



Winds of change - Do we truly need to introduce population control?



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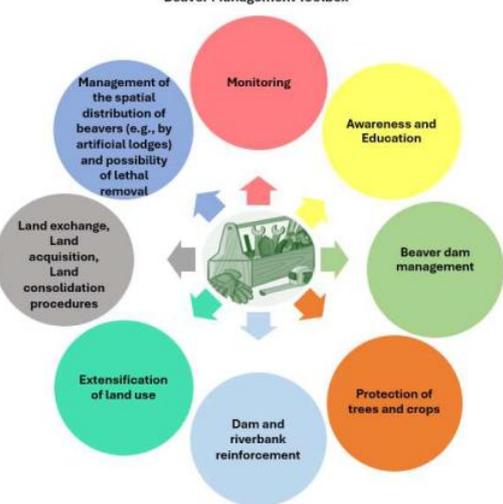
Introduction

According to the website of the Ministry of the Environment, Climate and Energy Sector Baden-Württemberg, "in the future, it shall be possible to directly deter beavers within strictly defined areas, such as wastewater treatment plants, flood protection structures, or railway embankments, without prior official exemption permits. If deterrence proves unsuccessful over a period of four weeks, lethal removal may also be carried out. This is conditional, however, on the affected areas not being reasonably protectable against beaver activity by practicable measures."¹

As every area and type of infrastructure can, in principle, be protected against beaver activities, experts are concerned that the proposed reform, particularly the inclusion of lethal control, could ultimately shift towards a form of population management broader in scope than originally intended and previously communicated.

This concern is understandable, as existing instruments for conflict prevention in the Stuttgart administrative district have allowed beaver management to be implemented effectively and proportionately (cf. fig. Beaver Management Toolbox). With strong voluntary engagement and without recourse to lethal control, conflicts have so far been resolved satisfactorily for stakeholders. Most land users affected by beaver activities have actively made use of the available prevention and conflict-mitigation-measures.

Beaver Management Toolbox



Current political demands are primarily explained by the continued territorial expansion of the species, the perceived need to regulate population growth, and the assumption of increasing complexity in beaver-related conflicts. At present, no sufficiently robust scientific evidence is available that would support an expansion of existing beaver management to include simplified procedures for beaver removal.

Furthermore, a Beaver Regulation (*Biber-Verordnung*) for Baden-Württemberg has been drafted and is presently under interministerial coordination process but has not yet entered into force.²

At the local level, similar demands have recently emerged in the Ostalbkreis district, where a political faction represented in the district council submitted a motion requesting an examination of legal options for a more targeted regulation of the beaver population within the framework of existing legislation. The motion specifically calls for assessing the feasibility of obtaining an exemption for the Ostalbkreis under § 45 of the Federal Nature Conservation Act (BNatSchG).³

Approach and Methods

Adapting beaver management to changing conditions is generally a welcome step. However, adaptive, evidence-based wildlife management requires a fact-based analysis of the status quo (cf. fig. Adaptive wildlife management cycle). Current debates in Baden-Württemberg, particularly regarding lethal removals, do not yet meet this standard. The debates are not sufficiently evidence-based and show a high degree of subjectivity. Robust data on the effort and effectiveness of beaver management are often lacking. We analyzed one year of management in two Ostalbkreis municipalities (Kirchheim and Rainau), where beaver populations have been near carrying capacity for over a decade.



Municipality of Rainau	Municipality of Kirchheim am Ries	
Number of active beaver territories	20	5
Calculated minimum population size	100	25

Stream lengths and the shoreline lengths of lakes and ponds were derived from official GIS data. Beaver territory mapping and checking stream courses and standing water bodies were surveyed on foot. The surface areas of standing water bodies were converted into shoreline length, assuming a circular shape. In Kirchheim, 7 of 14 ponds and ~50% of the upper reaches of streams were dry, whereas in Rainau ~20% of the upper reaches of streams and only 5% of standing water bodies were either dry or carried very little water.

Baseline input values for calculating three scenarios with different personnel cost assumptions (one-year cost calculation, 01 August 2024 - 01 August 2025) for beaver management efforts in two municipalities, covering material, machinery, and travel expenses as well as available (estimated) labor hours	Rainau	Kirchheim am Ries	Total
Working time category			
Local volunteer beaver manager (fixed hourly expense allowance: EUR 9.25)	24,0	27,0	51,0
Regional Beaver manager of Higher Nature Conservation Authority (RPS)	17,5	2,0	19,5
Staff of Lower Nature Conservation Authority (UNB)	16,5	8,0	24,5
Staff of Higher Nature Conservation Authority (HNB)	2,0	0,0	2,0
Total working hours beaver management	60,0	37,0	97,0
Total working hours employees of the municipal yard (estimated for Rainau)	150	56,5	206,5
Total working hours employees of the municipal administration (estimated)	30,0	10,0	40,0

Material, machinery, and travel costs (EUR)	Rainau	Kirchheim	Total
Total travel expenses beaver management (0.30 EUR/km, estimated based on administrative work and on-site visits)	3250,00	975,00	4225,00
Total Travel expenses municipality yard (0.30 EUR/km, estimated frequency of five times per week, with a total distance of 20 km per day)	3120,00	1560,00	4680,00
Machinery costs (estimate for Rainau (EUR))	4000,00	0,00	4000,00
Material costs (borne by the federal state of Baden-Württemberg and therefore excluded from the scenario calculation)	797,00	504,00	1301,00
Total non-personnel expenses (excluding material costs)	10370,00	2535,00	12905,00

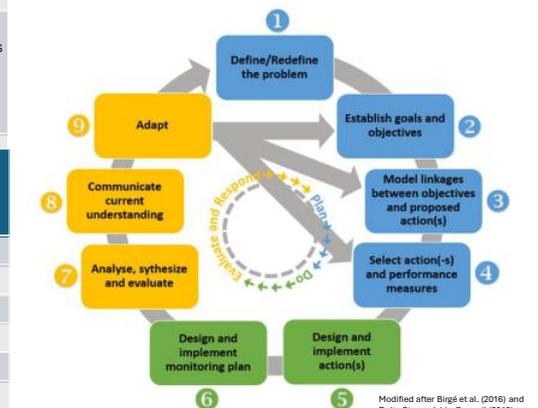
Municipality	25 EUR/working hour		50 EUR/working hour		100 EUR/working hour	
	Rainau	Kirchheim	Rainau	Kirchheim	Rainau	Kirchheim
Model Scenario	25 EUR/working hour	50 EUR/working hour	100 EUR/working hour	25 EUR/working hour	50 EUR/working hour	100 EUR/working hour
Total non-personnel expenses (excluding material costs)	10370,00	2535,00	13370,00	2535,00	13370,00	2535,00
Total personnel expenses	5622,00	2162,25	11022,00	4074,75	21822,00	7899,75
Total	15992,00	4697,25	24392,00	6609,75	35192,00	10434,75
Total costs of beaver management per month	1332,67	391,44	2032,67	550,81	2932,67	869,56
Assessment	less realistic	realistic	realistic	realistic	unrealistic	unrealistic

References
¹UfL (2025): Bibermanagement in Baden-Württemberg, Weiterentwicklung des Bibermanagement (Ministry for the Environment, Climate and Energy Sector Baden-Württemberg, Content of the official website concerning the advancement of beaver management. Retrieved from: <https://www.baden-wuerttemberg.de/dokument-euro-linguistische-wildlife-und-mensch-wildtier-schutz-und-management/biber-management/> (accessed: 2025/09/17)
²Biber-VO (2025): Verordnung der Landesregierung zum Schutz vor Beeinträchtigungen durch den Biber. Erlassen am 11.09.2025. (Joint Regulation of the State Government on protection against impact caused by beavers, dated 11 May 2025)
³Biber-VO (2025): CDU Kreisverwaltung Ostalb (2025): Stellungnahme zur Problematik der Biberpopulation im Gebiet des Ostalbkreis und zur Handhabung im Ostalbkreis (Bayer) und Antrag die Kreisverwaltung von Dr. Günter Bülter (Fraktionsvorsitzender) und Christoph Korte (Fraktionsgeschäftsführer) vom 17. März 2025. CDU District Council Group Ostalb (2025): Statement on the problem of the beaver population in the eastern Ostalb district and on its management in Ostalbkreis (Bavaria), and motion to the district administration by Dr. Günter Bülter (parliamentary group chairman) and Christoph Korte (parliamentary group executive).
⁴Reisner, J. (2022): Was kostet die Rückkehr des Biber nach Heusenstätt? Eine ökonomische Analyse des heusenstättischen Bibermanagement (Bachelorarbeit zur Weiterbildung des Biber, Institut Naturschutz in Heusen 7. 9. 24 Zentrale).
⁵Thompson, S., Williams, M., Phillips, J., & Norman, R. (2021). Ecosystem services provided by beavers. *Castor*, 5(1/2), 25-38. <https://doi.org/10.1111/cast.12225>



Using readily available management data, rapid mapping of active territories, and mortality records, we assessed population status (as of 01 August 2025), conflict incidence and severity, management effort, and implementation success. Stream lengths and the shoreline lengths of lakes and ponds were derived from official GIS data. Since the responsibility for maintaining most second-order water bodies lies with the municipalities, and the implementation of management measures is therefore mainly carried out by the municipal building yards, data on personnel and machinery costs were collected there. While Kirchheim provided complete datasets, in Rainau management effort had to be estimated, which was feasible due to the direct involvement of responsible beaver management staff in major measures.

Adaptive wildlife management cycle with three phases (Plan, Do, Evaluate and Respond), nine steps, and arrows indicating sequence and possible adaptations.



Modified after Birgi et al. (2016) and Delta Stewardship Council (2019)

Results and Discussion

Mortality: A total of 24 carcasses were registered between Jan 2023 and Aug 2025; 95% died between Jan-Jun, most of them juveniles (<2 years; 63% in Rainau, 80% in Kirchheim). The main cause of death was road traffic (89% in Rainau, 100% in Kirchheim). The finding, together with the calculated population density (0.37 beavers/km of stream or shoreline length in Rainau and 0.30 in Kirchheim, respectively), indicates a largely saturated population near carrying capacity. To keep our approach simple and cost-efficient, no habitat suitability index was applied. Average monthly costs for one year of beaver management and effective conflict mitigation (realistic cost assumptions): EUR 2032,67 (100 beavers) and EUR 550,81 (25 beavers). Under the specific conditions of Rainau and Kirchheim, established populations near carrying capacity could provide ecological benefits (biodiversity, water retention, flood protection) without lethal control. Whether such management efforts are justified remains a societal cost-benefit decision.

Conclusion

Even under higher cost assumptions, management efforts are proportionate. Cost-benefit analyses are challenging, as ecological values confirmed by research are difficult to monetize.^{4,5} In saturated beaver populations, established non-lethal approaches effectively mitigate conflicts without costly population control. As a K-selected species, beavers are largely self-regulated near carrying capacity. Pragmatic management with non-lethal tools has proven effective and transferable, with potential to depolarize similar debates in other human-shaped landscapes.

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