

Assess the potential of other effective area-based conservation measures as a driver for landscape-level conservation and connectivity in the EU - Contract under Framework Contract No EEA/NSS/17/002/Lot 3

Spain Country Report

Elaborated by David Rodríguez-Rodríguez, University of Málaga, October 2020

1. Overview

This report was produced as part of the project 'Assess the potential of other effective area-based conservation measures as a driver for landscape-level conservation and connectivity in the EU' (request for services for specific contract 3417/B2020/EEA.58150). The objective of the project is to provide advice to the European Union (EU) about the extent to which land and water set aside under the Water Framework Directive (WFD) and Floods Directive (FD) will in addition meet the criteria of potential 'other effective area-based conservation measures' (OECMs) as agreed by the Signatory Parties to the CBD. For this, the project assessed whether two selected MS (one of them is Spain) have any potential OECMs within the areas covered by the WFD and/or FD, and tested the results through a few case study sites per country.

A 'potential OECM' is a site that has been subject to a desk-based assessment and through that process exhibits qualities that are closely related to the CBD criteria for an OECM. Consent from the governance authority of the site and a site-level assessment are required to establish whether it definitively meets the criteria and can be recognised and reported as an OECM.

The project's main findings in Spain include:

- Potential recognition of River Reserves as OECMs in the country;
- Limited use of areas of potential significant flood risk (APSFR) as OECMs;
- Complete unawareness of the OECM concept among Spanish stakeholders and how it can help Spain achieve international biodiversity protection targets; and
- Contrasting interest in the topic by different stakeholders.

2. Methods and activities

A preliminary selection of potential OECM categories linked to the Water Framework Directive (WFD) and the Floods Directive (FD) in Spain was made according to the project's aims. These categories included APSFR and River Reserves (WFD). After initial consideration, it was determined that PFRA would likely not meet the OECM criteria. For this reason, the report provides the results of the assessment of one PFRA (which conformed to our expectations) and three assessments of WFD sites.

A preliminary GIS analysis was performed to determine which potential sites, or parts of sites, from those categories could be selected as potential OECMs. Notably, these sites

should not be overlapping with existing protected areas (PAs). For this, official digital cartography on PAs and potential OECM categories was used (MITECO, 2020a) and four sites including one PFRA and three River Reserves were identified (Figure 1). Table 1 shows the sites' main characteristics.

Site's name	Category	Directive	Location	Length ¹ (m)
Rio Manzanares	PFRA	Floods Directive	Madrid (Madrid Region)	22,000
Rio Muelas	River Reserve	Water Framework Directive	Arenas de San Pedro (Castilla y Leon Region)	8,400
Nacimiento del Genil	River Reserve	Water Framework Directive	Guejar Sierra (Andalucia Region)	56,120
Rio Navahondilla	River Reserve	Water Framework Directive	Navarrevisca (Castilla y Leon Region)	10,280

Table 1. Main characteristics of the assessed sites

Each of those sites was assessed against the criteria in Step 1 of the June 2020 version of the *Site-level methodology for identifying 'other effective area-based conservation measures'* (OECMs; Marnewick et al., 2020). Additional data on the sites' threats and main stakeholders' views were added through literature review (MITECO, 2020b) and phone interviews with relevant stakeholders including site's managers and local councils' representatives.

Even though River Reserves and PFRAs cover the Spanish Public Water Domain that includes riverbeds up to the ordinary high water mark level (thus some meters wide), both categories were digitally depicted by lines. For methodological purposes, and given the limited width of many potential OECMs linked to such categories, GIS polygons could easily be created by applying a conservative 5 to 10m wide buffer along both sides of each line. That stripe of land would most likely include the Public Water Domain and, where this is narrower, it might safely extend over the 5m wide Free Transit Area from the Public Water Domain in the Spanish water regulations (MITECO, 2020c).

¹ Approximate GIS-measured length of the non-protected part of the potential OECM

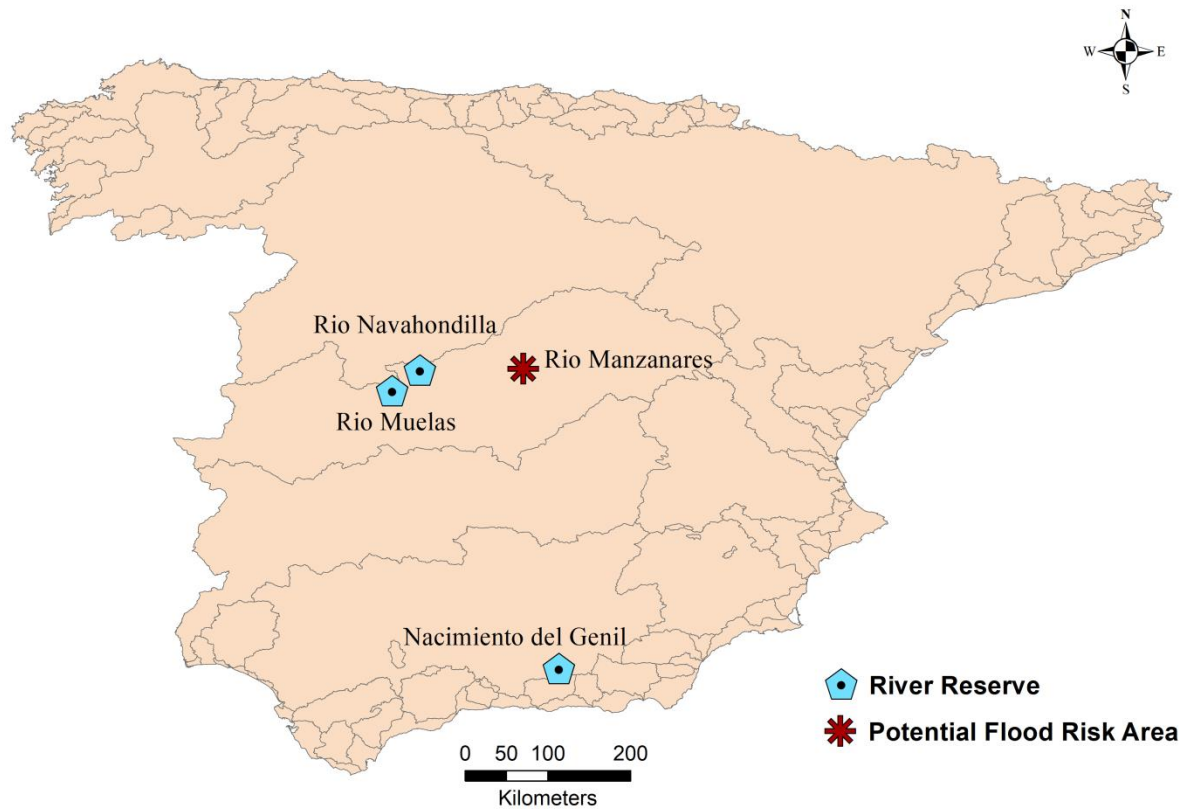


Figure 1. Location of the four identified potential OECEMs in Spain on a country's river basin map

3. Description of national PA network and list of categories of potential OECEMs

This section describes the Spanish regulatory framework relating to PAs. Because an OECEM is necessarily outside PAs, the four aforementioned sites that will be assessed in the next sections fall completely or partially outside the country's categories of PAs.

The Spanish basic norm regulating PAs, Law 42/2007 on Natural Heritage and Biodiversity, recognises nationally designated PAs, Natura 2000 sites and internationally designated areas as PAs in the country. Internationally designated PA categories include: World Heritage sites, MaB Biosphere Reserves, Ramsar sites, Specially Protected Areas of Mediterranean Importance (SPAMIs), OSPAR sites in the north-east Atlantic, UNESCO's Geoparks and Council of Europe's Biogenetic Reserves. This long list of PA categories covers a large part of the Spanish land territory, over 28% by mid-2020 (Rodríguez-Rodríguez et al., in progress).

A recent study preliminarily identified potential OECEM categories in Spain based on the initial guidance for identifying and reporting OECEMs (IUCN-WCPA, 2019). Such categories included Public Utility Forests, River Reserves and Hunting Reserves (Rodríguez-Rodríguez et al., in progress).

4. Case study 1 - Under the Floods Directive: Rio Manzanares PFRA

The PFRA crosses the south-eastern part of the municipality of Madrid for approximately 22 km. It connects different PAs: Monte de El Pardo Special Protection Area (SPA) and Cuenca de Rio Manzanares Site of Community Importance (SCI) to the north, and Ejes de los Cursos Bajos de los Rios Manzanares y Jarama Regional Park and Vegas, cuevas y páramos del sureste de Madrid SCI to the south, thus potentially performing an ecological corridor role across the highly humanised urban landscape.



Central part of the PFRA across the city of Madrid

4.1 Is the site geographically delineated, with agreed and demarcated boundaries?

Yes. Flood risk maps have been produced for the site.

4.2 Is the whole site, or the part being assessed as an OECM, outside of a protected area?

Yes. However, it connects PAs to the north and south of the city of Madrid.

4.3 Is the site under the governance authority of a specified entity or an agreed upon combination of entities?

Partially. River Tajo Basin Authority is responsible for managing the Public Water Domain in which part of the site including the riverbed and a 5m-wide free transit area along its river banks is included.

4.4 Is the site subject to a management regime which contributes to the in-situ conservation of biodiversity?

Partially. The managerial priority of the PFRA is preventing flood risk and damage. Sometimes this is done through ecological restoration, although sometimes hard engineering solutions are applied. Even though flood prevention measures try to be applied considering biodiversity, specific biodiversity inventories or management measures have not been made. Therefore, in situ conservation of biodiversity is highly dependent of the actual measures in place and cannot be taken for granted.

4.5 Is the governance and management 'sustained', i.e. expected to continue for the foreseeable future?

Partially. The Tajo River Basin Authority is responsible for managing the Public Water Domain in which the PFRA is partially included. However, whereas some management measures are restricted in time (e.g. ecological restoration of some areas), others such as water flow measurements are permanent and continuous.

4.6 Is there a strong likelihood that the area contains important biodiversity values?

Partially. The PFRA holds populations of common bird species (Ayuntamiento de Madrid, 2018). However, it is possible that relevant species from surrounding PAs might use the PFRA to some extent, especially at its borders, but that remains to be demonstrated.

4.7 Is there a strong likelihood that the sustained governance and management of the site is expected to deliver the effective in-situ conservation of biodiversity through legal or other effective means?

Partially. Biodiversity monitoring should be performed to answer this question.

4.8 Is there a strong likelihood that the sustained governance and management of the site is expected to deliver the long- term in-situ conservation of biodiversity through legal or other effective means?

Partially. Biodiversity monitoring should be performed to answer this question.

4.9 Existing threats

Existing threats include: extreme flood events may cause severe damage to biological communities, especially in the long channelled area of the PFRA; several small dams hamper the flow of swimming organisms; public works; alien species (*Cairina moschata domestica*; *Alopochen aegyptiaca*; *Trachemys scripta*; *Procambarus clarkia*; *Myiopsitta monachus*); Uncivic behaviour (disturbance to fauna; littering); and sports fishing.

4.10 Stakeholders' views

Table 4 provides a summary of the stakeholders' responses.

Stakeholder	Manager (Spanish Ministry for Ecological Transition)	Local council representative (Madrid City Council Environment Officer)
Additional measures to warrant conservation	Yes	No
Knowledge of OECM	No	No
Consider the ARPSIs to meet the OECM criteria	Unsure	Unsure
Stance on recognition of ARPSIs as OECM	It depends on new restrictions, which should be avoided. Sometimes, flood risk management may collide with biodiversity conservation.	It depends on its implications

Table 4. Rio Manzanares Potential Flood Risk Area’s stakeholders’ views

4.11 Preliminary determination about the site’s status as a ‘potential OECM’

The site is unlikely to meet the OECM criteria. Effective conservation of important biodiversity (if it existed) cannot be ensured.

5. Case study 2 - Under the Water Framework Directive: Rio Muelas River Reserve

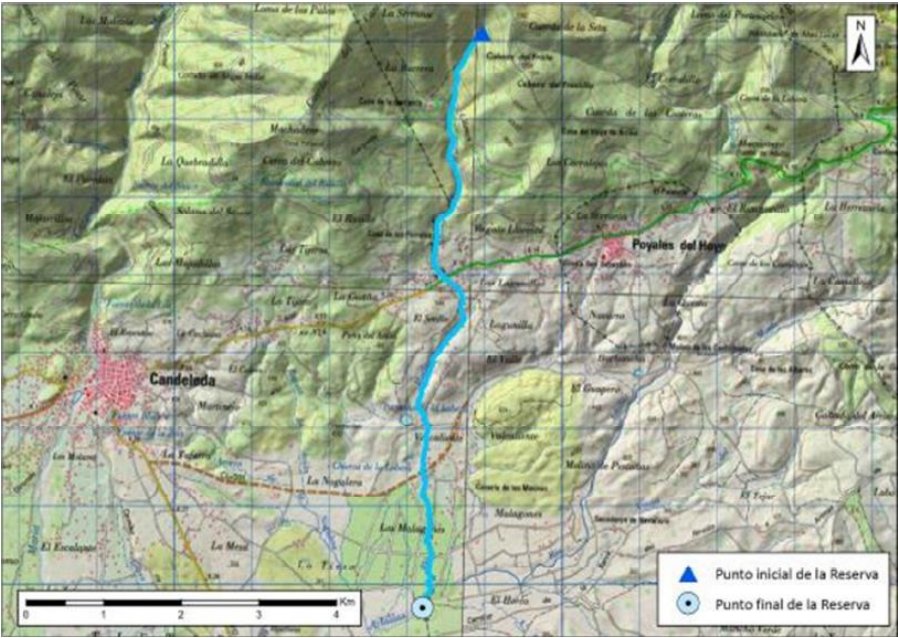
The reserve lies across 8.39 km and connects different PAs in central-western Spain: Sierra de Gredos Nature Park, SCI & SPA to the north, and Valle del Tietar SCI & SPA, thus likely performing an ecological corridor role across the landscape.



Rio Muelas River Reserve

5.1 Is the site geographically delineated, with agreed and demarcated boundaries?

Yes. The Reserve is located within the Public Water Domain (please see the map below). However, its boundaries may not be signalled on site.



5.2 Is the whole site, or the part being assessed as an OECM, outside of a protected area?

Partially. Approximately 1.6 km of its zone 1 in its northern part are inside Sierra de Gredos Nature Park, SCI & SPA. Thus, just under 7 km would be eligible as OECM.

5.3 Is the site under the governance authority of a specified entity or an agreed upon combination of entities?

Yes. Tajo River Basin Authority manages the Reserve.

5.4 Is the site subject to a management regime which contributes to the in-situ conservation of biodiversity?

Yes. The site has a Management Proposal which establishes management zones and measures and which considers important biodiversity. Nevertheless, measures in the Management Proposal are not compulsory. Rather, they guide management in the reserves.

5.5 Is the governance and management 'sustained', i.e. expected to continue for the foreseeable future?

Yes. River Reserve is a legal category under the Spanish Law on Water. Moreover, river reserves are included in the Public Water Domain which is managed by river basin authorities (Confederaciones Hidrográficas). However, proposed management measures for river reserves are implemented according to budgetary availability which may lead to discontinuous active management.

5.6 Is there a strong likelihood that the area contains important biodiversity values?

Yes. Present relevant species include: *Salmo trutta*, *Emys orbicularis*, *Lutra lutra*, *Cinclus cinclus*, *Prunus lusitanica*, *Discoglossus galganoi*, *Triturus pygmaeus*, *Alcedo atthis*, *Myotis daubentonii*, *Microtus cabreræ*. There is also the Priority habitat: River forests of *Alnus glutinosa* and *Fraxinus excelsior* (91E0).

5.7 Is there a strong likelihood that the sustained governance and management of the site is expected to deliver the effective in-situ conservation of biodiversity through legal or other effective means?

Yes, through surveillance and implementation of proposed management measures.

5.8 Is there a strong likelihood that the sustained governance and management of the site is expected to deliver the long- term in-situ conservation of biodiversity through legal or other effective means?

Yes, through permanent surveillance and management.

5.9 Existing threats

Existing threats include: unregulated water catchments; perpendicular obstacles to water flow and swimming organisms; small bridges and river crossings; occupation of riverbed and

river banks by illegal hunting fences; localised grazing pressure; alien invasive species (*Arundo donax*, *Neovison vison*, *Procambarus clarkii*, *Trachemys scripta*); occupation of river banks by crops; some diffuse pollution from animal farming; and reduced water quantity due to climate change.

5.10 Stakeholders' views

Table 2 provides a summary of the stakeholders' responses.

Stakeholder	Manager (Tajo River Basin Authority)	Local council representative ²
Additional measures to warrant conservation	Yes	
Knowledge of OECM	No	
Consider the RNF to meet the OECM criteria	Yes	
Stance on recognition of RNF as OECM	Yes	

Table 2. Rio Muelas River Reserve's stakeholders' views

5.11 Preliminary determination about the site's status as a 'potential OECM'

The site exhibits the qualities of a potential OECM. Local stakeholders' consent and input should be sought to further ascertain whether the site does in fact meet the criteria of an OECM.

6. Case study 2 - Under the Water Framework Directive: Nacimiento del Genil River Reserve

The reserve includes 56.12 km of the upper stretch of the Genil river in south-eastern Spain. Its upper-most part (zones 1 & 2) is included within Sierra Nevada National Park.

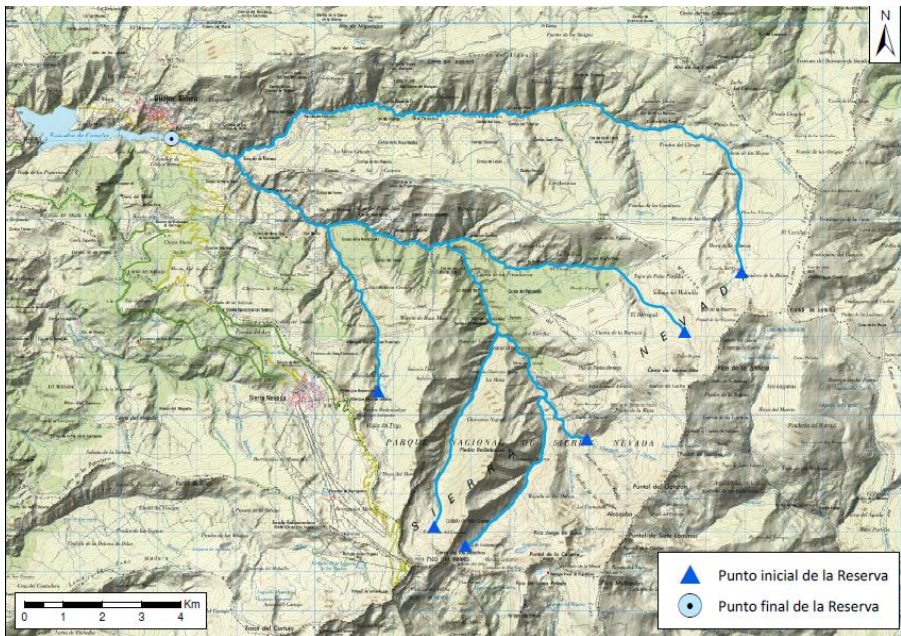
² Local council representatives from Arenas de San Pedro were difficult to interview by phone despite several attempts



Nacimiento del Genil River Reserve

6.1 Is the site geographically delineated, with agreed and demarcated boundaries?

Yes. The Reserve is located within the Public Water Domain (see the map below). However, its boundaries may not be signalled on site.



6.2 Is the whole site, or the part being assessed as an OECM, outside of a protected area?

Yes. Site's zones 3-7 to the West (aprox. 15 km) are outside existing PAs: Sierra Nevada National Park, Sierra Nevada Nature Park and Sierra Nevada Noroeste SCI.

6.3 Is the site under the governance authority of a specified entity or an agreed upon combination of entities?

Yes. Guadalquivir River Basin Authority manages the Reserve.

6.4 Is the site subject to a management regime which contributes to the in-situ conservation of biodiversity?

Yes. The site has a Management Proposal which establishes management zones and measures and which considers important biodiversity. Nevertheless, measures in the Management proposal are not compulsory. Rather, they guide management in the reserves.

6.5 Is the governance and management 'sustained', i.e. expected to continue for the foreseeable future?

Yes. River Reserve is a legal category under the Spanish Law on Water. Moreover, river reserves are included in the Water Public Domain which is managed by river basin authorities (Confederaciones Hidrográficas). However, proposed management measures for river reserves are implemented according to budgetary availability which may lead to discontinuous active management.

6.6 Is there a strong likelihood that the area contains important biodiversity values?

Yes. Present relevant species include: *Salmo trutta*. 67 invertebrate species, *Pleurodeles waltl*, *Hyla meridionalis*, *Pelodytes ibericus*, *Discoglossus jeaneae*, *Epidalea calamita*, *Alytes dickhilleni*, *Mauremys leprosa*.

Existing Habitats of Community Interest are: 6420 (Mediterranean tall humid grasslands of the *Molinio-Holoschoenion*), 6430 (Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels), 91B0 (Thermophilous *Fraxinus angustifolia* woods) & 92A0 (*Salix alba* and *Populus alba* galleries). These habitats may be totally or partially inside PAs.

6.7 Is there a strong likelihood that the sustained governance and management of the site is expected to deliver the effective in-situ conservation of biodiversity through legal or other effective means?

Yes, through surveillance and implementation of proposed management measures.

6.8 Is there a strong likelihood that the sustained governance and management of the site is expected to deliver the long- term in-situ conservation of biodiversity through legal or other effective means?

Yes, through permanent surveillance and management.

6.9 Existing threats

Existing threats include: perpendicular obstacles to water flow and swimming organisms; water catchments for agriculture; forest fires; alien invasive species (*Robinia Pseudoacacia*); reduced water quantity from climate change. Threats require management actions but do not seriously compromise biodiversity conservation in the reserve.

6.10 Stakeholders' views

Table 3 provides a summary of the stakeholders' responses.

Stakeholder	Manager (Guadalquivir River Basin Authority) ³	Local council representative (Environmental Councillor of Guejar Sierra Town Council) ⁴
Additional measures to warrant conservation		It depends on restrictions and on whether sustainable use of the river is allowed. They do not know current protection measures
Knowledge of OECM		No
Consider the RNF to meet the OECM criteria		Yes, if it allows some existing human uses of the river (e.g. constructions of small dams for swimming)
Stance on recognition of RNF as OECM		Neutral. They need more info

Table 3. Nacimiento del Genil River Reserve's stakeholders' views

6.11 Preliminary determination about the site's status as a 'potential OECM'

The site exhibits the qualities of a potential OECM. Substantial stakeholder engagement would be needed, especially from the site's managers (Guadalquivir River Basin Authority).

7. Case study 4 - Under the Water Framework Directive: Rio Navahondilla River Reserve

The reserve flows from south to north across more than 10 km in central-western Spain.

³ It was not possible to receive their input despite several attempts

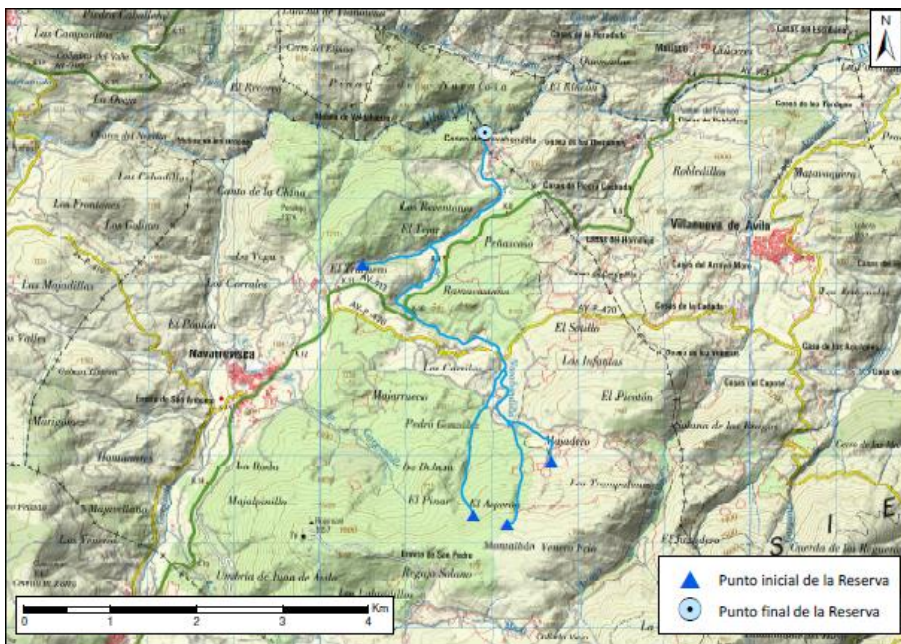
⁴ Guejar Sierra municipality. He mentioned a Public Utility Forest in his municipality as a possible OECM



Rio Navahondilla River Reserve

7.1 Is the site geographically delineated, with agreed and demarcated boundaries?

Yes. The Reserve is located within the Public Water Domain (see the map below). However, its boundaries may not be signalled on site.



7.2 Is the whole site, or the part being assessed as an OEKM, outside of a protected area?

Yes. It connects with Riberas del Río Alberche y afluentes SCI to the north.

7.3 Is the site under the governance authority of a specified entity or an agreed upon combination of entities?

Yes. Tajo River Basin Authority manages the Reserve.

7.4 Is the site subject to a management regime which contributes to the in-situ conservation of biodiversity?

Yes. The site has a Management Proposal which establishes management zones and measures and which considers important biodiversity. Nevertheless, measures in the Management proposal are not compulsory. Rather, they guide management in the reserves.

7.5 Is the governance and management 'sustained', i.e. expected to continue for the foreseeable future?

Yes. River Reserve is a legal category under the Spanish Law on Water. Moreover, river reserves are included in the Water Public Domain which is managed by river basin authorities (Confederaciones Hidrográficas). However, proposed management measures for river reserves are implemented according to budgetary availability which may lead to discontinuous active management.

7.6 Is there a strong likelihood that the area contains important biodiversity values?

Yes. Present relevant species include: *Squalius carolitertii*; *Gobio lozanoi*; *Margaritifera margaritifera*; *Rana ibérica*; *Lacerta schreiberi*; *Mauremys leprosa*; *Cinclus cinclus*; *Lutra lutra*; *Neomys anomalus* & *Mustela putorius*.

7.7 Is there a strong likelihood that the sustained governance and management of the site is expected to deliver the effective in-situ conservation of biodiversity through legal or other effective means?

Yes, through surveillance and implementation of proposed management measures.

7.8 Is there a strong likelihood that the sustained governance and management of the site is expected to deliver the long- term in-situ conservation of biodiversity through legal or other effective means?

Yes, through permanent surveillance and management.

7.9 Existing threats

Existing threats include: multiple water catchments, including a large 50,500 m³/month one; perpendicular obstacles to water flow and swimming organisms; walls channelling river banks at some points; grazing pressure; possible untreated wastewater spills from Navahondilla town; diffuse water pollution from animal farming; located pollution at bath point; alien invasive species (*Phytolacca Americana*; *Neovison vison*); and reduced water quantity from climate change.

7.10 Stakeholders' views

Table 5 provides a summary of the stakeholders' responses.

Stakeholder	Manager (Tajo River Basin Authority)	Local council representative (Rural development officer from Navarrevisca)
Additional measures to warrant conservation	Yes	The site is well preserved as it is. It has no pressures
Knowledge of OECM	No	No
Consider the RNF to meet the OECM criteria	Yes	Yes, even without active management
Stance on recognition of RNF as OECM	Yes	Neutral. There is no need

Table 5. Rio Navahondilla River Reserve's stakeholders' views

7.11 Preliminary determination about the site's status as a 'potential OECM'

The site exhibits the qualities of a potential OECM. It has potential to become recognised and reported as an OECM with effective threat abatement as a managerial priority.

8. Overall analysis of the four case studies

Some major findings that arise from this study include the following: There is a near total lack of awareness of the OECM concept among Spanish stakeholders and how it can help Spain achieve international biodiversity protection targets. While OECMs are likely not relevant to PFRAs, they offer real potential to better recognise the contributions to biodiversity by many of the 222 River Reserves currently designated in Spain by November 2020 (MITECO, 2020d).

The three River Reserves have potential to become OECMs subject to specific stakeholder engagement processes and threat abatement actions. Active management of the sites must be ensured, as it is somehow sporadic and subject to available funding. Some key stakeholders such as the Guadalquivir River Basin Authority do not seem to be very active or interested in the topic, as they have not replied to repeated queries.

9. National level recommendations

Next steps in Spain should stress information disclosure and public awareness on OECMs, especially among relevant stakeholders like territorial managers, biodiversity managers and decision-makers. Capacity-building among river reserves' managers would also be needed for such sites to eventually become OECMs.

Broader public awareness and capacity-building activities regarding an array of existing legal categories with high likelihood to meet the OECM criteria would contribute to including OECMs in the political agenda and to the wider engagement of stakeholders in the country.

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Assess the potential of other effective area-based conservation measures as a driver for landscape-level conservation and connectivity in the EU - Contract under Framework Contract No EEA/NSS/17/002/Lot 3

FINLAND Country Report

Compiled by Mervi Heinonen, Metsähallitus Parks & Wildlife Finland, 11 December 2020

1. Overview (synopsis)

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A 'potential OECM' is a site that has been subject to a desk-based assessment and through that process exhibits qualities that are closely related to the CBD criteria for an OECM. Consent from the governance authority of the site and a site-level assessment are required to establish whether it definitively meets the criteria and can be recognised and reported as an OECM.

The project's main findings in Finland include:

- Recognition of selected water bodies delineated for WFD river basin management planning (RBMP) as potential OECMs in the country.
- Limited use of Potential Flood Risk Areas as OECMs.
- Importance of engaging all parties that are involved in WFD planning and management processes, if candidate OECM sites are to be assessed and designated.
- National and regional WFD/FD experts having little or no prior knowledge of the OECM concept. Need to promote its role in landscape-level conservation.

2. Description of national PA network and categories of potential OECMs

The basic norm regulating protected areas in Finland, the Nature Conservation Act (enacted in 1996), recognises nationally designated PAs, including national parks, strict nature reserves and other nature reserves in both state-owned and privately owned lands and waters, as well as sites designated in the EU Natura 2000 network. Wilderness reserves are designated under the Wilderness Act (1991) and are considered part of the national protected area network. In all, the national network presently includes 17,800 sites and covers a total of 4.75 milj. ha. 90% of network surface area is in IUCN PA management

categories I and II. These are mostly large state-owned sites. 90% of all sites are in category IV. The bulk of these are small privately owned protected areas. All PA types contain waters, but larger water bodies have often been left outside of older area-based designations.

The Natura 2000 network in Finland includes 1,866 sites and covers 5.2 milj. ha. 85% of the Natura 2000 network area is overlapping with national designations. The remaining 15% of the network area is predominantly water. When initially designating N2000 network sites in 1998, Finland extended the existing national protected area network especially in inland and coastal waters. However, as much of this Natura 2000 water area does not have the same statutory status as nature reserves, conservation measures are not as compulsory and use restrictions are less strict. Water conservation measures are implemented by provisions of the Water Act (2019) and land use management legislation (1999). Area-based conservation measures are also recognised in several other statutes, for example the Forestry Act (1996).

Internationally designated PA categories that are recognised protected areas, as defined by the IUCN in 2008, include: Ramsar sites, HELCOM MPAs, UNESCO's World Heritage sites, MaB Biosphere Reserves and Geoparks. However, these do not have an independent statutory status in Finland. Ramsar and HELCOM MPA sites coincide with Natura 2000 sites. National designations form the core of the UNESCO designations, and these are buffered by an extensive zone delineated for cooperation and sustainable use.

'Other area-based conservation measures', as defined by the CBD and IUCN, have not been recognised as a designation. However, an ad hoc working group has been appointed in in October 2019 to draft preliminary national principles and guidelines for application of the OECM concept in Finland. Potential OECM area types have been discussed with stakeholders in workshops and screened with experts. Preliminary consensus has been reached on certain area-based forestry, agriculture and fisheries conservation measures with direct biodiversity objectives. Also, certain site types with secondary conservation objectives, such as special forest areas reserved for wildlife reproduction, forest gene pools, research or outdoor recreation (hiking areas), as well as water bodies managed under obligations of the Water Framework Directive (WFD), are being considered as potential OECM candidates. WFD measures have an important role in maintaining water dependent habitats and species of Community interest and water ecosystems with associated nature-based values on the whole.

3. Surface waters and their ecological status

Finland is rich in surface waters, with 188,000 lakes (larger than 500 square metres) and tens of thousands of kilometres of rivers and streams. Almost a tenth of the country area is covered with water. The coastline of Finland is more than 1 100 km, with some of the most extensive and diverse archipelagos within Europe.

Provisions on water resources management in Finland are laid down in Act on the Organisation of River Basin management and the marine Strategy (2004) and on Government Decree on Water Resources Management Regions (2004). Mainland Finland is divided into seven river basin districts (RBD) for the purposes of the river basin management

planning (RBMP) and measures required under the Water Framework Directive. These districts have been defined on basis of the natural basins of major rivers (see Fig. 1):

1. Vuoksi River Basin District
2. Kymijoki-Gulf of Finland River Basin District
3. Kokemäenjoki-Archipelago Sea-Bothnian Sea River Basin District
4. Oulujoki-Iijoki River Basin District
5. Kemijoki River Basin District
6. Tornionjoki IRBD (international, shared with Sweden)
7. Teno, Näätämöjoki and Paatsjoki IRBD (international, shared with Norway)
8. A separate RBD has been defined to cover the autonomous Åland Islands province, where the WFD is being implemented by the provincial government.

Finland's Centres for economic development, transport and environment (i.e. regional ELY Centres) are responsible for the planning of river basin management (RBMP) in their respective districts, with one centre appointed to co-ordinate the management of each of the five RBDs, together with a steering group. All of the ELY Centres in each RBD participate in the work of the steering groups, together with a representative of the fisheries administration. The ELY Centres have additionally set up joint working groups, whose other members include invited representatives of the main national and local authorities, organisations, landowners and business interests responsible for the use, protection and state of water bodies.

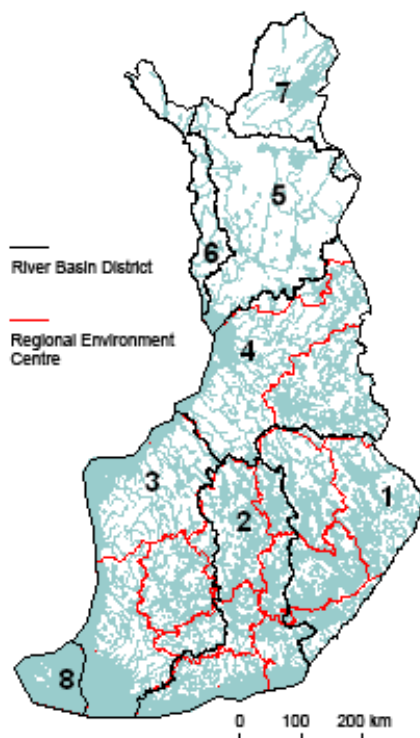


Fig. 1. River Basin Districts and ELY Centres

The main objective of the Water Framework Directive is to reach and maintain good ecological status in all surface and ground waters by 2027. Reporting on status assessment

on water bodies and WFD implementation is done every 6 years. For the assessment and planning of measures, surface waters have been delineated into 6,875 lakes, rivers and coastal water bodies (see table 1).

Table 2.1 *Number and area/length of delineated surface water bodies in Finland for the second and first cycles*

Year	RBD	Rivers		Lakes		Coastal	
		Number of water bodies	Total length of water body (km)	Number of water bodies	Total area (km ²) of water bodies	Number of water bodies	Total area (km ²) of water bodies
2016	FIVHA1	328	3 880	1 182	10 400	0	0
2016	FIVHA2	323	3 999	910	6 619	54	6 108
2016	FIVHA3	437	7 215	621	3 639	134	14 295
2016	FIVHA4	278	7 180	969	4 202	19	3 320
2016	FIVHA5	301	7 974	435	1 683	5	913
2016	FIVHA6	103	2 334	169	481	3	105
2016	FIVHA7	143	3 172	317	1 793	0	0
2016	FIWDA	0	0	14	11	61	7 766
2016	<i>Total</i>	<i>1 913</i>	<i>35 753</i>	<i>4 617</i>	<i>28 826</i>	<i>276</i>	<i>32 507</i>

Table 1. Surface waters in Finland: rivers, lakes and coast water bodies in River basin Districts. (Source: EU Commission implementation report 2019: Second River Basins Management Plans - Member state Finland)

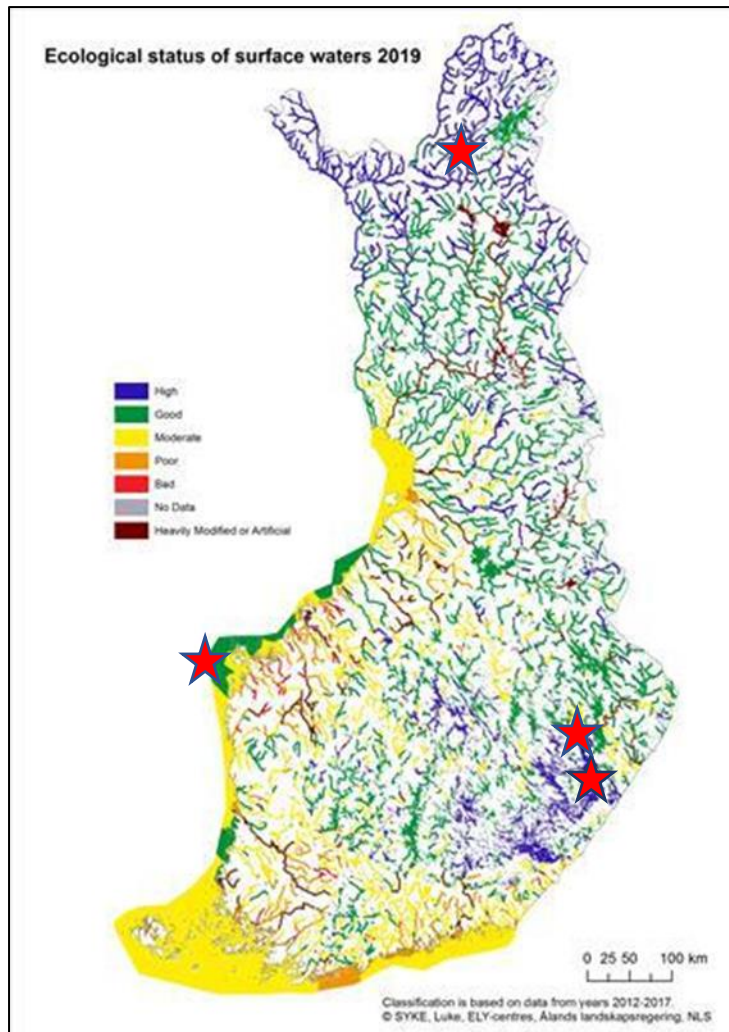
Nearly a quarter on Finland’s Natura 2000 sites (450 out of 1,866) have been identified as having habitats and/or species that depend on water environments and benefit from measures to improve and maintain their ecological status (see table 2). Each of these special protected areas are connected to relevant water bodies managed under the WFD. In planning of river basin management measures, the objectives of the Habitats (HD) and Birds Directives are taken into account.

Table 15.1 *Number of Protected Areas of all types in each RBD of Finland, for surface and groundwater*

Protected Area type	Number of Protected Areas Associated with ⁶⁴			
	Rivers	Lakes	Coastal	Groundwater
Abstraction of water intended for human consumption under Article 7	19	43	2	2 068
Recreational waters, including areas designated as bathing waters under Directive 76/160/EEC ⁶⁵	14	177	82	
Protection of species where the maintenance or improvement of the status of water is an important factor in their protection, including relevant Natura 2000 sites designated under Directive 79/409/EEC (Birds) ⁶⁶	83	111	72	
Protection of habitats or species where the maintenance or improvement of the status of water is an important factor in their protection, including relevant Natura 2000 sites designated under Directive 92/43/EEC (Habitats) ⁶⁷	145	152	120	61
Areas designated for the protection of economically significant aquatic species	10	11		

Table 2. Protected area types associated with surface and ground water bodies. Natura 2000 sites include species and habitats that depend on good water environments. (Source: EU Commission implementation report 2019: Second River Basins Management Plans - Member state Finland)

The most recent assessment of the ecological status of surface waters in Finland (published in 2019, see Fig. 2) shows that 87% of the surface area of the lakes and 68% of river length are in good or high condition. The freshwaters are in best condition in Northern and Eastern Finland and in most degraded condition along the coast and in Southern Finland where anthropogenic pressures are most widespread. At present, 70% of the Natura 2000 sites registered as WDF special protected areas have good or high ecological status/potential.



Ecological status of surface waters in Fir

Fig. 2. Ecological status of surface waters in Finland. (Source: Finnish Environment Institute)
Red stars indicate locations of pilot water bodies assessed as potential OECMs.
(Click to view a detailed PDF map).

4. Assessment of pilot water bodies as potential OECMs

A preliminary selection of potential OECM water bodies linked to the Water Framework Directive (WFD) and the Floods Directive (FD) in Finland was made according to the project's aims and assessment group's experience. A GIS analysis of all water bodies was intended to determine which potential sites or parts of sites could be selected as potential OECMs for not overlapping with existing PAs. Due to time restrictions this comprehensive analysis was postponed and instead a different approach was used.

Four water bodies delineated for river basin management planning were chosen as pilot sites using following criteria to (partly) match OECM criteria:

- Overlap with existing protected areas
 - o Water bodies having partial overlap with Natura 2000 sites were considered, because the other two criteria restricted sites with no overlap to a minimum.
- Present ecological status is high or good

- The ecological status is an indication effective conservation outcome from point of view of the aquatic ecosystem.
- Ecological status assessment is based on extensive biological data
 - There is enough data to assess biodiversity value and monitoring data to assess against OECM and conservation criteria.

One large lake, one smaller lake, and one marine site were first selected. Initially, the idea was to look at lakes only, since water bodies in river and coast environments are more artificially delineated and more often in less than good ecological status. However, it was seen that there may be potential in marine areas to develop the OECM concept in the future, as ecological status gets better and more biological data becomes available (and existing data is better used). Also, one large river system was selected, a small part of which is also a Floods Directive site. The idea was to look at one Floods Directive example to consider implications generally. Main characteristics of the selected pilot sites are presented in table 3. Location of the water bodies is shown in the map of surface waters (Fig. 2).

Site's name	Water body type	Directive	Location (regional ELY Centre)	Area (ha)/ Length (m)
1. Lake Puruvesi central basin	Large low-humic lake	Water Framework	South Savo (SE Finland)	40,749 ha
2. Lake Kangasjärvi	Shallow humus-rich lake	Water Framework	South Savo (SE Finland)	1,969 ha
3. Utgrynnan-Molpehällorna	Outer Kvarken Archipelago (marine)	Water Framework/ Marine Strategy Framework Directive	South Ostrobothnia (West coast)	110,301 ha
4. Ivalojoiki River	Large river on mineral soil	Water Framework/ Floods Directive	Lapland (Northern Finland)	115,500 m (388,400 ha catchment area)

Table 3. Main characteristics of the water bodies selected for OECM assessment.

The screening assessment of the selected potential OECM sites was done in a single meeting (in 30 November 2020) as a table-top exercise by national and regional experts. Assessors were representatives of the following organisations (listed in Annex 1):

- Metsähallitus Parks and Wildlife Finland (3)
- Ministry of Environment (1)
- Regional ELY Centres (1+3+3)
- Finnish Environment Institute (3)

The representatives have expertise on implementation and information management of the Water Framework Directive at national and regional level. Two representatives are currently involved in the previously mentioned OECM Working Group. Other representatives were not familiar with the OECM concept but were well informed about it prior to the assessment.

Each of the pilot sites was assessed against the criteria in Step 1 of the June 2020 version of the *Site-level methodology for identifying 'other effective area-based conservation measures'* (OECMs; Marnewick et al., 2020). Information on the pilot sites was collected before and after the assessment meeting. Questions used to make a general OECM screening assessment are listed site-specifically in chapters 5-8. Findings are summed up and discussed in chapter 9.

5. Case study 1 - Lake Puruvesi central basin

Lake Puruvesi is located in Eastern Finland between South Savo and North Karelia regions (see Fig.2). Being a part of the Lake Saimaa system, Lake Puruvesi is a large and exceptionally oligotrophic, clearwater and low-humic lake. Surface area of the central basin is 40,749 ha.

The catchment area of Lake Puruvesi in relation to the lake surface area and volume is small, which accounts for the long theoretical retention time (around 12 years) and oligo-humic character of the water. The morphology of the lake is very complex with several large basins and over 850 islands. The bedrock is mainly Archaean granite. Sediment accumulation areas are confined to the deepest parts of the basins and sedimentation is fairly slow.



Lake Puruvesi. Photo: Jari Ilmonen

The lake is known for its pure water and has uniquely excellent underwater visibility that reaches up to 12 meters. This is due to the fact, that much of it is filtered by a sand layer as groundwater enters the lake from below. Unfortunately, recent observations have shown

that eutrophication and spread of vegetation has increased around the large and shallow basins.

Lake Puruvesi area is a renowned and frequently visited nature and cultural tourism destination with multiple recreational possibilities, such as boating and fishing. Commercial fishing of Vendace is important locally. There is a significant number of summer cottages around the lake.

5.1 Is the site geographically delineated, with agreed and demarcated boundaries?

Yes, the water body is delineated for WFD river basin management planning (RBMP) and is registered with GIS boundaries, also for the catchment area (see Fig. 3). However, the site is not demarcated in the sense that statutory protected areas are.

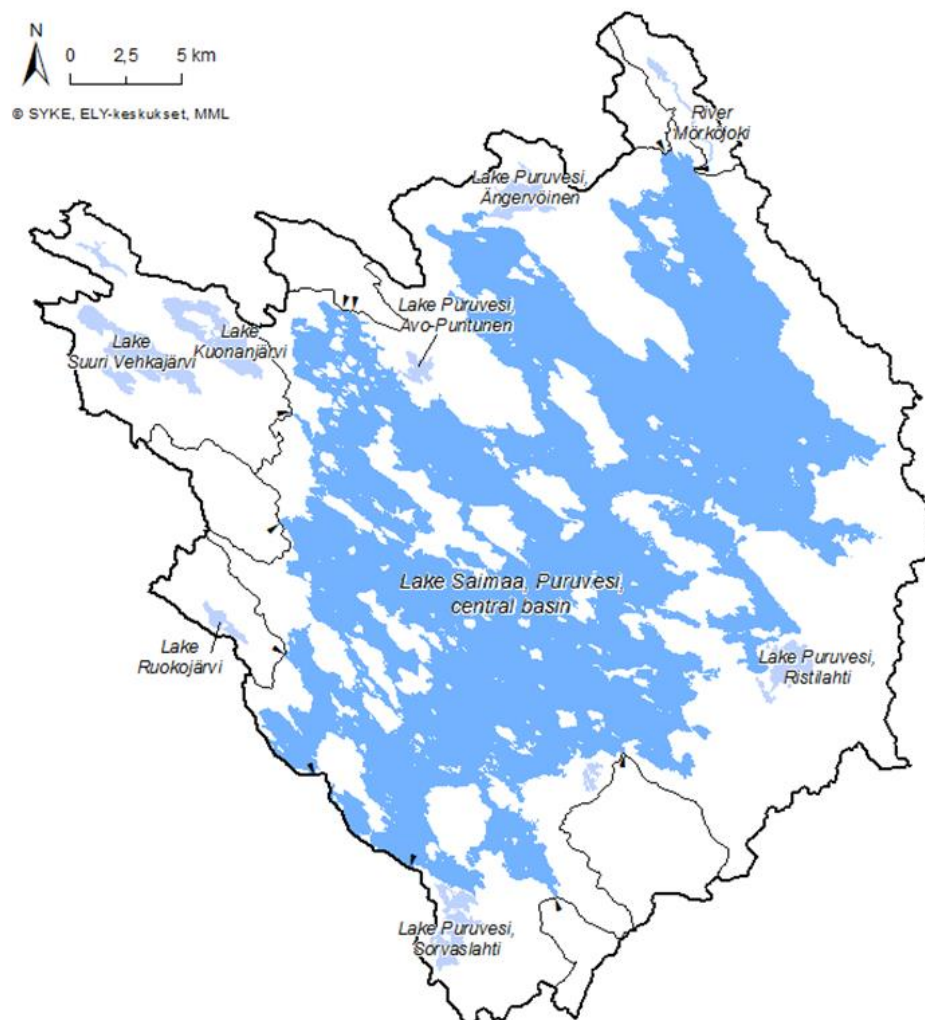


Fig. 3. Lake Puruvesi central basin and surrounding small lake water bodies.

5.2 Is the whole site, or the part being assessed as an OECM, outside of a protected area?

Partially. In total, 77 % of the lake area belongs to Natura 2000 site FI0500035 (SAC, Puruvesi).

Lake Puruvesi is included in the Saimaa lake area that is candidate for nomination as a World Heritage Site in 2021. If nominated, the designation will not change the legal status of the area.

5.3 Is the site under the governance authority of a specified entity or an agreed upon combination of entities?

Yes. Competent authorities are the municipalities of Savonlinna and Kitee. Metsähallitus (state enterprise) governs the state-owned lands and waters. Private waters are jointly governed by owners. All parties work closely together with the South Savo ELY Centre that is the WFD management authority.

5.4 Is the site subject to a management regime which contributes to the in-situ conservation of biodiversity?

Yes. Lake Puruvesi is situated in the River Vuoksi Basin District. The South Savo ELY Centre has responsibility of coordinating and implementing the WFD River Basin Management Plan for the District. Clear (WDF) objectives are set for water protection in the water body and for conservation of the habitats and species of Community interest for which the Natura 2000 site is designated (under the Habitats Directive, see 5.6 for details). There is a separate management plan for the Natura 2000 site.

Also, the Puruvesi Fisheries Region (including representatives of owners of fishery rights) has a statutory mandate and obligation to plan and manage the fishery resources of the lake. Fishing restrictions (both spatial and temporal) have been issued to protect valuable migrating fish stocks and the endangered Saimaa ringed seal population.

5.5 Is the governance and management ‘sustained’, i.e. expected to continue for the foreseeable future?

Yes. The second RBMP is being implemented. The third RBMP and programme of measures for years 2022-2027 have been drafted and are presently open for public consultation.

5.6 Is there a strong likelihood that the area contains important biodiversity values?

Yes. The lake has been included in the N2000 network to represent an oligotrophic habitat type containing very few minerals characteristic of sandy plains, having special importance as a habitat for submerged macrophytes (subtype *Littorelletae uniflorae*).

Recently the Saimaa ringed seal has been added as a HD species to the site. After intensive conservation efforts (including EU LIFE projects) in the Saimaa lake area, the species has returned to Lake Puruvesi for the first time after being hunted to extinction in the 1950's.

There are also several HD App. IV species, for example dragonflies, found in the lake. In addition, there are five species of valuable Salmonids. Vendace is fished commercially, but sustainably. Fishing of Arctic char and Grayling is forbidden during part of the year.

5.7 Is there a strong likelihood that the sustained governance and management of the site is expected to deliver the effective in-situ conservation of biodiversity through legal or other effective means?

Yes. Management measures have been and are being implemented as planned. Lake Puruvesi is one of the target water bodies in a multiyear project Freshabit LIFE IP (2016–2022) and many of the conservation actions taken in the catchment area have been funded by the programme.

Monitoring of water quality elements and biodiversity features is on-going. Especially the Saimaa ringed seal population and fish stocks are systematically surveyed.

5.8 Is there a strong likelihood that the sustained governance and management of the site is expected to deliver the long- term in-situ conservation of biodiversity through legal or other effective means?

Yes. Especially conservation measures targeted at the Natura 2000 site and HD species benefit the biodiversity of the whole water body. In the future, WDF measures in the catchment area may possibly be more restricted by resource availability.

5.9 Existing threats

The main threats and impacts on biodiversity are:

- Eutrophication caused by nutrient load, mainly from diffuse source and sedimentation (forestry, agriculture, waste from summer cottages);
- Increased macrophyte vegetation overgrowth in shallow lake basins;
- Fishing (by nets especially) potentially to Saimaa ringed seal (cubs).

5.10 Stakeholders' views

Stakeholder views were not consulted at this screening phase.

5.11 Site's proposal

The site has potential to become an OECM candidate. Representatives of the South Savo ELY Centre agreed that the Lake Puruvesi water area, that is outside of the Natura 2000 site, is much like that inside the designation and could well fulfil the OECM criteria. The potential OECM is like a buffer zone around the N2000 site. Measures should be planned inclusively, as they are in context of the RBMP. The high biodiversity values of the lake are well known and monitored.

6. Case study 2 - Lake Kangasjärvi

Lake Kangasjärvi is a shallow humus-rich lake located in the South Savo region in Eastern Finland. Surface area is 1,969 ha. The catchment area is surrounded by peatlands and forest. The lake has importance to local fishing and there is wide-spread peat extraction in the watershed area. Parts of the peatlands are also protected.



Lake Kangasniemi. Photo: South Savo ELY Centre

6.1 Is the site geographically delineated, with agreed and demarcated boundaries?

Yes, the water body is delineated for WFD river basin management planning (RBMP), and is registered with GIS boundaries, also for the catchment area (see Fig. 4). However, the site is not demarcated in the sense that statutory protected areas are.



Fig. 4. Lake Kangasniemi water body and area with surrounding small lakes.

6.2 Is the whole site, or the part being assessed as an OECM, outside of a protected area?

Yes, the water body itself is fully outside of protected area. Within the catchment area there is a peatland protection area, Natura 2000 site FI0500005 (SAC, Iso-Huppio).

6.3 Is the site under the governance authority of a specified entity or an agreed upon combination of entities?

Yes. Private waters are jointly governed by owners. The Virtasalmi-Joroinen Fisheries Region includes representatives of the owners of water and fishery rights. They work together with the South Savo ELY Centre that is the WFD management authority.

6.4 Is the site subject to a management regime which contributes to the in-situ conservation of biodiversity?

Yes. Lake Kangasjärvi is situated in the River Vuoksi Basin District. The South Savo ELY Centre has responsibility of coordinating and implementing the WFD River Basin Management Plan for the District. Clear (WDF) objectives are set for water protection in the water body.

Also, the local Fisheries Region has a statutory mandate and obligation to plan and manage the fishery resources of the lake. The use and management plan for the fisheries region has been drafted.

6.5 Is the governance and management ‘sustained’, i.e. expected to continue for the foreseeable future?

Yes. The management plans for the water body (RBMP) and fisheries region use and management plan are statutory and are being implemented.

6.6 Is there a strong likelihood that the area contains important biodiversity values?

No. There are no special water dependent biodiversity values listed in the data registered for the water body. The lake is a pretty typical representative of the shallow humic lake type.

6.7 Is there a strong likelihood that the sustained governance and management of the site is expected to deliver the effective in-situ conservation of biodiversity through legal or other effective means?

Yes/no. Water quality elements of the water body are monitored, especially indicators of eutrophication, from point of view of impacts caused by peat extraction. Littoral bottom fauna and fish populations are well known and monitored.

6.8 Is there a strong likelihood that the sustained governance and management of the site is expected to deliver the long- term in-situ conservation of biodiversity through legal or other effective means?

WDF measures in the catchment area may be restricted by resource availability.

6.9 Existing threats

Yes. Main threats to biodiversity values are forestry, agriculture and wide-spread peat extraction in the catchment area. The impacts of these are acidification (low pH level), load of organic material and eutrophication. Climate warming and associated increasing rain fall potentially amplifies these impacts. Research monitoring to assess impacts of peat extraction is on-going.

6.10 Stakeholders' views

Stakeholder views were not consulted at this screening phase.

6.11 Site's proposal

The site most likely doesn't have potential to become an OECM. Significant biodiversity values have not been identified or documented. Representatives of the South Savo ELY Centre questioned whether there are 'enough' of these values to consider the site as an OECM.

7. Case study 3 - Utgrynnan-Molpehällorna

Utgrynnan-Molpehällorna is an extensive marine water body in the Kvarken outer archipelago on the Western coast of Finland. Moraine formations from the Ice Age are still

slowly emerging from the sea in this part of the coast, creating landscapes and habitats that are unique at world scale. The total surface area of the water body is 110,400 ha.

The Kvarken archipelago area is a renowned and frequently visited nature and cultural tourism destination with multiple recreational possibilities, such as boating and fishing.



Outer Kvarken Archipelago. Photo: Päivi Rosqvist

7.1 Is the site geographically delineated, with agreed and demarcated boundaries?

Yes, the water body is delineated for WFD river basin management planning (RBMP), and is registered with GIS boundaries (see Fig. 5). However, the site is not demarcated in the sense that statutory protected areas are.

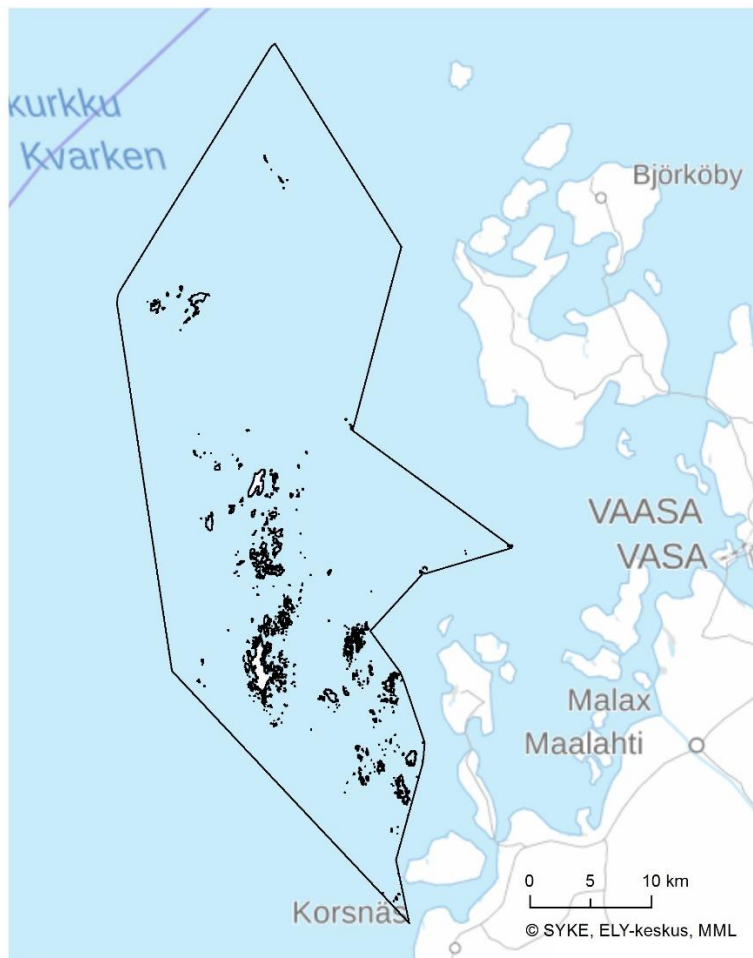


Fig. 5. Utgrynnan-Molpehällorna water body in the Outer Kvarken Archipelago.

7.2 Is the whole site, or the part being assessed as an OECM, outside of a protected area?

Partially yes. The water body belongs in part to large Natura 2000 site FI0800130 (SAC/SPA, Merenkurkun saaristo). The N2000 designation is part of a larger nature conservation programme entity. State-owned parts are reserved to be enacted as nature reserves (see Fig. 6, area shown in pink). The northernmost and southern parts of the water body are within the boundaries of the Kvarken World Heritage Site (the designation is in two parts).

7.3 Is the site under the governance authority of a specified entity or an agreed upon combination of entities?

Yes. Metsähallitus (state enterprise) governs the state-owned lands and waters. Private waters are jointly governed by owners. Representatives work closely together with the South Ostrobothnia ELY Centre that is the WFD management authority.

7.4 Is the site subject to a management regime which contributes to the in-situ conservation of biodiversity?

Yes. The water body is situated in the Kokemäenjoki-Archipelago Sea-Bothnian Sea River Basin District. The South Ostrobothnia ELY Centre has responsibility of coordinating and implementing the WFD River Basin Management Plan for the District. Clear (WFD) objectives

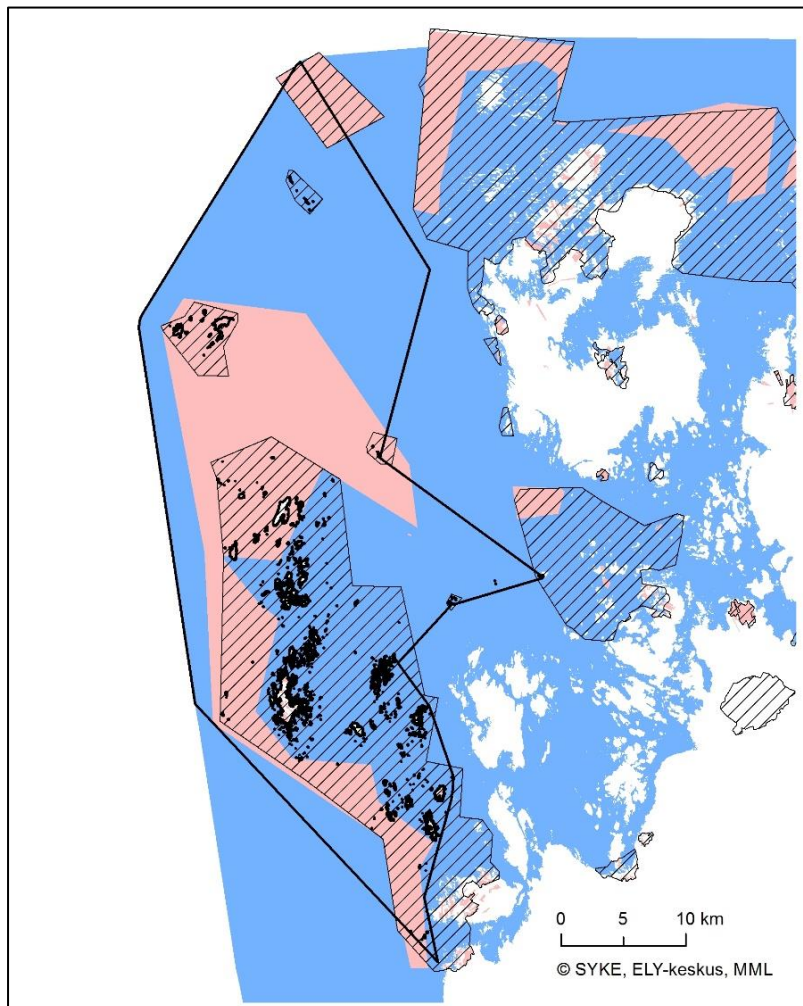


Fig. 6. Protected area within Utgrynnan-Molpehällorna water body. Natura 2000 site (FI0800130) is shown with lineation. State owned area in pink is to be enacted as a nature reserve.

are set for water protection in the water body and for conservation of the habitats and species of Community interest for which the Natura 2000 site is designated under the Habitats Directive. There is a separate management plan for the Natura 2000 site.

Also, the local Fisheries Region has a statutory mandate and obligation to plan and manage the fishery resources of the coastal area. The use and management plan for the fisheries region is being drafted.

7.5 Is the governance and management 'sustained', i.e. expected to continue for the foreseeable future?

Yes. The second RBMP is being implemented. The third RBMP and programme of measures for years 2022-2027 have been drafted and are presently open for public consultation.

7.6 Is there a strong likelihood that the area contains important biodiversity values?

Yes. The Rönnskär area (within the water body) has been identified as an ecologically significant marine underwater area (EMMA). Inventory Programme for the Underwater Marine Environment, VELMU (2004-2018) has registered some 80 HELCOM Underwater Biotopes (HUB) and over 100 taxons of algae, flora and fauna in the marine area. Habitats that are listed by the Habitats Directive include reefs (1170), coastal lagoons (1150) and underwater parts of boreal Baltic islets and small islands (1620).

Especially the coastal lagoons, complexes of so called fladas and gloes shaped by land uplift along the coast, are typical for the Kvarken Archipelago area. Fladas in the Gulf of Bothnia have been formed in the shallow depressions between moraine ridges shaped by the Ice Age. Fladas and gloes are unique to the Baltic coast in Finland and Sweden, and do not exist anywhere else in Europe.

Two species of seal live in the Kvarken archipelago. The grey seal (*Halichoerus grypus*) is the more common of the two, while the Baltic ringed seal (*Pusa hispida*) is still endangered.

7.7 Is there a strong likelihood that the sustained governance and management of the site is expected to deliver the effective in-situ conservation of biodiversity through legal or other effective means?

Yes. WFD measures alone will not deliver effective in-situ conservation of biodiversity. The protected area designations inside and outside of the water body help to focus on other conservation measures in the whole water body delineation. General measures under the Marine Strategy Framework Directive (MSFD) are also relevant (see 7.9).

7.8 Is there a strong likelihood that the sustained governance and management of the site is expected to deliver the long-term in-situ conservation of biodiversity through legal or other effective means?

Yes. The most valuable parts of the Kvarken archipelago are indicated as biodiversity areas in marine spatial plans and regional land use plans. It is likely that they will be taken into account when plans for exploitation of marine resources are evaluated in statutory EIAs.

7.9 Existing threats

Yes. The biggest threat to the shallow sea bays is caused by eutrophication, pollution, dredging, construction work on the shore, boating, and drainage in the catchment area. Inner archipelago waters (Bergö-Halsö area adjacent to Utgrynnan-Molpehällorna) are in moderate ecological status. Some of the impacts may reach the outer archipelago waters but are not significant. Harmful impacts of activities in the marine environment are addressed also in larger scale in measures planned in context of the Marine Strategy Framework Directive.

7.10 Stakeholders' views

Stakeholder views were not consulted at this screening phase.

7.11 Site's proposal

The Utgrynnan-Molpehällorna site has potential to become a candidate OECM. The water area, that is outside of the Natura 2000 site, is similar to that inside the designation and could well fulfil the OECM criteria. The potential OECM is like a buffer zone around the N2000 site and nature reserve. Measures should be planned inclusively, as they partly already are in context of the RBMP. Known biodiversity values (including new data from recent underwater inventories) could perhaps be better integrated into the RBMP.

8. Case study 4 - Ivalojoeki River

Ivalojoeki River is situated in subarctic Lapland in Northern Finland. It is delineated for RBMP as a large river on mineral soil. The upper parts of the river system are delineated as a separate water body (type medium-sized peatland river). The river basin is part of the Teno, Nääämöjoki and Paatsjoki International River Basin District (shared with Norway, see Fig. 8). Ivalojoeki River is situated in the southern part of the RBD and flows into Lake Inarijärvi. Length of the river that is included in the water body is 115,5 km and surface area of the river catchment is 388,400 ha.

Ivalojoeki River and its tributaries flow almost entirely in through wilderness areas. The river mouth forms a large delta area near the town of Ivalo. This area has been identified as one of the nationally significant flood risk areas under the Floods Directive. The town has experienced major floods almost every decade - the most destructive recent flood in 2005.

Ivalojoeki River is situated in the homeland of the indigenous Saami. The river also has a rich cultural history as a 'gold panning Eldorado'. The wild river and surrounding wilderness are revered by experienced canoe paddlers and hikers. Subsistence and recreational fishing are relevant for the local economy.

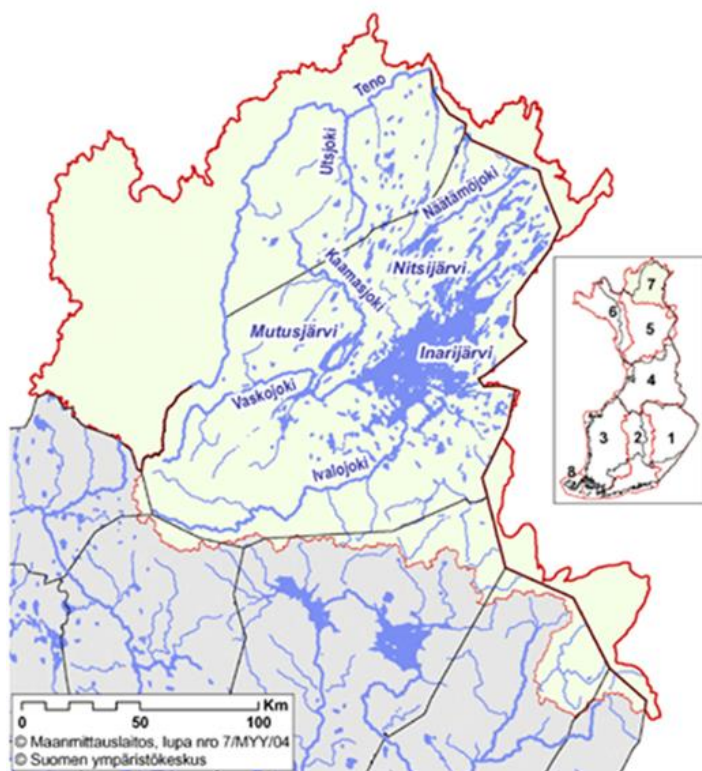


Fig. 8. Teno, Näätämöjoki and Paatsjoki International River Basin District (shared with Norway). Ivalojoeki River is situated in the southern part of the RBD and flows into Lake Inarijärvi.



Ivalojoeki River. Photo: Ari Kukkala

8.1 Is the site geographically delineated, with agreed and demarcated boundaries?

Yes, the water body is delineated for WFD river basin management planning (RBMP), and is registered with GIS boundaries, also for the large catchment area (see Fig. 9). Ivalojoeki River is part of the Paatsjoki water system that incorporates also Lake Inarijärvi and Paatsjoki

River. The catchment of Ivalojoeki is divided into upper and lower parts for management planning. The Floods Directive potential flood risk area designation comprises only a small area around the centre of Ivalo town (population c. 3000).

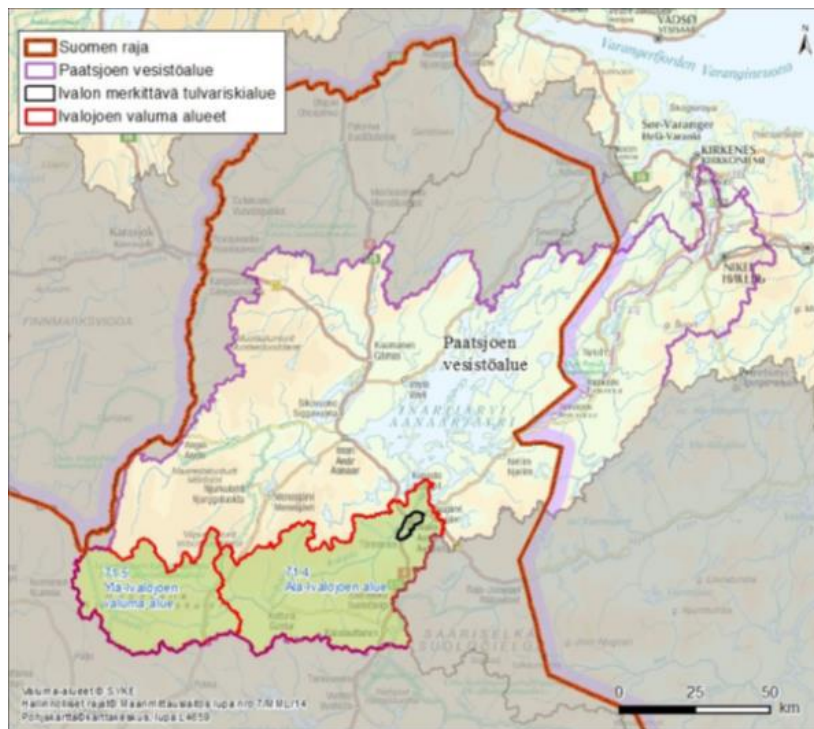


Fig. 9. Paatsjoki water system. Upper and lower Ivalojoeki catchment areas are shown in green. Potential flood risk area of Ivalo town is shown with black boundaries.

8.2 Is the whole site, or the part being assessed as an OECM, outside of a protected area?

Partly. The Ivalojoeki River flows partly through protected wilderness. The vast Hammastunturi wilderness reserve and Natura 2000 site FI1300203 overlaps with the catchment area of the river and the estuary/ river mouth near Lake Inarijärvi is part of Natura 2000 site FI1300211 (SAC, Ivalojoekisuisto). The river water body forms an ecological corridor between the two Natura 2000 sites.

8.3 Is the site under the governance authority of a specified entity or an agreed upon combination of entities?

Yes. Metsähallitus (state enterprise) governs the state-owned lands and waters of the Ivalojoeki River catchment area. Private waters are jointly governed by owners. Competent authority in the flood risk area is municipality of Ivalo. Representatives of all parties work closely together with the Lapland ELY Centre that is the WFD and FD management authority.

8.4 Is the site subject to a management regime which contributes to the in-situ conservation of biodiversity?

Yes. The water body is situated in the Teno, Näätämöjoki and Paatsjoki International River Basin District. The Lapland ELY Centre has responsibility of coordinating and implementing

the WFD River Basin Management Plan for the District. Clear objectives are set for water protection (WDF) in the water body. There is monitoring of water physio-chemical quality, and aquatic biota monitoring of benthic algae, macroinvertebrates and fish.

Flood risk management measures aim to minimize impacts of probable and possible floods. The main focus is on socially important buildings and services (public health centre, energy production and distribution, etc). Measures involve e.g. construction and re-enforcement of embankments. These may also mitigate impacts of nutrient flows from the catchment area.

8.5 Is the governance and management ‘sustained’, i.e. expected to continue for the foreseeable future?

Yes. The second RBMP is being implemented. The third RBMP and programme of measures for years 2022-2027 have been drafted and are presently open for public consultation.

8.6 Is there a strong likelihood that the area contains important biodiversity values?

Yes. Ivalojoki is a large subarctic river that is almost completely in natural state and ecological status of the water body is high - this is an important biodiversity value as such.

The Ivalojoki river delta has been included in the N2000 network to represent an oligotrophic habitat type containing very few minerals characteristic of sandy plains, having special importance as a habit for submerged macrophytes (subtype *Littorelletae uniflorae*). Mentionable water-dependent HD App. II/IV species are Otter (*Lutra lutra*), Bluntleaf sandwort (*Moehringia lateriflora*) and Lapland buttercup (*Coptidium lapponicum*).

Ivalojoki River with its tributaries is a significant spawning environment for migratory fish of the Lake Inarijärvi (Salmonids, such as the Lake trout).

8.7 Is there a strong likelihood that the sustained governance and management of the site is expected to deliver the effective in-situ conservation of biodiversity through legal or other effective means?

Yes. Though WFD measures are not needed for long stretches of the wild Ivalojoki River, measures in the other parts help deliver effective in-situ conservation of biodiversity. Also, conservation measures targeted at the Natura 2000 sites and HD habitats/species benefit the biodiversity of the whole water body.

Management of fisheries in the Ivalojoki River is organised in four zones. There are species-specific geographical and temporal restrictions to fishing of Salmonids.

8.8 Is there a strong likelihood that the sustained governance and management of the site is expected to deliver the long- term in-situ conservation of biodiversity through legal or other effective means?

Yes. There is no reason to believe that the measures planned in the third WFD RBMP, together with Natura 2000 management plans, fisheries region use and management plans

and land use management plans, should not be sufficient to keep ecological status of the Ivalojoki River high and the river ecosystems intact.

8.9 Existing threats

No significant threats to biodiversity are identified for most parts of the Ivalojoki River. Increasing land use in the catchment area and climate change may possibly cause some (local) impacts on water quality in the future.

8.10 Stakeholders' views

Stakeholder views were not consulted at this screening phase.

8.11 Site's proposal

Ivalojoki River has potential to become a candidate OECM (excluding parts that are designated as Natura 2000 sites or other protected areas). However, there was discussion within the assessment group on the 'added value' of the OECM designation when additional conservation measures are not seen critical. Floods Directive measures were not seen very relevant for conservation of biodiversity in the OECM context.

9. Overall analysis of the case studies and discussion

Four selected water bodies were assessed as potential OECM sites as described in Chapter 4. Results of the pilot analysis in Finland are summed up in the following. General conclusions about the usefulness of area-based measures under WFD and FD in the OECM context are noted first. These are followed by discussion on issues grouped around the OECM criteria that were the basis of the site-specific questions and triggered by evaluations presented in the case studies (Chapters 5-8).

Water Framework Directive (WFD)

There is potential for recognition of individual water bodies (lakes, rivers and marine) delineated for the WFD related River Basin Management Plans (RBMPs) as OECMs, when screened by specific criteria. These specific criteria, that were used for the pilot water bodies in the Finnish case study analysis, were:

- Present ecological status is high or good
- Status assessment is based on extensive biological.

All the assessed pilot WFD sites were considered as being possible OECM candidates, if the criteria are taken 'liberally'. Three out of four pilot sites were considered, when the criterion on the present and sustained existence of in situ biodiversity is interpreted scrupulously. The critical role of good data on ecological and biological elements of the site is discussed below.

Floods Directive sites

The Ivalojoki River is a very large water body, as delineated for river basin management planning. Flood risk and potential impacts are of concern only in the Ivalo town area. Measures aiming at preventing and mitigating local impacts of flooding involve embankments etc. that may also help maintain water quality/ecological status locally.

Finland has only 22 potential flood risk areas delineated under the Floods Directive. Almost half are in rivers of the low-lying western part of the country, where floods affect agricultural landscapes or estuaries. Similar measures and impacts as are mentioned for the Ivalo River may be relevant also for biodiversity values of these rivers, especially as climate warming may bring more rains and nutrient flows into the rivers. Many other potential flood risk areas are urban sites on the coast (e.g. cities of Helsinki-Espoo, Loviisa, Hamina-Kotka, Turku, Pori, Kemi) where risk assessment is focused more on social than ecological aspects.

Measures that are planned in connection to the Flood Directive are not considered as having significant relevance in connection to OECM objectives and criteria.

9.1 Legal base of area-based protection, conservation and management measures

Water bodies are delineated for WFD river basin management planning (RBMP) and registered with GIS boundaries. However, they are not demarcated in the sense that statutory protected areas are. This raised questions about the legal status of potential OECM area types and, also, of Natura 2000 sites designated in water ecosystems.

As much of Natura 2000 water area does not have the same statutory status as national nature reserves, conservation measures are not as compulsory and use restrictions are less strict. Water legislation and land use and building legislation as well as fishing legislation has an important role in directing the measures that are needed to implement conservation objectives.

Also, RBMPs have an important role in implementing conservation objectives of Natura 2000 sites. 450 Natura sites have been identified as having habitats and/or species that are depended on surface and/or ground waters. These special protected areas are linked to water bodies in RBMPs. There are national guidelines for planners on how to take these into account.

Although N2000 sites are considered as protected areas, within many water bodies the ecological space and biodiversity values outside of the designations may be very similar. Also, measures needed to maintain/enhance conservation status and the ecological status of the 'rest' of the water body are mostly congruent. Thus, it can make sense that these areas could be considered sites of "other effective measures".

Three out of the four water bodies investigated are partly overlapping with Natura 2000 site(s). Typically, designated aquatic habitat types and species extend outside of N2000 boundaries. Expert agreement was that in water environments, OECM status in water area

surrounding protected sites could have a buffering effect, if conservation/water management measures are supported and implemented. This pertains also to measures in the whole catchment area of the entire water body. Measures include those in forestry and agriculture as well as fishery management.

In connection to the Lake Puruvesi case, it was found that OECM area is easily outlined from the water body/N2000 site with GIS tools. The same approach is possible for a number of large lakes with a similar situation. An analysis of all the surface water bodies in relation to protected areas would give an estimation on the extent of potential OECM area in total.

9.2 Governance and management issues

In Finland, regional ELY Centres are the statutory management authorities responsible for implementation of WFD. Many different authorities and research institutes, as well as representatives of landowners and stakeholders, participate in water resources management.

Water ownership is rather complex in very many water areas. Both within large lake systems and on (especially) the (western) coast, state-owned and privately-owned waters often form a mosaic. As in RBMP processes, in the context of OECM definition and management planning, it is not possible to engage all landowners, but it would be possible to work with bodies of joint owners of water areas and fishing rights, and with fisheries regions.

Fisheries regions are public corporations whose purpose is to develop fishery in their region and to promote the collaboration of their members (including owners of waters and fishing rights) for the organisation of the sustainable management of fish resources. Their duty is to plan for sustainable management, enforce the approved plan and monitor its impact. In the South Savo ELY Centre region, there is presently an on-going pilot project to enhance compatibility of fishery plans and RBMPs. The local fisheries regions could have a significant role also in defining and managing OECMs in inland and coastal waters.

9.3. Effectiveness of management measures and sustainability of conservation outcomes

First starting point criterion in this study was that the present ecological status of the water body, as a potential OECM site, is high or good. The background thinking was that the ecological status is an indication effective conservation outcome from point of view of the aquatic ecosystem. But, is this any kind of guarantee that management is actually able to deliver effective and long-term in-situ conservation of biodiversity? In general terms, the case studies showed that this can be the case, but not necessarily always is for all water bodies. In some situations, there may be conflict between the conservation objectives of biodiversity and aim for good ecological status of the water body, e.g. in eutrophicated bird waters.

The WFD objectives together with those of the Nature Directives are a strong obligation, even if conservation measures are (partly) voluntary and/or often dependent on resource

availability. This is the case especially in Southern Finland. Few(er) measures are needed in the outer archipelagos of the coast or in Northern Finland.

As to the question on whether the governance and management are 'sustained', all the pilot sites areas are under monitoring and will most likely maintain their ecological status in the future. First RBMPs were drafted for years 2010-2015, The third round of RBMPs for the 2022-2027 are now completed and have been opened for public consultation.

9.4 Knowledge base on and monitoring of biodiversity and threats in aquatic environments

Another starting point criterion was that the ecological status assessment of the selected water bodies was to be based on extensive biological data. The background thinking was that there should be enough data to assess biodiversity value and monitoring data to assess against OECM and conservation criteria. Not all water bodies are likely to be OECM, however, and we must have scrutiny in assessing individual sites.

There was much discussion during the pilot assessments about the interpretation of 'strong likelihood that the area contains important biodiversity values' and also about the knowledge level on the threats that may have impacts on these values and the mitigation measures required to meet OECM criteria. These have been central questions in discussions with stakeholders during the OECM Working Group's work in Finland.

The biodiversity values of Lake Puruvesi are especially well known and registered. As a large part of the water body is designated as a N2000 site, also the remaining water area is likely to have the same kind of values. Relatively good biodiversity data is available for part of the large Ivalojoiki River area as well. All of the upper streams that are part of the river system have not been included in the RBMPs. For other sites, the biodiversity values have not been so well documented in the RBMP context. For example, as in the case of Utgrynnan-Molpehällorna, the marine underwater inventories (VELMU Programme) have produced data on habitats and species that may not have been fully used. Kangasjärvi has no special biodiversity values but is considered more or less a representative natural lake ecosystem.

Furthermore, there was discussion also on whether water bodies that are living environments of certain key species of Community interest (some also nationally red-listed) should be considered as potential OECMs, regardless of the criteria taken as a starting point. An example could be the freshwater Pearl mussel (*Margaritifera margaritifera*). This point needs more consideration.

Threats to surface water ecological status are listed in water body site-specific data sets. Mostly impacts on water-dependent biodiversity are the same. Mentionable/possible impacts are caused by forestry, agriculture and holiday homes in the South Savo area and eutrophication, fish farming and wind energy production in the West coast. The Ivalojoiki River area is mostly quite wild and known problems only local.

Lakes, rivers, groundwater reserves and the Baltic Sea have been carefully monitored in Finland for decades. Surface waters have so far been classified using a system that assesses their suitability for use by humans, but these categories are to be adapted to give more emphasis to ecological considerations such as the habitat requirements of aquatic plants and animals.

9.5 Stakeholders' involvement

This assessment was conducted only by managers and other government experts, and local stakeholders were not involved. Representatives of regional ELY Centres had no prior knowledge of the OECM concept and did not express strong views about interpretation of OECM criteria even after becoming familiar with them. However, all representatives thought it would be important to engage parties that are involved in RBMP processes when assessing candidate OECMs (Steps 2 and 3 of *Site-level methodology for identifying 'other effective area-based conservation measures'*).

River basin management planning procedures have been designed to promote transparency, participation and dialogue. Planning processes are led by the ELY Centres, and organised through joint working groups whose members also include invited representatives of the main national and local authorities, organisations, landowners and business interests responsible for the use, protection and state of water bodies. Integrating the definition of OECMs into the RBMP process might be worth considering in the future.

The northernmost part of Finland is part of the Saami Homeland region. There is a statutory obligation for participatory planning of lands and waters. Ivalojoiki River is located within the Region. Even if potential OECM status does not necessarily bring any new management obligations or restrictions to use of waters, the Saami Parliament should be consulted.

9.6 Potential of OECMs as a driver for landscape-level conservation and connectivity

In Finland, there is a three-level land use planning system, with strategic regional land use plans at the top. These plans have had and will potentially have a growing role in enhancing the green and blue infrastructure. At the moment the Land Use and Building Act is being reformed. Previously the focus has been very much terrestrial. Hopefully in the future, large scale planning will better take into consideration possibilities also within the water environment.

An example of how potential OECM designations could perhaps strengthen the status of biodiversity reservations in land use plans, is in the proposed new regional land use plan for North Lapland (strategic plan until 2040). The entire Ivalojoiki river system, including river tributaries and Lake Inarijärvi, is mapped and marked as a valuable water system in the plan. According to the planning regulation, there is an obligation to plan measures that have impacts on the state of the water environment so that the special natural and fisheries values are not degraded.

New strategic maritime spatial plans (until 2030) are also being drafted for Finland's territorial waters and economic zone. Finland's eight coastal regions will develop three maritime spatial plans by the end of March 2021. The independent Åland Province will compile its own plan. Maritime spatial planning contributes to the implementation of Finland's marine strategy, which presents a plan for the protection, conservation and improvement of the marine environment and marine ecosystems to ensure the good status of marine waters.

The Maritime Spatial Plans have put ecologically valuable underwater biodiversity areas (EMMA) on the map, as well as significant ecological corridors for land-sea interactions, including rivers significant for migratory fish and international green corridors. National parks and Natura sites as well as the ecological status classification of coastal waters were also taken into consideration when planning functional areas. By identifying these sites of significant ecological value, some of which could well fulfil the criteria of potential OECMs, the Maritime Spatial Plan may promote the protection of the marine environment which, if realised, would safeguard a significant part of the biodiversity in the Baltic Sea.

Spatial land use planning of terrestrial and marine areas is a key tool for building ecological networks and enhancing connectivity of protected areas. OECMs could have a significant role in land use planning at regional and municipal levels, also in urban settings.

10. National level recommendations

In Finland, next steps in promoting understanding of the OECM concept and putting the new designation into practice, are foreseen as the following.

National principles and guidelines for applying the OECM concept

- EU guidelines on interpretation of OECMs in the European context are anticipated and awaited.
- Discussions are continued on potential area types to be considered as OECMs.
- National OECM Working Group's draft proposal is due by end of March 2021.

Awareness, identification and assessment of potential OECMs

- Raising public awareness of OECMs, especially among relevant stakeholders like government and municipal decision-makers, regional administrators, and biodiversity managers.
- Engaging relevant organisations in OECM identification processes.
- Screening individual sites of potential site types.
- Performing a GIS analysis of all water bodies as was first intended in this case study.
- Considering following issues when assessments of candidate OECMs are made:
 - procedure for approval of actual designations;
 - registration, information management, reporting of OECM sites to national and international databases (EEA/CDDA and WCMC/WDPA).

Including OECMs in building ecological networks towards 2030

- Communicating the meaning of OECM site designation, if it doesn't have a statutory base.
- Creating possible mechanisms of financial support for OECM conservation measures.
- Integration of OECM thinking into development of legislation and of landscape-level and sector-specific planning.
- Including OECMs in national plans aiming towards ambitious area-based conservation goals in line with the EU Biodiversity Strategy 2030.

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Annex 1.

Names of organisations and representatives that took part in the pilot assessment of water bodies, delineated under the WFD, and flood risk site, defined under the FD, as potential OECM sites in Finland:

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