



Periodic Review of the Berchtesgadener Land Biosphere Reserve (2012-2021)



The following report fulfills the regular reporting obligation of UNESCO biosphere reserves in accordance with Article 9 of the Statutory Framework of the World Network of Biosphere Reserves. The report follows the structure prescribed by UNESCO.

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Summary

Berchtesgadener Land has taken important steps in the last few years to ensure its readiness for the future. Regional policy measures support not only positive economic development, but also efforts in the areas of climate action and education. As a very popular tourist destination and a region with a growing population, traffic, too much tourism (overtourism) and housing shortages were identified as the greatest challenges in the district and measures to address them were introduced.

As the only UNESCO biosphere reserve in Germany representing the Alps and Alpine Foreland, the region has an exceptionally high level of biodiversity in its natural environment and cultivated landscape. In the core area and buffer zone, the conservation function is consistently and stably ensured through the National Park and nature conservation areas.

Numerous measures for the conservation and development of biodiversity in the cultivated landscape were implemented in the transition area. In addition to the Biosphere Region administration (BR administration) and the local nature conservation authorities, important stakeholders came on board through the establishment of a landscape management association (LPV) and introduction of a biodiversity advisor office in the rural district administration. As well as implementing measures and activities, the BR administration plays an important role as a networker and initiator, particularly in the transition area.

Additional projects and increased numbers of staff enabled the BR administration to successively address further fields of action and thus satisfy the interdisciplinary UNESCO mandate. Alongside the established areas of education, activities in the areas of industry, agriculture, tourism, landscape ecology and public relations were developed and intensified. This raised and consolidated the profile of the BR administration within regionally active institutions and administrations and significantly increased awareness and acceptance of the biosphere region.

The fact that the district and the UNESCO biosphere reserve cover the same territory is a major advantage as it enables the BR administration to regularly work together synergistically with stakeholders active in the same geographic area. The region holds a lot of potential in terms of its own understanding of itself as a model region for sustainable development.

The BR administration projects have generated important impetus for Berchtesgadener Land to further develop as a future-proof place to live, work and engage in recreation and regard itself as a model region in the implementation of the UN Sustainable Development Goals (SDGs).

The main challenges the BR administration faces are establishing model approaches for the long term, establishing a central information centre for the biosphere region and expanding the research focus to include the transition area.

Part I: Overview

a.) Name of the Biosphere Reserve: Berchtesgadener Land Biosphere Region

b.) Country: Federal Republic of Germany

c.) Year designated: 1990

d.) Year(s) of periodic review(s): 2002, 2012

e.) Previous recommendation(s) made by the International Co-ordinating Council (MAB-ICC), if applicable:

The following section outlines the recommendations of the 19th session of the International Advisory Committee for Biosphere Reserves (11–13 March 2013 in Paris) and the resulting follow-up actions.

Recommendations MAB-ICC	Implementation status	Follow-up actions and justification
Intensified cooperation with the border regions in Austria and designation of a transboundary biosphere reserve	Partially completed	Good transboundary cooperation with Austria has been established on many levels. There is already close cooperation with the Salzburg Lungau Biosphere Park on a number of joint projects (see Chapter 5). Neither side is pursuing efforts to establish a transboundary biosphere reserve with the directly bordering regions.
Provision of detailed information on the sustainable development of maize cultivation for biofuels and setting up combined heat and power (CHP) plants.	Completed	Maize cultivation for energy use plays a minor role in the biosphere region. Initial approaches for using wild and cultivated crops as alternatives for energy were pursued, but have not yet been explored in greater depth. Setting up additional CHP plants is not an attractive option because of the provisions set out in the Renewable Energy Sources Act (EEG).
Forwarding of work outcomes in the areas of biodiversity conservation, labelling of organic farm products, education and climate change to the World Network of Biosphere Reserves, also in the framework of regional meetings, such as EuroMAB	Completed	Participation in the EuroMAB 2019 Conference in Dublin including presentation of the outcomes of the <i>Wild und Kultiviert</i> (wild and cultivated) project, continued participation is envisaged.

f.) What follow-up actions are completed? If not completed/initiated, please provide justifications:

The implementation status and potential follow-up actions are outlined under e).

g.) Update on the implementation of measures to achieve the objectives of the biosphere region:

Measures to achieve the biosphere region objectives (particularly in the transition area) were defined over the course of various participative processes and are reflected in plans including the extension application, the scientific concept and the framework concept (Chapter 2.3.1). Detailed objectives and measures in the core areas have been set out in the National Park plan and are implemented by the Berchtesgaden National Park administration. Where the buffer zone lies within the territory of the Berchtesgaden National Park, the objectives and measures are set out in the National Park plan. Forest conversion measures and objectives are set out in a separate forest development plan.

The provisions of the nature conservation ordinances are applicable in the other parts of the buffer zone. The entire core area and buffer zone of the biosphere region are also protected as Natura 2000 sites (8342-301 Nationalpark Berchtesgaden, 8342-302 NSG 'Aschau', NSG 'Schwarzbach' and Schwimmendes Moos, 8241-372 Östliche Chiemgauer Alpen). The relevant management plans are currently being drawn up. The focal areas of the BR administration are in the transition area and relate in recent years, in particular, to education for sustainable development, sustainable tourism, sustainable economic practices, agriculture, landscape ecology, and intensifying public relations work and cooperation with the municipalities.

h.) Briefly describe the process by which the current periodic review has been conducted:

The periodic review is intended to objectively present and critically question developments in the biosphere region on the basis of regional consensus. The regional population were thus involved in the process as follows: a representative public survey (2018), interviews

with regional stakeholders (2021), stakeholder workshop (2021) and an online questionnaire for the mayors (2021). In addition, an internal team workshop was held on developments in the BR administration (Chapter 1.5).

i.) Area and spatial configuration

Since the last report, the BR core area, which is also the core area of the National Park, has grown from 16.6% of the total area to 18.6%. Conversely, the buffer area is now 2% smaller. The core area was extended by the National

Park administration to the required 75% of the National Park area. An additional extension of the core area is not envisaged at present and would not be possible on a large scale due to existing grazing rights.

	Area in ha 2012	Area in % 2012	Area in ha 2021	Area in % 2021
Core area	13,896	16.55	15,607	18.58
Buffer zones	9,537	11.35	7,826	9.32
Transition area	60,551	72.10	60,551	72.10
Total area	83,984	100	83,984	100

j.) Human population of the biosphere region:

	Previous report (2010)		Current numbers (as of 30 June 2021)	
	Permanent	Seasonal	Permanent	Seasonal
Core area	0	< 50*	0	< 50*
Buffer zones	0	< 100*	0	< 100*
Transition area	102,389	unknown	106,483	unknown

* Based on estimates for management of summer pastures and chalets

k.) Budget:

Budget in previous report (as of 12 July 2012)	Current budget (as of 26 January 2022)
In terms of organisation and location, the BR administration and the National Park administration are separate. The annual budget stood at around 6 million euros, of which about 95% was allocated to the National Park.	In terms of organisation and location, the BR administration and the National Park administration are still separate. The budget of the BR administration is just under 1.39 million euros. 8.93 million euros are available to the National Park administration.

l.) International, regional, multilateral or bilateral cooperation framework

The work of the BR is primarily based on the Lima Action Plan (cf. references to Lima Action Plan in Annex III 7.13) and the Criteria for the Designation and Evaluation of UNESCO Biosphere Reserves in Germany (national criteria). Efforts are being made to actively

contribute to the implementation of the 17 Sustainable Development Goals (SDGs) of the 2030 Agenda and its targets (Annex III 7.6). Cooperation at international, regional and national level is described in detail in Chapter 6.6.

Part II: Periodic Review Report

1 The biosphere region

1.1 Year designated

1990

1.2 Year of first periodic review and of any following periodic review(s)

The first periodic review was carried out in 2002, the second in 2012.

1.3 Follow-up actions taken in response to recommendations from previous review(s)

The ICC recommendations and resulting follow-up actions are described in Part I e).

The recommendations of the MAB National Committee are addressed in the relevant chapters.

1.4 Other observations or comments on the above

None.

1.5 Describe in detail the process by which the current periodic review has been conducted:

1.5.1 Stakeholders involved

The following stakeholders and organisations were involved in the current periodic review: the public, the Trägerverein UNESCO-Biosphärenreservat Berchtesgadener Land (supporting association), Bavarian state forests (BaySF, Berchtesgaden forest holding),

the Berchtesgadener Land District Office, the Berchtesgaden National Park administration, the mayors of the biosphere region municipalities and other institutions and regional stakeholder groups (Table 1, see Annexes III 7.3, 7.4 and 7.5).

1.5.2 Methodology used to involve stakeholders in the process

The respective methods used are described in Table 1.

1.5.3 Frequency of methods used

The frequency with which the methods were used is described in Table 1.

1.5.4 Representative character of the participation process

As outlined in Chapter 1.5.1, the relevant stakeholders were comprehensively involved

in the process, thus representative participation can be assumed.

Table 1: Participation formats and methods, and stakeholder groups involved

	Public survey	Interviews and data collection	Online questionnaire for mayors	Team workshop	Stakeholder workshop
Goals	Examine acceptance of, commitment to and identification with the biosphere region	Find out about activities in last 10 years that have contributed to the biosphere objectives	Information on own activities, identification with biosphere region, assessment of developments, strengths, weaknesses	Collection of content, team discussion of developments of last 10 years	Supplementation and assessment of developments, strengths and weaknesses; identification of areas with development potential
Methods	Representative postal survey	Qualitative interviews	Standardised digital questionnaire	Moderated workshop	Moderated digital workshop
Participants	697	17	13	14	47
Stakeholder groups	The public	Regional stakeholders experts	Mayors	BR administration	Regional stakeholders
Year of survey	2018	2021 (Feb-April)	2021 (Feb-April)	2021 (April)	2021 (May)
Carried out by	Dialog N GmbH (von Lindern & Knoth 2019)	BR administration	Institute for Rural Development Research (IfLS)	BR administration	Institute for Rural Development Research (IfLS)

2 Significant changes in the biosphere region

2.1 Changes in land use

Arable land has decreased by 0.23%, while land for human settlements and transport infrastructure has increased (+0.15%) (Table 2). This can be attributed to the growth in population and economic growth in the biosphere region (Chapter 5.1). In addition to the provision of land for commercial use, the

creation of new housing is a central issue for the region's future viability. Between 2012 and 2017, there was an increase in the housing stock (+3.5%) and building land prices (+20%).

Current Landusemap see Figure 2.

Table 2: Land use trends in the biosphere region between 2014 and 2019

Area / changes	Residential	Transport infrastructure	Forest	Woodland	Non-vegetated area	Arable land	Grassland	Water bodies	Other
Area in ha 2014	3,715.98	2,193.28	41,012.13	3,384.09	13,232.52	3,543.76	15,252.31	1,537.71	111.35
Area in ha 2019	3,832.81	2,202.81	41,067.28	3,469.51	13,119.65	3,347.14	15,289.49	1,539.74	113.90
Changes to total area (%)	0.14	0.01	0.07	0.10	-0.13	-0.23	0.04	0.0024	0.0030
Share of total area (%) (2019)	4.6	2.6	49.0	4.1	15.6	4.0	18.2	1.8	0.1

Source: Own analysis based on data from the Authoritative Real Estate Cadastre Information System (ALKIS)

2.2 Updated background information on the biosphere region

2.2.1 Updated coordinates

The coordinates have not changed since the last periodic review.

2.2.2 Updated map

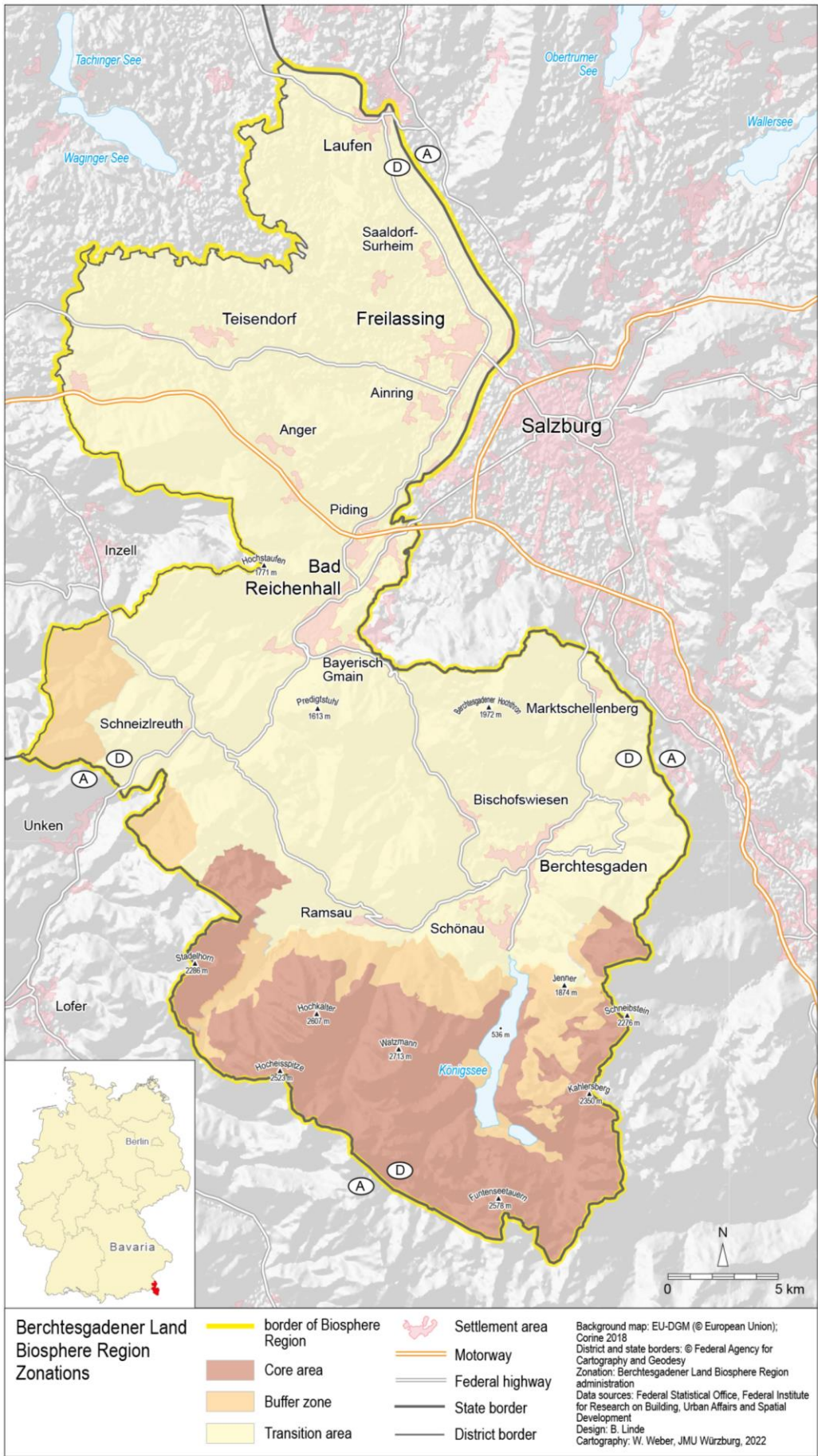


Figure 1: Map illustrating zonation and location of Berchtesgader Land Biosphere Region

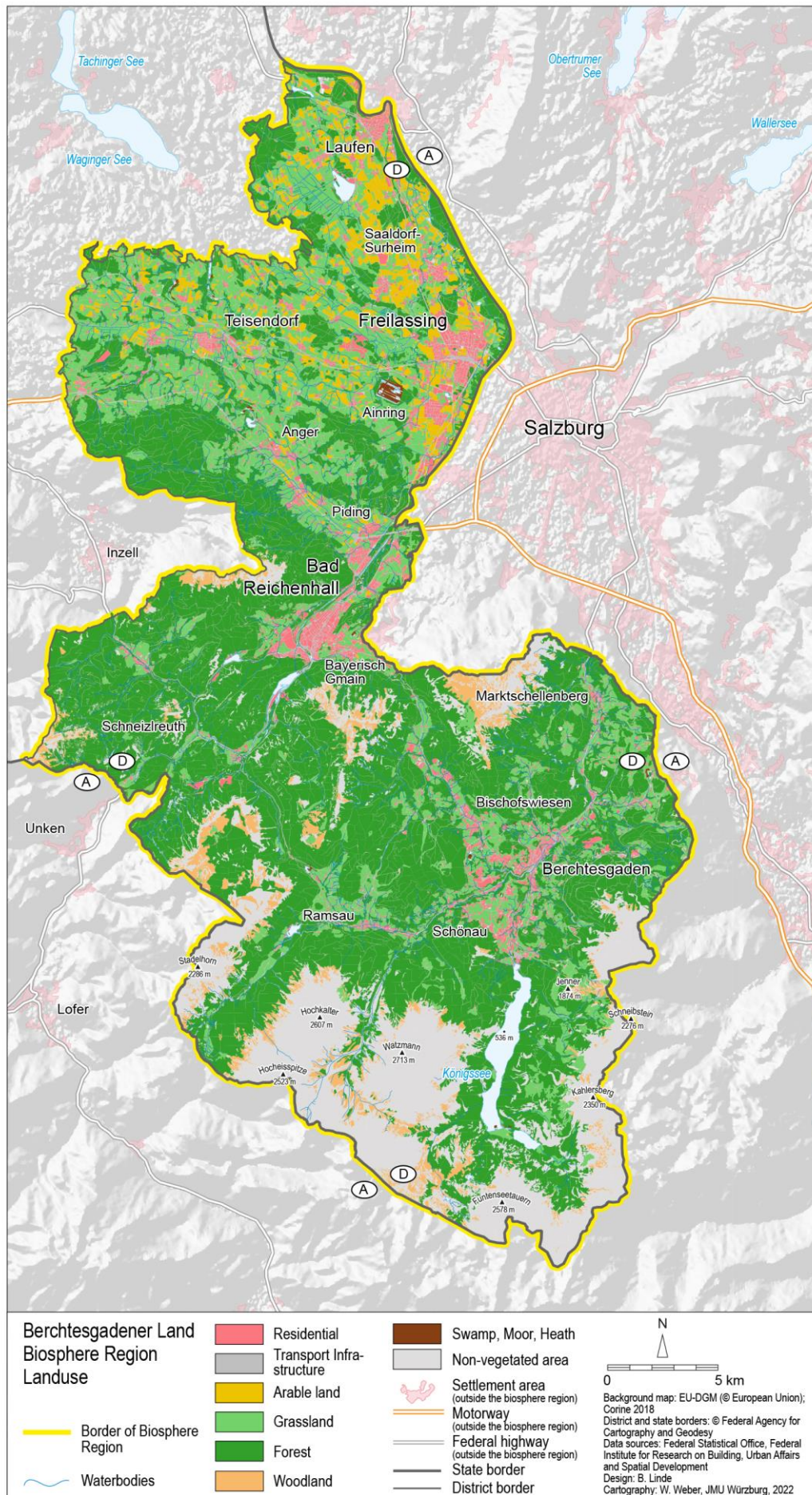


Figure 2: Berchtesgadener Land Biosphere Region Landuse

2.2.3 Changes in human population in the biosphere region

Since the last report, the population of the BR has steadily increased by 4% from 102,389 (as of 31 December 2010) to 106,483 (as of 30 June 2021).

The regional population projection for Bavaria predicts a stable population development up to 2039 for the Berchtesgadener Land district (+2%) (Bayerisches Landesamt für Statistik 2020).

2.2.4 Update on conservation function, including main changes (Chapter 4)

The conservation status of the other categories of areas protected under nature conservation law in the BR remained unchanged with the exception of the core area extension in the Berchtesgaden National Park, which thus extended the BR core area and reduced the size of the respective buffer zone (Chapter 4.1, Annex III 7.8 and 7.9, Figure 3). Changes were made to Bavaria's nature conservation law (BayNatSchG) and an accompanying law adopted following the referendum *Artenvielfalt und Naturschönheit in Bayern - Rettet die Bienen!* (species diversity and natural beauty in Bavaria - save the bees!). The changes included adding two biotope types to the list of legally protected biotopes (Chapter 4.1).

Other important partners in strengthening the conservation function were established with the LPV of the Berchtesgadener Land BR and the biodiversity advisor office of the local nature conservation authority. Over the last 10 years, a number of projects and measures were initiated and implemented by the BR and National Park administrations and other stakeholders; these are explained in more detail in Chapter 4 (conservation function) and Chapter 6 (research).

2.2.5 Update on development function, including main changes (Chapter 5)

New instruments supporting the development function include the initiative *Partner der Biosphärenregion* (Partners of the BR) and the product label *Biosphären-Produkte* (biosphere products). Both projects take a holistic approach and have links to all the BR administration's fields of action. The projects are intended to help strengthen sustainable economic practices and regional retail chains. The *Partner der Biosphärenregion* initiative is closely linked with the *Verantwortungsvoll Wirtschaften* (responsible economic practices) business network, a network of the Berchtesgadener Land Wirtschaftsservice GmbH (BGLW), which was set up together with

the BR administration and aims to facilitate increased focus on sustainability in businesses (Chapter 5.7). As a precursor to the partner initiative launched at the end of 2021, four official cooperation partners were recognised in 2018. The BR had already been working closely with these partners for many years. *Biosphären-Produkte* is a label of the BR administration for regionally and sustainably produced products. It is intended to strengthen the link between agriculture and artisanal food production and trade and tourism as well as the area's identity as a biosphere region (Chapter 5.3, Chapter 5.7).

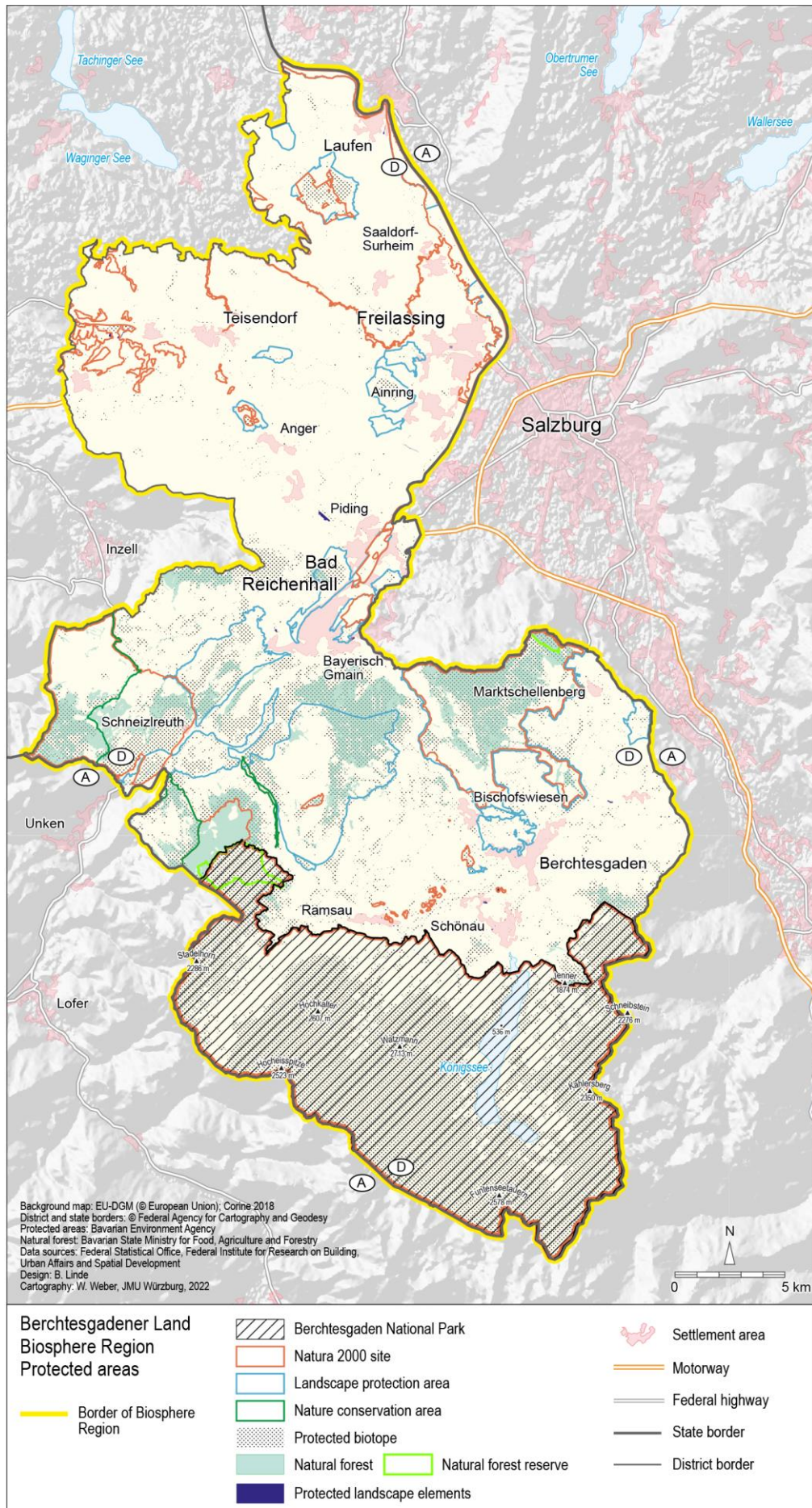


Figure 3: Protected areas in the Berchtesgadener Land BR

2.2.6 Update on logistic support function, including main changes (Chapter 6)

In the area of education for sustainable development (ESD), the activities offered were established on a permanent basis and adapted in certain areas (Chapter 6.4) With the increase in staff members and thus capacity, since 2017 all developments and measures in the BR have

been increasingly flanked by public relations work (Chapter 6.5.1). Numerous research and monitoring activities are conducted in the National Park. However, these do not meet the need for research in relation to the development function and transition area.

2.2.7 Update on governance management and coordination, including main changes (Chapter 7)

The incorporation of the BR administration into the Upper Bavaria district government in 2006 was considered a sensible and workable step

and was confirmed in 2012 with a declaration on the Berchtesgadener Land BR.

2.3 The authority/authorities in charge of coordinating/managing the biosphere region

Berchtesgadener Land BR administration is a branch office of the Upper Bavaria district government and reports directly to Division 5 responsible for environment, health and consumer protection (Figure 4). The BR administration does not have any sovereign functions or rights, these are held by the relevant administrative and specialist authorities. The Berchtesgaden National Park administration is the authority responsible for the core area and the parts of the buffer zone inside the National Park territory. It is a specialised authority under the remit of the Bavarian State Ministry of the Environment and Consumer Protection (StMUV). The BR administration takes part in meetings of the municipal committee and National Park advisory board. Furthermore, there is regular dialogue between the two administrations at working level. The Berchtesgaden forest holding of the Bavarian state forests (BaySF) is responsible for the parts of the buffer zone outside the National Park. Joint campaigns, events and bilateral exchange support cooperation.

The Trägerverein is made up of 15 municipalities, public agencies, associations and other civil society groups (agriculture, forestry, private sector etc.) (Annex III 7.2). At the general meetings (usually twice a year), the BR administration coordinates the respective projects and plans with the members. The Trägerverein is similar to a support association (*Förderverein*) and supports projects and initiatives in the BR using its own resources. It has its own management, which works closely together with the BR administration and is chaired by the governing District Administrator. In addition, the lord mayor is a member of the Trägerverein as the legal representative of his or her own municipality. The National Park administration is invited to the meetings as a guest, BaySF is a member of the Trägerverein.

Bayerisches Staatsministerium für
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Regierung von Oberbayern

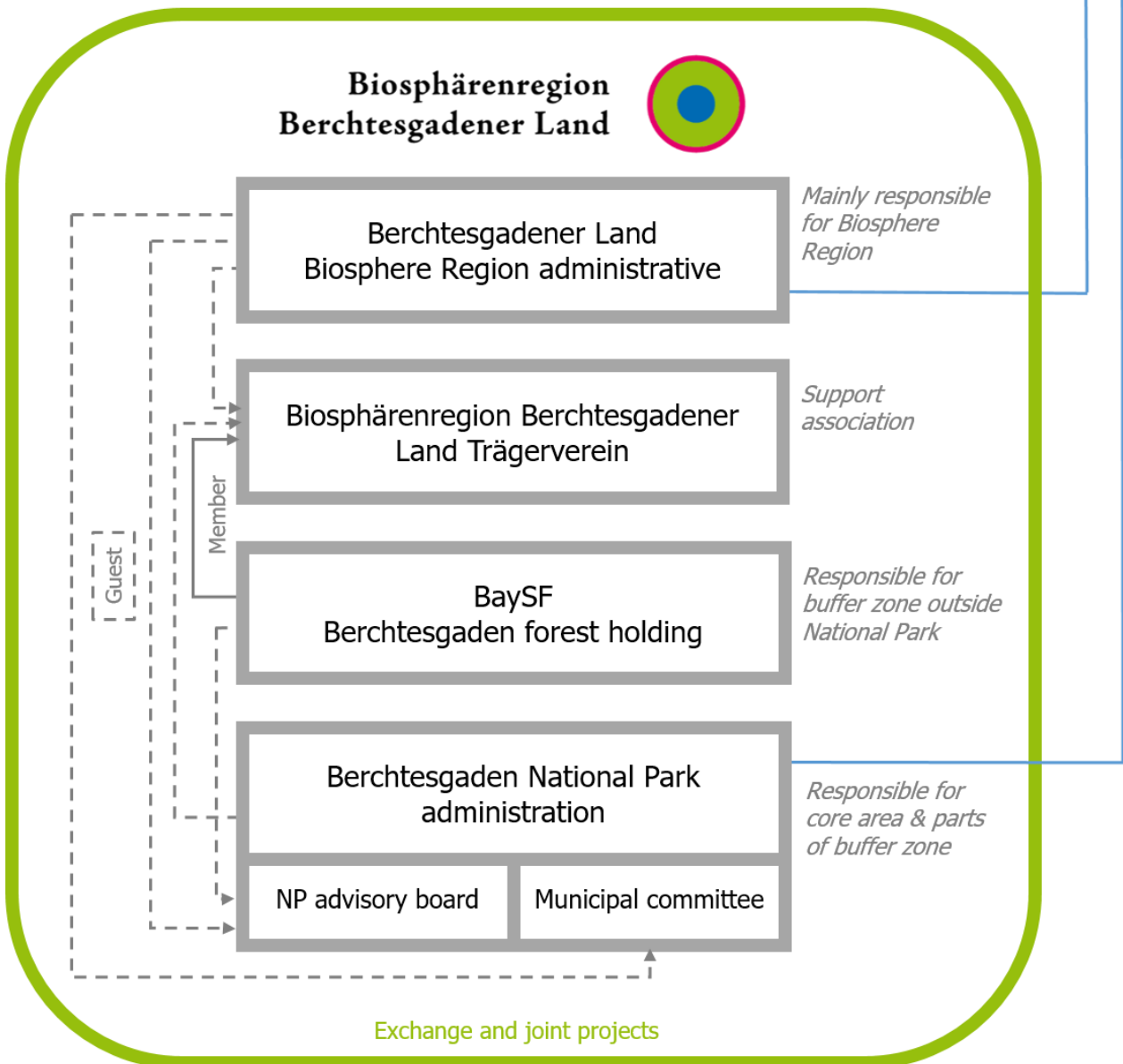


Figure 4: Organisational structure of the Berchtesgadener Land BR

2.3.1 Updates to cooperation/management policy/plan

A compact framework concept (also called management plan) is being drawn up for the Berchtesgader Land BR for the first time and is expected to be finished by the end of summer 2022 (Annex III 4.3). It will consolidate existing scientific concepts on agriculture (2011), education for sustainable development (2013) and sustainable tourism (2015). Other regional strategies will also be taken into account. The framework concept is being developed with the participation of regional stakeholders and is to be adopted by consensus as a management plan. The framework concept is not legally binding and contains guiding principles, objectives and measures for the biosphere region for the next 10 years. The concept is based on the national and international requirements and criteria pertaining to UNESCO biosphere reserves, such as those set out in the Lima Action Plan. In

addition to the BR administration, the municipalities and authorities, but also businesses and associations are primarily responsible for implementing the management plan.

A National Park plan has been in place for the Berchtesgaden National Park since 2001. The plan serves as a management plan for the core area and large parts of the buffer zone and sets out detailed objectives and measures for the development of these areas. The plan is currently being updated (see draft in Annex III 4.2). The BR administration is involved in the update process. The National Park is described as part of the biosphere region, cooperation and network structures have been specified and individual prospects for joint action in the future are presented.

2.3.2 Budget and staff support

The number of staff employed at the BR administration was gradually increased (Figure 5). In March 2022, a total of 16 people were employed at the BR administration either on a full-time or part-time basis with hours amounting to a total of 14.4 full-time positions (2.7 permanent posts, 9.95 project staff,

1 secondment, 0.75 administrative staff). In addition, there is a position for voluntary ecological year participants and for interns and student assistants, if needed (usually 1 to 3 per year). Figure 6 provides an overview of the BR administration structure.

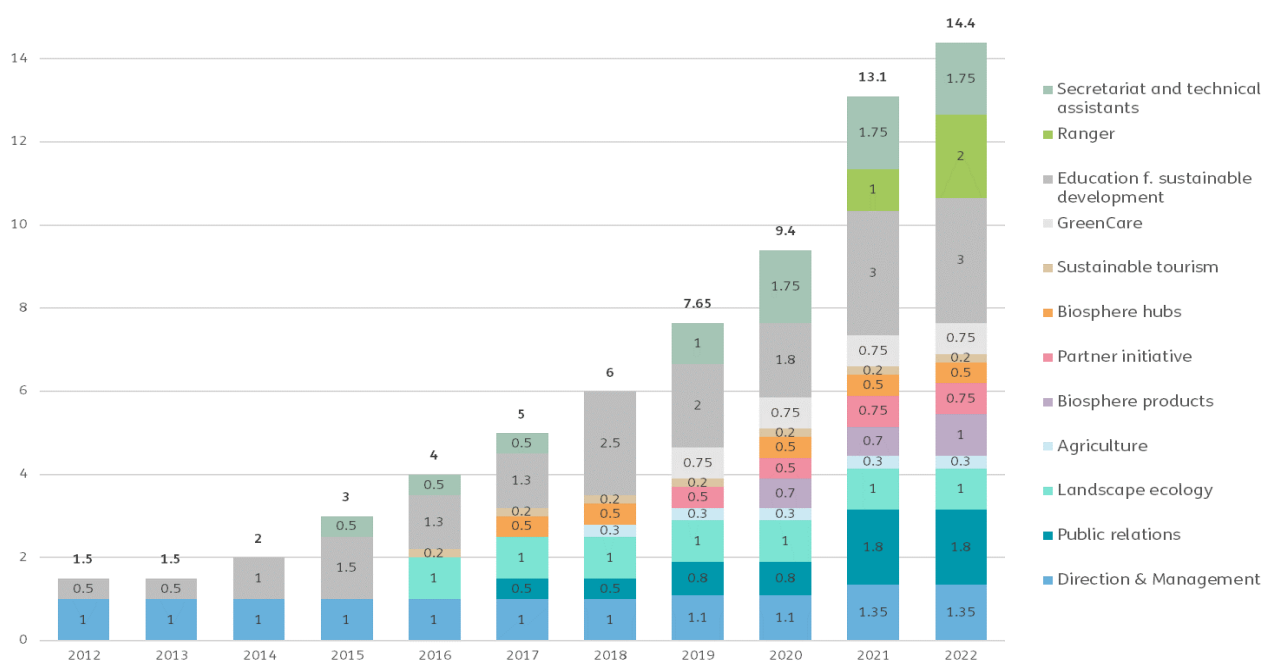


Figure 5: Trends in personnel broken down by BR administration thematic areas (as of 26 January 2022)

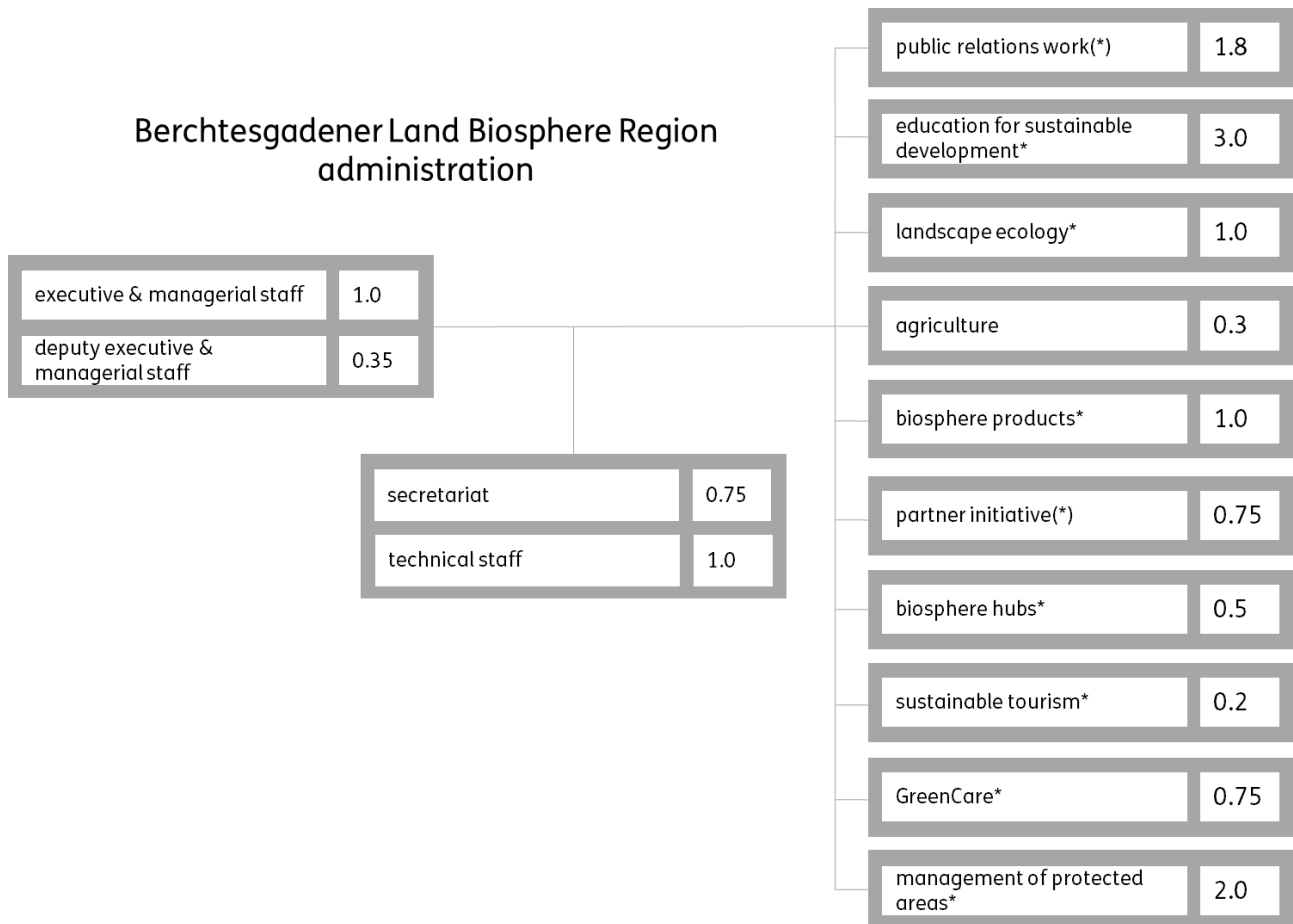


Figure 6: Structure of Berchtesgadener Land BR administration, * indicates temporary employment contracts, (*) indicates partially temporary employment contracts

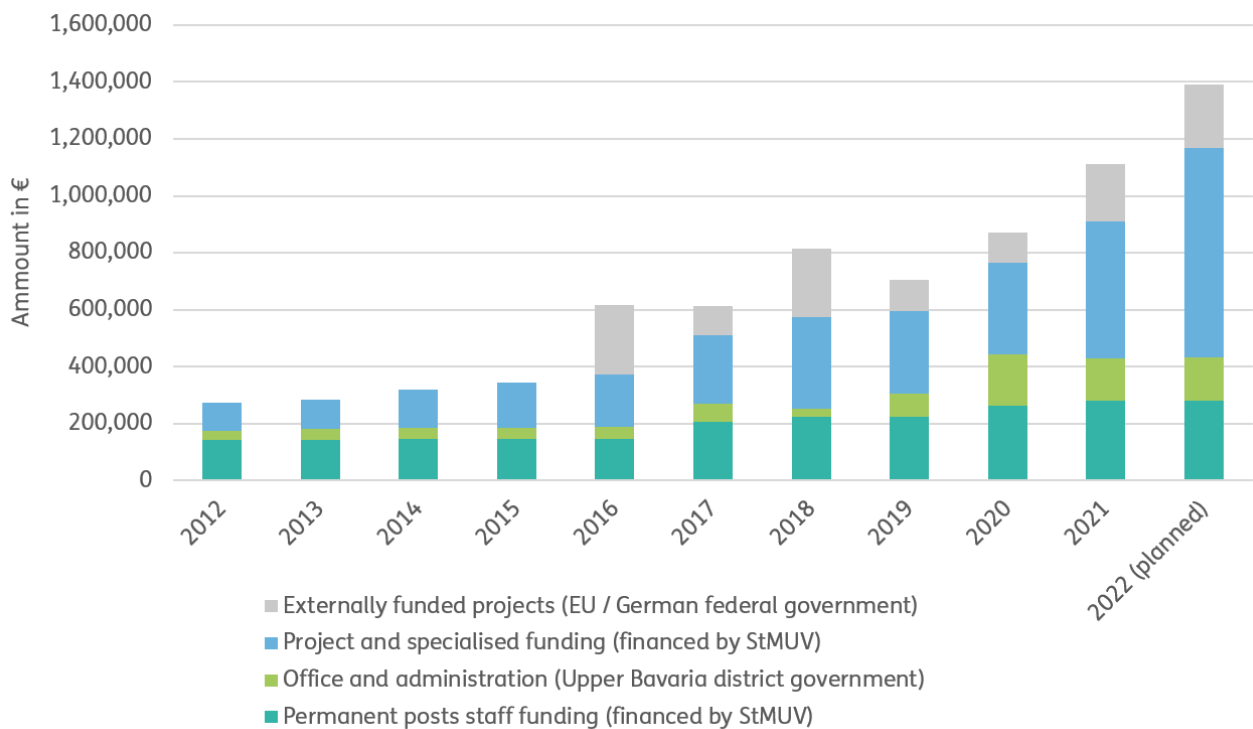


Figure 7: BR administration budget 2012-2022

In addition to staff numbers, the annual budget of the BR administration has grown steadily from 243,000 euros (2012) to 1,390,600 euros (2022), increasing fivefold since 2012 (Figure 7). Spending is mainly financed by StMUV or third-party funding. This does not include additional funds for voluntary ecological year participants, interns and student assistants.

The Berchtesgaden National Park administration employs approximately 126 people, working hours equivalent to 92.42 full-time positions (as of January 2022). The work of the National Park Administration is also supported by trainee staff, interns, Federal Voluntary Service workers and voluntary ecological year positions. According to the National Park administration budget plan (2022), the annual budget is just under 9 million euros, almost half of which is allocated to staff costs.

2.3.3 Communications strategy for the biosphere region

See Chapter 6.5.1 for information on existing goals regarding communication and public

relations work as well as measures and instruments for their achievement.

2.3.4 Strategies for fostering networks of cooperation

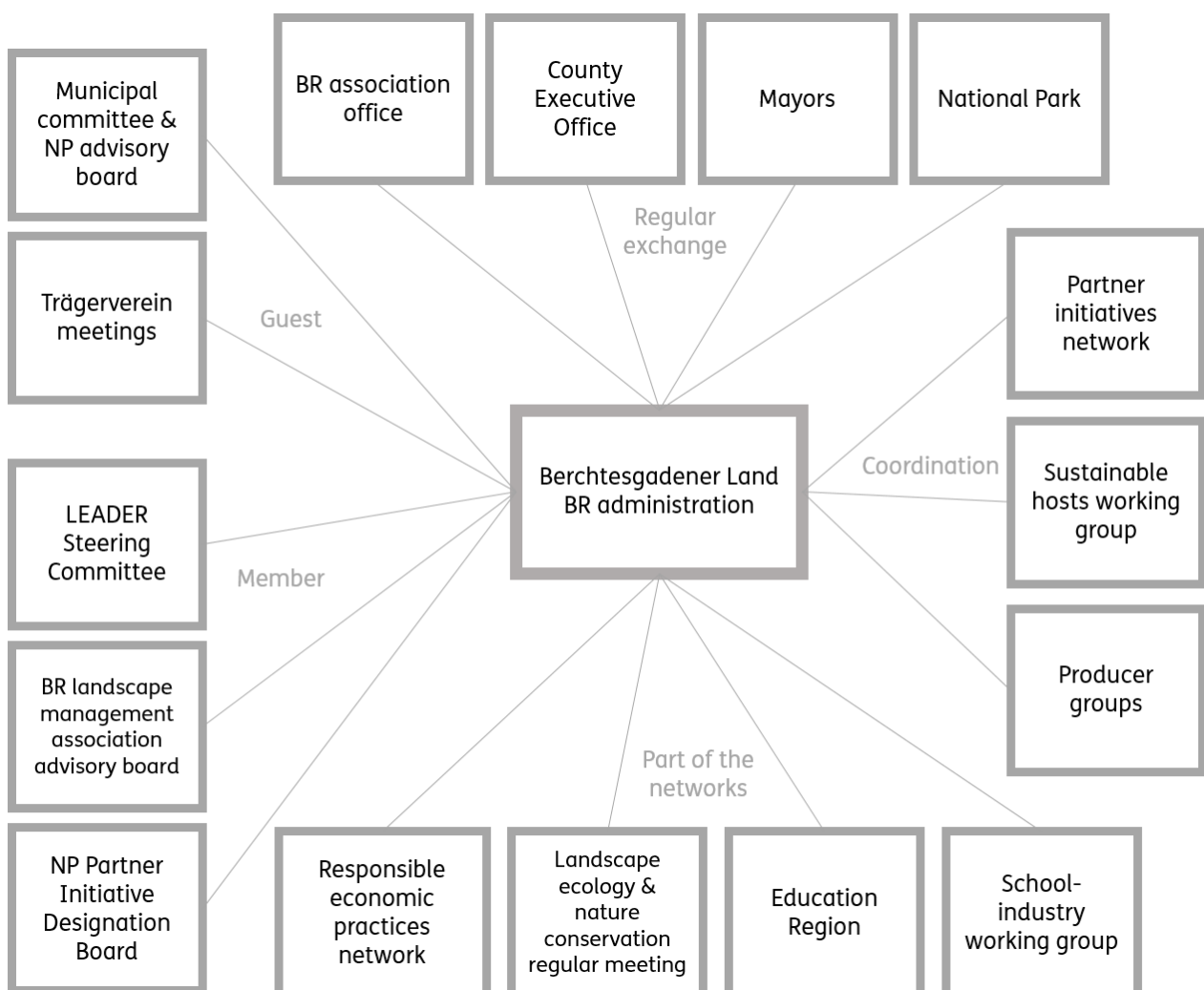


Figure 8: Network structures in the Berchtesgadener Land BR

The BR administration strategy for cooperation with regional stakeholder groups encompasses:

- Participation in existing cooperation networks and working groups
- Membership or guest status in regional bodies
- If appropriate, creation and coordination of own/new networks

Regular exchanges (mostly for specific reasons) with various regional stakeholders are also essential (Figure 8). The goal is for the biosphere reserve objectives to be disseminated through these cooperation structures, but also for regional stakeholders to support and help shape the objectives.

2.3.5 Visions and approaches for addressing the socio-cultural context

The administration pays close attention to regional and social-cultural aspects in all of its activities, although culture and cultural

heritage are not a stand-alone field of action for its work.

2.3.6 Use of traditional and local knowledge

Traditional and local knowledge is used on an ongoing basis and is an integral part of the BR administration's work. This ensures that local and cultural knowledge is incorporated into

management of cultivated landscape and educational and public relations work, and passed on during excursions and lectures.

2.3.7 Community cultural development initiatives

In the biosphere region, there are several clubs dedicated to local customs, for example, local heritage clubs, traditional costume clubs, shooting clubs as well as sports clubs, brass bands, fruit cultivation clubs and horticultural clubs. The promotion and preservation of the

Bavarian dialect via various clubs also plays a role in the biosphere region. Through the jointly organised biosphere day, the BR administration offers clubs and associations a platform and works together with them on specific projects or events.

2.3.8 Number of spoken and written languages

German is the only official language in the biosphere region.

2.3.9 Management effectiveness and functional processes

The incorporation into the Upper Bavaria district government has integrated the BR administration into the public administration of the Free State of Bavaria. However, there is still room for improvement, particularly as regards legal advice, finance and budgetary management processes, and permanent employment contracts. The provision by StMUV of further project staff positions has significantly improved the BR administration's processing of the various tasks within the cross-departmental UNESCO approach. However, as these positions are temporary,

this impairs the ability to guarantee long-term implementation of the MAB Programme goals. The division of work with the National Park administration is positive and expedient, as it optimally ensures protection of the core area and, to a large extent, the conservation function of the biosphere region. The title "administration" has created an obstacle in terms of public perception. It creates false expectations, particularly seeing as the administration does not "administrate" anything or have any sovereign functions. One plausible option would be to change the title to "office" or something similar.

2.4 Matters of special interest with regard to the biosphere region

2.4.1 Planning documents addressing the biosphere region

The biosphere region and/or National Park are mentioned in spatial planning development plans and instruments, for instance in the state development programme (2020), the Alps plan of the state development pro-

gramme (2003) and the regional plan for the Southeast Bavaria planning region (2020 update). There are numerous other strategies in the district which refer to the biosphere region (Annexes III 4.1 and 7.12).

2.4.2 Outcomes of management plans of government agencies and other organisations

The biosphere region is taken into account in the plans outlined in Chapter 2.4.1.

2.4.3 Continued involvement of local people

The involvement of local people is described in Chapters 2.3.4 and 7.5.

2.4.4 Role of women in organisations and decision-making processes

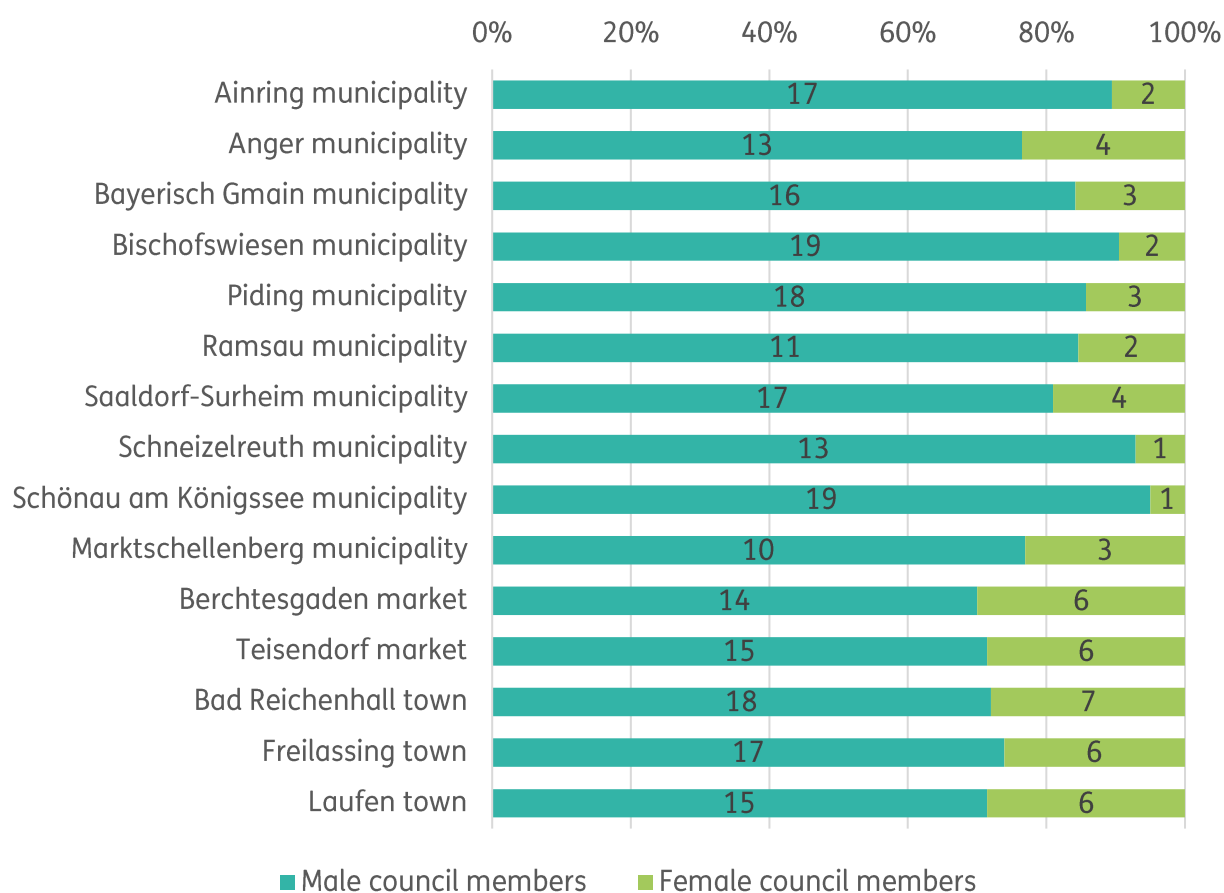


Figure 9: Town councillors and local councillors of the municipalities of the Berchtesgadener Land BR (as of December 2021)

Gender equality is legally enshrined in the Basic Law of the Federal Republic of Germany. Equal opportunities officers are appointed in government authorities. At 75%, the proportion of women employed at the BR administration is comparatively high (as of January 2021). Women account for 48% of staff employed at the National Park adminis-

tration. Women are, for the most part, severely under-represented among the elected public representatives at municipal level in the biosphere region (Figure 9). All lord mayors of the municipalities are male. Of the 61 district council members, 28% are female and 72% are male (as of December 2021).

2.4.5 Changes in the main protection regime of the core areas and buffer zones

See Part I: Overview, section i).

2.4.6 Research and monitoring activities

See Chapters 6.1 and 6.2.

2.4.7 Strengthening of collective capacities for the governance of the biosphere region

Collective capacities for the governance of the biosphere region have been strengthened, in particular, with the confirmation that the administration will permanently remain a branch office of the Upper Bavaria district

government and the increase in staff numbers through permanent and project positions. The associated establishment of networks and partnerships supports this process (Chapters 2.3.4 and 7.5).

2.4.8 Additional information about the interaction between the three zones

The large core area covering 15,607 ha (Figure 1) ensures minimal disturbance to the dynamics of the high mountain ecosystems, the forest communities of the montane and subalpine zones, mountain pine bushes and peatlands, alpine meadows, natural biotopes of the rocky regions, watercourses and standing waters. With the exception of leisure and recreational use, and limited military use¹, the core area is free of anthropogenic use.

The buffer zones (7,826 ha) comprise the buffer zones of the National Park and the “Aschau” and “Östliche Chiemgauer Alpen” nature conservation areas. They primarily serve to preserve, maintain and support the submontane to subalpine ecosystems that arose from or are influenced by anthropogenic use. The focus here is on forests and summer pastures in a broad range of different habitat types. The core area and buffer zone are

subject to strict protection ensured by designation as a National Park, nature conservation areas and Natura 2000 sites.

The transition area (60,551 ha) covers the rest of the Berchtesgadener Land district. As it is an area where people live, work and engage in recreation, sustainable economic practices are promoted and developed here.

Alongside research, monitoring and educational measures, all three zones are used for recreation, but to varying degrees. The core area and buffer zone are sought out by locals and visitors to the area for recreation and sport. As a result, sensitive landscape areas are under increasing pressure from visitors, and visitor numbers at times cause other problems like traffic congestion, parking issues and waste pollution.

¹ In particular, military overflights and landing sites for helicopters. Contractual agreements were reached with the Federal Armed Forces to ensure that disturbances in

the National Park, particularly in the core area, are kept to the absolute minimum.

Buffering of core area

The core area is very well protected from adverse impacts or influences by its topography, location, adjacent protected areas and buffer zone. On the German side, the core area is largely surrounded by the buffer zone. Exceptions to this are limited to the Reiteralpe area in the southwest of the biosphere region and at the Kehlstein in the southeast (boxes marked out in Annex III 7.7).

These areas are naturally buffered by the high altitudes and adjacent steep slopes. In the Alps plan, these areas are included in zone C (traffic only in exceptional cases) and B (traffic only in compliance with strict standards). On the Austrian side, the borders are also located in a high mountain area and border directly on protected areas, thus ensuring the existence of appropriate buffer areas.

2.4.9 Participation of young people in the biosphere region

Given the challenge of skilled worker shortages in the future, the Berchtesgadener Land district has recognised the involvement of young people as a priority. The District Youth Officer of the State District Office is working closely with the district youth association and other relevant stakeholders in all areas,

including the BR administration, to involve and connect young people with the Berchtesgadener Land. Young people can have their say and actively shape democratic processes in municipal politics e.g. within the framework of the democracy lab.

3 Ecosystem services

3.1 Ecosystem services provided by each ecosystem and their beneficiaries



Figure 10: Rocky and scree habitats (l.) © Florian Mädler; summer pasture on the Mordaualm (r.) © BR administration

The ecosystem services of the biosphere region have not been systematically quantified according to a scientific standard. Nevertheless, the following section provides a very simplified overview of the key habitats and their ecosystem services based on the CICES classification system (Haines-Young & Potschin 2018, Grunewald & Bastian 2013, Table 3).

The Berchtesgadener Land BR is Germany's only biosphere region with part of its territory in the Alps.

Alpine habitats include (Figure 10 - left) scree and boulder scree slopes, rocky slopes without vegetation, rock vegetation, alpine meadows and tall herbaceous communities. They are home to a large number of unique species that can survive in harsh climatic conditions.

One characteristic habitat of the Berchtesgadener Land are the summer pastures (Almen), large parts of which are characterised by oligotrophic grassland (Figure 10 - right). Grazing management has given rise to open landscape areas with characteristic plant communities which are among the most species-rich biotopes of the region and Central Europe. Furthermore, the summer pastures are an integral part of the alpine landscape and are a highly valuable aspect of the region's identity and tourism.

Agriculture in the Berchtesgadener Land is dominated by grassland farming. Extensive grassland encompasses mountain and lowland hay meadows, oligotrophic and dry grasslands, and rough pastures. Intensive grassland denotes multi-cut meadows (cut more than 3 times a year) and rich and permanent pastures (Figure 11).

20% of agricultural land is farmed as arable land. Forage maize is cultivated on around 50% of the land, while the other half is predominantly used to grow other types of cereals and clover. Vegetable cultivation plays hardly any role in the biosphere region.

Almost 50% of the land of the biosphere region is covered in forest and shrub areas which occur at almost all elevations. These include mesophilic mixed deciduous forests at lower altitudes, dealpine alluvial forest communities and hardwood alluvial forests, thermophilous forest communities in föhn-influenced sites with Scotch pine, large-leaved lime and durmast oak, subalpine spruce forests and montane to high montane mixed mountain forests (Figure 12 - left) as well as subalpine dwarf-shrub heath and pine groves (Figure 12 - right).



Figure 11: Pasture near Sillerdorf (l.); grassland farming near Ulrichshögl (r.) © Florian Mädler

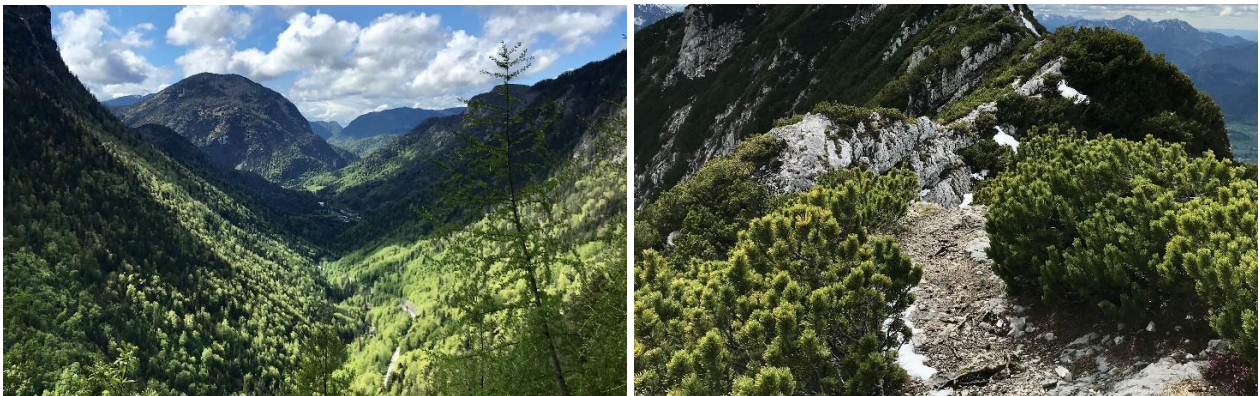


Figure 12: Montane to high montane mixed mountain forest (l.); pine groves (r.) © Britta Linde

Wetland meadows and peatlands are significant from a nature conservation perspective as they provide habitats for very unique species of flora and fauna (Figure 13). In the biosphere region these are moist and wet tall herbaceous communities, sedge reeds, molinia meadows, spring fens, alkaline fens and raised bogs.

The main water bodies flowing through the biosphere region are the Salzach, Saalach and Sur rivers. Furthermore, there is a widespread network of watercourses running from high up in the mountains to the foreland (Figure 14) and several lakes (e.g. Königssee, Hintersee, Thumsee, Abtdorfer See) and ponds with their silt communities.

Another significant habitat that is growing in size (Chapter 2.1) are rural settlements and urban areas (Figure 15). Key ecosystem services here are cultural services like space for living and recreation, they also contribute to the cultural identity of the region.

An overview of the landcover is provided in Chapter 2.1 and Annex III 2.



Figure 13: Ainringer bog (l.) © Florian Mädler; litter meadow in Haarmooos (r.) © Peter Loreth

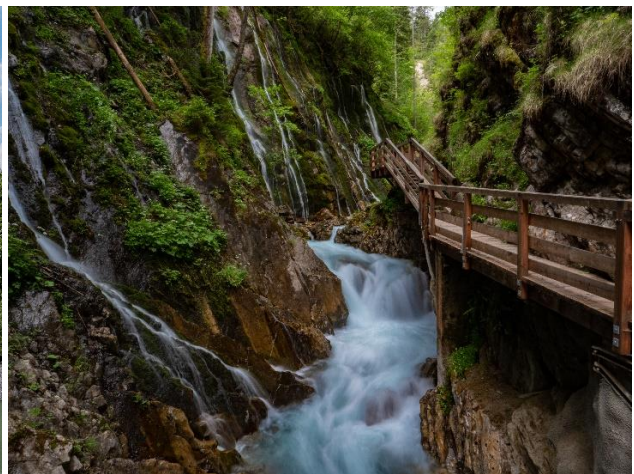


Figure 14: Saalach (l.); Wimbachklamm (r.) © Florian Mädler



Figure 15: Typical building style (l.); Bad Reichenhall historic town centre (r.) © Florian Mädler

Table 3: Ecosystem services of important habitats

Ecosystem services of important habitats in Berchtesgadener Land BR		1. Alpine habitats	2. Summer pastures	3. Extensive grassland	4. Intensive grassland	5. Wetland meadows and peatlands	6. Water bodies	7. Forest and woodland	8. Arable land	9. Settlements
1 Provisioning services	Food and animal feed crops (for humans and livestock)									
	Animal products (from livestock and wild animals)									
	Renewable raw materials and other natural resources for direct use or processing									
	Natural resources for energy generation									
	Genetic diversity (species and habitats)									
	Freshwater/drinking water									
2. Regulating services	Protection against erosion and natural hazards									
	Temperature and humidity regulation (climate regulation)									
	Hydrological cycle regulation and water storage capacity									
	Pollination									
	Filter and buffer function for contaminants									
	Soil fertility									
	Weathering, decomposition and fixation processes (e.g. carbon fixation)									
3 Socio- cultural services	Promotion of health and recreation (including sport)									
	Cultural identity									
	Landscape aesthetic and inspiration									
	Science and education									
	Jobs									
Main beneficiaries	Agricultural and forestry establishments									
	Crafts businesses and service providers									
	Tourism/tourism businesses									
	Consumers									
	Schools and other education stakeholders									
	Research institutions									
	Local population									

Green = key ecosystem services in the habitats listed,

orange = ecosystem services only partially relevant in these habitats

As Table 3 shows, ecosystem services provided by agricultural and forestry land play a key role for the biosphere region. Extensively used grassland (meadows, pastures), particularly summer pastures, wetlands and peatlands, are characterised by their species diversity and the presence of unique species, thus securing genetic resources (Annex III 5). Forests and peatlands are also important for biotic and abiotic regulating services such as climate and hydrological cycle regulation, and carbon fixation. Forests play an important role as protection in the southern part of the region. They protect settlements and infrastructure

from rockfalls, landslides and avalanches and thus enable settlement of these areas. Also worth highlighting are the provisioning services of agricultural and forestry land for the production of food and raw materials for further processing or energetic use as biomass.

Alongside biotic and abiotic provisioning and regulating services, socio-cultural ecosystem services of the cultivated landscape and protected areas are essential as they provide an important basis for recreation, sport, the tourism sector and the attractiveness of the region as a place to live and do business.

3.2 Changes regarding the indicators of ecosystem services

See Chapter 3.4.

3.3 Ecosystem services and biodiversity

Plant pollination, seed distribution and the conservation of genetic diversity are all key ecosystem services that support biodiversity conservation. They are particularly relevant in the alpine habitats and on extensive grassland (especially on limestone oligotrophic grass-

lands, lowland hay meadows, mountain hay meadows), characteristic wetlands and peatlands and in forests (especially species-rich mountain forests and alluvial forests) (Chapter 3.1).

3.4 Updated assessment of ecosystem services of the biosphere region

Scientific assessments of the ecosystem services of the biosphere region have not been carried out as of yet and are not envisaged.

4 Conservation function

4.1 Significant changes in the main habitat types, ecosystems and species of traditional or economic importance

Table 4: Protected areas in the biosphere region and area-related changes

Category	Area in hectares	Percentage of BR area	Area-related change during reporting period
17 Natura 2000 sites	31,353	37.3%	None
1 national park	20,801	24.8%	Extension of core area by 2% Reduction of buffer zone by 2%
3 nature conservation areas	2,686	3.2%	None
20 landscape protected areas	11,615	13.8%	None
Biotopes according to biotope mapping	26,773	31.8%	New since 2019: Meadow orchards and species-rich and structurally rich permanent grassland as legally protected biotopes, currently not yet mapped and therefore not included in area statistics.
16 protected landscape elements	24.9	0.03%	None
Natural forests	5,426	6.5%	New since 2020
3 natural forest reserves	523	0.6%	None

A total of just under 52% of the biosphere region area is legally protected. There is a lot of overlap between the different types of protected areas. Table 4 gives an overview of the protected area categories and their coverage in the region (Annex III 7.8).

The number and size of the Natura 2000 sites have not changed since the last report. Seven management plans were drawn up during the reporting period (Annex III 7.14). The legally protected biotopes were extended to include meadow orchards and species-rich hay meadows. Natural forests were added as a new category under the Bavarian law on forests (Bayerisches Waldgesetz). Natural forests in this context include near-natural forests in state forests and extend beyond

areas in which natural processes are already protected e.g. natural forest reserves. Other legally protected areas remain unchanged.

Among the most species-rich habitats in the region are mountain and alluvial forests, oligotrophic grasslands, litter and hummocky meadows, tratten (pastures and meadows with trees), alkaline fens and wet meadows, rough pastures, heimweiden (home meadows) and areas along the Sur river. Furthermore, the Berchtesgadener Land species and biotope conservation programme (ABSP) lists 1,993 animal and 468 plant species and assesses them from a nature conservation standpoint (Annexes III 5 and 7.10).

These include animal species like the golden eagle (*Aquila chrysaetos*), Eurasian curlew (*Numenius arquata*), Brandt's bat (*Myotis brandtii*), the otter (*Lutra lutra*), alpine ibex (*Capra ibex*) and the jersey tiger (*Euplagia quadripunctaria*) (Figure 16).

Among the plant species are the bladder gentian (*Gentiana utriculosa*), sticky flax (*Linum viscosum*), false tamarisk (*Myricaria germanica*), lady's slipper orchid (*Cypripedium calceolus*), edelweiss (*Leontopodium nivale*) and Alpine willow (*Salix alpina*). (Figure 17).

No concrete figures on population sizes or changes are available due to the lack of a systematic overall survey and incomplete data. Individual species are studied in the National Park with the support of volunteer workers. However, systematic surveys have not been conducted, with a few exceptions (e.g. on the golden eagle, black grouse and moths) (Chapter 6.1).

In general, it can be stated that the greatest threats to valuable habitats and species arise from the abandonment of agricultural activity on marginal yield farmland or from the intensification of use, but also from building and sealing of soil surfaces (Chapter 2.1), both in settlement areas and in connection with tourism. Tourism infrastructure and growing numbers of visitors to high alpine areas are increasing pressure on areas that are particularly sensitive from a nature conservation perspective.



Figure 16: Alpine ibex (*Capra ibex*) (l.) © Florian Mädler; Eurasian curlew (*Numenius arquata*) (r.) © Laura Wollschläger



Figure 17: Sticky flax (*Linum viscosum*) (l.) © BR administration; Edelweiss (*Leontopodium nivale*) (r.) © Florian Mädler

4.2 Description of the main conservation programmes in the biosphere region

Transition area

The BR administration initiated projects and activities together with partners with a view to conserving extensive and structurally rich cultivated landscapes and securing ecologically valuable habitats. One main focus of the BR administration’s work so far is the promotion of autochthonous meadow flora through the development and optimisation of a harvesting system, which was subsequently

passed on to the landscape management association (Figure 18 - left). Other activities such as the project to protect wild bees or the biosphere fruit tree campaigns are specifically aimed at attracting the broadest possible participation from the local population and regional stakeholders (Figure 18 - right). See Table 5 for a list of all initiatives and projects of the BR administration.



Figure 18: Seed extraction using the eBeetle (l.); distribution of fruit trees (r.) © BR administration

Table 5: BR administration activities related to SDG 15

SDG 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse soil degradation and halt biodiversity loss.			
<div>15 LIFE ON LAND</div>			
Measure / project	Aim	Implementation partners	Implementation status
Biosphären-Wiesensamen (biosphere meadow seeds)	Create species-rich habitats by establishing regional seed production of endangered meadow and wild field plant communities	Salzburg Lungau Biosphere Park Mitterpinzgau region	2015-2018: INTERREG project <i>Wild und kultiviert</i> (wild and cultivated) 2018-2024 Continuation via BR administration project position

Wildbienen schützen (protect wild bees)	Conservation of wild bees in Berchtesgadener Land as an indicator of an intact landscape through (re-)propagation of flowers and creation of nesting and breeding opportunities	Nationale Naturlandschaften e.V. (National Natural Landscapes), municipalities, schools and clubs	Ongoing since 2017
Biosphären Obstbaumaktionen (biosphere fruit tree campaigns)	Promotion of landscape elements typical to the region through annual distribution of fruit trees including planting material to interested parties	The Biosphärenregion Berchtesgadener Land e. V. association (Trägerverein), the landscape management association (LPV) and Berchtesgadener Land BR	Ongoing since 2015
Biosphären-Hecken (biosphere hedgerows)	Planting of landscape-hedgerows	See fruit tree campaigns	Ongoing since 2019
Bauhoftraining (municipal building yard training)	Organisation of half-day and full-day training days for municipal building yard employees on environmentally friendly management of green areas	Municipalities	Ongoing since 2019
Freiwilligencamps (volunteer camps)	Organisation and implementation of one- and multi-day camps working on the landscape management of summer pastures or on habitat management e.g. for the black grouse (<i>Lyrurus tetrix</i>)	Nationale Naturlandschaften e.V., Berchtesgadener Land dairy	Ongoing since 2020
Citizen Seeds	Propagation of wild field plants with the public	General public	Ongoing since 2019
Exchange through regular meetings with other stakeholders in the field of nature conservation and landscape ecology	Coordination and discussion of tasks, general exchange of ideas between stakeholders	Local nature conservation authorities, biodiversity advisor office, landscape management association (LPV), Bavarian Academy for Nature Conservation and Landscape Management (ANL)	Ongoing since 2021
Improvement of living conditions for cross-border scarce fritillary (<i>Euphydryas maturna</i>) metapopulation	Permanent conservation of a stable population through improvement of habitat structures, circulation potential and genetic exchange.	Salzburg state, represented by the Salzburg regional government, department 5 - nature conservation and environmental protection, industry	Completed; 2016-2018 INTERREG project

In November 2016, the landscape management association Biosphärenregion Berchtesgadener Land e.V. (LPV) was founded. Since then, measures promoting professional maintenance and conservation of biotopes and biotope networks in the region have become increasingly important. In recent years, for instance, some 3,000 metres of hedgerows with native shrubs were cultivated on agricultural land, 33 hectares of wetlands, 10 hectares of dry meadows and rough pastures and 4 tratten totalling around 11 hectares were managed. Since the estab-

lishment of LPV, funding claimed through the landscape management and nature parks guidelines (LNPR) has increased significantly (Table 6). LNPR funds also enable implementation of the BayernNetzNatur project *Quellmoore zwischen Salzach und Traun* (project on spring fens between Salzach and Traun which ran from 2010 to 2018). Under this joint project, a total of around 20 hectares of valuable habitats spread over 30 sites were professionally maintained in 2017 and 2018. More will follow.

Table 6: LNPR funds used in the Berchtesgadener Land district (in euros) 2012-2021

2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total
9,844	575	27,985	61,467	14,970	62,058	98,766	118,687	141,872	193,829	730,053

Table 7: Funds used under VNP for forests in the Berchtesgadener Land district (in euros)

2019	2020	2021	Total
41,785	218,705	298,265	558,755

Among the key measures for near-natural and sustainable forest management, in particular, are the implementation of a nature conservation concept by BaySF and the advisory activities for private forest owners offered by the Bavarian State Office for Food, Agriculture and Forestry (AELF). Following the second act for the protection of biodiversity and natural

beauty in Bavaria (*Zweiten Gesetzes zugunsten der Artenvielfalt und Naturschönheit in Bayern - Versöhnungsgesetz*), the scope of the contract-based nature conservation programme (VNP) for forests was extended and intensified. The goal throughout Bavaria is to apply VNP for forests to 6% of privately-owned and corporate forests thus making an important contribution to nature and species conservation. Privately-owned and corporate forests account for 37.3% of the forests in Berchtesgadener Land. Since 2019, VNP for forests fund use in Berchtesgadener Land has increased significantly (Table 7). A further increase is expected in 2022.

Core area and buffer zone

The entire National Park is a protected area under the EU Birds and Habitats Directives. The National Park administration is active in implementing conservation measures in the core area and large parts of the buffer zone in the biosphere region. The primary objective in the core area is conservation and the facilitation of natural processes without human influence. Priorities in the buffer zone are active support of forest development, regulation of game populations, combatting the bark beetle, management of summer

pastures and use of water bodies. Particularly worth highlighting is the INTERREG project “ALPBIONET2030” (duration: 2016-2019, overall budget 2,637,285 euros) on integrated and sustainable wildlife and habitat management in the Alps, as it was one of the most successful projects of the last decade.

In addition to the development of a transboundary multi-stakeholder concept for integrated wildlife management in the Alps, three key activities emerged from the project:

a management strategy for tratten, more in-depth management activities for spring fens and wet meadows and hazel grouse mapping. Other key activities of the National Park administration to promote and conserve biodiversity include targeted visitor management, establishment of near-natural mountain forests with fir and beech trees in the buffer zone (mandated by ordinance), reintroduction of bearded vultures and building up the lake trout population in the Königssee (Figure 19). In addition, the National Park administration carries out monitoring and research activities (Annex III 7.11, Chapter 6.2) which provide the basis for fulfilling the conservation function. Climate changes and springs have been intensively monitored in the National Park for decades.

These programmes have now been extended to include monitoring of biodiversity at all trophic levels and in the different habitats. Research activities are carried out in a number of fields, including climate impact research (impacts of climate changes on biodiversity), forest dynamics, biology of game animals, hydrology and the study of ecosystem processes (e.g. contributions of insects and fungi to the carbon cycle).

BaySF is responsible for carrying out conservation and management measures in the parts of the buffer zone outside the National Park. Here, management is carried out in accordance with nature conservation ordinances and the Bavarian state forests nature conservation concept (Bayerische Staatsforsten 2014).



Figure 19: Natural forest development in the core area and buffer zone (l.) © Roland Baier; since 2021 bearded vultures are being reintroduced in the Berchtesgadener Land (r.) © pixabay

4.3 Ways in which conservation activities are linked to sustainable development issues

Activities aimed at conserving native biotopes and species diversity are linked with the economic and social development of the region, also with a view to establishing measures in the long term. The projects are always implemented in cooperation with landowners and predominantly with regional businesses as, for instance, in the *Biosphären-Wiesensamen* project or in the propagation of meadow shrubs and wild field plants.

The wild field plants are in turn planted by holdings which cultivate heritage, endangered crop varieties. The flowers of the wild field plants are then used to decorate (Figure 20) the biosphere ice cream (Chapter 5.7). This cycle is an example of how to successfully link value creation in the region with promoting biodiversity in the local cultivated landscape.

The *Biosphären-Getreidegarten* (biosphere grain garden) launched in 2018 contributes to implementation of the Convention on Biological Diversity (CBD) and the Bavarian Biodiversity Programme 2030. The garden is intended to serve as a genetic pool for native species while at the same time supporting value creation by relevant businesses through the establishment of new products and conservation of the diversity of the cultivated landscape.



Alongside activities in agriculture and the marketing of regional products, links are being established between sustainable development and biodiversity conservation e.g. in the GreenCare research project (Chapter 6.2), the *Freiwilligencamps*, (Chapter 4.2) and in the criteria for the network of biosphere region partners (Chapter 5.2).



Figure 20: Wild field plants (l.) © BR administration; biosphere ice cream (r.) © Wolfgang Gasser

4.4 Assessment of the effectiveness of actions and strategies applied

Success monitoring of the impacts of implemented measures on species and habitats has been limited to date. In 2020, the wild bees project was designated a UN Decade project, thus reaffirming its importance and effectiveness for the region. Over the last 10 years, the project has helped create over 40 new wild bee habitats and plant over 2,000 biosphere fruit trees and a good 3,000 metres of hedgerows in the biosphere region. In 2021, a study by Universität Salzburg was launched with the goal of comparing wild bee and hover fly species between the meadow seed donor areas and the newly created flower areas. The findings are not yet available. Numerous

inquiries regarding the establishment and management of species-rich flowering areas show that the advisory competence of the BR administration regarding landscape ecology is recognised.

During the reporting period, the areas supported within the framework of the contract-based nature conservation programme (VNP) for open land tripled (2011: 368 hectares, 2021: 1,100 hectares) and funding more than tripled (according to an evaluation by the Upper Bavaria district government funding office). Since 2019, 550,000 euros in funding was provided through VNP for forests.

4.5 Main factors that influenced (positively or negatively) the success of conservation measures

The main factors that have positively influenced the implementation of conservation measures in the biosphere region are

- 1) the establishment of the landscape management association and the accompanying landscape management activities,
- 2) new financing and funding options for implementing projects (e.g. donations, extension of scope of LNPR funding),
- 3) financing of new project positions in the region using state funding,
- 4) adequate staff numbers and the numerous projects of the National Park administration and
- 5) the supervision and implementation of projects together with various stakeholders.

The 2019 referendum *Artenvielfalt und Naturschönheit in Bayern - Rettet die Bienen!* was an important initiative for enhancing species conservation in the biosphere region, and it led to amendments to the Bavarian state nature conservation law. It is also significant as several new offices were created in the region to implement species conservation projects. These offices are part of various institutions, which means that the effort required to coordinate activities and funds allocated has so far been considerable. To date, there have only been a few concrete activities to implement the species and biotope conservation programme and the Natura 2000 management plans. The new biodiversity advisor office will provide support with targeted implementation projects and funding acquisition.

4.6 Outlook and other comments from the biosphere region

One of the greatest challenges for the coming year is counteracting the loss and isolation of ecologically valuable habitats. While the core area and buffer zone are legally protected as a National Park, meaning climate changes and sporadically increasing pressure from visitors play more of a role in these areas, the transition area faces other or further challenges such as increased sealing of soil surfaces and structural change in the agriculture sector. In this context, land use intensification, but also abandonment of agricultural activity in periphery locations with marginal yields, and sealing and fragmentation of landscapes play a major role. According to land users and their advisers, the support rates provided by the state for

extensification of intensive agriculture are often too low to provide an economic incentive. One way to support agricultural holdings in the region and thus counteract biodiversity loss is to provide agricultural holdings with targeted advice on funding possibilities and funding acquisition for landscape management and contract-based nature conservation. Future tasks of the BR administration include continuing to strengthen cooperation with stakeholders in the field of nature conservation, improving and stepping up public relations and better integrating and communicating nature conservation approaches in educational contexts (Chapter 6.4).

5 Development function

5.1 Prevailing trends over the past decade

Berchtesgadener Land is a classic tourist destination and an attractive place to live and work with growing numbers of inhabitants. The biosphere region is thus different from other German biosphere reserves as the district is

considered a continuous growth region (Job & Dubrow 2018). The strongest sector is the service sector with an employment share of 68.7% and 73.7% share of value added (BGLW 2019, Figure 21).

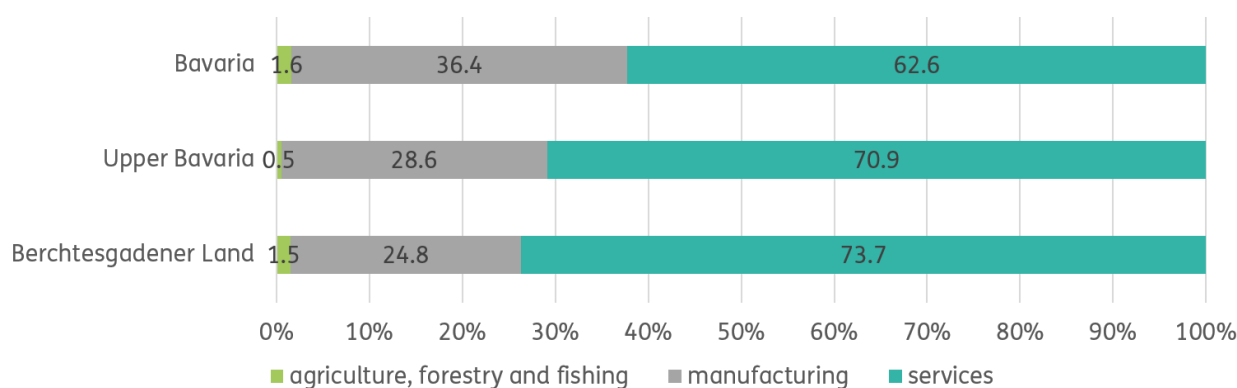


Figure 21: Shares of each sector in gross value added in % in 2019

5.2 Description of the tourism industry

With gross turnover of 587.3 million euros in 2019, tourism is one of the most significant sectors in the biosphere region (DWIF 2020). At around 3.8 million, the number of overnight stays are comparatively high (DWIF 2020). The average length of stay for visitors in the district, 4.1 days, is long compared with the rest of Bavaria and Germany (as of 2019, BGLT 2019). Emerging trends show higher numbers

of visitors staying for shorter periods (Bayerisches Landesamt für Statistik 2018). At the same time, the number of day trips is going up (6.3 million in 2019) (DWIF 2020). The number of visitors to the southern alpine part of the district is much higher than in the northern part (Table 8). This also includes the Berchtesgaden National Park with around 1.6 million visitors annually (Job et al. 2015).

Table 8: Number of visitors and overnight stays in the Berchtesgadener Land district²

Subregions	Overnight stays 2019	Visitors 2019	Duration of stay (in days) Ø 2019
Berchtesgaden - Königssee	2,357,099	576,294	4.09
Bad Reichenhall - Bayerisch Gmain	958,326	193,386	4.96
Rupertiwinkel	317,204	107,349	2.95

*Source: BGLT 2019

² A decrease in turnover and number of overnight stay is expected as a result of the COVID-19 pandemic. Current figures are not available.



Figure 22: Königssee (l.); Berchtesgaden with a view of the Watzmann (r.) © Florian Mädler

Attractions include, for example, the Königssee, and outside the National Park, the Berchtesgaden market (Figure 22). The attractions and range of products for tourists in the biosphere region are wide and varied: the southern alpine part of the region is dominated by active and nature-based pursuits (hiking and winter sports region), the Bavarian state spa Bad Reichenhall is a popular spot for spa and health-related tourism (Chapter 5.9, Gesundheitsregion^{plus}), while the pre-alpine northern part of the region primarily advertises family-friendliness and its proximity to Salzburg. All subregions offer a wide range of accommodation and leisure and recreational activities.

Individual (municipal) sustainable tourism approaches are already being implemented in the region e.g. the designation of Ramsau as a *Bergsteigerdorf* (mountaineering village) and the *Vital-Natur-Erlebnis-Gastgeber* (vital nature experience host) initiative, the promotion of climate-friendly accommodation providers in Schönau am Königssee and the *Alpine Pearls* title awarded to the tourist destinations Bad Reichenhall and Berchtesgaden. Such approaches also include the free use of local public transport throughout the entire district and discounted admission prices for guests with tourist tickets, the use of dial-a-bus schemes and the *AlmErlebnisBus* (summer pastures experience bus).

It should be noted that there is no joint strategic approach to sustainable tourism in the district. The dissolution of the district-wide marketing company Berchtesgadener Land Tourismus GmbH (BGLT) at the end of 2020 has

made a uniform approach more challenging. At present, two large tourism associations and various smaller municipal associations operate in the district largely independently of one another.

Activities of the BR administration

Given the world-renowned tourist destinations and well-known National Park, to date, tourism professionals currently see no added value in marketing the UNESCO Biosphere Reserve designation to attract tourists. By networking and offering support and advisory services to tourism stakeholders, the BR administration is working to ensure the biosphere designation is established as a mark of quality and sustainability.

Under the INTERREG project *Erlebnis Biosphäre – Neue Wege zur nachhaltigen Tourismusdestination* (experience biosphere - new ways to sustainable tourist destinations) (Table 15), a joint transboundary tourism strategy with a region-specific action plan was developed together with the Salzburg Lungau Biosphere Park. The working group *Nachhaltige Gastgeberinnen und Gastgeber* (sustainable hosts) was set up based on this strategy. Together with tourism stakeholders and associations from the region, the working group prepares steps towards creating a sustainable tourism destination, while also seeking links to other projects of the BR administration (biosphere products, partner initiatives). The focus is currently on developing specific sustainable options for tourists, e.g. 'biosphere meals' or a 'biosphere breakfast' (Figure 23, Chapter 5.3).

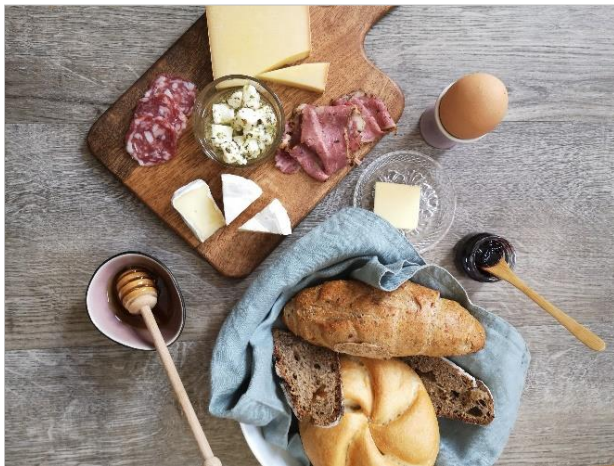


Figure 23:
Biosphere
breakfast made
with regional
products © BR
administration



Figure 24: National
Park app ©
National Park
administration

Activities of the National Park administration

Important activities of the National Park administration in the area of sustainable tourism include visitor management, the model management plan on barrier-free access, the sustainable mobility project *Fahrtziel Natur* (destination nature) of Deutsche Bahn (German railways) which the Berchtesgaden National Park administration is involved in, informational facilities and educational programmes (Chapter 6.4). To manage visitor flows, the National Park administration deploy rangers strategically, provides information on the accessibility of

different trails, has introduced a code of conduct for cyclists, developed a climbing concept and compiled information for paragliders. On the National Park's homepage, visitors can find rules they should abide by during their holiday in the National Park and tips for hiking and staying in chalets. This is supplemented by the National Park's app, which has provided 3D maps, tips for visitors regarding tours, mountain chalets and summer pastures, a virtual panorama as well as a tracking tool since 2017 (Figure 24).

5.3 Other key sectors and uses

Agriculture

The type of agriculture is heavily determined by the natural geography of the BR, with the alpine areas in the south and the prealpine foothills in the north. Large parts are designated as areas of natural or other specific constraints (ANCs) in accordance with the EU definition. In 2021, a total of 1,270 holdings were operating in the BR, working approximately 19,746 ha of agricultural land (23.5% of the total area of the region). 80% of the agricultural land is used for grassland farming with cattle grazing and dairy operations, of that portion 9.9% is summer pastures; 20% of the agricultural land is used for crops (Table 9).

In the south part of the district, agricultural operations are predominantly part time. Traditional summer pasture use constitutes natural and cultural heritage with great importance for preserving biodiversity as well as regional identity. In the north, there are many full-time agricultural holdings that also grow crops. In arable farming, silage maize is the dominant crop, accounting for approximately 50% of cultivated land. The remaining arable land is cultivated in roughly equal parts with other grains as well as clover and agricultural grasses. Fruit and vegetable cultivation is of little significance in Berchtesgadener Land.

Table 9: Agricultural land use in the Berchtesgadener Land district

Land use	Year		Changes	
	2003	2021	ha or number	%
Total land (ha)	20,375	19,746	-629.00	-3.09
Grassland (ha)	15,566	14,675	-891.00	-5.72
Summer pastures (number)*	63	55	-8	-12.70
Summer pastures (ha)*	1,590	1,433	-157.00	-9.87
Arable land (ha)	3,219	3,638	+419.00	+13.02

*Note: Summer pasture area has remained constant but has shifted in the statistics due to a new coding (AELF 2020).

Between 2010 and 2019, the number of agricultural holdings in the BR decreased by 3.3%. The decrease in the number of holdings is comparatively smaller than the decreases in Upper Bavaria (-5,7%) and Bavaria (-7,1%) over the same time period (StMELF 2012; StMELF

2020). Although the average size of agricultural holdings in the BR is significantly smaller, the share of land being farmed organically is higher than in Bavaria or Upper Bavaria (Table 10).

Table 10: Average size of holding, percent in part-time operation, percent organic

		Berchtesgadener Land	Upper Bavaria	Bavaria
Average size of holding (as of 2019)		15 ha	27.9 ha	30.2 ha
Percent in part-time operation (as of 2009)		53.8%	43.1%	48.7%
Percent of land farmed organically	2016	15.1%	10.8%	8.3%
	2010	11.9%	8.8%	6.2%

Sources: StMELF 2012; StMELF 2020

The BR administration focusses on activities to strengthen farm-based, sustainable and future-proof agriculture (Table 11). Building up value chains and producer groups (for example the producer group for organic malting barley, *Erzeugerkreis Bio-Brauerste*) supports agricultural holdings and culminated in the *Biosphäre-Produkte* (biosphere products) project launched in February 2020 (Figure 25, Table 12, Chapter 5.7). The project product label indicates regional provenance and sustainability. The project itself links local agriculture with artisanal food production, retail and hospitality. The *Biosphären-*

Getreidegarten, a biosphere grain garden where heritage varieties are propagated for conservation and awareness-raising purposes, is an additional component of the project (Figure 26). The aim is to identify production and marketing pathways for some of these varieties. The BR administration started a cooperative project with a brewery and distillery for “Berchtesgadener Vogel”, a heritage grain variety used for wheat beer, thus laying the foundation for the new biosphere product “Alpenkorn” (alpine grain spirits).



Figure 25: Biosphere beer and ice cream (l.) © Wolfgang Gasser; Erzeugerkreis Bio-Brauerste (r.) © BR administration



Figure 26: Production of “Alpenkorn” (l.) © Florian Mädler; Biosphere grain garden (r.) © BR administration;

The BR administration was also part of a transboundary project involving the ancient grain “Binkel” (club wheat); activities included agricultural history research, experimental cultivation and development of marketing bases. The administration plays an advisory and support role for agricultural holdings with regard to diversification, questions about direct sales and projects to improve biodiversity, complementing the activities of

AELF Traunstein and other institutions. These services are primarily provided during excursions and as part of informational and specialised events. The administration’s public relations work and ESD programmes (such as *Schule auf der Alm* and *Schule fürs Leben*, Chapter 6.4) also help strengthen consumer awareness of purchasing regional and organic products.

Table 11: BR administration activities related to SDG 2



SDG 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture 			
Measures / project	Aim	Implementation partners	Implementation status
Biosphären-Getreidegarten	Seed propagation and conservation of heritage grain varieties and field plants; information on biodiversity	Bavarian State Institute for Agriculture (LfL), municipality of Saaldorf-Surheim, farmers, processors, sales representatives	Ongoing since Autumn 2018
Erzeugerkreis Bio-Braugerste	Production and local processing of regional, organic malting barley	Privatbrauerei M.C. Wiener, 12 organic farms (approx. 37 ha of agricultural land), Surmühle, Naturland	Ongoing since August 2019
Berchtesgadener Vogel	Expansion of processing and marketing chains and valorisation of a heritage variety of winter wheat through targeted networking and creation of new biosphere products like “Alpenkorn”	Enzianbrennerei Grassl, Privatbrauerei M.C. Wiener, agricultural holdings	Since 2018, market launch 2022
Laufener club wheat	Support and networking of farms growing Laufener club wheat, local marketing and regional value creation	ANL, BIO AUSTRIA, organic model region Waginger See-Rupertiwinkel, farmers, processors, mills	Ongoing since 2017 2016-2017: INTERREG small project under EUREGIO Salzburg-Berchtesgadener Land-Traunstein
Ancient grain “Binkel”	Agricultural history research, experimental cultivation of accessions, development of marketing bases for familiarising and sensitising consumers	LfL, Genbank Tirol, Salzburg Lungau Biosphere Park	INTERREG small project; Duration: January-December 2021
Training events and excursions for agricultural holdings	Showcasing options for diversification and encouraging exchange among farms	Farmers, experts, environmental organisations, government institutions	Ongoing since 2018

Table 12: BR administration activities related to SDG 12

SDG 12: Ensure sustainable consumption and production patterns			
Measures / project	Aim	Implementation partners	Implementation status
Educational programmes on sustainable consumption and production run by the BR administration	Awareness raising and sensitisation for sustainable consumption in preschools, schools and adult education	Salzburg Lungau Biosphere Park, schools and preschools in the BR, VHS Rupertiwinkel (adult education centre), businesses	Ongoing
Biosphären-Produkte	Creating a selection of regional and sustainable food products; strengthening and closing value chains; producing high-quality regional products from heritage crop varieties, marketing in the region	Businesses and holdings in the BR	Ongoing since February 2020; products to date: <ul style="list-style-type: none"> • Biosphere ice cream • Biosphere “Hoamat” beer • Organic biosphere eggs
Biosphere dining & biosphere breakfast	Creation of regional and sustainable options in gastronomy (“biosphere on the plate”) in connection with biosphere products; strengthening cooperation with tourism sector; creating a culinary experience of the biosphere	Hospitality and gastronomy businesses in the BR	Launched in 2020 Pilot phase since summer 2021 in four businesses (3x breakfast, 1x meal/snack)

Forestry

Nearly 50% (41,067 ha) of the BR area is covered by forest (Table 13). In addition to near-natural and sustainable forest management based on forest conversion and natural forest regeneration, the implementation of the nature conservation concept by and through BaySF and the advisory activities for private forest owners by AELF in particular contribute to near-natural forest development outside the National Park. In addition to its economic and ecological importance, the forest is extremely significant because of its protective function, particularly in the southern part of the district. It protects settlements and infrastructure from rockfalls, landslides and avalanches and thus enables settlement of these areas in the first place.

Currently, the administration’s contact with all stakeholders in the forestry sector primarily takes place in the context of joint events such as volunteer camps. More focussed cooperation, for example with the forest owners’ association, is feasible in future, also in relation to regional value chains and biosphere products, as the processing of local timber is now already a key factor in sustainable regional development. Forests have not been a focus of the BR administration’s work due to current priorities.

Table 13: Forest ownership structures in the Berchtesgadener Land BR

Forest ownership structure (as of 2020)	ha	%
State forest (National Park)	7,515	18.3
State forest (Bavarian state forests)	17,946	43.7
Municipal forest	1,044	2.5
Private forest	14,254	34.8
Federal forest	269	0.7
Total	41,028	100

Climate action, energy and resource efficiency, mobility

Although the population and economic output of the district have increased, the 2013 creation and rigorous implementation of an integrated climate action strategy for the district reduced both electricity (-2.3%) and heating consumption (-5.5%) in the period from 2014 to 2019. The share of renewable energy used has increased sharply, accounting for 41% of the energy used in 2019 (2014: 30%) and 24% of the energy used in heating in 2018 (2014: 22%). Hydropower makes up the largest share of renewable energy in the Berchtesgadener Land district at 23%, followed by photovoltaics (12%), natural gas and biomass (5%). Under the regional plan for Southeast Bavaria, Berchtesgadener Land is an exclusion area for wind power installations.

The overall carbon footprint has shown positive developments. Between 2014 and 2018, emissions per capita decreased from 8.6 to 7.9 tonnes/year. In addition to the Berchtesgadener Land District Office and Energieagentur Südostbayern (Southeast Bavaria Energy Agency), there are other key drivers of energy conservation and climate action in the BR including BGLW, AELF, BaySF and the municipal authorities.


The BR administration integrates climate action and adaptation to climate change as an important cross-cutting issue in (educational) projects, administrative processes and administrative resource use (Table 14).

The National Park administration received the EMAS³ certification in 2020, making use of an instrument that applies across the EU to make its own operational environmental behaviour measurable, with the aim of identifying future savings and reduction options and developing concrete measures. Other activities in the National Park related to climate change can be found under research (Chapter 6.2).

The further development of mobility systems and transport routes to make them as climate-friendly, socially equitable and effective as possible is a key challenge for the Berchtesgadener Land district. The main stakeholder here is the Berchtesgadener Land District Office, with its mobility officer, who is working closely with climate action management on viable solutions. In 2018, for instance, the district drew up a mobility strategy that is now being implemented (Landkreis Berchtesgadener Land 2018).

³Eco-Management and Audit Scheme

Table 14: BR administration and Berchtesgadener Land District Office activities related to SDG 12

SDG 13: Take urgent action to combat climate change and its impacts			
			
Measures / project	Aim	Implementation partners	Implementation status
BR administration educational programme with climate action as cross-cutting issue	Awareness raising and sensitisation for climate change in school and adult educational programmes	Salzburg Lungau Biosphere Park, schools and preschools in the BR	Ongoing
Climate-neutral BR administration	Part of the INTERREG project <i>Grenzenlos Nachhaltigkeit lernen</i> included identification of implementation options with regard to climate neutrality in the administrative offices of the Berchtesgadener Land BR and the Salzburg Lungau Biosphere Park.	Salzburg Lungau Biosphere Park	Completed (2018-2021); implementation planned beyond the project dates
Activities of the Berchtesgadener Land District Office related to the integrated climate strategy, climate management system and 30 far-reaching and now mostly implemented measures	<ul style="list-style-type: none"> • Reduction of energy consumption • Increase in production of renewable energy • Reduction of carbon dioxide emissions 	Berchtesgadener Land District Office with support from regional stakeholders, municipalities, Energieagentur Südostbayern GmbH	Ongoing 17 of 30 measures implemented since 2013

5.4 Benefits of economic activities for local communities

See Chapters 5.2, 5.3, 5.6 und 5.7.

5.5 Effectiveness of actions and strategies applied

See Chapter 5.10.

5.6 Community economic development initiatives

In 2015, the Berchtesgadener Land district was recognised as a LEADER region for the second time. In the current funding period (2014-2022), a number of projects have been implemented. These were selected on the basis of a sustainability check, among other criteria. Approximately 2 million euros of LEADER funds have been put to use in the region. The BR administration had decisive

involvement in drawing up the rural development strategy, is a member of the LEADER steering committee and played a key role in two LEADER-funded projects: *Biosphärenregion Berchtesgadener Land als alpine Nachhaltigkeits- und Qualitätsregion*, on establishing the BR as an alpine quality region, and *Biosphärendrehscheiben – Erstellung eines Rahmenkonzeptes*, on biosphere hubs

(Chapters 5.7 and 6.4). Involvement in the LEADER region application for the next funding period is planned.

The Berchtesgadener Land district is a part of the Austrian-German EUREGIO Salzburg-Berchtesgadener Land-Traunstein, a consortium of 102 municipalities, two districts, three special interest groups and one private person. The BR administration was involved in a total of eight projects with INTERREG funding between 2012 and 2021. These cover the areas ESD (Chapter 6.4), agriculture (Chapter 5.3), tourism (Chapter 5.2) and nature (Chapter 4). The BR is also included in the recently updated border area strategy 2021-2027.

The BGLW, a subordinate body of the district, also fosters economic development. It guides and supports businesses in issues such as business start-up, skilled staff, digital transformation, innovation and funding, land and real estate. “Pilots” were established for this purpose. These are specialists who provide primary advisory services, organise informational and networking events and establish contacts with experts as needed. Two of the pilots were financed under the regional development funding guideline (FöRLa) of the Bavarian Ministry for Economic Affairs, Regional Development and Energy.

5.7 Economic initiatives aimed at sustainable development

The activities of the BR administration are listed in Table 15 and Table 16. The BR partner initiative (Figure 27) (started at the end of 2021) is key for advancing sustainable economic practices. It is closely linked to the BGLW network on responsible economic practices, *Verantwortungsvoll Wirtschaften*. A uniform, cross-sector criteria catalogue forms the common basis. The network is intended to be open to all businesses and to achieve general improvement in sustainability aspects. Designation as a biosphere partner is linked to additional more extensive requirements. The BR and the economic region work together across all sectors to successfully implement close cooperation between the BR administration and businesses that can make key contributions to sustainable development in all dimensions of their activities (products, services, employees, supply, etc.), as called for in the UNESCO Lima Action Plan. This new approach will enable Berchtesgadener Land to assume an international leadership role in future.


The National Park administration has launched its own independent partner initiative. Both administrations support each other, for example through membership in the other administration's partner designation board.

For public corporations, the BR administration has drawn up the document *Handlungsfelder und Leitsätze nachhaltiger Kommunalentwicklung in der Biosphärenregion*, a guide with the aim of strengthening municipal frameworks for sustainable economic initiatives.



Figure 27: Companies focus on sustainable economic practices (1.) © BGLW/Josi Unterhauser; designation of cooperation partners as a prelude to the partner initiative (2.) © Wolfgang Gasser

Table 15: BR administration activities related to SDG 8

SDG 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all 			
Measures / project	Aim	Implementation partners	Implementation status
Berchtesgadener Land BR as an alpine sustainable development and quality region (feasibility study)	Drawing up cross-sector sustainability criteria for and with businesses, development of a plan for a business network and implementation of a pilot phase	Businesses, BGLW	Completed
BR partner initiative	Support of regional economic cycles and sustainable economic practices	Businesses, BGLW	Start date: December 2021 Since 2018: Cooperation partners (prelude to designation as partner)
Cooperation with the network Verantwortungsvoll Wirtschaften	Joint basis (topic catalogue and its review), close cooperation (trainings, etc.) and joint public outreach for the network and partner initiative	BGLW	Ongoing
Cooperation with National Park partner initiative	Cooperation on training, BR administration is a member of the partner advisory board of the National Park	Berchtesgaden National Park	Ongoing
Membership in SchuleWirtschaft working group	Networking schools and businesses via projects and cooperative initiatives	Members of the working group, e.g. Sparkasse Berchtesgadener Land (bank), Berchtesgadener Land vocational school	Ongoing
Cooperation with Solidargemeinschaft Berchtesgadener Land (regional association with product quality label which aims to strengthen regional economic cycles)	Joint projects like <i>Schule fürs Leben</i>	Solidargemeinschaft Berchtesgadener Land e.V.	Ongoing
Erlebnis Biosphäre (biosphere experience)	Making tourism and recreational sectors sustainable in biosphere regions to strengthen tourism and the local economy and find new approaches to tourism	Salzburg Lungau Biosphere Park	Completed (1 January 2020-30 June 2021)
Nachhaltige Gastgeber:innen (sustainable hosts) working group	Implementation of joint sustainable tourism measures and products	Tourism associations, individual initiatives and sector businesses	Ongoing

Rigorous local economic support and the focus on a joint economic vision contribute to positive, sustainable economic development.

The BGLW is key in supporting sustainable development (Chapter 5.6) and works closely with communities, the district administration and other regional organisations and institutions to this end.

In the *SchuleWirtschaft* working group, stakeholders from schools and industry come together to develop a variety of educational opportunities that improve business education and career orientation and highlight opportunities in engineering and science.


Some businesses in the Berchtesgadener Land that operate in an environmentally friendly way have eco-certifications. There are 14 businesses that participate in the Bavarian Environmental Pact (there are a total of 1,026

of these businesses in Bavaria), five businesses with Viabono certification and two businesses with EMAS certification. The National Park administration is also EMAS certified.

In addition, the association Solidargemeinschaft Berchtesgadener Land has approximately 80 members who are actively promoting sustainable development within their network, e.g. by publishing a purchasing guide, offering the educational programme *Schule fürs Leben – in Werkstatt, Küche und Natur* (school for life – in the workshop, kitchen and nature, Chapter 6.4) and awarding a regional label for products.

Two municipalities are designated as fair trade communities, and two other municipalities are working to attain this certification. Three communities and the district as a whole received a designation recognising them as GMO free.

Table 16: BR administration activities related to SDG 11

<div> <div>SDG 11: Make cities and human settlements inclusive, safe, resilient and sustainable</div> <div>  </div> </div>			
Measures / project	Aim	Implementation partners	Implementation status
Municipal sustainable development goals in the BR	Strengthening sustainable municipal activities by jointly developing municipal sustainable development goals	Municipalities in Berchtesgadener Land, Berchtesgadener Land district, Trägerverein, BGLW	In planning and strategy stage
Biosphere hubs	Upgrading existing facilities and creating new attractions that communicate the concept of sustainability	Municipalities in Berchtesgadener Land	Ongoing since 2020
Presentations in adult education	Presentations on sustainable development topics (e.g. light pollution) in communities	Speakers, experts, adult education centre (VHS), etc.	Ongoing

5.8 Tangible and intangible cultural heritage in the biosphere region

Components of intangible cultural heritage include salt extraction⁴ in Berchtesgaden and Bad Reichenhall and traditional summer pasture use (Chapter 5.3). Transboundary efforts are currently being undertaken to have the salt industry in Southeast Bavaria and Salzburg designated as UNESCO World Cultural Heritage (on the tentative list for Germany since 2020). In the BR, the salt industry can be experienced in the visitor mine in Berchtesgaden, in the Alte Saline in Bad Reichenhall and on the new long-distance hiking trail, the SalzAlpenSteig. Other lived traditions and customs, such as the local practice of *Alperschnalzen*⁵ and transhumance (*Almabtrieb*), the droving of livestock from summer pastures into the valleys, which was inscribed as intangible cultural heritage in 2013, are significant for the local people and are also valued for tourism.

The cultural heritage of the region plays a role in many of the BR administration's activities. Guided tours and presentations focus on cultural heritage. The experience station of the children's trail map in Schneizlreuth thematises the *Soleleitungsweg*, historical salt mining infrastructure. The biosphere hubs are intended to make local cultural features of individual towns and communities in the BR tangible (Chapter 6.5.1). Volunteer initiatives also help support alpine farmers in tending summer pastures (Figure 27).



Figure 28: Volunteer work on a summer pasture
© Florian Mädler

5.9 Community support facilities and services

The regional educational initiative, *Bildungsregion Berchtesgadener Land*, was started in 2016 to improve the quality of local education, counteract the already apparent shortage of skilled workers and strengthen Berchtesgadener Land as a business location (Table 19). Other key initiatives in education and promotion of the economy include support for professionals provided by BGLW and the *SchuleWirtschaft* working group (Chapter 5.7).

The healthcare network *Gesundheitsregion*^{plus}, founded in December 2015, is one example of an initiative to address health issues. The network is a coordination and networking platform for stakeholders in healthcare in the Berchtesgadener Land region. It was established in line with the Bavarian State Ministry for Health and Care strategy of the same name. The various activities of the administration raise awareness about sustainability issues and also help attract young people to green careers and business practices.

⁴Salt mining is the reason for the small scale of agriculture in the region because many salt miners only operated farms part time.

⁵ *Alperschnalzen*, in particular, is the term for the Bavarian and Salzburg custom of rhythmically snapping and cracking a whip in small groups, which is done around Christmas and Shrove Tuesday (Karneval).

5.10 Effectiveness of activities aiming to foster sustainable development

Overall, during the reporting period, numerous positive trends towards sustainable development were observable, promoted by a variety of stakeholders (Chapters 5.1, 5.2, 5.3, 5.6, 5.7, 5.9). However, the impact of individual measures is difficult to quantify. Specific data listed below provides an approximation. The significance of the network *Verantwortungsvoll Wirtschaften* is reflected in membership numbers (42 in its first year alone). The BR partner initiative launched at the end of 2021 also had numerous interested parties before its start date. The keen interest in the designation of biosphere products is also important. Four biosphere products have already been designated and, within the first

two project years (2020 and 2021), 40 farmers, 20 processing businesses, 10 businesses in hospitality, six direct marketing associations and 15 other stakeholders came on board. Due to this success and the great interest in the designation of additional biosphere products, the federally funded project has been extended by three years (2022-2025, financed with state funds). In tourism, the number of designations/certifications of sustainable tourism businesses and initiatives serves as an indicator: 5 businesses have Viabono certification and 44 accommodations belong to the *Vital-Natur-Erlebnis-Gastgeber* initiative. For data on agriculture, forestry and climate action, see Chapter 5.3.

5.11 Main factors influencing (positively or negatively) the success of activities in sustainable economic practices

The main factors in success are the active involvement of individual stakeholders and/or institutions, willingness to work together and overarching coordination. Successful examples include the rigorous implementation of the climate strategy and the economic vision by the district and municipalities. In this context, the fact that the biosphere region and the district are geographically identical is a major advantage, meaning that the administration can work together with stake-

holders with the same geographic area of responsibility. Cooperation with the office for district development (Stabstelle für Landkreisentwicklung) and the BGLW has been particularly successful. The situation is much more difficult where there is no overarching organisation, such as in sustainable tourism development, regional marketing and agriculture. In these areas, there is potential to use the biosphere region designation in future as a quality criterion or unifying label.

6 Logistic function

6.1 Institutions in the biosphere region conducting research or monitoring and their programmes

To date, research and monitoring activities in the biosphere region mostly take place in the core area and buffer zone in Berchtesgaden National Park. Due to other priorities for the existing personnel capacities to date, the BR administration has conducted almost no research and monitoring activities of its own.

The National Park administration's department on research received reinforcements in

2020 thanks to research cooperation with the Technical University of Munich (TUM). The project receives funding from StMUV and primarily focusses on the study of alpine ecosystems. The BR's research interests are taken into consideration.

Table 17 lists additional key research institutions pursuing activities within the biosphere region.

Table 17: Key institutions conducting research and monitoring within Berchtesgadener Land BR

Institution (Main location)	Research focusses	Selected projects	Additional relevant information
Berchtesgaden National Park (Berchtesgaden)	<ul style="list-style-type: none"> Climate and water balance Land cover and landscape development Research on flora and fauna 	<ul style="list-style-type: none"> See list of research and monitoring activities in reporting period (Annex III 7.11) 	<ul style="list-style-type: none"> 16.5 full-time positions in the National Park administration's division for research/monitoring Has own research station 17 fully automatic climate monitoring stations and approx. 19 hydrologic monitoring stations
Bavarian Academy for Nature Conservation and Landscape Management (ANL) (Laufen)	<ul style="list-style-type: none"> Applied ecological research/nature conservation research 	<ul style="list-style-type: none"> Grazing management and nature conservation (various projects) Development of management strategies for butterfly species under EU-wide protection 	<ul style="list-style-type: none"> Legal mandate to conduct ecological research throughout Bavaria Strass ecological station in the northern part of the BR Berchtesgadener Land is a pilot region for ANL research projects
Bayerisches Amt für Waldgenetik (Bavarian state office for forest genetics, AWG) (Teisendorf)	<ul style="list-style-type: none"> Applied forest genetic research Provenance research Preservation of forest genetic resources 	<ul style="list-style-type: none"> LIFEGENMON – Life for European Forest Genetic Monitoring System Drawing up provenance recommendations for the field maple, European white elm, yew and service tree 	<ul style="list-style-type: none"> Conducts Bavaria-wide research projects, but also national and international projects Specialised authority under the Bavarian Forestry Administration
School research centre Berchtesgadener Land (Berchtesgaden)	<ul style="list-style-type: none"> Maths, computer science, natural sciences and technology 	<ul style="list-style-type: none"> Research projects for children and young people 	<ul style="list-style-type: none"> Scientific steering is handled by TUM Berchtesgadener Land district is the sponsor

6.2 Summary of the main themes of research and monitoring

Activities and research topics of the BR administration

Despite very little capacity within the BR administration for research and monitoring, the area was not wholly neglected in the last few years. *GreenCare: Nature und psychische Gesundheit* is a key research project on mental health conducted by the BR administration. It is a joint project with the Rhön Biosphere Reserve examining nature and health, and the health and healing impacts of natural and cultivated landscapes in the two biosphere reserves (Table 18, Figure 29).



Figure 29: Mindfulness exercises in nature
© Florian Mädler

Beyond this, research questions and approaches have been integrated in the administration's model projects. For example, a survey of the field plant flora in the biosphere was conducted under the *Wild und kultiviert* project (Chapter 4.2) with TUM and the Bayerische Kulturlandstiftung (Bavarian foundation for cultivated land). The project also examined options for further propagation. In 2018 and 2019, the public survey on acceptance of the biosphere reserves, *Akzeptanz, Identifikation und Engagement – Ansichten und Mitwirkung der Bevölkerung in UNESCO-Biosphärenreservaten*, was conducted (von Lindern et al. 2019, see Chapter 6.5.1 for excerpts of the results). Currently, a preliminary survey of the regional economic impacts of tourism in the biosphere region is under way.


Since the last report, the administration participated in a total of 5 federal Research & development projects and was also involved in third-party projects, for example a project entitled *Alte Obstsorten im oberbayerischen Alpenvorland* (old heritage fruit varieties in the Alpine Foreland). In addition, the biosphere region often serves as a test or pilot region for the research activities of third parties. These include, in particular, the INTERREG projects “AlpES – Alpine Ecosystem Services” (2015–2018) and “OpenSpaceAlps” (2019–2022), which explored the sustainable development of alpine open spaces through improved regional planning governance.

Activities and research topics of the Berchtesgaden National Park

Research and monitoring are part of the key responsibilities of the National Park. The focus is on the dynamics of alpine ecosystems. Major topics include the climate and water balance, land cover and agricultural development, and research on flora and fauna. An overview of the National Park's research and monitoring activities during the reporting period is provided in Annex III 7.11.

The National Park's research activities in the area of the climate and water balance are primarily based on its fully automatic climate monitoring network. Key research activities here included projects on water balance modelling (Kraller 2012), snow cover dynamics (Warscher 2014) and the regional modelling of climate scenarios derived from these (Kunstmann et al. 2019, Warscher et al. 2019) as well as a research project on the retention times of groundwater from precipitation to source (Garvelmann et al. 2017).

Table 18: BR administration activities related to SDG 3

<div> <div>SDG 3: Ensure healthy lives and promote well-being for all at all ages</div> <div> 3 GOOD HEALTH AND WELL-BEING  </div> </div>			
Measures / project	Aim	Implementation partners	Implementation status
GreenCare	<ul style="list-style-type: none"> Studying the suitability of mindfulness-based nature-supported interventions for promoting mental health Conducting nature-supported mindfulness training as a preventive course and therapy Highlighting special natural and cultivated landscape areas that have an impact on health and well-being 	Rhön Biosphere Reserve, Katholische Hochschule Eichstätt-Ingolstadt, rehabilitation clinics, adult educational centres	In implementation Project duration: 1 November 2018-30 April 2023

Highlighted projects on monitoring of land cover during the reporting period include the CC-HABITALP project on change in land cover (Hauenstein & Haller 2013) and the time series analysis of landscape development of the National Park since 1980 (Oravec 2020).

Some of the most important monitoring activities include golden eagle monitoring (conducted annually since 1994), bark beetle monitoring (annually since 1985), summit vegetation as part of the GLORIA⁶ initiative (for example, Pauli et al. 2015) as well as the forest inventory taken approximately every 12 years.

Research on springs (Lichtenwöhrer et al. 2019) has proven to be a particularly successful example of a monitoring programme with supra-regional significance. A long-term joint biodiversity monitoring project was launched in 2021 with Bayerischer Wald National Park; the aim is to examine the impacts of climatic changes on biodiversity (Figure 30).



Figure 30: Malaise traps for studying insect diversity in the National Park © Sebastian Seibold

⁶ Global Research Initiative in Alpine Environments

6.3 Collection and dissemination of knowledge from management practice

Experience and knowledge gained in projects and activities are communicated in the public relations and educational work of the BR administration (Chapters 6.4, 6.5.1) and the National Park. Knowledge transfer and training play an important role as well. Generally,

knowledge and experience gained by the BR administration in management practice are also taken into account thus, for example, allowing the knowledge of regional stakeholders to be integrated into the creation of the framework concept.

6.4 Environmental education/education for sustainable development

There are numerous education stakeholders active outside of schools with various focusses (Table 20). They come together in the educational region's network, and some work

In 2013, the BR administration developed an ESD strategy together with its active contracting organisations in education. The objective set out in the strategy is to sensitise and motivate local people to take active part in shaping an ecologically, socially and economically sustainable society. Until 2021, the BR administration's education programmes included a variety of topics for preschools and schools, regularly scheduled children's groups ("Wildniskids" and "Wildnisclub") as well as programmes for adults and families (Figure 31 – left).

The educational programmes on offer during the reporting period were primarily carried out by contracting organisations. In future, this will be reorganised in close coordination with the region. The first planned step is to offer multiplier training for teachers, early childhood educators, partners and tour guides. The

together at project and programme level. The programmes of the National Park administration and the BR administration provide the entire district with ESD options.

varied programmes for schools will be incorporated in *Partnerschulen*, a partner schools project, which will be implemented in cooperation with the National Park administration (Figure 30 – right). Programmes for families and adults will be continued in the form of tours, workshops and experiential events. The BR administration's educational work has received the environmental education quality label *Umweltbildung Bayern* (2019) and the designation *Lernort des UNESCO-Weltaktions-programmes Bildung für nachhaltige Entwicklung* (learning site of the UNESCO World Action Programme Education for Sustainable Development, 2017).

From 2013 to 2019, the number of events carried out by the BR and National Park administrations increased (Table 19). Due to the COVID-19 pandemic, the number of events implemented in 2020 and 2021 decreased by approximately 75%.

Table 19: Events and participants in education programmes offered by the BR and National Park administrations

	BR administration		National Park administration	
Years	2013	2019	2013	2019
Activities	118	160	872	1,263
Number of participants	2,000	3,300	20,917	26,422

Table 20: Activities of out-of-school educational sites in the biosphere region related to SDG 4

SDG 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all 		
Provider	Educational focus / approach	Programmes
BR administration	Education for sustainable development with focus on environmental aspects	<ul style="list-style-type: none"> • Multiplier training courses • Partner school project • Schule fürs Leben • <i>Schule auf der Alm</i> (school on the summer pasture) • Events and guided tours • Lending of educational materials • Children's trail maps • Travelling exhibitions • Expert events
National Park administration	Nature and wilderness education	<ul style="list-style-type: none"> • Haus der Berge (mountain house), an information and education centre with a large outdoor area • 6 additional informational facilities • Accessibility options • Hiking programme • Special events • Partner school project • Children's groups • School holiday programmes • Mobile education units
School research centre	Natural science subjects	<ul style="list-style-type: none"> • Programmes for school classes and holiday courses • Experiment days • STEM academy, Clib, Lab2Venture, technology camp • Competitions
Rupertiwinkel, Bad Reichenhall and Berchtesgaden adult education centres	Broad spectrum of topics	<ul style="list-style-type: none"> • Workshops • Excursions • Presentations • Etc.
Katholisches Bildungswerk (Catholic training institute)	Christian education, programming on creating a sustainable future fit for our grandchildren's generation	<ul style="list-style-type: none"> • Workshops • Excursions • Presentations • Etc.
Academy for Nature Conservation and Landscape Management (ANL)	Nature conservation and landscape management, remote sensing, species studies, etc.	<ul style="list-style-type: none"> • Continuing education and training courses • Advisory services • Specialist conferences
Bildungsregion Landratsamt Berchtesgadener Land (regional education initiative)	Network structures from early childhood education to working life	<ul style="list-style-type: none"> • Network meetings • Specialist conferences
Forest experience centre Ruhpolding	Forest pedagogy, ESD	<ul style="list-style-type: none"> • Support of multi-day class trips • Nature tours • Children's birthday parties • Expert presentations



Figure 31: Examining water (l.); educational programme on recycling mobile phones (r.) © BR administration



Figure 32: Biosphere hub in Schneizlreuth (l.) © Schneizlreuth town authority; Haus der Berge (r.) © National Park administration



Figure 33: Children's trail map in Saaldorf-Surheim (front page) and the associated experience station © BR administration

Networking

The BR administration was closely involved in the establishment of the educational region in the Berchtesgadener Land district, which has now been in place since 2016. Around 150 education stakeholders are involved. In future, the administration will work with the coordinator of the educational region and be closely involved with the ESD working group *Bildung für nachhaltige Entwicklung im Berchtesgadener Land*.

Infrastructure

The biosphere region does not yet have its own educational facility or information centre. To date, all educational programmes carried out by the BR administration have taken place in nature or in school or preschool facilities and their immediate surroundings. Discussions on setting up a biosphere information centre are currently under way with the Free State of Bavaria, the Berchtesgadener Land District Office and specific municipalities.

In addition, a number of decentralised information points– biosphere hubs –are currently in the detailed planning and implementation stages. They link knowledge with experience, refer to local and regional partners and contribute to a sense of belonging and identification with the biosphere region (Table 16). These hubs can be in the form of exhibitions, an informational unit, a nature trail or similar. In Schneizldreuth, the hub is an exhibition (Figure 32 – left). The information centre of the National Park, *Haus der Berge*, works together with the network of biosphere hubs (Figure 32 – right). The centre provides information about the biosphere region with an information unit in the entrance area.

In the reporting period, the BR administration supported set up two educational nature trails and a teaching garden. Since 2015, the administration has been working on children's trail maps (KIWAKA); one map and an experience station in Saaldorf-Surheim have been implemented (Figure 32). Three additional maps are in implementation or planning.

Effectiveness of educational programmes

Overall, the number of participants in educational and ESD events organised by the BR and National Park administrations (Table 19) shows that the programmes are popular and in high demand. This is also reflected in

the fact that the events are often very quickly booked out, and demand exceeds availability. The results of feedback forms from the BR administration educational programmes are positive and underscore their quality.

6.5 Assessment of the effectiveness of actions and strategies applied

See Chapters 6.2, 6.4 and 6.7.

6.5.1 Description of the biosphere region's main internal and external communication mechanisms/systems

The main goals of the BR administration are to increase identification with the biosphere region, develop the visibility of the UNESCO designation, build up networks and facilitate participation, with the aim of motivating people to act sustainably.

Traditional publicity instruments are important for the BR administration's external communications, which are complementary to the numerous activities and events in various

fields of action. The administration uses various formats for publicity including press releases, special press dates, various media pieces and the publication of printed materials (Table 21).

The official corporate design of the umbrella brand *Nationale Naturlandschaften e.V.* (national natural landscapes) is heavily incorporated in this work.

Table 21: Overview of external communication activities

External Communication	Format
Media and press relations	Press releases: 2019: 40, 2020: 39, 2021: 41
	Special press dates: at events including volunteer camps, biosphere day, designation dates, etc.
	Media spots: From March 2017 to December 2021: approx. 1,250 reports about the biosphere region in print, TV, radio, online
	Articles in local newsletters and ads in relevant magazines
Informational material (Annex II)	Various flyers and posters: on the biosphere region generally, advertising all event series and individual events, programmes and fields of action
	Handouts on special topics: e.g. guide on planting a flowering meadow
	Portable backdrops on various topics for use at events: 7 current backdrops
	Postcards: a total of 6 postcard designs on various topics
	Give-aways: notepads, pencils, stickers, cotton bags
	Informational signs: e.g. for providing information in the Biosphären-Getreidegarten, marking biosphere flowering meadows, providing information on cooperation with the biosphere region
Online media:	Website (Figure 34): www.biosphaerenregion-bgl.de ; access numbers for 2021 not representative due to technical difficulties and change of provider, relaunch in 2022 Newsletter: Periodic distribution of informational e-mails announcing events and calling for participation in projects (mailing list includes approx. 125 individuals). Expansion of subscriber base is planned via a registration form on the new website from 2022, more frequent newsletter is planned in future.
Social media	Facebook: since October 2017, 347 followers (as of 25 January 2022), continuous maintenance of social media presence has only been possible since September 2021, once additional staff was available https://de-de.facebook.com/biosphaerenregion.berchtesgadener.land/ Instagram: since January 2022, 308 followers (as of 15 July 2022), still in development; https://www.instagram.com/biosphaerenregion_bgl/ YouTube: since 2015, primarily used to upload videos for dissemination, e.g. on Facebook and BR website; https://www.youtube.com/channel/UC8UoONdNqhw8HwIM2msg2IA/featured
BR events	Biosphere days: Estimated visitors in 2018: 5,000-7,000 people; since 2016, originally planned as an annual event (cancelled 2019-2021), considering biannual frequency for capacity reasons
	A variety of topical events for adults, children, families and specialised audiences; 20 in 2019 (for purely educational events see Chapter 6.4)
Participation in third-party events	Action and information booths at other events: approx. 10 events per year
	Presence at conferences/fairs: e.g. f.re.e fair in Munich, TourNatur in Düsseldorf, state garden show in Ingolstadt; approx. 1-2 conferences/fairs per year

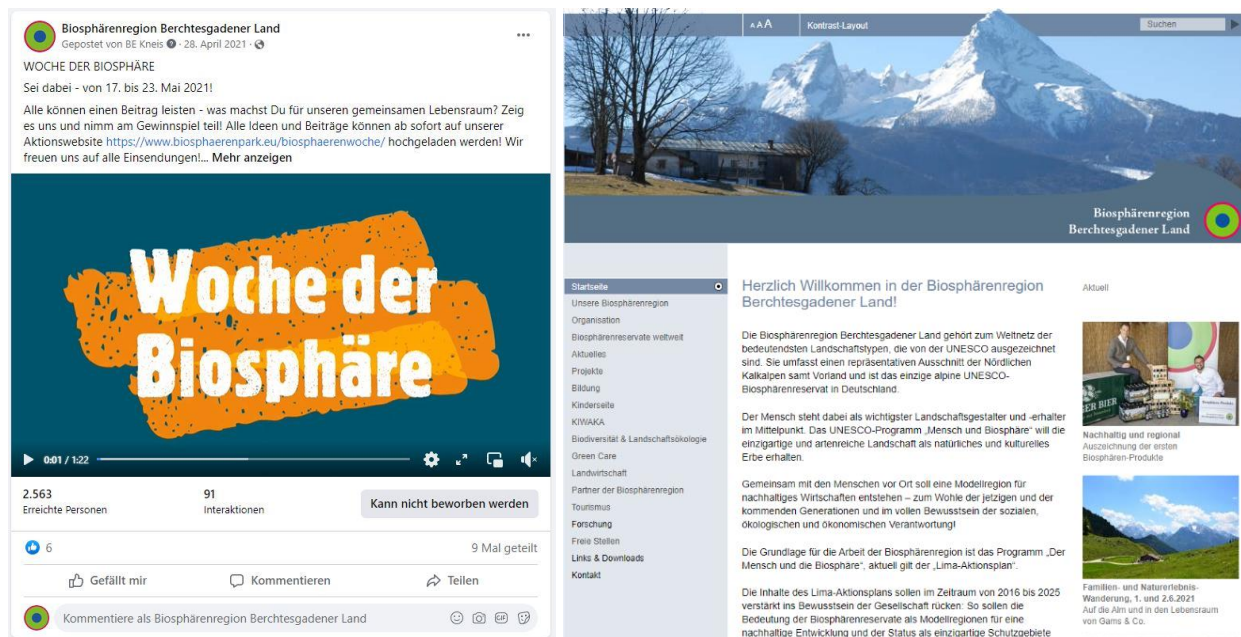


Figure 34: Facebook post from 28 April 2021 (l.): current website (r.) © BR administration

Biosphere days, which are planned regularly as a large event with the municipalities and regional stakeholders under the motto *Wir sind Biosphäre!* (We are the biosphere), are a very effective instrument for communicating the UNESCO mandate. There are booths for initiatives and activities and a regional market. Sustainable businesses and associated options for the region are also showcased (Figure 35 – right). Attention was also garnered via television spots broadcast by regional and supra-regional television stations. For example, in 2020, television spots on biosphere seeds and the volunteer camps (Chapter 4.2) as well as on biosphere ice cream (Chapter 5.7) were featured in nationwide broadcasts. In addition, in recent years, local radio stations also broadcast reports including on the biosphere fruit tree campaigns and the launch of the first children's trail map. Since

2018, monthly biosphere tips have been published in regional newspapers on various sustainability topics. In addition to the creation, distribution and display of flyers and other informational materials, the biosphere also communicates its presence in the region via the installation of informational signs. In almost all of the biosphere communities and three cooperation partner businesses, flags with the biosphere days motto are on display. The village of Saaldorf-Surheim welcomes visitors with signs highlighting its location in the biosphere region (Figure 35 – left, centre). This shows that the biosphere concept is finding footing in the region, that the biosphere region is represented and seen as a unifying trait of the entire district by various regional stakeholders beyond the activities of the BR administration.



Figure 35: Flags in the biosphere communities (l.) © Christian Sichert; Signs when entering a village (c.); biosphere booths (r.) © BR administration

With regard to **communication with the municipalities, authorities and other regional stakeholders** and their involvement, the BR administration is active in existing regional networks, working groups and meetings beyond direct dialogue with various points of contact (Chapter 2.3.4). In addition, the administration presents its work and objectives as a guest at the meetings of associations, chambers of commerce or mayors as well as at specialist excursions and conferences. Biosphere contacts have been appointed in the administrations of the municipalities. These contacts are direct dialogue partners on issues and matters related to the biosphere region and function as an interface to the BR administration.

Communication within the BR administration is conducted via internal meetings with the entire team and also in the form of regular topic-specific meetings and working groups. Interdisciplinary working methods promote successful dialogue in the team. External communication particularly benefits from this networked style of work. Digital communication formats were used much more extensively during the COVID-19 pandemic.

Effectiveness of public relations work

The results of the public survey carried out in Berchtesgadener Land in 2018, which included questions on the acceptance of the biosphere region, made it clear that there was significant room for improvement regarding public awareness and information. While only 53% of the population reported being aware of the biosphere region, this figure was significantly higher in other areas (e.g. 91% in the Schwäbische Alb Biosphere Reserve, von Lindern & Knoth 2019). The activities in the area of communications and public relations were ramped up in 2017 and 2021 thanks to improved personnel capacities, which have allowed and will in future allow the implementation of measures to improve awareness. Maintenance and further expansion of communication and information measures combined with public relations work in the various fields of action will likely lead to greater effectiveness in regard to acceptance, identification and engagement in future. Part of the expansion includes the Germany-wide figure campaign for biosphere reserves, the implementation of the biosphere hubs, the set-up of a modern and attractive website, more active use of social media channels (e.g. Instagram) and the resumption of biosphere days.

6.5.2 Biosphere region website

See Table 21 in Chapter 6.5.1.

6.5.3 Electronic newsletter

See Table 21 in Chapter 6.5.1.

6.5.4 Social networks

See Table 21 in Chapter 6.5.1.

6.5.5 Other internal communication systems

In addition to the aspects already described in Chapter 6.5.1, a file sharing system, a shared calendar, digital communication formats and note-taking arrangements for important staff meetings help ensure efficient management of the administration.

6.6 Contribution to the World Network of Biosphere Reserves

6.6.1 Collaboration with existing biosphere reserves

At national level, the BR administration is active in the network of German UNESCO biosphere reserves. The administration participates in the Permanent Working Group of the German Biosphere Reserves (with its sub-committees) and implements joint projects. The administration is also involved in the bodies and working groups of *Nationale Naturlandschaften Deutschland* e.V. (communication working group since 2018, partner working group since 2019, education working group since 2019).

The BR has close ties to the Rhön Biosphere Reserve (the Bavarian part). There is intensive, cross-cutting exchange with the Black Forest Biosphere Reserve and the Schwäbische Alb Biosphere Reserve.

The BR administration also maintains constructive dialogue with other alpine biosphere reserves. One example of Europe-wide cooperation is the public survey on the acceptance, identification and engagement, which was developed and carried out jointly with biosphere reserves in Austria, Switzerland

and Germany (Chapters 6.2, 6.5.1). There has also been exchange and mutual support with the Julian Alps Biosphere Reserve. Close cooperation with the Salzburg Lungau Biosphere Park is supported by the situation within the joint funding setting of EUREGIO Salzburg-Berchtesgadener Land-Traunsten under the INTERREG VA Bavaria-Austria programme. One large-scale and two small-scale projects have already been jointly carried out with the park administration, and efforts are being made for further projects. The biosphere region is also represented at the EuroMAB conferences.


International contacts outside of Europe exist with the Cacique Lempira Señor de las Montañas Biosphere Reserve in Honduras. In 2019, their delegation visited the BR (Figure 36).

The BR administration is making a contribution to SDG 17 through its involvement in the UNESCO World Network of Biosphere Reserves and existing ties (Table 22).



Figure 36: Delegation of Cacique Lempira Señor de las Montañas Biosphere Reserve © BR administration

Table 22: BR administration activities related to SDG 17

SDG 17: Strengthen the means of implementation and revitalize the global partnership for sustainable development 			
Measures / project	Aim	Implementation partners	Implementation status
Mutual visits between biosphere reserves	Exchange, learning from one another, mutual support	To date: Julian Alps Biosphere Reserve, Cacique Lempira Señor de las Montañas Biosphere Reserve (Honduras)	Ongoing
Participation in EuroMAB conference	International networking of biosphere reserves	All biosphere reserves	Ongoing
Provision of information	Mutual knowledge transfer	All biosphere reserves	Ongoing
Implementation of joint research projects	Transferring research approaches to other areas, comparative approaches	Other biosphere reserves, research institutions	As needed

6.6.2 Benefits of international cooperation for the biosphere region

Global challenges such as adaptation to climate change, loss of biodiversity and attainment of social justice require action and a coordinated approach at regional and global level. Important benefits of international

cooperation include exchange of knowledge and experience, mutual encouragement and inspiration, and the opportunity to transfer model approaches, adapt them at regional level and further develop them.

6.6.3 Future contributions to the World Network and to Regional and Thematic networks

In the international context, there is potential for action in the upcoming years on strengthening cooperation with biosphere reserves in the Alps via concrete projects and on the continuance of collaboration and establishment of partnerships with biosphere reserves outside the EU (Lima Action Plan, Action B6.1). Establishing a cooperative

partnership related to regional products could be one thematic starting point. At national and state level, the focus is on continuing existing cooperation and networking. Continued active participation in the events, fora and working groups mentioned in Chapter 6.6.1 is planned. Expansion of participation is also feasible (e.g. info centres working group).

6.7 Main factors that influenced (positively or negatively) the success of activities contributing to the logistic support function

Cooperation with regional stakeholders and networks plays an important role in ESD and public relations. Successive topping up of (project) positions in education and public relations has strengthened the foundations for

successfully fulfilling the logistic support function. In contrast, the area of research and monitoring could scarcely be addressed due to the current capacities and the existing priorities of the BR administration.

6.8 Outlook and other comments from the biosphere region

Expansion of research activities is particularly necessary. Here, the aim is to transfer the existing environmental research and monitoring approaches from the National Park to the transition area and to intensify socio-economic research.

In ESD, it is important to continue restructuring educational work and activity in networks and to set up a centre for the biosphere region. Generally, the successful approaches in ESD and public relations will be continued and

expanded as much as possible. The main objectives of work in upcoming years in public relations and communication are: to strengthen identification with the biosphere region in order to increase acceptance of the biosphere region and motivate stakeholders to participate and engage; to develop a shared understanding of the region as a UNESCO model region for sustainable development, so that this can be communicated externally by all involved, e.g. as part of location and destination marketing.

7 Governance, biosphere region management and coordination

7.1 Technical and logistical resources for coordination

The BR administration is currently operating on an interim basis in an office complex with the basic technical and logistical resources. This includes, in addition to offices, a meeting room and a break room with a kitchen. The district government of Upper Bavaria has equipped the offices with up-to-date hardware and software and has linked them to its network. An e-bike and bicycle are available for use as

work vehicles. Otherwise, the local public transport or private cars must be used. A travel service is available for organising more extensive official travel. Working remotely is generally possible for all staff. Spaces for educational work, workshops and storage are not available. The search for an adequate permanent solution for housing the BR administration office is ongoing.

7.2 Overall framework for governance

Chapter 2.3 provides an overview of the organisational structure. The official declaration on the Berchtesgadener Land BR promulgated by StMUV on 28 August 2012 (Annex III 3.1) forms the legal framework for

the region, as does the regulation on the Berchtesgaden Alpine and National Park in the version promulgated on 16 February 1987 (Annex III 3.2).

7.3 Cultural initiatives and support of indigenous and local rights

Not applicable.

7.4 Main conflicts related to the biosphere region and potential solutions

Main conflicts that occur in the biosphere region are:

- 1) Land-use conflicts resulting from land scarcity and competition (e.g. in residential development).
- 2) Recreational uses and visitor flows: Due to high numbers of visitors during peak seasons, popular tourist locations experience increased traffic, parking space shortages and litter which can be hazardous to particularly sensitive areas for animals and plants. Initial approaches to managing high visitor numbers are already in place. The National Park administration has stepped up awareness raising on site

(mobile education units, Chapter 6.4), increased the presence of rangers in the core area and buffer zone, expanded the hiking programme in cooperation with the BR administration to alleviate and steer visitor flows and developed a hiking app. In addition to this, in mid-2021 the BR administration hired protected area stewards (called “biosphere rangers”, financed with EU funds), who help manage visitors in selected areas of the transition area and buffer zone together with site guides from the local nature conservation authorities (since 2022).

7.4.1 Main conflicts regarding access to and the use of resources in the area

No major conflicts are apparent.

7.4.2 Conflicts in competence among the different administrative authorities

Although explicit conflicts are not apparent, administrative offices that generally lack a sense of shared responsibility. region could be much more robust in some

7.4.3 Means used to resolve conflicts

To prevent conflicts, the BR administration stakeholders in joint discussions, working relies on intensive exchange with regional groups, networks and projects.

7.5 Updated information about the representation and consultation of local communities and their participation in the life of the biosphere region

7.5.1 Inclusion of local people

Local people can be directly involved in shaping the biosphere region in the framework of projects and networks and are included in the design of activities through committees, particularly the Trägerverein. Participatory processes directly include local people in specific projects (Chapter 1.5). Where necessary or appropriate, there is focussed dialogue between the BR administration and relevant persons and groups.

7.5.2 Inclusion of various groups

Associations, organisations and other civil society groups influence the biosphere region via the Trägerverein and their own activities.

7.5.3 Procedures for integrating the representative body of local communities

See Chapter 2.3.

7.5.4 Use of the consultation mechanism

See Chapter 2.3.

7.5.5 Impacts of consultations

The organisational structures and processes (Chapter 2.3) are set up to facilitate the inclusion of local people and institutions of the biosphere region in its management and in the development and implementation of measures. Stakeholder groups involved in project implementation are included in the development of projects, for example to coordinate expectations and to benefit from their experience. The same is true for the coordination processes of the various working groups.

7.5.6 Inclusion of local people in the individual phases of management of the biosphere region

The BR administration includes local people and regional stakeholder groups in initiatives and projects in management and attempts to delegate as much responsibility as possible in all stages of the management process in order to increase the sense of ownership of the UNESCO designation. In addition, regional stakeholder groups are involved in the management of the biosphere region via the Trägerverein.

7.6 Update on management and coordination structure

7.6.1 Changes in responsibility for the zones of the biosphere region

None.

7.6.2 Information on management/coordination of the biosphere region

The position of head of the BR administration went to the current holder of the role (Dr Peter Loreth) following a public job listing in 2013. The first chair of the Trägerverein (Chapter 2.3) changed in accordance with the association's by-laws, when Bernhard Kern was elected the new district commissioner in the local elections in 2020.

7.6.3 Change in the coordination structure of the biosphere region

The BR administration's incorporation into the Upper Bavaria district government has shown its worth and was confirmed (Chapter 2.3). With the exception of four new members in the Trägerverein, there have been no changes with regard to the coordination structure (autonomous association with municipal majority).

7.6.4 Adaptation of the management/coordination to the local situation

The head of the BR administration is represented in various regional bodies such as the LEADER steering committee, the National Park advisory board, the district National Park committee, the advisory board of the National Park's partner initiative and the expert board of the landscape management association and participates in the meetings of the Trägerverein.

7.6.5 Effectiveness of management/coordination

Satisfaction with the BR administration was evaluated in the online questionnaire for mayors. 62% of the respondents said that they were very satisfied or satisfied with the work of the administration; the remaining 38% responded with "somewhat satisfied". The respondents positively emphasised the competence and openness of administration staff, the organisation and adequate completion of assigned tasks by the administration. Critical responses primarily focussed on the lack of visibility and prominence of the biosphere region (Annex III 7.4).

7.7 Update on the management plan

7.7.1 Changes with regard to the management plan and the stakeholders involved

See Chapter 2.3.1.

7.7.2 Content and binding nature of the management plan

See Chapter 2.3.1.

7.7.3 Role of the authorities in charge of implementation of the management plan

See Chapter 2.3.1.

7.7.4 Integration of the biosphere region's objectives in the management plan

See Chapter 2.3.1.

7.7.5 Progress with regard to the guidelines of the management plan

See Chapter 2.3.1.

7.7.6 Important factors in implementing the management plan

In addition to sufficient personnel capacities, it is important that the relevant regional stakeholders orient themselves to and identify with the framework concept.

7.7.7 Integration of the biosphere region in regional and national strategies

The biosphere region is integrated in regional development strategies and plans were taken into account in the development of the Existing regional and supra-regional framework concept.

8 Criteria and progress made

1. **“Encompass a mosaic of ecological systems representative of major biogeographic regions, including a gradation of human interventions.”**

According to the Udvardy classification of biogeographic regions, the Berchtesgader Land biosphere region is part of the biome “mixed mountain and highland systems with complex zonation”.

As the only biosphere reserve of the Alpine Foreland and Alps in Germany, it is representative in the south (in the core area and buffer zone) of a typical cross-section of the Northern Limestone Alps (the Berchtesgaden Alps and parts of the Chiemgau Alps). Due to the natural and geographic conditions in the south, the density of protected areas (Natura 2000, nature conservation areas, natural forests, etc.) is higher and the intensity of land use is lower than in the north. The north of the biosphere region is made up of characteristic prealpine peatlands and hilly ranges. The richly structured natural and cultivated landscape features a wealth of habitats.

The land shares of the representative habitats (Chapters 2.1, 3.1 and 4.1) were largely retained. Various solutions are in place to preserve these habitats (Chapters 4.1, 4.2).

2. **“Be of significance for biological diversity conservation.”**

The biosphere region is special because of the occurrence of many plant and animal species with Europe-wide significance (Annex III 5). Almost 52% of the area is under legally binding protection (protected areas and legally protected biotopes). The conservation and management measures contribute to the preservation of the ecosystem diversity (Chapters 4.1, 4.2).

3. **“Provide an opportunity to explore and demonstrate approaches to sustainable development on a regional scale.”**

Sustainable development strategies have been tested and showcased as part of research and practical projects, particularly in the areas of tourism, landscape ecology, sustainable economic practices, agriculture and ESD (see Chapters 5, 6.1, 6.2 and 6.4).

4. **“It should have an appropriate size to serve the three functions of biosphere reserves, as set out in Article 3.”**

The size of the biosphere region (83,984 ha) is sufficient to serve these functions. Core area: 15,607 ha, buffer zone: 7,826 ha, transition area: 60,551 ha.

5. **“Have appropriate zonation to serve the three functions.”**

The zonation serves all functions (Part I and Chapter 2.4.8). Special feature: fully linked core area that makes up a large share of the area (18.6%).

6. **“Organizational arrangements should be provided for the involvement and participation of a suitable range of inter alia public authorities, local communities and private interests in the design and the carrying out of the functions of a biosphere reserve.”**

Permanent and event-related participation will also be promoted in future to guarantee comprehensive participation by stakeholder groups (Chapter 7.5).

7. Mechanisms for implementation

a. *Mechanisms to manage human use and activities*

The various forms of human use are managed via legal mechanisms (e.g. legislation and ordinances), organisational approaches at various planning and approval levels, via funding instruments, conservation contracts, projects (based on strategies or plans), awareness raising and ESD programmes. In the biosphere region, these instruments are deployed at various levels. These include, for example, legal provisions and funding at the levels of the EU, the German federal government, the Free State of Bavaria as well as cooperative approaches mostly at regional level, including the framework concept of the biosphere region.

b. *Management policy or plan*

The framework concept is developed with regional participation and forms the strategic and conceptual basis for the further development of the biosphere region (Chapter 2.3.1). It brings together and supplements existing specialised strategies and integrates numerous regional strategies (climate strategy, regional education strategy, LEADER development strategy, species and biotope conservation programme, EUREGIO border area strategy, etc.) and supra-regional strategies (Lima Action Plan, 2030 Agenda, etc.).

c. *Authority or mechanism to implement the framework concept*

The framework concept guides the actions of the BR administration and is intended to be implemented jointly with regional stakeholders.

d. *Programmes for research, monitoring, education and training*

The BR administration is implementing related programmes together with the National Park administration and other partners (Chapters 6.2 and 6.4).

Cooperative activities with other biosphere reserves (Chapter 6.6):

At national level:

Cooperation takes place in the context of projects. Regular exchange and meetings of the biosphere reserves take place within national bodies.

At regional level:

The majority of cooperative activities are undertaken with other alpine and neighbouring German biosphere reserves.

Through twinning and/or transboundary biosphere reserves:

To date, cooperation has taken place in the context of projects. There is particularly in-depth cooperation with the Austrian Salzburg Lungau Biosphere Park.

Within the World Network:

To date, mutual exchange has been the focus of activity here. There is a desire to expand international cooperation in the coming years.

Obstacles encountered and assistance expected from the Secretariat:

The Secretariat, within the scope of its capacities, could contribute more to improving the international or EU-wide networking of the UNESCO biosphere reserves. The existing network structure, the biennial EuroMAB meeting, is viewed as fruitful and inspiring, but has potential to be made more in-depth.

Main objectives of the biosphere region:

The main objectives of the biosphere region include, in particular, preserving the Berchtesgadener Land as a future-proof region for living, working and recreation and establishing it as a model region for sustainable development for implementing the global sustainable development goals.

9 Supporting documents (annexes)

Annex I: MABnet Directory of Biosphere Reserves

Annex II: Promotional and communication materials

Annex III: Further annexes

1. Updated location and zonation map
2. Updated land cover map
3. List of legal documents
 - 3.1. declaration on biosphere region
 - 3.2. national park ordinance
4. List of land use and management /cooperation plans
 - 4.1. list of other relevant documents
 - 4.2. national park plan for the Berchtesgaden National Park
 - 4.3. Berchtesgadener Land Biosphere Region Managementplan
5. Species list
6. Updated list of the main bibliographic references
7. Further supporting documents
 - 7.1. List of abbreviations
 - 7.2. Members of the BR association
 - 7.3. Stakeholder interviews on data collection in connection with evaluation
 - 7.4. Participation of municipalities in online survey for evaluation
 - 7.5. Participation in evaluation workshop
 - 7.6. BR administration model projects relating to SDGs
 - 7.7. Buffering of core area - detailed map
 - 7.8. Overview of protected areas
 - 7.9. Map of protected areas
 - 7.10. Species and biotope conservation programme
 - 7.11. National Park research projects
 - 7.12. Regional development plans
 - 7.13. References to Lima Action Plan
 - 7.14. Overview SAC- and SPA-Management plans

10Addresses

10.1 Contact address of the biosphere reserve

Regierung von Oberbayern,
Verwaltungsstelle UNESCO-Biosphärenreservat Berchtesgadener Land
Sägewerkstr. 3
83395 Freilassing
Germany
Telephone: +49 8654 30946-10
Email: info@brbgl.de
Website: <https://www.brbgl.de/>

10.2 Administration of core area(s):

Nationalparkverwaltung Berchtesgaden
Doktorberg 6
83471 Berchtesgaden
Germany
Telephone: +49 8652 9686-0
Email: poststelle@npv-bgd.bayern.de
Website: www.nationalpark-berchtesgaden.bayern.de

10.3 Administrations of buffer zone(s):

Nationalparkverwaltung Berchtesgaden (see above) and
Forstbetrieb Berchtesgaden des Unternehmens Bayerische Staatsforsten
Am Brandholz 2 ½
83471 Berchtesgaden
Germany
Telephone: +49 / 8652 9589-0
Email: info-berchtesgaden@baysf.de
Website: <http://www.baysf.de/>

10.4 Administration of the transition area(s):

Regierung von Oberbayern, Verwaltungsstelle der Biosphärenregion Berchtesgadener Land
(see above)

11 Conclusion and outlook

Over the last 10 years in the Berchtesgadener Land Biosphere Region, several projects have been implemented, new partnerships for cooperation forged and areas of action expanded. The biosphere region is increasingly becoming a model region in the spirit of the Sustainable Development Goals of the United Nations 2030 Agenda. In future it is key that these future-proof approaches developed in recent years are continued. The BR administration has set the following priorities for the future:

- Improving cooperation with regional stakeholders and institutions, optimising networking and target-group-oriented communication and public relations work are intended to increase the overall visibility of the biosphere region and thus further enhance the sense of belonging to the biosphere and identification with the biosphere region among all involved.
- Establishing a biosphere centre and permanent and adequate headquarters for the administration are urgent priorities for the next few years. This will bring public recognition and awareness to a new level.
- Educational programmes will be adapted and further developed, including in the partner school project, multiplier courses and other initiatives.
- To further support and expand sustainable economic practices, cooperation with municipalities and regional businesses will be enhanced and established on a permanent basis.
- In the field of sustainable tourism, existing network structures will be strengthened and developed strategies implemented.
- Activities will be continued which aim to strengthen smallhold farming businesses through advisory services on diversifying operations and establishing producer groups.
- By implementing additional (larger-scale) projects in the area of biodiversity, a contribution will also be made in future to conserving extensive and structurally rich cultivated landscapes and to securing ecologically valuable habitats.
- There is potential for expansion in the areas of research and monitoring, customs and traditions, social aspects, forests.
- The close transboundary cooperation with the Salzburg Lungau Biosphere Park is to be continued and international cooperation in general will be stepped up.

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The biosphere region Berchtesgadener Land belongs to the "National Natural Landscapes", the umbrella brand of the German national parks, biosphere reserves and nature parks supported by EUROPARC Deutschland e. V.: <https://nationale-naturlandschaften.de/>