



Biodiversity Roadmap

CEMBUREAU's vision for
biodiversity in and around
quarries over the coming
decades



The European Cement Association based in Brussels is the representative organisation of the cement industry in Europe. Currently, its Full Members are the national cement industry associations and cement companies of the European Union (except for Malta and Slovakia) plus the UK, Norway, Switzerland and Turkey. Croatia and Serbia are Associate Members of CEMBUREAU. A cooperation agreement has been concluded with Vassiliko Cement in Cyprus and the Cement Association of Ukraine.

The Association acts as spokesperson for the cement industry before the EU institutions and other public authorities, and communicates the industry's views on all issues and policy developments regarding technical, environmental, energy, employee health and safety and sustainability issues. In addition to the EU, permanent dialogue is maintained with other international organisations (e.g. OECD, IEA), the Global Cement and Concrete Association (GCCA) and sister associations in other parts of the world.

The cement sector's efforts to reduce its environmental footprint and support a carbon neutral economy are further explained on our [Low-carbon economy website](#).

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The European cement and concrete industry provides essential materials for innovative, sustainable construction. Together with partners along the construction value chain, **the industry plays a vital role in creating our modern world.**

Cement production has always been linked to the availability of its raw material: limestone.

Plants are typically located next to quarries, and become the foundation of local economic activity and prosperity. The use of locally available resources to produce cement and concrete firmly anchor the cement industry in communities across Europe.

Cement and concrete are pivotal to building a climate-neutral Europe. **The foundations of wind turbines, hydro-electric dams, passive housing, tidal power installations and new transport infrastructure all rely on the unique qualities of concrete.** In addition, concrete products play a role in the development of artificial habitat structures for wildlife, including

concrete islands, artificial reefs and substrate for green roofs/walls and wildlife passages.

In short, cement is not only the glue that makes a combination of aggregates and water into an amazing construction material; it also binds society's expectations of growth and employment with environmental sustainability. By 2050, the cement sector aims to achieve carbon neutrality along its full value chain – **clinker, cement, concrete, construction and (re)carbonation** – otherwise known as our 5C approach. This can be achieved through a combination of industrial and political actions, that are described in the **CEMBUREAU's Carbon Neutrality Roadmap** published in May 2020.



©Yannis Kontos, Greece

Cement:
an essential material
for society

The role of the cement sector in relation to biodiversity

The extraction sites of raw materials used in the European cement industry **are important for biodiversity because they contain many different types of ecosystems spread across several different climatic zones within the EU**. Quarries are home to a rich variety of species, as many different habitat types are often encountered, with the transitional zones between offering significant biodiversity interest. These transition zones between habitats, known as ‘ecotones’, support better biodiversity outcomes. Extractive activities support habitat succession, which in turn helps support pioneer species, including wildflowers and pollinators. This also gives species dependent on early successional habitats such as the **yellow-bellied toad** (*Bombina variegata*), the **midwife toad** (*Alytes obstetricans*), the **eagle owl** (*Bubo bubo*) and the **peregrine falcon** (*Falco peregrinus*) a refuge which maybe absent in the wider countryside.

A key priority for the European cement industry is to protect and preserve the rich ecosystems thriving in and around our quarries. These sites are the source of our raw materials, but we recognise they are also sites for nature conservation. Furthermore, new habitats created during the rehabilitation process, that can go above and beyond legislative requirements, ensure animal and plant life, including rare and threatened species, can further prosper and flourish, thus contributing to

the **United Nations Sustainable Development Goal 15** “Life on lands” and the UN Decade on Ecosystem Restoration 2021-2030.

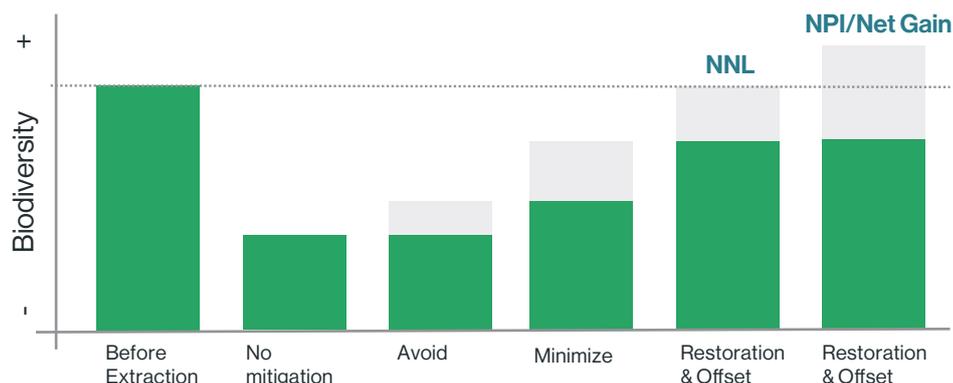


Notwithstanding the impacts of extraction activities on the landscape and biodiversity, the cement industry’s ambition is **to contribute to halting biodiversity loss during the lifecycle of a quarry through rehabilitation processes**. The **mitigation hierarchy** provides a structured biodiversity management approach to manage this impact and ultimately to enhance biodiversity.

This can be achieved through projects related to habitat management and restoration, which enhance the ecological value of quarried areas. In turn, this provides an educational resource for academic institutions, non-governmental organisations and the general public. A **photo gallery** is available on CEMBUREAU’s web site with **various case studies showing nature protection and enhancement examples in the quarries of its members**.

Mitigation Hierarchy

NO NET LOSS (NNL) and NET POSITIVE IMPACT (NPI)



Nature can thrive on the margins of active quarries, enabling plants and animals to prosper. One of the ways to ensure this is **by encouraging areas of temporary habitat**, which is land that has been extracted but not yet rehabilitated and left untouched for at least one year.

The cement industry is proud of its work supporting nature conservation through good land stewardship and proper planning of quarry activities. This not only benefits the wildlife in and around these sites but enhances human well-being and provides important educational resources for all.

Temporary habitats in quarries play an important role, contributing positively to biodiversity and restoration. Nature can thrive on the margins of active quarries, enabling plants and animals to prosper. One of the ways to ensure this is by encouraging areas of temporary habitat, which is land that has been extracted but not yet rehabilitated and left untouched for at least one year.

Several temporary habitats are generated during the extraction phase, and this process plays an important role in minimising habitat fragmentation. Increasing connectivity enables the movement of fauna and the appearance of pioneer species and habitats, thus increasing the ecological value and ecosystem services in these areas.

In recognition of the importance of temporary habitats, CEMBUREAU together with Birdlife Europe, HeidelbergCement, Eurogypsum, and UEPG, the European Aggregates Association, launched in October 2021 the **“Extractive Sector Species Protection Code of Conduct”** – a framework for the management of temporary habitats linked to the extractive sector.

The Code of Conduct builds on the provisions of the EU’s Birds and Habitats Directives and suggests a management approach for the extraction sector to protect species and fully respect these directives by conserving nature through the implementation and establishment of temporary habitats.



©Jochen Roeder, Germany

This is an excellent example of how nature conservation organisations and the business community can collaborate to develop lasting solutions to meet the needs of biodiversity and people – ultimately helping to create a nature-positive future.

Furthermore, it demonstrates the commitment of CEMBUREAU and its partners to finding practical solutions which ensures that **“quarrying and conservation go ‘hand-in-hand’”**.

In the **EC guidance¹** on undertaking non-energy extractive activities in accordance with Natura 2000 requirements, several examples of best practice from quarries used for cement production are included, which demonstrate how extraction projects can ultimately be **beneficial to biodiversity by providing high-quality ecological niches**.

¹ <https://op.europa.eu/en/publication-detail/-/publication/69b6d6c1-bfc1-4fe5-9252-08af20a95cfe/>

Working in partnership

The example above shows the power of partnership working, and while it is an excellent example of sector collaboration, it builds on a long history of CEMBUREAU engagement with a wide range of stakeholders.

In 2014, CEMBUREAU collaborated with the **International Union for Conservation of Nature** (IUCN), the **Cement Sustainable Initiative** (CSI)², the **Cement Association of Latin America** (FICEM) and the **European Aggregates Association** (UEPG) for the publication of a comprehensive guide for **biodiversity management in the cement and aggregates sector**.

In 2017, CEMBUREAU, together with **Birdlife International**, **co-signed a letter** to the European Commission describing specific recommendations which aimed to address gaps and inadequacies in the implementation and enforcement of the **Birds and Habitats Directives**.

CEMBUREAU is an affiliate member of the **Global Cement & Concrete Association** (GCCA), and fully supports its policy paper and its **Sustainability Guidelines for Quarry Rehabilitation and Biodiversity Management**, published in May 2020.

“

Serious businesses have now understood that there simply can be no business on a dead planet. Yet too many companies and sectors are still in denial or have only made it to the greenwashing stage. I am thus truly excited by CEMBUREAU's new biodiversity roadmap, which is tackling the right issues, takes science seriously and makes quantified and verifiable commitments. It certainly shows the way to go, for the sector and for the business community at large.

”

Ariel Brunner
Senior Head of Policy
BirdLife Europe and Central Asia



² whose work has been transferred to the Global Cement & Concrete Association (GCCA) on 1 January 2019

Policy context

At the heart of European biodiversity policy is the **Fauna-Flora-Habitat Directive** (FFH) and the **Birds Directive**. Together they are considered the core of the EU's nature conservation and biodiversity policy and form the basis for an EU-wide ecological network (Natura 2000) of several thousand sites that are intended to ensure the long-term survival of the most valuable and endangered species, habitats and ecosystems.

Furthermore, in 2020, the EU adopted a comprehensive Biodiversity Strategy for 2030, which describes various approaches and measures to help strengthen biodiversity and reduce risks to biodiversity. **The EU Biodiversity Strategy 2030 calls on Member States to ensure that the conservation status of protected habitats and species does not deteriorate by 2030.** Furthermore, among other things, the implementation of the EU Regulation on Invasive Alien Species is to be advanced in order to minimise or prevent the introduction and establishment of alien species in the EU.

As the European cement sector, we fully support the efforts of the EU to lead the world in driving forward the adoption of a transformative global framework at the 15th Conference of the Parties (COP) to the Convention on Biological Diversity.

CEMBUREAU is fully aligned with the assessment of the European Commission that **“the biodiversity crisis and the climate crisis are intrinsically linked”** and that **“nature is a vital ally in the fight against climate change”**. With this in mind, the work towards nature conservation in the limestone quarries of the European cement industry is a valuable contribution to both biodiversity protection and climate change mitigation, supporting the goal of a more sustainable future.

CEMBUREAU fully supports the commitment of the European Commission to address the main causes of biodiversity loss in the EU. We endorse the in-depth analysis of EU protected areas on the need for improvements, understanding that meeting the provisions of the legislation is compatible with fulfilling the demand for raw materials and sustainable development.

CEMBUREAU endorses policies that stress the role of education in raising awareness of biodiversity. Limestone quarries are already ‘outdoor classrooms’ for fruitful collaboration between researchers and our industry, but they are also valuable information resources for members of the public in local communities.



In 2020, the EU adopted a comprehensive **Biodiversity Strategy for 2030**, which describes various approaches and measures to help strengthen biodiversity and reduce risks to biodiversity.

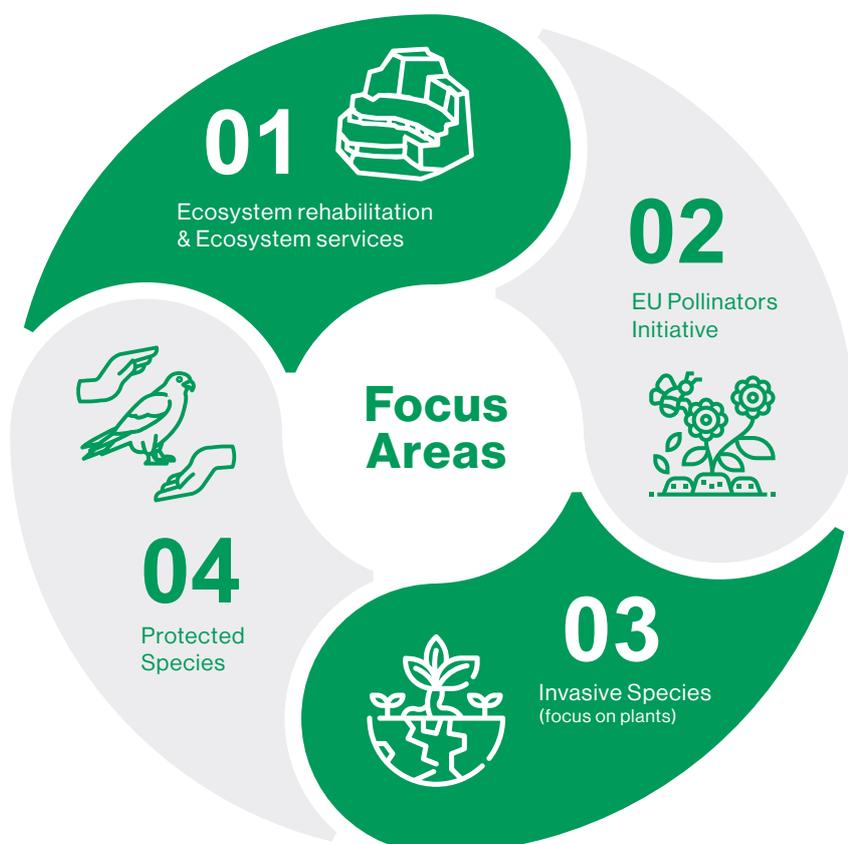
Our 2030 Biodiversity Roadmap & our vision to the future

In publishing this cement sector Biodiversity Roadmap, **CEMBUREAU is sharing its vision for biodiversity in and around quarries for the coming decades.**

While the focus of this Roadmap is on the limestone quarries that provide raw materials for the production of cement, we encourage the application of the actions and targets in the Roadmap to other extractive sectors and processes. **It is at the discretion of an individual company as to whether it extends the scope of this roadmap to include aggregate quarries.**

This Roadmap outlines actions and targets until 2030 that are grouped into four focus areas to help, guide, and influence companies to manage biodiversity and inspire collaboration between the cement sector and other stakeholders, such as regulators, nature conservation associations, political institutions and wider society.

Through this roadmap, CEMBUREAU and its members will contribute to the global goal of **'Nature Positive'³** by enhancing the ecological value of quarried areas, protecting and restoring ecosystems to deliver sustainable growth, in harmony with the natural world – **this is our vision of the future.**



³ <https://www.naturepositive.org/>



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01. **Ecosystem rehabilitation & Ecosystem services**

Introduction

The extraction of raw materials has an impact on the natural world. 400 Limestone quarries, across Europe, supply the raw materials needed for the production of cement to CEMBUREAU members⁴. **The impact of the extraction of these raw materials can be addressed and mitigated** through the development and implementation of quarry rehabilitation plans.

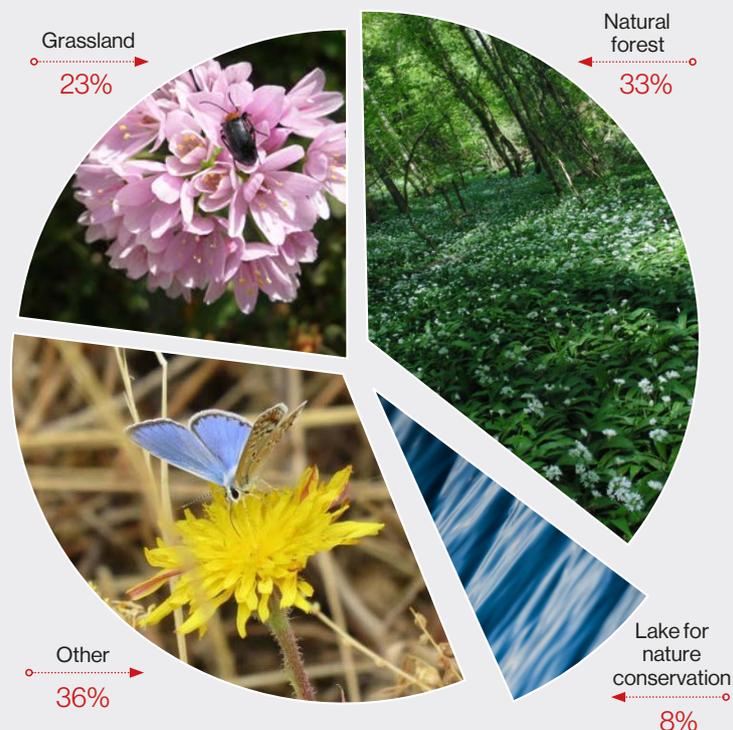
The UN Decade on Ecosystem Restoration aims to prevent, halt and reverse the degradation of ecosystems on every continent and in every ocean. **It can help to reduce poverty, combat climate change and prevent mass extinction.** It will only succeed if everyone plays their part⁵. The European cement industry can contribute to these goals as well as to the targets of the EU Biodiversity Strategy 2030, more specifically to the Nature Restoration Plan and restoration targets and reforestation. **The industry can support improvement to habitats included within the Natura 2000 network, which**

represents over 18 per cent of the EU's land area across all 27 EU countries.

Quarry rehabilitation can create opportunities for ecosystem restoration, enhanced biodiversity, the increased provision of ecosystem services through habitat management and the creation of new and temporary habitats. Promoted as best practice across the sector, progressive rehabilitation during quarrying is implemented where possible, reducing open areas within the quarry and leading to the development of habitats at an early stage of a quarry's life cycle.

To evaluate whether quarry rehabilitation is moving towards achieving **"No Net Loss"** or **"Net Positive Impact"**, it's important to measure biodiversity values, which can be achieved by incorporating methodologies such as a net impact assessment into quarry rehabilitation.

Type of rehabilitation for the limestone quarries of CEMBUREAU members⁶



⁴ CEMBUREAU's full members are the national cement industry associations and cement companies of the European Union (except for Malta and Slovakia) plus Norway, Switzerland, Turkey and the United Kingdom

⁵ <https://www.decadeonrestoration.org/>

⁶ <https://cembureau.eu/media/wyukfn5q/biodiversity-leaflet-digital-version.pdf>

Quarry rehabilitation can create **opportunities for ecosystem restoration, enhanced biodiversity and the increased provision of ecosystem services.**

Vision

CEMBUREAU members will contribute to the restoration targets emerging from the 2030 EU Biodiversity Strategy, and to the UN Decade on Ecosystem Restoration, by:

- **Creating opportunities** for ecosystem rehabilitation and the creation of new and temporary habitats throughout the life cycle of the quarry.
- **Promoting** progressive quarry rehabilitation.
- **Incorporating** an impact assessment methodology/evaluation of the habitat quality or target species into quarry rehabilitation plans.
- **Facilitating and encouraging** sharing of knowledge about rehabilitation good practices and experiences in the sector.
- **Working together** with NGOs and academia, promoting scientific knowledge and applied research on the rehabilitation process.



Targets



Our Roadmap targets for Ecosystem rehabilitation & Ecosystem services are related to reporting of hectares rehabilitated and to improving the quality of quarry rehabilitation.



1. Annual reporting of the hectares rehabilitated

- **Compile all data** to calculate KPIs and publish the hectares rehabilitated per year.
- **Members will report** annually the data.

KPI 1 – area restored

KPI 2 – type of area restored

KPI 3 – percentage of quarried area allocated to temporary habitats



2. Improve the quality of quarry rehabilitation

- **Provide** dissemination of material to support high-quality rehabilitation.
- **Promote** webinars to encourage sharing of knowledge about quarry rehabilitation.
- **Incorporate** an impact assessment methodology into quarry rehabilitation plans.*
- **Increase** the number of studies on ecosystem services provided by quarry rehabilitation (e.g. carbon sequestration, seed dispersal, cultural values).
- **Promote** the creation of temporary habitats in active quarries.
- **Enhance** quarry rehabilitation of non-forest ecosystems (e.g. wetlands, pioneer habitats, grasslands).

KPI 1 – Number of quarries per total quarries that incorporate an impact assessment methodology

KPI 2 – Number of studies on ecosystem services provided by quarry rehabilitation



* example of methodologies which are currently available, the CSI-WBCSD and the BIRS-IUCN



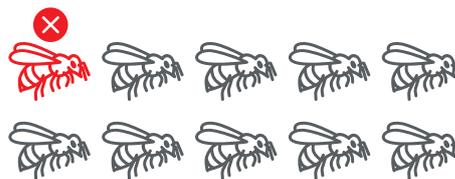
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02. **EU Pollinators Initiative**

Introduction

It is estimated that the agricultural contribution of pollinators is €10 -15 billion in the European Union alone. More than 75 per cent of leading food crops and almost 90 per cent of the world's flowering plants rely, at least in part, on pollination. Pollinators encompass a wide variety of species, including birds and bats, but the vast majority are insects, including butterflies and, especially, bees⁷.

Mirroring the downward trend in global biodiversity, the populations of many pollinators are in decline, although given the lack of global and national databases the true picture is not clear. However, a study⁸ in Germany found in 2017 that **flying insect populations had declined by around 75 per cent over a 27-year period**, while within a European context ten per cent of European bee species are threatened with extinction. Given the biodiversity and economic consequences of such dramatic declines in pollinators, in 2018 the European Commission launched the EU Pollinators Initiative, with the aims of improving knowledge, tackling the causes of decline and raising awareness.



10% of European bee species are threatened with extinction.

It is clear that pollinators need a lifeline: could quarries be part of the solution? Evidence increasingly shows the value of quarries, both active and rehabilitated, as **rich pollen and nectar sources**, while the bare substrates and slopes/cliffs provide abundant nesting opportunities, in particular for mining bees.

Many actions in support of pollinators have already been shared with the **EU Pollinator Initiative** from our sector, and given the significant contribution that quarries could provide to the aims of this initiative, **pollinators have been chosen as a key focus area in this Roadmap.**



More than **75 per cent of leading food crops** and almost **90 per cent of the world's flowering plants** rely, at least in part, on pollination.

⁷ <https://www.ipbes.net/assessment-reports/pollinators>

⁸ Hallmann et al (2017) <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0185809>

Evidence increasingly shows the value of quarries, **both active and rehabilitated, as rich pollen and nectar sources**, while the bare substrates and slopes/cliffs provide abundant nesting opportunities, in particular for mining bees.

Vision

The CEMBUREAU membership will contribute to reversing the decline of pollinators across Europe, by taking actions to support the conservation and rehabilitation of wild pollinator populations and gain a better understanding of which species are thriving in quarries.

These actions include but are not limited to: promotion of nectar/pollen rich habitats in the active site through temporary nature, creation of species rich grassland during rehabilitation activities, provision of nesting and overwintering habitat for wild pollinators, creation of ponds with shallow wet edges, partaking in regular monitoring and in an urban context the construction of green roofs and



walls that can provide important food plants for wild pollinators. As best practice the use of insecticides will be avoided.

Targets



To meet the vision, and to facilitate engagement with the EU Pollinators Initiative, CEMBUREAU and its members have adopted two targets specifically related to pollinators:



1. Create a database of wild pollinators that are inhabiting quarries across Europe

- **Encourage** cement companies to submit records of wild pollinators recorded on site. Data collected either through routine surveys, activities with NGOs/academics or through citizen science events.
- **Compile** the database and communicate to the EU Pollinators Initiative during regular contact.

KPI1 – Existence of a pollinator database, and number of entries on an annual basis

KPI2 – Number of meetings with EU Pollinators Initiative



2. Undertake rehabilitation activities targeted specifically for wild pollinators

- **Facilitate knowledge** sharing (webinars, papers, case studies) of rehabilitation activities targeted specifically for pollinators and experiences in the sector and studies that promote the interaction of vegetation and pollinators.
- Companies, either through their own capacity, or in partnership with NGO/universities, **to undertake a number of activities** targeted specifically for pollinators through temporary habitat in the working quarry and rehabilitation.
- **Companies hold public engagement** events around pollinators - supporting all major themes - citizen science monitoring, habitat creation through schools, developing bee houses/wildflower meadows, all contributing to raising awareness.

KPI1 - Pollinator-related communication material, with number of people reached

KPI2 - Number of pollinator-related conservation outcome activities





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03.

Invasive Species

(focus on plants)



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Introduction

After habitat loss, the colonisation and establishment of invasive alien species poses the largest threat to global biodiversity. In Europe alone over the past 40 years, invasive alien species have increased by 76 per cent, **with the environmental and economic costs amounting to more than €12 billion per year⁹.**

This significant threat has led to administrative and legislative responses. In 2015, the European Union introduced new legislation: the EU Regulation 1143/2014 on invasive alien species, which includes **a regularly updated list of invasive alien plant and animal species of high priority within the Union¹⁰.**

Invasive alien plant species can quickly colonise bare or disturbed areas, with even small fragments or seeds/spores resulting in rapid spread that can outcompete local species of higher ecological value.

Plant material can be highly transferable through wind, vehicle movement and flood events, or introduced directly through inappropriate planting. Quarries can provide conditions for the establishment of invasive alien plant species, contributing to their spread either through natural dispersion or through material movements. Given the significance this holds for biodiversity in the wider landscape, this is an important focus area for the Roadmap.



Over the past 40 years,
**invasive alien species
have increased by 76%**

⁹ <https://ieep.eu/work-areas/biodiversity/invasive-alien-species>

¹⁰ https://ec.europa.eu/environment/nature/invasivealien/index_en.htm

Vision

To contribute to reducing the number of native species threatened by invasive alien plant species, **to facilitate the sharing of experiences within the sector and to provide the knowledge and tools to enable companies to manage invasive plant species in quarries.**



Targets



To meet our vision, contribute to targets set out within the European Biodiversity Strategy 2030 and to support the cement sector in meeting the requirements of the EU Invasive Alien Species Regulation, two targets and accompanying key performance indicators have been set for 2030.



1. Develop a database of invasive alien plant species that are most significant for the cement sector

- **Develop (and regularly update) a database of invasive alien plant species** that are most significant for the cement sector, which will include **an analysis of the 354 red listed species** that are threatened - Based on the EU Regulation.
- **Develop** appropriate materials, promote webinars for sharing experiences and best practices and promote the EU IAS App through the member associations / companies.
- **Compile** the database and disseminate appropriate materials within the sector (the significance of invasive alien plant species, promote the distinct types of measures: prevention, early detection, rapid eradication and management).
- **Share** their knowledge about the actions that can be undertaken to manage relevant species on their sites and contribute to update the database on invasive alien species.

KPI1 – Measure communication activity on invasive alien species management by number of people reached



2. Implementation of an invasive alien plant species management plan/strategy

- **Using the information and tools** above, companies will develop an invasive alien plant species management plan/strategy that will support sites in the identification and management of such species on site. Natural methods of control will be promoted where possible, and any herbicides will be used through targeted application. The management of invasive alien plant species is to be supported by community/NGO/university involvement, for example specific 'working group' events.

KPI1 - Number of companies with invasive alien plant species management plans/strategies implemented across relevant sites¹¹



¹¹ Where exists an impact from invasive species in Europe



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04. **Protected Species**

Introduction

Of the 1,389 protected species listed in the Habitats Directive the EU has reported that **63% have an unfavourable conservation status.**



The EU also reports that **39% of bird species have poor or bad conservation status.**

The EU's Biodiversity Strategy 2030 is trying to improve these statistics and **CEMBUREAU continues to prioritise initiatives and partnerships designed to support this aim.** The quarries operated by CEMBUREAU's members are well-regulated and the rehabilitation plans put the industry in a good position to help deliver protection for species listed in the Habitats and Birds Directives.

As an industry we work closely, and in some instances, partnered many different NGO's who have given advice and support to help develop Species and Biodiversity Management Plans (BMP). The rehabilitation schemes at quarries have offered researchers and local communities the chance to study and engage in projects directly related to **protecting species, including plants, pollinators, invertebrates, amphibians, reptiles, mammals, and birds.**

This work has included peer reviewed articles and papers, something **we will continue to promote as part of the Biodiversity Roadmap.**

CEMBUREAU shares case studies from members highlighting good site practice. This is important as it allows the sector to develop and share conservation methods which can be used for the benefit of protected species. This initiative also feeds into individual members commitments to protecting habitats and species by developing site specific Biodiversity Management Plans. **The Roadmap will facilitate the delivery of plans at all sites close to protected and key biodiversity areas.**

Considering the area covered by extractive licenses for the cement activity, approximately 0,01% of the EU territory allows habitats for a lot of pioneer endangered species like Natterjack toad or Eagle Owl.

Such concentrated areas can be considered as potential hot spots or biodiversity reservoirs, if well managed in the respect of species.

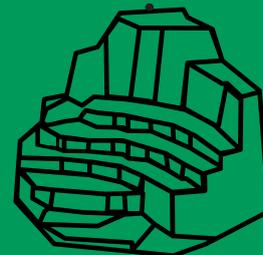
For illustrative purposes a French study concerning 35 quarries (still in activity and totally restored) showed in 2008 that 50% of the amphibians' species and almost 45 % of the nesting birds species present in France were found on these sites.



50%



45%



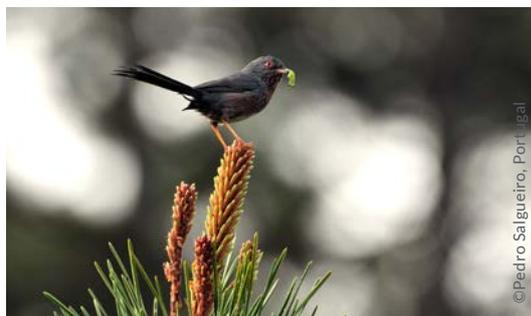
<https://www.unicem.fr/wp-content/uploads/inventaires-35-carrieres-roches-massives.pdf>



The rehabilitation schemes at quarries have offered researchers and local communities **the chance to study and engage in projects directly related to protecting species**, including plants, pollinators, invertebrates, amphibians, reptiles, mammals, and birds.

Vision

Using the industry's combined experiences and links with stakeholders to continue to promote good practice and legal compliance with the Habitats and Birds Directives in order to support the protection of priority species. **In doing so they help to fulfil the aims of the EU's Biodiversity Strategy 2030 around Protected Species.**



Targets



Develop management tools such as **Biodiversity Management Plans (BMP) and the Code of Conduct** for the Extractive Sector which are designed to protect species. Continue to work with partners and stakeholders to create case studies which highlight good practice and which can be shared for the purpose of achieving our Vision and improving conservation outcomes at members sites.



1. Support the implementation of BMPs & prepare supporting documents for the species protection code of conduct for the extractive sector

- Support the industry by identifying the most commonly encountered protected species and listing simple effective measures to protect / enhance populations.
- Support (through knowledge and guidance) the members on the implementation of BMP for sites with high biodiversity value.
- Promote the implementation of BMP for sites with high biodiversity value.

KPI 1 - Record of protected species found at members sites will be used to support a European database

KPI 2 - Number of sites within or near areas with high biodiversity value that operate with a BMP



2. Protected Species Enhancement

- Development of case studies / projects to improve the status (regional or local) of protected species.
- Engagement with partners and stakeholders (academia, NGO's and local Communities) to develop appropriate conservation responses, specific assessments and monitoring for the species most at risk / signature species / conservation concern in the company / quarry areas.
- Case studies to highlight research and community-based projects. Individual, national or pan European initiatives.

KPI 1 - Number of case studies/projects to support the enhancement (regional or local) of protected species

KPI 2 - Number of case studies highlighting partnerships developed that enhance the conservation of protected species





©Tiago Pinto, Portugal

Executive summary

The European cement industry provides essential materials for sustainable construction and supports the EU's targets of climate neutrality and resilience. Extraction sites for these essential raw materials are currently providing a rich variety of habitats across Europe. **Thanks to the rehabilitation plans in place, and existing biodiversity commitments, our members are paving the way to a more sustainable future.**

Linked to tackling climate change, preventing biodiversity loss is a major challenge currently facing humanity. **Recognition of the importance of biodiversity is reflected in the United Nations Sustainable Development Goals and in the European Union's Biodiversity Strategy 2030.** It is also a key priority for the European cement industry to protect and preserve the ecosystems thriving in and around limestone quarries. While these sites provide our raw materials, we recognise the nature conservation opportunities of our activities. Furthermore, enhanced or new habitats created during the rehabilitation process ensure animal and plant life, including rare and threatened species, can prosper and flourish. Thus, **CEMBUREAU fully supports the commitment of the European Commission to address the main causes of biodiversity loss in the EU.**

CEMBUREAU has published this Biodiversity Roadmap to further promote the commitment of the European cement industry to meeting international nature conservation targets. The Roadmap focuses on four areas: (i) ecosystem rehabilitation & services, (ii) the EU Pollinators Initiative, (iii) invasive alien species and (iv) protected species. For each of these topics, CEMBUREAU has framed a vision and set specific targets to monitor progress until 2030. This document gives a **clear overview of**

the importance of the European cement industry's quarries in preventing biodiversity loss. Furthermore, it aims to support and facilitate the continuity of extraction activities in limestone quarries. The Roadmap provides practical assistance to both operators and authorities to allow objective assessment of measures promoting wildlife.

The European cement industry is proud of its nature conservation work through good land stewardship and proper planning of quarry activities. This not only benefits the wildlife in and around these sites, but enhances human well-being and provides an educational resource for all. Nevertheless, these achievements can be better maintained and expanded by cooperation between the cement sector and other stakeholders, such as political institutions, authorities, academia, nature conservation associations and society. Working together with a common goal will deliver the best possible solutions for nature conservation in and around limestone quarries. **The European cement industry is committed to working with all relevant stakeholders and being a key partner for the European Union Biodiversity Strategy for 2030 as well as supporting the United Nations Sustainable Development Goal N° 15 "Life on land".**

Summary of the Key Performance Indicators



Ecosystem rehabilitation & Ecosystem services



Annual reporting of the hectares rehabilitated

KPI 1 - Area restored

KPI 2 - Type of area restored

KPI 3 - Percentage of quarried area allocated to temporary habitats



Improve the quality of quarry rehabilitation

KPI 1 - Number of quarries per total quarries that assesses the NIA on biodiversity

KPI 2 - Number of studies on ecosystem services provided by quarry rehabilitation (e.g. carbon sequestration, seed dispersal, cultural values)



EU Pollinators Initiative



Create a database of wild pollinators that are inhabiting quarries across Europe

KPI1 - Existence of a pollinator database, and number of entries on an annual basis

KPI2 - Number of meetings with EU Pollinators Initiative



Undertake rehabilitation activities targeted specifically for wild pollinators

KPI1 - Pollinator-related communication material, with number of people reached

KPI2 - Number of pollinator-related conservation outcome activities



Invasive Species (focus on plants)



Develop a database of invasive alien plant species that are most significant for the cement sector

KPI1 - Measure communication activity on invasive alien species management by number of people reached



Implementation of an invasive alien plant species management plan/strategy

KPI1 - Number of companies with invasive alien plant species management plans/strategies implemented across relevant sites



Protected Species



Support the implementation of BMPs & prepare supporting documents for the species protection code of conduct for the extractive sector

KPI 1 - Record of protected species found at members sites will be used to support a European database

KPI 2 - Number of sites within or near areas with high biodiversity value that operate with a BMP



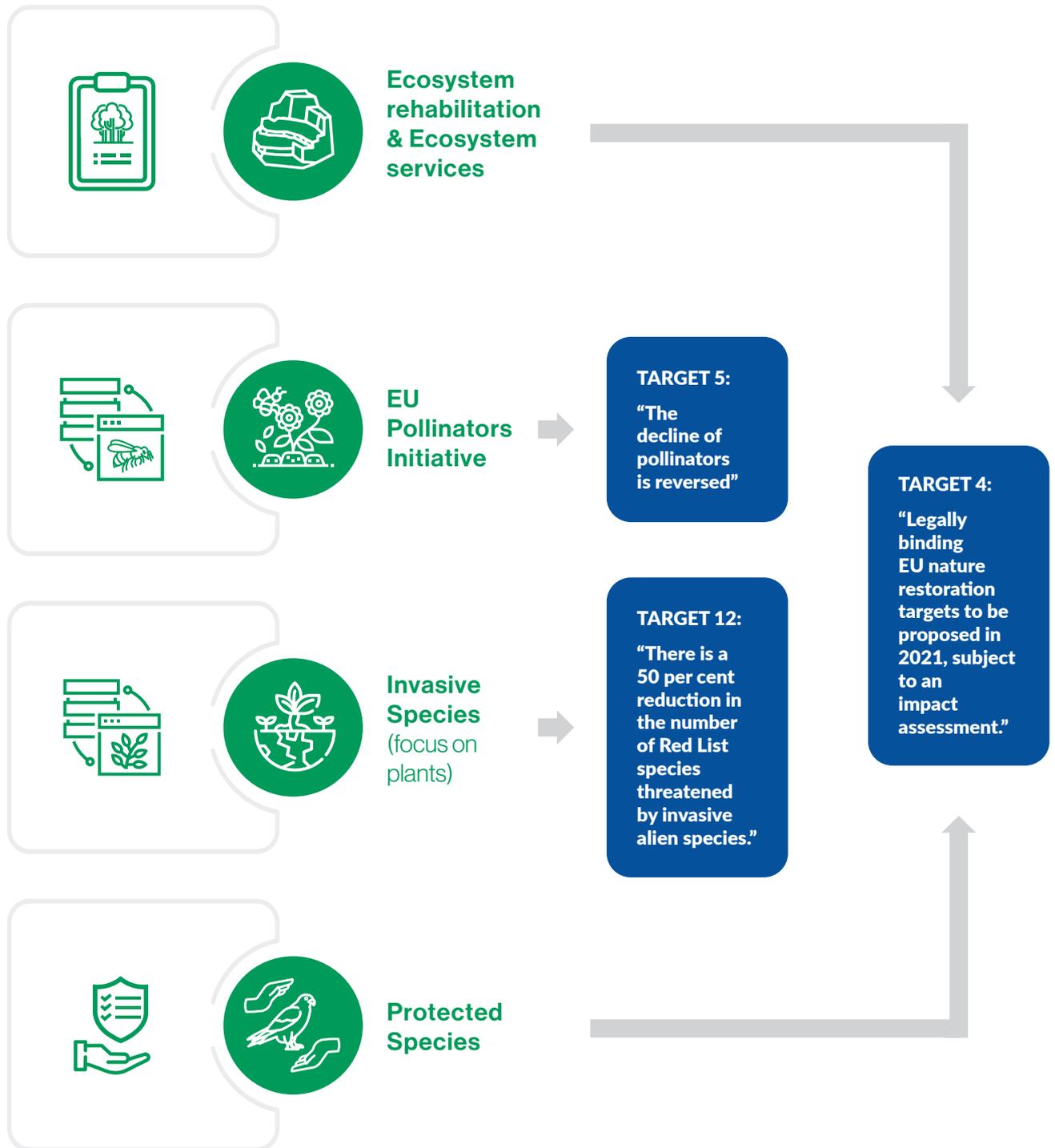
Protected Species Enhancement

KPI 1 - Number of case studies/projects to support the enhancement (regional or local) of protected species.

KPI 2 - Number of case studies highlighting partnerships developed that enhance the conservation of protected species

CEMBUREAU's Roadmap focused areas

EU Biodiversity Strategy Actions Tracker



Glossary

Pollinators

Pollinators are animals that provide pollination – the transfer of pollen between the male and female parts of flowers – which enables reproduction of plants. In Europe pollinators are mainly insects, in particular bees and hoverflies, but also butterflies, moths, some beetles, and other fly insects. Bees are the most prolific pollinators.

(Source: EU Pollinators Initiative)

Threatened species

Term used internationally to refer to any species listed as Critically Endangered, Endangered, or Vulnerable according to the IUCN Red List of Threatened Species definitions.

(<https://www.iucnredlist.org/>)

Protected Species

Are species protected by a legal document, such as the Habitats/Birds Directives, Bern, and Bonn Conventions and by national regulations.

Invasive species

Invasive Alien Species (IAS) are opportunist non-native animals and plants that are introduced accidentally or deliberately into a natural environment, where they are not normally found, with serious negative consequences for their new environment (based on EU definition).

Pioneer species

The term pioneer is used to describe the hardy species that first colonize new habitats created by disruption.

Invertebrates

Invertebrates are animals without a backbone or bony skeleton.

Restoration

Re-establishing the original ecosystem, the habitat, or their functions in the undisturbed way in which they originally existed, including biological, chemical, and physical elements (Source: CSI Guidelines on Quarry Rehabilitation)

Rehabilitation

Establish and provide stewardship for stable, safe state land area, and self-sustaining ecosystem that must be compatible with its natural environment, and suitable for the proposed future use of land (Source: Guidelines on Quarry Rehabilitation)

Biodiversity

The variability among living organisms from all sources, including, inter alia, terrestrial, marine, and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species, and of ecosystems.¹

Ecosystem services

The direct and indirect contributions of ecosystems to human well-being. These include the production of clean soil, water and air, the moderation of climate and disease, nutrient cycling and pollination, the provisioning of a range of goods useful to humans, and potential for the satisfaction of aesthetic, recreation, and other human values (Source: Society for Ecological Restoration, SER)

Net impact assessment

The net impact assessment evaluates the ecological impact, negative or positive, that a project has over a period of time, for example prior and post extractive activities.

¹ Gann G.D., McDonald T., Walder B., Aronson J., Nelson C.R., Jonson J., Hallet J.G., Eisenberg C., Guariguata M.R., Liu J., Hua F., Echeverria C., Gonzales E., Shaw N., Declerck K., Dixon K.W. 2019. International Principles and Standards for the Practice of Ecological Restoration. Second Edition. Restoration Ecology (27(S1): 1-46).

Active quarries

Active quarries are defined as quarries with an area which is currently under extraction. This applies to all stages of extraction (e.g., clearing of the area, removing the topsoil, extracting the raw materials). The quarries where rehabilitation is still in progress and extraction has finished are also included as active quarries.

Key biodiversity areas

Key biodiversity areas (KBAs) are sites contributing significantly to the global persistence of biodiversity.
(<https://www.keybiodiversityareas.org/>)

Biodiversity Management Plans (BMP)

A practical site-specific document developed and used by the site management team to maintain or improve biodiversity values during the operational and post-closure phases, and to determine risks and opportunities before quarrying begins. The process for developing a BMP should focus on identifying, evaluating, conserving (and if possible, enhancing) the relevant aspects of biodiversity. The development of a BMP follows a set of principles, objectives, and stages.
(Source: Global Cement & Concrete Association, GCCA)

Quarry rehabilitation plan

A practical site-specific document, diagram or map developed and used by the site management team for organizing rehabilitation works. The rehabilitation plan is aligned with the quarry development plan and follows the principles, objectives, and stages, as outlined in the respective Guidance. Rehabilitation plan is also referred to as a restoration plan or reclamation plan
(Source: GCCA Sustainability Guidelines for Quarry Rehabilitation and Biodiversity Management GCCA).

Progressive rehabilitation

Progressive rehabilitation means that rehabilitation done continually and sequentially, within a reasonable time, at the pace of quarry extraction.

Temporary habitats

Areas which have been extracted, but not yet rehabilitated, and left untouched for at least one year within an active quarry area (which is an area that is currently under extraction, i.e., area already opened for extraction but not rehabilitated as the plan is to continue extracting in that area)



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