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Messel Pit Fossil Site

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Messel Pit Fossil Site

Messel Pit is the richest site in the world for understanding the living environment of the Eocene, between 57 million and 36 million years ago. In particular, it provides unique information about the early stages of the evolution of mammals and includes exceptionally well-preserved mammal fossils, ranging from fully articulated skeletons to the contents of stomachs of animals of this period.

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Site fossilifère de Messel

Messel est le site le plus riche au monde pour la compréhension du milieu vivant de l'éocène, période géologique située entre – 57 et – 36 millions d'années. Il fournit notamment des informations uniques sur les premières étapes de l'évolution des mammifères, dont il livre des fossiles exceptionnellement bien préservés, allant de squelettes totalement articulés jusqu'au contenu de l'estomac d'animaux de cette époque.

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إن ميسيل هو الموقع الأغنى في العالم لجهة شموله للأوساط الحية منذ الإيوسين وهي حقبة جيولوجية تقع بين 57 و 36 مليون سنة. ويؤمن هذا الموقع معلومات فريدة متعلقة بالمراحل الأولى لنمو الثدييات بحيث أنه يحفظ وبشكل ممتاز بعض المتحجرات التي تتراوح بين الهياكل العظمية التي لا تزال مفاصلها حسنة التركيب إلى مضمون أمعاء الحيوانات التي كانت موجودة في تلك الحقبة الزمنية.

source: UNESCO/ERI

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麦塞尔化石遗址

麦塞尔化石遗址是了解5700至3600万年间始新世生活环境极为珍贵的遗址，是哺乳动物早期进化的唯一资料。从完好的骨架到那个时期动物胃里的物质，哺乳动物的化石仍保存完好。

source: UNESCO/ERI

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Карьер Мессель является местом обнаружения самых ценных окаменелостей, датируемых эоценом, относящихся к периоду времени 57-36 млн. лет назад. В частности, это место предоставляет уникальную информацию о первых этапах развития млекопитающих, поскольку здесь найдены прекрасно сохранившиеся окаменелые останки доисторических животных – от целых скелетов до содержимого желудков зверей, живших в те времена.

p>

source: UNESCO/ERI

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Sitio fosilífero de Messel

Messel es el mejor sitio fosilífero del mundo para conocer el medio ambiente del Eoceno, el periodo geológico que se inició unos 57 millones de años antes de nuestra era y finalizó unos 21 millones de años después. El sitio proporciona una información única en su género sobre las primeras etapas de evolución de los mamíferos, de los que se encuentran fósiles excepcionalmente bien conservados, desde esqueletos perfectamente articulados hasta contenidos de sus estómagos.

source: UNESCO/ERI

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メッセル・ピットの化石地域

5700万～3600万年前の始新世の環境を知る上でもっとも重要な場所と考えられている。特に哺乳類進化の初期の段階を理解するのに貴重な情報源となる、全身骨格から胃の内容物までを含む、きわめて状態のよい哺乳類の化石が発掘されている。

source: [NFUAJ](#)

Fossielengebied Groeve van Messel

De groeve van Messel – een voormalige mijn bij Darmstadt – is de rijkste plaats ter wereld voor het bestuderen van het leefmilieu in het Eoceen, het geologisch tijdperk tussen 57 miljoen en 36 miljoen jaar geleden. De groeve geeft in het bijzonder unieke informatie over de vroege stadia van de evolutie van zoogdieren en omvat uitzonderlijk goed bewaard gebleven fossielen van zoogdieren. Het varieert van volledig geledede skeletten tot de inhoud van magen van dieren uit deze periode. Naast de fossielen van zoogdieren zijn er ook fossielen van vogels, reptielen, vissen, insecten en planten te vinden.

Source: [unesco.nl](#)

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Messel Pit Fossil Site (Germany) © Tim Schnarr



Outstanding Universal Value

Brief synthesis

Messel Pit provides the single best fossil site which contributes to the understanding of evolution and past environments during the Palaeogene, a period which saw the emergence of the first modern mammals. The property includes a detailed geological record of middle Eocene age, dating from 47-48 million years ago. It provides unique information about the early stages of the evolution of mammals and is exceptional in the quality of preservation, quantity and diversity of fossils of over 1000 species of plants and animals, ranging from fully articulated skeletons to feathers, skin, hair and stomach contents. Located in the German Land of Hesse, this area of just 42 ha conserves a rich fossiliferous bed of oil shale some 190 m thick. Discovered through mining activities, the area has now been preserved and has been the subject of important paleontological research, which has greatly contributed to our knowledge of evolutionary history. Significant scientific discoveries include studies of the evolution of echolocation in exceptionally well-preserved fossil bats and vital new data on the evolution of primates, birds and insects.

Criterion (vii): Messel Pit Fossil Site is considered to be the single best site which contributes to the understanding of the Eocene, when mammals became firmly established in all principal land ecosystems. The state of preservation of its fossils is exceptional and allows for high-quality scientific work.

Integrity

As the Messel Pit is the former site of an oil shale mine, the land surface has been significantly disturbed. Paradoxically, if there had been no mine, the scientific values of the property would have never been discovered. Once mining was discontinued in the late 1960's, the site was opened to private prospection and even proposed as a refuse dump in 1971, a threat that led to increased scientific prospection and public concern. This culminated in the purchase of the pit by the government and its full protection as a cultural monument. The extraordinary state of conservation of the property's fossils, which allows for the reconstruction of the morphology of the preserved fauna and flora as well as that of their environment, and the serious commitment by government for its long-term maintenance as a site of scientific importance, means that the conditions of integrity for the property are fully met. Although much material has been taken from the site - approximately 20 million tonnes of rock in a century of mining activities - the volume of fossil-bearing oil shale sediments is still massive and far from depleted.

Protection and management requirements

The Land of Hesse is the legal owner of the Messel Fossil Pit. The oil shale in the pit is a historical mineral resource, making it part of the cultural heritage as defined in the Hessian *Heritage Protection Act*. Operations in the mine are governed by the *Federal Mining Act*. The property is jointly managed through an agreement between the government, the Senckenberg Society for Nature Research and the Messel Pit World Heritage Non-Profit Limited, an NGO founded in 2003, which has as its principal responsibility the presentation of the site to visitors. Shareholders of this NGO are the Land of Hesse, the Senckenberg Society for Nature Research and the municipality of Messel. The Messel Pit Fossil Site is administrated separately from the Federal State budget.

Under German law, the Senckenberg Society for Nature Research is the operator of the mine, which has an agreement with the Land of Hesse for the protection and preservation of the Messel Pit. The operator is responsible for the main operating plan of the mine, which includes water drainage, slope reinforcement, management of encroaching vegetation, protection against trespassers and management of the former North-East Dump, as well as for sustaining scientific research. The property is surrounded by a perimeter fence and controls on excavation and disturbance to the oil shale are in place. Various development and landscape plans for the property have been produced, as well as an overall Management Plan. A 22.5 ha buffer zone surrounding the property was defined in order to strengthen the integrity of the property and support its effective protection and management. A viewing platform overlooking the pit, a visitor information centre and a wide range of communication activities concerning the property are in place.

Media

-  [Messel Pit Fossil Site \(UNESCO/NHK\)](#)

News (1)

- [Wadden Sea World Heritage showcases sustainable tourism at the ITB 2017](#) Sunday, 12 March 2017

Events (1)

- [UNESCO at the world's largest tourism fair - ITB Berlin 2017](#) 08-Mar-2017-12-Mar-2017

Links

-  [View photos from OUR PLACE the World Heritage collection](#)
- [UNESCO Commission of Germany](#)
- [Fossilienlagerstätte Grube Messel \(Deutsche UNESCO-Kommission\)\(german only\)](#)
- [Protectedplanet.net](#)



Germany

District of Darmstadt-Dieburg, State of Hesse (Hessen)

N49 55 0.012 E8 45 14.004

Date of Inscription: 1995

Minor boundary modification inscribed year: 2010

Criteria: (viii)

Property : 42 ha

Buffer zone: 22.5 ha

Ref: 720bis



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Media News Events Links

Periodic Reporting



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Protections by other conservation instruments

(1 protection / 1 element)

Geoparks (1 element)

- [Bergstraße-Odenwald UNESCO Global Geopark](#)

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