

Reactions to European Bison Return to Kokořínsko – Máchův Kraj Protected Landscape Area

Tomáš Řezáč, Jan Andreska

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Abstract

The European Bison is an animal adapted to live in the forested and man rarely used countryside, which correlates with the army abandoned or sporadically used military areas (Řezáč, 2017). This fact can relate to the fundamental question whether the European Bison can live wild in the conditions of the Czech Republic or whether game parks should only be taken into consideration especially with regard to the potential risks.

This study proceeds from the above-mentioned hypothesis and examines the general acceptance of the European Bison in the Czech wild. However, there has been no experience with its behaviour due to several centuries of Bison absence (the exact date of its extermination in the Czech and Moravian wild is unknown). The authors compared their questionnaire-based findings with those of their Polish colleagues who had mapped the general acceptance of the European Bison before its re-establishment into the region of the Augustowski and Knyszynska puszta.

It became evident from the questionnaire findings that the results of both Polish and Czech respondents are considerably influenced by their age, level of education, job and, last but not least, the relationship to the area in question.

Annotation

The return of large mammals can provoke various emotions. In the case of the European Bison, there is expected to be fear and the need to come to terms with its potentially renewed presence, especially by the inhabitants of the discussed region. The public currently adopts a stance towards its presence, which is closely related to its long-term absence, the lack of information about its behaviour and the potential risks connected with its permanent and unlimited presence in the wild.

Keywords

Environmental Education, Returning Species, European Bison, Nature Conservation

Abstrakt

Zubr (*Bison bonasus*) je živočich adaptovaný na život v zalesněné a člověkem nepříliš využívané krajině, což jsou v České republice zejména armádou plně nevyužívané, případně opuštěné vojenské újezdy (Řezáč, 2017). S tím se pojí zásadní otázka, zda v podmínkách České republiky může zubr žít volně, nebo s ohledem na možná rizika připadají v úvahu pouze oborní chovy.

Na základě této spekulace vznikla tato studie, ve které je zjišťováno teoretické přijetí zubra do české krajiny. Avšak vzhledem k tomu, že po několika staletích nepřítomnosti zubra (přesné datum jeho exterminace v české a moravské krajině není známo) zcela chybí zkušenosti s jeho chováním, vychází se z empirií polských kolegů, kteří mapovali teoretické přijetí zubrů před jejich reintrodukcí do regionu Augustowské a Knyszynské pusty.

Z dotazníkového šetření je patrné, že výstupy polských i českých respondentů jsou značně ovlivňovány jejich věkem, dosaženým vzděláním, typem zaměstnání a v neposlední řadě také vztahem ke zkoumané oblasti.

Anotace

Návrat velkých savců je obvykle provázen různými obavami, což se neliší ani u zvažovaného návratu zubra do krajiny, který vyvolává potřebu obyvatel příslušného regionu vyrovnat se s jeho potenciálně obnovenou přítomností. Postoj, který k zubrovi veřejnost aktuálně zaujímá, souvisí s jeho dlouhodobou nepřítomností a nedostatkem informací o jeho chování, zejména ale s potenciálním rizikem spojeným s jeho trvalou a neomezenou přítomností v krajině.

Klíčová slova

environmentální výchova, vracející se druhy, zubr, ochrana přírody

Objectives

The objective of this study is to assess the feasibility of reintroduction of the European Bison to the Kokořínsko – Máchův Kraj Protected Landscape Area (hereinafter referred to as “the Kokořín region”) which partially overlaps with a former military zone of Ralsko, from the perspective of the local people and, afterwards, compare the results obtained from similar questionnaires circulated in selected areas of Poland.

Material and Methodology

The electronic questionnaire ascertaining the attitude towards the re-establishment of the European Bison was designed to obtain the required data from the people of the Kokořín region, the Czech Republic, and circulated in autumn 2019. The target group of respondents were primary school employees, officers and people working in hotels and restaurants located in the region. 167 respondents originally from this region completed the Likert-scale itemised questionnaire, following the example of the Polish survey, examining a related topic. Specifically, it was a study performed by the Technical University in Białystok, the objective of which was to verify the social acceptance of Bison subpopulations in the Augustow and Knyszyn forests by the regional community of countrymen. The data were collected via 95 interviews held in the Knyszynska Desert and 180 interviews in the location of the Augustowski Forest in autumn 2011 (Smoleński, 2013).

Introduction

Prior to WWII, the only European population of the European Bison had been preserved in the Białowieża forest in Poland (Andreska & Andresková, 1993), which led to its significant protection during the post-war era. The result of this breeding and intensive protection was so successful that it enabled Bison re-establishment to other regions. The similar re-establishing activity could also be observed in Belarus (the Chernobyl zone) in Slovakia (the Poloniny National Park) (Jirků & Dostál, 2015) and Romania.

In the Czech Republic, the European Bison has been semi-wild bred until now. However, if its population rises as quickly and successfully as in Poland, speculations about its return to the wild will follow. One of the premises of this aim’s successful realisation is the favourable attitude of people living in the area to the presence of such non-aggressive and herbivorous animal, which still frightens us with its size. (Hanzák & Veselovský, 1965). This hypothesis has been proven by the shooting of one European Bison that crossed the river Odra from Poland to Germany. Moreover, the re-establishment of the European Bison in the Poloninsky park in Slovakia was accompanied by the aversion of local settlers. In Poland, the attitude of the local people was preventively examined in two areas (Smoleński, 2013). That survey, supplemented with further questions, provided the authors with methodological help, suitable for the application in the conditions of the Czech Republic.

Questions used in the questionnaire designed for the Kokořín region:

1. sex:
2. age:
3. the highest education achieved:
4. employment sector:

5. Respondents' interest in returning of the European Bison to the wild region of Kokořín:
6. Respondents' relationship to the region of Kokořín:
7. What could be the most significant advantage of the European Bison's return into the wild of the region of Kokořín?
8. What could be the most significant threat of the European Bison's return into the wild for the region of Kokořín?
9. The respondents were asked to order the following animals from the safest to the most dangerous: Wild Boar, European Bison, Lynx and Wolf
10. The respondents were asked whether they believed that the European Bison could historically occur in the wild of the Czech Republic.
11. The respondents were asked whether they agreed with the claim that it made sense to bring these animals back into the countryside of their origin.
12. The respondents were asked whether they noticed any attempts to bring the European Bison back into the Czech countryside.

Table 1: Sex

| | |
|--------|-------------|
| Male | 60 (35.9%) |
| Female | 107 (64.1%) |

Table 2: Age

| | |
|-------------------|------------|
| 15 – 24 | 9 (5.4%) |
| 25 – 44 | 73 (43.7%) |
| 45 – 60 | 64 (38.3%) |
| over 60 years old | 21 (12.6%) |

Table 3: The Highest Achieved Education

| | |
|--------------------------------------|-------------|
| Primary School | 3 (1.8%) |
| Secondary School without Matura Exam | 12 (7.2%) |
| Secondary School with Matura Exam | 52 (31.1%) |
| University Degree | 100 (59.9%) |

Tab. 4: Employment Sector

| | |
|---|-------------|
| The Primary Sector (agriculture, forestry, fisheries) | 14 (8.4%) |
| The Secondary Sector (food, chemistry, construction industry) | 21 (12.6%) |
| The Tertiary Sector (insurance, education, culture) | 126 (75.4%) |
| Quaternary Sector (science, research) | 6 (3.6%) |

Table 5: Respondent's interest in returning of the European Bison to the wild region of Kokořín:

| | |
|----------------------|------------|
| Total negation | 13 (7.8%) |
| Strong negation | 3 (1.8%) |
| Slight negation | 7 (4.2%) |
| Neutral relationship | 39 (23.4%) |
| Moderate acceptance | 35 (21.0%) |
| Strong acceptance | 34 (20.4%) |
| Full acceptance | 36 (21.6%) |

Table 6: Respondent's relationship to the region of Kokořín:

| | |
|---------------------------|------------|
| A resident | 57 (34.1%) |
| A visitor | 88 (52.7%) |
| Never been | 12 (7.2%) |
| Born there but moved away | 10 (6.0%) |

Table 7: What could be the most significant advantage of the European Bison's return into the wild of the region of Kokořín?

| | |
|--|-------------|
| Increasing the reputation and attractiveness of the location | 16 (9.6%) |
| Strengthening the attractiveness of the area for tourism | 18 (10.8%) |
| Increasing the landscape diversity | 103 (61.7%) |
| There are no significant advantages for the return | 25 (15.0%) |
| Other answers | 5 (3.0%) |

Table 8: What could be the most significant threat of the European Bison's return into the wild for the region of Kokořín?

| | |
|--|------------|
| No threat | 60 (35.9%) |
| Property damage | 14 (8.4%) |
| Concerns about property damage and local psychological well-being | 39 (23.4%) |
| Concerns about disruption of psychological well-being caused during local visits | 42 (25.1%) |
| Other answers | 12 (7.2%) |

Table 9: In your opinion, order the following animals from the safest to the most dangerous: Wild Boar, European Bison, Lynx and Wolf (on a scale of 1 to 4, where 1 = the safest, 4 = the most dangerous):

| | |
|----------------|-----|
| Wild Boar | 2.7 |
| Lynx | 2.8 |
| Grey Wolf | 2.3 |
| European Bison | 2.3 |

Table 10: Do you believe that the European Bison could historically occur in the wild of the Czech Republic?

| | |
|--------------|-------------|
| Yes | 118 (70.7%) |
| No | 5 (3.0%) |
| I don't know | 44 (26.3%) |

Table 11: Do you agree that it makes sense to bring these animals back into the countryside of their origin?

| | |
|--------------|-------------|
| Yes | 134 (80.2%) |
| No | 17 (10.2%) |
| I don't know | 16 (9.6%) |

Table 12: Have you noticed any attempts to bring the European Bison back into the Czech countryside?

| | |
|-----|------------|
| Yes | 87 (52.1%) |
| No | 80 (47.9%) |

Results of Questionnaires Designed for the Kokořín Region

The respondent's relationship to the Kokořín region is an essential parameter of the questionnaire. The survey shows that a total of 105 (63.0%) respondents perceive possible efforts for the Bison re-establishment positively. A considerable number of 39 respondents (23.4%) are neutral about the return of the Bison, while the remaining 23 (13.8%) recorded negative connotations to similar projects. A total of 57 respondents (34.1%) live in the region. Their attitude seems to be the most important, as they could be affected by the Bison return the most. Out of those 57 respondents, the greatest number of answers was positive (12 respondents leaned towards moderate acceptance, 12 to strong acceptance and 13 to total acceptance). Twelve respondents recorded a neutral response. A negative opinion was demonstrated by eight respondents (three slightly negative, five completely negative).

One-half of the respondents, 88 in total (52.7%), were visitors to the area. The questionnaire was also completed by ten respondents (6.0%) who come from the place but no longer live there. Twelve respondents (7.2%) have never visited the area.

The biggest advantage of the Bison return into the wild is considered by 103 respondents (61.7%) who associate it with increased diversity of the countryside. On the other hand, the greatest threat is believed to be property damage and fear of entering places where these animals occur. To the contrary, 60 respondents (35.9%) indicated that they could not see any possible danger connected with the Bison reintroduction, and 25 respondents (15.0%) cannot see any benefits in the Bison return.

118 respondents (70.7%) believe that Bison used to live wild in the Czech Republic. Moreover, 134 respondents (80.2%) think that it makes sense to return animals into their original habitat. One-half of respondents (52.1%) supported the effort of re-establishing the European Bison into the Czech countryside. It should also be noted that the questionnaire has risen the public awareness of this topic.

An interesting fact has also been deduced from the classification of animals according to the level of fear they can raise. The Wild Boar and the Lynx were chosen as the most feared animals, although the Wolf and the European Bison were surprisingly perceived as less dangerous.

The questionnaire was filled by 126 respondents (75.4%) employed in the tertiary sector. The secondary sector follows with 21 respondents (12.6%), while the primary sector was represented by 14 respondents (8.4%). The sector with the lowest number of respondents, only 6 (3.6%), was the quaternary sector.

Regarding the highest academic degree achieved, 100 university-educated respondents (59.9%) took part in the survey, followed by 52 respondents with the Matura exam (31.1%) and 12 respondents without the Matura exam (7.2%). Finally, there were only three respondents with primary school education (1.8%).

Selected Questions from Questionnaires Designed for Puszca Augustowska and Puszca Knyszyńska

1. sex:
2. age:
3. The highest educational achieved
4. Employment Sector
5. Your interest in returning of the European Bison into the wild of the following region:
6. What do you consider to be the biggest advantage of returning the European Bison into the wild?
7. What do you consider to be the biggest threat of returning European Bison into the wild?

Table 1: Sex

| | Puszca Augustowska (N=180) | Puszca Knyszynska (N=95) |
|--------|-------------------------------|--------------------------|
| Male | 58.33% | 55.79% |
| Female | 41.67% | 44.21% |

Table 2: Age:

| | Puszcza Augustowska (N=180) | Puszcza Knyszynska (N=95) |
|-------------------|--------------------------------|------------------------------|
| 15 – 24 | 5.56% | 3.16% |
| 25 – 44 | 28.33% | 22.11% |
| 45 – 60 | 40.00% | 41.05% |
| Over 60 years old | 26.11% | 33.68% |

Table 3: The highest academic degree achieved:

| | Puszcza Augustowska (N=180) | Puszcza Knyszynska (N=95) |
|-------------------------|--------------------------------|------------------------------|
| Primary School | 37.78% | 38.95% |
| Secondary School | 57.78% | 54.73% |
| Postsecondary Education | 4.44% | 6.32% |

Table 4: Employment Sector:

| | Puszcza Augustowska (N=180) | Puszcza Knyszynska (N=95) |
|-------------------|--------------------------------|---------------------------|
| Primary Sector | 53.33% | 44.21% |
| Secondary Sector | 16.11% | 9.48% |
| Tertiary Sector | 26.67% | 17.89% |
| Quaternary Sector | 3.89% | 28.42% |

Table 5: Your interest in returning of the European Bison into the wild of the following:

| | Puszcza Augustowska (N=180) | Puszcza Knyszynska (N=95) |
|----------------------|--------------------------------|---------------------------|
| Total negation | 20.00% | 1.05% |
| Strong negation | 20.00% | 7.37% |
| Slight negation | 6.67% | 17.89% |
| Neutral relationship | 8.88% | 7.37% |
| Moderate acceptance | 10.56% | 22.11% |
| Strong acceptance | 18.33% | 17.89% |
| Full acceptance | 15.56% | 26.32% |

Table 6: What do you consider to be the biggest advantage of returning the European Bison into the wild?

| | Puszcza Augustowska (N=180) | Puszcza Knyszynska (N=95) |
|---|--------------------------------|------------------------------|
| Increasing the reputation and attractiveness of the location. | 29.44% | 43.16% |
| Promoting the attractiveness of the area for tourism. | 15.56% | 14.74% |
| Increasing the diversity of the countryside. | 19.44% | 36.84% |
| There are no significant advantages of the return. | 35.56% | 5.26% |

Table 7: What do you consider to be the biggest threat of returning European Bison into the wild?

| | Puszcza Augustowska (N=180) | Puszcza Knyszynska (N=95) |
|---|--------------------------------|------------------------------|
| No threat | 27.22% | 44.21% |
| Fear of property damage | 31.67% | 44.22% |
| Concerns about property damage and local psychological well-being | 2.22% | 7.36% |
| Concerns about disruption of people's psychological well-being caused during their local visits | 38.89% | 4.21% |

Results of Questionnaires Designed for Augustowski and Knyszynski Forests

The results provided by the Polish respondents were quite different from those of the Czech survey participants. The most significant difference was indicated in the case of a rather sceptic view of the European Bison reintroduction. This result is probably based on a high number of respondents employed in the primary sector. Compared to the Czech questionnaire, Polish respondents were older than the Czech ones with lower academic degrees. Furthermore, people of certain age lacking formal academic education who work in the primary sector tend to adopt a more critical attitude towards the European Bison presence in the wild than younger respondents with a high level of education not living in the area inhabited by the European Bison (Smoleński, 2013).

Discussion

Each animal reintegration into the wild, even though it is its original habitat, is not easy and could become rather complicated. The attitude of the society is very variable, and an affirmative acceptance can turn into a negative one quite quickly. Therefore, a guarantee that animals should be able to naturally return to their original place of occurrence could be

quite questionable. In the case of ascertaining the attitudes of the Kokořín region's inhabitants, the authors have drawn a rather definite conclusion. People would welcome the Bison return, although they are aware of the possible danger of property damage or that of decreased mental comfort during their walks around local forests. It is essential to mention that the main objective of the study did not focus on gaining the maximum number of respondents, but on reflecting the respondents' relationship towards the Kokořín region, while observing the quality of responses.

A similar approach was applied towards the Polish respondents. Almost half of the Polish respondents perceived the return of the European Bison negatively, while Czech respondents were generally positive. An important criterion in addressing the respondents was the effort to attract as many people from that region as possible (which was also the intention of the Polish mapping), as their point of view is the most significant. Unlike the Polish respondents, the Czech ones can imagine their coexistence with the European Bison.

The highest educational level achieved by the respondents (the Czech research was dominated by university students while there was an absolute minimum of such respondents in Poland) was another significant difference between the surveys. The employment sector of the respondents (the primary sector was predominant among Polish respondents; the tertiary sector among the Czech ones) was the next parameter observed.

It was an unexpectedly positive surprise that some respondents (mainly employees of primary schools, officers and people engaged in the protection of the Kokořín region) became extra involved in the questionnaire survey and subsequently helped with the distribution of questionnaires.

In the future, similar comparisons would also be worth doing in Slovakia, for which region a detailed study is still missing.

The most significant criterion for the preference of animal species that are about to be re-established in the wild is the level of fear they can raise. Hence, a suitable choice of places and positive attitude of people living in those places should become the main requirements for future wild animal re-establishment efforts.

Conclusion

Many animal species had disappeared from the wild of the Czech Republic within previous centuries. In the 20th century, they either started to return spontaneously (e.g. the European Moose) (Andreska, D., & Andreska, J., 2015; Andreska, 2017) or thanks to the re-establishing programmes (e.g. the Atlantic Salmon) (Andreska, 2010) or as a result of the two aforementioned trends. (e.g. the Lynx (Kutal, 2017), the Beaver (Andreska, D., & Andreska, J., 2014). The re-establishment of the European Bison to the wild has not started yet, although it is kept semi-wild in wildlife parks and fenced areas. The presented study focuses on the public attitude towards the return of the European Bison into the wild. All of the 167 respondents have shown a positive acceptance tendency, but the results could be influenced by the fact that the European Bison has not become the target of a hate campaign yet, as evidenced in the case of the Wolf, the Wild Boar and the Elk, the common participants of road accidents. Besides, not only the affirmative public acceptance but also the need to be protected by the Nature Conservation Act should be taken into consideration despite the disputable question whether the gene pool is endangered by collisions with road and rail traffic.

At present, the European Bison lives in relatively safe game parks in the Czech Republic and only the future will show whether they can be re-established into the wild.

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