ontwikkeling+beheer natuurkwaliteit

Kennisnetwerk OBN

The OBN Knowledge Network for Restoration and Management of Nature in The Netherlands

INNOVATIVE KNOWLEDGE NETWORK COOPERATION MULTIDISCIPLINARY

photo: Marijn Nijssen

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CONTENT

photo: Marcel Horsthuis

THE OBN KNOWLEDGE NETWORK

Background

During the 20th century, the strong deterioration of the quality and the biodiversity of Dutch nature and woodlands slowly became eminent. At that time, the country was already densely populated and industrialized. This deterioration also occurred in the 162 Natura 2000 sites, in which many species and habitat types still have an unfavorable conservation status. Consequently, in 1989 the Ministry of Agriculture, Nature Conservation and Fisheries (currently: Ministry of Economic Affairs) started the 'Survival Plan of Dutch Nature', that included a budget for nature restoration measures. In the early nineties, this plan lead to a knowledge network that focused on the supervision and monitoring of these measures, and that slowly developed into the current OBN Knowledge Network. Until 2006, these measures solely focused on the reduction of the impact of desiccation, eutrophication, atmospheric nitrogen deposition, and acidification. Nowadays, a much wider focus has been established.

Core message

The Dutch OBN Knowledge Network for Nature Restoration and Management

- is an Independent and innovative platform where policy makers, site managers and scientists cooperate in the management and restoration of natural areas;
- it develops and disseminates knowledge to enhance nature quality management and conservation in the Dutch lansdcapes and in the Atlantic Region.

Main principles

In the OBN Knowledge Network, researchers, conservation site managers, universities, consultancies, NGO's and governmental bodies, such as provinces and water boards, closely cooperate to restore ecosystems and nature reserves. In this network, knowledge and practice intermingle, and science and nature management jointly look for

the most effective approaches to enhance sustainable conservation of important ecosystems in the Dutch landscapes.
Since 2006 The OBN Knowledge network formulates each 4 to 5 years its mission statement and knowledge agenda which is leading in all OBN related activities. Based on this mission statement, landscape-based 'Expert Teams' are working on the development, dissemination and implementation of knowledge on restoration and rehabilitation of nature reserves, on issues regarding Natura 2000 and the EU Water Framework Directive, as well as on distribution problems of individual species. During the last decade, the OBN Knowlegde Network is also focusing on environmental problems, such as the effects of atmospheric nitrogen deposition, climate change, sea level rise, coastal defense, flood risks, and other changes in the hydrological systems.
In these fields of research, the network cooperates with many research institutes.

photo: Roos Loeb

Stakeholders

Since 2014 for an initial period of five years, and commissioned by BIJ12 (The Twelve Dutch Provinces) and the Ministry of Economic Affairs, the activities of the OBN Knowledge Network are coordinated by VBNE (Association of Forest - and Nature site owners) in Driebergen. BIJ12 and the Ministry are providing an annual budget of 1.6 million euro for research and communication carried out within the frame-work of OBN.
OBN research projects are being allocated via calls for tenders to research institutes. The overall responsibility for the OBN Knowledge Network lies with the VBNE Board that is being advised by an Advisory Committee with a broad representation from policy, research and management organizations. In 2012, a mid-term review on input, outcomes and effects helped to redefine research priorities of the OBN Knowledge Network. The Expert Group Fauna and eight Expert Teams form the core of the network.

Dissemination of knowledge

In the European context, the international collaboration in nature management is becoming more important and acknowledged by the authorities.
Among researches, policy makers and land managers there is now a widespread belief that it is necessary to collaborate to solve environmental issues because “nature has no boundary”.
For this reason in the OBN Knowledge network dissemination of knowledge is its second core business. The knowledge gathered by the network is published on an extended website www.natuurkennis.nl. This website is in Dutch with only one limited textpage in English. On the website all reports and other outputs of the network are published. Since 2014 the research reports have an English summary and captions of figures and tables in English. The scientific results are published in books and international reviewed journals (see examples of publications).
Beside publications within the OBN Knowledge Network all kind of symposia, field workshops and conferences are an important way of knowledge exchange. Especially during the field workshops research outputs are discussed, effects of restoration measures and experiences with management techniques are shared to link policy, knowledge and management.
Within the OBN Knowledge Network field workshops are an important way of knowledge exchange. During these workshops research outputs and experiences with management techniques are being shared and discussed.

Recent publications in English:

Diemont, H.W., et al. 2013. *Economy and ecology of heathlands.* Published by KNNV Publishing, Zeist

Grootjans, A., et al. 2012. *Calcareous mires of Slovakia. Landscape setting, management and restoration prospects.* Published by KNNV Publishing, Zeist

photo: Cora de Leeuw

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THE EXPERT TEAMS

The set-up of the eight Expert Teams has been based on the various landscapes that occur in the Netherlands:

- Brook Valleys
- Dry Sandy Areas
- Dunes and Coastal Areas
- Colline Areas
- Fen and Sea Clay Areas
- Wet Sandy Areas
- Riverine Areas
- Agricultural and Rural Areas

An expert group on fauna is established to provide advice to the Expert Teams on fauna aspects.

The Expert Teams form the core vehicle of the OBN Knowledge Network. These teams formulate research questions aimed at solving (long-term) management problems. They also supervise research projects and disseminate knowledge by means of reports, scientific papers, brochures, expert reviews, lectures, field symposiums, and a Nature Portal (via internet).
In all landscapes, changes in land use, desiccation, eutrophication, atmospheric nitrogen deposition, acidification, often biased by uncoordinated nature policies and nature management, still have a huge impact on habitats and species, causing a drastic deterioration of the once very rich cultural-historical and landscape values and the originally high biodiversity. Especially in the dune and coastal areas and along the main river systems, safety aspects and drinking water production often set special preconditions to nature management.

More information

For more information on one of the Expert Teams please contact the relevant secretary; for contact details see the text for the several teams.

• Brook Valleys

photo: Han Runhaar

Contact: T. Termaat (secretary) – tim.termaat@vlinderstichting.nl
Important habitat types: H3260A, H4010A, *H6120, *H6230, H6410, H6430A, H7140A, H7230, H9160A, *H91EOC
Focus: restoration of brook valley meadows and forests, stimulation of peat-forming processes and decrease of management costs.
In Western Europe, man has influenced brook valleys and their biodiversity for centuries, by draining the marshes and by mowing the meadows. Particularly during the second part of the 20th century, land consolidation projects resulted in further drainage and an intensification of land use. This led to a severe loss in biodiversity in the brook valleys and to a loss of landscape elements like hedgerows and windbreaks.

Publications:

Emsens, W., C.J.S. Aggenbach, A.J.P. Smolders & R. van Diggelen (2015). *Topsoil removal in degraded rich fens: Can we force an ecosystem reset?* Ecological Engineering 77: 225-232.
Emsens W.-J., C.J.S. Aggenbach, K. Schoutens, A.J.P. Smolders & R. van Diggelen (2016). *Soil iron content as a predictor of carbon and nutrient mobilization in rewetted fens.* Plos One. Accepted

• Dry Sandy Areas

photo: Hans Dekker

Contact: W. van Heusden (secretary) – wouter.vanheusden@rvo.nl
Important Habitat types: H2310, H2320, H2330, H3110, H3130, H3160, H4010A, H4030, H5130, *H6230, H6410, H7110B, H7150, H9120, H9160A, H9190, *H91D0
Focus: Restoration and development of relatively nutrient-poor ecosystems, both on a habitat and landscape scale. This type of landscape includes dry sand heathlands, shifting sands and forests with moderate to low nutrient levels (mostly dominated by Quercus and Betula sp.). The ecosystems of this landscape often overlap with those studied by the expert team wet sandy areas. In the past, this landscape has been affected by the cultivation of the most fertile parts, resulting in a large loss in biodiversity and decline of characteristic gradients.

Publications:

Oosten H.H. van (2015). *On the brink of extinction: biology and conservation of Northern wheatears in the Netherlands.* Proefschrift Radboud University, Nijmegen, 2 April 2015

• Dunes and Coastal Areas

photo: Winant Halfwerk

Contact: Sander Terlouw (secretary) – s.terlouw@staatsbosbeheer.nl
Important Habitat Types: H1110a, H1110b, H1130, H1140a, H1140b, H1160, H1310a, H1310b, H1320, H1330a, H1330b, H2110, H2120, *H2130a, H2130b, *H2130b, *H2130c, *H2140a, *H2140b, *H2150, H2160, H2170, H2180a, H2180b, H2180c, H2190a, H2190b, H2190c, H2190d, H3260a, *H6230, H6410, H6430b, H7210
Focus: Nature restoration, impact of coastal sand nourishment, hydrological mechanisms in dune areas and salt marshes, grass encroachment in dune areas, impact of grazing on flora and fauna and on dry dune ecosystems. This landscape is the most dynamic and varied landscape in the Netherlands. It ranges from dry to wet, from salt to fresh, from calcareous to lime deficient, and from dynamic to stable habitats, and includes many gradients in between. Human impacts mostly consist of coastal safety aspects, drinking water production and recreation, which all set specific preconditions for nature management.

• Colline Areas

photo: Rein de Waal

Contact: Friso van der Zee (secretary) – friso.vanderzee@wur.nl
Important Habitat Types: H3260A, *H6110, *H6130, *H6210, *H6230, H6430C, H6510A, *H7220, H7230, H9110, H9120, H9160B, *H91E0C
Focus: landscape restoration, management of calcareous grasslands, restoration of roadside flora. Within this landscape, OBN-research is being focused on hill slope forests and calcareous grasslands. In the Netherlands, both habitats are rare and limited to the southern part of the country, where nature management is strongly affected by the isolation of natural areas and habitats and a high human population density.

Publications:

Toos van Noordwijk, *Through arthropod eyes – gaining mechanistic understanding of calcareous grassland diversity,* Thesis RadboudUniversity Nijmegen

Van Klink, R., van der Plas, F., van Noordwijk, C. G. E., Wallis De Vries, M. F. and Olff, H. (2014), *Effects of large herbivores on grassland arthropod diversity*, Biological Reviews

• Fen and Sea Clay Areas

photo: Gijs van Dijk

Contact: R. de Ridder (secretary) – ridderr@noord-holland.nl
Important Habitat Types: H3140, H3150, H4010B, H6410, H6430B, H6510B, H7140A, H7140B, *H7120, *H91D0
Focus: integrated water management, development of more dynamic hydrological systems and of man-made nature in the sea clay landscape, restoring brackish water conditions by re-salination of lakes and marshes. Part of this landscape is situated below sea level. It mostly originates from intensive peat digging and partly from long-term clay deposition by large rivers and the sea. Therefore, this landscape is influenced by fresh to brackish ground and surface water and consists of a large variety of soil types with many transitional stages in between. The building of dikes, as well as land reclamation and land consolidation projects put a strong curb on the originally dynamic processes and the corresponding high biodiversity.

Publications:

Mettrop, I.S. (2015), Water Level Fluctuations in Rich Fens. *An Assessment of Ecological Benefits and Drawbacks. Proefschrift Universiteit van Amsterdam*, 21 oktober 2015

Casper Cusell, *Preventing acidification and eutrophication in rich fens: water level management as a solution?,* Universiteit van Amsterdam, 24 oktober

Emsens, W.J., Aggenbach, C.J.S., Smolders, A.J.P., van Diggelen, R., *Topsoil removal in degraded rich fens: can we force an ecosystem reset?* Elsevier Ecological Engineering

• Wet Sandy Areas


photo: Tim Faasen

Contact: Loekie van Tweel-Groot (secretary) – loekie.vantweel@landschapoverijssel.nl
Important Habitat Types: H3160, H4010A, * H 6230, H 6410, * H 7110A, H 7110B, H 7120, * H 7120, * H 91D0
Focus: restoration of ecosystems on a landscape scale by restoring processes on landscape levels (more natural hydrological systems, stimulation of dispersal processes, review of restoration measures).

This landscape includes wet and moist woodlands and heaths, species-rich nardus grasslands, dystrophic ponds and (degraded) raised bogs. The ecosystems of this landscape type are strongly interrelated with those of the dry sandy areas and the brook valley landscapes. They have been strongly affected by interventions in the hydrological systems, while the local expansion of invasive species interferes with restoration measures.

Publications:

Limpens, J., M. Holmgren, C.M.J. Jacobs, S.E.A.T.M. van der Zee, E. Karofeld & F. Berendse, 2014. *How does tree density affect water loss of peatlands? A mesocosm experiment.* PLoS ONE 9(3):.
Van Kleef, H. & E. Jongejans, 2014. *Identifying drivers of pumpkinseed invasiveness using population models.* Aquatic Invasions 9(3).

• Riverine Areas


photo: Cora de Leeuw

Contact: Mark Brunsveld (secretary) - m.brunsveld@vbne.nl
Important Habitat Types: H3150, H3260B, H3270, *H6120, H6410, H6430A, H6430B, H6430C, H6510A, H6510B, *H91E0A, *H91E0B, H91F0
Focus: research of morphodynamic processes, design and management of more natural riparian habitats, increase of faunal biodiversity with a focus on fish species.

Being a delta, the Netherlands has a special responsibility for the nature along its large rivers Rhine, Meuse, Waal, Ijssel and Vecht. The Dutch river system has been affected by large-scale safety interventions, by which natural processes (like sedimentation, geomorphology, flooding, drainage and water quality) have been greatly altered.

• Agricultural and Rural Areas

photo: Fabrice Ottburg

Contact: Astrid Manhoudt (secretary) – manhoudt@veelzijdigboerenland.nl
Important Habitat Species: Black-tailed godwit (A156), Northern lapwing (A142), Common snipes (A153) (open wet grasslands), Montagu's Harrier (A084); Eurasian skylark, Black-bellied hamster (open greenfields), Grey long-eared bat, Geoffroy's bat (H1321), Common tree frog (dry interlacing network), Northern crested newt (H1166), Weatherfish (H1145), Tundra vole (*H1340) (wet interlacing network)
Focus: biodiversity restoration of agrarian lands in open grassland, open field, dry and wet strands. The expert team aims to provide nature and landscape quality for all types of cultivated land in these four habitats. It also encourages the effective dissemination of knowledge.

• Expert Group Fauna

photo: Cora de Leeuw

Contact: H. van Kleef (secretary) - h.vankleef@science.ru.nl
Habitats: see habitat types of the expert teams
Focus: the expert group Fauna has been established to generate attention for fauna aspects in nature management to be included in research projects by the expert teams. The group supports the expert teams during their research projects (quality control) with the focus on management problems related to fauna, gives advice and contributes to knowledge exchange.

CASE STUDIES

In this section we present several results from research carried out by the OBN Expert teams. These results give an overview of topics concerning restoration and rehabilitation of important ecosystems in the Dutch landscapes.

CASE STUDY Nitrogen deposition

Forest biodiversity in mineral-poor soils and dry sandy areas

Project Leader: A. van den Burg, *Stichting Bargerveen (Currently Biosphere Science Foundation)*
(http://bit.ly/1rkvGSP)

The biodiversity in forests on former drift sands and heathlands (H9190; H9120) in the Netherlands has rapidly decreased over the last decades. Rapid declines of birds of prey, some woodpeckers and other bird species have been observed. Furthermore, damage to English oak caused by caterpillars was much lower compared to the forests on soils of ridges pushed up by the ice and richer in minerals. Long-term studies on the Sparrowhawk, carried out in South-West Veluwe, indicated poor food quality as an important factor of this decline: the availability of amino acids was insufficient.

photo: Eddy Kuis

This OBN project focuses on the possible relationships between biodiversity loss and nitrogen deposition together with the inevitably associated acidification. It is known that nitrogen deposition affects the amino acid composition of plants. Acidified forests in particular are sensitive to amino-acid problems due to nitrogen deposition. The aim of this research is also to provide backgrounds concerning the programmatic Dutch approach to nitrogen (PAS policy) which focuses on reducing the impact of nitrogen deposition on ecosystems.
The results of this study show that the nitrogen deposition and the acidification cause shortages of plant mineral nutrients, compromising amino acid production in plants, which in turn affects the fauna communities leading to an advanced degradation of forest ecosystem quality.
In conclusion, implication and recommendations of possible restoration methods are provided. In particular, in order to restore biodiversity, it is necessary to enable trees to have proper nitrogen assimilation. Two scientifically realistic pathways are shown: the first is to have a further reduction of nitrogen deposition and the second is to lift the mineral deficiency of trees by replenishing the system with minerals. The benefits and drawbacks of these tow pathway, and other possible remedies, are discussed.

CASE STUDY **Nitrogen deposition**

N-deposition trends in sensitive habitats on the West Frisian Islands

Project Leader: dr. F.H. Everts, *EGG Consult*
(http://bit.ly/1NCKqpQ)

This research was designed to ascertain what the trends were for Nitrogen deposition in sensitive habitats on the West Frisian Islands during the past two decades based on the development of the acreage and the quality of the vegetation. The habitats considered during the project are Dune slacks (H2190ABC; H6410), Dune heaths (H2140AB; H2150; H6230) and Dune grasslands (H2130ABC). The research is mainly based on a comparison of vegetation maps.
The aim of this research is also to implement the Dutch Programmatic Approach Nitrogen (PAS policy), which focuses on reducing Emissions of Nitrogen and reducing the impact of Nitrogen deposition on ecosystems by nature conservation measures.
Results show that during the last decades, in old and stabilized dune areas, the acreage and the quality of the dune slacks have clearly increased. These landscapes are of a sufficient size to maintain dynamic gradients. The nature values also increased due to hydrological recovery measures and sods. The same situation has been

observed for the dune heats. For dune grasslands (grey dunes), it has become clear that the evolution is variable. In general, the quality is diminishing slightly. After all, in several places it appears that some sand drifting from the fore dune zone benefits the quality of the grey dunes.
More in general, the management measures in the humid dune slacks to restart succession have been very successful: the policy of dynamic coastal management (stimulation of natural landscape processes) has been successful in compensating the detrimental effects of atmospheric N deposition and the appropriate grazing regime can reverse damages to dune heath and can also (partially) stabilize grey dunes.
During the research, it has been observed that it is difficult to isolate the effects of Nitrogen deposition from the effects of many other changes that have taken place in the West Frisian Islands during the past hundred years and that have led to increase the stabilization of the dune areas. It might be assumed that the greatly increased Nitrogen deposition since the middle of the previous century has an important role in this stabilization. However, subsequent research is necessary on a local level into the relationships between the deposition measured and the effects on the balance of nutrients in dune soils, and to relate this directly to the development of vegetation.

CASE STUDY **Dune and Coastal Area**

Grazing management related to fauna communities restoration in dry dune grasslands

Project Leader: Marijn Nijssen, *Bargerveen Foundation*
(http://bit.ly/1pJIRLs)

In the last decades, grass and shrubs encroachment in coastal dunes in the Netherlands has caused a decrease in quality and quantity of habitat types H2130 (dune grassland) and H2140, H2150 (dune heathlands). This research project investigates if and how grazing management can affect the fauna communities of open coastal dune habitats in order to restore the biodiversity of this important landscape.
The study of the differences between grazed and ungrazed plots along the whole Dutch coastline (Renodunaal District and Wadden District) shows that grazing in general has a positive effect on fauna communities of dry open dune habitat. The effects, however, depend on grazing management types and fauna species.
The results of this study in general show that a low grazing pressure is preferable in calcium-rich dunes of Renodunaal District since it facilities rabbits, characteristic butterfly species and other flower-visiting insects and has little effect on soil fauna.

photo: Marijn Nijssen

In calcium-poor dunes of the Wadden District, grazing decreases N-availability, which is necessary to temper plant growth. The high grazing pressure seems profitable for the number of characteristic breeding birds, but unprofitable for soil fauna, butterflies and other flower-visiting insects.
In conclusion, even if grazing pressure must be high to tackle grass-encroachment, a local decrease of grazing pressure might be necessary for optimal grazing for the Wadden district.

CASE STUDY **Wetlands**

Water level fluctuations in peatlands: relation between hydrology, ecosystem, dynamics and Natura 2000 Habitat types

Project Leader: Ivan S. Mettrop (red.), *University of Amsterdam (UvA)/Radboud Nijmegen University*
(http://bit.ly/1T6S5sN)

Peatlands are important ecosystems in many European countries and comprise different protected habitat types within the Natura 2000 framework. Changes in hydrology, eutrophication, acidification, and toxicity have led to severe deterioration of water and soil quality. Especially brown moss-dominated, biodiverse rich fens show a strong decline as a result of these changes. During the past decades, the water levels in these rich fens have often become constricted within narrow limits

photo: Hans van den Bos

as a result of adjacent agricultural water management. This research considers the potential ecological benefits and drawbacks of the re-establishment of fluctuating water levels as a management tool in different Natura 2000 habitat types to support water and nature management authorities in decision-making. The potential drawbacks of temporary lowered surface water levels, and related lowered water tables in the peat soil, seem to be more important than the potential benefits. The combined effects of enhanced acidification (particularly in Fe-rich soils), increased nutrient mineralization, direct drought-stress for brown mosses, improved conditions for Sphagnum spp., and increased biomass production by fast-growing species will strongly hamper the development of protected brown moss vegetation in rich fens. Long term (>7 weeks) aeration and especially the desiccation of the upper 10 cm of the soil in rich fens should therefore be avoided. In contrast to drought, periods of inundation with base-rich water in summer can be favorable in order to structurally improve the pore water ANC. Finally, area-specific chemical properties of peat soils and surface water turned out to strongly determine the responses to water table fluctuations in the peat soil. The Ca- and Fe-contents of peat soils in particular are important factors. These findings are highly valuable to support water and nature management authorities in decision-making.

CASE STUDY **Heathlands**

Heathlands recovering from nutrient rich and dynamic habitats

Project Leader: J. Vogels, Foundation Bargerveen
(http://bit.ly/1Tynmlj)

In the Netherlands, heathland natural areas harbour several Natura 2000 protected habitat types (H2310; H2330; H3160; H4010; H4030; H5130; H6230).
Unfortunately, characteristic fauna species of these ecosystems are still in decline. One possible factor is the loss of land use gradients in the remaining heathland landscape. In the past, extensive agricultural fields linked the heathlands with the permanently used fields near the towns; nowadays, these habitat types are rare.
Since heathlands restoration and management has become very important on a national and international level, this research project investigates the possible contribution of these relatively nutrient rich and dynamic habitats on the biodiversity of heathlands landscape. The possibility of reinstating these types is also researched in order to restore the biodiversity in these nature areas.
The results of this research project led by OBN show that in order to restore the fauna biodiversity, heathlands management should incorporate extensive farmland management schemes.
Extensive agricultural fields in heathlands have one important function: they harbour a rich fauna biodiversity; it has been observed that mesotrophic grasslands that originated from extensive agricultural use in the past harboured more characteristic species than the neighboring heathland, such as the bird species Skylark, Coomon Linnet and Yellowhammer.
Field experiments demonstrate that the easiest way to restore extensive farming practices is by reinstating these practices at the sites that were already used in the past.

photo: Joost Vogels

CASE STUDY **Colline Areas**

Restoration and expansion of unimproved downland in Southern-Limburg

Project Leader: Toos (C.G.E.) van Noordwijk, Bargerveen Foundation (Present: Wiltshire Wildlife Trust)
(http://bit.ly/1SuZvdn)

The unimproved downland in Southern-Limburg plays an important role in the Dutch landscape. Many plant and animal species of this area are related to the Natura 2000 habitat H6210 (calcareous grasslands) and H6230 (matgrass swards).
It has emerged from previous OBN research studies that the biodiversity in this landscape is declining and that the increased availability of nitrogen in the soil is the major cause. In addition, fragmentation and isolation of remaining downland sites has emerged as a major bottleneck for plants and animals.
Based on these results, the following research study shows measures to reduce habitat fragmentation and investigates the possibilities to restore unimproved downland on former arable land. The carbon cycling within the matgrass zone of the downland gradient,where plant species richness strongly declined in the last 3-4 years, is also examined.
The aim of this research is also to implement the Dutch Programmatic Approach Nitrogen (PAS policy) which focuses on reducing Emissions of Nitrogen and reducing the impact of Nitrogen deposition on ecosystems by nature conservation measures.
This study demonstrates that it is possible to recreate species-rich downland on improved grassland sites. It is important to investigate the soil chemistry, variation in soil type and presence of special features and to adapt the restoration plan in accordance with these findings. Recommendations on different restoration measures are provided.
The research into the nitrogen economy of the soil in matgrass grasslands has not yet led to a clear solution to the repressed nitrification rates. Shallow sod-cutting on a local scale, combined with the addition of soil and plant material with diaspores from well-developed sites might be an effective solution in the future, but its efficacy to restore the typical diversity of these grasslands is still unknown.

photo: Marijn Nijssen

INTERNATIONAL COLLABORATION

In 2016 the OBN Knowledge Network became member of the 'Society for Ecological Restoration Europe' (SERE). Recently (members of) the network participated in several international conferences and meetings with the intent to disseminate knowledge and to enhance nature quality conservation in the Dutch landscape and in the Atlantic Region. Some examples below.

Conference on Ecological Restoration

Members of the OBN Knowledge Network visit international (scientific) conferences on research, ecological restoration and management e.g. SWS Potsdam and SER(E) Freising/Munich. OBN members participated in the 6th SER World Conference on Ecological Restoration 'Towards Resilient Ecosystems: Restoring the Urban, the Rural and the Wild' (2015, Manchester UK) and also provided sessions on effects of nitrogen deposition on habitat quality.
More information at: http://www.ser2015.org/

Dutch Nitrogen-tour 2015

In the Atlantic Region nitrogen-deposition is one of the most important challenges in nature conservation. The purpose of the Dutch Nitrogen-tour was to show innovative approaches to reduce the emissions of nitrogen and the restoration measures of nature and to share information and ideas for future solutions on an international level. It was a two-day thematic networking event that involved policy-makers, civil servants, researchers and site managers from the Atlantic Biogeographical Region where nitrogen deposition is an important environmental issue.
The OBN Knowledge Network collaborated with ECNC in organizing the Dutch Nitrogen-tour and providing two restoration projects in the province of Drenthe, set up within the framework of the Dutch integrated approach to Nitrogen deposition (PAS).
More information at: http://bit.ly/1VUxz5I

Biogeographical Process

At the end of 2011, the European Commission launched the Natura 2000 Biogeographical Process to assist Member States and key stakeholders in managing and implementing Natura 2000 as a coherent ecological network. The aim of this process is "to improve and strengthen the implementation of Natura 2000 and ensure progress towards key EU 2020 Biodiversity Strategy targets". Within this framework, the OBN Knowledge Network started a collaboration with ECNC (Tilburg, the Netherlands) at the end of 2015 providing technical and scientific support.
More info at: http://bit.ly/1G97xOl

How to collaborate with the OBN Knowlegde Network

The OBN Knowledge Network provides all kind of publications on research and restoration measures. The network is always open to international knowledge exchange.
If you would like more information on OBN projects or international collaboration, please send an email with your name, organization, contact details and field of interest (habitat, species or landscape type) to: info@vbne.nl.

vereniging van
bos- en natuurterreineigenaren
VBNE

The Knowledge Network OBN is coordinated by the VBNE and is commissioned by BIJ12 and the Ministry of Economic Affairs

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Ministerie van Economische Zaken

BIJ12