Project LIFE 12 NAT/IT/000807 WOLFALPS

Wolf in the Alps: implementation of coordinated wolf conservation actions in core areas and beyond

Action A8 – Ex Ante analysis of attitudes of the general public, hunters and farmers toward wolves and wolf management

Technical report

PUBLIC ATTITUDES TOWARD WOLVES AND WOLF CONSERVATION IN ITALIAN AND SLOVENIAN ALPS

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Brief reports in Italian language for each of the core areas are available on www.lifewolfalps.eu.

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Summary

Public awareness campaigns are often used as tools to improve human attitudes toward wildlife and wildlife management decisions. One of the main expected results of many large carnivore conservation projects, including LIFE WOLFALPS, is improved local public's, farmers' and hunters' acceptance of large carnivore(s) in question in their regions. In this study of public attitudes toward wolves and wolf conservation we've surveyed 3675 respondents from seven previously identified key areas (core areas) for wolf conservation across Italian and Slovenian Alps. Groups that were surveyed were adult residents of the core areas (general public), hunters, high school students, farmers, members of mountaineering clubs and members of environmental NGOs.

To describe and analyse public support to wolf conservation we used Generalized Linear Models and information-theoretic approach to model selection and inference to model the data and enable interpretation of effects of otherwise confounded explanatory variables. We used attitudinal scores obtained by PCA as response variables, and explored their relation to other characteristics of the sample (target group, core area, gender, education, etc.).

General public as an important indicator of society's "climate" towards wolf conservation is overall cautiously supporting wolf conservation in the Alps. There are considerable differences among the core areas and the most knowledgeable about the wolves were also the most supportive to wolf conservation.

One of the most important stakeholder groups in wolf conservation, the farmers, are also by far the most negative group in their support for wolf conservation and are the only group consistently opposing wolf conservation across the core areas and regardless of presence/absence of wolves.

Hunters, although usually not as vocal as farmers, are another key stakeholder group in wolf conservation. Hunters proved to be the most diverse group across the core areas, ranging from opposition to wolf conservation in the western core areas to clear support of wolf conservation in the eastern core area. Hunters were considerably less in favour of wolf conservation in the areas where reproductive packs of wolves are present then in the areas where wolves are absent or present only sporadically.

Targeted awareness raising activities planned in the project were the main reason high school students were specifically included in the survey. They are also the future decision-makers and policy-shapers, and are already forming their attitudes toward wolves. High school students are more supportive of wolf conservation then an average adult resident of the core areas.

As expected, mountaineers and even more so environmentalists were the most supportive to wolf conservation. This support remained consistent across the core areas.

Personal experiences with wolves do partly shape respondents' attitudes towards wolf conservation. Having had damage caused by wolves was a strong predictor of negative attitudes

towards wolf conservation, while seeing a wolf in captivity (e.g. zoo) had a marginal positive effect on support for conservation.

In conclusion, the results of our study suggests that although overall supportive to wolf conservation, the residents of the key areas in the Alps need to be continuously reached through well planned information campaigns. Hunters, as one of the key stakeholder groups, proved to have a potential to be partners in wolf conservation, so in the future more effort should be directed towards building this partnership. Farmers, the group that is the main focus of practically all wolf conservation projects in Europe, were consistently opposing wolf conservation across all core areas regardless of their education or age. This finding suggests that there is a need for re-evaluation of the approaches currently used in resolving the issue of wolf-caused conflicts in agriculture.

Sommario

Le campagne di sensibilizzazione sono spesso utilizzate come strumento per migliorare la percezione e attitudine umana nei confronti della fauna selvatica e della gestione della stessa. Uno dei principali risultati attesi di molti progetti di conservazione di grandi carnivori, tra cui il LIFE WOLFALPS, è migliorare l'accettazione di queste specie da parte del pubblico locale, di agricoltori e cacciatori nelle proprie regioni. In quest'analisi dell'atteggiamento del pubblico nei confronti del lupo, e della sua conservazione, abbiamo indagato le risposte di 3675 intervistati in sette aree chiave identificate sulle Alpi italiane e slovene. I gruppi intervistati sono stati: gli adulti residenti nelle diverse aree (i.e. pubblico generale), i cacciatori, gli studenti delle scuole superiori, gli allevatori, i membri di club alpini ed i membri di ONG ambientali.

Per descrivere e analizzare il sostegno del pubblico alla conservazione del lupo abbiamo utilizzato i Modelli Lineari Generalizzati (GLM) e l'"information-theoretic approach" per selezionare i modelli e consentire l'interpretazione degli effetti delle variabili esplicative altrimenti confuse. Abbiamo usato punteggi attitudinali, ottenuti da un'analisi di PCA, come variabili di risposta, e abbiamo esplorato la loro relazione con le altre caratteristiche del campione (e.g. gruppi di portatori di interesse, aree chiave, età, sesso, livello di istruzione).

Il pubblico generale è un importante indicatore del "clima" della società verso la conservazione del lupo; e nella presente analisi è risultato lievemente a favore della conservazione del lupo nelle Alpi. Vi sono però notevoli differenze tra le diverse aree; ed in generale i più informati riguardo i lupi sono stati anche i più favorevoli alla sua conservazione.

Uno dei gruppi di interesse più importanti in materia di conservazione del lupo, gli allevatori, sono stati anche di gran lunga il gruppo più negativo nel sostegno alla sua conservazione e sono l'unico gruppo coerentemente opposto alla conservazione del lupo su tutte le aree e indipendentemente dalla presenza / assenza di lupi.

I cacciatori sono un altro gruppo di stakeholder molto importanti da valutare nella conservazione del lupo. I cacciatori, come gruppo di interesse, hanno dimostrato essere il gruppo più diversificato tra le diverse aree, rivelando una forte opposizione alla conservazione del lupo nelle aree occidentali ed un chiaro supporto nelle aree orientali (principalmente in Slovenia). I cacciatori sono stati meno a favore della conservazione del lupo nelle zone in cui sono presenti i branchi riproduttivi rispetto ad aree dove i lupi sono assenti o presenti solo sporadicamente.

Gli studenti delle scuole superiori sono stati inclusi nell'indagine anche perchè oggetto di mirate attività di sensibilizzazione previste dal progetto. Essi saranno anche i futuri protagonisti di processi decisionali volti a scelte politico-gestionali; e stanno già formando il loro atteggiamento verso i lupi. Gli studenti delle scuole superiori sono stati più favorevoli alla conservazione del lupo rispetto alla media degli adulti residenti nelle rispettive aree.

Come previsto, gli alpinisti e ancora di più gli ambientalisti, sono stati i più favorevoli alla conservazione del lupo. Il supporto è stato costante tra le diverse aree.

Le esperienze personali con i lupi modificano solo parzialmente l'atteggiamento degli intervistati nei confronti della sua conservazione. Avere avuto un danno causato dai lupi è una variabile predittiva importante dell'atteggiamento negativo nei confronti della conservazione del lupo, mentre vedere un lupo in cattività (ad esempio allo zoo) ha avuto un effetto solo marginalmente positivo al sostegno per la conservazione.

In conclusione, i risultati del nostro studio suggeriscono che, sebbene nel complesso i residenti delle diverse aree delle Alpi siano favorevoli alla conservazione del lupo, questi devono essere costantemente oggetto di campagne di informazione ben pianificate. I cacciatori, come uno dei principali gruppi di interesse, hanno dimostrato di poter essere partner nella conservazione del lupo, quindi in futuro uno sforzo maggiore dovrebbe essere rivolto verso la costruzione di questa partnership. Gli allevatori, che sono il gruppo al centro di praticamente tutti i progetti di conservazione del lupo in Europa, sono stati costantemente contrari alla sua conservazione in tutte le aree. Questa scoperta suggerisce che vi sia la necessità di una nuova valutazione degli approcci attualmente utilizzati a risolvere la questione del conflitto lupo-zootecnia.

Povzetek

Ozaveščevalne kampanje se pogosto uporabljajo kot orodje za izboljšanje odnosa javnosti do prostoživečih živali in upravljavskih odločitev v zvezi z njimi. Eden od glavnih rezultatov mnogih projektov ohranjanja velikih zveri, vključno s projektom LIFE WOLFALPS, je izboljšanje sprejemanja le-teh med lokalnim prebivalstvom, kmetijci in lovci na območjih, kjer živijo. V tej študiji odnosa javnosti do volka in njegovega varstva smo anketirali 3675 naključno izbranih oseb iz sedmih vnaprej določenih ključnih območij za ohranjanje volka v italijanskih in slovenskih Alpah. Skupine, ki smo jih anketirali so odrasli prebivalci ključnih območij (širša javnost), lovci, srednješolci, kmetje, člani planinskih in alpinističnih društev ter člani naravovarstvenih nevladnih organizacij.

Za opis in analizo podpore javnosti do varstva volka smo uporabili generalizirane linearne modele (Generalized Linear Models) in informacijsko-teoretski pristop izbire modelov. S takšnim analitičnim pristopom smo omogočili interpretacije učinkov pojasnjevalnih spremenljivk, ki se drugače prekrivajo. Uporabili smo indeks stališča do varstva volkov, ki smo ga pridobili z metodo glavnih komponent (PCA) ter raziskali odnos med tem indeksom in ostalimi značilnostmi našega vzorca (interesna skupina, ključno območje, spol, izobrazba itd.).

Širša javnost kot pomemben pokazatelj družbene 'klime' glede varstva volkov previdno podpira ohranitev volkov v Alpah v vseh vključenih območjih. Obstajajo pa velike razlike med posameznimi ključnimi območji: kjer je poznavanje volka najvišje, je tudi podpora za njegovo ohranitev najvišja in obratno.

Ena najpomembnejših interesnih skupin pri varstvu volkov, kmetje, predstavljajo tudi skupino, ki je do podpore ohranjanja volkov daleč najbolj negativna in so edina skupina, ki konsistentno nasprotuje ohranjanju volka na vseh ključnih območjih ne glede na dejansko prisotnost/odsotnost te vrste.

Lovci, čeprav običajno niso tako glasni kot kmetje, so še ena ključna interesna skupina pri varstvu volkov. Izkazali so se kot najbolj raznolika skupina, z velikimi razlikami med ključnimi območji. Njihov odnos vključuje jasno izraženo nasprotovanje varstvu volka v ključnih območjih na zahodu, po drugi strani pa precejšnjo podporo ohranjanju volka v ključnih območjih na vzhodu. Lovci so bili občutno manj naklonjeni volku na območjih, kjer so prisotni reproduktivni tropi volkov, kot na območjih, kjer volkovi niso prisotni oziroma se pojavljajo le občasno.

Glavni razlog za neposredno vključevanje srednješolcev v raziskavo so bile ciljno usmerjene aktivnosti ozaveščanja, ki jih načrtujemo v okviru projekta. Srednješolci predstavljajo namreč bodoče odločevalce in oblikovalce politik, katerih stališča do volka so še v fazi oblikovanja. Podpora srednješolcev do ohranjanja volka je višja od podpore povprečnega odraslega prebivalca ključnega območja.

Kot je bilo pričakovano, so člani planinskih in alpinističnih društev, še bolj pa člani naravovarstvenih organizacij, od vseh v raziskavo vključenih interesnih skupin najbolj naklonjeni ohranjanju volka. Ta podpora ostaja enaka v vseh ključnih območjih.

Tudi osebne izkušnje z volkovi v neki meri oblikujejo stališča anketirancev do varstva volkov. Pri anketirancih, ki so utrpeli škodo zaradi volka, bo ta izkušnja močan kazalnik negativnega odnosa do varstva te vrste. Po drugi strani je izkušnja videti volka v ujetništvu (npr. v živalskem vrtu) imela le neizrazit pozitivni učinek na podporo ohranjanju.

Če povzamemo: rezultati naše raziskave kažejo, da moramo kljub razmeroma dobri splošni podpori varstvu volkov prebivalce ključnih območij Alp redno informirati in ozaveščati z dobro načrtovanimi izobraževalnimi kampanjami, da bi to podporo ohranili ali še izboljšali. Pokazali smo, da imajo lovci kot ena ključnih interesnih skupin pomemben potencial za partnerstvo pri varstvu volka, zato je treba v prihodnosti več napora usmeriti prav v gradnjo tega partnerstva. Kmetje, ki so fokus skoraj vseh projektov varstva volka v Evropi, pa varstvu volka konsistentno nasprotujejo v vseh ključnih območij ter ne glede na izobrazbo in starost. Te ugotovitve nam narekujejo, da obstaja potreba po ponovnem ovrednotenju pristopov, ki so trenutno v uporabi pri reševanju konfliktov, ki jih volkovi povzročajo v kmetijstvu.

Introduction

Public awareness campaigns are often used as tools to improve human attitudes toward wildlife and wildlife management decisions. One of the main expected results of many large carnivore conservation projects, including LIFE WOLFALPS, is improved local public's, farmers' and hunters' acceptance of large carnivore(s) in question in their regions. Especially in areas that are being recolonized by large carnivores, there is often a debate how these large carnivores should be managed. This debate occurs because different stakeholder groups hold different values and subsequently have different or even opposing management goals. Because of that, it is important that decision-makers and all those involved in large carnivore conservation understand those values and how values influence attitudes and consequently also support or opposition to the conservation goals. This study besides its capacity to increase understanding of how different stakeholder groups in different areas of the Alps see wolves, also presents a baseline assessment which will allow for evaluation of the effectiveness of a public awareness campaign which is being implemented during the project. Knowledge analysis will also allow for evaluation of sheep farmers' and hunters' education activities planned in the project. Baseline attitude and knowledge gap surveys will also allow for better preparation and targeting of the public awareness campaign. In fact, information campaigns need to be designed ad hoc, addressing specific targets and providing the adequate level of knowledge.

Methods

Study area

Study area for the public attitude survey includes all seven core areas defined in the LIFE WOLFALPS project (Figure 1). Status of the wolf population in these core areas ranges from (still) absent, over sporadically present (lone wolves / dispersing animals), recolonizing (recently established reproductive packs) to present for couple of decades.

Specifically, in the Italian part of core area 1 (Maritime Alps) wolf packs have been present since 1996, in core area 2 (Cozie Alps) wolf packs started appearing in 1996, in core area 3 (Ossola Val Grande) and core area 4 (Italian Central Alps) wolves are only sporadically present since 2001. In core area 5 (Lessinia), a reproductive pack of wolves has formed in 2012. In core area 6 (Dolomites), there is no recent record of any wolf presence, while in core area 7 (Eastern Alps) wolves are only sporadically present (dispersing individuals).

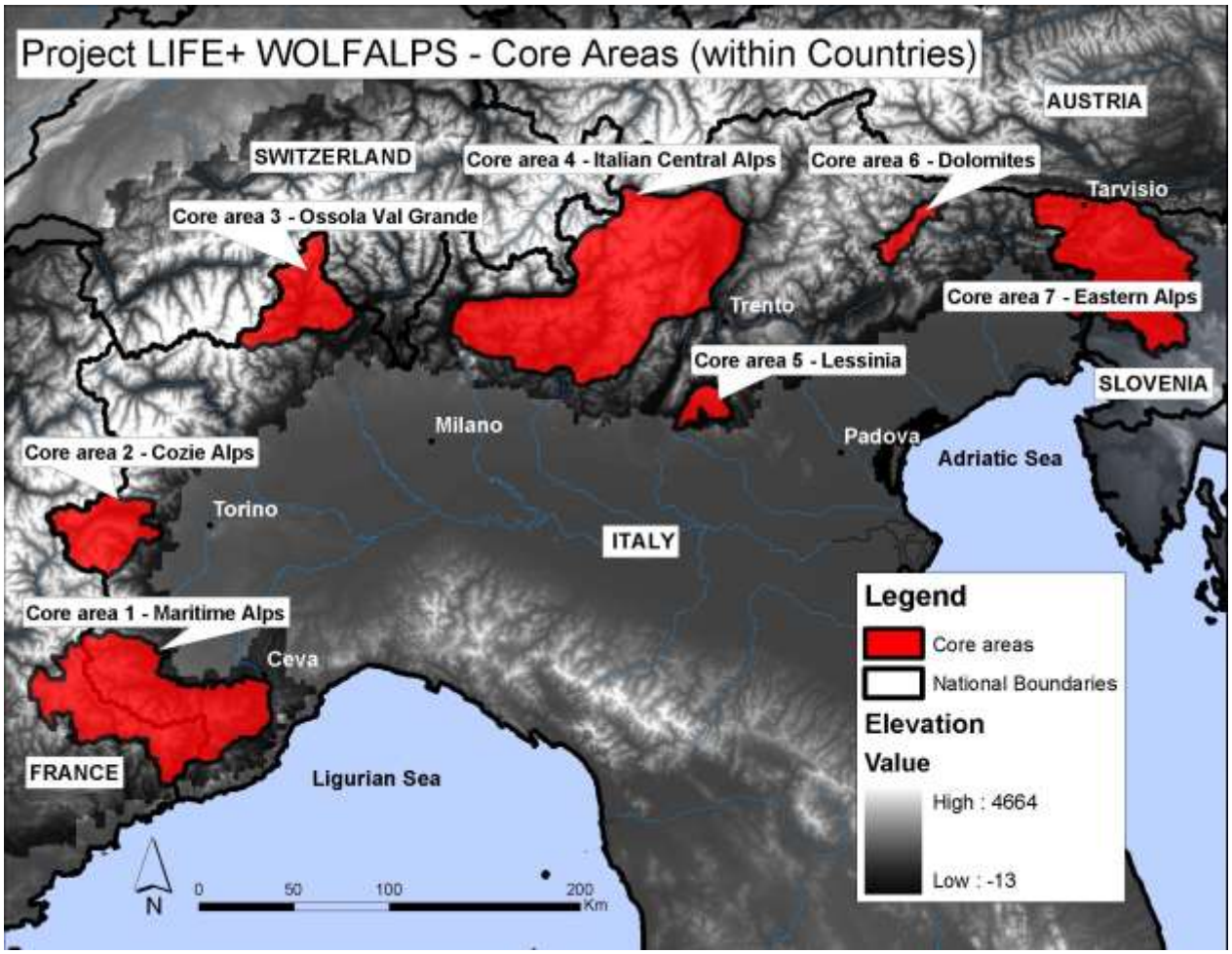


Figure 1: Core areas of the LIFE WOLFALPS project represent also study area of the public attitude survey.

Questionnaires

In surveys, answers are of interest not intrinsically but because they are in relationship to something they are supposed to measure. In that sense designing a question for a questionnaire is designing a measure, not a conversational inquiry. For the purpose of this study, a basic questionnaire in two languages (Italian and Slovenian) was designed (see Annex 1 – Questionnaires). Additional questions were added for some target groups (i.e. hunters). Consistency within the different questionnaires was preserved as much as possible in order to allow comparisons between the groups. In general, following topics were included in the questionnaire:

- Attitudes toward wolves.
- Beliefs about wolves and a knowledge section made up of factual questions.
- Attitudes toward various management issues, such as livestock issues, hunting, trust of information sources and others.
- Personal experience with wolves.
- Familiarity with the LIFE WOLFALPS project.

- Socio-demographic information about each respondent.

The development of the questionnaires was based on the questionnaires previously used in Italy and Slovenia. There are two main reasons for that:

- The questions used in the previous surveys were already tested and therefore we could largely omit additional pretesting of our questionnaire.
- Similar questionnaires would allow direct comparisons of the results from before the start of the LIFE WOLFALPS project with our data, thus we have also directed our research towards more longitudinal monitoring of the attitudes and beliefs.

Sampling and data collection

The same approach to sampling was taken in all core areas. The target groups and their respective planned sample sizes per core area were: general public (100), hunters (50), farmers (50), high school students (100), members of environmental NGOs (50) and members of mountaineering clubs (50). These groups were identified as important in wolf conservation

The general public was randomly sampled proportional to the number of inhabitants in each community within a core area. If the questionnaire was implemented using personal interviews, the process of randomizing the selection of respondents was defined at the level of choosing a household (i.e. every third household until the planned number was reached) and at the level of choosing a respondent (first adult of 18 years or older contacted within a chosen household). A non-respondent form was provided and interviewers recorded gender, estimated age and reason for refusing participation in the study. When the questionnaire was implemented using postal services, local phonebook was used to create a sample. We've considered a minimal expected response rate using mail to be 20%, thus number of sent questionnaires was adjusted accordingly. The questionnaires were mailed together with additional envelope with prepaid postage for returning the filled questionnaire. Ten days after the mailing of the questionnaires, a reminder / thank you card (Figure 2) was sent in order to increase the response rate.

Figure 2: Reminder / Thank you! card was sent to potential respondents in order to increase the response rate.

Other groups (hunters, high school students, farmers, environmentalists, mountaineers) were sampled in a more opportunistic manner, making sure that the respondent is a member of the targeted group. A combination of personal interviews, postal mail and web-based survey was used.

Data preparation

The questionnaire data was recorded in the pre-agreed table format in each core area, and merged into a single database when the field-surveys were completed. We maintained the index key structure to preserve trackability of each physical questionnaire with its record in the database. Since the questionnaires had some core-area or respondent-group specific questions, we've merged the tables in a way to preserve all data. We checked the data for consistency, data-entry errors and missing data. The records with unacceptable amount of missing data (more than 8 missing data points in essential questions), missing data in key columns or inconsistencies we were not able to solve were removed and stored in a different database, labelled as problematic cases and were not included in further analysis.

Some variables needed to be constructed by aggregation of data from several columns (*has_livestock, has_large livestock, has_small livestock, has_pets*). We included the variable about wolf presence in a certain core area (*wpresence*). We also calculated *knowledge score* as the number of correct answers to the five questions about wolf biology included in the questionnaire.

Statistical analysis

All statistical analyses were done in R analytical environment within RStudio IDE. We followed the reproducible research paradigm by ensuring data consistency throughout analysis and documenting each analytical step (R code, comments, data and output) with RMarkdown.

Reduction of dimensionality in attitudinal questions with Principal Component Analysis (PCA)

We used the 15 questions regarding different components of attitudes towards wolves and their conservation to obtain scores describing meaningful attitudinal components for downstream analysis. Since responses were collected using the Likert scale, we could assume ordinality and linearity of the responses and include them in Principal Component Analysis (PCA). We used R package *psych* to do this part of the analysis. We determined the number of meaningful components to extract using screeplot analysis, Kaiser-Guttman rule (eigenvalue > 1), Parallel Analysis, Optimal Coordinates, and Accelleration Factor. The components were rotated using the Varimax rotation to extract the interpretable components. Cases with unacceptable amount of missing data were excluded in the data preparation phase, and the remaining missing values were set to the mean of the variable to prevent unacceptable data loss. The extracted components were interpreted and included in the database table for downstream analysis.

Statistical modelling

We used Generalized Linear Models and information-theoretic approach to model selection and inference to model these highly complex data and enable interpretation of effects of otherwise confounded explanatory variables. We used attitudinal scores obtained by PCA as response variables, and explored their relation to other characteristics of the sample (stakeholder group, core area, gender, education, etc.).

First, we checked the distribution of the response variables. Since they were PCA scores, we didn't expect a specific functional form, and we tried different probability distributions and transformations to select the correct distribution family and link function for GLM and ensure model fit.

We explored the missing data in the dataset. When meaningful (for some scalar variables) we replaced the missing values with the mean value of the variable, which shouldn't have much effect on fitting of models but prevented unacceptable data loss. At the model selection stage the remaining records with missing data were discarded to enable comparison of the fitted models, but the final (optimal) models were fitted with the entire dataset so that only the records that had missing data in the variables retained in the model were lost.

We constructed a global model with the selected distribution family and link function for each response variable where we fitted all variables we a-priori hypothesized (according to previous understanding of the problem) that they affect the response variable. We didn't fit any interactions between variables at this stage. We checked model fit by plotting standardised residuals against predicted values, checking for non-linearity and heteroscedascity. We checked for multicollinearity using Variance Inflation Factors (VIF), and created different model sets which

excluded highly multicollinear variables (VIF > 2), but together included all variables to exploit the entire information space of the data.

We explored the model space of each global model by fitting all sub-models without interactions using R package MuMIn. We determined the importance of each variable as the proportion of models where it appears weighted by the Akaike's weight of each model. We constructed the optimal model without interactions by including all highly important variables (Importance > 0.9), and tested the effect of removal of each variable by comparing the second-order Akaike's information criterion (AICc) with the full model. We used dAICc > 3 as the threshold to retain a variable.

We fitted different two-way interactions between variables, selected a-priori using prior knowledge and hypotheses about the problem, and checked support of each model by the data using AICc. We also used dAICc > 3 as the criteria to retain a model. If the dAICc was between 0 and 3, we retained the model with lower number of parameters.

To fit the final optimal (most parsimonious) model with as much data as possible, we used the entire dataset and excluded the records that had missing data just in the variables retained in the model. We checked the data for high-leverage data points by calculating Cook's distances, and we excluded the records with Cook's distances larger than 4/N, where N is the number of records included in the model. We re-fitted the optimal model with this dataset without outliers, re-checked linearity and lack of heteroscedascity, and used the fitted model for interpretation.

Data exploration and interpretation of modelling results

We plotted different aspects of the dataset to visually examine the raw data for the effects of different explanatory variables on the response variables. Since the explanatory variables are in many cases highly confounded and in practically all cases non-orthogonal, we used the most parsiomonious models fitted in the statistical modelling exercise to directly explore the effect of single explanatory variables or their pre-determined interactions when the other parameters in the model are being controlled for. In other words, we examined the "pure" effect of a specific explanatory variable (e.g. age, education, etc.) on the response (e.g. support for wolf conservation) controlling for the effect of other explanatory variables (e.g. core area, respondent group, gender, etc.). In this manner we could provide an understanding of the actual effect of a certain explanatory variable even in the face of the high complexity and non-orthogonallity of the data. The effects were explored using the R package *effects*.

Results

Data set description

Altogether, we received 3748 questionnaires in all core areas, which is 1648 more than originally planned. Some of these were completed online or sent by post, and the data in them were sometimes missing or inconsistent, so they had to be removed. The final dataset for analysis

included responses of 3675 respondents from different stakeholder groups and different core areas, and 79 recorded variables. Summary tables of all items can be found in Annex 2.

Dimensionality reduction of attitudinal variables using PCA

We included 15 variables with questions regarding attitudes towards wolves and their conservation in the PCA analysis. The variables and questions are listed in Table 1.

Table 1: Variables which were included in the principal components analysis (PCA). Responses were offered on a 5-point Likert scale where 1 represented complete disagreement (or dislike in case of "attitude_wolf"), 3 represented neutral attitude and 5 represented complete agreement (or completely in favour in case of "attitude_wolf).

Variable name	Question
attitude_wolf	Which of the following best describes your feelings toward wolf?
future_generations	It is important to maintain wolves in It/Slo, so that future generations can enjoy them.
conserv_not_necessary	It is unnecessary to have wolves in It/Slo because abundant populations already exist in other European countries.
decrease_deer	Wolves greatly reduce ungulate populations and make hunting impossible.
prey_oldsick	Wolves mainly prey on old and sick animals and thus keep wild ungulate populations healthy.
tolerate_vicinity	I would tolerate wolves living in nearby forests of our municipality.
do_not_attack_people	Wolves do not attack people.
not_afraid_forest	I would not be afraid to hike in the woods where wolves are present.
damage	Wolves cause abundant damages to livestock.
pay_compensation	Livestock owners that lose livestock due to wolf should be compensated.
kill_problem_animal	If a wolf killed livestock, I would agree with killing this problem animal.
agree_increase	I would agree with increasing wolf numbers in my region.
enough_wolves	We already have enough wolves in my region.
agree_hunting	There should be authorized wolf hunts in It/Slo.
attract_tourists	Wolves attract tourists.

We checked how many components it was meaningful to extract (Figure 3).

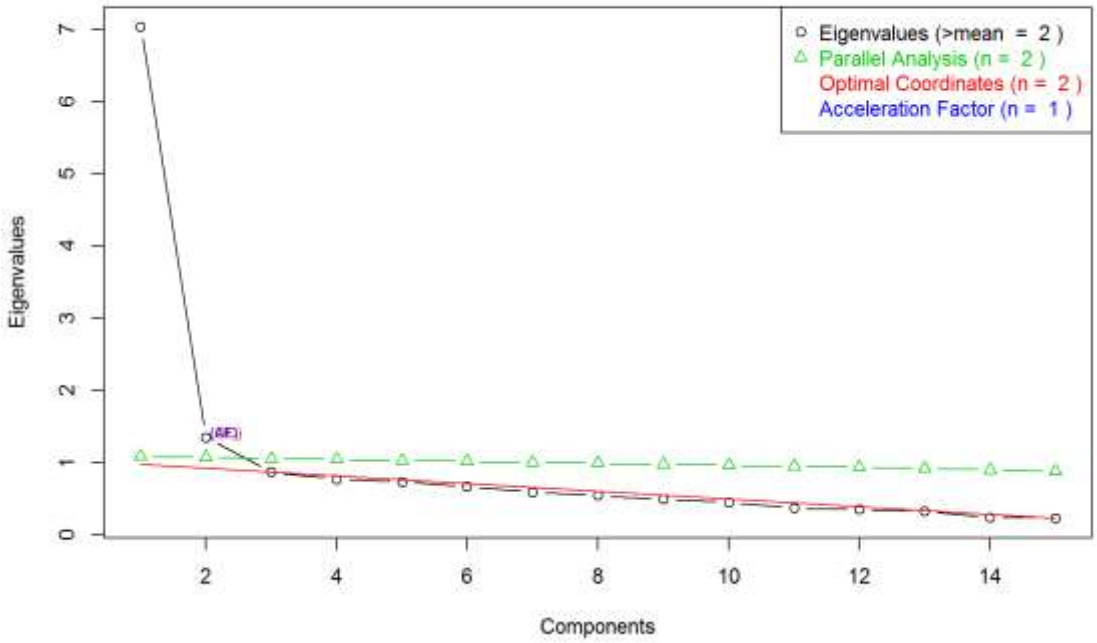


Figure 3: Non-Graphical solutions to scree test of the number of meaningful components to retain in PCA.

It seemed sensible to retain two components according to Kaiser-Guttman rule (eigenvalue > 1), Parallel Analysis and Optimal Coordinates. Accelleration Factor does max-out at 2 (supporting 1 component), and eigenvalue of PC2 is considerably smaller than that of PC1, so some caution is warranted. In any case, the first component aggregates considerably more information than the second component, and is the most important one to interpret.

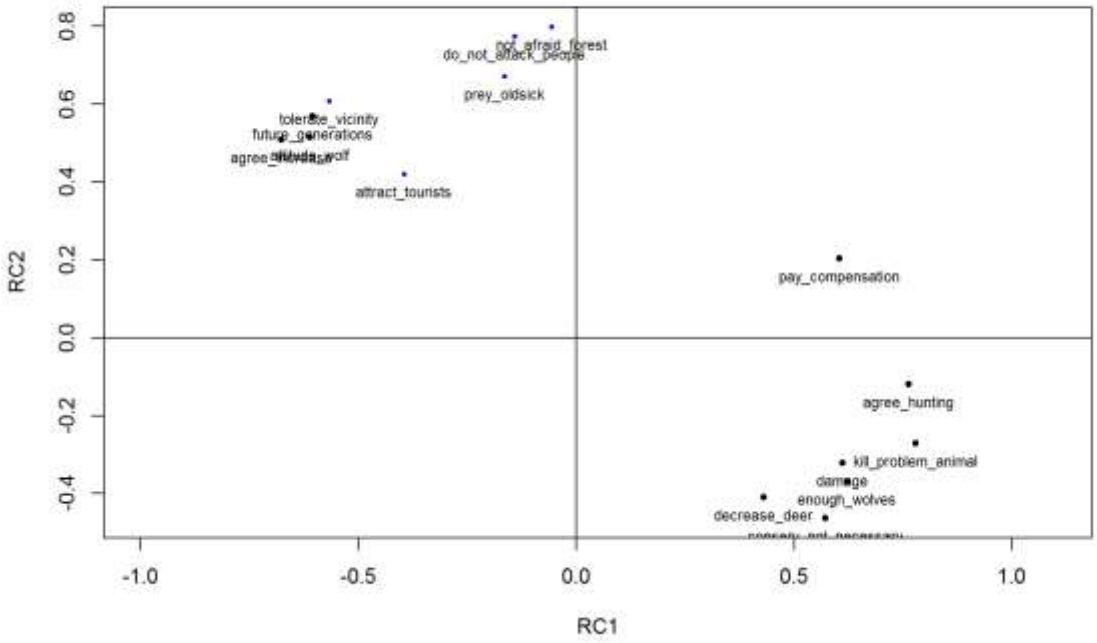


Figure 4: Grouping of loadings of different attitudinal questions on the retained rotated components.

When checking the interpretability of the components (Figure 4 and Table 2) we noticed that some items load somewhat apart from the main cluster (i.e. attract_tourists and pay_compensation) or even load apart while not contributing considerably to neither of the two components (not_afraid_forest, do_not_attack_people and prey_oldsick).

Table 2: Loadings of different attitudinal questions on the retained rotated components.

Attitudinal items:	RC1	RC2
attitude_wolf	-0.611	0.514
future_generations	-0.605	0.568
conserv_not_necessary	0.571	-0.462
decrease_deer	0.430	-0.410
prey_oldsick	-0.165	0.671
tolerate_vicinity	-0.568	0.608
do_not_attack_people	-0.141	0.773
not_afraid_forest	0.798	
damage	0.612	-0.321

pay_compensation	0.605	0.204
kill_problem_animal	0.779	-0.270
agree_increase	-0.677	0.509
enough_wolves	0.621	-0.368
agree_hunting	0.763	-0.119
attract_tourists	-0.396	0.420
SS loadings	4.553	3.827
Proportion Var	0.304	0.255
Cumulative Var	0.304	0.559

Variables 5, 7 and 8 (not_afraid_forest, do_not_attack_people and prey_oldsick) seem to be related to fear/predatory behaviour of wolves and load on their own. We removed these variables to be extracted as a separate component, and re-ran PCA.

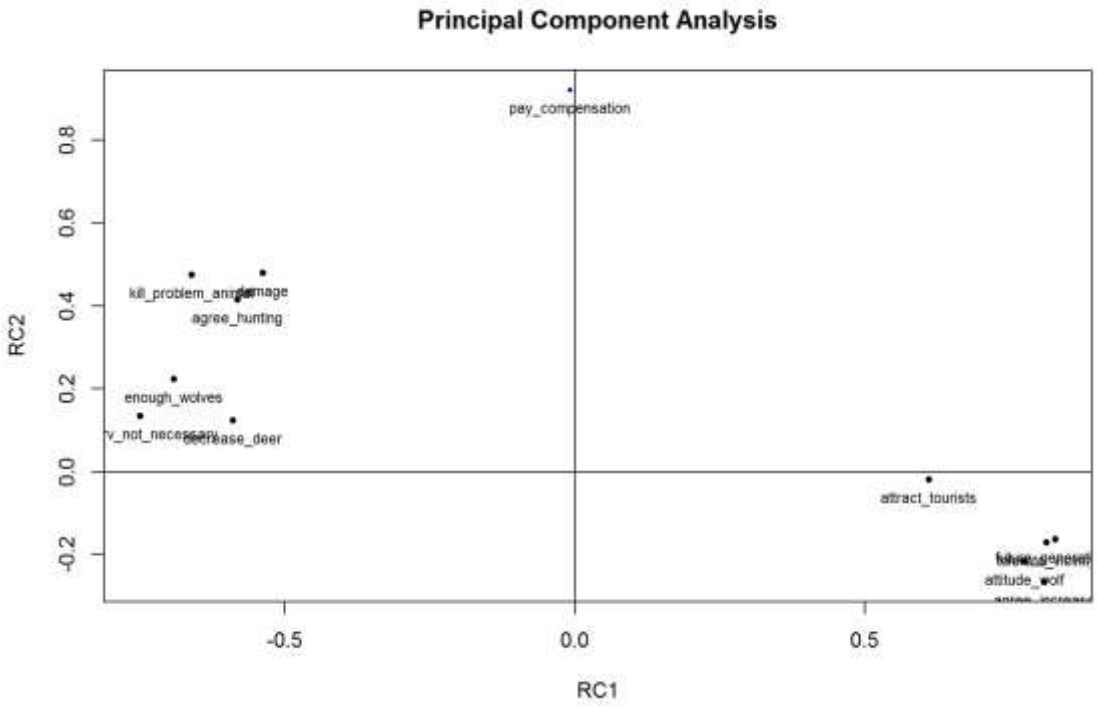


Figure 5: Grouping of loadings of different attitudinal questions on the retained rotated components after removal of questions related to fear of wolves.

Similarly to the “fear” cluster, p*ay_compensations* loaded completely on its own and needed to be interpreted separately. *Attract_tourists* loaded separately and while related to support for wolf conservation, it's conceptually a different question. It is the same with *agree_hunting*, which is

not necessarily connected to support for wolf conservation (hunters typically agree to hunting, but often support wolf conservation). The PCA model improved if these variables were removed, from 0.52 to 0.60 explained variance. The other questions aggregated to a single component that can be interpreted as **Support For Wolf Conservation** (Figure 6Figure 4: Grouping of loadings of different attitudinal questions on the retained rotated components.).

We also extracted the second rotated component interpreted as **Fear of Wolves** (Figure 7).

Table 3: Loadings of different attitudinal questions on the retained rotated components after removal of questions related to fear of wolves.

Attitudinal items:	**RC1**	**RC2**
attitude_wolf	0.776	-0.217
future_generations	0.828	-0.163
conserv_not_necessary	-0.748	0.135
decrease_deer	-0.589	0.124
tolerate_vicinity	0.813	-0.171
damage	-0.537	0.480
pay_compensation	0.921	
kill_problem_animal	-0.660	0.475
agree_increase	0.810	-0.265
enough_wolves	-0.691	0.224
agree_hunting	-0.581	0.415
attract_tourists	0.611	
SS loadings	5425	1734
Proportion Var	0.452	0.145
Cumulative Var	0.452	0.597

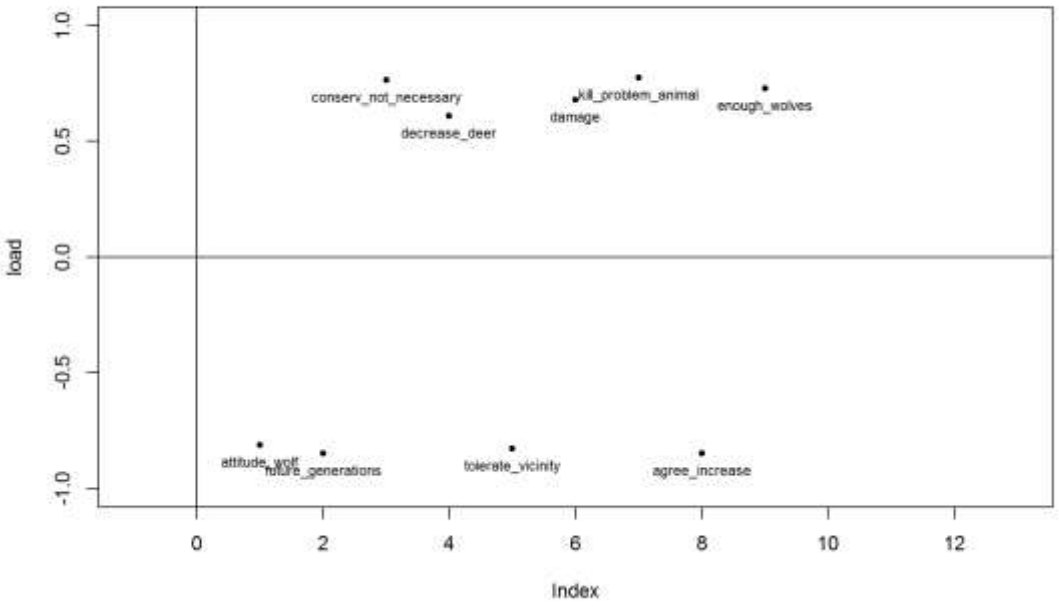


Figure 6: Loadings of retained attitudinal questions on the rotated component interpreted as "Support for Wolf Conservation".

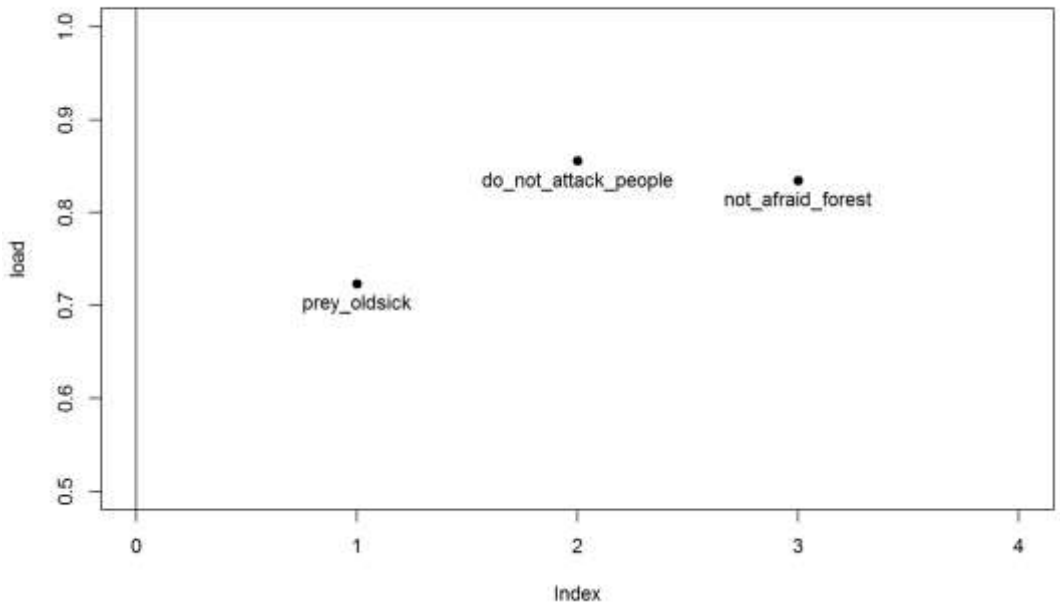


Figure 7: Loadings of retained attitudinal questions on the rotated component interpreted as "Support for Wolf Conservation".

To facilitate interpretation of PCA scores we used the PCA models to predict the "neutral" PCA score (all answers are 3) for both extracted components. Both components were then centered on this "neutral" score and rescaled on the same Likert scale as the questions, meaning that the "*Support for Wolf Conservation*" component was scaled 1 to 5 from "*absolutely against*" (1), to "*neutral*" (3), and to "*completely support*" (5). The "*Fear of Wolves*" component was scaled similarly from "*not afraid*" (1), to "*neutral*" (3), and to "*very afraid*" (5). The "Support for Wolf Conservation" was used as the main response variable for the downstream analysis.

Modelling Support for Wolf Conservation

Exploring response variables

Both extracted components had unimodal distribution, and seemed relatively easy to describe parametrically (Figure 8).

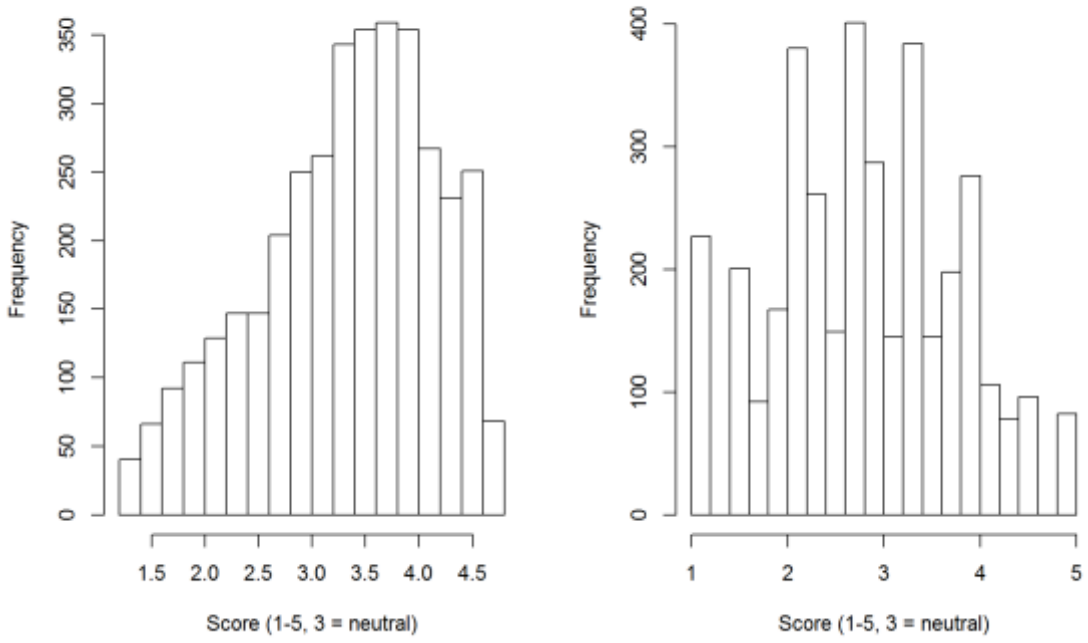


Figure 8: Distribution of the Support for Wolf Conservation component (left) and Fear of Wolves component (right).

We tried fitting different parametric distributions (Gaussean, Weibull, Gamma, Beta) that would correctly describe the distribution of these two components. We also tried Box-Cox transformations to tease the distributions towards normality.

Response for wolf conservation is nicely described with Gamma distribution (when rotated across y-axis), and both the distribution and the rotation were used in fitting of GLMs. Fear of wolves was adequately described by the normal distribution (Figure 9).

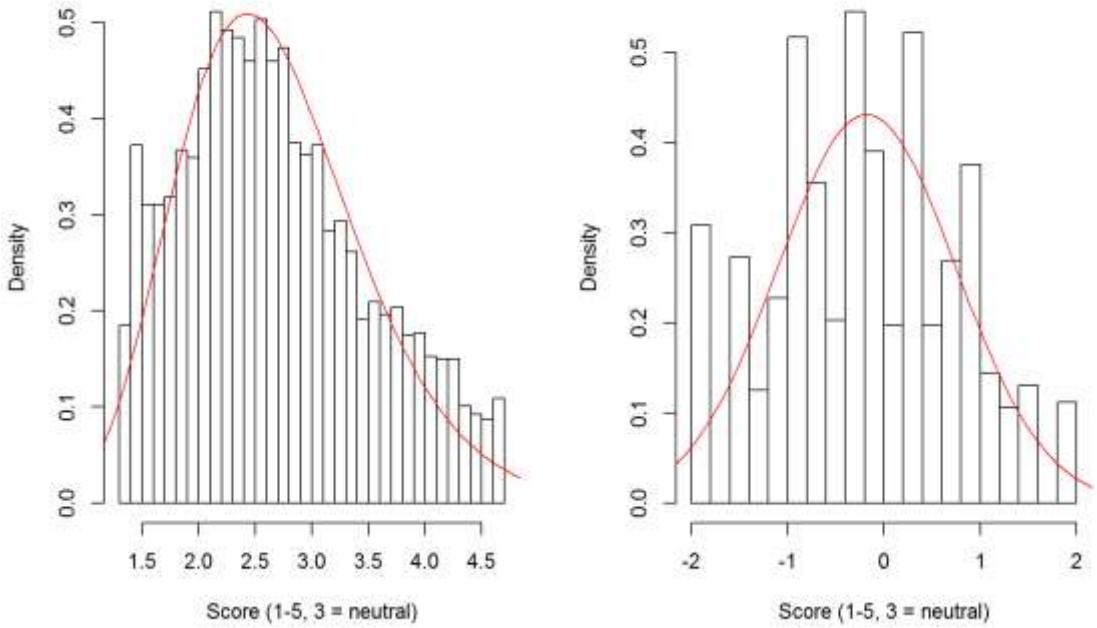


Figure 9: Fitting of Gamma distribution on the y-axis rotated "Support for Wolf Conservation" component (left) and fitting of normal distribution on Fear of Wolves component (right).

Finding the model for the Support for Wolf Conservation

We've fitted a generalized linear model (GLM) with Gamma distribution and identity link function on y-axis rotated (to get right skew instead of left) Support for wolf conservation variable.

For the global model, we fitted all variables we hypothesized (according to previous understanding of the problem) that they affect the support for wolf conservation, without interactions.

We checked for multicollinearity using variance inflation factors (VIF, Table 4).

Table 4: Variance inflation factors for the global model.

	GVIF	Df	GVIF^(1/(2*Df))
c_area	27.158309	6	1.316715
group	54.416049	5	1.491326
d_collection	4.782208	3	1.297990
country	14.842116	1	3.852547
seen_nature	1.334928	1	1.155391

seen_captivity	1.230164	1	1.109128
had_damage	1.365430	1	1.168516
gender	1.220973	1	1.104976
age	2.698353	1	1.642666
education	2.109054	3	1.132438
hunter	3.208042	1	1.791101
big_livestock	1.158690	1	1.076425
small_livestock	2.441819	1	1.562632
has_pets	1.137414	1	1.066496
knowledge	1.206718	1	1.098507

There seemed to be a considerable multicollinearity problem for group, age, livestock, hunter, and education. This makes sense - group is a predictor of livestock for farmers, and age/education is highly collinear with group for students, and hunter with group for hunters. Country is also a collinear with core area.

We constructed two model sets which included either of the collinear variables - one with **group** included, and one with the "replacement" variables **age, education, hunter and livestock**. We fitted all models excluding interactions with the pre-selected variables for both groups, and sorted them by their AICc.

We fitted the entire model set for each of the two global models, and checked importance of each variable - in how many models it appeared weighted by Akaike's weights (Table 5). We constructed the optimal model without interactions that retained all variables that had importance larger than 0.8. We checked AICc of models withouth the variables with importance < 1.

Table 5: Variable importance for both model sets.

Model set with "group" variable:

```
                     c_area group knowledge seen_captivity had_damage
Importance:          1.00   1.00  1.00      1.00           1.00
N containing models:  512    512   512       512            512
                     hunter big_livestock has_pets gender seen_nature
Importance:          1.00   1.00          1.00     0.95   0.28
N containing models:  512    512           512      512    512
```

Model set with age, education, hunter and livestock variables:

```
                     c_area education small_livestock knowledge
Importance:          1.00   1.00      1.00            1.00
N containing models: 2048   2048      2048            2048
```

```
                     big_livestock age  seen_captivity hunter had_damage
Importance:          1.00          1.00 1.00           1.00   1.00
N containing models: 2048          2048 2048           2048   2048
                     has_pets gender seen_nature
Importance:          0.98     0.82   0.35
N containing models: 2048     2048   2048
```

Optimal model for Support for Wolf Conservation - "Respondent Group" included

We constructed the *optimal model with "group" retained* without interactions. Only the variable *seen nature* (have seen a wolf in nature) was removed. The people that have seen the wolf in nature are so few that the information in this variable is very low. We fitted various 2-way interactions between variables (according to a-priori hypotheses) and checked the AICc of the resulting models.

There seemed to be a *difference between groups* in different core areas. While the number of variables doubles, AIC falls considerably (dAICc ~ 59). *Knowledge* seems to have interaction with *group* , but *gender* does not. Having *seen wolf in captivity* doesn't seem to interact with the group of respondents or gender. Having had *damage done by wolves* has considerable group-connected effect. *Having pets* has no interaction with *group*.

The final model had the following structure:

support_conservation ~
c_area+group+knowledge+seen_captivity+has_pets+gender+group:c_area+group:had_damage
+group:knowledge

We checked for outliers - high influence points - with the optimal model and cook's distances. We re-fitted the model with outliers removed. We checked the diagnostics of the final model (Figure 10).

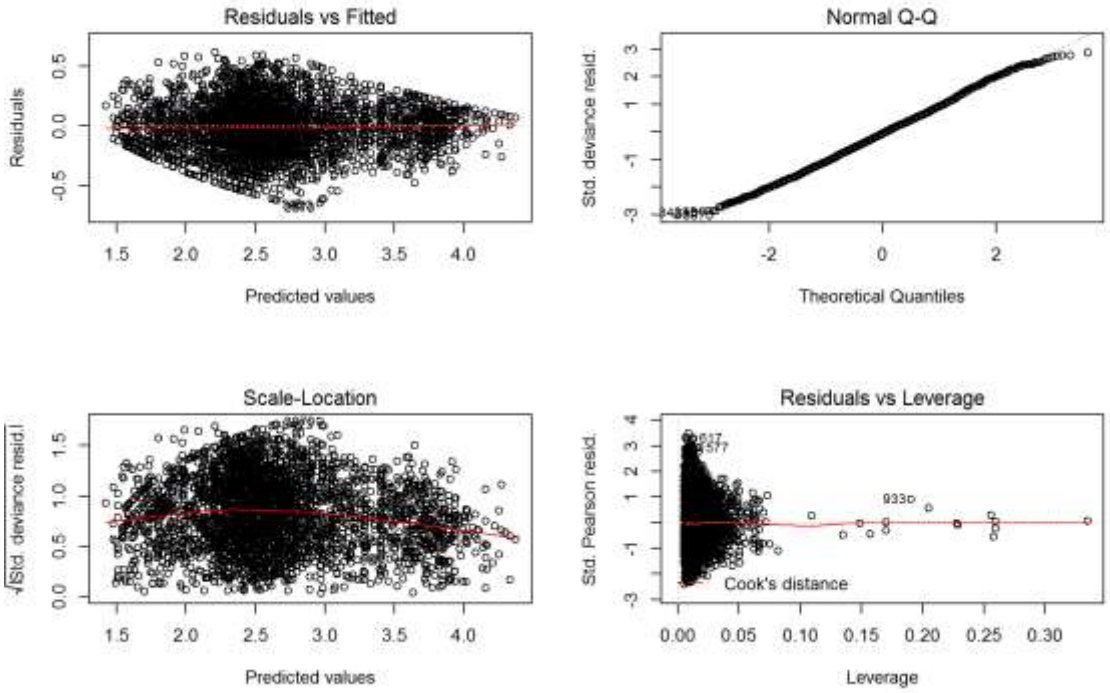


Figure 10: Diagnostic plots for the optimal model for Support for Wolf Conservation.

While the model fit seems good and there is no evidence of non-linearity, there is some evidence of heteroscedascity, probably due to censoring and differences in variance between factor levels. This is difficult to remove without adding considerable complexity to the model. However, the problem seems marginal and shouldn't influence the interpretation in any meaningful way.

Fitting of the second model set with education, age and ownership of livestock variables

These variables are multicollinear with respondent groups, so they need to be modelled separately. The optimal model had the following structure:

support_conservation~c_area+knowledge+seen_captivity+had_damage+hunter+has_pets+gender+education+age+small_livestock+big_livestock

The following hypothesised a-priori interactions improved the model: *age:knowledge+age:education+hunter:education+has_livestock:age+hunter:c_area+c_area:has_livestock*. Also, it considerably improves the model if "has_livestock" (having any type of livestock) is included instead of small livestock and big livestock variables. We followed the same procedure of outlier removal and goodness-of-fit checking as with the other model set to obtain the optimal model.

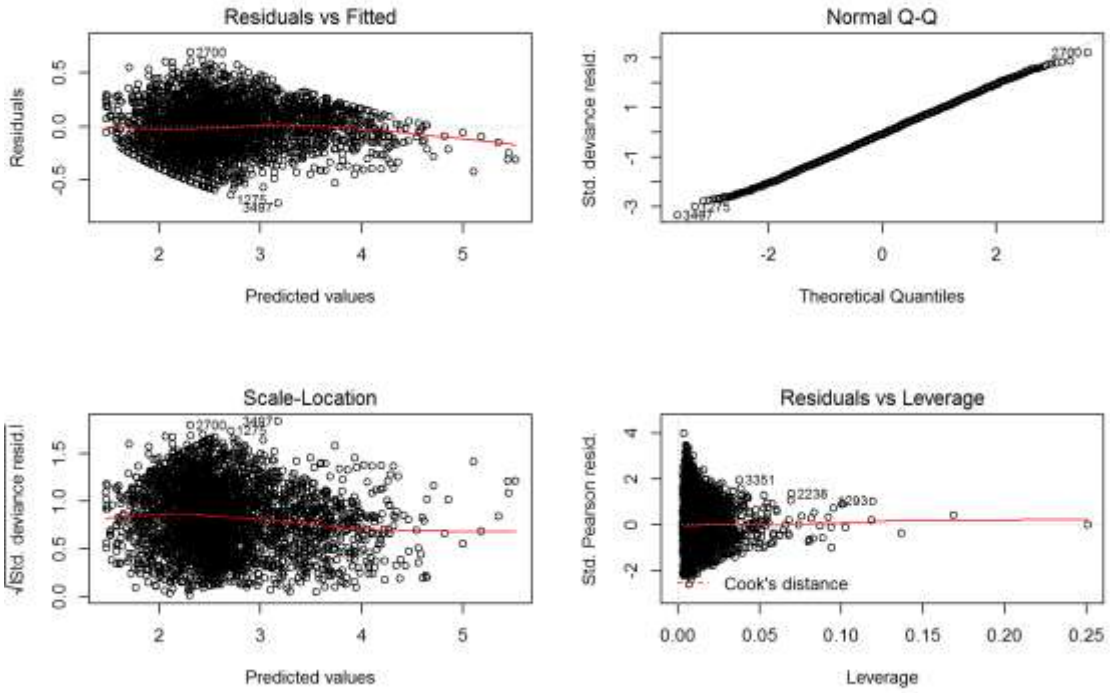


Figure 11: Diagnostic plots for the alternative optimal model for Support for Wolf Conservation.

The heteroscedascity problem is somewhat more evident than in the previous model set, but still shouldn't influence the interpretation in any meaningful way.

Exploring Effects - Support for Wolf Conservation w/ group variable

Using the constructed model of Support for Wolf Conservation, we can explore the effect of a single variable or a combination of variables while controlling for the effect of other variables. In this manner we can understand the effect of i.e. core area where the respondent lives (or any other parameter we wish to explore) without the confounding effects of other characteristics of the respondent (e.g. gender, education etc.).

Effect of Core Areas

We can explore the effect of individual core areas on Support for Wolf Conservation while controlling for effects of other variables (Figure 12).

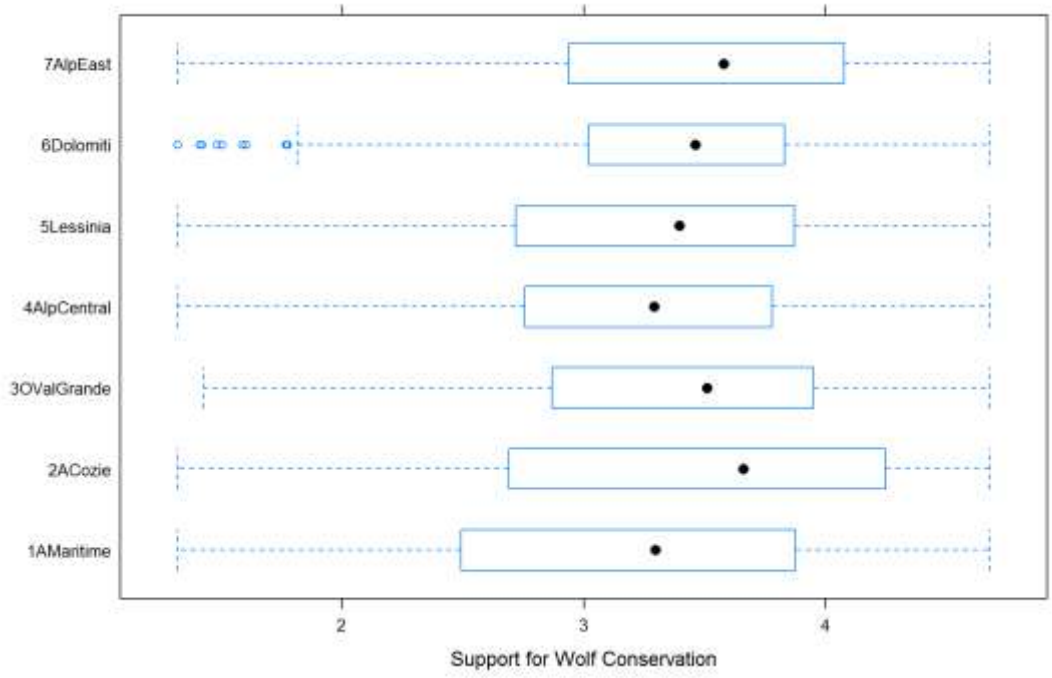


Figure 12: Effect of Core Area on Support for Wolf Conservation - Raw Data

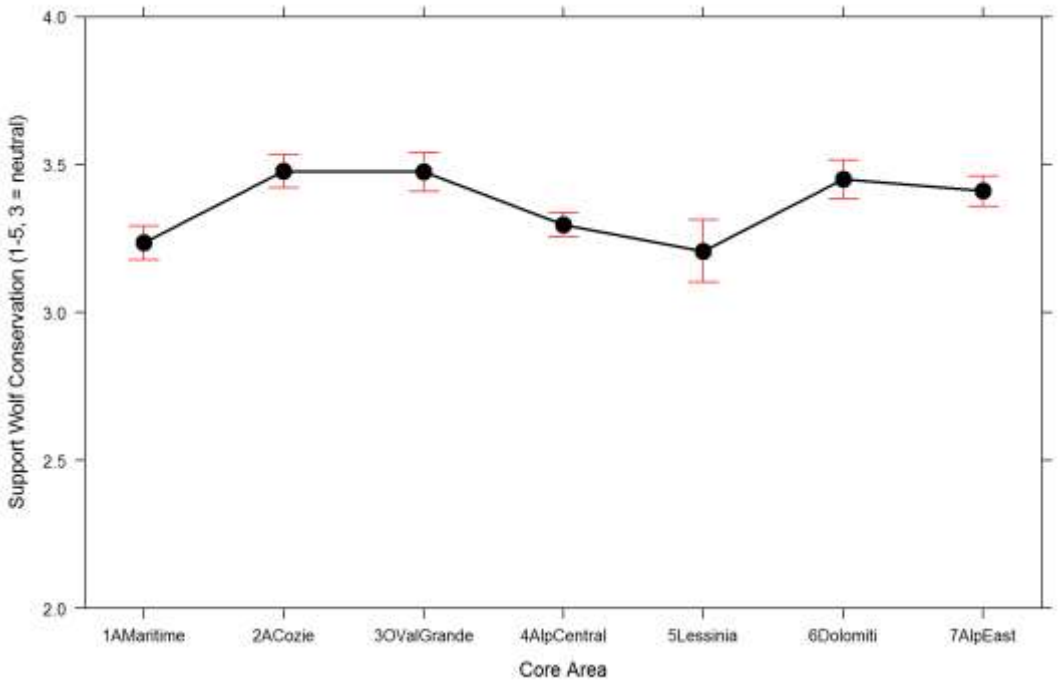


Figure 13: Effect of Core Area on Support for Wolf Conservation - controlled for confounding effect of other variables.

There are differences between core areas, but support for wolf conservation of all respondents is above neutral (3 in the graph). We can see that support is the lowest in *Maritime Alps* (Core Area 1) and *Lessinia* (Core Area 5). It is also lower in *Central Italian Alps* (Core Area 4). Support for wolf conservation is high in *Cozie Alps* (CA 2), *O Val Grande* (CA 3), *Dolomiti* (CA6) and *Eastern Alps* (CA7).

Effect of Respondent Groups

It is expected that different groups of respondents (i.e. hunters, farmers, general public...) will have different attitudes towards wolves (Figure 14).

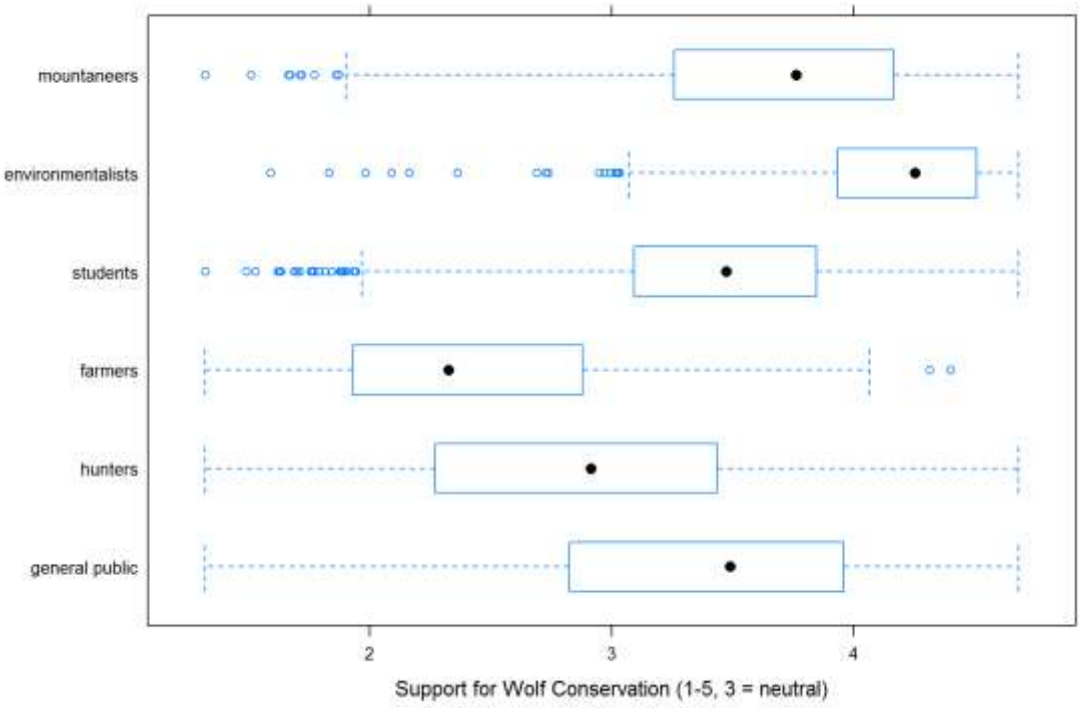


Figure 14: Effect of Respondent Group on Support for Wolf Conservation - Raw Data.

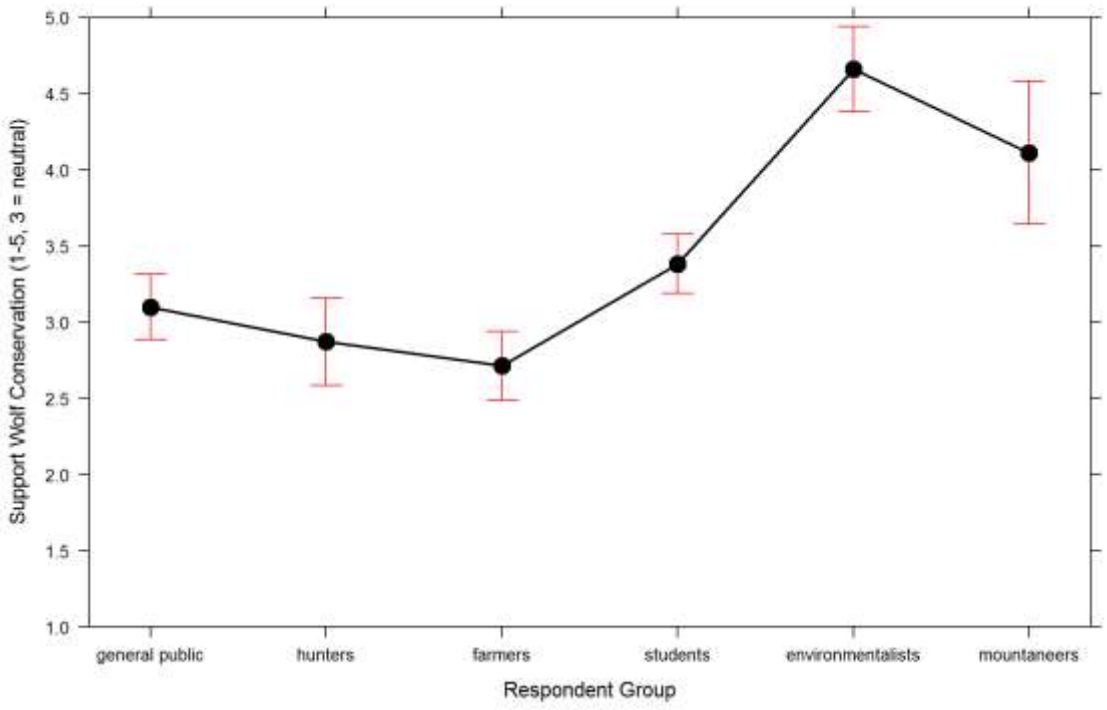


Figure 15: Effect of Respondent Group on Support for Wolf Conservation - controlled for confounding effect of other variables.

We can see that *farmers* are by far the most negative group in their support for wolf conservation, and the only one that has the attitudes towards wolf conservation below neutral. As expected, the most positive groups are *environmentalists* and *mountaineers*, trailed very closely by *students*. *General Public*, as an important predictor of the society's "climate" towards wolf conservation is still above neutral and in favour of wolf conservation.

Combined Effect of Core Areas and Respondent Groups

We can expect that some respondent groups can form more extreme attitudes in different core areas (i.e. where there are many conflicts with wolves vs. where the wolves are absent), and multimodel inference supports that (the model without the interaction between these two variables has dAIC = 221.3 less support in the data). The results are presented in Figure 16.

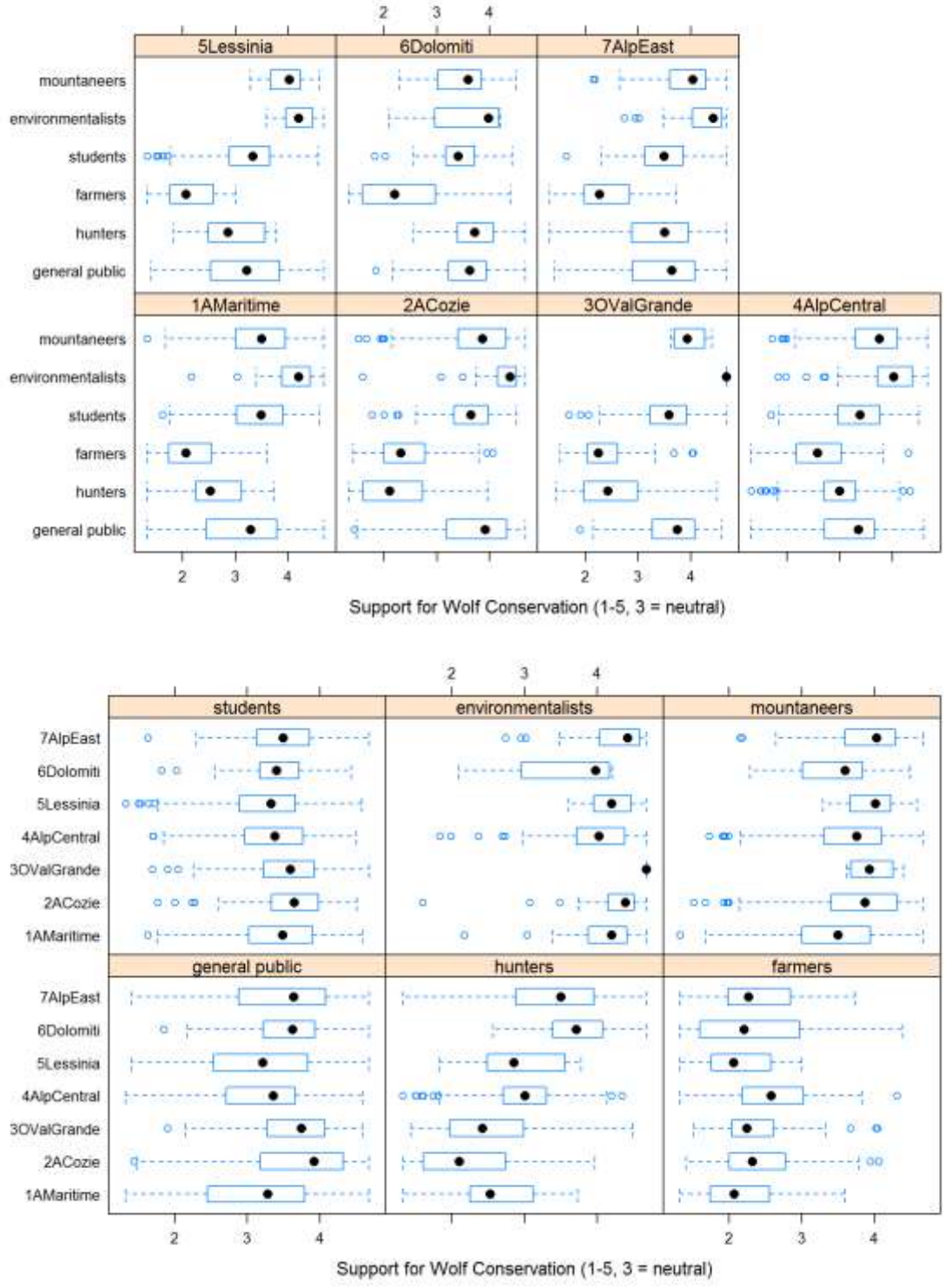


Figure 16: Support for Wolf Conservation by core area and by respondent group, raw data. The two graphs show the same data (Support for Wolf Conservation) across two different categories (respondent group and core area).

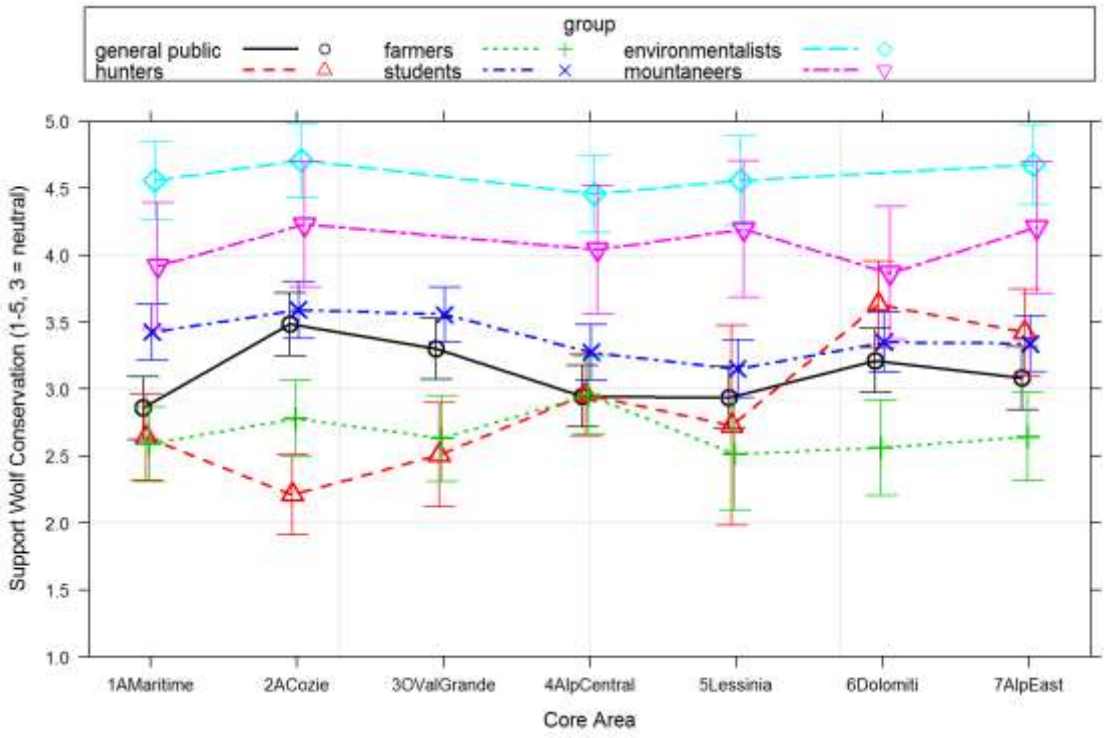


Figure 17: Combined effect of respondent group and core area on Support for Wolf Conservation - controlled for confounding effect of other variables.

Our model shows a general pattern of *environmentalists* being very positive towards wolf conservation and *farmers* being very negative throughout all core areas, which is an expected result. The attitude of the *mountaineers* is also very positive, but does show some effect of being different in different core areas. The attitudes of *students*, another very positive group, also vary with core area. The effect becomes prominent in the *general public*. Possibly the most interesting group are *hunters*. While the comparably smaller sample size causes large confidence intervals, especially problematic in the Lessinia core area, we can see a general west-east trend in the attitudes, which largely follows the recolonization pattern of the wolves. An anomaly here is in core area Cozie Alps, where the attitudes of hunters are very negative (similar to those of the farmers), while general public is very positive.

To test the hypothesis that attitudes correspond with the recolonization pattern of the wolves, we have replaced the Core Area variable with the variable describing the wolves' presence in the certain area, or their absence from an area (Figure 18). Since both variables are perfectly collinear, we can't use both in a model if we wish to interpret either of them.

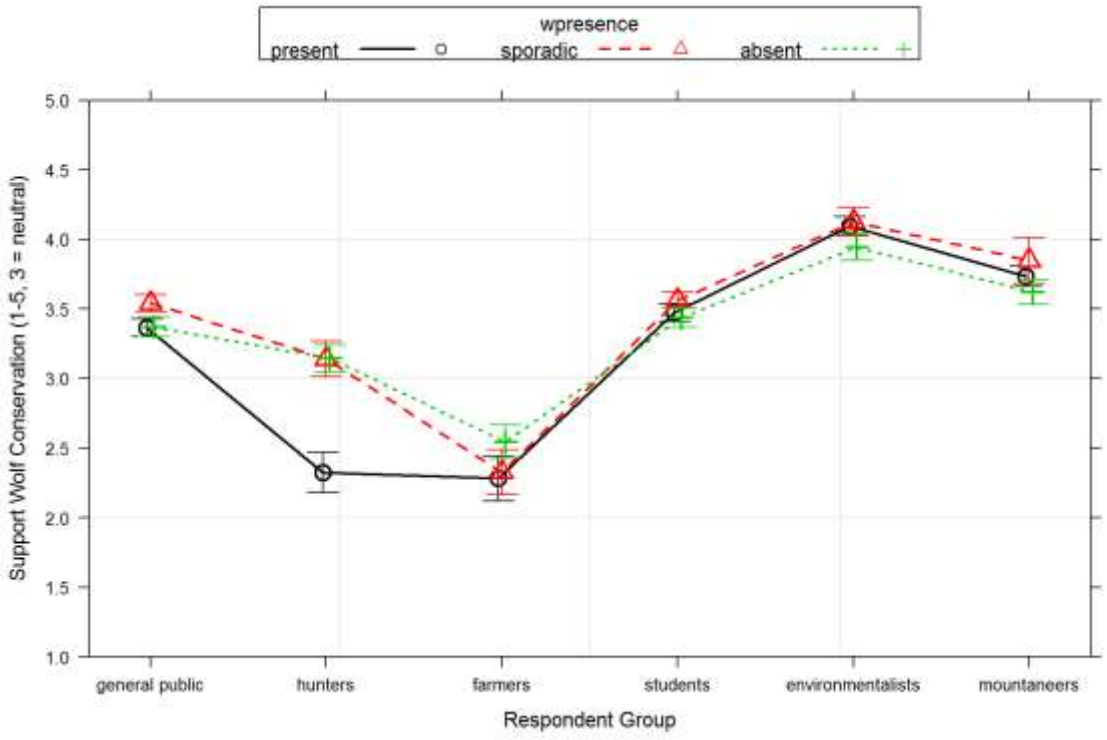


Figure 18: Combined effect of respondent group wolf presence in the respondent's area on support for wolf conservation - controlled for confounding effect of other variables.

While the models which include wolf presence variable instead of core area variable are somewhat poorer, they are interesting and enable a different perspective of the information in the data. The only real effect we see is on *hunters* - hunters are considerably less in favour of wolf conservation in the areas where wolves are present (reproductive packs) than in the areas where wolves are absent or present only sporadically. There seems to be some effect for *farmers*, but this stakeholder group has a very negative attitude towards wolves that persists regardless of other factors.

We further explored this with the optimal model obtained through the second modelling set with the variables that were collinear with the respondent group variable and consequently excluded from the models that contained the respondent group variables.

Exploring effects of being a hunter

We further explored one of the most important stakeholder groups, the hunters, with the second model set. The respondents included in this model are the ones that have declared themselves to be hunters, and this also includes non-targeted hunters from the general public and other groups. The sample size is consequently larger (N=626 vs. N=469 of directly sampled hunters) and makes possible stronger inferences about this stakeholder group.

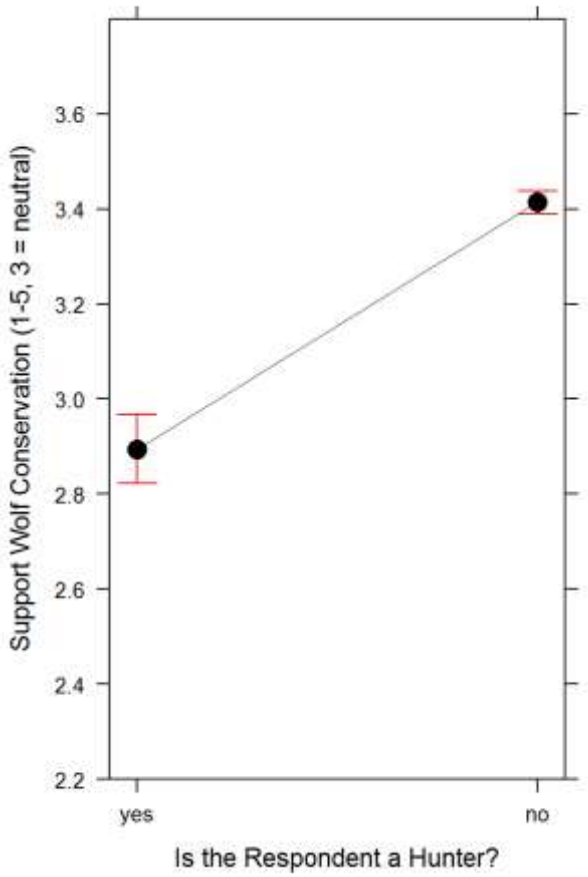


Figure 19: The effect of the respondent being a hunter on support for wolf conservation - controlled for confounding effect of other variables.

Hunters on general have considerably lower support for wolf conservation than the general public, and are apart from farmers / livestock breeders the only group with a negative average attitude (Figure 19).

The achieved level of education seems to have less effect on the attitude towards wolves of hunters than it has on other respondents (Figure 20).

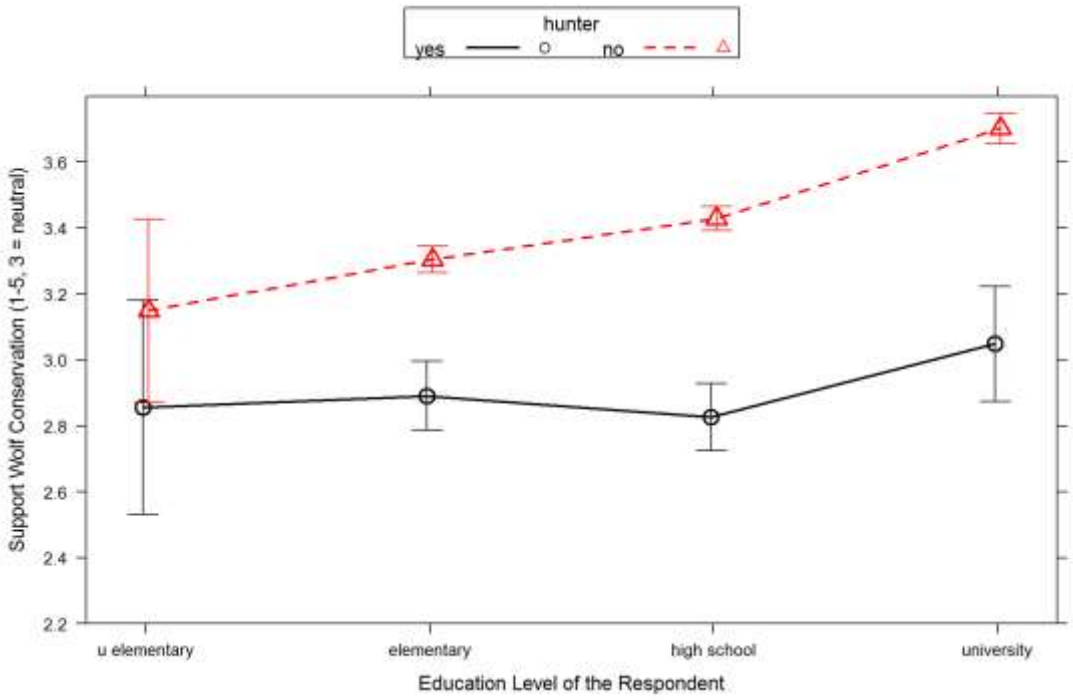


Figure 20: The effect of education level of the respondent on hunters' support for wolf conservation - controlled for confounding effect of other variables.

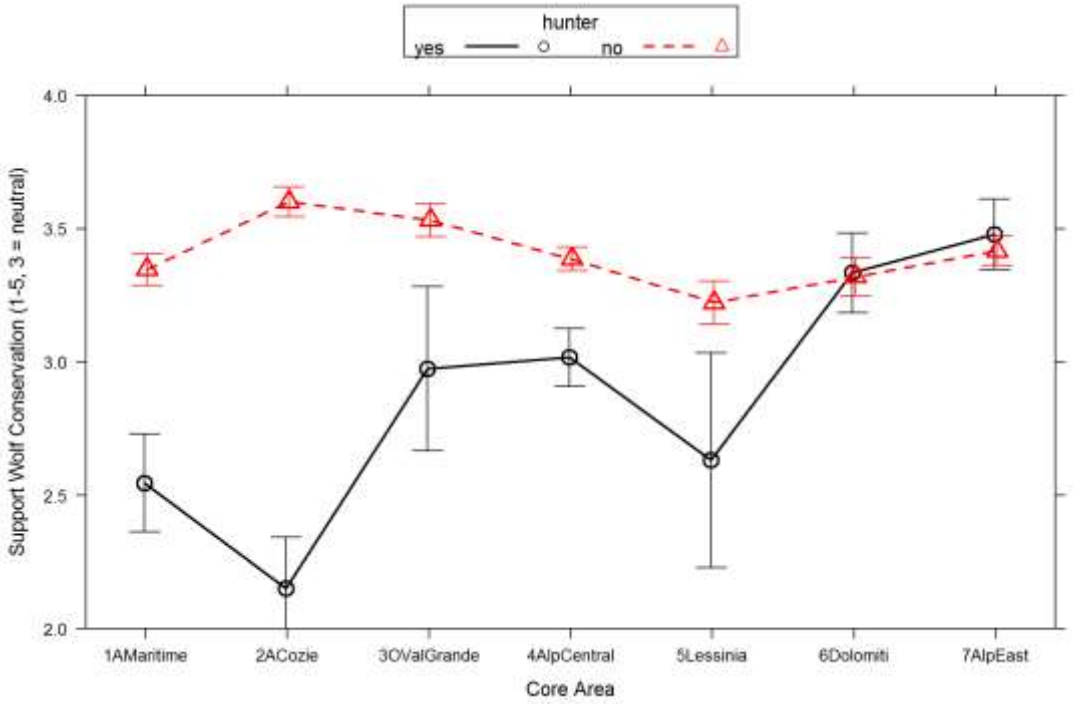


Figure 21: Support for wolf conservation of hunters in different core areas - controlled for confounding effect of other variables.

There seems to be considerable difference between hunters in different core areas, although the low sample sizes make drawing of firmer conclusions about these differences difficult. We explored this further with the *wolf presence* in the area instead of the *Core Area* variable (Figure 21).

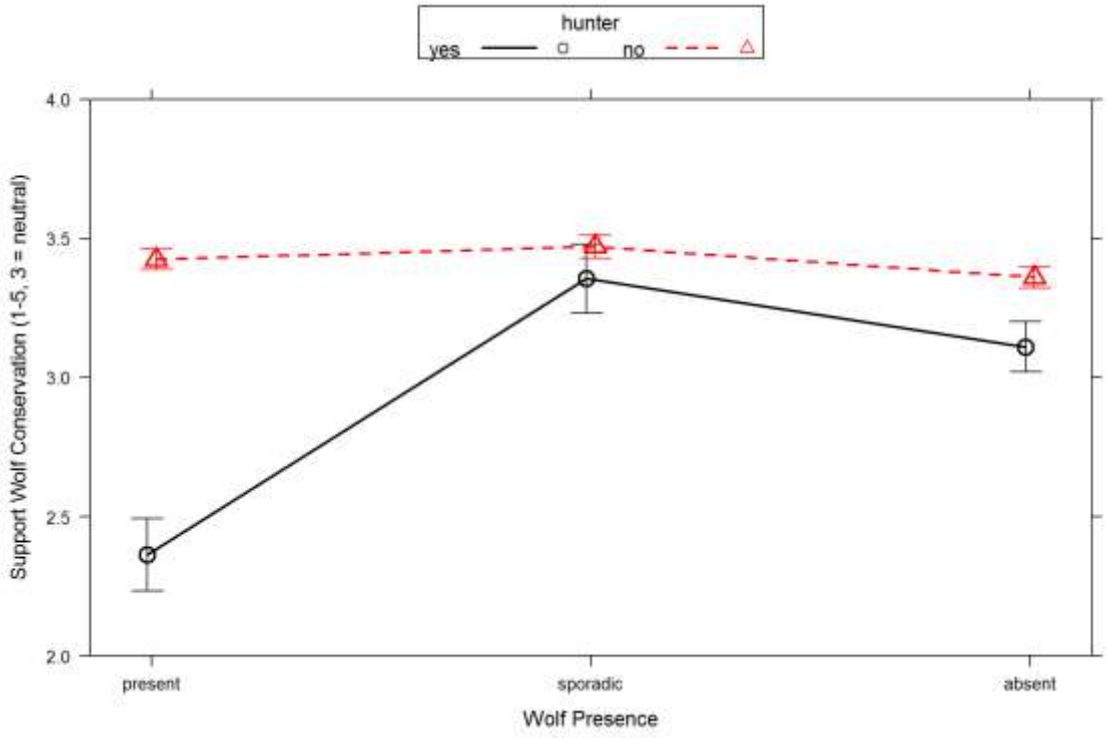


Figure 22: Support for wolf conservation of hunters in with regard to wolf presence in their area - controlled for confounding effect of other variables.

There is a considerable effect of the wolf being present in an area on how the hunters perceive them. Hunters in the areas with permanent wolf presence are considerably less in favour of wolf conservation than hunters in the areas where wolves are absent or occur only sporadically.

Effect of gender on support for wolf conservation

The gender of the respondent seems to have a marginal effect on support for wolf conservation (Figure 23). While the models that include this variable are better (dAIC = 3.45) and women seem marginally more positive, the actual effect is very low.

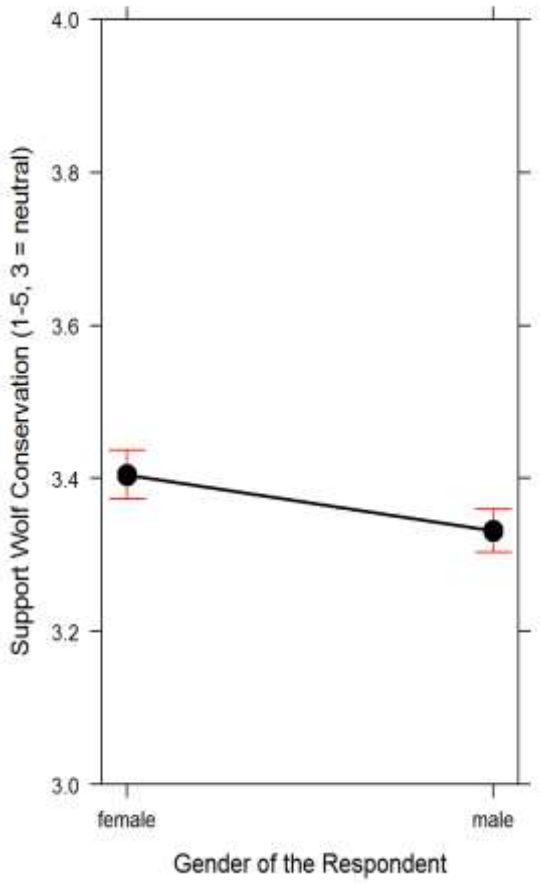


Figure 23: Support for wolf conservation by gender - controlled for confounding effect of other variables.

Effect of seeing a wolf in captivity on support for wolf conservation

Seeing a wolf in captivity (e.g. ZOO) has a marginal positive effect on support for conservation (Figure 24). There is no support for including the interaction between respondent group or core area and this variable in models.

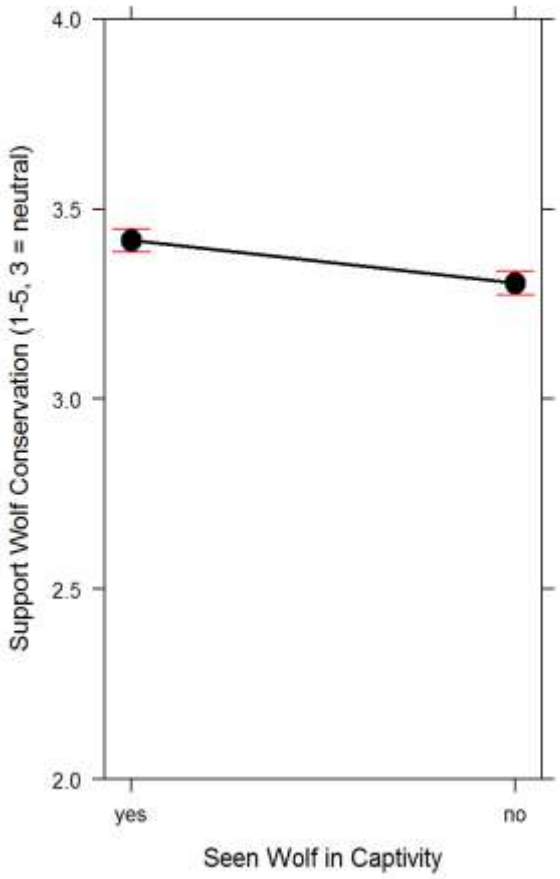


Figure 24: Effect of the responder having seen a wolf in captivity on support for wolf conservation - controlled for confounding effect of other variables.

Effect of having wolf damage

There are 232 respondents that had wolf damage. We can see that having had wolf damage is a considerable predictor of negative attitudes towards wolf conservation in different respondent groups (Figure 25). There are only 9 environmentalist and 12 mountaineers that had wolf damage, and in general the sample size per group is low (Table 6), limiting the strength of this inference.

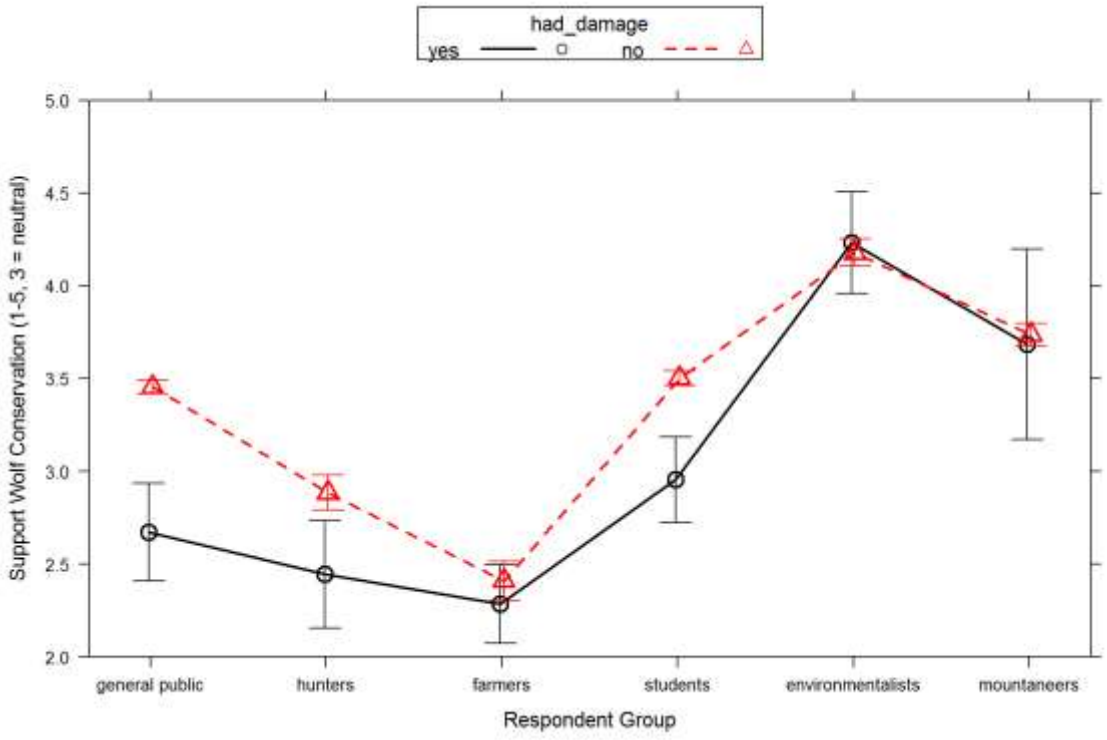


Figure 25: Effect of having had wolf damage on support for wolf conservation by different respondent groups - controlled for confounding effect of other variables.

Table 6: The number of respondents that have had wolf damage by the respondent group.

group	n
general public	38
hunters	47
farmers	86
students	40
environmentalists	9
mountaineers	12

Effect of knowledge about wolves on support for wolf conservation

Knowledge questions (Table 7) results were aggregated into a knowledge score (the number of correct answers), which scales from 0 to 5.

Table 7: Knowledge questions that were included into the knowledge score (0-5). Responses that were considered correct are presented with bold characters.

Question	Possible answers				
How much does an adult wolf weigh?	**15-30 kg**	**31-45 kg**	46-60 kg	More than 60 kg	Not sure
Wolves feed mainly on:	**wild ungulates such as deer and chamois**	carrion	domestic animals	Not sure	
Wolves generally live:	solitary	in pairs	**in groups / packs**	Not sure	
Wolves have been introduced by people in It/Slo.	Yes	**No**	Not sure		
The wolves are naturally coming back to areas where they were once extirpated.	**Yes**	No	Not sure		

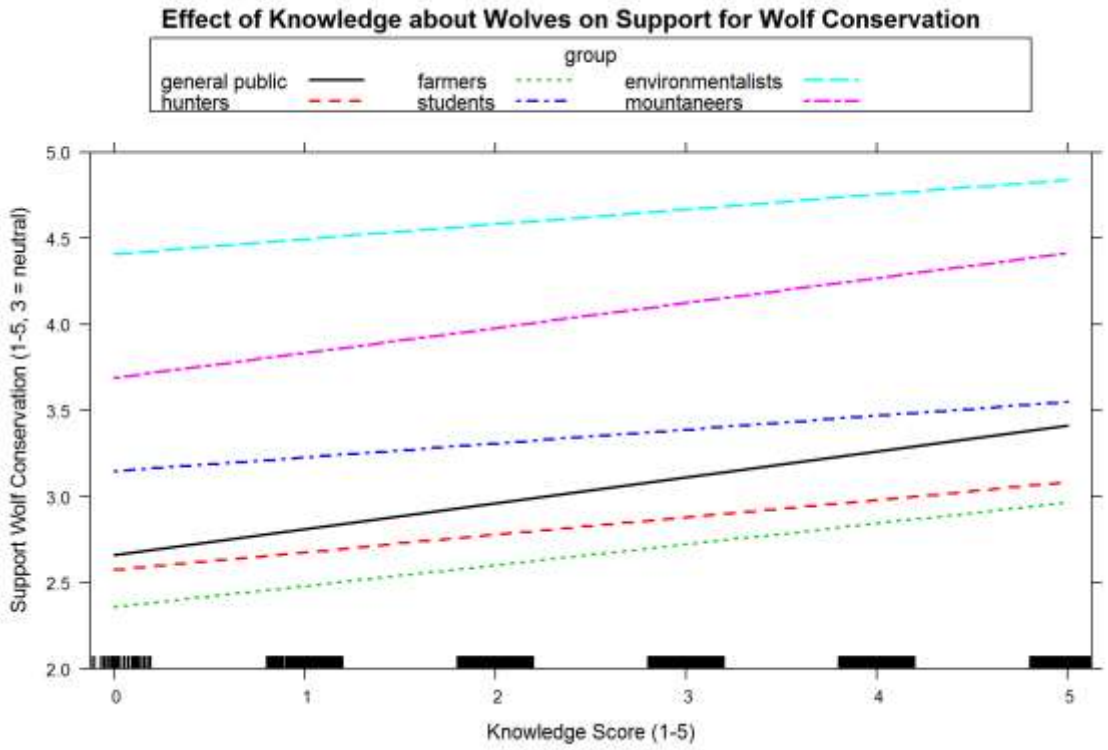


Figure 26: Effect of knowledge about wolf biology on support for wolf conservation by different respondent groups - controlled for confounding effect of other variables.

Support for wolf conservation in general increases with knowledge. There is no support for interactions of knowledge with either group or core area in predicting support for wolf conservation. In general, knowledge about wolves has a positive effect on support for wolf conservation.

Knowledge and fear

An intuitive assumption would be that fear of wolves' decreases with an increase in knowledge about wolves. In addition, we have explored if the knowledge and fear scores differ by core area or group. We're looking at raw data, so there is probably some confounding of effects, but sample sizes are large and we're looking at relatively large groups of respondents.

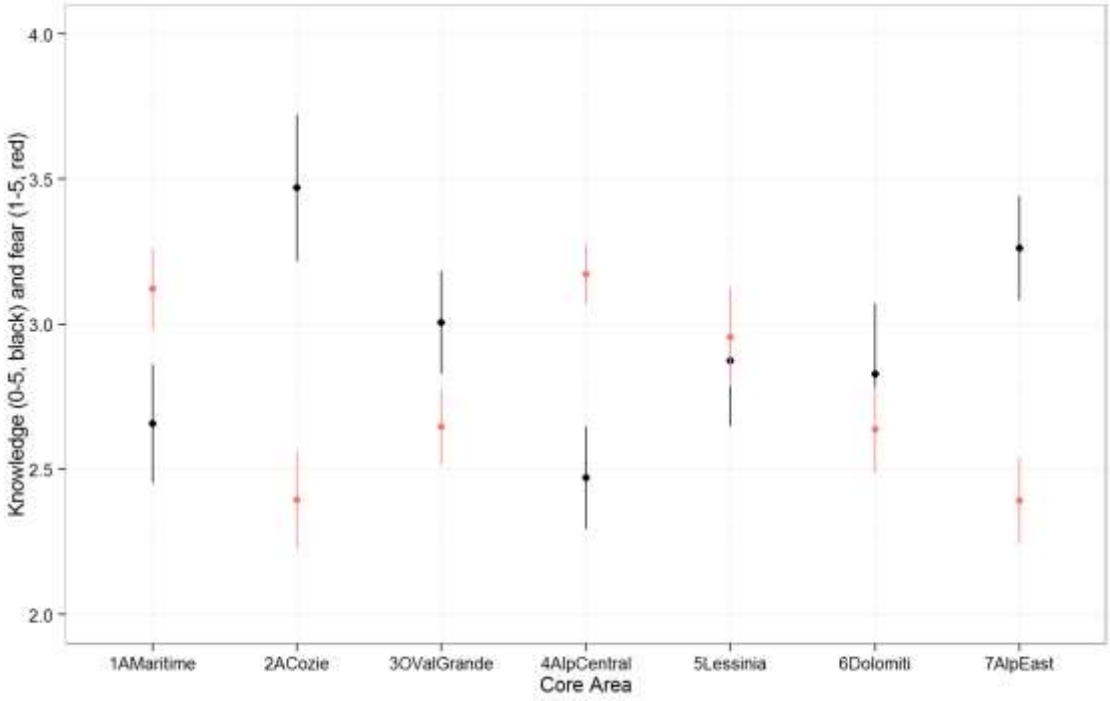


Figure 27: Exploration of relationship between knowledge about wolf biology (0-5, black) and fear of wolves (1-5, red) by different core areas - raw data, sample of general public.

Knowledge and fear are directly opposite, and vary to a degree between core areas (looking at the sample of the general public, Figure 27). The lowest fear and highest knowledge levels were documented in core area 2 (Cozie Alps) and core area 7 (Eastern Alps). An interesting pattern is observed in core area 5 (Lessinia) where both knowledge and fear levels are quite high. This is probably due to the transition this core area is experiencing going from complete absence of wolves to very well documented reproductive pack of wolves in only a couple of years.

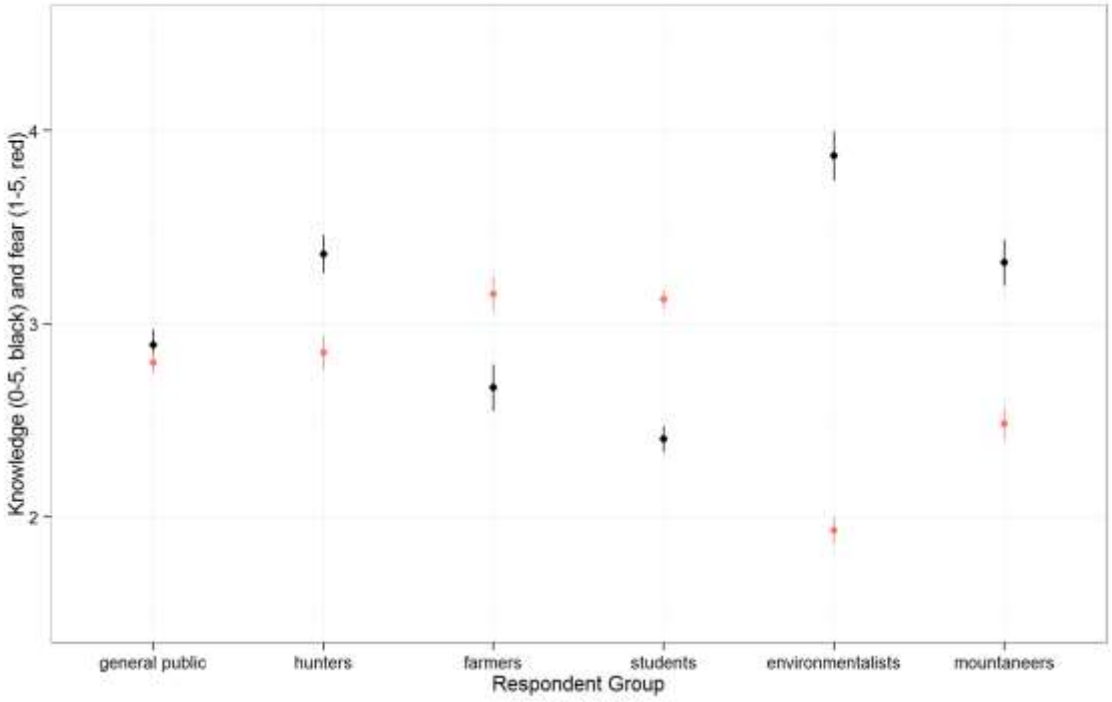


Figure 28: Exploration of relationship between knowledge about wolf biology (0-5, black) and fear of wolves (1-5, red) by different respondent groups - raw data.

There is considerable variation in both variables between respondent groups (Figure 28), with farmers and students being the most afraid of wolves and knowing the least about wolves, and environmentalists, mountaineers and (to a lesser extent) hunters being the least afraid and most knowledgeable.

Pet owners and support for wolf conservation

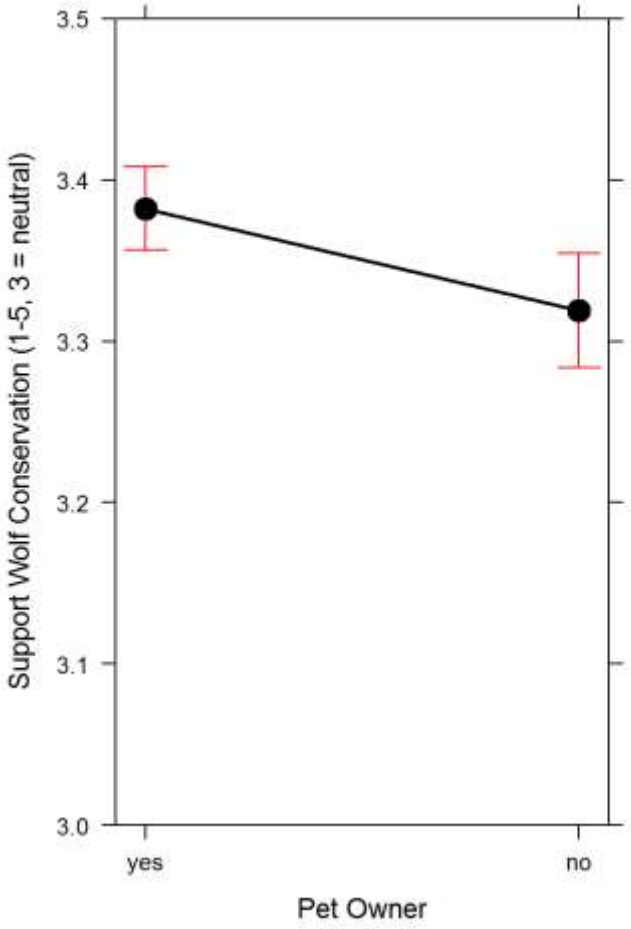


Figure 29: Effect of owning a pet on support for Wolf conservation - controlled for confounding effect of other variables.

Owning a pet has a minimal, but positive relation with support for wolf conservation (Figure 29).

Exploring effects of education and age

Based on the previous published research, it can be expected that both age and education can have an effect on support for wolf conservation, and the model selection process showed that there is an important interaction between the two variables.

Age and education have considerable effect on support for wolf conservation, with young people being considerably more inclined towards wolf conservation than older people (Figure 30).

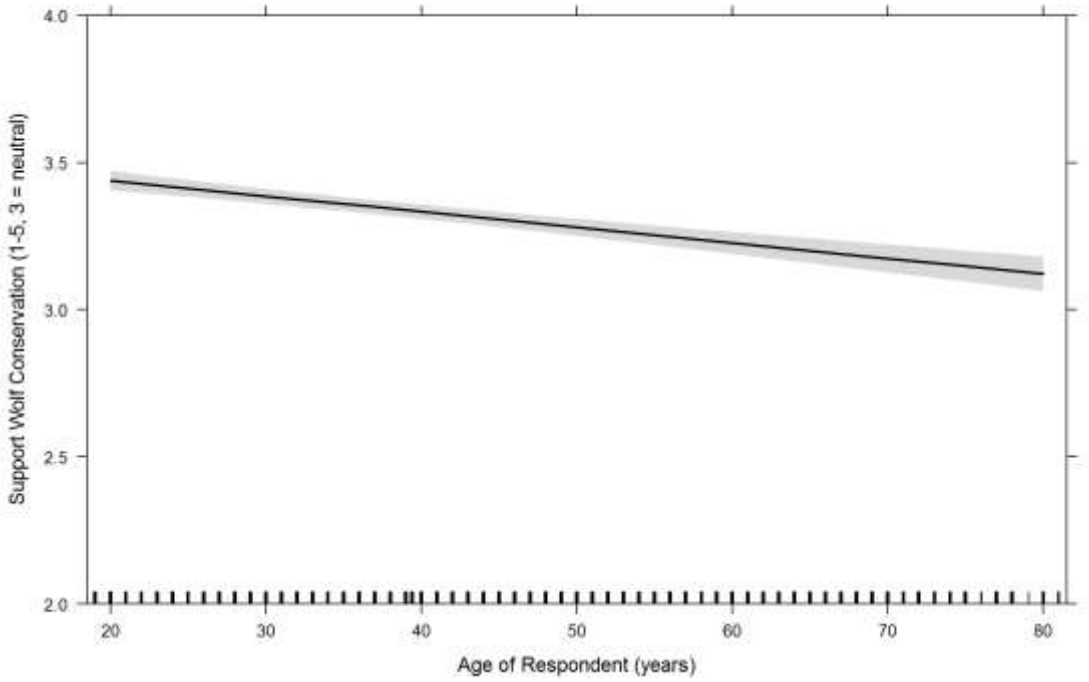


Figure 30: Effect of age of the respondent on support for Wolf conservation - controlled for confounding effect of other variables.

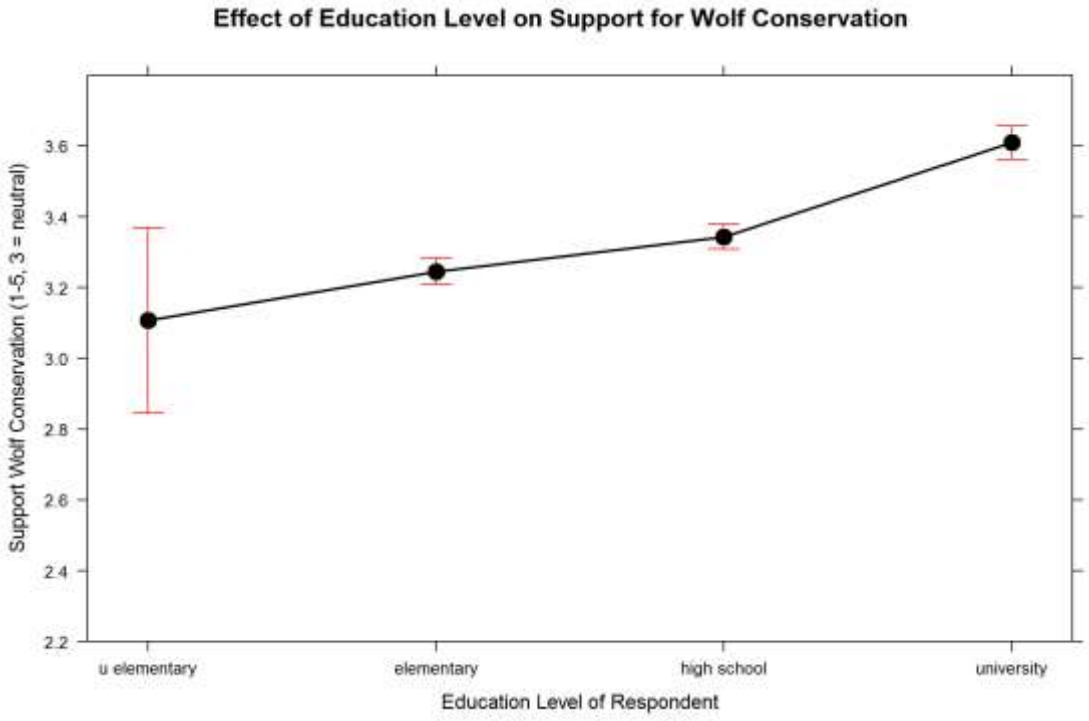


Figure 31: Effect of the education level of the respondent on support for Wolf conservation - controlled for confounding effect of other variables.

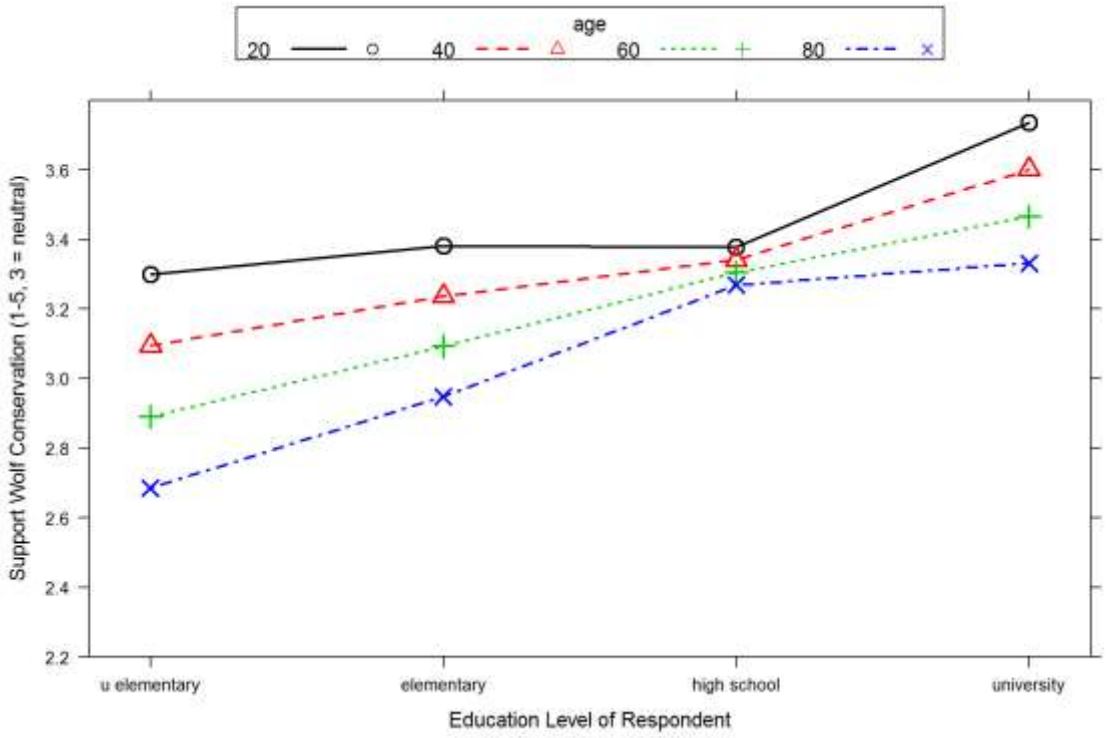


Figure 32: Effect of education on support for Wolf conservation according to the age of the respondent - controlled for confounding effect of other variables.

Similar is the effect of education level, with higher support for wolf conservation in higher educated respondents (Figure 31). However, there is an interaction between age and education which can be probably interpreted with the different role of high school today than it had 40-60 years ago (Figure 32). In other words, it seems that in the past those that completed high school education had more in common with those that obtained university education, while today those that obtain high school education have more in common with those that finish their education at elementary school level.

Exploring the effect of owning livestock

Livestock owners are an important and very vocal stakeholder group, and it is expected that they are less in favour of wolves than the other groups. This group overlaps somewhat with the "farmers" group, but is considerably larger since it also includes livestock owners from the other respondent groups (N = 715 vs. N = 398). We used the model without the "respondent group" variable for inference.

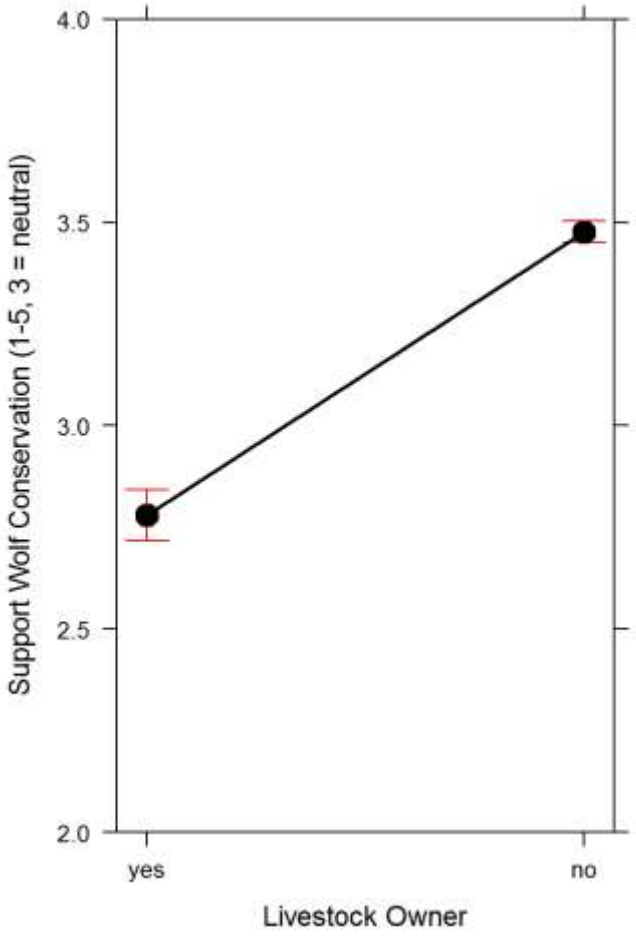


Figure 33: Support for Wolf conservation of livestock breeders - controlled for confounding effect of other variables.

Owning livestock is a strong negative predictor of respondent's support for wolf conservation (Figure 33). While livestock owners in different core areas have a relatively similar support for wolf conservation (Figure 34), there seems to be lower support in Lessinia, and higher in Eastern Alps. However, the sample sizes in different core areas are still small, causing large confidence intervals that make this inference weak.

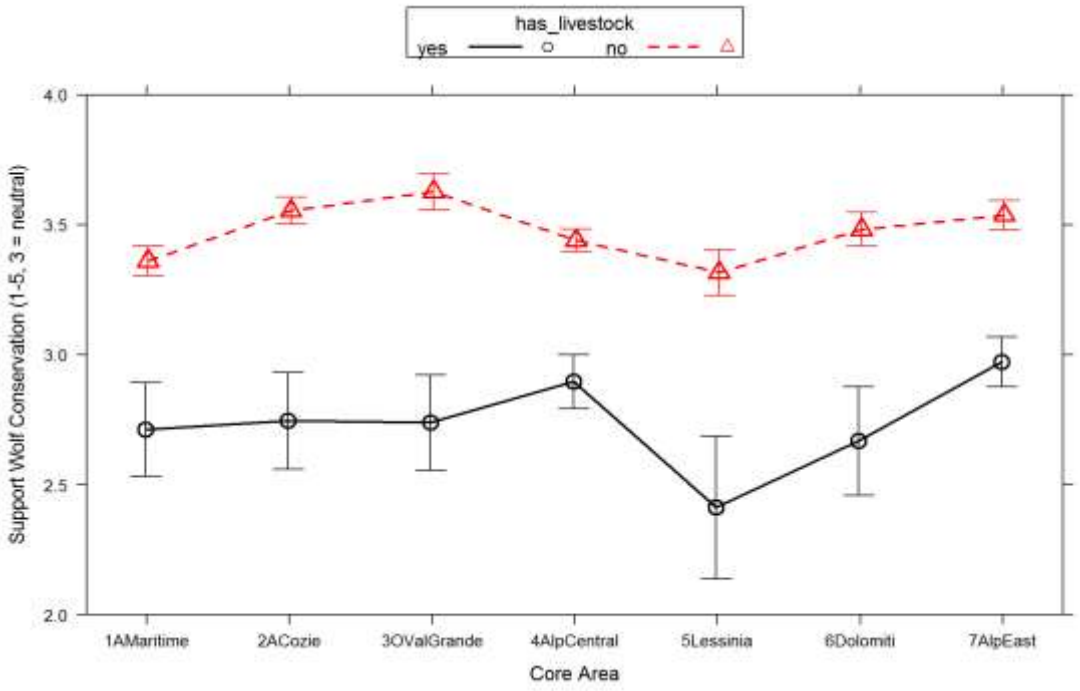


Figure 34: Support for Wolf conservation of livestock breeders in different core areas - controlled for confounding effect of other variables.

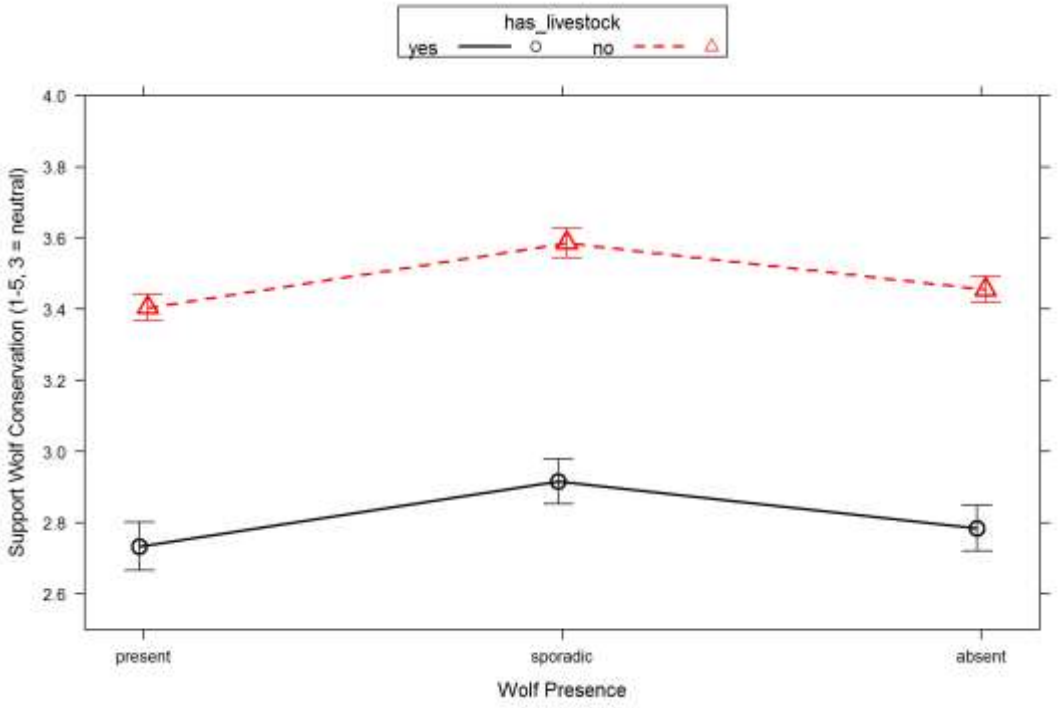


Figure 35: Support for Wolf conservation of livestock breeders with regard to wolf presence in their area - controlled for confounding effect of other variables.

When we replace the core area with wolf presence data (Figure 35) we see that while there is some difference in support between livestock breeders with regard to wolf presence in their area, wolf presence has small effect on the generally negative attitudes of this stakeholder group towards wolves.

Conclusions

General public as an important indicator of society's "climate" towards wolf conservation is overall cautiously supporting wolf conservation in the Alps. There are considerable differences among the core areas with Cozie Alps being the most positive and Maritime Alps being the most negative. Since these two core areas are neighbouring and with very similar patterns of wolf recolonization, we hypothesize that the difference is caused mainly by the influence of more urban lifestyle in the Cozie Alps (due to the closer location to a very large city like Turin), and the more rural background of the residents of the Maritime Alps. General public of the Cozie Alps was also the most knowledgeable about the wolves, while the general public of the Maritime Alps was among the least knowledgeable about wolves.

One of the most important stakeholder groups in wolf conservation, the farmers, are also by far the most negative group in their support for wolf conservation and they are the only group consistently opposing wolf conservation across the core areas and regardless of presence/absence of wolves. This means that the efforts for increasing tolerance of wolves among livestock owners, which are currently among most expensive wolf conservation activities (i.e. implementation of damage compensations), might not be the best investment from the human dimensions point of view. They might however have a positive indirect effect on other groups by improving a "caring for fellow human" image of the wolf conservation efforts.

Hunters, although usually not as vocal as farmers, are another key stakeholder group in wolf conservation. Hunters proved to be the most diverse group across the core areas, ranging from opposition to wolf conservation in the western core areas to clear support of wolf conservation in the eastern core area. This pattern largely follows the recolonization pattern of wolves. In further support of this finding, hunters were the only group whose attitudes were dependant on the presence or absence of wolves in their respective core areas. Hunters were considerably less in favour of wolf conservation in areas where reproductive packs of wolves were present then in areas where wolves are absent or present only sporadically. These results would suggest that the hunters are the key group to focus on in areas that are being recolonized by wolves. They seem to have a potential of being a partner in wolf conservation but somehow their support is lost once the wolves appear in their vicinity. Our results are also suggesting that supporting control of wolf population through hunting is not necessarily in conflict with supporting wolf population conservation. Hunters typically agree to hunting but often also support wolf conservation. An interesting finding and an indicator of how hunters truly form their own independent "subculture" is the fact that the hunters were the most negative and opposing wolf conservation in the Cozie Alps, the core area where the general public was the most supportive of wolf conservation. In particular, the Cozie Alps have the higher density of hunters in the

western Italian Alps core areas and the greater focus in red deer, making the general practice a local business.

Targeted awareness raising activities planned in the project were the main reason high school students were specifically included in the survey. They are also the future decision-makers and policy-shapers, and are already forming their attitudes toward wolves. High school students are more supportive of wolf conservation then the average adult resident of the core areas.

As expected, mountaineers and even more so environmentalists were the most supportive to wolf conservation. The support remained consistent across the core areas.

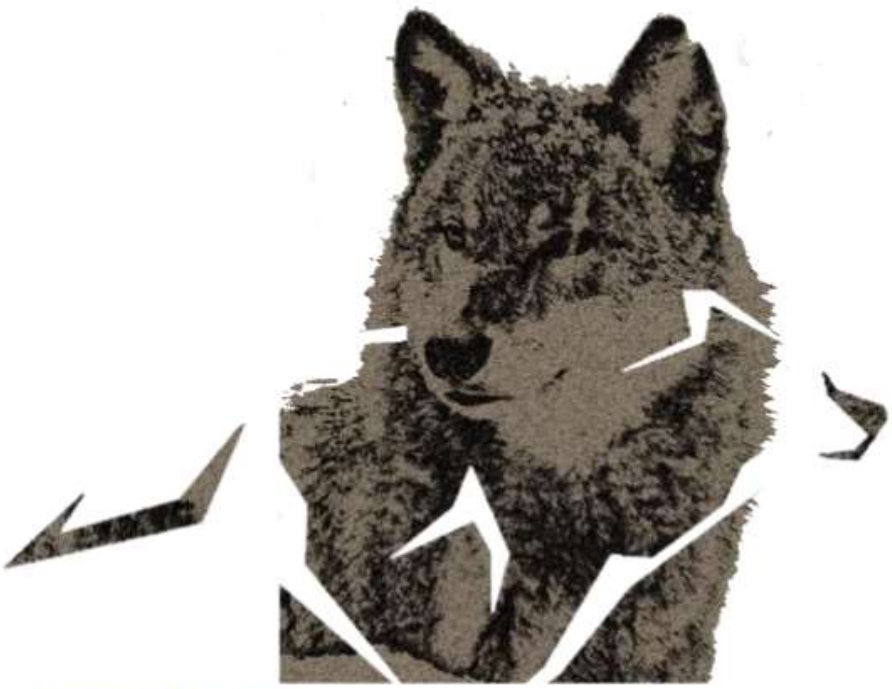
Personal experiences with wolves do partly shape respondents' attitudes towards wolf conservation. Having had damage caused by wolves was a strong predictor of negative attitudes towards wolf conservation, while seeing a wolf in captivity (e.g. zoo) had a marginal positive effect on support for conservation.

Our data clearly suggest that support for wolf conservation generally increases with knowledge about wolves, stressing importance of awareness raising and educational campaigns. Knowledge about wolves was also clearly related to a very specific component of attitudes toward wolves – fear of wolves. As knowledge increased, fear of wolves decreased and the opposite. In areas with low knowledge about wolves (e.g. Central Italian Alps and Maritime Alps), it seems that fear of wolves, although largely irrational, remains an important issue to tackle in wolf conservation. Farmers and high school students were the two groups with the lowest knowledge levels and the highest fear of wolves levels, while environmentalists, mountaineers and to a lesser extent hunters showed most knowledge about wolves and were least afraid of wolves.

Annex 1: Questionnaires in English, Italian and Slovenian languages

Public attitude survey toward wolf
and its management in Italian and Slovenian Alps

WOLF



Project is co-financed by the
European Union - Programme LIFE.

LIFE WOLFALPS

Project coordinator:

Parco naturale Alpi Marittime

Action coordinator:

Univerza v Ljubljani Biotehniška fakulteta

Other project partners:

Triglavski narodni park

Corpo Forestale dello Stato

MUSE

Parco naturale del Marguareis

Aree protette dell'Ossola

ValGrande

Regione Lombardia

Regione del Veneto

LIFE WOLFALPS

ATTITUDES TOWARD WOLF IN THE ALPS

In September 2013 has started a LIFE+ project entitled »Implementation of coordinated wolf conservation actions in core areas and beyond - WOLFALPS« coordinated by Parco Naturale delle Alpi Marittime in participation with other project partners in Italy and Slovenia. The goal of the project is the support of the wolf management on areas of its natural recolonization in The Alps. **However, for its long-term conservation, coexistence of wolves and humans is crucial.** That is why we would like to learn more about wolf area residents' attitudes toward wolf. Knowing and understanding public opinions about different management options is necessary for its successful implementation. Furthermore, governments are obliged to respect public opinion about the topics that concerns it.

We kindly ask you to take ten minutes of your time to answer following questions. Regardless of your attitudes toward the wolf, your opinion is valuable, so we encourage you to answer all the questions. Please, send back the filled out questionnaire in the envelope enclosed. The results of the survey will be published on www.lifewolfalps.eu 2015.

Please answer your questions openly and do not write your name. **The questionnaire is anonymous and your answers strictly confidential.**

For further information, please contact *(phone number and e-mail)*.

We thank you in advance for your participation in the survey!

Action coordinator,
Aleksandra Majić Skrbinšek

Interviewer,
Name of the interviewer

PART A: We will start with general statements about your attitude toward the wolf and its management. Please choose the response that best describes your opinion from 1 to 5.

1. Which of the following best describes your feelings toward wolf?

a) Completely against.
b) Moderately against.
c) Neither in favour nor against.
d) Moderately in favour
e) Completely in favour.

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
2. It is important to maintain wolves in It/Slo, so that future generations can enjoy them.	1	2	3	4	5
3. It is unnecessary to have wolves in It/Slo because abundant populations already exist in other European countries.	1	2	3	4	5
4. Wolves greatly reduce ungulate populations and make hunting impossible.	1	2	3	4	5
5. Wolves mainly prey on old and sick animals and thus keep wild ungulate populations healthy.	1	2	3	4	5

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
6. I would tolerate wolves living in nearby forests of our municipality.	1	2	3	4	5
7. Wolves do not attack people.	1	2	3	4	5
8. I would not be afraid to hike in the woods where wolves are present.	1	2	3	4	5
9. Wolves cause abundant damages to livestock.	1	2	3	4	5
10. Livestock owners that lose livestock due to wolf should be compensated.	1	2	3	4	5
11. If a wolf killed livestock, I would agree with killing this problem animal.	1	2	3	4	5
12. I would agree with increasing wolf numbers in my region.	1	2	3	4	5
13. We already have enough wolves in my region.	1	2	3	4	5
14. There should be authorized wolf hunts in It/Slo.	1	2	3	4	5
15. Wolves attract tourists.	1	2	3	4	5

PART B: Next few questions are about general knowledge about wolf as a species. Please choose the response that you find the most appropriate or that the best describes your opinion.

1. **How much does an adult wolf weigh?**

   a) 15-30 kg.
   b) 31-45 kg.
   c) 46-60 kg.
   d) More than 60 kg.
   e) Not sure.

2. **Wolves feed mainly on::**

   a) wild ungulates such as deer and chamois.
   b) carrion.
   c) domestic animals.
   d) Not sure.

3. **Wolves generally live:**

   a) solitary.
   b) in pairs.
   c) in groups.
   d) Not sure.

4. **Wolves have been introduced by people in It/Slo.**

   a) Yes.
   b) No.
   c) Not sure.

5. **The wolves are naturally coming back to areas where they were once extirpated.**

   a) Yes.
   b) No.
   c) Not sure.

6. **Do you believe wolf numbers in It/Slo is:**

a) Increasing.

b) Decreasing.

c) Remaining the same.

d) Not sure.

PART C: Please, share your opinion about information sources.

1. **How much you can trust following sources of information about wolves?**

	Do not trust at all	Do not trust	I cannot decide	Trust	Completely trust
Media	1	2	3	4	5
Biologists	1	2	3	4	5
Hunters	1	2	3	4	5
Foresters	1	2	3	4	5
Veterinaries	1	2	3	4	5
Environmental NGOs	1	2	3	4	5
Ministry of the...	1	2	3	4	5
Farmers	1	2	3	4	5
Politicians	1	2	3	4	5

2. **Have you ever heard of the project "Wolf in the Alps: Implementation of coordinated wolf conservation actions in core areas and beyond" (short name WOLFALPS)?**

a) Yes.

b) No.

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If your answer is »Yes«, how did you hear about the project (*multiple answers possible*)?

a) Media.

b) Personal communication.

c) Attended an event organized by the project.

d) Participated in the project activities.

e) I don't remember.

f. Other: _____

3. If possible, would you like to participate in the project LIFE WOLFALPS?

a) Yes, as a volunteer in the project activities. Your contact: _____

b) No, but I would like to receive project news. Your contact: _____

c) No, I'm not interested.

PART D: We are interested also in your experience with wolves.

1. Have you ever seen live wolf in the wild?

a) Yes.

b) No.

2. Have you ever seen a wolf in captivity?

a) Yes.

b) No.

3. Have you ever had a damage caused by a wolf?

a) Yes.

b) No.

PART E: To finish, we would like to know some information about you solely for the purpose of statistical analysis.

I. Gender: a) Female. b) Male.

II. Age: _____years.

III. ZIP code: _____

IV. Education:

a) Unfinished elementary school.

b) Finished elementary school.

c) Finished highschool.

d) Finished higher education.

V. Are you a hunter?

a) Yes.

b) No.

VI. If you are a livestock owner, what type of livestock do you have?

a) Sheep.

b) Goats.

c) Cows.

d) Horses.

e) Other: _____

f. I don't have livestock.

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VII. If you are a pet owner, what type of pets do you have?

a) Dog.

b) Cat.

c) Other: _____

d) I don't have pets.

VIII. Are you a member of any non-governmental organization?

a) (*specifically for each country*)

b) (*specifically for each country*)

c) (*specifically for each country*) ...

d) Other: _____

e) No.

Thank you very much for your cooperation!

Your opinion will importantly contribute to a better wolf management!

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Any other comments on this subject or with respect of the questionnaire:

LIFE
WOLFALPS

Questionnaire designed by:
Andrea Bardi and Urška Marinko

2014, printed in xx copies

Indagine sulle opinioni pubbliche relative al lupo e alla sua gestione sulle Alpi Italiane e Slovene

LUPO

Progetto co-finanziato da:
Unione Europea - Programma LIFE.

LIFE WOLFALPS

Coordinatore di progetto:

Alpi Marittime

Coordinatore delle azioni:

Altri partners di progetto:

LIFE WOLFALPS

OPINIONI E ATTEGGIAMENTI NEI CONFRONTI DEL LUPO SULLE ALPI

Nel Settembre 2013 è partito il progetto LIFE+ intitolato "Azioni coordinate per la conservazione del lupo nelle aree chiave e non solo - - WOLFALPS" coordinato dal Parco Naturale delle Alpi Marittime e con la partecipazione di altri partner di progetto sia in Italia sia in Slovenia. L'obbiettivo del progetto è quello di sostenere la gestione del lupo nelle aree alpine interessate dalla sua naturale ricolonizzazione. **Tuttavia, per garantire la conservazione del lupo a lungo termine è cruciale la sua convivenza con l'uomo.** Ecco perché vogliamo conoscere meglio quali sono le opinioni della popolazione residente nelle aree coinvolte nei confronti del lupo. Per una efficace gestione della specie è indispensabile conoscere e comprendere le opinioni del pubblico in merito. Inoltre, le Amministrazioni sono obbligate a rispettare l'Opinione Pubblica in merito alle questioni che la riguardano.

Vi chiediamo cortesemente di dedicare dieci minuti del vostro tempo per rispondere alle seguenti domande. A prescindere dalle vostre opinioni e atteggiamenti nei confronti del lupo, il vostro parere è prezioso, quindi vi invitiamo a rispondere a tutte le domande. I risultati del sondaggio saranno pubblicati su www.lifewolfalps.eu nel 2015.

Vi preghiamo di rispondere alle domande in modo aperto e sincero senza scrivere il vostro nome. **Il questionario è anonimo e le risposte strettamente confidenziali** .

Per maggiori informazioni , si prega di contattare *(il numero di telefono ed e-mail)*.

Vi ringraziamo in anticipo per la vostra partecipazione a questo sondaggio!

Action coordinator,
Aleksandra Majič Skrbinšek

Intervistatore
Il nome dell'intervistatore

PARTE A: Inizieremo con alcune affermazioni generali riguardanti il lupo e la sua gestione. Per favore scelga la risposta che meglio descrive la sua opinione su una scala da 1 a 5

1. **Quali delle seguenti affermazioni descrive meglio la sua opinione personale nei confronti dei lupi?**

   a) Non mi piacciono per niente.
   b) Non mi piacciono.
   c) Mi sono indifferenti.
   d) Mi piacciono.
   e) Mi piacciono molto.

	Per niente d'accordo	In disaccordo	Indifferente / Non so	D'accordo	Pienamente d'accordo
2. È importante conservare il lupo in Italia per le future generazioni	1	2	3	4	5
3. Non è necessario conservare il lupo in Italia per le future generazioni perché ne sono già presenti numerose popolazioni in altri Paesi europei.	1	2	3	4	5
4. I lupi riducono notevolmente le popolazioni di ungulati selvatici (cervo, capriolo, camoscio…) rendendo impossibile la caccia.	1	2	3	4	5

		Per niente d'accordo	In disaccordo	Indifferente / Non so	D'accordo	Pienamente d'accordo
5.	I lupi predano principalmente animali vecchi e malati mantenendo sane le popolazioni di ungulati selvatici.	1	2	3	4	5
6.	Sono disposto a tollerare la presenza del lupo sul territorio del mio Comune.	1	2	3	4	5
7.	I lupi non attaccano le persone.	1	2	3	4	5
8.	Non ho paura di camminare nei boschi dove sono presenti i lupi.	1	2	3	4	5
9.	I lupi causano ingenti danni al bestiame domestico.	1	2	3	4	5
10.	Gli allevatori che subiscono delle perdite al bestiame domestico causate dal lupo devono ricevere un rimborso.	1	2	3	4	5
11.	Sono favorevole all'uccisione di un lupo che uccide bestiame domestico.	1	2	3	4	5

	Per niente d'accordo	In disaccordo	Indifferente / Non so	D'accordo	Pienamente d'accordo
12. Non ho niente in contrario ad un aumento del numero di lupi nella mia Regione / Provincia.	1	2	3	4	5
13. Ci sono già abbastanza lupi nella nostra Regione / Provincia.	1	2	3	4	5
14. In Italia si deve autorizzare la caccia al lupo.	1	2	3	4	5
15. I lupi attraggono i turisti.	1	2	3	4	5

PARTE B: le prossime domande riguardano la sua conoscenza generale del lupo. Per favore scelga la risposta che le sembra più appropriata o che descrive meglio la sua opinione.

1. Quanto pesa un lupo adulto?

a) 15-30 kg.

b) 31-45 kg.

c) 46-60 kg.

d) Più di 60 kg.

e) Non so.

2. I lupi si cibano principalmente di:

a) Ungulati selvatici come caprioli e camosci

b) Carcasse di animali.

c) Animali domestici.

d) Non so.

3. I lupi generalmente vivono:

a) Solitari.
b) In coppia.
c) In branco.
d) Non so.

4. I lupi sono stati reintrodotti in Italia.

a) Si.
b) No.
c) Non so.

5. I lupi sono ritornati naturalmente nelle zone da cui sono stati eliminati in passato.

a) Si.
b) No.
c) Non so.

6. Pensa che il numero di lupi in Italia stia:

a) Aumentando
b) Diminuendo.
c) Rimanendo stabile.
d) Non so .

5

PARTE C: per favore, ci dia la sua opinione sulle sue fonti di informazione.

1. Quanta fiducia ha nelle seguenti fonti di informazione sul lupo?

	Nessuna fiducia	Poca fiducia	Non so	Molta fiducia	Totale fiducia
Media	1	2	3	4	5
Biologi	1	2	3	4	5
Cacciatori	1	2	3	4	5
Forestali	1	2	3	4	5
Veterinari	1	2	3	4	5
Associazioni ambientaliste	1	2	3	4	5
Ministero dell'Ambiente	1	2	3	4	5
Allevatori	1	2	3	4	5
Amministrazioni pubbliche es. Province, Regioni	1	2	3	4	5

2. Ha mai sentito parlare del Progetto "Wolf in the Alps: Implementation of coordinated wolf conservation actions in core areas and beyond" (acronimo WOLFALPS)?

a) Si.

b) No.

Se "sì" da quale fonte ha saputo del progetto? (*è possibile segnare più opzioni*)?

a) Media.

b) Comunicazione personale.

c) Partecipazione ad un evento organizzato dal Progetto.

d) Partecipazione al progetto come volontario.

e) Non mi ricordo.

f. Altro: _____

6

3. **Se possibile, vorrebbe partecipare al progetto LIFE WOLFALPS?**

   a) Si come volontario alle attività di progetto (per favore ci lasci un suo contatto): _____

   b) No ma sono interessato a ricevere la newsletter del progetto (Per favore ci lasci il suo recapito mail): _____

   c) No non sono interessato.

PARTE D: Siamo interessati anche alle sue esperienze con i lupi.

1. **Ha mai visto un lupo allo stato selvatico?**

   a) Si.

   b) No.

2. **Ha mai visto un lupo in cattività?**

   a) Si.

   b) No.

3. **Ha mai avuto un danno causato dal lupo?**

   a) Si.

   b) No.

7

LIFE WOLFALPS

PARTE E: Per finire le chiediamo alcune informazioni personali per le analisi statistiche.

I. **Sesso:** a) Donna. b) Uomo

II. **Età:** _____**anni.**

III. **Comune di residenza:** _____

IV. **Titolo di Studio:**

a) Scuole elementari.
b) Scuole medie.
c) Diploma.
d) Laurea
e) Nessuno.

V. **Lei è un cacciatore?**

a) Si.
b) No.

VI. **Se lei è un allevatore, che tipo di bestiame alleva?**

a) Ovini
b) Caprini.
c) Bovini.
d) Equini
e) Altro _____
f) Non sono un allevatore.

VII. **Se lei ha animali da compagnia, che tipo di animale ha?**

a) Cane
b) Gatto
c) Altro _____
d) Non ho animali da compagnia.

LIFE WOLFALPS

VIII. Lei è socio di qualche associazione ambientalista?

a) WWF

b) Legambiente

c) Greenpeace

d) Lipu

e) FAI

f) Altro _____

g) No.

Grazie per la sua preziosa collaborazione!

La sua opinione sarà un importante contributo per una migliore gestione del lupo!

Qualsiasi altro commento sull'argomento o sul questionario:

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

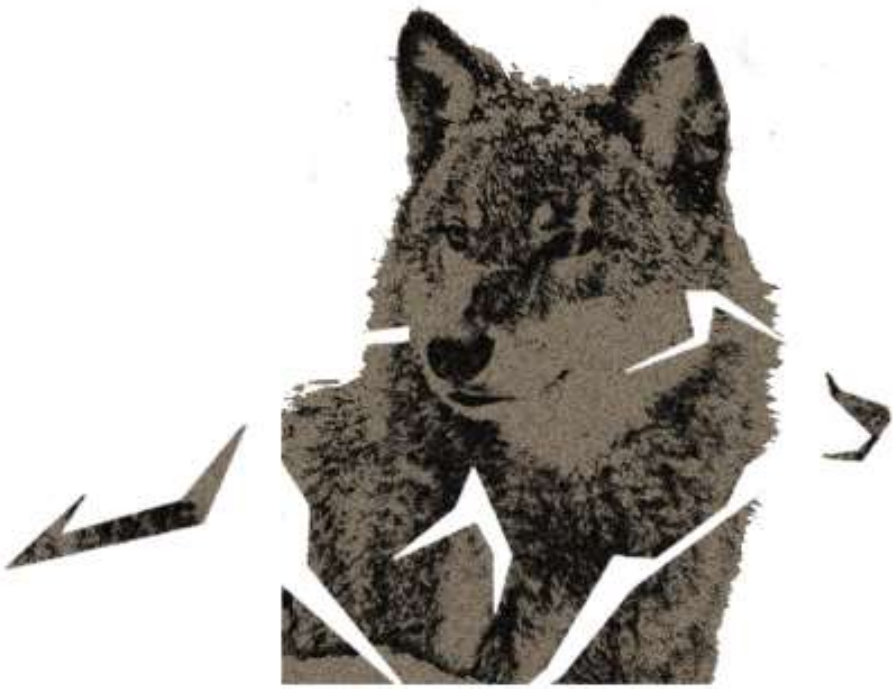
LIFE WOLFALPS

Questionario progettata da:
Andrea Bardi and Urška Marinko

Valdieri 2014

Raziskava odnosa javnosti do volka in upravljanja z njim
na območju italijanskih in slovenskih Alp

VOLK



Projekt sofinancira Evropska unija
v okviru programa LIFE.


LIFE
WOLFALPS
Koordinator projekta:
Parco naturale
Alpi Marittime
Koordinator akcije:
Univerza v Ljubljani
Biotehniška fakulteta
Ostali projektni partnerji:
TRIGLAVSKI NARODNI PARK
MUSE
Parco naturale
del Marguareis
Aree protette
dell'Ossola
ValGrande
Regione
Lombardia
REGIONE DEL VENETO

LIFE WOLFALPS

ODNOS JAVNOSTI DO VOLKA V ALPAH

Septembra 2013 se je pod vodstvom italijanskega javnega zavoda Parco Naturale delle Alpi Marittime začel izvajati italijansko-slovenski LIFE+ projekt »Volk v Alpah: izvajanje usklajenih varstvenih ukrepov na izbranih ključnih območjih in širše - WOLFALPS«, pri katerem poleg italijanskih partnerjev, sodelujeta tudi Triglavski narodni park in Biotehniška fakulteta Univerze v Ljubljani. Cilj projekta je podpora upravljanju z volkom na območjih njegovega ponovnega pojavljanja v Alpah. Ob tem pa je za njegovo dolgoročno ohranitev **ključnega pomena zagotavljanje nemotenega sobivanja volkov s prebivalci tega območja.** Zato bi želeli izvedeti več o njihovem odnosu do volka, poleg tega pa je vlada dolžna upoštevati mnenja javnosti pri sprejemanju odločitev o upravljanju z volkom.

Lepo vas prosimo, da si vzamete deset minut svojega časa in ga namenite vprašalniku. Ne glede na vaš odnos in poznavanje vrste, bodo vaši odgovori pomembni. Zato vas prosimo, da odgovorite na vsa vprašanja in s tem pripomorete k točnejšim rezultatom raziskave. Izpolnjen vprašalnik nam pošljite po pošti v priloženi kuverti. Pridobljene podatke bomo analizirali, rezultate študije odnosa javnosti pa si boste lahko ogledali na spletni strani www.lifewolfalps.eu v drugi polovici leta 2015. ***Vprašalnik je popolnoma anonimen, vaši odgovori pa so strogo zaupni.***

Za dodatne informacije o vprašalniku se lahko obrnete na Urško Marinko (telefon 01/320 3666 ali e-naslov: urska.marinko@bf.uni-lj.si).

Za sodelovanje in pomoč se vam že vnaprej zahvaljujemo!

Koordinator akcije,
mag. Aleksandra Majić Skrbinšek

Anketar,
Urška Marinko

1

LIFE WOLFALPS

DEL A: Vprašalnik bomo začeli s splošnimi vprašanji in izjavami o vašem odnosu do volka in upravljanja z njim. Prosimo, da med ponujenimi odgovori obkrožite tistega, ki najbolje odraža vaše stališče na lestvici od 1 do 5.

1. Kaj od spodaj naštetega najbolje opiše vaše stališče do volka?

a) Popolnoma odklonilno.
b) Odklonilno.
c) Ne morem se opredeliti.
d) Naklonjeno.
e) Popolnoma naklonjeno.

	Nikakor se ne strinjam	Deloma se ne strinjam	Ne morem se opredeliti	Deloma se strinjam	Popolnoma se strinjam
2. Volka je v Sloveniji pomembno ohraniti za prihodnje generacije.	1	2	3	4	5
3. Volka v Sloveniji ni treba ohraniti za prihodnje generacije, ker živi drugod po Evropi.	1	2	3	4	5
4. Volkovi močno zmanjšujejo število parkljarjev (srnjadi, jelenjadi, kozorogov in gamsov) in s tem onemogočajo lov na njih.	1	2	3	4	5

2

	Nikakor se ne strinjam	Deloma se ne strinjam	Ne morem se opredeliti	Deloma se strinjam	Popolnoma se strinjam
5. Volkovi večinoma plenijo stare in bolne živali in tako ohranjajo zdrave populacije parkljarjev (srnjadi, jelenjadi, kozorogov in gamsov).	1	2	3	4	5
6. Prisotnost volka v gozdovih svoje okolice bi sprejel/a brez večjih težav.	1	2	3	4	5
7. Volkovi ne napadajo ljudi.	1	2	3	4	5
8. Ni me strah se sprehajati po gozdovih, kjer so prisotni tudi volkovi.	1	2	3	4	5
9. Volkovi povzročajo nesprejemljivo škodo na domačih živalih.	1	2	3	4	5
10. Rejec bi moral dobiti odškodnino, ko zaradi napada volka izgubi domačo žival.	1	2	3	4	5
11. Če bi volk ubil domačo žival, bi se strinjal/a z odstrelom te "problematične" živali.	1	2	3	4	5
12. Strinjal/ bi se s povečanjem števila volkov na območju, kjer živim.	1	2	3	4	5

3

	Nikakor se ne strinjam	Deloma se ne strinjam	Ne morem se opredeliti	Deloma se strinjam	Popolnoma se strinjam
13. Na območju, kjer živim je že sedaj dovolj volkov.	1	2	3	4	5
14. Prav je, da je v Sloveniji dovoljen kontroliran odstrel volkov.	1	2	3	4	5
15. Prisotnost volkov privlači turiste.	1	2	3	4	5

DEL B: V nadaljevanju je nekaj splošnih vprašanj o volku kot vrsti. Obkrožite odgovor, ki se vam zdi najbolj ustrezen ali najbolje opiše vaše mnenje.

1. Koliko tehta odrasel volk?

a) 15-30 kg.

b) 31-45 kg.

c) 46-60 kg.

d) Več kot 60 kg.

e) Nisem prepričan/a.

2. Večino volkove hrane predstavlja:

a) srnjad, jelenjad, gamsi in kozorogi.

b) mrhovina.

c) domače živali.

d) Nisem prepričan/a.

4

LIFE WOLFALPS

3. Volkovi živijo:

a) samotarsko.

b) v paru.

c) v tropu.

d) Nisem prepričan/a.

4. Volkove so v Slovenijo pripeljali ljudje.

a) Da.

b) Ne.

c) Nisem prepričan/a.

5. Volkovi po naravni poti poseljujejo območja, od koder so bili nekoč iztrebljeni.

a) Da.

b) Ne.

c) Nisem prepričan/a.

6. Ali menite, da število volkov v Sloveniji:

a) Narašča.

b) Upada.

c) Je stabilno.

d) Nisem prepričan/a.

DEL C: Prosimo vas, da predstavite vaše mnenje o virih informacij.

1. Koliko po vašem mnenju lahko zaupate naštetim virom informacij o volkovih?

	Nikakor ne zaupam	Ne zaupam	Ne morem se opredeliti	Zaupam	Popolnoma zaupam
Medijem	1	2	3	4	5
Biologom	1	2	3	4	5
Lovcem	1	2	3	4	5

5

	Nikakor ne zaupam	Ne zaupam	Ne morem se opredeliti	Zaupam	Popolnoma zaupam
Gozdarjem	1	2	3	4	5
Veterinarjem	1	2	3	4	5
Naravovarstvenikom	1	2	3	4	5
Ministrstvu za kmetijstvo in okolje	1	2	3	4	5
Rejcem drobnice	1	2	3	4	5
Politikom	1	2	3	4	5

2. Ali ste že slišali za slovensko-italijanski projekt "Volk v Alpah: izvajanje usklajenih varstvenih ukrepov na izbranih ključnih območjih in širše" (krajše ime: WOLFALPS)?

a) Da.

b) Ne.

Če ste odgovorili z "Da", prosim odgovorite na naslednje vprašanje: Kje ste slišali za projekt? (*možnih več odgovorov*)?

a) V medijih.

b) Iz osebnih pogovorov.

c) Na projektnem dogodku.

d) Med sodelovanjem pri aktivnostih projekta.

e) Ne spomnim se.

f) Ostalo: _____

6

DEL D: Zanimajo nas tudi vaše izkušnje z volkovi.

1. **Ali ste že videli volka v naravi?**

   a) Da.

   b) Ne.

2. **Ali ste že videli volka v ujetništvu (na primer v živalskem vrtu)?**

   a) Da.

   b) Ne.

3. **Vam je volk že kdaj povzročil škodo (napad na domače živali, škoda na vaši lastnini)?**

   a) Da.

   b) Ne.

DEL E: Za konec bi za potrebe statistične obdelave podatkov radi izvedeli še nekaj informacij o vas.

I. **Spol:** a) Ženski. b) Moški.

II. **Starost: _____let.**

III. **Poštna številka: _____**

IV. **Stopnja izobrazbe:**

a) Nedokončana osnovna šola.

b) Končana osnovna šola.

c) Končana srednja šola.

d) Visokošolska izobrazba.

7

LIFE WOLFALPS

V. Ali ste lovec?

a) Da.

b) Ne.

VI. Če imate domače živali, katero vrsto redite?

a) Ovce.

b) Koze.

c) Govedo.

d) Konje.

e) Drugo: _____

f) Nimamo domačih (rejnih) živali.

VII. Če ste lastnik domačega ljubljenčka, katero vrsto imate?

a) Psa.

b) Mačko.

c) Drugo: _____

d) Nimam domačih ljubljenčkov.

Najlepša hvala za sodelovanje!

Vaše mnenje bo pomembno prispevalo k uspešnejšem upravljanju z volkom!

8

LIFE WOLFALPS

Če imate še kakšne komentarje o tematiki ali pripombe na vprašalnik, jih prosim napišite tu:

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9

Vprašalnik oblikovala:
Andrea Bardi in Urška Marinko

Ljubljana 2014, naklada 500 izvodov

Annex 2: Summary tables and graphs

Figure 36: Which of the following best describes your feelings toward wolf? (Surface of the grey bubbles represents the share of answers within the group – e.g. general public of Eastern Alps. The numbers represent actual number of responses)

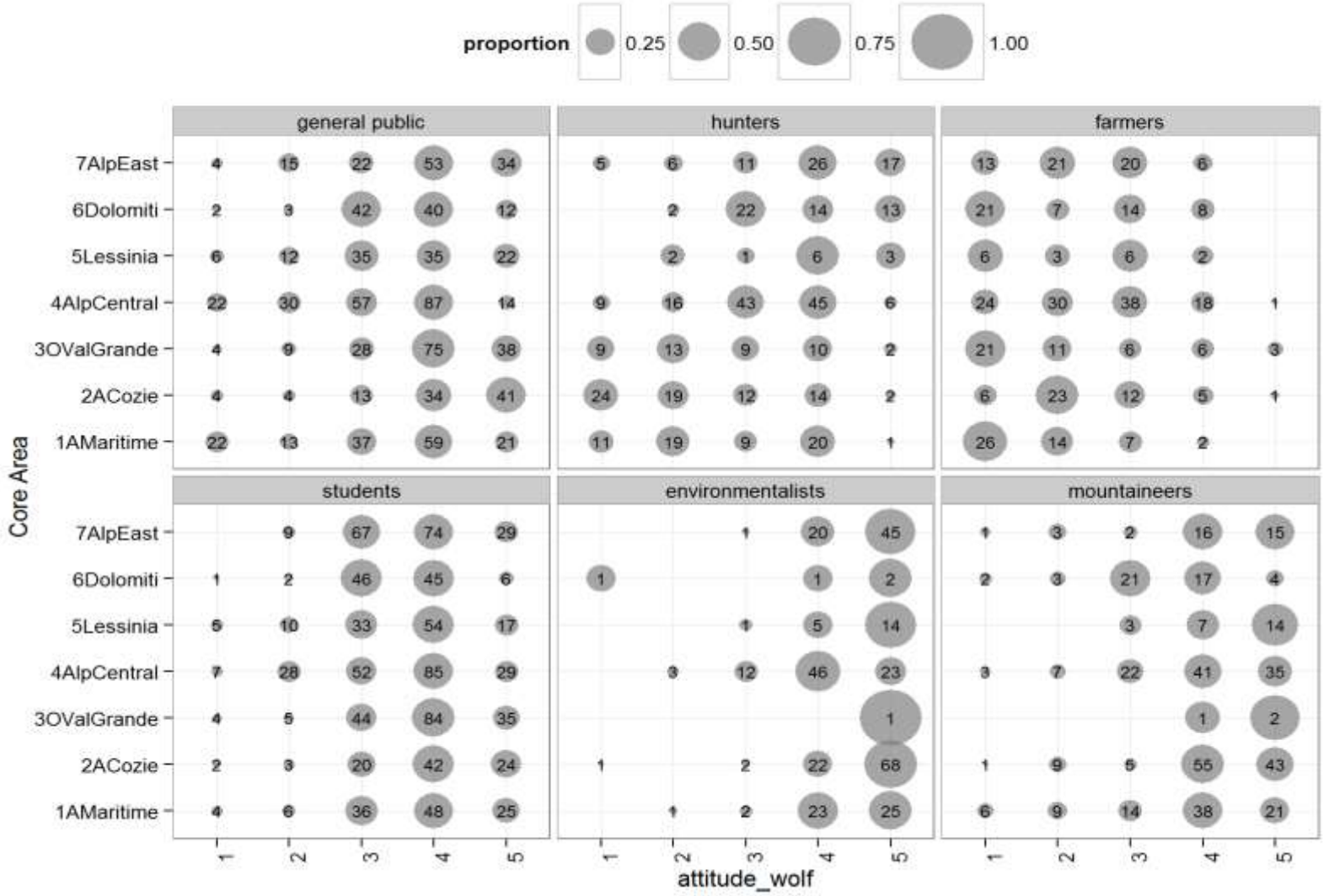

Figure 37: It is important to maintain wolves in It/Slo, so that future generations can enjoy them. (Surface of the grey bubbles represents the share of answers within the group – e.g. general public of Eastern Alps. The numbers represent actual number of responses)

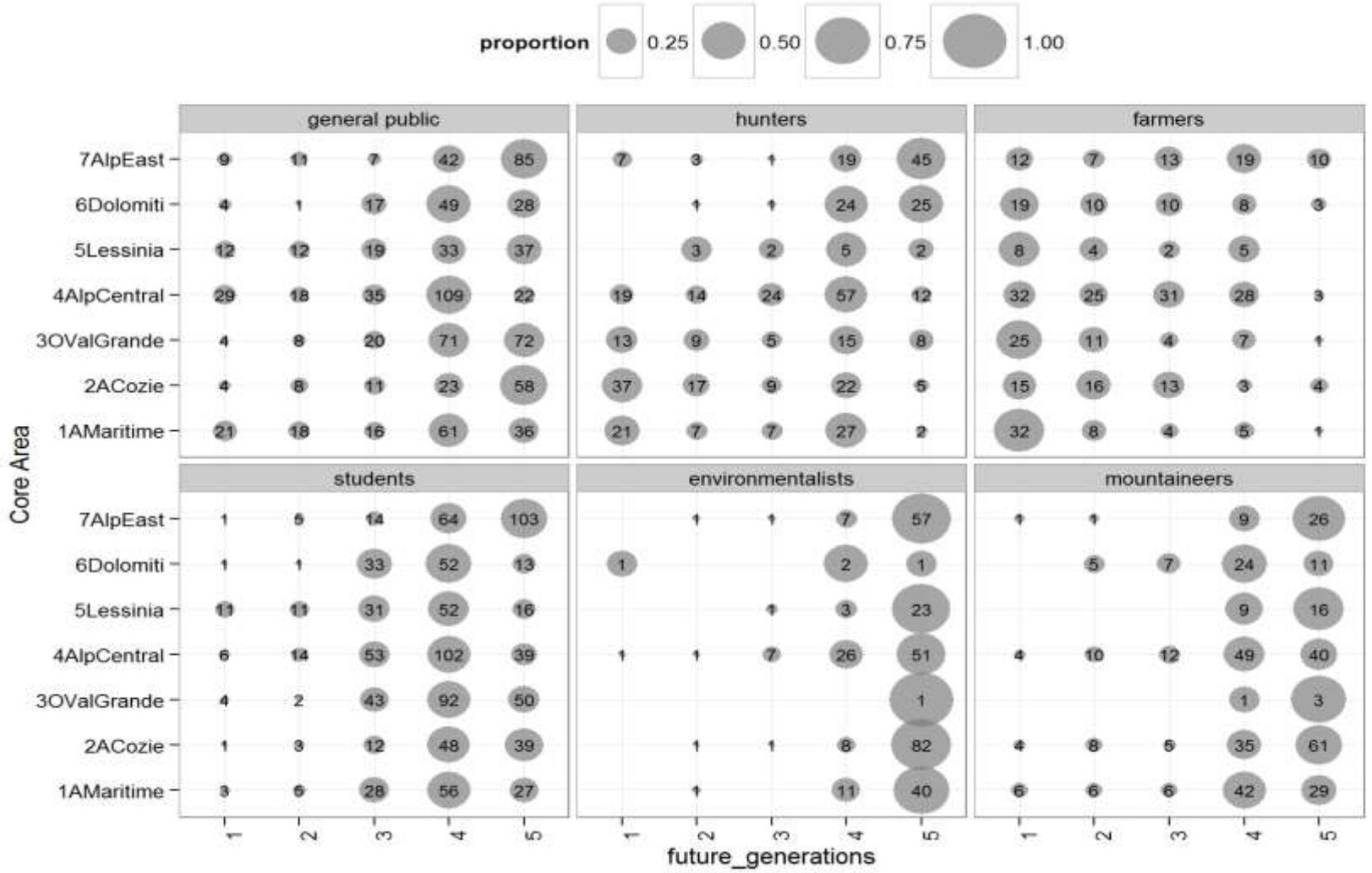

Figure 38: It is unnecessary to have wolves in It/Slo because abundant populations already exist in other European countries. (Surface of the grey bubbles represents the share of answers within the group – e.g. general public of Eastern Alps. The numbers represent actual number of responses)

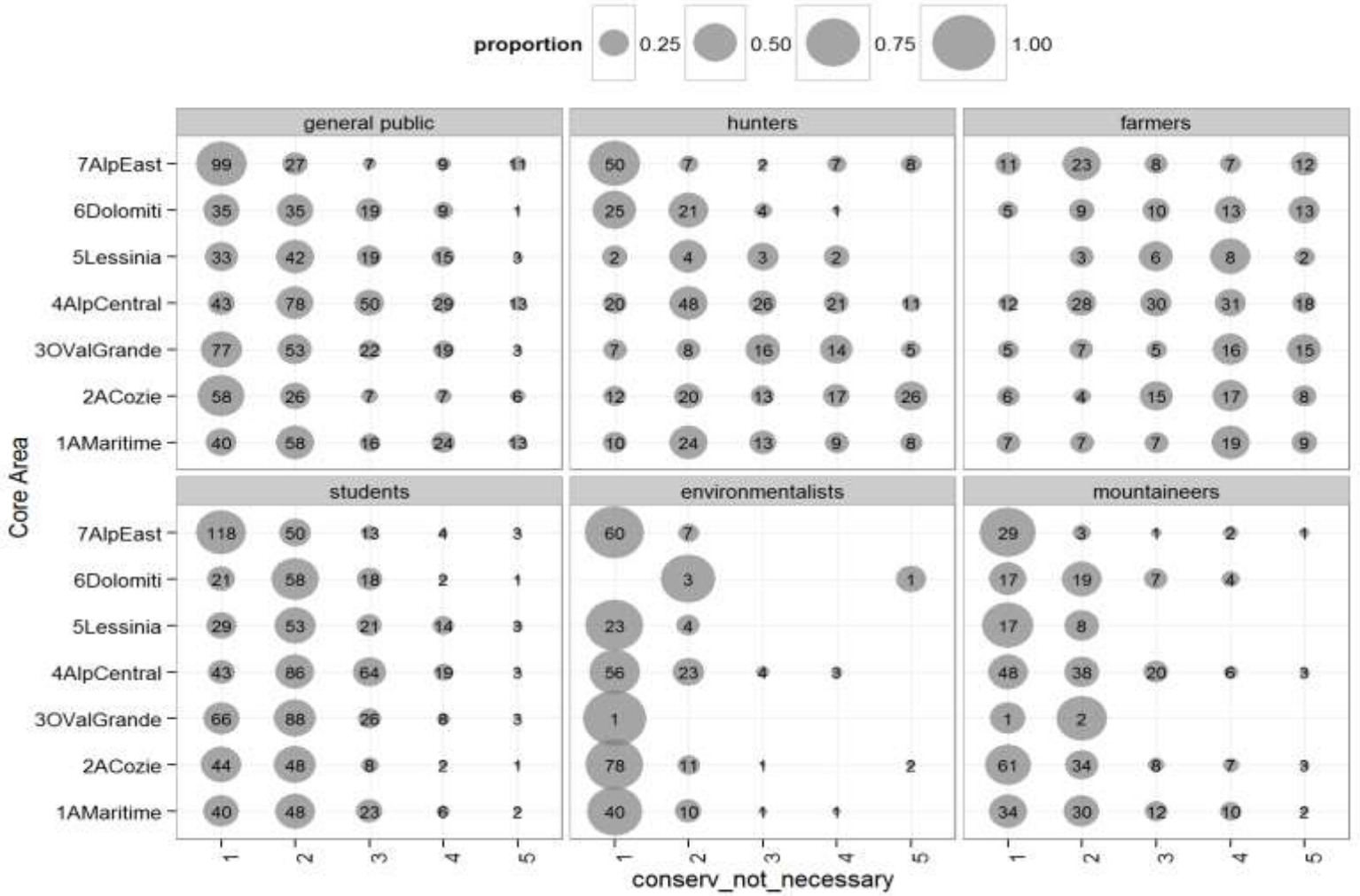

Figure 39: Wolves greatly reduce ungulate populations and make hunting impossible. (Surface of the grey bubbles represents the share of answers within the group – e.g. general public of Eastern Alps. The numbers represent actual number of responses)

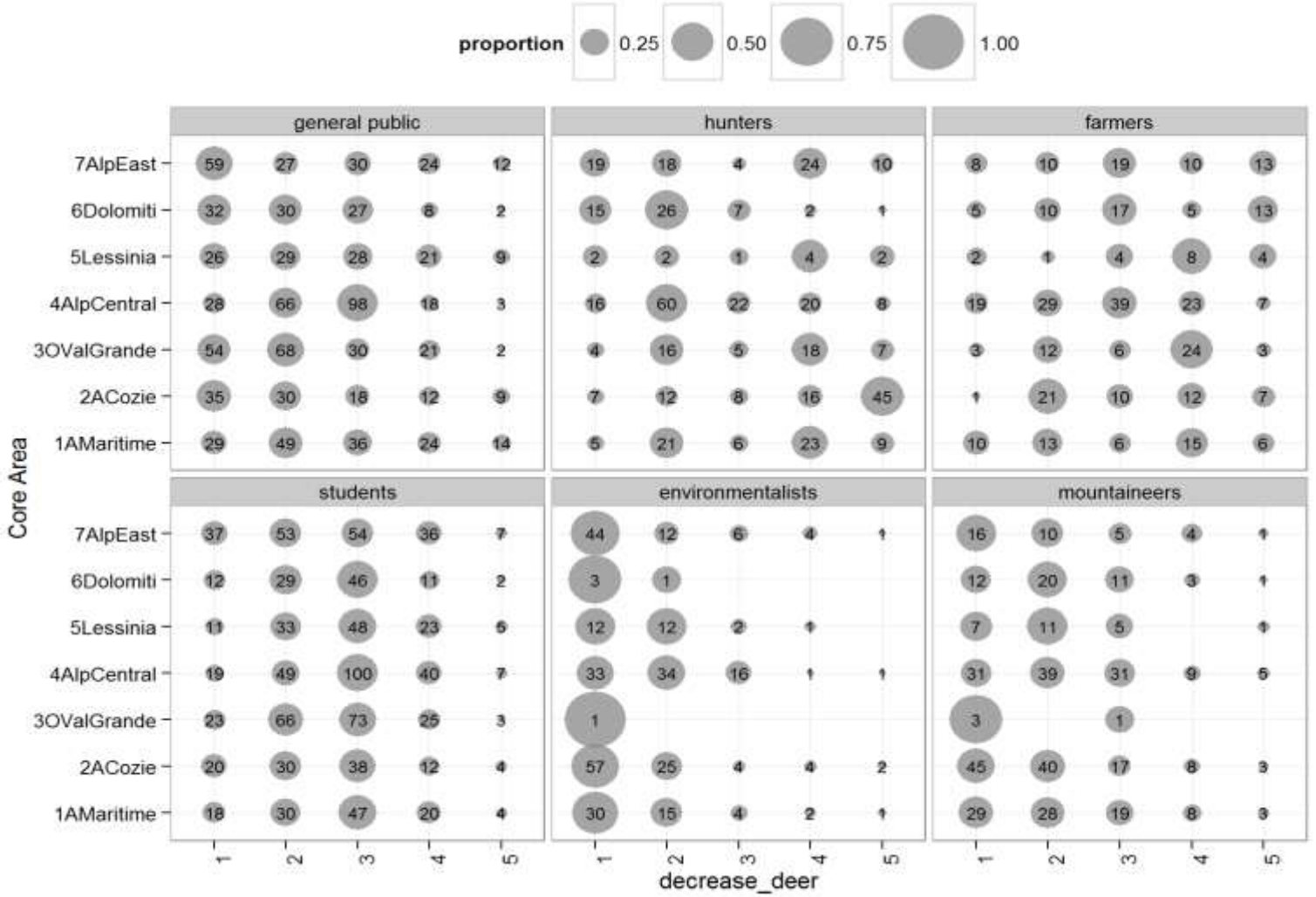

Figure 40: Wolves mainly prey on old and sick animals and thus keep wild ungulate populations healthy. (Surface of the grey bubbles represents the share of answers within the group – e.g. general public of Eastern Alps. The numbers represent actual number of responses)

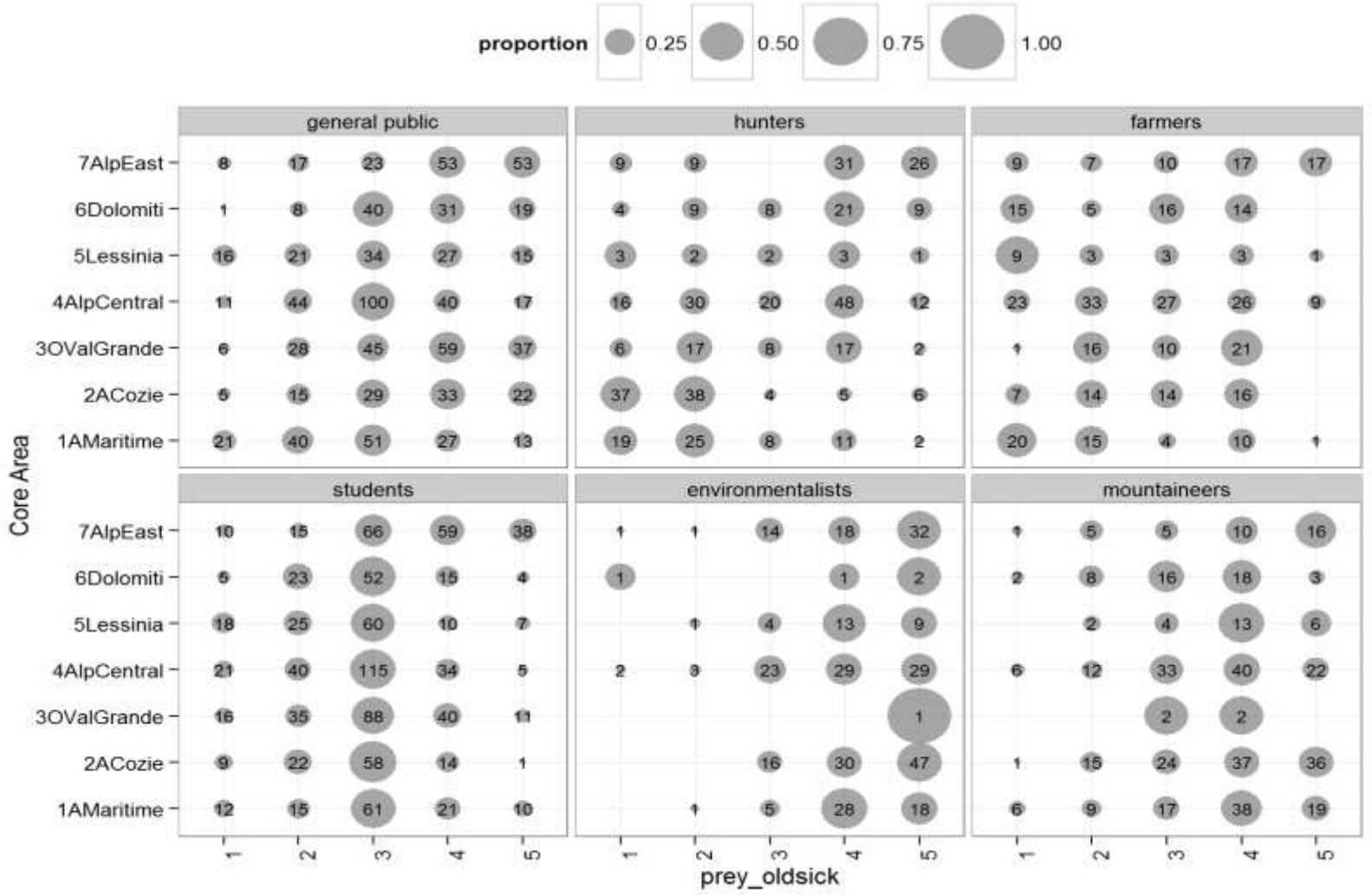

Figure 41: I would tolerate wolves living in nearby forests of our municipality. (Surface of the grey bubbles represents the share of answers within the group – e.g. general public of Eastern Alps. The numbers represent actual number of responses)

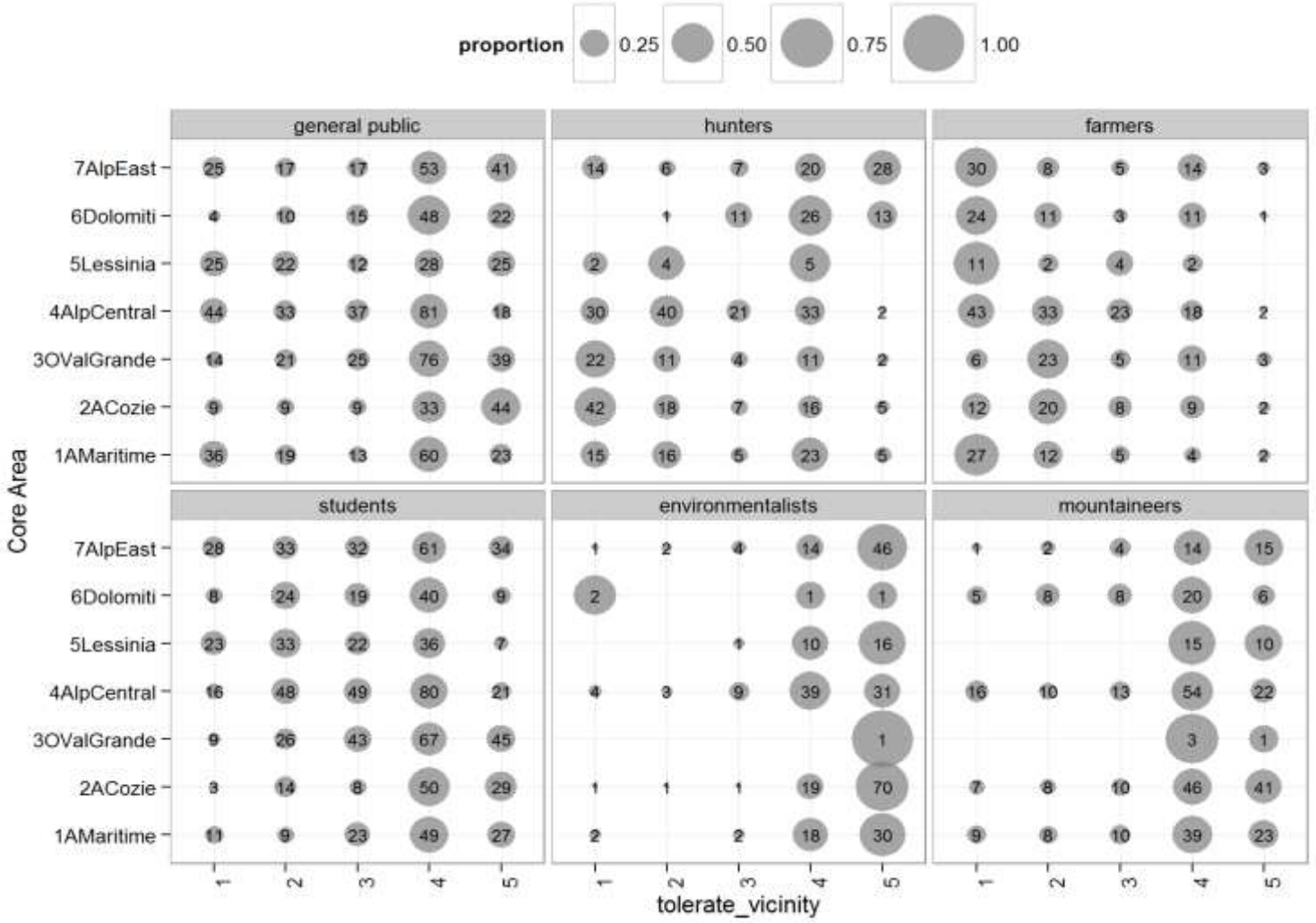

Figure 42: Wolves do not attack people. (Surface of the grey bubbles represents the share of answers within the group – e.g. general public of Eastern Alps. The numbers represent actual number of responses)

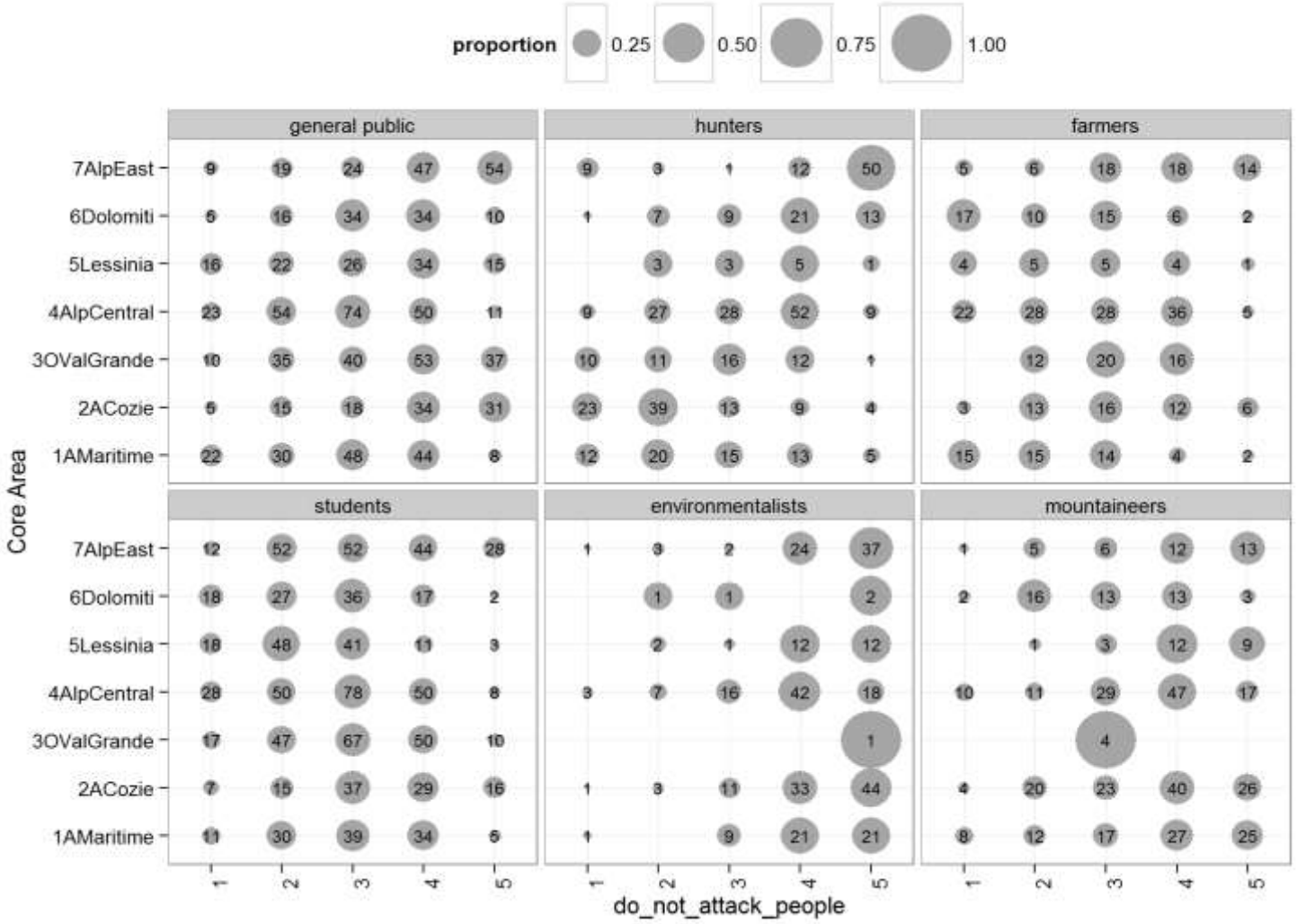

Figure 43: I would not be afraid to hike in the woods where wolves are present. (Surface of the grey bubbles represents the share of answers within the group – e.g. general public of Eastern Alps. The numbers represent actual number of responses)

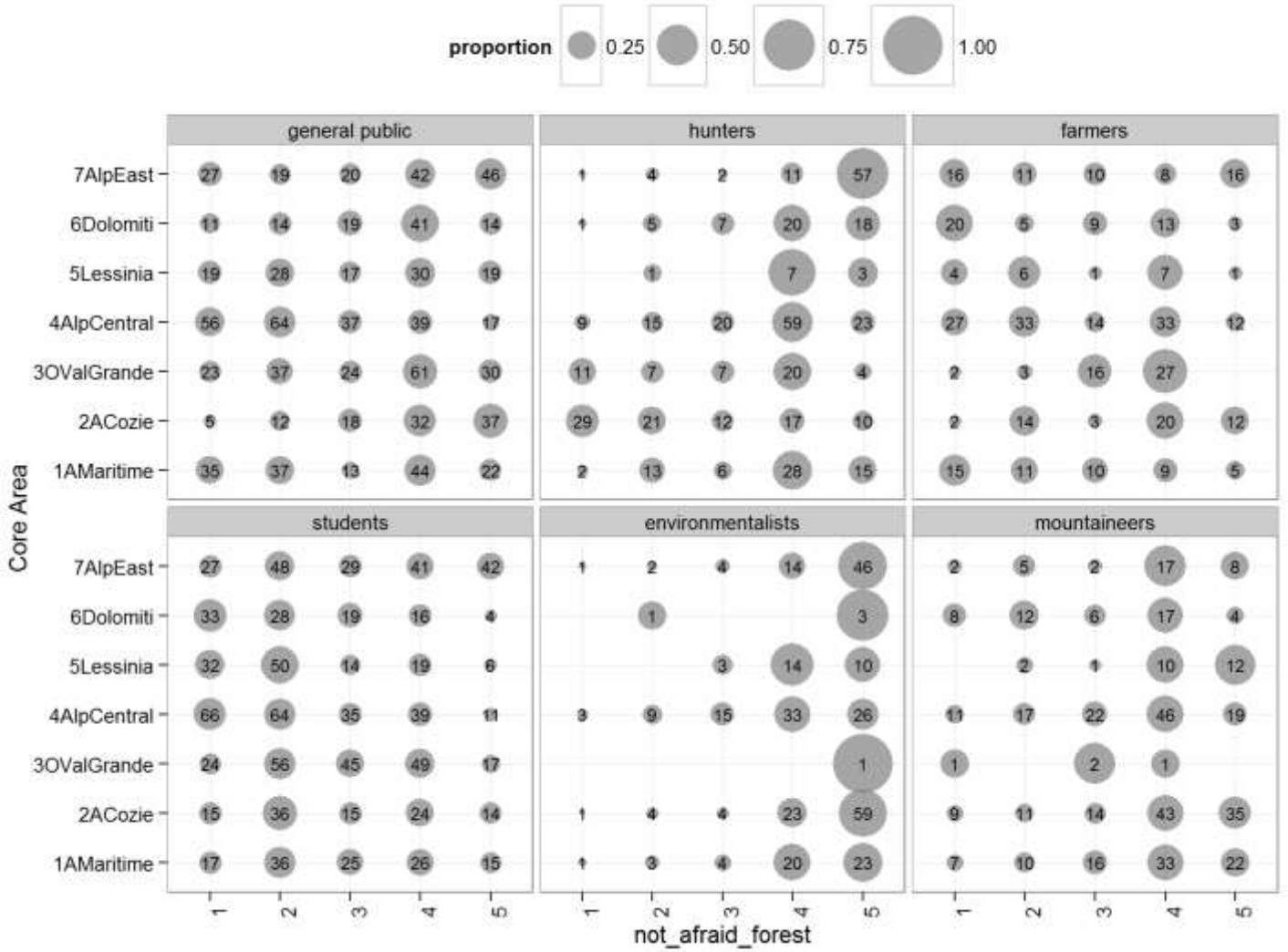

Figure 44: Wolves cause abundant damages to livestock. (Surface of the grey bubbles represents the share of answers within the group – e.g. general public of Eastern Alps. The numbers represent actual number of responses)

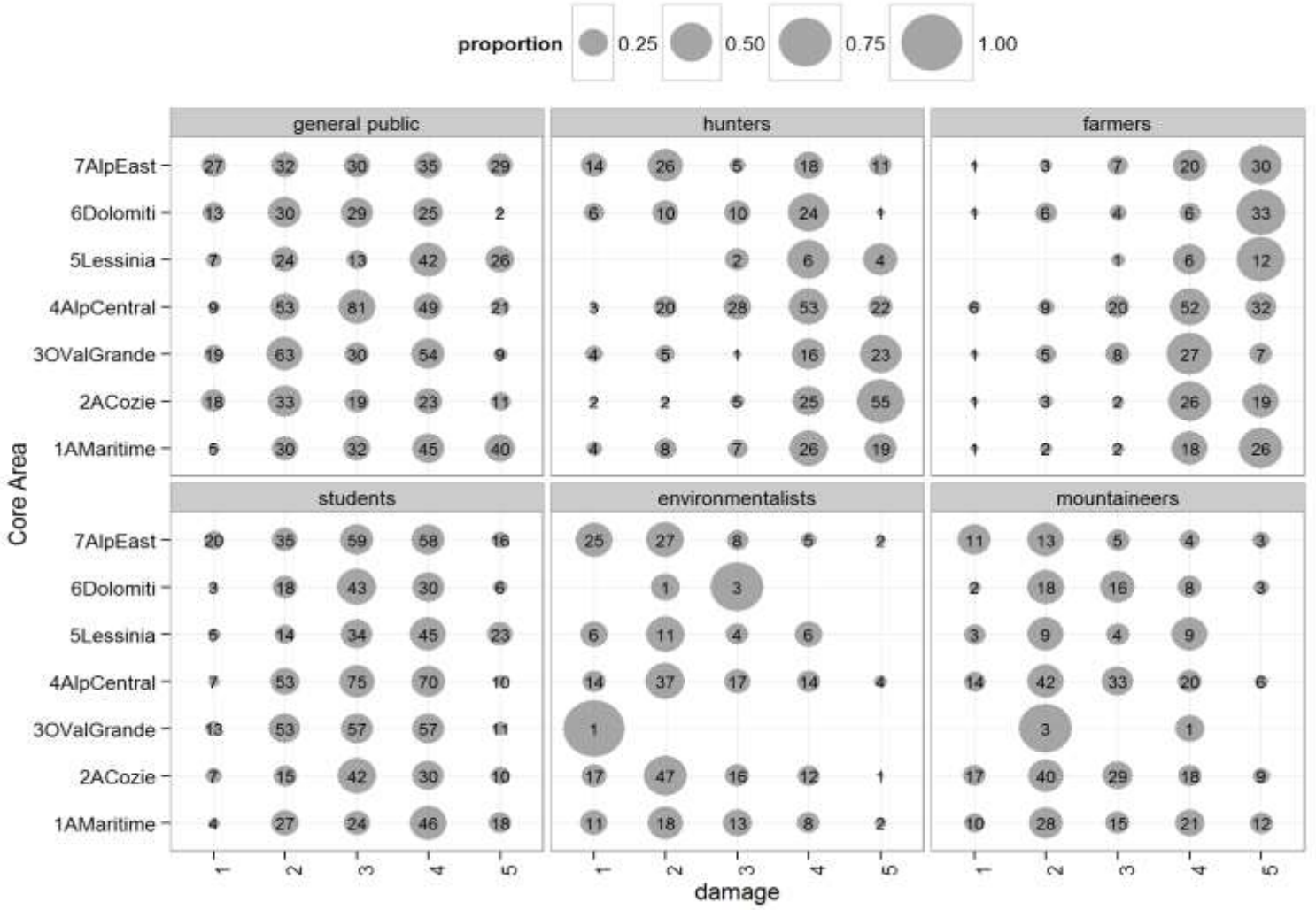

Figure 45: Livestock owners that lose livestock due to wolf should be compensated. (Surface of the grey bubbles represents the share of answers within the group – e.g. general public of Eastern Alps. The numbers represent actual number of responses)

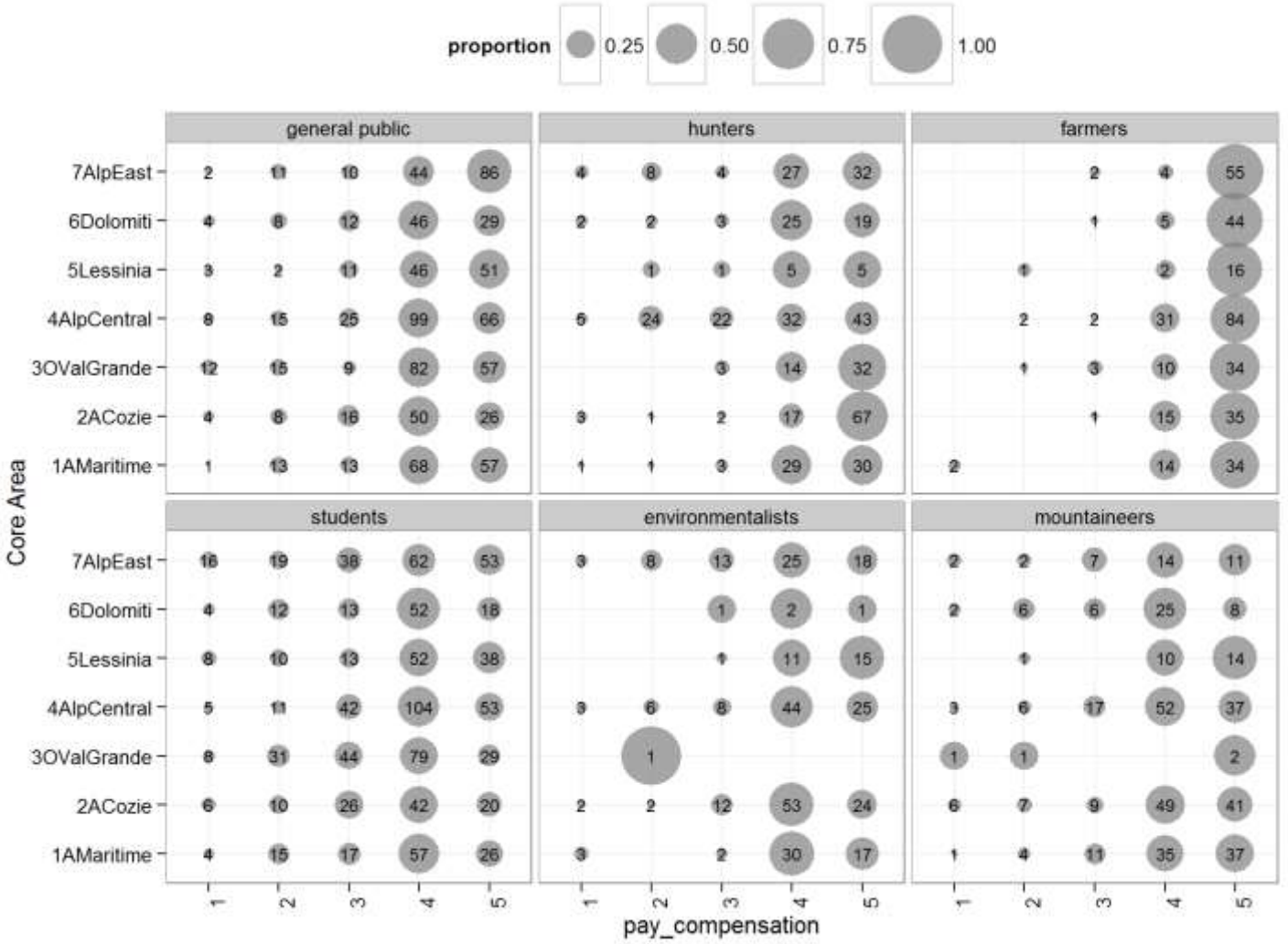

Figure 46: If a wolf killed livestock, I would agree with killing this problem animal. (Surface of the grey bubbles represents the share of answers within the group – e.g. general public of Eastern Alps. The numbers represent actual number of responses)

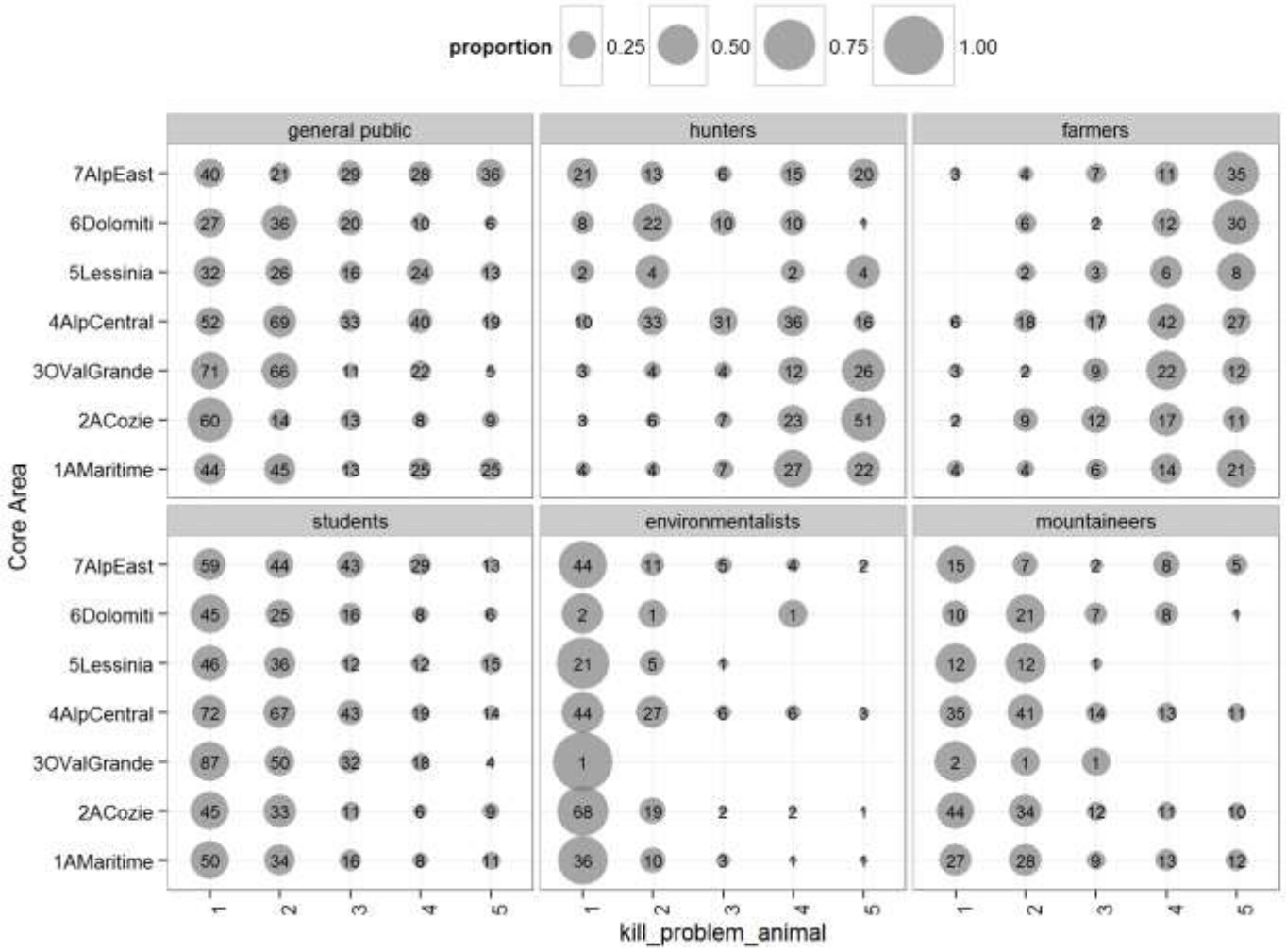

Figure 47: I would agree with increasing wolf numbers in my region. (Surface of the grey bubbles represents the share of answers within the group – e.g. general public of Eastern Alps. The numbers represent actual number of responses)

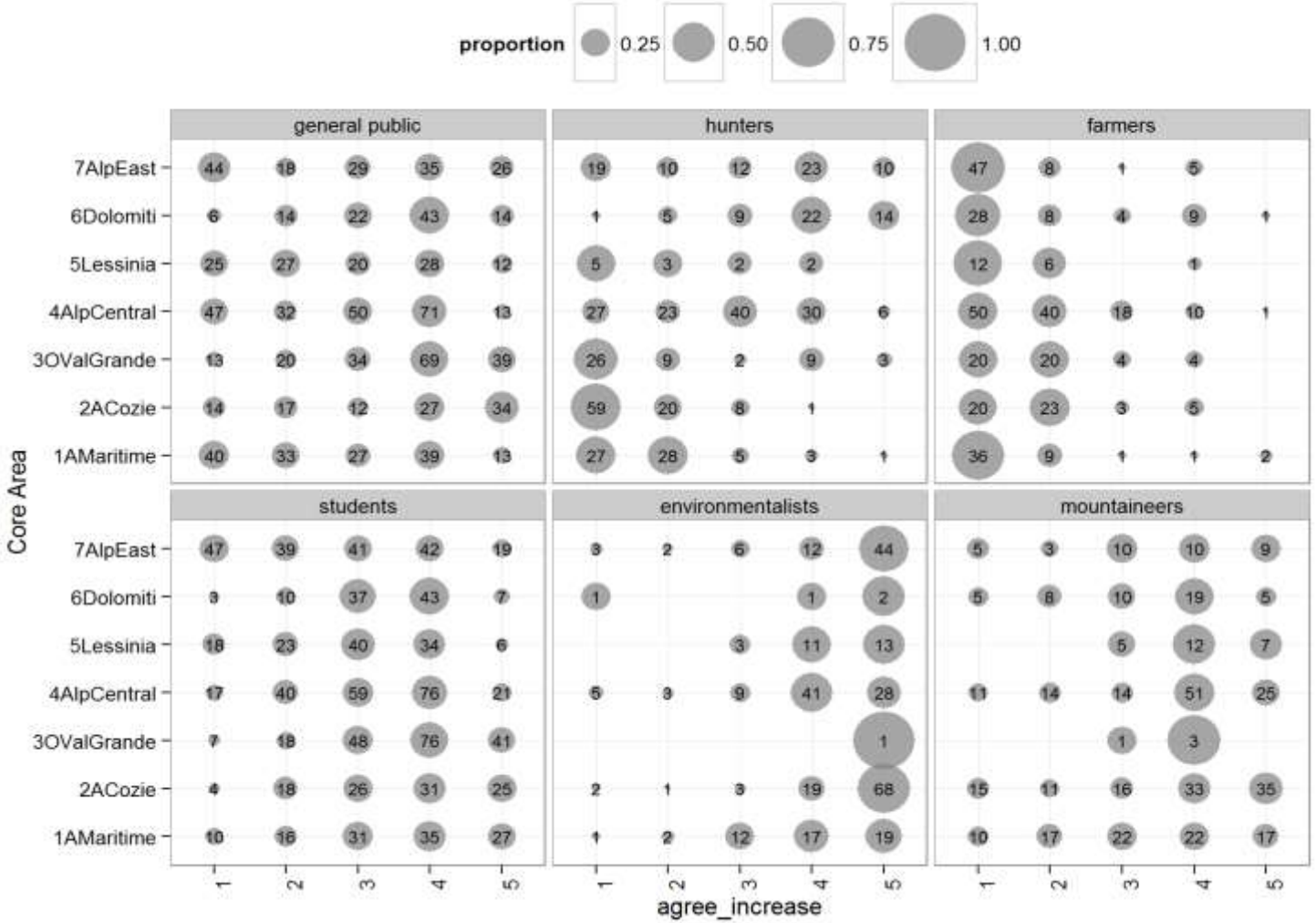

Figure 48: We already have enough wolves in my region. (Surface of the grey bubbles represents the share of answers within the group – e.g. general public of Eastern Alps. The numbers represent actual number of responses)

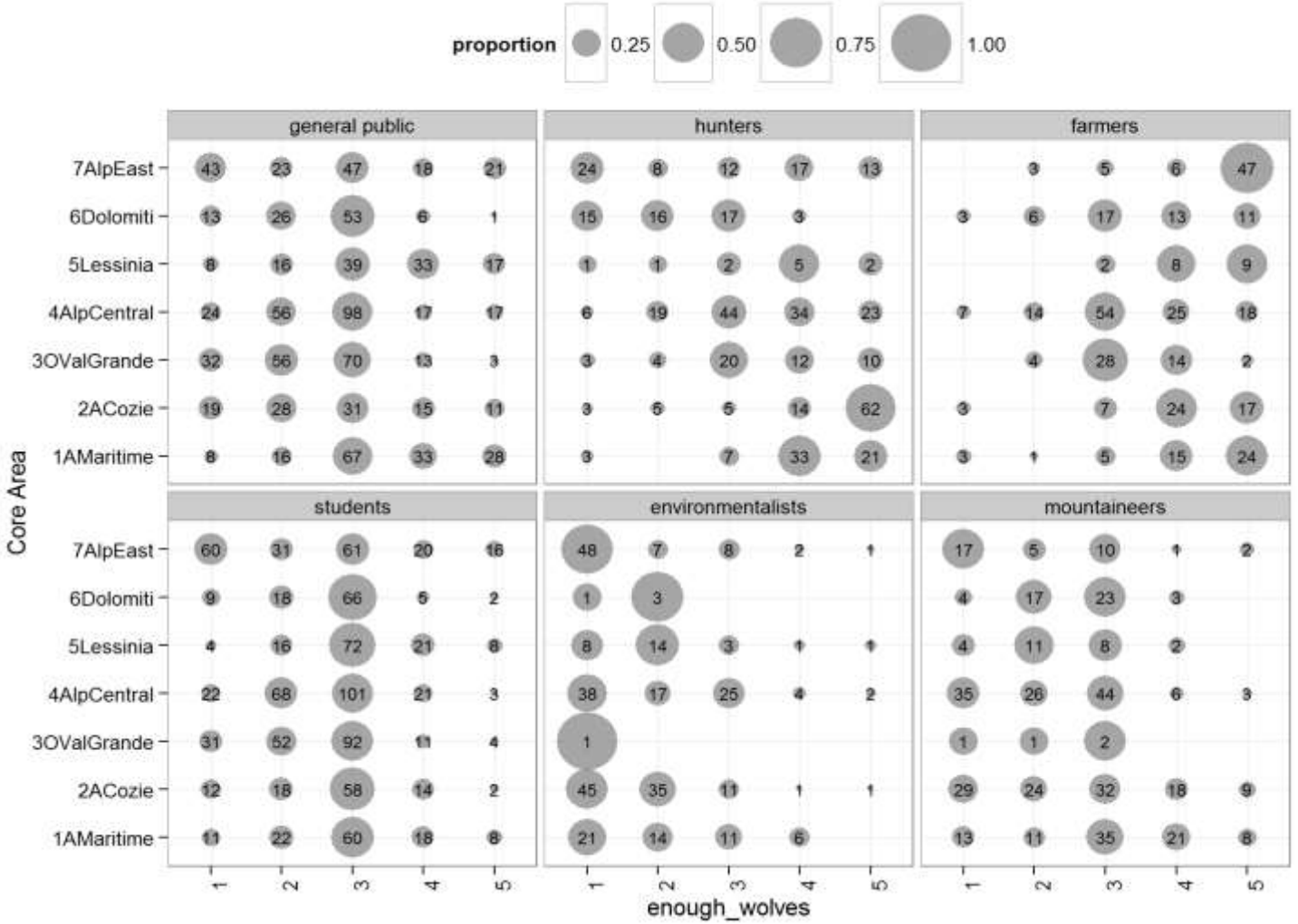

Figure 49: There should be authorized wolf hunts in It/Slo. (Surface of the grey bubbles represents the share of answers within the group – e.g. general public of Eastern Alps. The numbers represent actual number of responses)

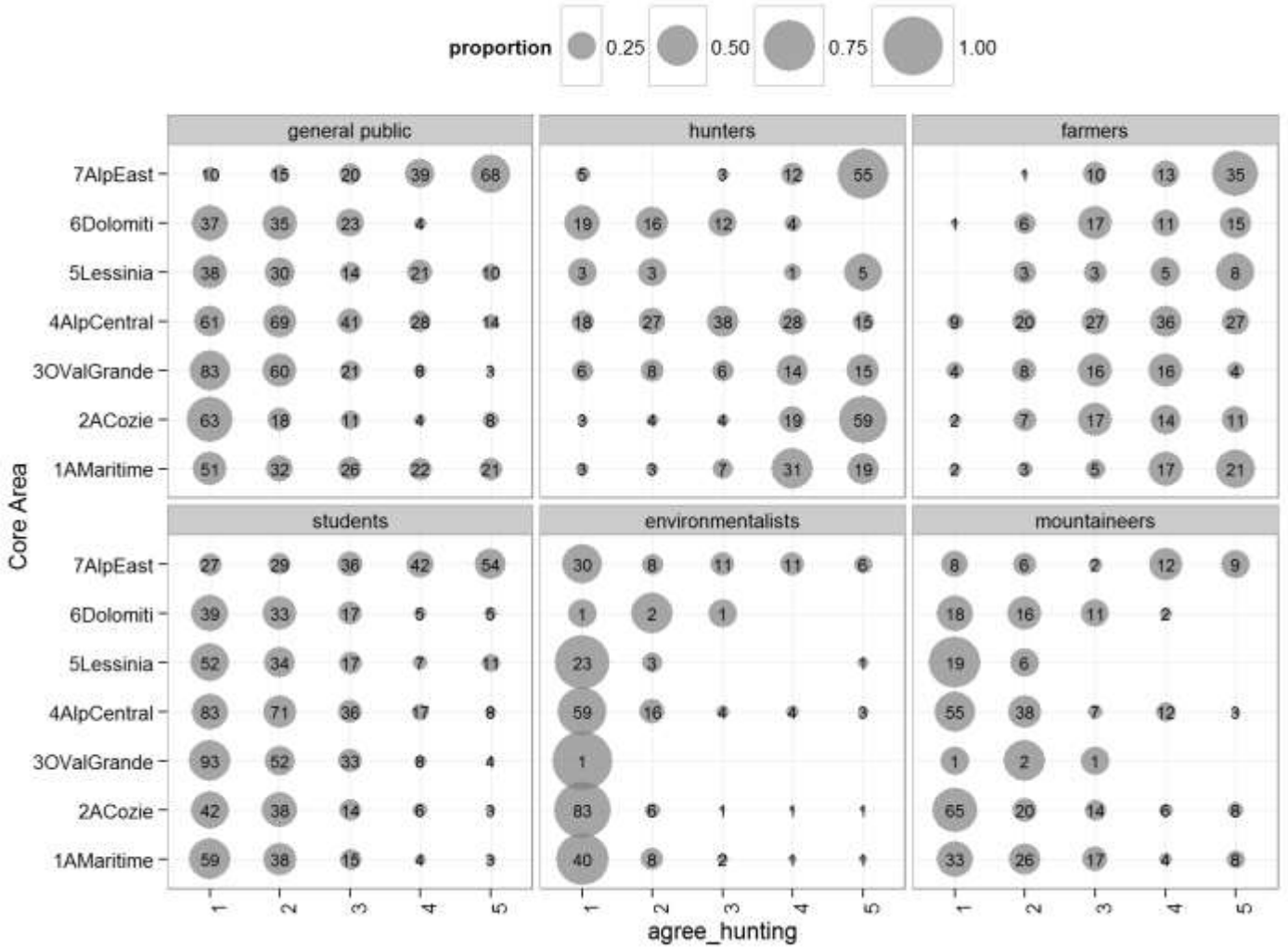

Figure 50: Wolves attract tourists. (Surface of the grey bubbles represents the share of answers within the group – e.g. general public of Eastern Alps. The numbers represent actual number of responses)

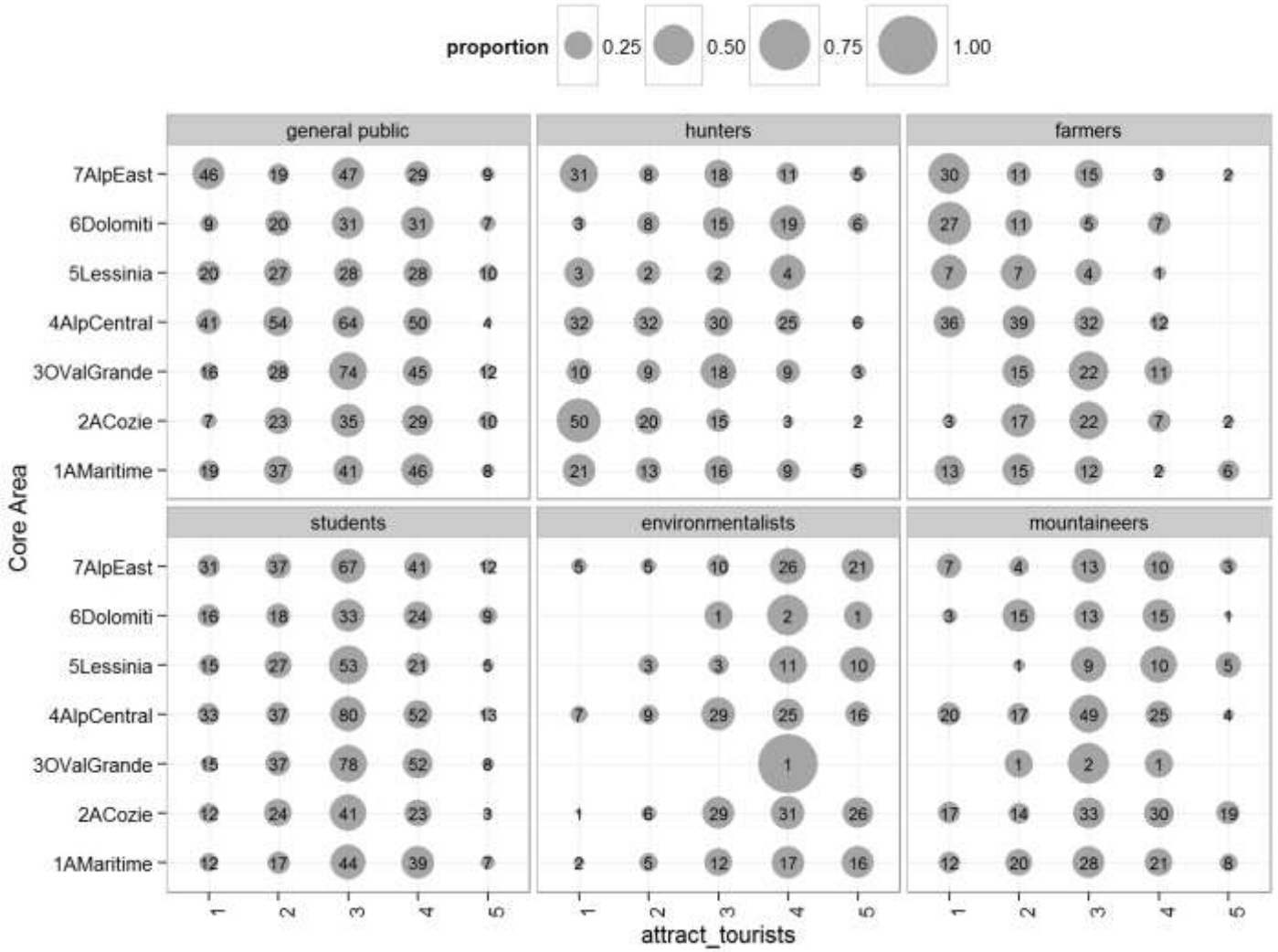

Figure 51: Knowledge score (0-5). (Surface of the grey bubbles represents the share of answers within the group – e.g. general public of Eastern Alps. The numbers represent actual number of responses)

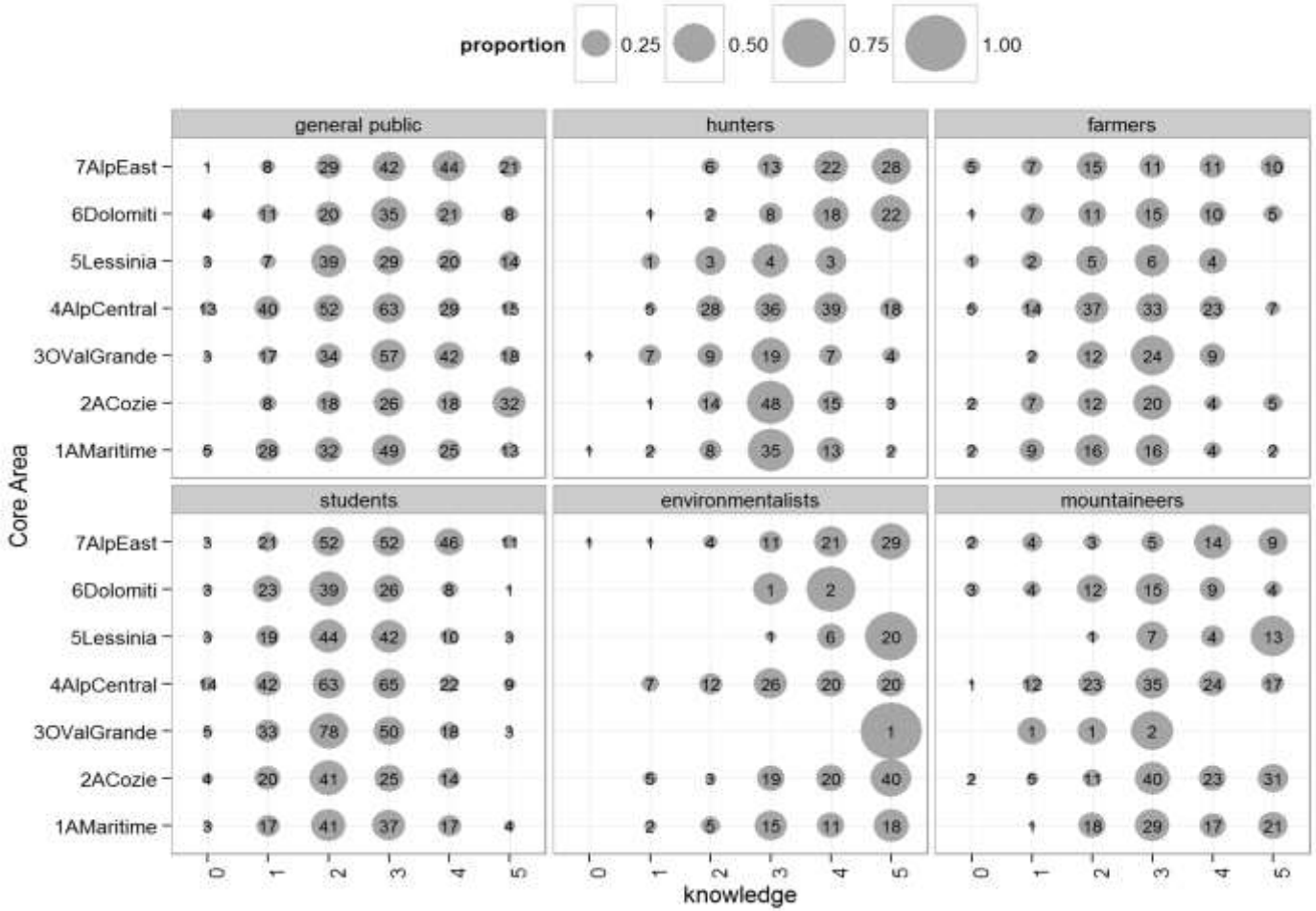

Figure 52: How much you can trust following sources of information about wolves – MEDIA (Surface of the grey bubbles represents the share of answers within the group – e.g. general public of Eastern Alps. The numbers represent actual number of responses)

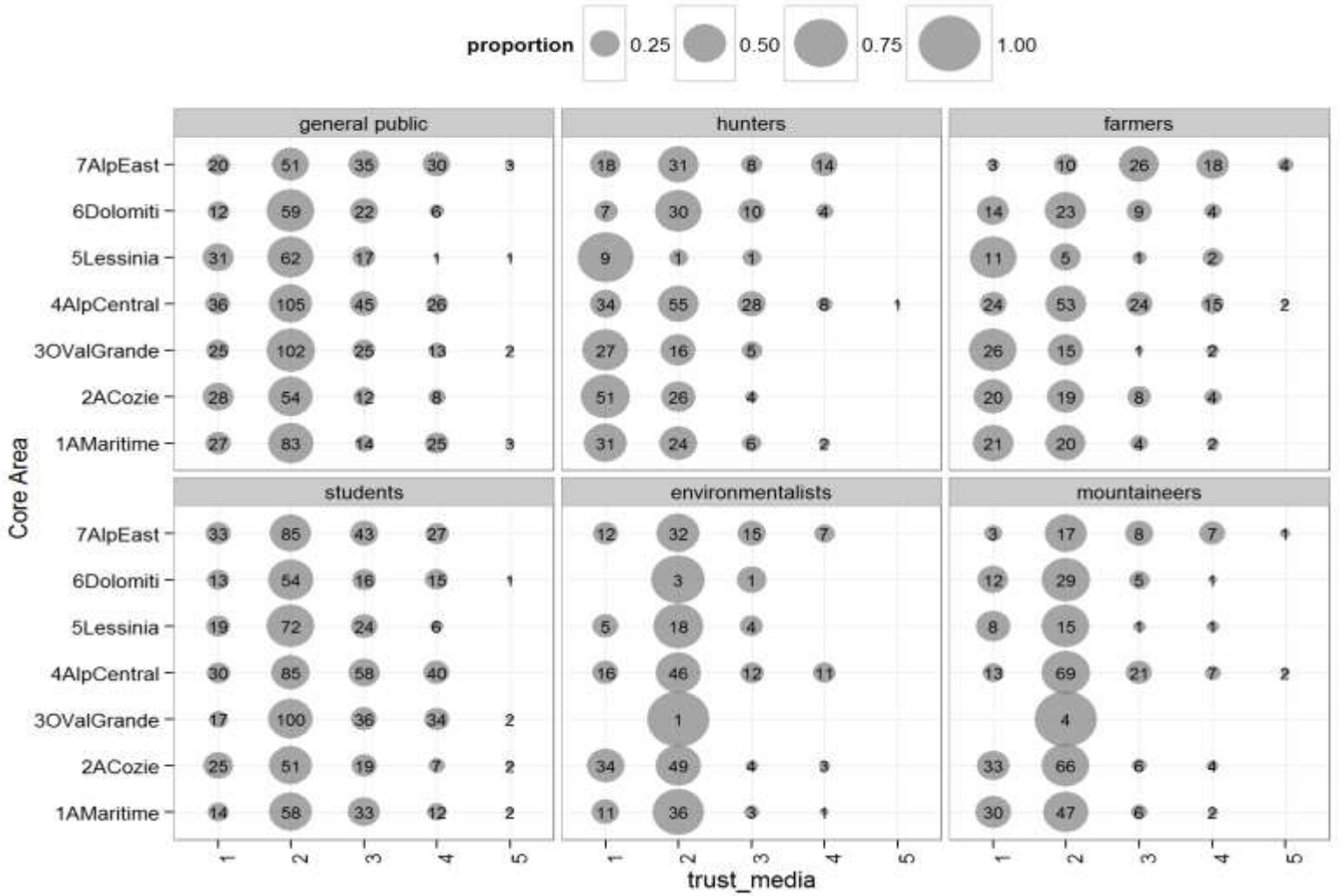

Figure 53: How much you can trust following sources of information about wolves – BIOLOGISTS (Surface of the grey bubbles represents the share of answers within the group – e.g. general public of Eastern Alps. The numbers represent actual number of responses)

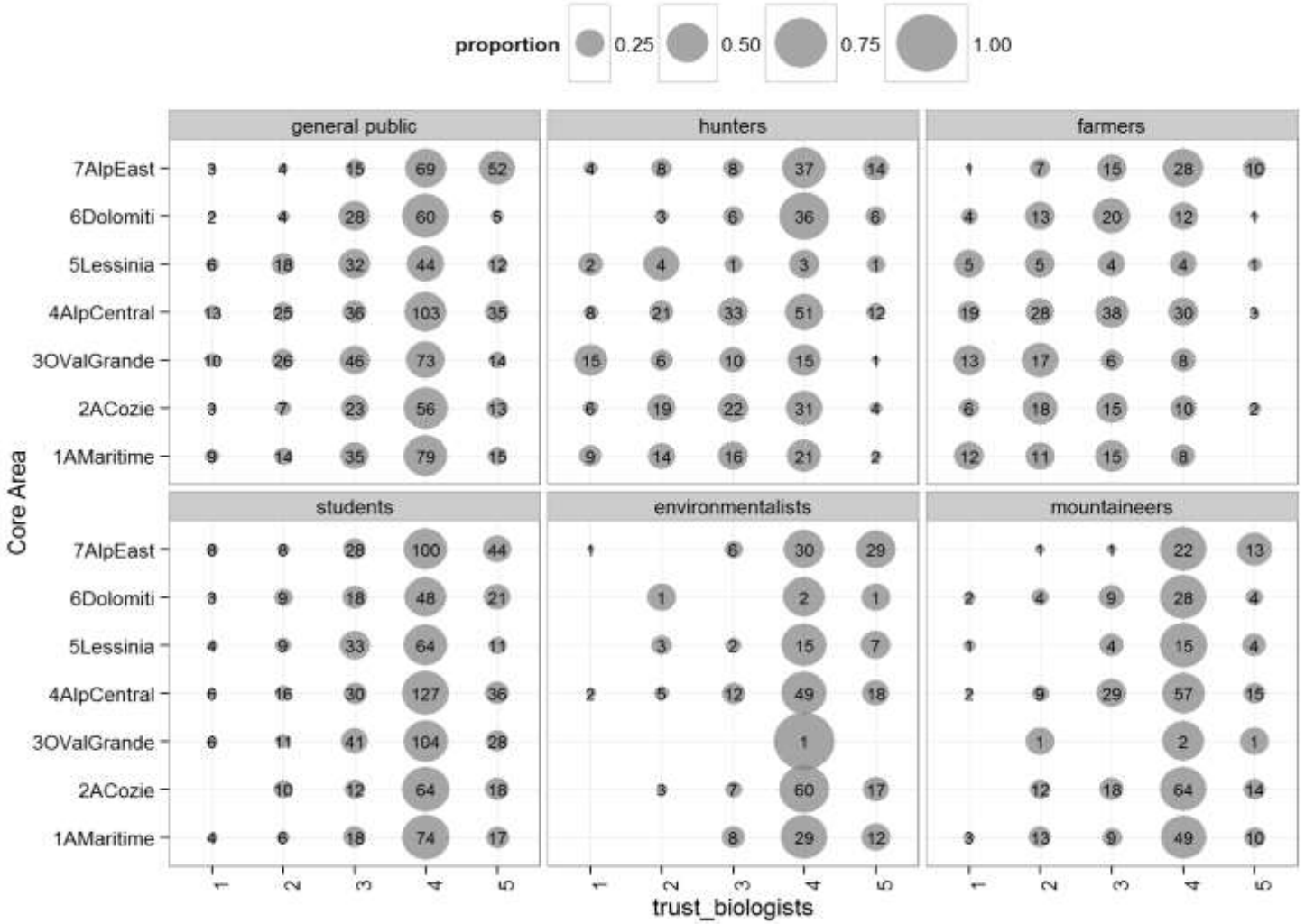

Figure 54: How much you can trust following sources of information about wolves – HUNTERS (Surface of the grey bubbles represents the share of answers within the group – e.g. general public of Eastern Alps. The numbers represent actual number of responses)

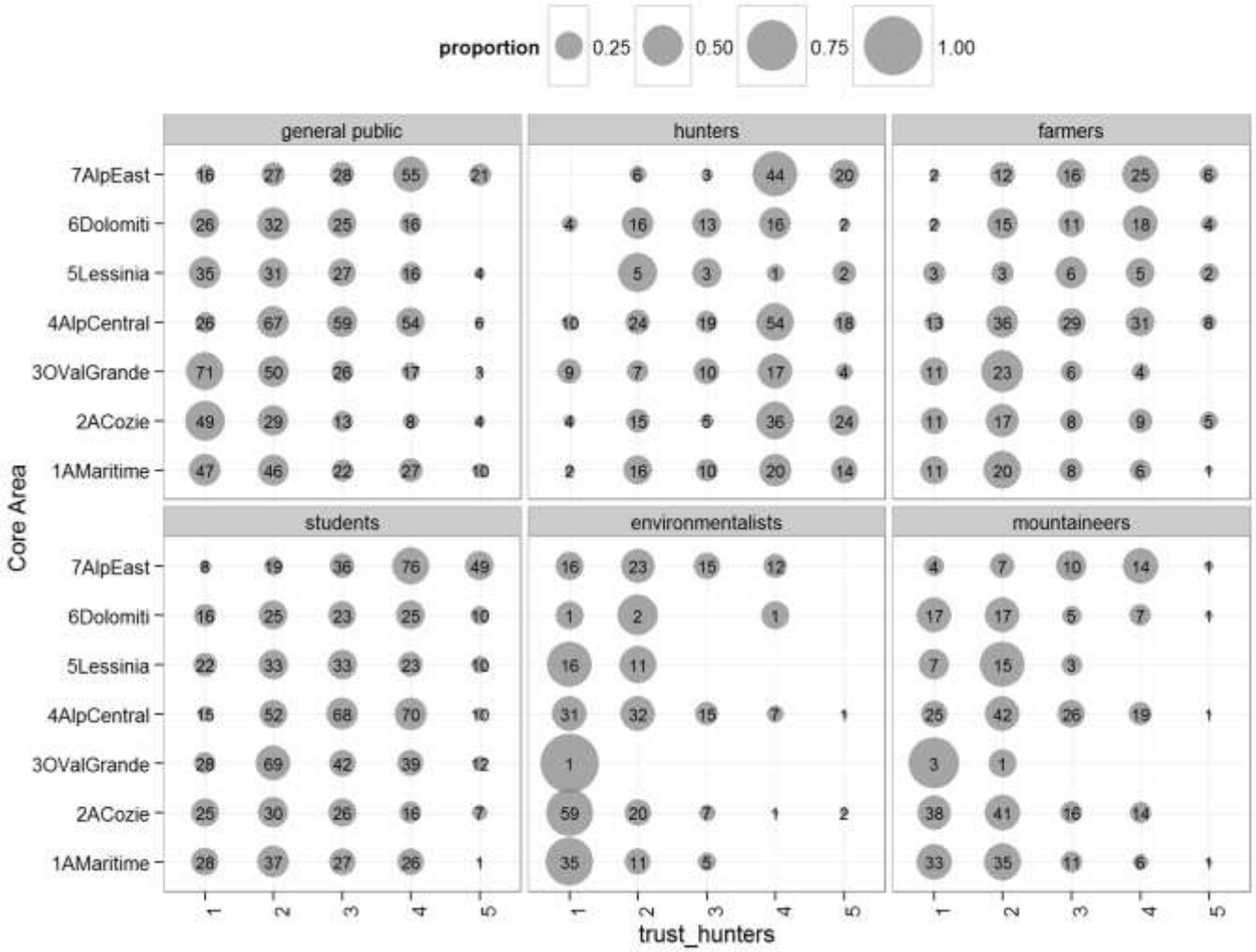

Figure 55: How much you can trust following sources of information about wolves – FORESTERS (Surface of the grey bubbles represents the share of answers within the group – e.g. general public of Eastern Alps. The numbers represent actual number of responses)

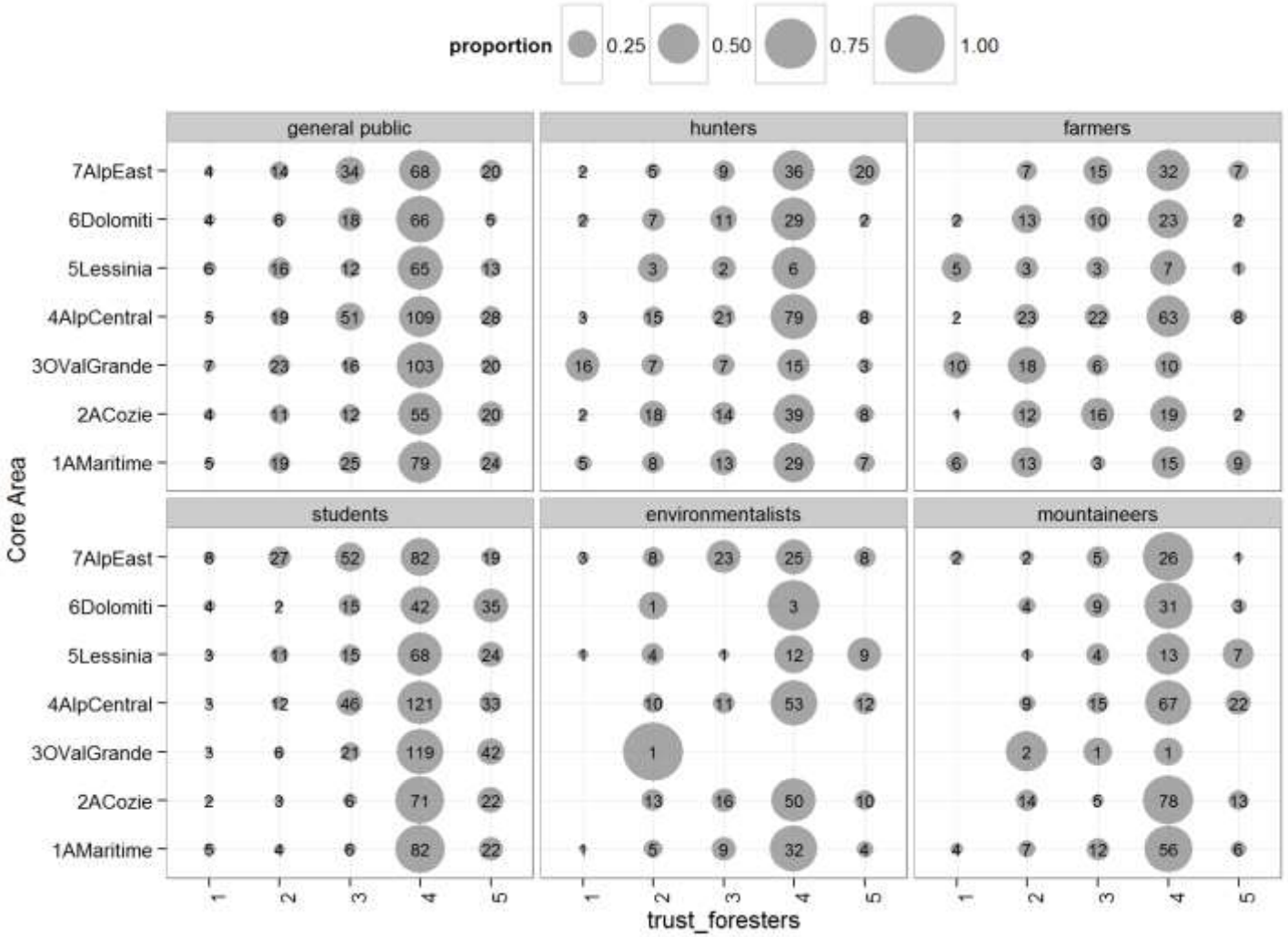

Figure 56: How much you can trust following sources of information about wolves – VETERINARIANS (Surface of the grey bubbles represents the share of answers within the group – e.g. general public of Eastern Alps. The numbers represent actual number of responses)

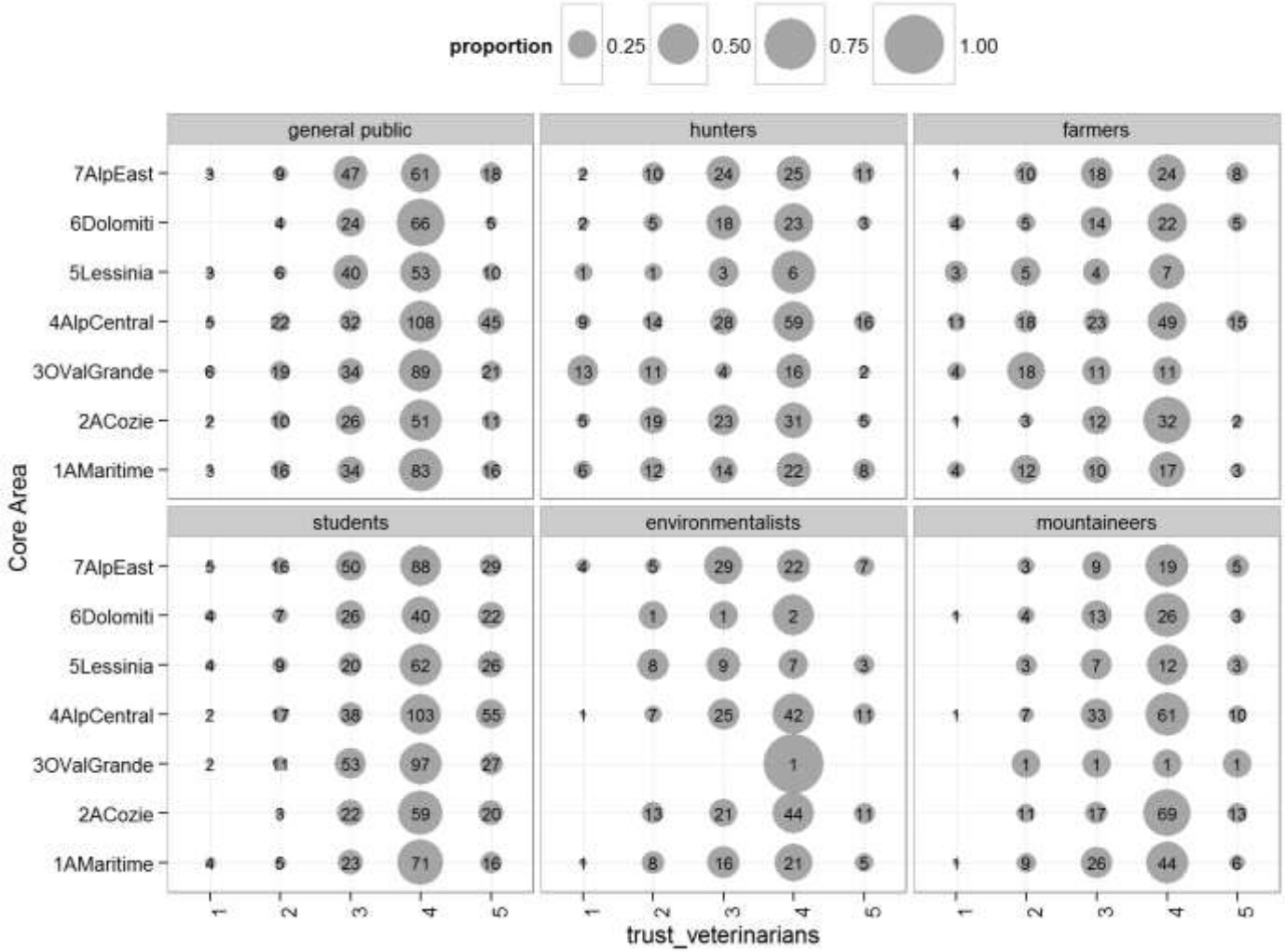

Figure 57: How much you can trust following sources of information about wolves- CONSERVATIONISTS (Surface of the grey bubbles represents the share of answers within the group – e.g. general public of Eastern Alps. The numbers represent actual number of responses)

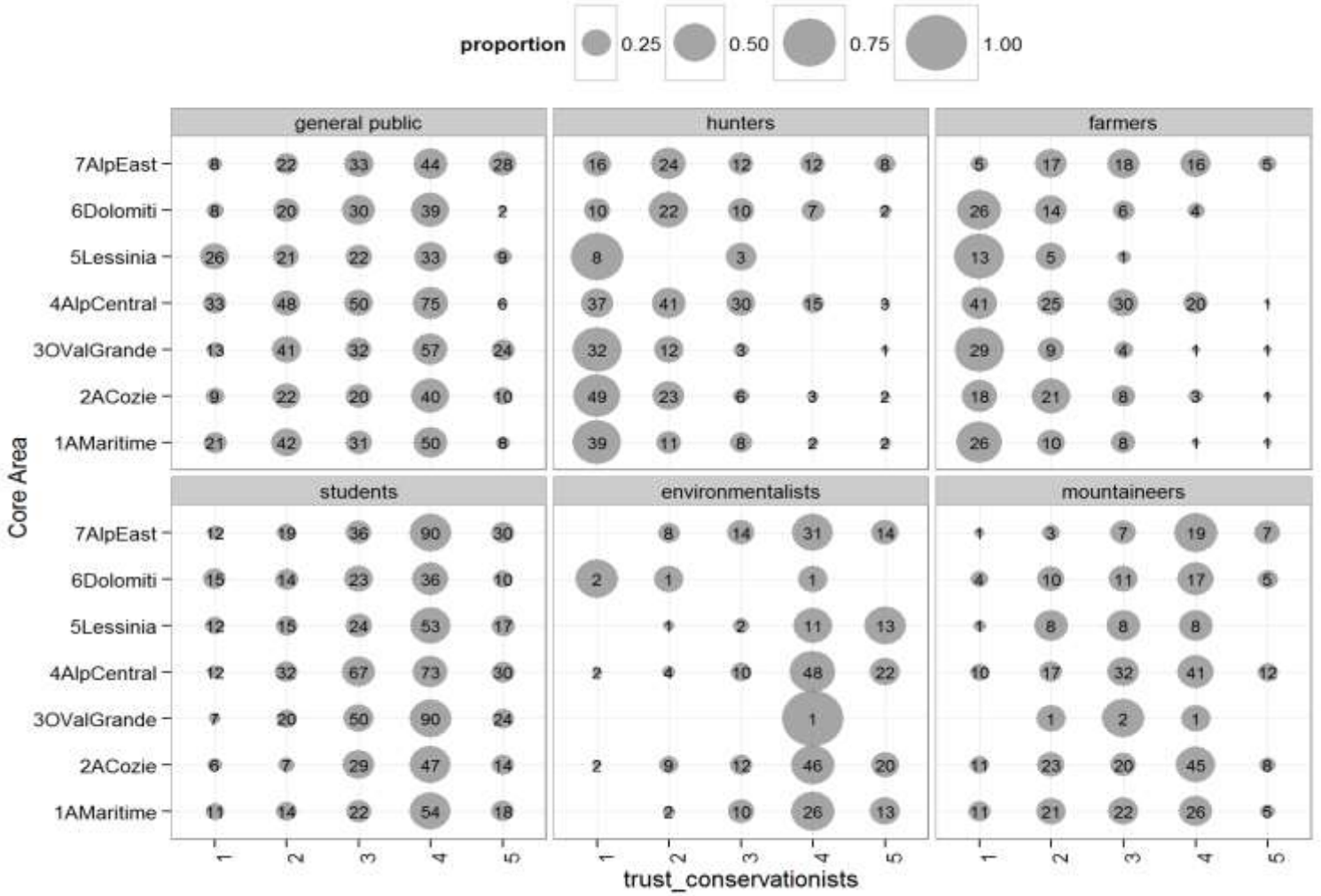

Figure 58: How much you can trust following sources of information about wolves – COMPETENT MINISTRY (Surface of the grey bubbles represents the share of answers within the group – e.g. general public of Eastern Alps. The numbers represent actual number of responses)

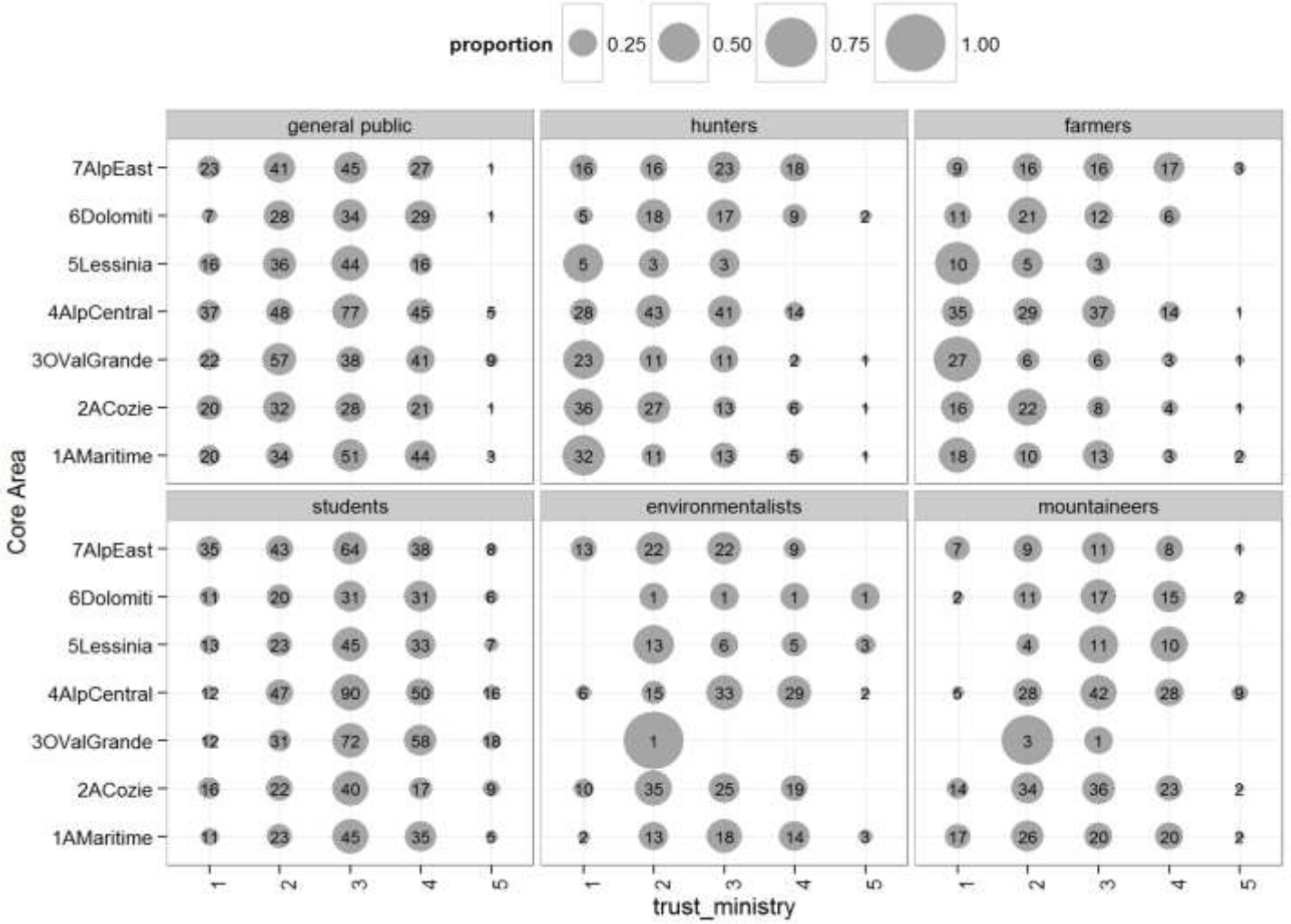

Figure 59: How much you can trust following sources of information about wolves – FARMERS (Surface of the grey bubbles represents the share of answers within the group – e.g. general public of Eastern Alps. The numbers represent actual number of responses)

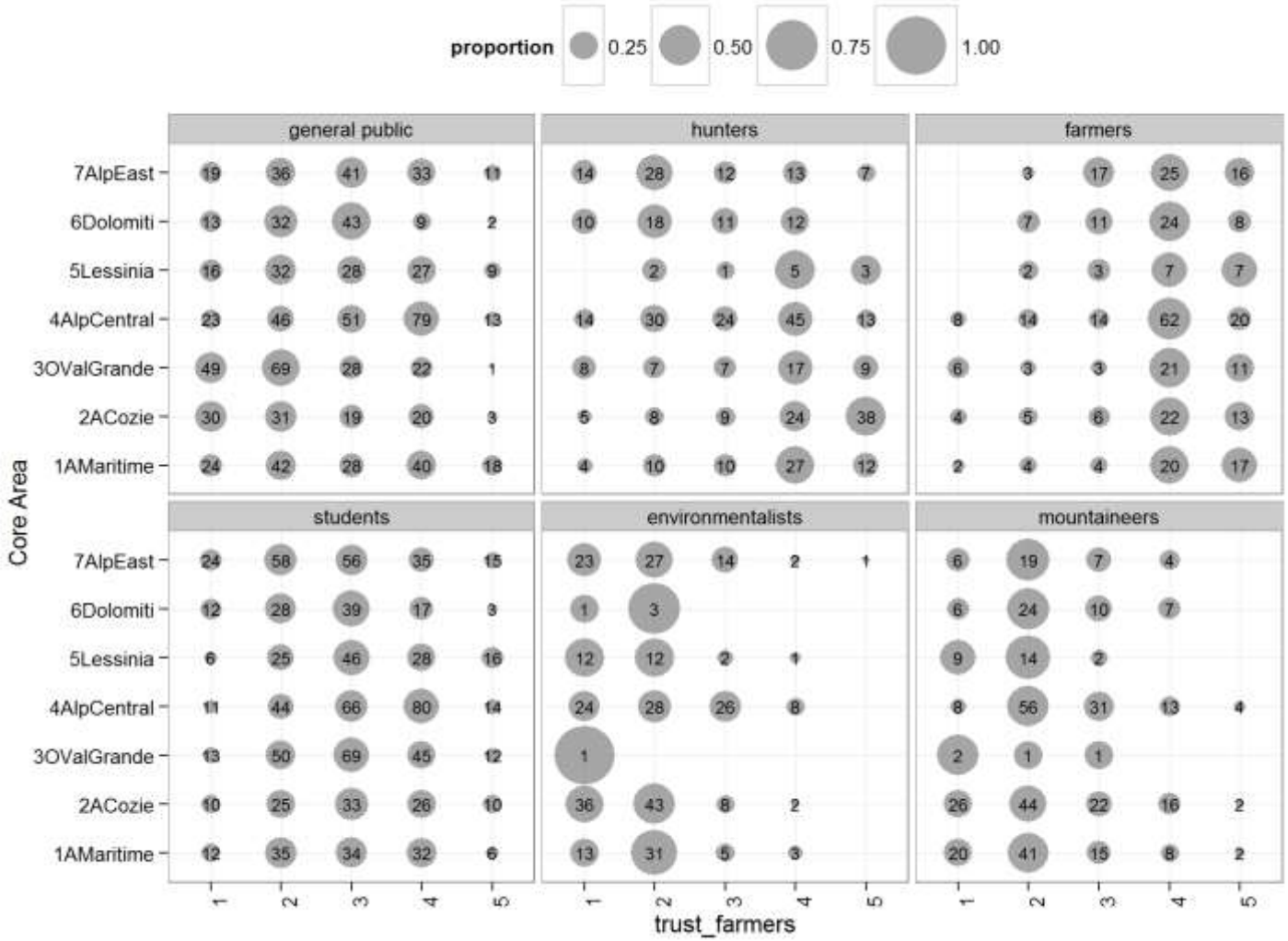

Figure 60: How much you can trust following sources of information about wolves – POLITICIANS (Surface of the grey bubbles represents the share of answers within the group – e.g. general public of Eastern Alps. The numbers represent actual number of responses)

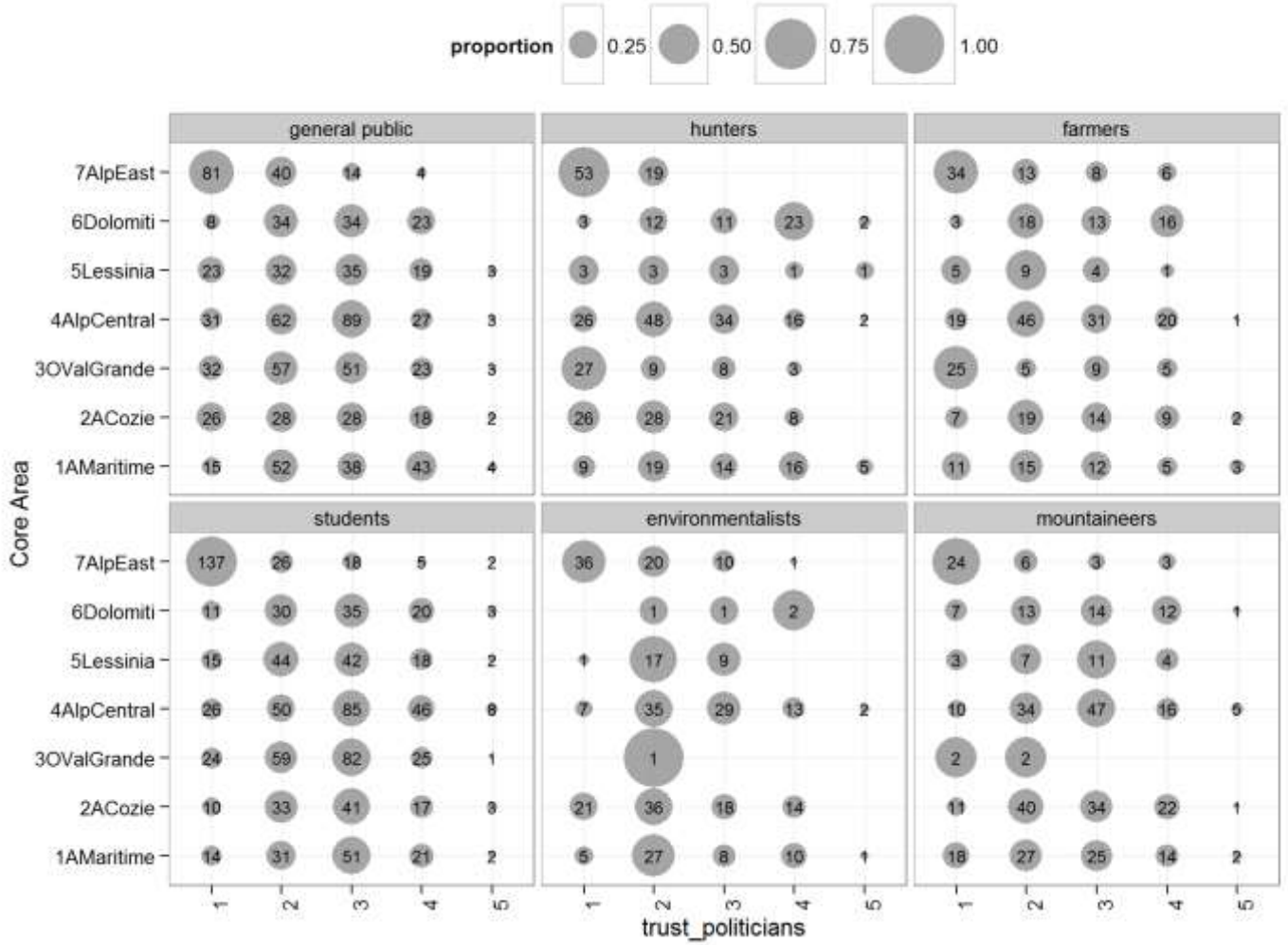

Figure 61: Have you ever seen a wolf in captivity? (Surface of the grey bubbles represents the share of answers within the group – e.g. general public of Eastern Alps. The numbers represent actual number of responses)

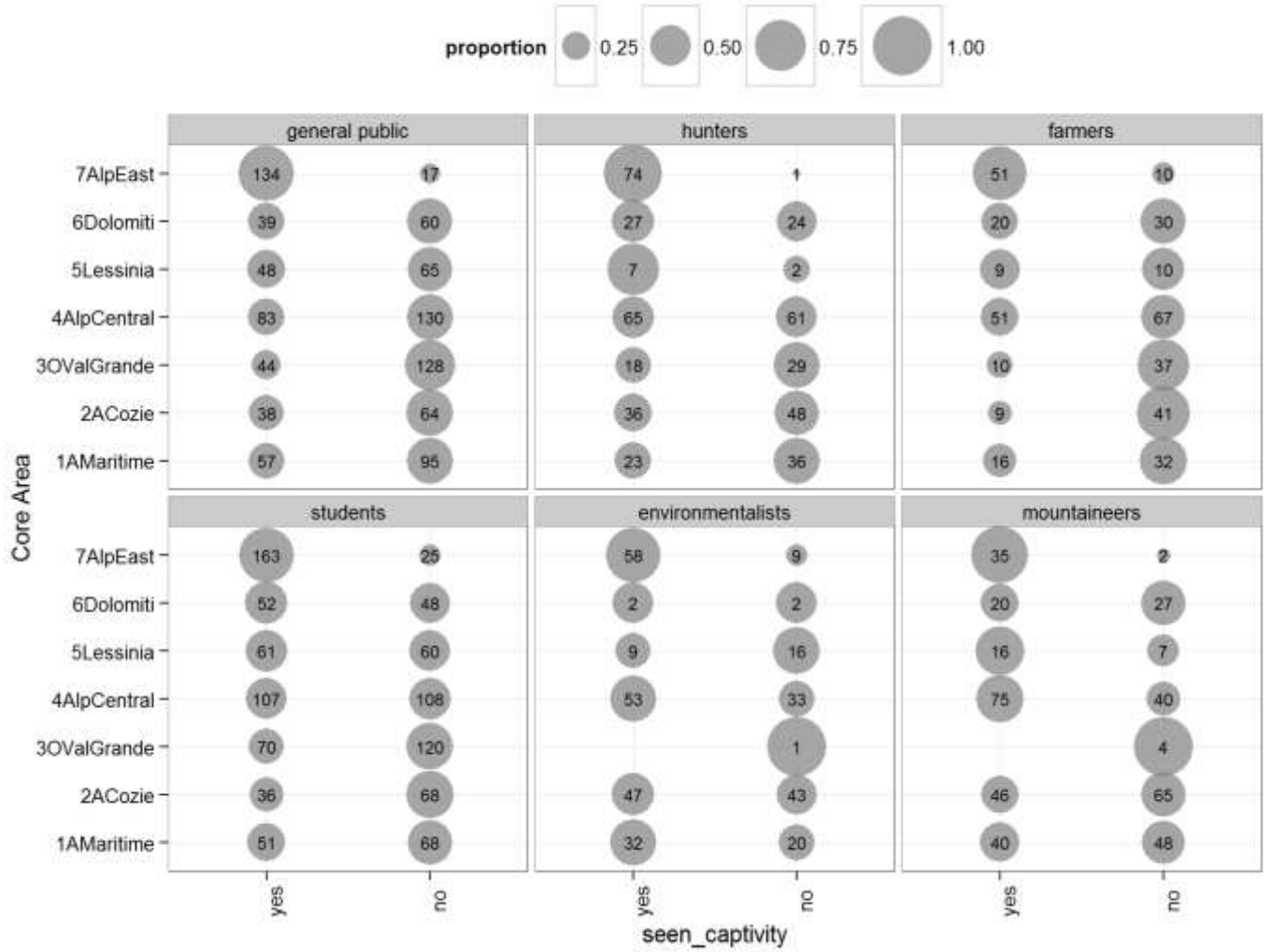

Figure 62: Have you ever had a damage caused by a wolf? (Surface of the grey bubbles represents the share of answers within the group – e.g. general public of Eastern Alps. The numbers represent actual number of responses)

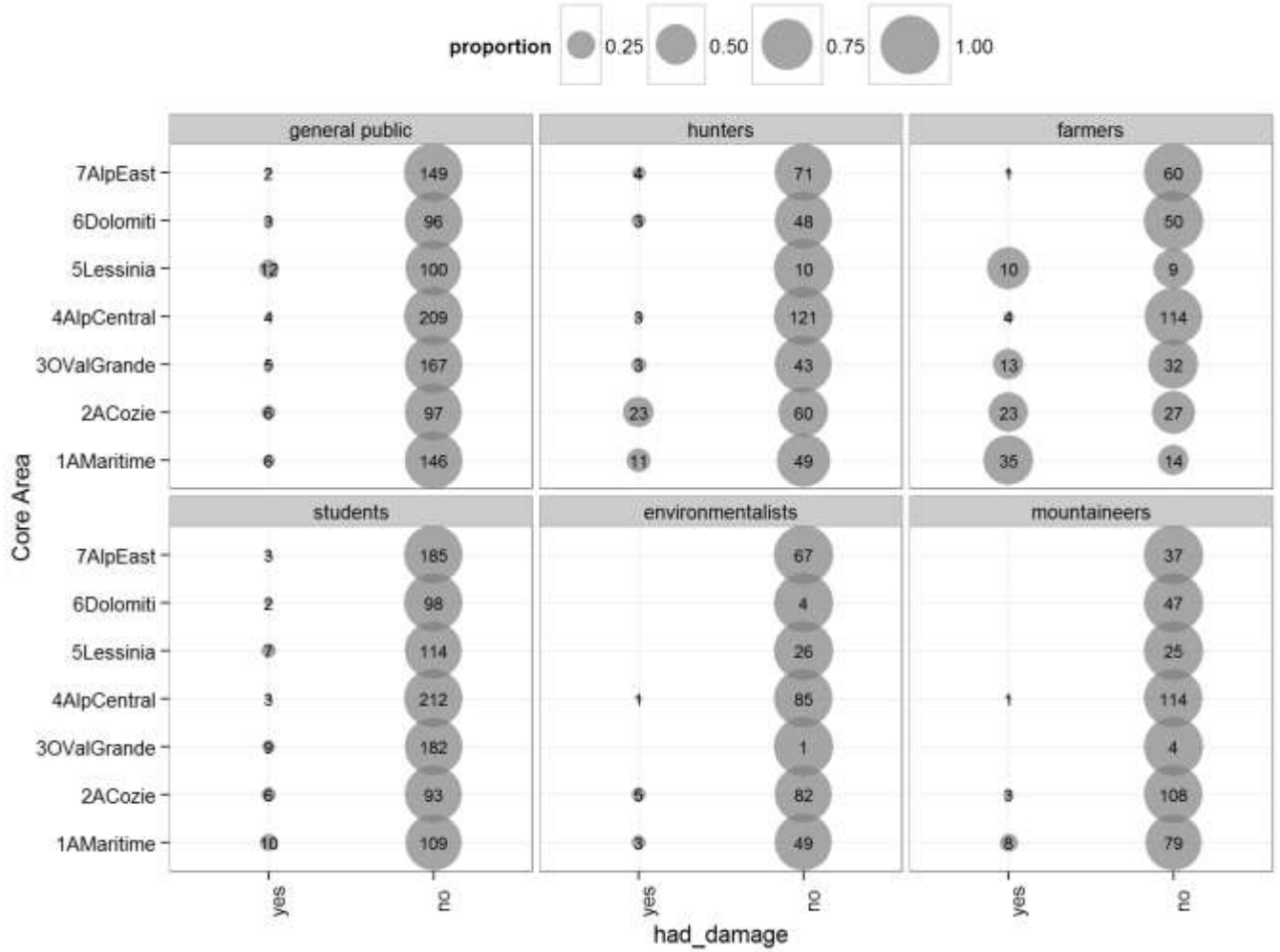

Figure 63: Respondents by gender. (Surface of the grey bubbles represents the share of answers within the group – e.g. general public of Eastern Alps. The numbers represent actual number of responses)

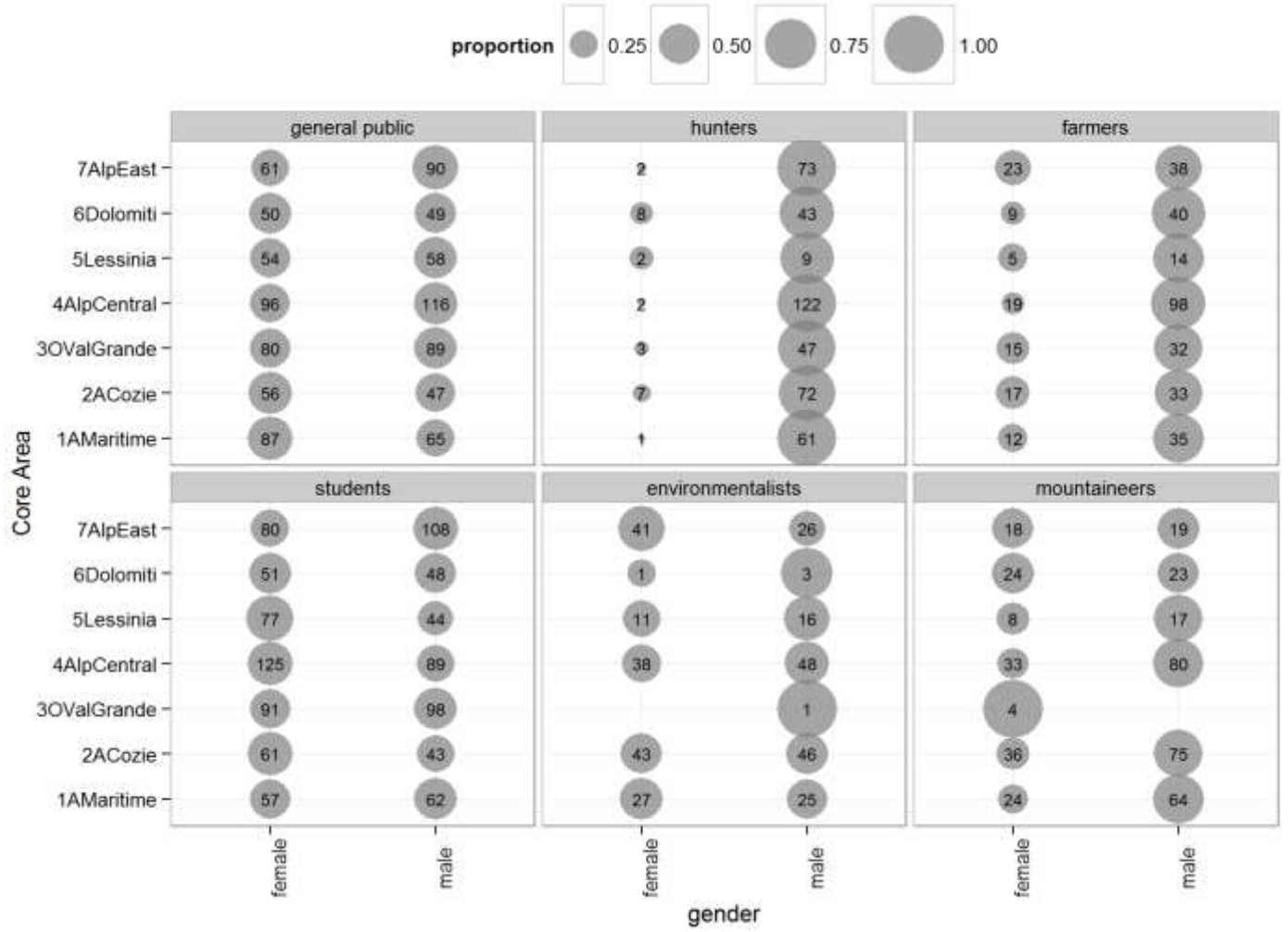

Figure 64: Distribution of respondents by age.

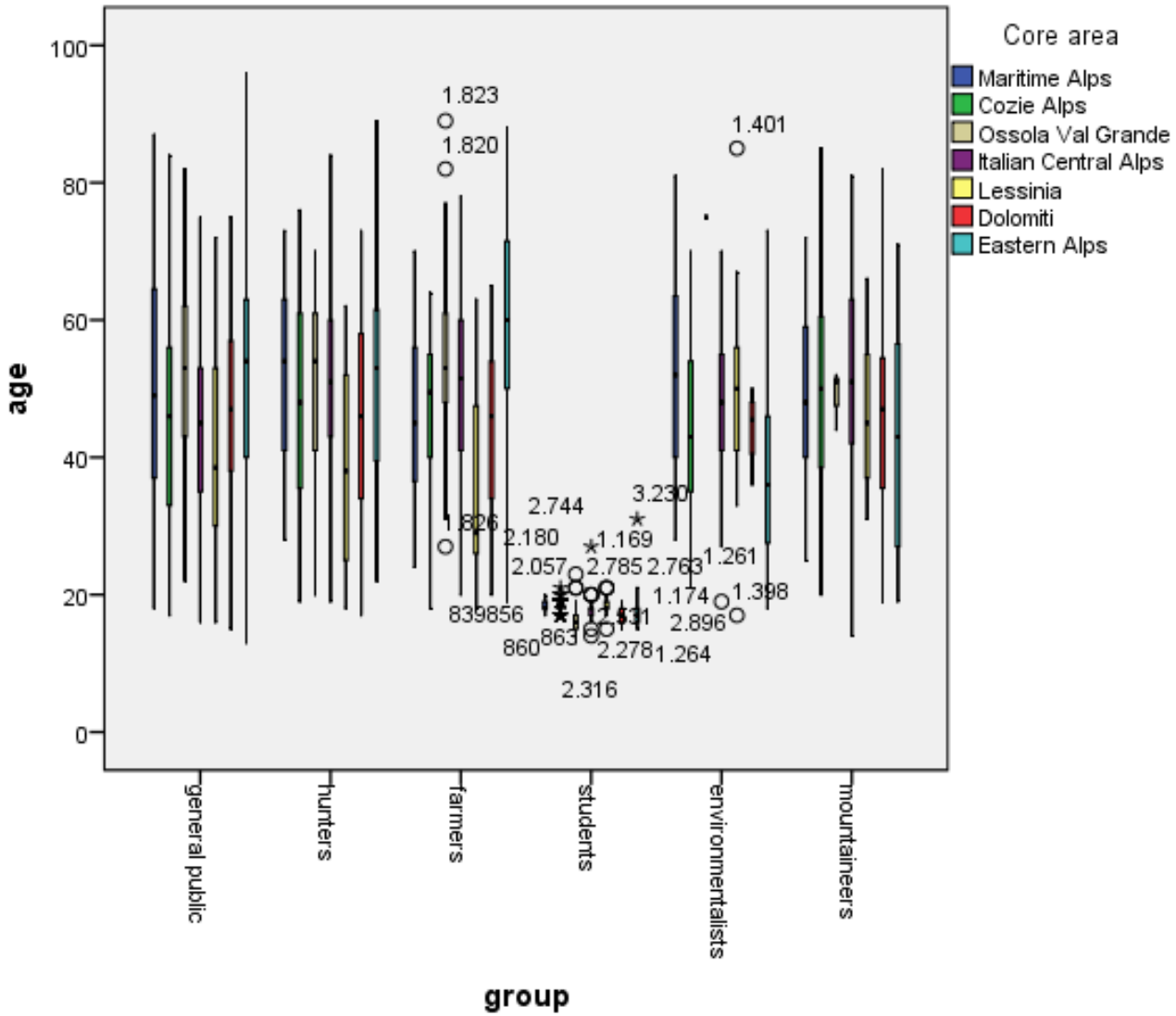

Figure 65: Respondents by education. (Surface of the grey bubbles represents the share of answers within the group – e.g. general public of Eastern Alps. The numbers represent actual number of responses)

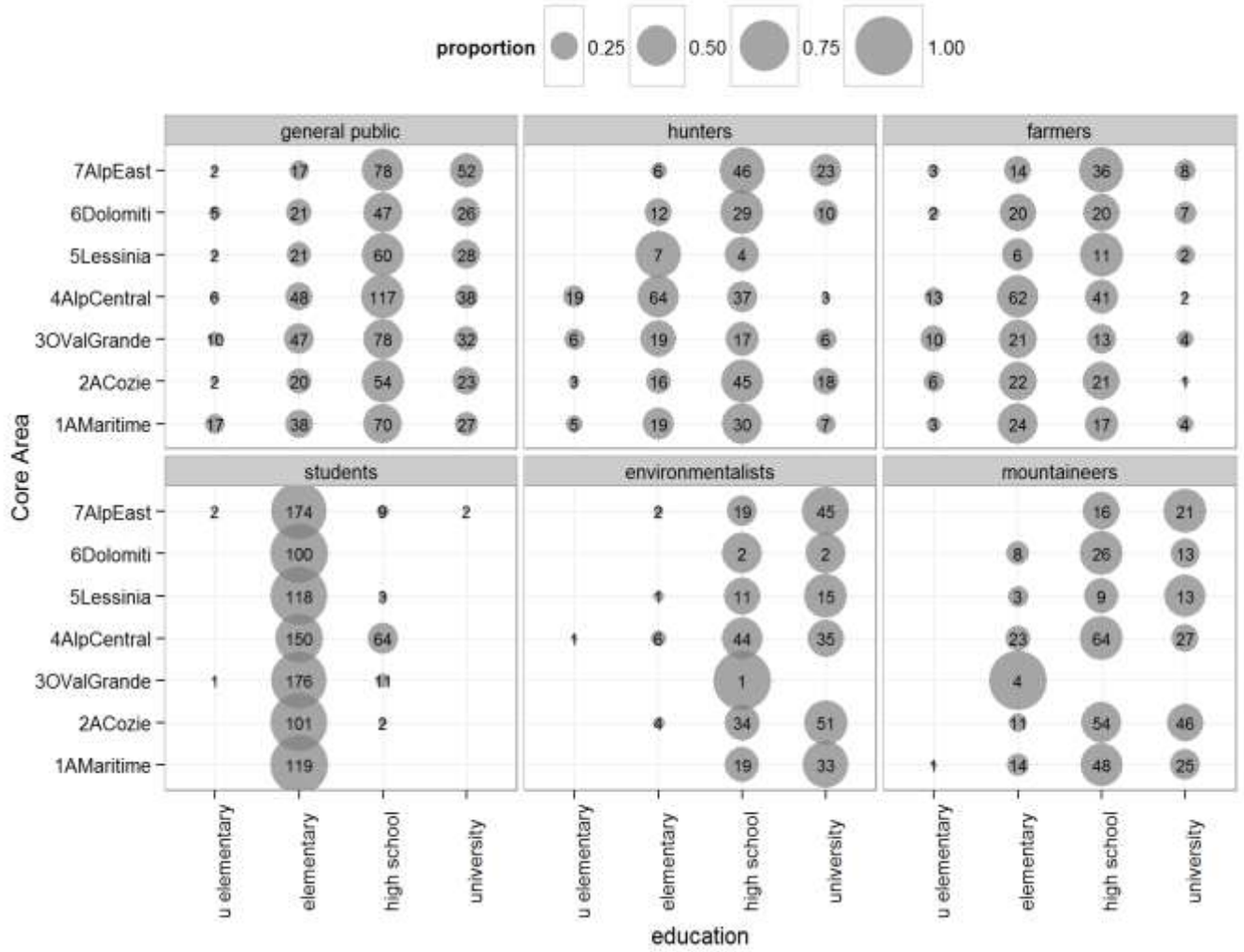

Figure 66: Are you a hunter? (Surface of the grey bubbles represents the share of answers within the group – e.g. general public of Eastern Alps. The numbers represent actual number of responses)

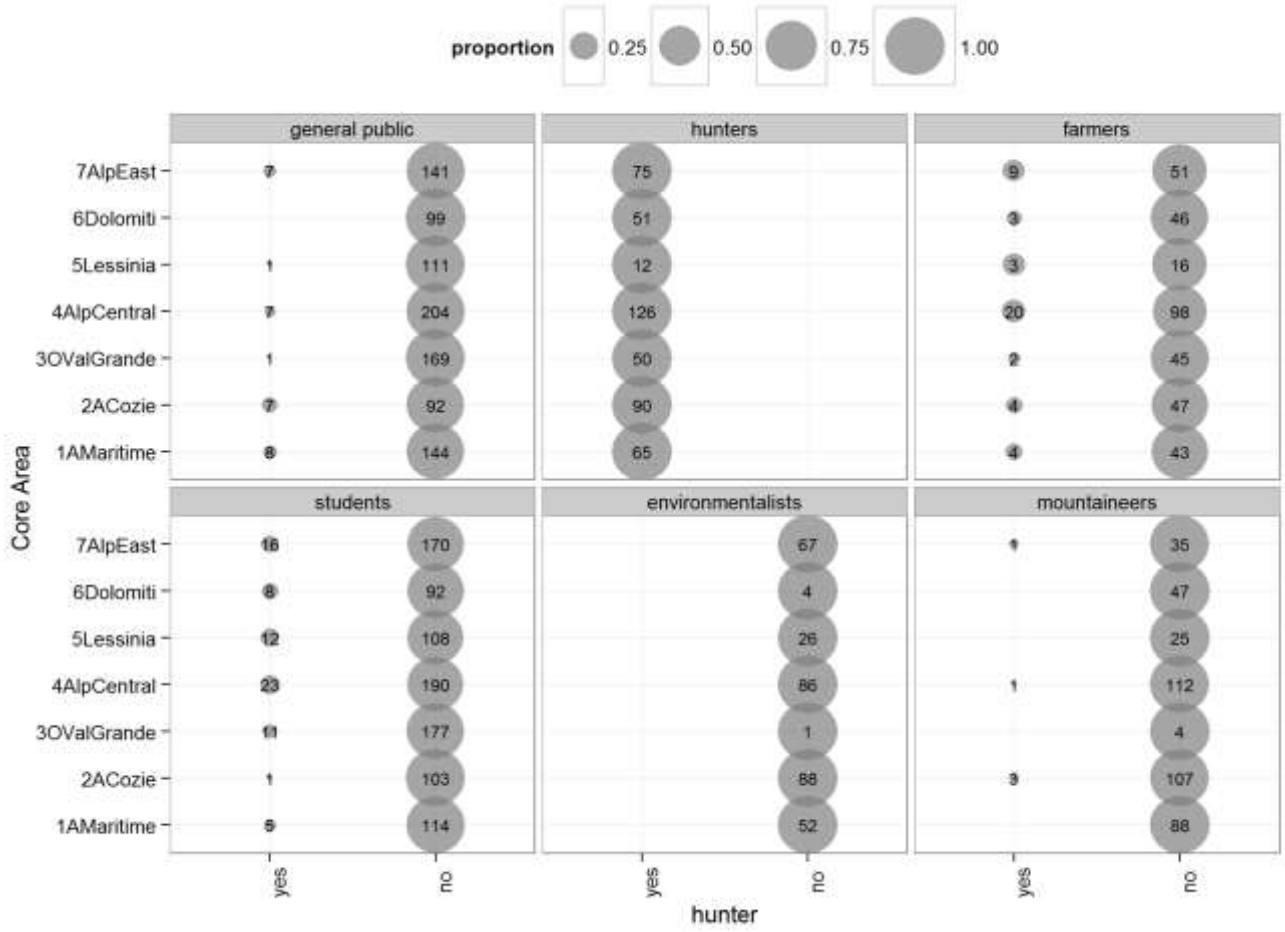

Figure 67: Do you own livestock (sheep, goats, cattle, horses, other)? (Surface of the grey bubbles represents the share of answers within the group – e.g. general public of Eastern Alps. The numbers represent actual number of responses)

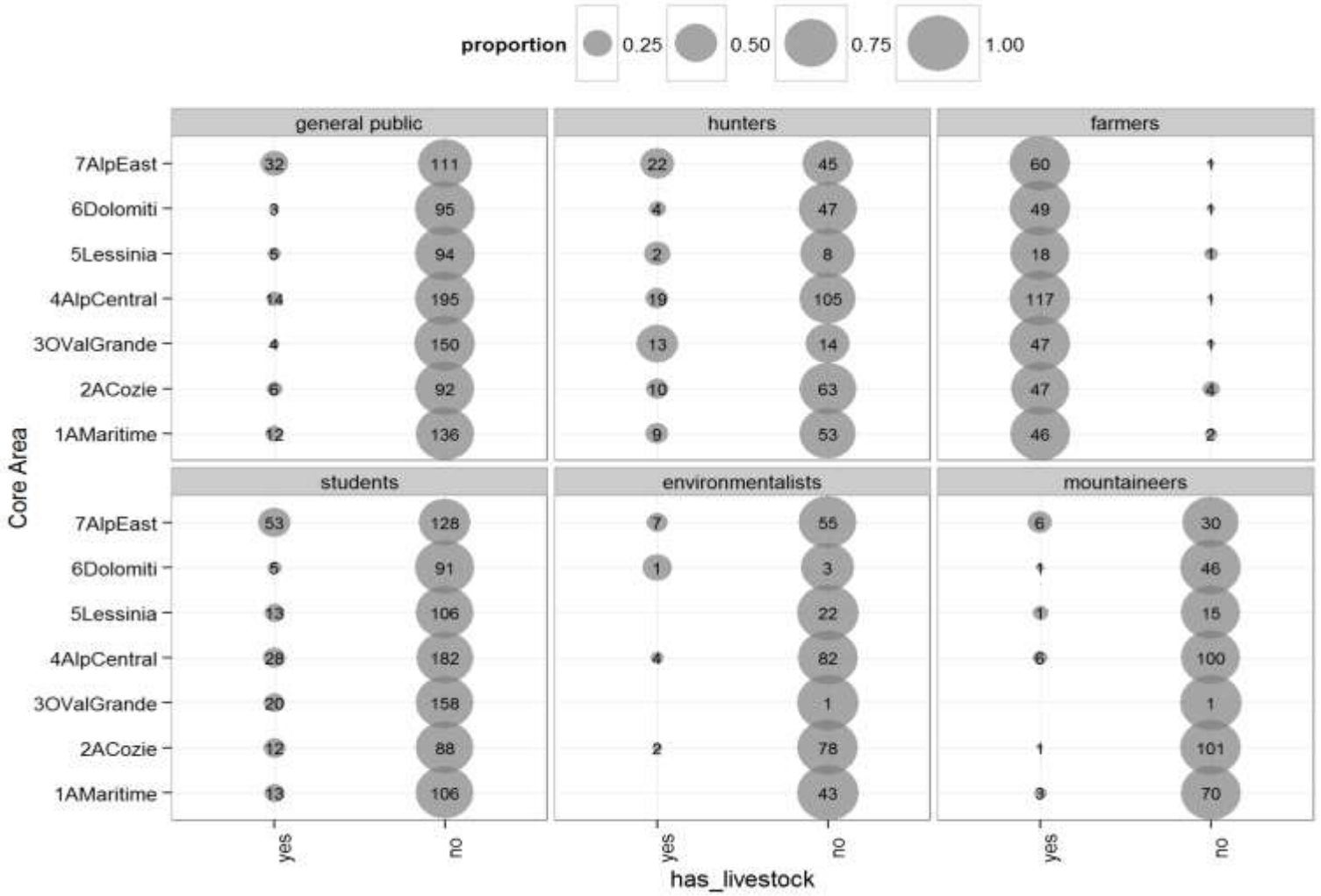

Figure 68: Do you have pets (dog, cat, other)? (Surface of the grey bubbles represents the share of answers within the group – e.g. general public of Eastern Alps. The numbers represent actual number of responses)