acceptable	37	3	61	101
	-1,50	10	2	10	22
	Little acceptable	15	1	23	39
	-,50	3	1	1	5
	,00	9	1	12	22
	,50	3	1	0	4
	Rather acceptable	6	6	8	20
	1,50	2	0	5	7
	Very Acceptable	6	5	8	19
Total		91	20	128	239

catch and appropriate killing [alien mammal species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
catch and appropriate killing [alien mammal species]	Not acceptable	24	2	58	84
	-1,50	5	2	5	12
	Little acceptable	19	1	24	44
	-,50	2	0	5	7
	,00	8	0	10	18
	,50	0	0	1	1

	Rather acceptable	8	6	13	27
	1,50	6	0	3	9
	Very Acceptable	19	9	9	37
Total		91	20	128	239

clearing [native plant species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
clearing [native plant species]	Not acceptable	28	2	31	61
	-1,50	11	1	8	20
	Little acceptable	14	2	19	35
	-,50	6	1	3	10
	,00	8	0	14	22
	,50	3	0	3	6
	Rather acceptable	7	6	24	37
	1,50	5	4	9	18
	Very Acceptable	9	4	17	30
Total		91	20	128	239

clearing [alien plant species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
clearing [alien plant species]	Not acceptable	11	1	27	39
	-1,50	5	0	8	13
	Little acceptable	12	1	19	32
	-,50	2	1	2	5
	,00	8	1	7	16
	,50	2	1	2	5
	Rather acceptable	8	5	24	37
	1,50	15	3	17	35
	Very Acceptable	28	7	22	57
Total		91	20	128	239

shooting [native mammal species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
shooting [native mammal species]	Not acceptable	32	3	55	90
	-1,50	14	1	12	27
	Little acceptable	15	1	28	44
	-,50	1	1	1	3
	,00	5	1	7	13
	,50	3	1	0	4
	Rather acceptable	11	6	14	31
	1,50	4	0	2	6
	Very Acceptable	6	6	9	21
Total		91	20	128	239

shooting [alien mammal species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
shooting [alien mammal species]	Not acceptable	21	1	47	69
	-1,50	11	1	16	28
	Little acceptable	13	1	27	41
	-,50	2	0	1	3

	,00	4	1	10	15
	,50	1	0	0	1
	Rather acceptable	10	4	15	29
	1,50	6	2	2	10
	Very Acceptable	23	10	10	43
Total		91	20	128	239

elimination/removal without killing [native plant species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
elimination/removal without killing [native plant species]	Not acceptable	20	2	11	33
	-1,50	9	0	7	16
	Little acceptable	10	5	12	27
	-,50	3	0	5	8
	,00	10	2	13	25
	,50	2	2	3	7
	Rather acceptable	9	3	25	37
	1,50	9	1	15	25
	Very Acceptable	19	5	37	61
Total		91	20	128	239

elimination/removal without killing [alien plant species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
elimination/removal without killing [alien plant species]	Not acceptable	6	1	10	17
	-1,50	7	0	8	15
	Little acceptable	10	2	10	22
	-,50	2	0	4	6
	,00	9	3	12	24
	,50	4	3	3	10
	Rather acceptable	9	3	27	39
	1,50	11	3	15	29
	Very Acceptable	33	5	39	77
Total		91	20	128	239

elimination/removal without killing [native mammal species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
elimination/removal without killing [native mammal species]	Not acceptable	19	6	17	42
	-1,50	6	2	8	16
	Little acceptable	10	1	15	26
	-,50	3	2	2	7
	,00	10	0	13	23
	,50	1	0	2	3
	Rather acceptable	21	4	27	52
	1,50	7	2	14	23
	Very Acceptable	14	3	30	47
Total		91	20	128	239

elimination/removal without killing [alien mammal species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
elimination/removal without killing [alien	Not acceptable	5	5	12	22
	-1,50	4	1	7	12

mammal species]	Little acceptable	12	2	16	30
	-,50	2	1	2	5
	,00	16	1	12	29
	,50	2	0	3	5
	Rather acceptable	20	3	26	49
	1,50	9	3	15	27
	Very Acceptable	21	4	35	60
Total		91	20	128	239

**prevention of further spread (e.g., establishment of quarantine zones around infested areas)
[native plant species]**

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
prevention of further spread (e.g., establishment of quarantine zones around infested areas) [native plant species]	Not acceptable	18	3	11	32
	-1,50	5	2	6	13
	Little acceptable	7	5	10	22
	-,50	1	0	1	2
	,00	14	0	17	31
	,50	5	2	3	10
	Rather acceptable	13	2	25	40
	1,50	9	2	18	29
	Very Acceptable	19	4	37	60
Total		91	20	128	239

**prevention of further spread (e.g., establishment of quarantine zones around infested areas)
[alien plant species]**

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
prevention of further spread (e.g., establishment of quarantine zones around infested areas) [alien plant species]	Not acceptable	1	2	9	12
	-1,50	3	0	5	8
	Little acceptable	7	4	11	22
	-,50	3	0	0	3
	,00	8	0	13	21
	,50	2	1	4	7
	Rather acceptable	11	1	24	36
	1,50	20	3	22	45
	Very Acceptable	36	9	40	85
Total		91	20	128	239

**prevention of further spread (e.g., establishment of quarantine zones around infested areas)
[native mammal species]**

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
prevention of further spread (e.g., establishment of quarantine zones around infested areas) [native mammal species]	Not acceptable	20	3	15	38
	-1,50	10	3	7	20
	Little acceptable	10	2	9	21
	-,50	0	1	2	3
	,00	11	0	9	20
	,50	2	1	3	6
	Rather acceptable	16	5	39	60
	1,50	7	1	16	24
	Very Acceptable	15	4	28	47
Total		91	20	128	239

**prevention of further spread (e.g., establishment of quarantine zones around infested areas)
[alien mammal species]**

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
prevention of further spread (e.g., establishment of quarantine zones around infested areas) [alien mammal species]	Not acceptable	3	3	9	15
	-1,50	10	1	8	19
	Little acceptable	6	2	11	19
	-,50	4	0	1	5
	,00	10	0	8	18
	,50	2	1	2	5
	Rather acceptable	19	4	35	58
	1,50	13	1	20	34
	Very Acceptable	24	8	34	66
Total		91	20	128	239

killing by chemical agents [native plant species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
killing by chemical agents [native plant species]	Not acceptable	69	10	88	167
	-1,50	7	1	9	17
	Little acceptable	11	2	20	33
	-,50	2	0	1	3
	,00	1	1	2	4
	,50	0	1	0	1
	Rather acceptable	1	2	4	7
	1,50	0	2	1	3
	Very Acceptable	0	1	3	4
Total		91	20	128	239

killing by chemical agents [alien plant species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
killing by chemical agents [alien plant species]	Not acceptable	58	9	87	154
	-1,50	9	2	9	20
	Little acceptable	18	2	20	40
	-,50	1	0	1	2
	,00	2	3	1	6
	,50	0	0	3	3
	Rather acceptable	1	2	3	6
	1,50	1	1	0	2
	Very Acceptable	1	1	4	6
Total		91	20	128	239

killing by chemical agents [native mammal species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
killing by chemical agents [native mammal species]	Not acceptable	84	15	118	217
	-1,50	3	3	4	10
	Little acceptable	2	1	4	7
	,50	1	0	0	1
	Rather acceptable	0	0	1	1
	Very Acceptable	1	1	1	3
Total		91	20	128	239

killing by chemical agents [alien mammal species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
killing by chemical agents [alien mammal species]	Not acceptable	75	12	114	201
	-1,50	8	4	6	18
	Little acceptable	6	3	6	15
	,00	0	0	1	1
	Very Acceptable	2	1	1	4
Total		91	20	128	239

usage of natural enemies [native plant species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
usage of natural enemies [native plant species]	Not acceptable	21	2	11	34
	-1,50	5	1	3	9
	Little acceptable	13	2	14	29
	-,50	4	0	3	7
	,00	9	1	9	19
	,50	1	2	4	7
	Rather acceptable	11	3	29	43
	1,50	5	2	16	23
	Very Acceptable	22	7	39	68
Total		91	20	128	239

usage of natural enemies [alien plant species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
usage of natural enemies [alien plant species]	Not acceptable	6	1	10	17
	-1,50	4	1	3	8
	Little acceptable	13	1	14	28
	-,50	1	0	2	3
	,00	10	1	2	13
	,50	1	1	3	5
	Rather acceptable	18	4	31	53
	1,50	4	3	16	23
	Very Acceptable	34	8	47	89
Total		91	20	128	239

usage of natural enemies [native mammal species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
usage of natural enemies [native mammal species]	Not acceptable	20	3	24	47
	-1,50	8	2	5	15
	Little acceptable	16	2	17	35
	-,50	4	0	3	7
	,00	7	0	10	17
	,50	0	1	1	2
	Rather acceptable	12	4	32	48
	1,50	3	2	15	20
	Very Acceptable	21	6	21	48
Total		91	20	128	239

usage of natural enemies [alien mammal species]

		Stakeholder group			Total
		Nature	Nature User	General Public	

		Experts			
usage of natural enemies [alien mammal species]	Not acceptable	16	2	23	41
	-1,50	6	1	5	12
	Little acceptable	15	2	18	35
	-,50	3	0	2	5
	,00	8	1	10	19
	,50	0	2	1	3
	Rather acceptable	14	3	31	48
	1,50	5	1	14	20
	Very Acceptable	24	8	24	56
Total		91	20	128	239

killing by infection with species-specific diseases or fungal diseases [native plant species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
killing by infection with species-specific diseases or fungal diseases [native plant species]	Not acceptable	45	7	51	103
	-1,50	9	3	15	27
	Little acceptable	16	4	31	51
	-,50	2	0	2	4
	,00	3	1	5	9
	,50	3	0	1	4
	Rather acceptable	2	2	17	21
	1,50	6	0	4	10
	Very Acceptable	5	3	2	10
Total		91	20	128	239

killing by infection with species-specific diseases or fungal diseases [alien plant species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
killing by infection with species-specific diseases or fungal diseases [alien plant species]	Not acceptable	29	5	52	86
	-1,50	10	1	12	23
	Little acceptable	20	2	32	54
	-,50	2	0	0	2
	,00	3	4	4	11
	,50	2	1	1	4
	Rather acceptable	8	2	19	29
	1,50	9	1	4	14
	Very Acceptable	8	4	4	16
Total		91	20	128	239

killing by infection with species-specific diseases [native mammal species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
killing by infection with species-specific diseases [native mammal species]	Not acceptable	73	14	107	194
	-1,50	3	4	7	14
	Little acceptable	10	1	9	20
	,00	2	0	0	2
	,50	1	0	0	1
	Rather acceptable	2	0	4	6
	Very Acceptable	0	1	1	2
Total		91	20	128	239

killing by infection with species-specific diseases [alien mammal species]

		Stakeholder group			Total
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		Nature Experts	Nature User	General Public	
killing by infection with species-specific diseases [alien mammal species]	Not acceptable	66	12	104	182
	-1,50	6	4	8	18
	Little acceptable	11	2	10	23
	,00	1	0	1	2
	Rather acceptable	5	1	4	10
	Very Acceptable	2	1	1	4
Total		91	20	128	239

prohibition of keeping and trading [native plant species]

		Stakeholder group			
		Nature Experts	Nature User	General Public	Total
prohibition of keeping and trading [native plant species]	Not acceptable	21	1	13	35
	-1,50	9	0	8	17
	Little acceptable	4	2	12	18
	-,50	3	1	2	6
	,00	12	1	9	22
	,50	5	2	3	10
	Rather acceptable	12	4	21	37
	1,50	4	2	16	22
	Very Acceptable	21	7	44	72
Total		91	20	128	239

prohibition of keeping and trading [alien plant species]

		Stakeholder group			
		Nature Experts	Nature User	General Public	Total
prohibition of keeping and trading [alien plant species]	Not acceptable	8	0	10	18
	-1,50	3	0	7	10
	Little acceptable	2	1	8	11
	-,50	0	1	2	3
	,00	11	2	7	20
	,50	7	1	5	13
	Rather acceptable	14	3	22	39
	1,50	10	3	18	31
	Very Acceptable	36	9	49	94
Total		91	20	128	239

prohibition of keeping and trading [native mammal species]

		Stakeholder group			
		Nature Experts	Nature User	General Public	Total
prohibition of keeping and trading [native mammal species]	Not acceptable	14	3	8	25
	-1,50	2	1	3	6
	Little acceptable	4	0	5	9
	-,50	1	0	1	2
	,00	4	2	4	10
	,50	3	0	1	4
	Rather acceptable	17	1	15	33
	1,50	8	1	15	24
	Very Acceptable	38	12	76	126
Total		91	20	128	239

prohibition of keeping and trading [alien mammal species]

		Stakeholder group			
		Nature	Nature User	General Public	Total

		Experts			
prohibition of keeping and trading [alien mammal species]	Not acceptable	5	1	6	12
	-1,50	0	0	3	3
	Little acceptable	3	0	5	8
	-,50	0	1	1	2
	,00	6	1	4	11
	,50	4	0	1	5
	Rather acceptable	13	1	14	28
	1,50	10	1	16	27
	Very Acceptable	50	15	78	143
Total		91	20	128	239

prohibition of releasing into the environment [native plant species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
prohibition of releasing into the environment [native plant species]	Not acceptable	18	1	11	30
	-1,50	5	0	7	12
	Little acceptable	5	2	5	12
	-,50	3	1	1	5
	,00	11	3	14	28
	,50	2	1	3	6
	Rather acceptable	10	2	19	31
	1,50	5	1	18	24
	Very Acceptable	32	9	50	91
Total		91	20	128	239

prohibition of releasing into the environment [alien plant species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
prohibition of releasing into the environment [alien plant species]	Not acceptable	3	0	10	13
	-1,50	3	1	5	9
	Little acceptable	1	0	4	5
	-,50	1	1	1	3
	,00	6	0	10	16
	,50	2	0	2	4
	Rather acceptable	8	4	21	33
	1,50	11	1	17	29
	Very Acceptable	56	13	58	127
Total		91	20	128	239

prohibition of releasing into the environment [native mammal species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
prohibition of releasing into the environment [native mammal species]	Not acceptable	13	1	15	29
	-1,50	4	2	4	10
	Little acceptable	6	0	5	11
	-,50	5	0	2	7
	,00	7	3	7	17
	,50	0	0	4	4
	Rather acceptable	11	2	13	26
	1,50	9	1	14	24
	Very Acceptable	36	11	64	111
Total		91	20	128	239

prohibition of releasing into the environment [alien mammal species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
prohibition of releasing into the environment [alien mammal species]	Not acceptable	4	0	12	16
	-1,50	3	0	2	5
	Little acceptable	4	0	5	9
	-,50	2	0	2	4
	,00	6	3	7	16
	,50	1	0	4	5
	Rather acceptable	7	1	11	19
	1,50	7	1	13	21
	Very Acceptable	57	15	72	144
Total		91	20	128	239

import controls and bans [native plant species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
import controls and bans [native plant species]	Not acceptable	18	1	10	29
	-1,50	6	0	7	13
	Little acceptable	6	1	6	13
	-,50	5	1	0	6
	,00	11	1	9	21
	,50	3	1	4	8
	Rather acceptable	9	5	18	32
	1,50	8	3	16	27
	Very Acceptable	25	7	58	90
Total		91	20	128	239

import controls and bans [alien plant species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
import controls and bans [alien plant species]	Not acceptable	6	0	8	14
	-1,50	1	0	6	7
	Little acceptable	4	0	5	9
	-,50	1	1	0	2
	,00	9	1	7	17
	,50	2	1	1	4
	Rather acceptable	12	4	18	34
	1,50	15	2	16	33
	Very Acceptable	41	11	67	119
Total		91	20	128	239

import controls and bans [native mammal species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
import controls and bans [native mammal species]	Not acceptable	15	2	8	25
	-1,50	3	2	1	6
	Little acceptable	6	0	2	8
	-,50	1	0	3	4
	,00	10	1	6	17
	Rather acceptable	15	2	19	36
	1,50	4	1	16	21
	Very Acceptable	37	12	73	122
Total		91	20	128	239

import controls and bans [alien mammal species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
import controls and bans [alien mammal species]	Not acceptable	5	0	6	11
	-1,50	1	1	1	3
	Little acceptable	5	0	4	9
	-,50	1	1	0	2
	,00	4	0	4	8
	,50	0	0	1	1
	Rather acceptable	12	2	18	32
	1,50	5	1	14	20
	Very Acceptable	58	15	80	153
Total		91	20	128	239

political measurements [native plant species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
political measurements [native plant species]	Not acceptable	17	1	7	25
	-1,83	0	0	4	4
	-1,67	1	0	2	3
	-1,50	3	0	3	6
	-1,33	1	0	1	2
	-1,17	2	0	0	2
	Little acceptable	1	1	2	4
	-,83	3	0	0	3
	-,67	3	1	3	7
	-,50	3	1	2	6
	-,33	3	0	1	4
	-,17	3	0	0	3
	,00	3	0	7	10
	,17	0	0	5	5
	,33	1	1	6	8
	,50	2	1	2	5
	,67	6	1	5	12
	,83	1	0	0	1
	Rather acceptable	5	2	9	16
	1,17	2	1	4	7
	1,33	5	1	4	10
	1,50	1	2	8	11
	1,67	3	0	5	8
	1,83	4	2	7	13
	Very Acceptable	18	5	41	64
Total		91	20	128	239

political measurements [alien plant species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
political measurements [alien plant species]	Not acceptable	3	0	5	8
	-1,83	1	0	3	4
	-1,67	1	0	3	4
	-1,50	0	0	3	3
	-1,33	1	0	0	1
	Little acceptable	0	0	1	1
	-,83	1	1	0	2
	-,67	2	0	2	4

	-,50	0	1	2	3
	-,33	2	0	2	4
	,00	2	0	3	5
	,17	1	0	4	5
	,33	5	0	6	11
	,50	1	0	1	2
	,67	5	1	3	9
	,83	2	2	3	7
	Rather acceptable	6	2	8	16
	1,17	3	0	5	8
	1,33	7	1	7	15
	1,50	6	0	7	13
	1,67	6	0	5	11
	1,83	7	4	8	19
	Very Acceptable	29	8	47	84
Total		91	20	128	239

political measurements [native mammal species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
political measurements [native mammal species]	Not acceptable	11	1	6	18
	-1,83	0	0	1	1
	-1,67	0	0	1	1
	-1,50	2	1	0	3
	-1,33	1	0	2	3
	-1,17	0	0	1	1
	Little acceptable	3	1	0	4
	-,83	3	0	1	4
	-,67	1	0	1	2
	-,50	1	1	0	2
	-,33	2	1	2	5
	-,17	1	0	2	3
	,00	3	1	3	7
	,17	0	0	2	2
	,33	3	0	3	6
	,50	3	0	2	5
	,67	4	0	5	9
	,83	1	1	2	4
	Rather acceptable	9	1	11	21
	1,17	1	0	1	2
	1,33	4	0	6	10
	1,50	3	1	9	13
	1,67	4	0	2	6
	1,83	3	0	7	10
	Very Acceptable	28	11	58	97
		91	20	128	239
	Total				

political measurements [alien mammal species]

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
political measurements [alien mammal species]	Not acceptable	2	0	4	6
	-1,83	0	0	1	1
	-1,67	0	0	1	1
	-1,33	1	0	2	3
	Little acceptable	1	0	1	2
	-,83	4	0	0	4
	-,67	2	0	0	2

	-,50	1	1	3	5
	-,33	1	2	2	5
	-,17	1	0	1	2
	,00	2	0	3	5
	,17	0	0	1	1
	,33	1	0	2	3
	,50	2	0	2	4
	,67	2	0	6	8
	,83	1	0	1	2
	Rather acceptable	8	1	8	17
	1,17	2	0	3	5
	1,33	2	0	3	5
	1,50	4	1	8	13
	1,67	3	0	4	7
	1,83	5	0	8	13
	Very Acceptable	46	15	64	125
Total		91	20	128	239

Species' knowledge

		Certainly not native in Austria	Presumably not native in Austria	I don't know	Presumably native in Austria	Certainly native in Austria
Vincetoxicum hierundinaria	Nature Experts	1	9	21	34	26
	Nature User	2	1	5	8	4
	General Public	2	19	41	53	13
Asclepias syriaca	Nature Experts	25	32	19	13	2
	Nature User	4	8	4	4	0
	General Public	8	47	47	20	6
Impatiens noli-tangere	Nature Experts	12	8	13	15	43
	Nature User	0	2	6	5	7
	General Public	6	16	33	53	20
Impatiens glandulifera	Nature Experts	65	9	7	6	4
	Nature User	10	3	3	3	1
	General Public	38	25	31	27	7
Vulpes vulpes	Nature Experts	1	4	0	13	73
	Nature User	0	0	0	2	18
	General Public	0	6	7	32	83
Nyctereutes procyonoides	Nature Experts	45	19	13	11	3
	Nature User	14	2	1	2	1
	General Public	26	51	27	21	3
Martes foina	Nature Experts	0	3	2	18	68
	Nature User	0	1	0	2	17
	General Public	0	2	7	40	79
Procyon lotor	Nature Experts	57	13	4	10	7
	Nature User	15	2	0	2	1
	General Public	52	46	13	12	5

Topic relevance

Are the topics alien species and their management relevant for Austria?

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
Are the topics alien species and their management relevant for Austria?	Not Important	0	0	2	2
	Less important	3	3	8	14
	Neutral	7	0	17	24
	More important	24	6	52	82
	Very important	57	11	49	117
Total		91	20	128	239

Management of natural reserves

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
Management of natural reserves	No contribution	0	1	1	2
	Little Contribution	4	1	7	12
	Median contribution	16	5	24	45
	High contribution	37	7	59	103
	Very high contribution	34	6	37	77
Total		91	20	128	239

NGO's for Nature-, Environment-, and Species conservation

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
NGO's for Nature-, Environment-, and Species conservation	No contribution	1	2	0	3
	Little Contribution	6	1	11	18
	Median contribution	26	5	32	63
	High contribution	36	9	49	94
	Very high contribution	22	3	36	61
Total		91	20	128	239

Farmers and Foresters

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
Farmers and Foresters	No contribution	10	0	5	15
	Little Contribution	29	3	14	46
	Median contribution	16	4	36	56
	High contribution	18	5	37	60
	Very high contribution	18	8	36	62
Total		91	20	128	239

Hunters

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	

Hunters	No contribution	13	0	10	23
	Little Contribution	23	1	21	45
	Median contribution	24	4	46	74
	High contribution	20	6	38	64
	Very high contribution	11	9	13	33
Total		91	20	128	239

European Union

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
European Union	No contribution	14	3	14	31
	Little Contribution	23	9	44	76
	Median contribution	24	0	37	61
	High contribution	21	6	24	51
	Very high contribution	9	2	9	20
Total		91	20	128	239

Gardeners

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
Gardeners	No contribution	20	1	13	34
	Little Contribution	33	5	34	72
	Median contribution	12	6	43	61
	High contribution	14	4	28	46
	Very high contribution	12	4	10	26
Total		91	20	128	239

Landscape Architects

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
Landscape Architects	No contribution	9	3	13	25
	Little Contribution	29	6	35	70
	Median contribution	30	2	46	78
	High contribution	17	7	23	47
	Very high contribution	6	2	11	19
Total		91	20	128	239

Regional government

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
Regional government	No contribution	16	1	12	29
	Little Contribution	31	4	46	81
	Median contribution	20	7	40	67
	High contribution	13	5	20	38
	Very high contribution	11	3	10	24
Total		91	20	128	239

Federal government

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
Federal government	No contribution	21	2	20	43
	Little Contribution	34	6	56	96
	Median contribution	20	4	32	56
	High contribution	11	5	15	31
	Very high contribution	5	3	5	13
Total		91	20	128	239

Awareness of EU IAS policies

How important are regulations for invasive alien species via EU-regulation?

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
How important are regulations for invasive alien species via EU-regulation?	Not Important	0	2	3	5
	Less important	4	1	7	12
	Neutral	5	1	18	24
	More important	30	5	48	83
	Very important	52	11	52	115
Total		91	20	128	239

Have you ever heard of the regulation (EU) 1143/2014 about prevention and management of Neobiota?

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
Have you ever heard of the regulation (EU) 1143/2014 about prevention and management of Neobiota?	No	51	11	105	167
	No answer	3	2	7	12
	Yes	37	7	16	60
Total		91	20	128	239

Alien species concern nature and species all over Europe

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
Alien species concern nature and species all over Europe	Disagree	1	1	2	4
	No answer	2	2	11	15
	Agree	88	17	115	220
Total		91	20	128	239

EU-coordinated actions are an advantage

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
EU-coordinated actions are an advantage	Disagree	7	4	16	27
	No answer	8	2	10	20

Agree	76	14	102	192
Total	91	20	128	239

One EU action plan is more efficient

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
One EU action plan is more efficient	Disagree	21	5	25	51
	No answer	17	4	28	49
	Agree	53	11	75	139
Total		91	20	128	239

Customs union and Schengen offer advantages

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
Customs union and Schengen offer advantages	Disagree	13	4	17	34
	No answer	31	4	45	80
	Agree	47	12	66	125
Total		91	20	128	239

The EU as one big area for actions is more efficient

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
The EU as one big area for actions is more efficient	Disagree	32	6	42	80
	No answer	14	5	27	46
	Agree	45	9	59	113
Total		91	20	128	239

Every country should decide autonomously

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
Every country should decide autonomously	Disagree	65	9	74	148
	No answer	15	2	29	46
	Agree	11	9	25	45
Total		91	20	128	239

Alien species aren't a threat in all EU countrys

		Stakeholder group			Total
		Nature Experts	Nature User	General Public	
Alien species aren't a threat in all EU countrys	Disagree	47	14	74	135
	No answer	30	3	34	67
	Agree	14	3	20	37
Total		91	20	128	239