



Viewpoint

Media portrayal of beaver (*Castor fiber*) related conflicts as an indicator of changes in EU-policies relevant to freshwater conservation



Thomas A.M. Kaphegyi^{a,*}, Yvonne Christoffers^a, Sebastian Schwab^a, Volker Zahner^b, Werner Konold^a

^a Institute for Earth and Environmental Sciences, University of Freiburg, Tennenbacherstr. 4, 79106 Freiburg, Germany

^b University of Applied Sciences, Weihenstephan-Triesdorf, Hans-Carl-von-Carlowitz-Platz 3, 85350 Freising, Germany

ARTICLE INFO

Article history:

Received 26 May 2014

Received in revised form 6 March 2015

Accepted 10 April 2015

Keywords:

Beaver recovery
EU agriculture policy
News media
Riparian habitat

ABSTRACT

In many European countries, the condition of the majority of waters still does not meet advanced ecological standards. In this context, conservation of riparian habitats is of particular importance. A recently increasing demand for cultivable land led to changes in the EU's subsidy policies. We argue that these changes to land use policies can affect aquatic–terrestrial intersections. We used media reporting on beaver-related aspects as a parameter for conflict potentials within riparian habitats. We detected a considerable increase in conflicts occurring concurrently with the re-intensification of agricultural land use. Our results provide cause for concern that recent tendencies in land use in the EU might have destructive impacts on freshwater ecosystems.

© 2015 Elsevier Ltd. All rights reserved.

Introduction

Water bodies are an integral part of cultural landscapes and have always been used and affected by humans. Although human interest in streams, rivers and lakes has changed considerably over recent decades, the condition of the majority of waters in Germany – as in most European countries – still does not meet advanced ecological standards (EU, 2000; International Commission for the Protection of the Danube River (ICPDR), 2005; International Commission for the Protection of the Rhine (ICPR), 2005; Jähnig et al., 2011). While organic contamination, formerly the main impact factor, has been reduced and is now less relevant, the ecology of water bodies is of increasing importance. In recent years, great efforts have been made to develop environmental flow standards for rivers and streams (Merritt et al., 2010; Poff et al., 2010; Poff and Zimmerman, 2010), and means of implementing these concepts into legal frameworks have been analyzed (Acreman and Ferguson, 2010). Although the importance for river ecology of habitats at the aquatic–terrestrial intersection is undisputed (e.g. Aldridge et al., 2009; Kaushal et al., 2006; Muotka and Syrjanen, 2007), we argue that negative impacts of decisions in the

European Union's land use policy on river ecosystems often remain undetected and are therefore largely neglected.

Changes in the European Union's agricultural policy create cause for concern that an increasing demand for cultivable land may negatively affect riparian habitats: Set-asides, an instrument of the European Union's Common Agricultural Policy (CAP), which were originally meant to prevent overproduction (farmers were obliged to set aside 10% of their land for e.g. conservation purposes), were suspended in 2008 and finally abolished in 2009 (EU, 2008). We argue that agricultural re-intensification can also considerably affect areas adjacent to waterways and thus may have destructive impacts on the conservation of freshwater ecosystems. However, our requests to the German Federal Statistical Agency have revealed that there is actually no data available on the exact extent of riparian areas that are affected by agricultural re-intensification processes. In light of existing data gaps, we used media reporting released during a 10-year period on human–beaver conflicts as an indicator of changes to land use management in riparian zones. By the end of the nineteenth century, the beaver had been forced to extinction throughout most of Germany with the exception of a small occurrence at the watersheds of the River Elbe. Conservation legislation and re-introductions in more recent decades have resulted in the restoration of the species in many parts of the country. Beavers now occur in all 16 federal states of Germany (German Federal Agency for Nature Conservation, 2008b). The recovery of the species can serve as an example of successfully applied species

* Corresponding author. Tel.: +49 761 203 3642.

E-mail address: thomas.kaphegyi@landespflege.uni-freiburg.de (T.A.M. Kaphegyi).

restoration measures. However, beavers can cause conflicts by cutting trees, undermining human-constructed dams and roads, foraging in corn fields, and by flooding arable land and forest stands in areas adjacent to waterways (Nolet et al., 1998). Beaver activities are perceived predominantly as conflictive if the area concerned is subject to intensive human land use. The basic idea behind our approach is that the competition for riparian areas may escalate with an increasing demand for crop area, which in turn may increase the potential for conflicts associated with the beaver. Thus, the frequency of beaver-related land use conflicts could in turn be understood as an indicator for changes in the proportion of riparian area under anthropogenic use. However, such conflicts are not systematically recorded in Germany. Species distribution data assessed in the course of the mandatory national reports to the European Commission is currently the only beaver-related data available for countrywide analyses. Given that information about the incidence of conflicts is not available in order to identify changes in the land use of riparian areas, we assumed that the frequency of press releases concerning the beaver can be used as a parameter reflecting the occurrence of conflicts.

Methods

We explored daily press articles and TV and radio segments concerning beavers in Germany that were published between 2000 and 2010. In order to use the releases as a conflict indicator, it was necessary to clarify the conflict-oriented character of media contributions. As a comparison, a corresponding analysis was conducted of material produced by conservation agencies and NGOs aimed at informing the public about the returning species.

We identified TV and broadcast segments relating to beavers and beaver-related topics, respectively, from the internet archives of radio and television stations under public law in Germany. In order to achieve a representative sample of print news media, we analyzed eight nationally relevant news magazines, weeklies and daily newspapers. In addition, we evaluated 14 regionally relevant daily newspapers, which together completely cover the area where beavers currently occur.

In order to identify potential tendencies prevailing in the reporting, we explored the news material using qualitative content analyses, which is an objective method adequate for systematically examining documents with regards to their informational content (Kondracki and Wellman, 2002; Krippendorf, 1980). This method is frequently applied in the conservation field to derive information about the impact of media on conservation aspects (e.g. Houston et al., 2010; Muter et al., 2012). The contents of the reports were examined with regards to the number of statements which could be categorized into (1) impartial information, (2) statements relating the beaver to negative or critical aspects and (3) statements linking beavers with positive attributes. The same analytical procedure was applied to the information material from conservation agencies and NGOs. In a further step, we explored the news reports as well as the conservation sector materials to identify recommendations put forward for problem solutions in response to damages caused by beavers. For this analysis, the recommendations formulated in the material gathered were categorized with regards to their relevance to current beaver management policies.

Results

Characteristics of media reports

In total, we explored 28 TV and radio segments and 454 reports published in regional and cross-regional daily press. Additionally,

we found 97 contributions produced by conservationists that were aimed at informing the public about the beaver.

News media contributions and information material from conservation agencies were both analyzed concerning their informational content and the perception conveyed (Fig. 1).

Both news media and material from conservation agencies and NGOs provided impartial information, e.g. on distribution, life history and species ecology, history of extinction and reintroduction, or about the legal situation concerning beaver conservation. The returning rodents' positive effects on ecosystems were frequently emphasized. In this context, improvement of biodiversity and water retention capacities were the effects most often credited to the beaver. On the other hand, problems caused by the beaver, e.g. cutting trees, flooding or damage of infrastructure, were often the focus of the reports. With regard to the content, the arguments used in both the news media and in the nature conservation information materials were largely similar. However, quantification of the arguments revealed significant differences between them: In the conservationists' brochures and leaflets, problem-oriented topics and positive aspects related to beaver recovery were handled in relatively equal proportions. In contrast, references to beaver-related problems and damage incidents in the news media reports clearly outnumbered references to positive aspects ($\chi^2 = 70.98$; $df = 4$; $p < 0.001$; Table 1).

In a further step, we explored how suggestions for problem solutions were treated in press media and in the information material, respectively. Reflecting the spectra of problems potentially associated with the presence of beavers, the contributions referred to a range of different measures. We found that, in relation to the number of contributions, the conservationists' material addressed measures for non-invasive problem solutions 2.5 times more frequently than news media ($\chi^2 = 45.510$; $df = 1$; $p < 0.001$; Table 1). In turn, our analyses demonstrate that news media broached much more frequently the issue of measures and activities that directly affect the animals or provide financial compensation for claimants ($\chi^2 = 45.762$; $df = 1$; $p < 0.001$; Table 1).

Frequency of reporting

In the period between 2000 and 2010, the total number of contributions concerning the beaver in Germany differed considerably between radio and TV media on the one hand and daily newspapers on the other. From 2000 to 2007, the frequency of press articles dealing with the beaver and beaver-related topics in Germany was relatively low, at between 9 and 23 contributions per year. Since 2008, the number of articles has clearly increased. In much smaller proportions, TV and broadcast segments displayed a comparable trend during the study period. The beaver topic attracted the attention of the broadcast and press media in Germany for the most part until around 2009. Data reflecting the occurrence of beaver throughout Germany suggest a continuous expansion of the species, but do not indicate a correlation between beaver distribution and the noticeable increase in the number of news reports since 2008 (Fig. 2).

Discussion

Our analyses revealed that news reporting about beaver is mainly conflict related. Thus, the frequency of news articles and reports can serve as a measure of the potential for beaver-human conflict. At first glance, this might be explained by an increasingly expanding beaver population. However, a comparison of the development of beaver distribution with the frequency of beaver-related news reports between 2000 and 2010 does not suggest that the significant increase in the number of reports since 2008 is

Download English Version:

<https://daneshyari.com/en/article/6548184>

Download Persian Version:

<https://daneshyari.com/article/6548184>

[Daneshyari.com](https://daneshyari.com)