

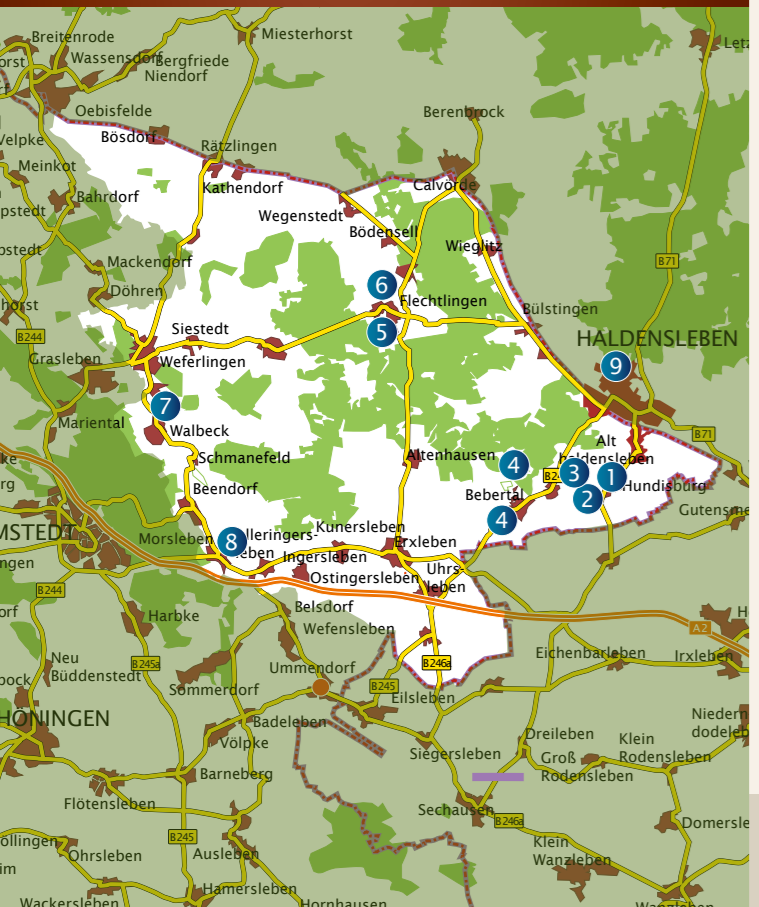


Glossar

Landmarks ("Landmarken") are physically prominent spots and/or well-known places which have been selected as being representative for a certain area. They are name-giving for the area and may serve for a first orientation within the second-largest geopark of Europe. 21 of these landmarks and the areas around have been described in detail by a flyer, such as the present one.

Geopoints ("Geopunkte") are spots of special interest within the areas of the landmarks. As prominent examples they illustrate the geological and cultural history and heritage of the respective areas. Identified by consecutive numbers beginning with #1 for the landmark they may be individually combined to Georoutes ("Geo-Routen").

The accompanying map may help for planning your individual Georoute.



6 Castle with Potential for Development and Outcrops Flechtingen Castle

The Flechtingen Castle which was mentioned in a document for the first time in 1307 as belonging to the Masters von Schenck is surrounded by water and one of the best preserved constructions of its kind in the State of Saxony-Anhalt. Parts of the ward and the keep are still preserved from the early times. Starting with the beginning of the 15th century, a stately home was built step-by-step on the foundations of the medieval castle. Eduard von Schenck constructed the park in 1860 and the drawbridge was replaced by a dam to connect the park to the buildings. In the final stage of the 2nd World War and afterwards the buildings were used for housing refugees from bombing and displaced people. In 1945 the property was expropriated from the family von Schenck and transformed into a convalescence facility and a dermatological and psychological clinic by the State`s



Wasserschloss Flechtingen



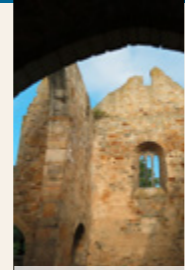
Aufschluss an der westlichen Wehrseite

social security agency in 1947. Before, it was partly used as a retirement home and for regular housing. From 1958 to 1963 the castle was occupied by the frontier division of the national troops of the GDR until it became retirement home again. Following reunification it was sold for an use as hotel in 1993, and reconstruction started in 2000. Flechtingen Castle is now again in private ownership and may be visited by appointment. Flechtingen Castle is also important from a geological standpoint. The contact between Lower Carboniferous greywacke and a Rotliegend porphyry dike is situated at the NW corner of the adjacent pond. The heat of the intrusive Lower Permian volcanic rock caused contact metamorphism in the greywackes. The porphyry of the dike is exposed at the "Kanonenplatz" W of the castle, and the greywacke can be found a few metres away in the "Parkweg" in an outcrop with an information board.

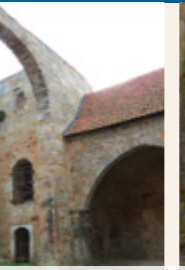
www.wasserschloss-flechtingen.de

7 On Top of the Triassic The Walbeck Ruin

Following Federal Road 1 (B 1) towards Weferlingen through the valley of the Aller (Allertal), the Otto dynasty village Walbeck with the ruin of the collegiate church of St. Mary, St. Pankraz and St. Anna is reached. The ruin, 25 m above the Allertal on top of a hill formed by Middle Triassic Muschelkalk facies limestones, is witness of construction techniques of the Otto`s times and as such a spot on the touristic route of the Romanesque Road (Strasse der Romanik). Here, duke Lothar II in 942 donated a Benediktine`s chapter as expiation for conspiring against emperor Otto I. The most famous person in the history of the chapter is bishop Thietmar von Merseburg, a major chronicler of the time of Otto I. He has not only recorded the history of Walbeck, but also consecrated the church in 1015 following reconstruction after fire. The famous bell of Walbeck, one of the oldest church bells in Germany, survived from that time.



Impressionen der Ruine Walbeck



Impressionen der Ruine Walbeck



Impressionen der Ruine Walbeck



Impressionen der Ruine Walbeck

The Walbeck ruin is situated on the Weferlingen-Schönebeck-Block which is composed of Triassic rocks and separated from the Allertal graben structure (Allertal Structure) by a major fault. The steep eastern flank of the Allertal forms the most prominent relief of the area, including elongated stretches of slopes formed by Middle Triassic (Lower Muschelkalk) Wellenkalk facies limestones. Following the tectonic structure, the Aller has formed a wide valley which is filled by Holocene sands and alluvial loam. North of Walbeck, towards Weferlingen, Upper Cretaceous (Maastrichtian) quartz sands are extensively mined at the surface. Upper Triassic "Rhaetian" sandstones can be found in a number of small historical quarries W of Walbeck, and the lower part of the Wellenkalk facies limestones is still exposed in an old quarry NE of Walbeck at the former inn "Barriere Rehm" (Geotope Nr. 3732-06 as listed for Saxony-Anhalt).

www.walbeckimallertal.de

8 Salt Structure and Disposal Site Information Site ERAM Morsleben

The former common salt and potash salt mine Bartensleben at Morsleben was transformed into a disposal site for radioactive waste by the GDR in 1971 and was continuously in use until 1998. A total of 36,000 m3 of weak to medium active waste has been deposited under conditions which would never become licensed today. Therefore an application has been made to close the site finally under Federal Atomic Law. The mine at Morsleben is geologically situated in the salt structure of the Allertal (Allertal Structure). The salt was deposited in Zechstein times (Late Permian) and later covered by younger deposits. Starting with Late Triassic (Keuper) times the sedimentary cover started sliding apart, and the Zechstein salt moved into the opening space. Following a period of subsidence into Late Cretaceous times the salt structure was compressed and elevated again, accompanied by renewed uprise of salt.



Historischer Schacht Bartensleben ...



... und heute ERAM Morsleben

Elevation continued to the end of the Cretaceous and was followed by the erosional removal of about 1.5 km of Mesozoic deposits. As a consequence, the salt within the Allertal Structure reached groundwater and became subject to subsurface dissolution. The remaining gypsum-cap is heavily karstified which is documented at the surface by a number of more-or-less evident sinkholes. The Morsleben permanent atomic waste disposal site will be prepared so that people and the environment should not be endangered in future times. This requires large constructional efforts for closing and securing the underground cavities. Because of instabilities in the southern part of the mine there is a need for strengthening the structures which is achieved by filling the cavities. The radioactive waste in this part of the mine is now covered by an at least 3 m thick layer of rock salt. In other places, stabilisation is reached by applying a special salt-concrete.

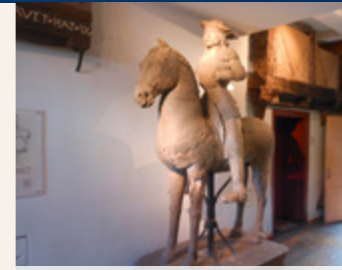
www.bge.de

9 Regional Stone-age Discoveries Museum Haldensleben

The regional museum of Haldensleben was founded in 1910 and is especially devoted to the cultural history of the region and the Biedermeier epoch. Therefore the exhibitions are centering on the one hand around archaeological objects and an impressive sculpture of Riding Roland, on the other on artistic pottery and furniture. Furthermore, an ensemble of two half-timbered houses with a chicken run and a flower garden forms an open-air document of town life in the Biedermeier epoch. Part of the estate of the Brothers Grimm belongs to the European cultural heritage and forms the centre of an exhibition of more than regional importance. There are many interconnections to the Ecomusée Haldensleben-Hundisburg (#1, Landmark). Rooster Hans is guiding children into the fabulous corners of the museum landscape. The remains of extinct civilizations are the prime source



Museum Haldensleben



Reitender Roland im Museum (Original)

of information on the prehistory of the Haldensleben region in the museum. Both, the diversity of material and design in the individual objects, and a chronologically ordered exhibition offer the chance to learn about the regional specialities of the different times. Remarkable spots of colour are painted reconstructions of prehistoric life in combination with photographs of archaeological monuments from the landscape around Altenhaldensleben and Hundisburg. This includes a group of bronze-age tumuli on the Galgenberg. The archaeological objects and their context in the excavation are well presented and give a realistic impression from the daily business of the archaeologists. A supplementary hike on the path through the historical square mile towards the tumuli SW of Haldensleben is highly recommended.

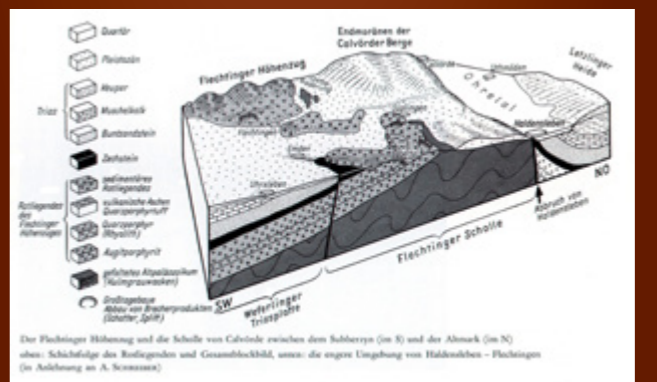
www.museumhaldensleben.de

Geological Development of the Region

The oldest rocks in the area of the present Landmark can be found in the Flechtingen Ridge. This area represents one of the most northern hardrock occurrences within North Germany which is otherwise mainly covered by unconsolidated Quarternary sediments. The ridge itself is composed of sediments and volcanic rocks of Carboniferous and Permian age. The Carboniferous rocks were deposited in the so-called Rhoic Ocean and folded by the Variscan orogeny. About 300 million years ago, granite intruded the folded rocks.

In terms of the regional geologic situation the Flechtingen Ridge is part of the Flechtingen-Roßlau-Block which extends from the Drömling in the NW to Magdeburg and Roßlau in the SE. The famous cathedral of Magdeburg is based on an isolated exposure of the same block (Magdeburger Domfels). Following the Variscan Orogeny the mountain ranges were quickly eroded and the area soon was covered by the sea again. For the next several million years until Cretaceous times sediments were deposited in the region. Marine flooding started with the Late Permian Zechstein Sea, afterwards terrestrial and marine conditions alternated.

Starting at the end of the Cretaceous the Flechtingen Block was lifted and the sedimentary cover eroded. Since a thick cover was still existing S of the area, e.g. on the Weferlingen-Schönebeck Triassic Block, Zechstein salt started to become plastic and slowly moved upward forming salt-structures, such as, e.g., the Allertal Structure.



Quelle: Wagenbreth & Steiner (2001): Geologische Streifzüge. Landschaft und Erdgeschichte zwischen Kap Arkona und Fichtelberg. - Spektrum Akademischer Verlag



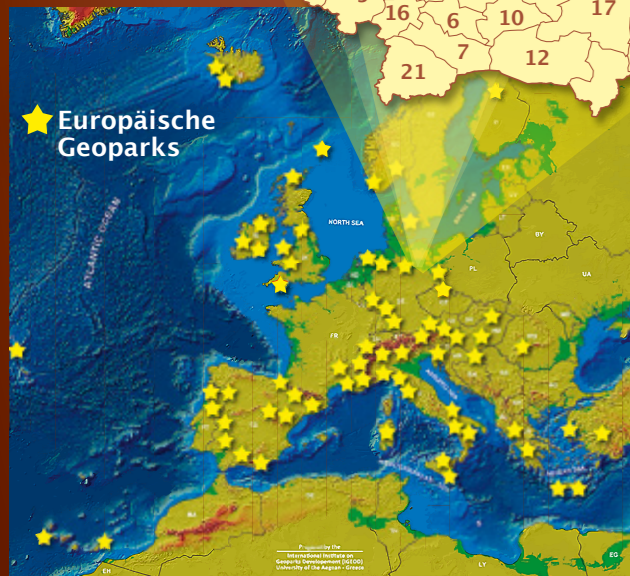
Landmark 28

Hundisburg Castle





Overview of the Geopark Harz · Braunschweiger Land · Ostfalen



For Germany a National GeoPark is defined as a clearly delimited territory where the representative takes care of making public the earth and cultural history combined with the protection of its geological heritage.



The Geopark Harz · Braunschweiger Land · Ostfalen was founded in 2002. The above map shows the extent of all existing landmarks.

1 Landmark #28 and Forest Information Center Hundisburg Castle

Next to Haldensleben, the county-seat of the "Bördekreis", the impressive stately home of Hundisburg (so-called Hundisburg Castle) is situated on top of a spur of greywacke in the middle of an extensive landscape park. Based on an old fortification it was converted into a Renaissance stately home by the family von Alvensleben in the 16th century. Having been destroyed during the 30-years War in the first half of the 17th century buildings and garden were restored and enlarged in the baroque style in 1693. Following the demise of the von Alvensleben family, the installations were acquired by an industrialist from Magdeburg, J.G. Nathusius. From 1831, his son Hermann Engelhard von Nathusius took over. He was a well-known agricultural engineer and zoologist of his time and integrated home and garden into the extensive landscape park of Althaldensleben-Hundisburg. The baroque garden was well organized and



Schloss Hundisburg



Blick in die Parkanlage

comprised several ornaments and fountains in addition to exotic plants. Following the Second World War the castle was occupied by soviet soldiers in 1945 and burned down in November of the same year. The castle, the baroque garden and the landscape park were taken over by the town of Hundisburg in 1994, followed by a careful reconstruction. Reconstruction not only included the castle, but also the 100 ha of the English-style landscape park. The ensemble of Hundisburg Castle is now included in the touristic system of the "Gartenträume Sachsen-Anhalt" (Garden dreams of Saxony-Anhalt). A didactic path explaining natural and cultural history guides through the park. The northern part of the castle is presently used by the "Haus des Waldes" (House of Forest), the central information and experience centre for forests in the State of Saxony-Anhalt. An exhibition and numerous activities for people of all ages offer an all-over-the-year chance to experience new and knowledgeable information on forest ecosystems.

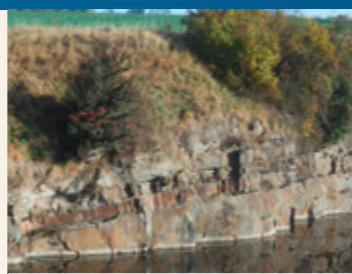
www.schloss-hundisburg.de
www.hausdeswaldes.sachsen-anhalt.de

2 Greywacke quarry "Ruine Nordhusen" at Hundisburg

Turning left from Hundisburg Castle 500 m into the "Steinbruchweg" you will reach a parking lot at the old greywacke quarry Nordhusen. Disused since 1954 the quarry is now filled with water, but, at its western face just below the ruin of a Romanesque church thick-bedded flat-lying Lower Carboniferous greywacke is still visible. It was used for building stone, pavement, and gravel in the region. The northern face of the quarry still shows 12 m of an alternation of massive and layered greywacke with minor intercalations of shaly clay. At the eastern edge of the quarry scratches are preserved on top of the greywacke which were produced by overriding glaciers (Gletscherschrammen) most probably during the Drenthe advance of the Saalian glaciation about 200,000 years ago. They have been declared officially as a geosite of special interest (Geotope) by



Ruine Nordhusen



Grauwackebruch an der Ruine Nordhusen

the State of Saxony-Anhalt (Geotope Nr. 3734-01 of the respective list). The church of Nordhusen was built above the valley of the Beber creek in 1214. The impressive remnant of its western tower is the only building surviving from the abandoned village Nordhusen. A base of 12 X 5 m and a preserved height of 17 m are unique for the area and indicate a size of the original tower larger than that of most towers of churches in coeval cities. The tower was accurately built from regular blocks of greywacke derived from the nearby quarry. The appearance of the tower is dominated by the two top-rounded gates which serve as the entrance. They are continued to the top by bell windows in the upper storeys. The ruin is part of the touristic Romanesque Route (Strasse der Romanik).

www.strassederromanik.de
www.ecomusee.de

3 Technical Monument and Museum Hundisburg Brickworks

Driving further west from Hundisburg, Hundisburg Brickworks is reached in a distance of about 1 km. The historical brick producing installations have been turned into a technical monument and active museum. In the adjacent former brickpit Pleistocene clay and silt were mined. On the southern slope of its western part heavily deformed well-layered silt (Bänderschlufl) can still be seen (Geotope Nr. 3734-02 as listed for Saxony-Anhalt). The deformation was caused by inland ice overriding the area during one of the advances. The rest of the pit has been artificially modified to serve as a protected biotope which can be explored from a circular route. It may also be of interest to take a tour on the historical light railway (Feldbahn) and to have a look at the bucket-chain excavator from the 1940ies which was used for extracting the clay.



Ziegelei Hundisburg



Natur und Technik in der alten Tongrube

Construction of the brickworks and brick production started in 1882. The installations as seen today are mainly from the 1930ies with some components still surviving from 1903. This is unique for Germany, especially since they are still in use for the production of brick products, high-temperature gypsum and quicklime for the purpose of monument reconstruction. Bricks are formed manually by "Handstrich", an old technique in brick production. Afterwards they are air-dried in large barn-like buildings and burned in the zig-zag-oven from 1938. This enables the individual production of different shapes and colours on demand for the restoration of architectural monuments. Sometimes visitors may form individual bricks of their own design in so-called "creative workshops".

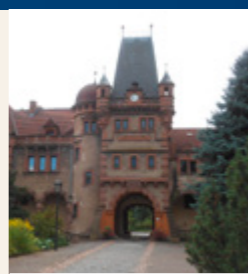
www.ziegelei-hundisburg.de

4 Alvensleben Sandstone Bebertal and Veltheimsburg

When leaving the Autobahn A2 at exit "Eilsleben" and driving towards Haldensleben we are passing a small parking lot in the valley "Hünenküche", just before reaching the village of Bebertal. Slightly southward-dipping red conglomerates, sandstones and sandy shales of the Lower Permian Bebertal Formation may be seen on both sides (Geotope Nr. 3733-02 as listed for Saxony-Anhalt). The so-called Alvensleben-Sandstone was quarried here and can be found in numerous buildings of the area around. A short walk up the valley leads to the nature monument Witte-Schacht (=White Shaft), a 15 m deep barite mine which is now flooded by groundwater (Geotope Nr. 3733-07 as listed for Saxony-Anhalt). Walking further west along a small creek towards the Federal Road small overgrown heaps of spoil from Kupferschiefer (copper shale) mining are reached. Mining of the Late Permian copper shale ended here in 1798.



Bebertal-Schichten des Rotliegenden der Hünenküche

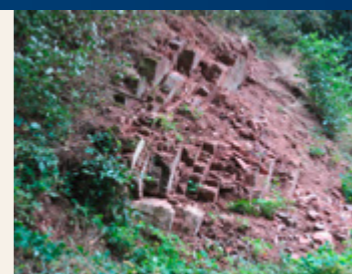


Zugang zur Veltheimsburg

Back to the parking lot we continue to Bebertal where we turn left just before the wall of the local cemetery. A track across the fields leads us to an active quarry in Lower Permian (Rotliegend facies) sandstones between Bebertal and Emden. Back to Bebertal, we follow the signs to "Veltheimsburg". The stately home of Veltheimsburg is one of the most prominent buildings of the region. It has been mentioned in written documents for the first time at the beginning of the 13th century and was probably composed of three individual castles. The main castle was owned by the bishops of Halberstadt since 1180. The keep and remains of the castle's core still remain from medieval times. The cylindrical keep is made of rectangular blocks of porphyry and shows the original entrance 11 m above the ground; the entrance at the base and the battlements are of more recent origin. The manor from the 18th century is a simply plastered building carrying the shield of the Alvensleben family on the gable. The most decorative part of the new ensemble is the lavishly built stately home in Neo-Renaissance style from 1882. Visitors have unlimited access to the exterior of the buildings. From time to time, garden festivals, public talks and fairs, flea markets and the "Schloss-Café" are attractions for guests.

5 Basement and Hardrock Mining Flechtingen Ridge

Covering an area of about 400 km2 about 60 km N of the Harz Mountains, the hills of its "little brother", the Flechtingen Ridge, reach an elevation of only 179 m above sea level. To the W they are enclosed by the upper reaches of the river Aller, to the N by the Spetze creek, to the NE by the Ohre creek with the Mittelland canal in its alluvial plain, and by the Beber creek to the S. Geologically, the Flechtingen Ridge is a southeasterly tilted block of Palaeozoic basement similar and parallel to the basement block of the Harz Mountains. At the surface, Lower Carboniferous quartzites (Gommern Quartzite) and greywackes (Kulm-greywacke) and Lower Permian (Rotliegend facies) sediments and volcanic rocks are exposed. Granite has been met in a well at a depth of 576 m. Similar to the Harz, the Flechtingen Block is bounded to the N by a deep-reaching fault which is situated below the valley of the Ohre creek. The Letzlingen Heathland



Großes Bruch bei Neuwegersleben



Schrägschichtungen in der Kiesgrube

and the Altmark with their thick cover of Quaternary sediments N of it do not belong to the area of the Geopark. Also similar to the Harz Mountains, the southern margin of the Flechtingen Ridge is inconspicuous and partly marked by comparatively small heaps of spoil from historical mining of Late Permian copper shale (Kupferschiefer), e.g. at Emden and Bebertal. The copper shale here is gently dipping to the SE below a Mesozoic cover. Lower Carboniferous greywackes and shales are exposed in an abandoned quarry at Hundisburg next to the remnants of the medieval Nordhusen church. Greywacke and Gommern Quartzite are of historical importance as construction material in all of the region. The Lower Carboniferous is covered by an up to 600 m thick sequence of Lower Permian Rotliegend volcanites, especially different varieties of porphyry, and sediments. The volcanites are actually mined in large quarries at Dönstedt, Bodendorf, and Flechtingen, the latter has a public observation platform and an accessible outcrop of porphyry at the access road.

www.landkreis-boerde.de



Haldensleben: Rathaus mit Roland

Der Geopark Harz · Braunschweiger Land · Ostfalen ist Teil der drei Bundesländer Niedersachsen, Sachsen-Anhalt und Thüringen. Er umfasst die Städte Wolfsburg, Salzgitter und Braunschweig sowie die Landkreise Peine, Wolfenbüttel, Goslar, Göttingen, Harz, Südharz-Mansfeld, Nordhausen, dazu einzelne Gemeinden und Städte der Landkreise Northeim, Börde und Salzland.

Träger des Gesamt-Geoparks ist die Geopark Harz · Braunschweiger Land · Ostfalen GbR, die der Geopark-Trägerverein Braunschweiger Land - Ostfalen e. V. zusammen mit dem gleichberechtigten Partner Regionalverband Harz e.V. bildet.

Der gemeinnützige Geopark-Trägerverein ist im Geotopschutz, in der Bildung für nachhaltige Entwicklung, in der Regionalentwicklung und in der Förderung der wissenschaftlichen Forschung tätig. Der Verein ist für den Nordteil des Geoparks verantwortlich, wo er zusammen mit regionalen Partnern Geopark-Infozentren & -Infostellen, Landmarken, Geopfade und Geopunkte betreut. Das Teilgebiet erstreckt sich von Wolfsburg im Norden bis zum Fallstein im Süden, von Peine im Westen bis nach Haldensleben im Osten.

Herausgeber: Geopark-Geschäftsstelle
Niedernhof 6, 38154 Königslutter am Elm
Tel.: 05353-3003, E-Mail: info@geopark-hblo.de
www.geopark-hblo.de

2. Auflage 2019

Autoren: Dr. Friedhart Knolle und Dr. Rainer Schulz (†)
mit freundlicher Unterstützung des Börde-Museums
Burg Ummendorf

Fotos: Christian Schulz

Druck: Druckerei Bührig, Königslutter am Elm