

(Projects submitting final reports after 1 January 2014 must use this format.)



LIFE Project Number  
**LIFE10 NAT/SE/045**

**FINAL Report**  
Covering the project activities from **01/09/2011 to 2016/12/31**

Reporting Date  
**2017-05-31**

LIFE+ PROJECT NAME or Acronym  
**Remediation of migratory barriers in Nordic/fennoscandian  
watercourses - Remibar**

Project Data

<b>Project location</b>	County of Västerbotten and County of Norrbotten, SWEDEN
<b>Project start date:</b>	01/09/2011
<b>Project end date:</b>	31/08/2016 <b>Extension date:</b> 31/12/2016
<b>Total Project duration (in months)</b>	60 months (including <b>Extension of 4 months</b> )
<b>Total budget</b>	€8.169.141
<b>Total eligible budget</b>	€8.169.141
<b>EU contribution:</b>	€4.084.570
<b>(%) of total costs</b>	50%
<b>(%) of eligible costs</b>	50%

Beneficiary Data

<b>Name Beneficiary</b>	Swedish Transport Administration
<b>Contact person</b>	Mrs Ida Schönfeldt
<b>Postal address</b>	Box 809, SE 971 25 LULEÅ, SWEDEN
<b>Visit address</b>	Sundsbacken 2-4, Luleå
<b>Telephone</b>	+46 (0)10-1237436
<b>Fax:</b>	
<b>E-mail</b>	Ida.schonfeldt@trafikverket.se
<b>Project Website</b>	www.trafikverket.se/remibar

# 1. List of contents

1.	List of contents .....	2
2.	Executive Summary .....	3
3.	Introduction .....	6
4.	Administrative part.....	7
4.1	Description of the management system .....	7
4.2	Evaluation of the management system.....	8
5.	Technical part.....	8
5.1	Technical progress, per task .....	8
5.1.1.	Action A.1: Work plan - completed .....	8
5.1.2.	Action A.2.1, A.2.2 and A.2.3: Work plan and call for tenders – completed .....	8
5.1.3.	Action A.3: Land owner meetings - completed .....	9
5.1.4.	Action C.1: measures in project site Råneälven – completed .....	12
5.1.5.	Action C.2: Measure in project site Varjisån – completed .....	15
5.1.6.	Action C.3: Measures in project site Ängesån – in completed .....	18
5.1.7.	Action C.4: Measures in project site Lögdeälven – completed.....	21
5.1.8.	Action C.5: measures in project site Sävarån – completed .....	25
5.1.9.	Action E.2: Networking – completed.....	30
5.1.10.	Action E.3.1: Monitoring and evaluation – otter mitigation –completed .....	30
5.1.11.	Action E.3.2: Monitoring and evaluation – completed .....	31
5.1.12.	Action E.4: Audit report - completed.....	32
5.1.13.	Problems encountered/changes .....	32
5.1.14.	Complementary actions outside LIFE.....	33
5.1.15.	Action E.5: After LIFE conservation plan – completed.....	35
5.2	Dissemination actions .....	36
5.2.1	Objectives.....	36
5.2.2	Dissemination: overview per activity.....	36
5.3	Evaluation of Project Implementation.....	51
5.4	Analysis of long-term benefits .....	53
6.	Comments on the financial report .....	57
6.1.	Summary of Costs Incurred.....	57
6.1.1	Total costs .....	57
6.1.2	Personnel costs .....	57
6.1.3	Travel costs .....	58
6.1.4	External .....	58
6.1.5	Durables .....	59
6.1.6	Consumables .....	59
6.1.7	Other costs.....	61
6.2.	Accounting system .....	62
6.3.	Partnership arrangements .....	62
6.4.	Auditor's report/declaration.....	62
6.5	Summary of costs per action .....	63
7.	Annexes.....	65

## 2. Executive Summary

The overall aim of the project is to minimise migratory barriers in five larger water systems in the northern part of Sweden where road crossings and dams have been some of the causes of decreasing populations of the targeted species. Through these actions where barriers can be removed there is a potential for lastingly improving and securing the biodiversity in the selected water systems for the targeted species and several associated species. The (favourable) conservation status of the Natura 2000 habitats and species will be improved or maintained through increased connectivity.

The habitats and species involved within the project are:

- Fennoscandian natural rivers (3210)
- Water courses of plain to montane levels with the *Ranuncion fluitantis* and *Callitricho-Batrachion* vegetation (3260)
- Freshwater pearl mussel (*Margaritifera margaritifera*) (1029)
- Atlantic salmon (*Salmo salar*) (1106)
- Otter (*Lutra lutra*) (1355)
- Bullhead (*Cottus gobio*) (1163)

The projects sites are within these Natura 2000 sites:

- Råneälven SE0820431 (project site Råneälven)
- Piteälven SE0820434 (project site Varjisån)
- Torne och Kalix älvsystem SE0820430 (project site Ängesån)
- Lögdeälven SE0810433 (project site Lögdeälven)
- Sävarån SE0810436 (project site Sävarån)

### Action A

Milestone	Deadline	Status 31/03/2015
Work plans ready	31/12/2012	Completed
Landowner meetings	30/06/2013	Completed

#### Work plan, call for tenders and landowner meetings

All work plans are completed. Required notifications (for actions C1, C2, C3, C4, C5) to the CAB of Norrbotten and CAB of Västerbotten are completed and approved by the authorities for all measures.

The calls for tenders are ready for all of the measures

52 persons in total attended the landowner meetings. The objective of 50 persons attending at the meetings is reached. All meetings took place in June 2013.

## Action C

The concrete actions started in the spring of 2012.

304 objects (~100%) are restored in total. That means that we have reached our objectives.

**C1 - Råneälven:** 53 barriers are removed.

**C2 – Varjisån:** 50 barriers are removed.

**C3 – Ängesån:** 30 barriers are removed.

**C4 – Lögdeälven:** 74 barriers are removed.

**C5 – Sävarån:** 97 barriers are removed.

Milestone	Deadline	Status 31/03/2015
C-action: approximately 10% of the migration barriers are restored	31/12/2012	Completed, a total of 21 % are done (until 31/12/12)
C-action: approximately 40% of the migration barriers are restored	31/12/2013	Completed, a total of 43 % are done (until 31/10/13)
C-action: approximately 70% of the migration barriers are restored	31/12/2014	Completed, a total of 72 % are done (until 31/12/2014)
C-action: 100% of the migration barriers are restored	31/12/2016	Completed, a total of 100 % are done (until 31/12/2016)

## D. Public awareness and dissemination of results

We have, until December 2016, achieved all planned milestones; exchange of experience and demonstration sites.

We have also had 18 excursions in the project areas and 5 seminars for targeted groups. We have reached over 3000 persons. We have had a lot of contact with the media. Our noticed boards are completed and are placed at 100 objects. The film is done and can be found on YouTube and our website. The manual is completed and is handed out at excursions and seminars. We have visited the Division of Ecological Restoration and the Department of Transportation in Massachusetts, US and also Metsä-Hallitus (similar to the Swedish Forest Agency) in Pudasjärvi, Finland. We have had visitors from Finland, Scotland, Norway and the United States.

### **Deliverables**

<b>Deliverables</b>	<b>Deadline</b>	<b>Status 31/03/2015</b>
D.1 Leaflet general communication	31/02/2012	Completed
D.2 Folder, demonstration site	31/12/2012	Completed
D.3 Booklet/manual for seminars	31/05/2013	Completed
D.6 Documentation from final seminar	31/12/2016	Completed
D.1 Layman's report	31/12/2016	Completed

### **E. Overall project operation and monitoring**

The project is achieving the objectives and the time plan is kept as a whole.

We have done a lot of networking and the Remibar project has several times been used as a good example on how to co-operate when working with environment project.

The monitoring has been executed according to plan with re-visits to the culverts and dams and tracking and camera surveillance at the otter mitigations.

### **Deliverables**

<b>Deliverables</b>	<b>Deadline</b>	<b>Status 31/03/2015</b>
E.5 After LIFE conservation plan	31/12/2016	Completed

The stated objectives have been reached.

### 3. Introduction

The most important objectives in the Remibar project are:

1. Remediation of migratory barriers to facilitate the migration of aquatic species.
2. The two Natura 2000 habitats 3210 and 3260 will be restored with methods that strive to achieve a natural condition at the water-road crossing. The amount of new, accessible area due to the measures will increase.
3. Restoration to facilitate safe road crossings for otters and by this reduce the number of otters being killed by cars.
4. To construct two easily accessible demonstration sites in strategic locations, representative of the different characters of possible river-road crossings found in different parts of the county and the actions taken there for fish migration and mitigations work for otters. Through these demonstration areas the project will also be disseminated to the public. To reach out to a broader public, a short film has been produced.
5. Dissemination and knowledge transfer by excursions and seminars to make the public, land owners, contractors, municipalities, consultants, technicians, and staff from public organisations responsible for water restoration and management aware of the problems but also of the solutions. In total 18 excursions and 5 seminars.

#### **The expected long term results of the project Remibar are:**

Anthropogenic migratory barriers in five water systems are removed and facilitate fish migration. Otters have the opportunity to pass the roads in a safe way.

304 migratory barriers in the project area have been changed to functioning passages for the targeted species. The freshwater pearl mussel (*Margaritifera margaritifera*) will be able to establish new populations in the river systems due to possible fish migration. The long-term effects on freshwater pearl mussel will be that the population as a whole in the project area will increase when new mussels are established and thereby strengthen the conservation status. This is a long term result and we will not be able to see any of these results within the project time. The otter mortality will decrease due to safer road crossings. This will lead to a more stable population with a higher abundance of the species in the project area. The Atlantic salmon (*Salmo salar*) and bullhead (*Cottus gobio*) will have access to additional areas for spawning, feeding, breeding and shelter. This will favour the species and their conservation status on a long term.

An additional area of approximately 67 km<sup>2</sup> of water habitat is accessible for the targeted species in total for all project areas. This will favour the species and their conservation status as well as strengthen the status concerning the habitats. More natural conditions will be achieved concerning the structures and functions of the habitats.

## 4. Administrative part

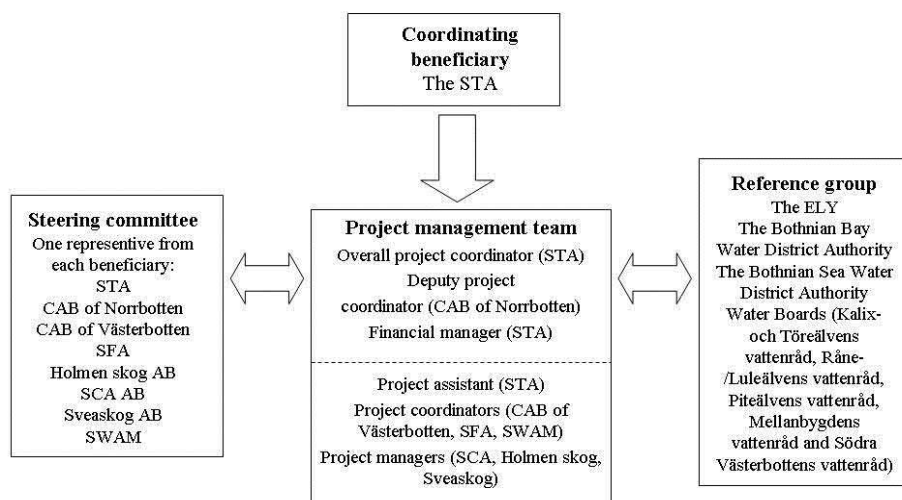
### 4.1 Description of the management system

The work was done according to the time plan except for the delay of the project ending with four month.

The project coordinator at the STA, Ida Schönfeldt has worked up to 100% within the project. Niklas Kemi at STA has worked up to 50% in the project mostly as fieldworker. The deputy project coordinator at the CAB BD, Sofia Perä, has worked up to 50% within the project. The financial manager at the STA is Anita Pettersson and she has worked up to 25% within the project. At CAB AC Tommy Vennman has worked up to 50% within Remibar, as project coordinator (earlier it was Roger Vallin and Mats Norberg). The SFAs project coordinator is Elin Lindström-Jonsson, she has worked up to 25% (earlier it was Peter Ericsson). Project managers at Sveaskog AB are Martin Osbäck and Stefan Ahlenius, at Holmen Anders Brännlund and at SCA Gunnar Lindgren and Ove Jonsson. More people are also involved in the project but these persons are the responsible ones at each partner.

From the 1<sup>th</sup> of June 2015 to the end of the project the project coordinator Ida Schönfeldt has worked up to 50% within the project. And Niklas Kemi and Torbjörn Nilsson, both environmental specialists at the STA, have worked up to the remaining 50%.

During the whole period the work group has had several telephone meetings and six physical meetings. The steering committee consists of one representative from each partner and we have had approximately one or two meetings per year with the steering committee. The reference group has been a valuable discussion partner and has been contacted when needed. We have had one physical meeting with the reference group. Once a year we have had visits from the project monitor Inga Racinska. The visits have given us a lot of good inputs to the project. There are no changes in the organigramme of the project.



Three reports are delivered to the commission from the project start; the inception report, the progress report and the midterm report.

The project has achieved the objectives and the time plan is kept as a whole but needed to be adjusted with an additional four month. The prolongation of the project was issued as an amendment to the European Commission the 11<sup>th</sup> of February 2016 and was granted. Complementary partnerships agreement was signed by all partners due to the prolongation. The original Partnership agreements were submitted to the Commission in the inception report and there were some complements to them in the progress report. The last complement to the agreement will be attached to this report, see annex 7.1.

## 4.2 Evaluation of the management system

The project has achieved the objectives through a good management process and good project coordination by the project management team. The partnership leads to increased knowledge of each other's organisations and we have learnt a lot from each other. We have had some problem with partners that did not fulfil their part of the agreement but the problems have been discussed with the head of the unit and after that everything is running smoothly. We have no deviations from the original partnership agreements.

Communication with the Commission has been done by e-mail and through reports. Our questions have been handled effectively. Once a year we have had visits from the project monitor Inga Racinska. She has given us a lot of good inputs to the project. We have also a lot of e-mail correspondence with Inga Racinska. She answers our questions quickly and gives us a lot of guidance.

## 5. Technical part

### 5.1 Technical progress, per task

#### Action A

<b>Milestone</b>	<b>Deadline</b>	<b>Status 31/03/2015</b>
Work plans ready	31/12/2012	Completed
Landowner meetings	30/06/2013	Completed

#### 5.1.1. Action A.1: Work plan - completed

The SFA work plan for excursions, seminars etc. are completed (in progress report sent to the EC in December 2013)

#### 5.1.2. Action A.2.1, A.2.2 and A.2.3: Work plan and call for tenders – completed

The STA, the CAB of Norrbotten and the CAB of Västerbotten's work plans are completed (attached to progress report, December 2013).

304 required notifications (for actions C1, C2, C3, C4, C5) to the CAB of Norrbotten, CAB of Västerbotten and the environmental court are completed and approved by the authorities for all measures.



#### Call for tenders – completed

The public authorities have done 14 calls for tenders following LOU for contracts concerning the actual construction of measures. Of these three are projecting and planning and the rest is contracts with building contractors. The forest companies have done five competitive tendering (looking for best price) concerning contractors. For eleven otter mitigations and for eight culverts, the STA has also used existing framework contracts (five different contracts) for seven contractors.

A lot of meetings with land owners, especially for the dam removals of CAB AC, have taken more time than we assumed. Some of the landowners do not want any measures and then several meetings and field visits have to be done to convince the landowners. Approximately 120 landowners have been contacted for consultation and consent.

#### 5.1.3. Action A.3: Land owner meetings - completed

52 persons in total attended the meetings in all five catchment areas. The objective of 50 persons attending at the meetings is reached. All meetings took place in June 2013. List of participants were attached in the midterm report 30/08/2015 in appendix 7.20.

## Action C

The concrete actions started in the spring of 2012. The work could not start until the 15<sup>th</sup> of June when the activity of migratory fish is lower. To avoid disturbance of possible autumn spawning fish in the area, we do not work from the 15<sup>th</sup> of September until 15<sup>th</sup> of October. Before any excavator put the bucket in the ground we have had specialists look at the streams to make sure that no ecological values could be negatively affected. We educated some employees (one day education in May 2012) from the forest companies so they knew what to look for. The CAB of Norrbotten and the CAB of Västerbotten used their own specialist for the investigation. The STA had a consultant do the work.

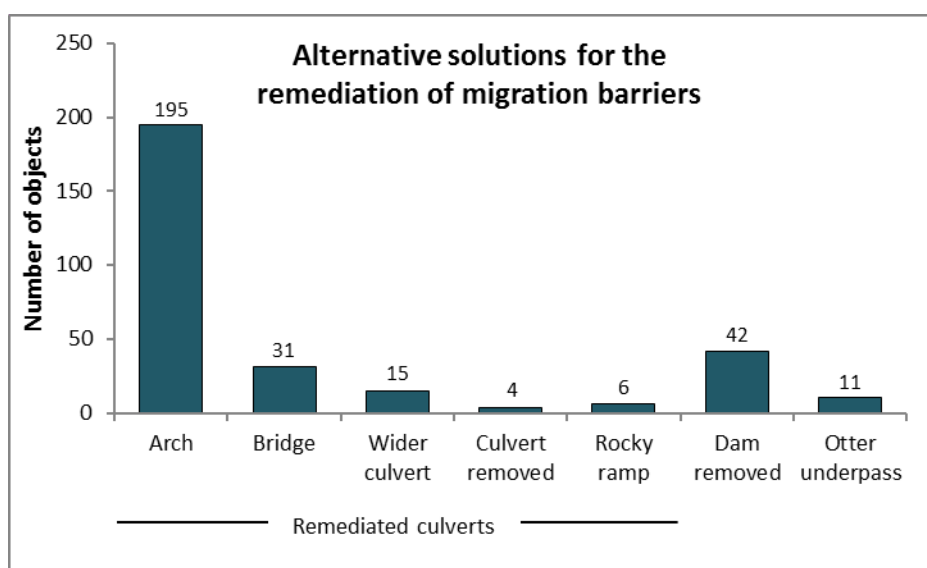
304 objects (100%) are restored in total. The total list of objects after changes can be found in Annex 7.2 and description of new objects in Annex 7.17. That means that we have reached our objectives.

An additional report has been made which describes how to construct a sedimentation dam which lowers the amount of sediments in the streams during the time the culverts are replaced or dams are removed. The report and construction of the sedimentation dam is one of SCAs contribution to the project. (midterm report 30/08/2015).

All measures in Remibar is in a national database called "[åtgärder i vatten](#)". There you can see each measure; for example what has been done, who is responsible for the measure, the cost and financing, maps and pictures.

<b>Milestone</b>	<b>Deadline</b>	<b>Status 31/03/2015</b>
C-action: approximately 10% of the migration barriers are restored	31/12/2012	Completed, a total of 21 % are done (until 31/12/12)
C-action: approximately 40% of the migration barriers are restored	31/12/2013	Completed, a total of 43 % are done (until 31/10/13)
C-action: approximately 70% of the migration barriers are restored	31/12/2014	Completed, a total of 72 % are done (until 31/12/2014)
C-action: 100% of the migration barriers are restored	31/12/2016	Completed, a total of 100 % are done (until 31/12/2016)

The majority of the structures that constituted migration barriers for fish and other aquatic organisms consisted of culverts (251 objects) that were often too narrow and too steep, while 42 objects consisted of dams. Eleven migration barriers consisted of bridges that were lacking possibilities for otters to pass underneath the road safely. Most of culverts (77.7 % of the culverts) were replaced by arches, while 12.4 % were replaced by bridges, and 6.0 were replaced by wider culverts. A smaller proportion of the culverts were not replaced but remediated by constructing a rocky ramp downstream the culvert (2.4 %) or removed and not replaced with a new construction as the roads were no longer in use (1.6 %) (fig. 6). The 42 dams were removed, and the original or existing water level was maintained through the construction of a rocky ramp. The eleven objects that constituted migration barriers for otters and other medium-sized mammals were remediated so that those animal groups should be able to pass the road-river crossing without crossing the road.



**Figure 6.** Number of objects replaced with different solutions.

#### 5.1.4. Action C.1: measures in project site Råneälven – completed

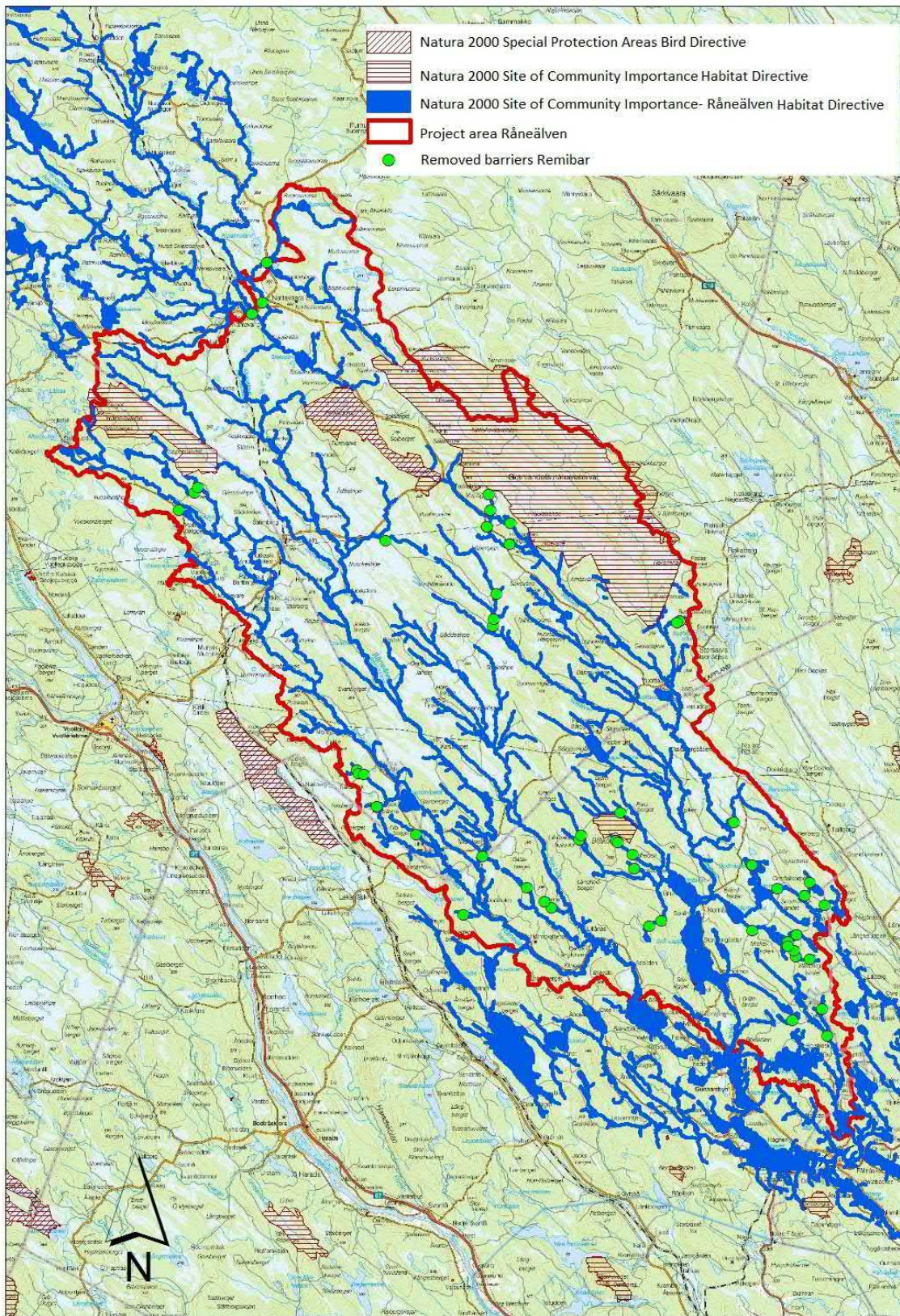
53 barriers are removed in total. All measures are listed in table 1. Map 1 shows the location of the restored objects and picture 1 shows an example on how it looks before and after the migration barrier is removed.

40 objects were replaced by arches with natural riverbeds (see example in picture 2). At object n° 15 the stream that followed the road had several small falls. The stream was altered and the falls were removed. N° 313 were replaced by culverts that were lowered and increased in dimension (see example in picture 4) and n° 45, 47, 48, 50, 51, 52 and 310 were replaced by bridges (see example in picture 1). No 22, 23 and 24 are otter mitigations (see example in picture 3). N° 330 is a dam that has been removed (see example in picture 5).

**Table 1.** Click on the object number to go to the database "åtgärder i vatten" and get more information about the objects.

N°	Responsible partner	Type of measure	Year of measure
<a href="#">0</a>	SCA	Arch	2012
<a href="#">1</a>	SCA	Arch	2013
<a href="#">2</a>	SCA	Arch	2012
<a href="#">3</a>	SCA	Arch	2013
<a href="#">4</a>	SCA	Arch	2012
<a href="#">5</a>	SCA	Arch	2012
<a href="#">6</a>	SCA	Arch	2013
<a href="#">7</a>	SCA	Arch	2012
<a href="#">8</a>	SCA	Arch	2013
<a href="#">9</a>	SCA	Arch	2012
<a href="#">10</a>	SCA	Arch	2013
<a href="#">11</a>	Sveaskog AB	Arch	2013
<a href="#">12</a>	SCA	Arch	2012
<a href="#">13</a>	SCA	Arch	2012
<a href="#">15</a>	STA	Altered stream	2014
<a href="#">17</a>	STA	Arch	2015
<a href="#">18</a>	STA	Arch	2015
<a href="#">20</a>	STA	Arch	2015
<a href="#">21</a>	STA	Arch	2015
<a href="#">22</a>	STA	Otter mitigation	2013
<a href="#">23</a>	STA	Otter mitigation	2013
<a href="#">24</a>	STA	Otter mitigation	2013
<a href="#">26</a>	Sveaskog AB	Arch	2013
<a href="#">27</a>	Sveaskog AB	Arch	2013
<a href="#">28</a>	Sveaskog AB	Arch	2015
<a href="#">29</a>	Sveaskog AB	Arch	2013
<a href="#">30</a>	Sveaskog AB	Arch	2013

N°	Responsible partner	Type of measure	Year of measure
<a href="#">31</a>	Sveaskog AB	Arch	2013
<a href="#">32</a>	Sveaskog AB	Arch	2013
<a href="#">33</a>	Sveaskog AB	Arch	2013
<a href="#">34</a>	Sveaskog AB	Arch	2013
<a href="#">35</a>	Sveaskog AB	Arch	2013
<a href="#">36</a>	Sveaskog AB	Arch	2013
<a href="#">37</a>	Sveaskog AB	Arch	2013
<a href="#">38</a>	Sveaskog AB	Arch	2013
<a href="#">39</a>	Sveaskog AB	Arch	2013
<a href="#">40</a>	Sveaskog AB	Arch	2013
<a href="#">41</a>	Sveaskog AB	Arch	2013
<a href="#">42</a>	Sveaskog AB	Arch	2013
<a href="#">43</a>	Sveaskog AB	Arch	2013
<a href="#">44</a>	Sveaskog AB	Arch	2013
<a href="#">45</a>	Sveaskog AB	Bridge	2014
<a href="#">46</a>	Sveaskog AB	Arch	2013
<a href="#">47</a>	Sveaskog AB	Bridge	2013
<a href="#">48</a>	Sveaskog AB	Bridge	2013
<a href="#">49</a>	Sveaskog AB	Arch	2013
<a href="#">50</a>	Sveaskog AB	Bridge	2013
<a href="#">51</a>	Sveaskog AB	Bridge	2013
<a href="#">52</a>	Sveaskog AB	Bridge	2013
<a href="#">310</a>	Sveaskog AB	Bridge	2014
<a href="#">313</a>	Sveaskog AB	Culvert	2012
<a href="#">315</a>	SCA	Arch	2013
<a href="#">330</a>	CAB BD	Removal of dam	2015



Map 1. Object in project area Råneälven. Green dots= migratory barrier removed.



**Picture 1a.** Object 191 before, culverts with falls in the outlet.



**Picture 1b.** Object 191 after, bridge with a natural riverbed.

### 5.1.5. Action C.2: Measure in project site Varjisån – completed

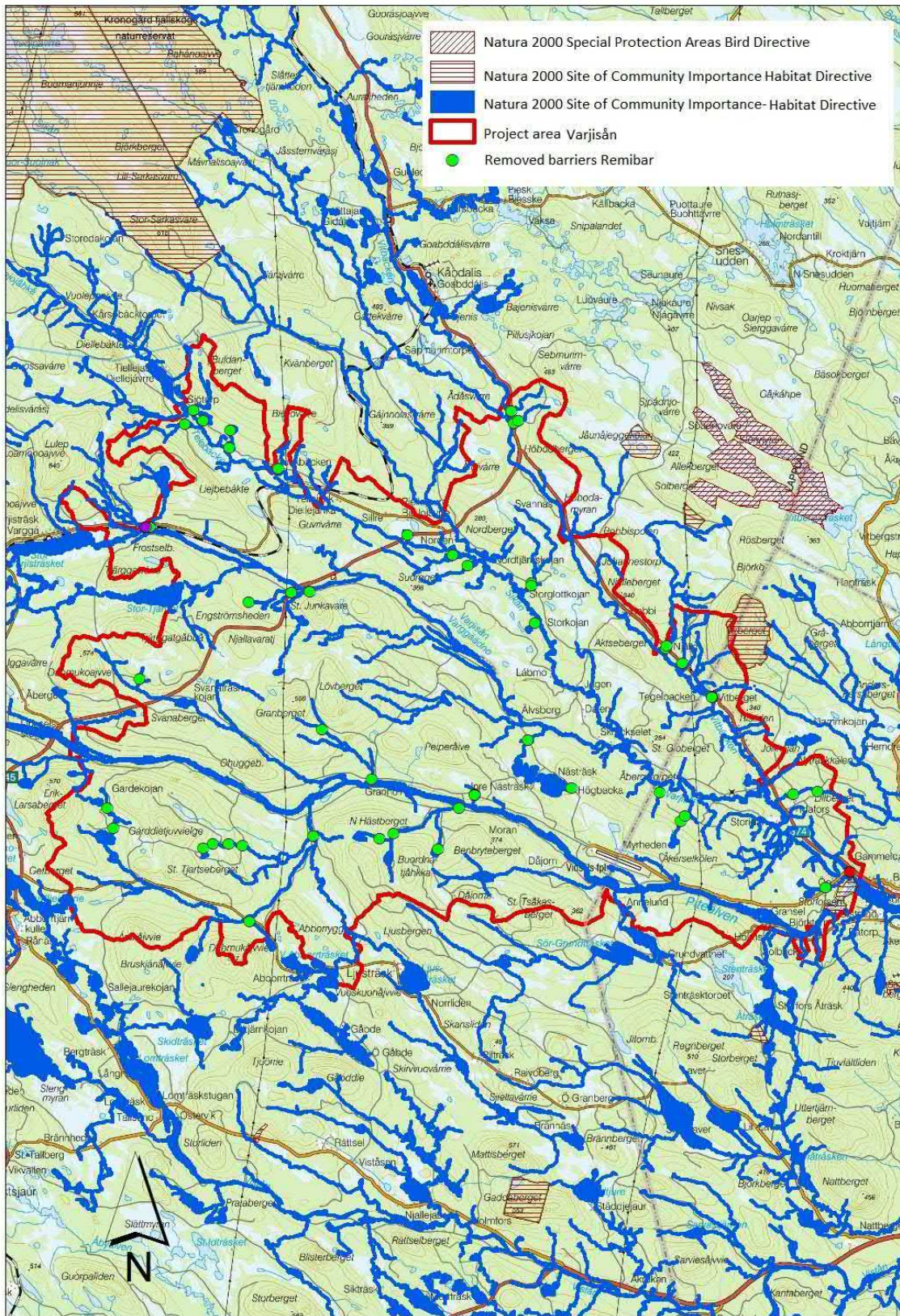
50 barriers are removed in total. All measures are listed in table 2. Map 2 shows the location of the restored objects and picture 2 shows an example on how it looks before and after the migration barrier is removed and replaced by a bridge.

35 objects were replaced by arches with natural riverbeds (see example in picture 2) and 6 with bridges (see example in picture 1). 5 objects were replaced by culverts that were lowered and increased in dimension (see example in picture 4). N° 58 and 72 were removed since the roads are no longer in use. At n° 62 a rocky ramp was built. N° 329 is a dam that has been removed (see example in picture 5).

N° 60 (otter mitigation) is not done. The entire bridge will be reconstructed by the STA in the near future and an otter mitigation will be built at the same time.

**Table 2.** Click on the object number to go to the database "åtgärder i vatten" and get more information about the objects.

N°	Responsible partner	Type of measure	Year of measure
<a href="#">53</a>	STA	Arch	2015
<a href="#">54</a>	STA	Culvert	2014
<a href="#">55</a>	STA	Arch	2015
<a href="#">56</a>	STA	Arch	2015
<a href="#">58</a>	Sveaskog AB	Removed	2015
<a href="#">59</a>	STA	Culvert	2013
<a href="#">61</a>	STA	Culvert	2015
<a href="#">62</a>	STA	Rocky ramp	2014
<a href="#">63</a>	Sveaskog AB	Arch	2012
<a href="#">64</a>	Sveaskog AB	Arch	2012
<a href="#">65</a>	Sveaskog AB	Arch	2012
<a href="#">66</a>	Sveaskog AB	Arch	2012
<a href="#">67</a>	Sveaskog AB	Arch	2012
<a href="#">68</a>	Sveaskog AB	Arch	2012
<a href="#">69</a>	Sveaskog AB	Arch	2012
<a href="#">70</a>	Sveaskog AB	Arch	2012
<a href="#">71</a>	Sveaskog AB	Bridge	2012
<a href="#">72</a>	Sveaskog AB	Removed	2013
<a href="#">73</a>	Sveaskog AB	Arch	2012
<a href="#">74</a>	Sveaskog AB	Arch	2012
<a href="#">75</a>	Sveaskog AB	Arch	2012
<a href="#">76</a>	Sveaskog AB	Arch	2012
<a href="#">77</a>	Sveaskog AB	Arch	2012
<a href="#">78</a>	Sveaskog AB	Bridge	2012
<a href="#">79</a>	Sveaskog AB	Arch	2012
<a href="#">80</a>	Sveaskog AB	Arch	2012
<a href="#">81</a>	Sveaskog AB	Arch	2012
<a href="#">82</a>	Sveaskog AB	Arch	2012
<a href="#">84</a>	Sveaskog AB	Arch	2012
<a href="#">85</a>	Sveaskog AB	Arch	2012
<a href="#">86</a>	Sveaskog AB	Arch	2012
<a href="#">87</a>	Sveaskog AB	Arch	2014
<a href="#">88</a>	Sveaskog AB	Arch	2012
<a href="#">89</a>	Sveaskog AB	Arch	2012
<a href="#">90</a>	Sveaskog AB	Arch	2012
<a href="#">91</a>	Sveaskog AB	Arch	2012
<a href="#">92</a>	Sveaskog AB	Arch	2012
<a href="#">93</a>	Sveaskog AB	Bridge	2012
<a href="#">94</a>	Sveaskog AB	Arch	2012
<a href="#">95</a>	Sveaskog AB	Bridge	2014
<a href="#">96</a>	Sveaskog AB	Bridge	2012
<a href="#">97</a>	Sveaskog AB	Arch	2013
<a href="#">98</a>	Sveaskog AB	Bridge	2012
<a href="#">99</a>	Sveaskog AB	Arch	2013
<a href="#">304</a>	STA	Culvert	2015
<a href="#">307</a>	STA	Arch	2013
<a href="#">309</a>	STA	Arch	2015
<a href="#">312</a>	Sveaskog AB	Arch	2015
<a href="#">329</a>	CAB BD	Removal of dam	2015
<a href="#">331</a>	STA	Culvert	2015



**Map 2.** Object in project area Varjisån. Green dots= migratory barrier removed. Purple dots=new objects removed, see annex 7.17 for more details. Red dot= migratory barrier not removed.





**Picture 2a.** Object 44 before, culvert with a fall at the outlet.



**Picture 2b.** Object 44 after, arch with natural riverbed.

### 5.1.6. Action C.3: Measures in project site Ängesån – in completed

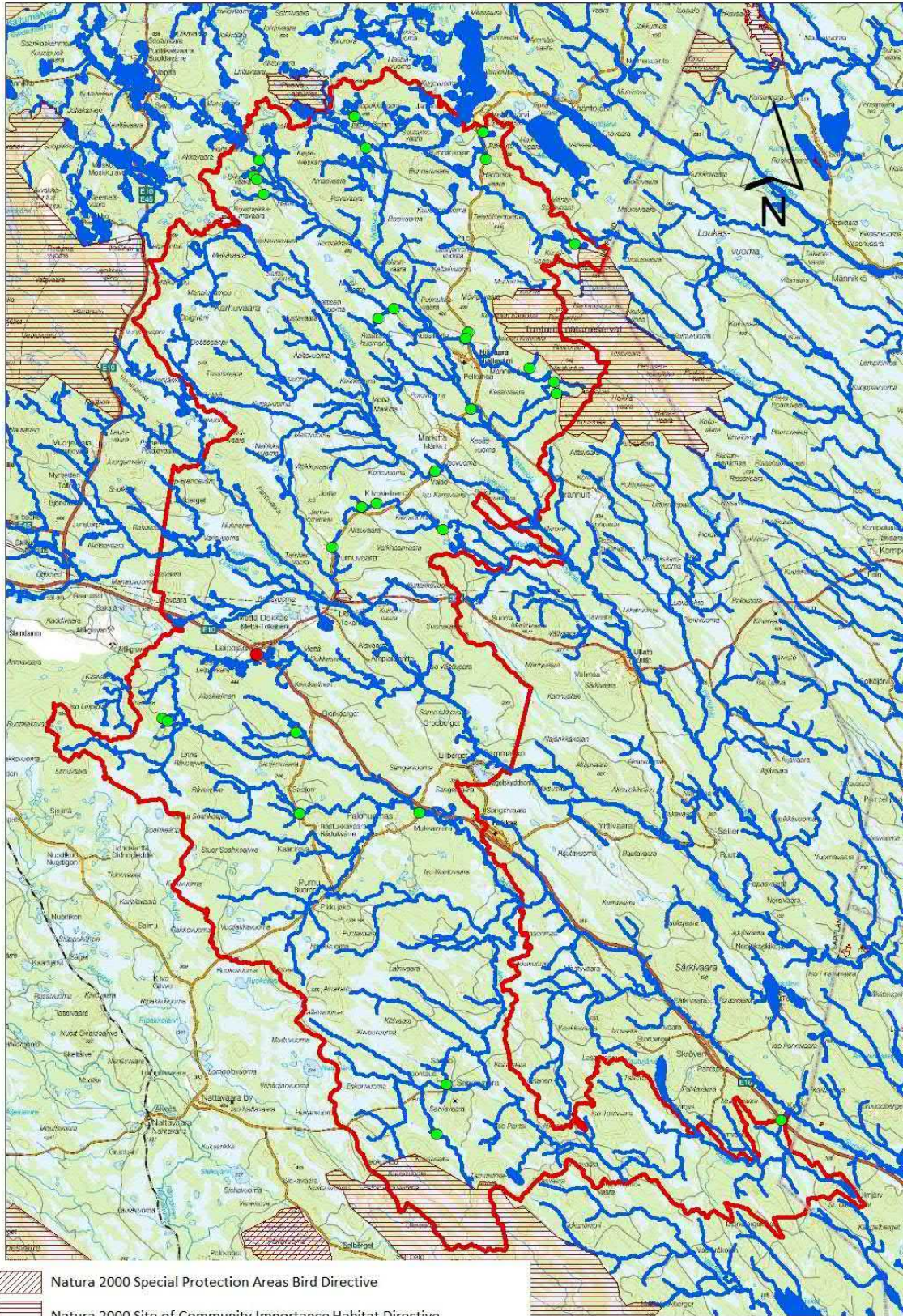
30 barriers are removed in total. All measures are listed in table 3. Map 3 shows the location of the restored objects and picture 3 shows an example on how an otter mitigation can be constructed.

Almost all objects were replaced by arches with natural riverbeds (see example in picture 2) but n° 123, 124, 125, 126, 306 and 311 were replaced by bridges (see example in picture 1). N° 107, 108, 109 and 110 are otter mitigations (see example in picture 3). N° 103, 104, 105 and 305 were replaced by culverts that were lowered and increased in dimension (see example in picture 4). N° 316 is a dam that has been removed (see example in picture 5). N° 106 (otter mitigation) is not done. The entire bridge will be reconstructed by the STA in the near future and an otter mitigation will be built at the same time.

**Table 3.** Click on the object number to go to the database "åtgärder i vatten" and get more information about the objects.

N°	Responsible partner	Type of measure	Year of measure
<a href="#">101</a>	CAB BD	Arch	2014
<a href="#">103</a>	STA	Culvert	2015
<a href="#">104</a>	STA	Culvert	2015
<a href="#">105</a>	STA	Culvert	2015
<a href="#">107</a>	STA	Otter mitigation	2013
<a href="#">108</a>	STA	Otter mitigation	2013
<a href="#">109</a>	STA	Otter mitigation	2013
<a href="#">110</a>	STA	Otter mitigation	2013
<a href="#">111</a>	Sveaskog AB	Arch	2014
<a href="#">112</a>	Sveaskog AB	Arch	2014
<a href="#">113</a>	Sveaskog AB	Arch	2014
<a href="#">114</a>	Sveaskog AB	Arch	2014
<a href="#">115</a>	Sveaskog AB	Arch	2014
<a href="#">116</a>	Sveaskog AB	Arch	2014
<a href="#">117</a>	Sveaskog AB	Arch	2014

N°	Responsible partner	Type of measure	Year of measure
<a href="#">118</a>	Sveaskog AB	Arch	2014
<a href="#">119</a>	Sveaskog AB	Arch	2014
<a href="#">120</a>	Sveaskog AB	Arch	2015
<a href="#">121</a>	Sveaskog AB	Arch	2014
<a href="#">122</a>	Sveaskog AB	Arch	2014
<a href="#">123</a>	Sveaskog AB	Bridge	2015
<a href="#">124</a>	Sveaskog AB	Bridge	2015
<a href="#">125</a>	Sveaskog AB	Bridge	2014
<a href="#">126</a>	Sveaskog AB	Bridge	2015
<a href="#">127</a>	Sveaskog AB	Arch	2014
<a href="#">128</a>	Sveaskog AB	Arch	2014
<a href="#">305</a>	STA	Culvert	2015
<a href="#">306</a>	CAB BD	Bridge	2014
<a href="#">311</a>	STA	Bridge	2015
<a href="#">316</a>	CAB BD	Removal of dam	2014



**Map 3.** Object in project area Ängesån. Green dots= migratory barrier removed. Red dot= migratory barrier not removed.



**Picture 3a.** Otter mitigation, object 24.



**Picture 3b.** Otter mitigation, a dry culvert for otters to go through, object 197.

### 5.1.7. Action C.4: Measures in project site Lögdeälven – completed

74 barriers are removed. All measures are listed in table 4a and 4b. Map 4 shows the location of the restored objects and picture 4 shows an example on how it looks before and after the migration barrier is removed and replaced by a culvert.

The main part of all migration barriers was replaced by an arch with a natural riverbed (see example in picture 2) but n° 181, 183, 184, 194 and 317 were replaced by culverts that were lowered and increased in dimension (see example in picture 4). Objects n° 138, 154, 158, 191 and 321 were replaced by bridges (see example in picture 1). N° 25, 196 and 197 are otter mitigations (see example in picture 3). In project area Lögdeälven 13 dams that were removed (see example in picture 5). N° 142 was removed since the road is no longer in use. At n° 188 a rocky ramp was built.

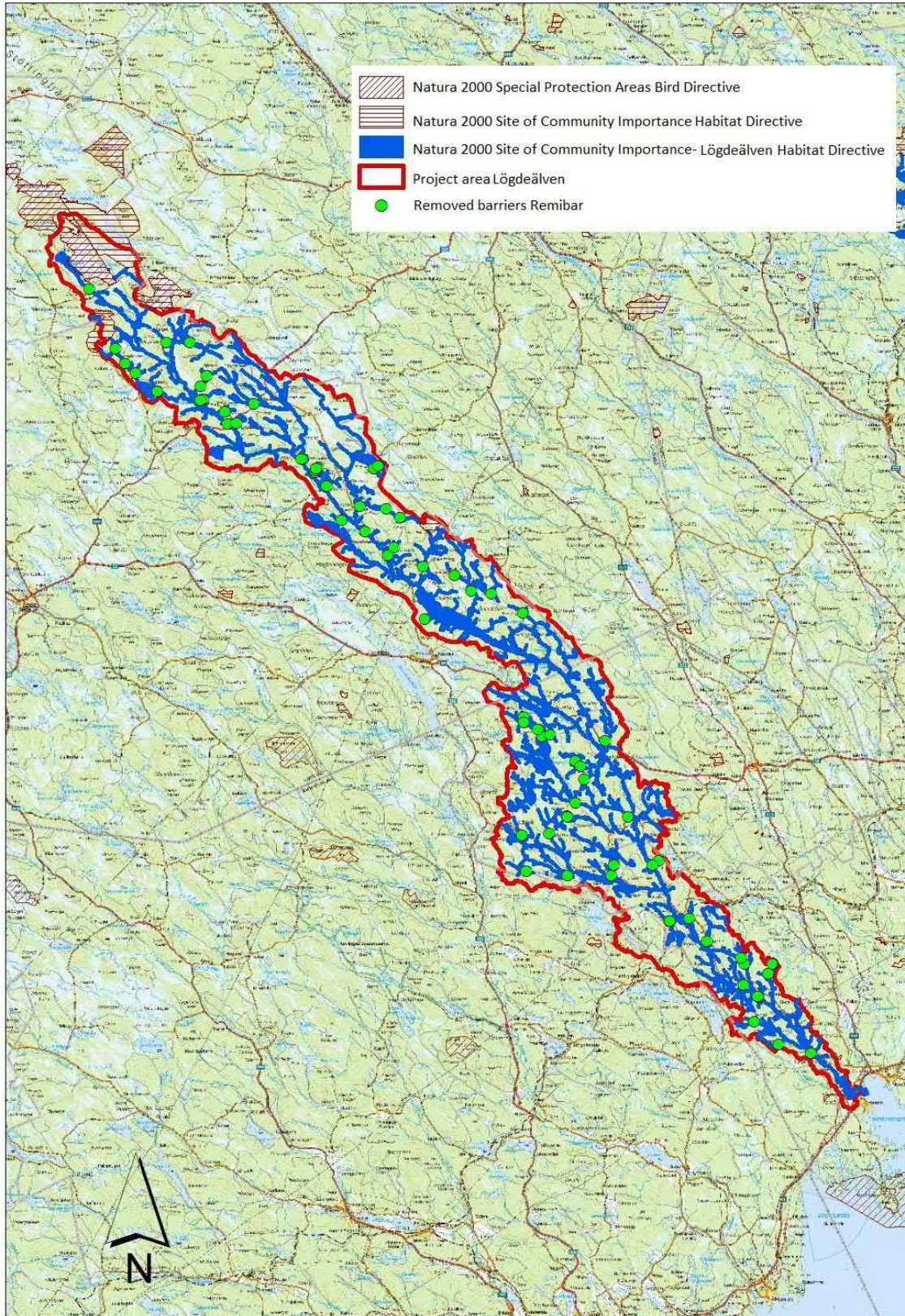
**Table 4a.** Click on the object number to go to the database "ätgärder i vatten" and get more information about the objects.

N°	Responsible partner	Type of measure	Year of measure
<a href="#">25</a>	STA	Otter mitigation	2013
<a href="#">129</a>	SCA	Arch	2015
<a href="#">130</a>	SCA	Arch	2014
<a href="#">131</a>	CAB AC	Arch	2014
<a href="#">132</a>	SCA	Arch	2014
<a href="#">133</a>	SCA	Arch	2014
<a href="#">134</a>	SCA	Arch	2014
<a href="#">135</a>	SCA	Arch	2014
<a href="#">136</a>	SCA	Arch	2014
<a href="#">137</a>	SCA	Arch	2013
<a href="#">138</a>	CAB AC	Bridge	2015
<a href="#">139</a>	CAB AC	Arch	2014
<a href="#">140</a>	CAB AC	Arch	2015
<a href="#">141</a>	SCA	Arch	2014
<a href="#">142</a>	SCA	Removed	2014
<a href="#">143</a>	CAB AC	Arch	2015
<a href="#">144</a>	SCA	Arch	2014
<a href="#">145</a>	SCA	Arch	2014
<a href="#">146</a>	SCA	Arch	2014
<a href="#">147</a>	SCA	Arch	2014
<a href="#">148</a>	SCA	Arch	2014
<a href="#">149</a>	SCA	Arch	2014
<a href="#">150</a>	SCA	Arch	2014
<a href="#">151</a>	SCA	Arch	2014
<a href="#">153</a>	SCA	Arch	2014
<a href="#">154</a>	CAB AC	Bridge	2014
<a href="#">155</a>	SCA	Arch	2014
<a href="#">156</a>	SCA	Arch	2014

N°	Responsible partner	Type of measure	Year of measure
<a href="#">158</a>	CAB AC	Bridge	2014
<a href="#">159</a>	SCA	Arch	2014
<a href="#">160</a>	SCA	Arch	2014
<a href="#">161</a>	CAB AC	Dam removal	2014
<a href="#">162</a>	CAB AC	Dam removal	2016
<a href="#">163</a>	CAB AC	Dam removal	2015
<a href="#">164</a>	CAB AC	Dam removal	2014
<a href="#">165</a>	CAB AC	Dam removal	2015
<a href="#">168</a>	CAB AC	Dam removal	2015
<a href="#">169</a>	CAB AC	Dam removal	2014
<a href="#">170</a>	CAB AC	Dam removal	2016
<a href="#">171</a>	CAB AC	Dam removal	2015
<a href="#">172</a>	CAB AC	Dam removal	2016
<a href="#">173</a>	CAB AC	Dam removal	2016
<a href="#">174</a>	SCA	Arch	2013
<a href="#">175</a>	SCA	Arch	2013
<a href="#">176</a>	SCA	Arch	2013
<a href="#">177</a>	SCA	Arch	2013
<a href="#">181</a>	STA	Culvert	2013
<a href="#">183</a>	STA	Culvert	2013
<a href="#">184</a>	STA	Culvert	2013
<a href="#">185</a>	STA	Arch	2016
<a href="#">186</a>	STA	Arch	2015
<a href="#">188</a>	STA	Rocky ramp	2016
<a href="#">190</a>	STA	Arch	2015
<a href="#">191</a>	STA	Bridge	2016
<a href="#">192</a>	STA	Arch	2015
<a href="#">194</a>	STA	Culvert	2013

**Table 4b.** Click on the object number to go to the database "åtgärder i vatten" and get more information about the objects.

<b>N°</b>	<b>Responsible partner</b>	<b>Type of measure</b>	<b>Year of measure</b>
<a href="#">195</a>	STA	Arch	2015
<a href="#">196</a>	STA	Otter mitigation	2013
<a href="#">197</a>	STA	Otter mitigation	2013
<a href="#">198</a>	Sveaskog AB	Arch	2013
<a href="#">199</a>	Sveaskog AB	Arch	2013
<a href="#">200</a>	Sveaskog AB	Arch	2013
<a href="#">201</a>	Sveaskog AB	Arch	2013
<a href="#">203</a>	Sveaskog AB	Arch	2013
<a href="#">204</a>	Sveaskog AB	Arch	2013
<a href="#">205</a>	Sveaskog AB	Arch	2013
<a href="#">206</a>	Sveaskog AB	Arch	2013
<a href="#">207</a>	Sveaskog AB	Arch	2013
<a href="#">208</a>	Sveaskog AB	Arch	2013
<a href="#">209</a>	Sveaskog AB	Arch	2013
<a href="#">317</a>	STA	Culvert	2016
<a href="#">321</a>	CAB AC	Bridge	2015
<a href="#">322</a>	CAB AC	Dam removal	2014
<a href="#">325</a>	CAB AC	Dam removal	2014



**Map 4.** Object in project area Lögdeälven. Green dots= migratory barriers removed.



**Picture 4a.** Object 59, before, a culvert with a fall at the outlet



**Picture 4b.** Object 59, after, a culvert which is lowered and increased in dimension. Material is put in to the culvert to let the riverbed continue under the road



### 5.1.8. Action C.5: measures in project site Sävarån – completed

97 barriers are removed. All measures are listed in table 5a, 5b and 5c. Map 5 shows the location of the restored objects and picture 5 shows an example on how it looks before and after a dam removal.

The main part of all migration barriers was replaced by an arch with a natural riverbed (see example in picture 2) but 7 objects were replaced by bridges. 26 were dams (see example in picture 5). Objects 278 and 279 were replaced by culverts that were lowered and increased in size (see example in picture 4). We have placed stones (rocky ramp) downstream objects 237 and 280 to raise the water level and remove the fall at the outlet. N° 282 is an otter mitigation (see example in picture 3).

212 and 256 will not be done in this project because we have not get consent from the landowners.

257 will not be done due to cultural values.

**Table 5a.** Click on the object number to go to the database ”åtgärder i vatten” and get more information about the objects.

N°	Responsible partner	Type of measure	Year of measure
<a href="#">213</a>	CAB AC	Bridge	2014
<a href="#">215</a>	CAB AC	Bridge	2014
<a href="#">216</a>	Holmen Skog AB	Arch	2013
<a href="#">217</a>	CAB AC	Arch	2014
<a href="#">218</a>	CAB AC	Arch	2015
<a href="#">219</a>	CAB AC	Arch	2014
<a href="#">220</a>	Holmen Skog AB	Arch	2013
<a href="#">221</a>	Holmen Skog AB	Arch	2013
<a href="#">222</a>	CAB AC	Arch	2016
<a href="#">223</a>	CAB AC	Arch	2015
<a href="#">225</a>	CAB AC	Arch	2015
<a href="#">226</a>	CAB AC	Arch	2014
<a href="#">227</a>	Holmen Skog AB	Arch	2013
<a href="#">229</a>	CAB AC	Arch	2014
<a href="#">230</a>	CAB AC	Arch	2014
<a href="#">231</a>	CAB AC	Arch	2014
<a href="#">233</a>	Sveaskog AB	Arch	2013
<a href="#">234</a>	Sveaskog AB	Arch	2013
<a href="#">235</a>	Holmen Skog AB	Arch	2013

N°	Responsible partner	Type of measure	Year of measure
<a href="#">236</a>	Holmen Skog AB	Arch	2013
<a href="#">237</a>	CAB AC	Rocky ramp	2014
<a href="#">238</a>	Sveaskog AB	Arch	2013
<a href="#">239</a>	CAB AC	Arch	2012
<a href="#">240</a>	CAB AC	Arch	2015
<a href="#">241</a>	Holmen Skog AB	Arch	2013
<a href="#">242</a>	CAB AC	Bridge	2013
<a href="#">244</a>	Holmen skog AB	Bridge	2015
<a href="#">246</a>	CAB AC	Dam removal	2014
<a href="#">247</a>	CAB AC	Dam removal	2014
<a href="#">248</a>	CAB AC	Dam removal	2014
<a href="#">249</a>	CAB AC	Dam removal	2015
<a href="#">250</a>	CAB AC	Dam removal	2014
<a href="#">251</a>	CAB AC	Dam removal	2014
<a href="#">252</a>	CAB AC	Dam removal	2014
<a href="#">253</a>	CAB AC	Dam removal	2014
<a href="#">254</a>	CAB AC	Dam removal	2014
<a href="#">255</a>	CAB AC	Dam removal	2014
<a href="#">258</a>	CAB AC	Dam removal	2015

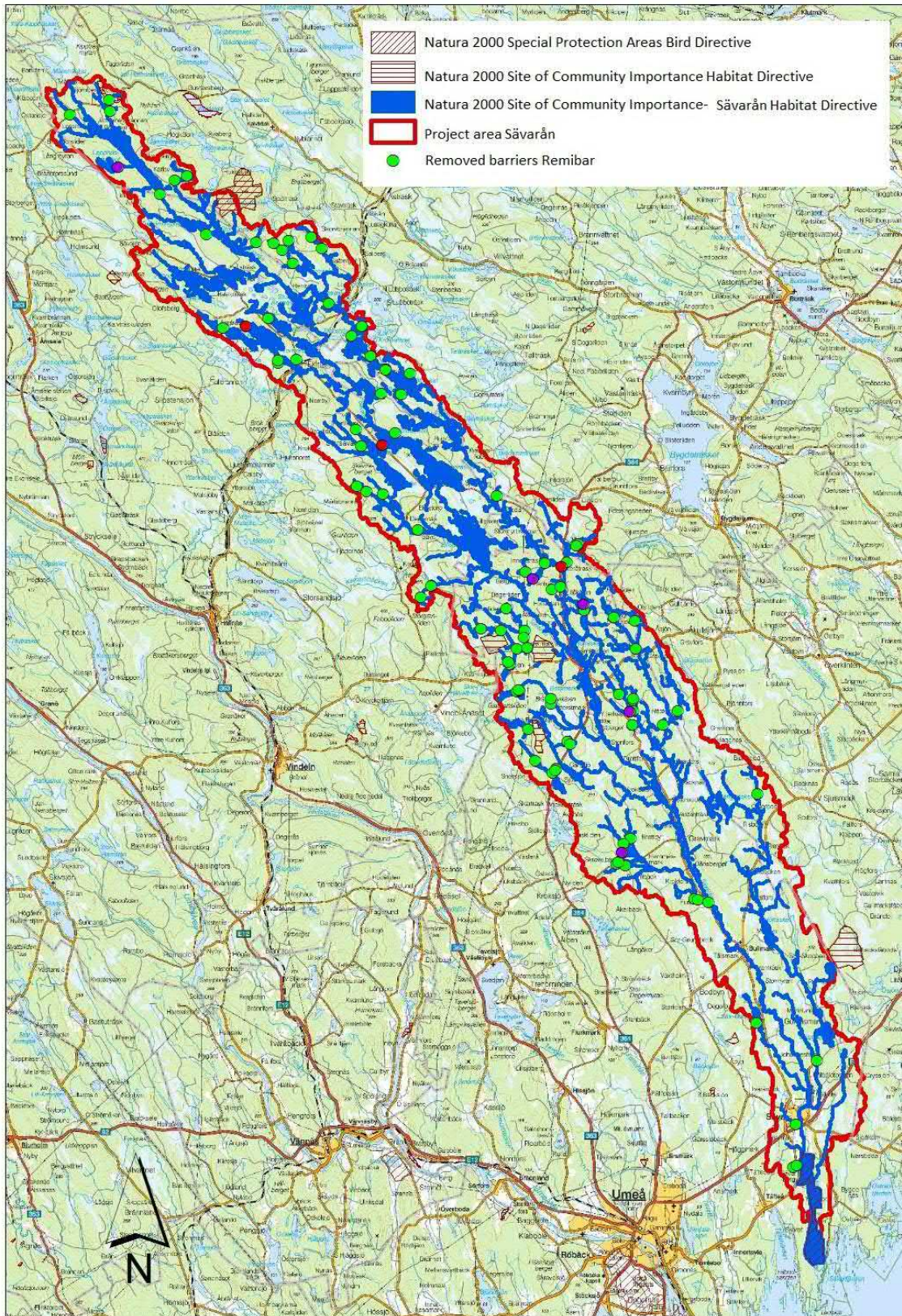
**Table 5b.** Click on the object number to go to the database "åtgärder i vatten" and get more information about the objects.

Nº	Responsible partner	Type of measure	Year of measure
<a href="#">259</a>	CAB AC	Dam removal	2014
<a href="#">260</a>	CAB AC	Dam removal	2014
<a href="#">261</a>	CAB AC	Dam removal	2015
<a href="#">262</a>	CAB AC	Dam removal	2016
<a href="#">263</a>	Holmen Skog AB	Arch	2012
<a href="#">264</a>	Holmen Skog AB	Arch	2012
<a href="#">265</a>	Holmen Skog AB	Arch	2012
<a href="#">266</a>	Holmen Skog AB	Arch	2012
<a href="#">267</a>	Holmen Skog AB	Arch	2012
<a href="#">268</a>	Holmen Skog AB	Arch	2012
<a href="#">269</a>	Holmen Skog AB	Arch	2012
<a href="#">270</a>	Holmen Skog AB	Arch	2012
<a href="#">271</a>	Holmen Skog AB	Arch	2012
<a href="#">272</a>	Holmen Skog AB	Arch	2012
<a href="#">273</a>	Holmen Skog AB	Arch	2012
<a href="#">274</a>	Holmen Skog AB	Arch	2012
<a href="#">275</a>	Holmen Skog AB	Arch	2012
<a href="#">276</a>	STA	Arch	2015
<a href="#">278</a>	STA	Culvert	2015
<a href="#">279</a>	STA	Culvert	2013
<a href="#">280</a>	STA	Rocky ramp	2015
<a href="#">281</a>	STA	Bridge	2015
<a href="#">282</a>	STA	Otter mitigation	2013
<a href="#">283</a>	Sveaskog AB	Arch	2012
<a href="#">284</a>	Sveaskog AB	Arch	2012
<a href="#">285</a>	Sveaskog AB	Arch	2012

Nº	Responsible partner	Type of measure	Year of measure
<a href="#">286</a>	Sveaskog AB	Arch	2012
<a href="#">287</a>	Sveaskog AB	Arch	2012
<a href="#">288</a>	Sveaskog AB	Arch	2013
<a href="#">289</a>	Sveaskog AB	Arch	2012
<a href="#">290</a>	Sveaskog AB	Arch	2013
<a href="#">291</a>	Sveaskog AB	Arch	2013
<a href="#">292</a>	Sveaskog AB	Arch	2013
<a href="#">293</a>	Sveaskog AB	Arch	2013
<a href="#">294</a>	Sveaskog AB	Arch	2012
<a href="#">295</a>	Sveaskog AB	Arch	2012
<a href="#">296</a>	Sveaskog AB	Arch	2012
<a href="#">297</a>	Sveaskog AB	Arch	2013
<a href="#">298</a>	Sveaskog AB	Arch	2012
<a href="#">299</a>	Sveaskog AB	Arch	2013
<a href="#">300</a>	Sveaskog AB	Arch	2012
<a href="#">301</a>	CAB AC	Bridge	2014
<a href="#">302</a>	Sveaskog AB	Arch	2012
<a href="#">303</a>	Sveaskog AB	Arch	2012
<a href="#">308</a>	Holmen Skog AB	Bridge	2014
<a href="#">314</a>	STA	Dam removal	2016
<a href="#">318</a>	CAB AC	Dam removal	2016
<a href="#">319</a>	Sveaskog AB	Arch	2014
<a href="#">320</a>	CAB AC	Dam removal	2016
<a href="#">323</a>	Holmen Skog AB	Arch	2016
<a href="#">324</a>	Holmen Skog AB	Arch	2016
<a href="#">326</a>	CAB AC	Dam removal	2015

**Table 5c.** Click on the object number to go to the database "åtgärder i vatten" and get more information about the objects.

<b>Nº</b>	<b>Responsible partner</b>	<b>Type of measure</b>	<b>Year of measure</b>
<a href="#">327</a>	CAB AC	Dam removal	2014
<a href="#">328</a>	CAB AC	Dam removal	2014
<a href="#">332</a>	CAB AC	Dam removal	2015
<a href="#">333</a>	CAB AC	Dam removal	2015
<a href="#">334</a>	CAB AC	Dam removal	2015
<a href="#">335</a>	CAB AC	Dam removal	2015
<a href="#">336</a>	CAB AC	Dam removal	2015



**Map 5.** Object in project area Sävarån. Green dots= migratory barrier removed. Purple dots=new objects removed, see annex 7.17 for more details. Red dots= migratory barrier not removed.



**Picture 5a.** Object 173, before, a dam that is a migratory barrier for fish



**Picture 5b.** Object 173, after, the dam is removed.

## Action E

Milestone	Deadline	Status 31/12/2016
Monitoring	31/08/2016	Completed

### 5.1.9. Action E.2: Networking – completed

We have attended 52 events, conferences and meetings to gain more knowledge about migrations barriers and species affected by these but also to disseminate knowledge about Remibar and to spread awareness of the issue. See detail in annex 7.26.

### 5.1.10. Action E.3.1: Monitoring and evaluation – otter mitigation –completed

- Tracking has been done continuously at each object. The tracking has been done once every week for four week each season (four seasons). So in total each object has been visited 16 times every year.
- Cameras have been in place and the evaluation of the photographs is completed (picture 6).

The results from the otter monitoring has be put together in a monitoring report (annex 7.3).



**Picture 6.** Photographs taken with the surveillance cameras at the otter mitigations.

#### 5.1.11. Action E.3.2: Monitoring and evaluation – completed

During the course of the project five drainage areas have been opened up and we have remediated 304 migration barriers. In total, 1 700 km of streams with a total surface area of 67 km<sup>2</sup> has been remediated and reconnected. As a result, fish and other animals in the streams can now reach areas that were previously difficult or impossible to reach. It means that the animals are able to access a larger number of habitats for reproduction, growth, and in their search for food. In the longer term it can lead to increasing and sustainable populations in our rivers and creeks.

Evaluation has been done at all objects. All of them are successful due to ecological functions but some of them need another visit to control erosion and we have also had some problems with beavers that have built dams inside arches. In that case that we have sent comments on the construction etc. to the responsible beneficiary.

One part of the monitoring have been to re-visit all objects two to three years after the measure has been done to make sure that the action is durable over time. This second follow-up has been done 2015 and 2016.

When an object is monitored, a protocol has been used to make sure that there is no longer a migratory barrier. We have looked at water velocity inside the culvert (or under the bridge/arch), substrate inside the construction, if there is risk of erosion, fall at the outlet, water depth and other things that can be of importance. We have also done photo documentation.

Our studies have shown that the measures done by Remibar have resulted in improved migration conditions for all aquatic animals.

For all culverts, arches, bridges and dam removals have a new riverbed been constructed with a heterogeneous structure (stones and boulders) and that have resulted in lower water velocity and resting places for fish and other animals.

Unfortunately there were no studies done of the water velocity in the rivers Lögdeån and Sävarån before measures had been done but compared to the data from Ängesån, Råneälven and Varjisån the water velocity at the outlet of arches and culverts has decreased after the measures had been done. From a mean water velocity 1,65-2,15 m/s to 0,17-0,42 m/s. To ensure that the water velocity will not increase inside the culvert or arch the dimension (diameter) of the culvert or arch must be wider than the stream with. Our studies show that the average diameter are 33% wider than the stream in Lögdeälven, 13% in Sävarån, 52% in Råneälven, 19% in Ängesån and 15% in Varjisån.

The results from the monitoring have been concluded in a report (annex 7.4).

Through ordinary monitoring by the CAB, we also have records of electro fishing, benthos, plant algae and fresh water pearl mussels etc. on catchment scale.

For this assessment and evaluation, only electrofishing data from existing monitoring programs focusing on measuring the recruitment of salmon and trout and data from fish counters.

Despite limitations, it was possible to detect a positive effect of the removal of migration barriers on the reproductive success of salmon or trout, or both species, at a number of sites in the Varjisån project area, the Sävarån project area, and the Lögdeälven project area. It was not possible to detect an effect of Remibar in the Ängesån project area and the Råneälven project

area. The results from the monitoring have been concluded in a connectivity report (annex 7.5).

The follow-up for otter shows that all constructed underpasses have been used by medium-sized mammals. Animal tracking in snow shows that otter occurs in the vicinity of all the underpasses. Wintertime the animals can often pass on the ice underneath the bridge without using the constructed underpass. Monitoring using cameras revealed that otter has been using five of the constructed underpasses, namely those in Råneälven, Skrövån, Vettasjoki, Venetjoki, and Långbäcken.

We can draw the conclusion that the constructed underpasses are working and are being used by many species of medium-sized mammals. We have concluded that otters are using all types of underpasses that have been constructed as part of the project, but dry culverts and shorelines have been used slightly more than the other types.

#### 5.1.12 Action E.4: Audit report - completed

The audit report shows just a few minor remarks. Details of the audit report can be found in Annex 7.14.

#### 5.1.13. Problems encountered/changes

A.2.3 The costs have exceeded the budget since there are a lot of private landowners and it has taken more time than expected to get consents from all of them.

At some of the sites we have had problems to get an agreement with the landowners.

C. In the progress report we reported that 24 objects were removed from the project for different kind of reasons; they were already replaced with non-barrier culverts, further studies show that they were not barriers to begin with and there are natural migratory barriers close up streams (reported in the progress report 30/11/2013). These objects are replaced with new ones and were reported in the answer to issue 1.3 in Ares 137903, dated 2014-05-22.

Four objects have been removed and replaced in the midterm report 30/08/2015.

After midterm report, we have also removed five objects from the project and replaced them with the five new objects. We did not get consent from two landowners, and at two of the otter mitigations the entire bridges will be reconstructed by the STA. One dam is cultural valuable and not ecologically important.

Some objects has changed responsible partner due to uncertainty in landownership/responsibility when the application was written (reported in the progress report 30/11/2013).

Several measures have been more expensive than what was stated in the application. Any activity involving the construction and implicates contractors are more expensive now because the competition has increased with several planned and opened mines in northern Sweden and also a lot of new infrastructure. New costs were reported in the midterm report (30/08/2015).

The calculations in the application were estimations that were too low. The STA also have new, higher safety demands (for example new rules for safety barriers on roads). We have solved this problem with more financing from the STA and SWAM.



The prices differ a lot between different types of roads. The public roads have high demands for safety and also for lifetime of the investments. The public roads also demands high safety for the contractors during work. Signs and safety barriers has to be used and the traffic is often lead to bypasses. It is important that the emergency services can pass even though a bridge is constructed. The road bank is often high and the length of the arch/bridge/culvert is often long under a public road. This makes the measures on public roads expensive. On forestry road the lifetime of the investment can be shorter, because these roads are used during a certain period and after that they are not maintained. The roads can even be closed if forestry is not taking part in the area for several years. Of course all measures follow standard and set rules (for example carrying capacity) for that specific type of road.

On public roads it has also been noticed that it is not a good solution to use arches when the slope is  $> 6\%$  due to erosion problems. In these sites concrete bridges are used instead of arches and they are more expensive. This was not known when the application was written.

The cost is higher than in the application but they are the most cost-effective and this is assured by public tenders to get the best price. The project has done everything possible to get the best price and to keep the cost down. The additional costs will be paid for by the STA and SWAM.

We have unfortunately noticed a miscalculation in the output indicators in the inception report. Therefore we would like to replace the table with annex 7.25. The miscalculation is an error in the transformation between  $\text{km}^2$  and hectares. Thus 100238 hectares should be 1002.38 hectares.

We have encountered some problems mentioned above during the project time but we have solved all of them and all actions and objectives have been completed and reached at the end of 2016.

#### 5.1.14. Complementary actions outside LIFE

During the Remibar-project a parallel regional project, Levande laxälvar 2013-2017, has been conducted in river Sävarån where the CAB of Västerbotten have restore the river from the damage done during the timber floating. (<http://www.lansstyrelsen.se/vasterbotten/sv/miljo-och-klimat/vatten-och-vattenanvandning/restaurering-av-vattendrag/pages/default.aspx>).

Also, a salmon management plan will be created with the owners of fishing rights and fishery management areas. It is financed with national funds from SWAM.

Another project, Friskare skogsvatten 2012-2014, has had great success to informed forest owners the importance of clean water, good ecology and a forestry which take the aquatic values in consideration (<http://www.friskareskogsvatten.se/Sv/Pages/default.aspx>).

The SWAM finances a project in Norrbotten; restoration from the damage done by the timber floating (move back stones and boulders and recreate spawning beds) and removing dams. A coordinated management will be created with the owner of fishing rights and fishery management areas. The River Råneälven will be the pilot river but if it is successful the same thing will be done in the other rivers. This work is in progress now.

Another LIFE-project, ReBorN (Restoration of Boreal Nordic Rivers) has started in the counties of Norrbotten and Västerbotten in 2016. The goal is to restore parts of the rivers Kalixälven, Piteälven, Råneälven, Åbyälven, Byskeälven and Lögdeälven. Many of these areas are the same as the Remibar project areas.

Since the project started 16 new nature reserves have been established in the project areas; five in project area Råneälven (Tjuorvumkåbbå, Muorkaape, Mossavikberget, Kilberget and Södra Storberget) and six in Sävarån (Nedre Sävarån, Fäbodträsk, Trehörningstjärnen, Krokån, Rödstensbacken and Bjärntjärnliden) and five in area Lögdeälven (Mårdberget, Ottjärn, Mjösjöberget, Björnberget-Gäddtjärn and stor-Holmsjön).

Since the project started 24 habitat protection areas have established in the project areas 11 nature conservation agreement and 48 key habitats.

The STA, the CABs and the SFA are working continuously to implement measures according to the Water Frame Directive.

Stricter fishing regulations have been implemented by the National Board of Fisheries. With very weak sea trout populations in the late 1990's it was necessary to increase the survival both in rivers and streams, as well as in the coastal area.

As fishing in rivers and streams is performed with rod and reel it is possible to regulate trout fishing without regulating the fishing for other species. Trout that are caught by mistake can be released back to the water without harming them very much.

In some rivers and streams trout fishing thereby was banned totally. And in others the minimum size was increased. In some rivers we even have both minimum size and maximum size limits to spare the most important fish for breeding, so called slot size limit.

In the coastal area, where fishing mainly is performed with gillnets, fish that are caught by mistake can't be released back without harming them. It was thereby not possible to regulate only the trout fishing with gillnets.

Due to the fact that the trout hunts in shallow water during spring and autumn, it is very easily caught in gillnets during these periods. Even if many fishermen claim that they were fishing for whitefish they caught a trout now and then, as bycatch.

With very weak populations, now and then, though is enough to hold the populations down. To come across the problem with by-catch of trout in gillnets the National Board of Fisheries decided to ban fishing with gillnets in areas shallower than 3 meters during spring and autumn (banned from 1st of April to 10th of June and from 1st of October to 31st December).

In this way it was possible to allow fishing for whitefish in deeper areas at the same time as the trout was spared.

The regulation of fishing together with restoration of rivers and restoring of connectivity have led to clearly improved status for several stocks of sea trout. An exact evaluation on the sea trout status in the whole of the area is however not possibly to make as data on sea trout is scarce in many rivers and historical references are lacking.

We still have problem with weak populations on the local scale, but as the restoration of streams and connectivity goes on, the problem is becoming less for every year that passes.

The regulation of fishing with gillnets in the shallow coastal areas also have led to positive responses in other species that spawn in shallow areas during spring or autumn. The sea living grayling seems to have increased a lot and we can also see that the whitefish populations are increasing. We believe that the regulation of fishing with gillnets have played a big role in this positive development.

#### 5.1.15. Action E.5: After LIFE conservation plan – completed

The work with migratory barriers will continue after 2016. One of the Bothnian Bay Water District's biggest problem for not reaching good or excellent status in all water bodies is migratory barriers. The work with this is prioritized and the national authority (SWAM) have noticed it.

The dissemination during the project and the cooperation with other road owners will increase the knowledge about migratory barriers.

The STA will continue maintenance and surveillance after the project has ended. The monitoring of the conservation status for species and habitats will be done by CABs through their monitoring plans for Natura 2000 areas and the management plans of the Water Frame Directive.

Through regional and national environmental monitoring by the CAB, we monitor fish populations, benthos, plant algae and fresh water pearl mussels, water chemistry, metals etc. on catchment scale. Chosen streams and lakes (random selection) are monitored several times each year and has been monitored for several years.

Also, the CABs will re-visit objects 4-5 years after the project has ended to make sure that there are no migratory barriers.

Several groups has formed to continue the work and exchange experience, such as the "road-water-crossing-group" that contains of representatives from both CABs, the STA, the SFA and some municipals.

The knowledge and methods acquired during the course of Remibar are being used in a range of projects within the counties of Norrbotten and Västerbotten. They are also being disseminated to stakeholders in others parts of Sweden and neighbouring countries. The work aiming at improving the status of habitat and species in the five rivers included in Remibar is also being continued within the scope of a range of other ongoing and planned projects.

More details are found in the After-Life report, annex 7.6.

## 5.2 Dissemination actions

### 5.2.1 Objectives

The objectives are summarized in the table.

<b>Milestone</b>	<b>Deadline</b>	<b>Status 31/12/2016</b>
Website	31/02/2012	Completed
Demonstration site	31/12/2013	Completed
Exchange of experience	31/12/2014	Completed
Excursion and seminars	31/08/2016	Completed

### 5.2.2 Dissemination: overview per activity

#### **D1. Communication plan – general communication – completed**

- Project logotype is designed



- A website has been produced; <http://www.trafikverket.se/remibar> and has been updated every second month. After the ending of the project the website will be revised to contain the most relevant information and results and remain for five years. An article on our internal STA web gave really good results. Over 3000 readers checked it out, all employees at the STA , picture 7 and 8.

sarkiv/Ny Nöjd kund fångad p... x

Välkommen Ida Schönfeldt

**TRAFIKVERKET**  
Intranät

**Startsida** **Aktuellt** **Arbetsätt** **Stöd och verktyg** **Min anställning** **Om Trafikverket** **Mina inställningar**

Startsida > Aktuellt > Nyhetsarkiv > Nöjd kund fångad på bild

**Aktuellt**

- Chatt
- Kalender
- > Trafikverket i medierna
- > Trafikstörningar och driftrapporter
- > Aktuella projekt
- > Nyhetsbrev och tidningar
- > Nyhetsarkiv
  - > 2014
    - September
    - Augusti
    - Juli
    - Juni
    - Maj
    - April
    - Mars
    - Februari
    - Januari
  - > 2013
  - > 2012
  - > 2011
- > Chefen informerar
- Mässor och konferenser

### Nöjd kund fångad på bild

Senast uppdaterad/granskad: 11 september 2014

**Det är inte alltid vi lyckats fånga våra nöjda kunder på bild. Än mer sällan när kunden har fyra ben och är en vanligtvis skygg utter.**

Inom projektet Remibar arbetar Trafikverket tillsammans med olika samarbetspartners för att bygga bort vandringshinder i vattendrag i Norr- och Västerbotten. Fiskar och andra vattenlevande djur ska lättare kunna vandra och föröka sig tack vare våra åtgärder.

Under året har Remibar satt upp kameror vid olika vattendrag för att se om hur våra passager används. Kamerorna reagerar på rörelse och har fångat många olika djur på bild.

– I augusti lyckades kamerorna för första gången fotografera en utter, berättar Ida Schönfeldt, en mycket glad projektledare för Remibar. Det ser ut att vara en nöjd utter som inte bara använder sig av vår passage utan faktiskt tar en vilopaus på den.

De stora stenblocken i bild är vår åtgärd på platsen och dessa lockar uttern att gå under bron och markera sitt revir istället för att ta den farliga passagen över vägen, där uttern riskerar att bli påkörd av bilar.

Kontaktperson  
**Terese Lantto** Kommunikation

[Skriv ut](#)

[Lägg till i mina länkar](#)

[Följ kommentarer på sidan](#)

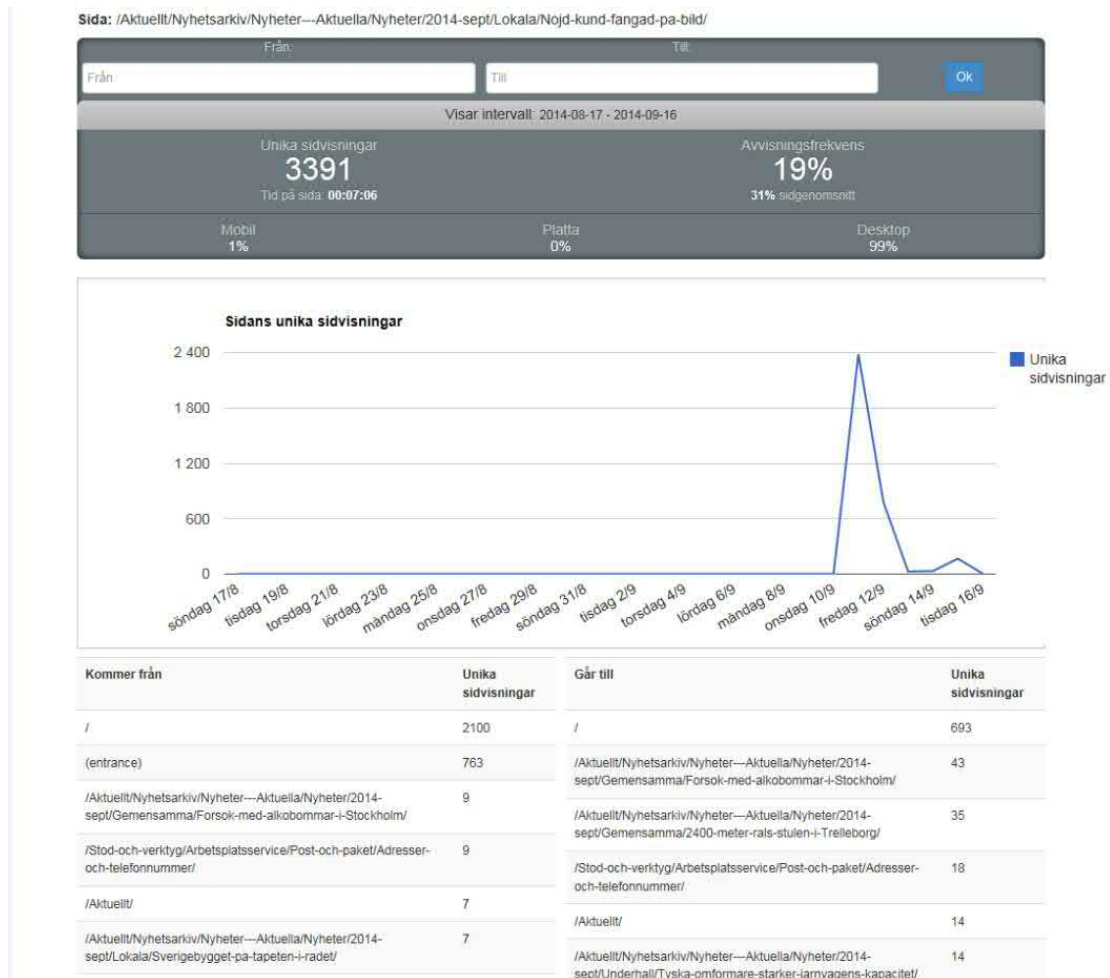
**Länkar**

- > Projektsidan för Remibar

**Nyckelord**

- > miljö
- > vägprojekt

Picture 7. The article on the internal web at STA that gave over 3000 readers.



**Picture 8.** The number of unique readers can be seen in the picture.

#### Media contact (see annex 7.7)

- Two articles in the newspaper Västerbotten Kuriren, 2011.
- The project also had articles in the Water Authorities' newsletter and in the CAB of Norrbotten's newsletter.
- The project participated in a reportage on radio P4 Norrbotten in September 2011.
- A media day the 25th of July 2012 in Norrbotten resulted in two newspaper articles, reportage on national radio and reportage on local TV.
- An article in the magazine Älvräddaren was published about the project.
- A media day 23rd of July 2013 in Västerbotten resulted in 3 newspaper articles and reportage on local radio
- We also attended in a national radio program called Naturmorgon that was on air the 21<sup>st</sup> of September 2013.
- Remibar was interviewed by local radio about otters the 14<sup>th</sup> of October 2014.
- Remibar was interviewed by local radio 1<sup>st</sup> of September 2015.
- World Fish Migration Day resulted in a local radio interview 20<sup>th</sup> of May 2016.
- The school excursions lead to one reportage in the local TV news the 1<sup>st</sup> June 2016.
- Radio interview about the ending of Remibar project 5<sup>th</sup> of September 2016.
- The evening seminar (part of our final seminar) lead to one article and one web-TV reportage in the local newspaper the 28<sup>th</sup> of September 2016.

- The childrens day at the Culture house the 28<sup>th</sup> of October 2016 was highlighted in a one side article in the local paper Extra.

#### Dissemination material

- Leaflet – In total 3600 copies in Swedish and 957 copies in English has been printed of the leaflet (delivered in midterm report and can be found on the website)
- Three roll-ups are printed, one in English and two in Swedish.
- Notice board are completed and put in place at 100 sites.
- A Layman’s report is produced and printed in 100 copies in Swedish and 100 copies in English, annex 7.19. The report can also be found on the remibar website  
[http://www.trafikverket.se/contentassets/2b378fd1b5ce4dc894f612aac2e3b826/remibar\\_laymans\\_report\\_eng\\_170321.pdf](http://www.trafikverket.se/contentassets/2b378fd1b5ce4dc894f612aac2e3b826/remibar_laymans_report_eng_170321.pdf)



Picture 9. Notice board at one of our objects

- A short video is done and published on YouTube  
 Swedish: <https://www.youtube.com/watch?v=XqvMpmIWKck>  
 English: <https://www.youtube.com/watch?v=bG5K8mzwTXM>

- The project has been promoted several times on the Facebook account of CAB BD and CAB AC

Vatten i Norr: [https://www.facebook.com/pages/Vatten-i-Norr/776707085734550?ref=aymt\\_homepage\\_panel](https://www.facebook.com/pages/Vatten-i-Norr/776707085734550?ref=aymt_homepage_panel)

Remibar has during the years published 66 posts on *Vatten i Norr* and totally reached 33 300 persons, and have got over 3000 post clicks.

Restaurering i vattendrag, Länsstyrelsen i Västerbotten:

<https://www.facebook.com/restaurering?fref=ts>

Remibar has during the years published 31 posts on *Restaurering i vattendrag* and have got over 3450 post clicks.

The Swedish Agency for Marine and Water Management and the Swedish Transport Administration have posted one post on their Facebook, Picture 10 and 11.

More information about dissemination material, see annex 7.11.



**Picture 10.** Post at the Swedish Agency for Marine and Water Management Facebook





Picture 11. A post on The Swedish Transport Administration Facebook

We have bought give-aways (that was accepted as cost according to mail 2 September 2014 from EC) to be handed out at meetings, excursions and seminars:

- 500 USB (with logos)
- 500 floating key ring (with logos)
- 500 bio-bottles for water
- 2 500 chocolate squares
- 500 textile bags





**Picture 12.** Example of give-aways with the Remibar logo and LIFE+ and Natura2000-logos

## **D2. Dissemination to targeted groups – demonstration sites – completed**

Two demonstration sites are built, one in Varjisån and one in Sävarån. On the sites, information signs and brochures can be found. 1000 brochures have been printed for each site in Swedish and 300 copies has been printed in English for each site (see annex 7.8 and can also be found on the website).

Varjisån Swedish version:

[http://www.trafikverket.se/contentassets/2e89dfc130824590895c1d2cdb68f65d/folder\\_varjisan\\_150618.pdf](http://www.trafikverket.se/contentassets/2e89dfc130824590895c1d2cdb68f65d/folder_varjisan_150618.pdf)

Varjisån english version:

[http://www.trafikverket.se/contentassets/4ce3ae19a95b4f0e85748bc52bd3a6e0/folder\\_remibar\\_varjisan\\_150409.pdf](http://www.trafikverket.se/contentassets/4ce3ae19a95b4f0e85748bc52bd3a6e0/folder_remibar_varjisan_150409.pdf)

Sävarån Swedish version:

[http://www.trafikverket.se/contentassets/2e89dfc130824590895c1d2cdb68f65d/folder\\_savaran\\_150617.pdf](http://www.trafikverket.se/contentassets/2e89dfc130824590895c1d2cdb68f65d/folder_savaran_150617.pdf)

Sävarån English version:

[http://www.trafikverket.se/contentassets/4ce3ae19a95b4f0e85748bc52bd3a6e0/folder\\_remibar\\_savaran\\_150409.pdf](http://www.trafikverket.se/contentassets/4ce3ae19a95b4f0e85748bc52bd3a6e0/folder_remibar_savaran_150409.pdf)

There is an old saw mill upstream demonstration site Varjisån. We also have a small sign describing the cultural use of water by the mill. A small trail leads to the mill.



Picture 13. Demonstration site Varjisån.



Picture 14. Demonstration site Sävarån.

A seven minute film can also be seen on YouTube

Swedish: <https://www.youtube.com/watch?v=rysqnHkjXuQ>

English: [https://www.youtube.com/watch?v=\\_jFtdd\\_ORNU](https://www.youtube.com/watch?v=_jFtdd_ORNU)

The Swedish version has been viewed on Youtube over 1700 times and the English version over 200 times.

In the project Remibar we have had a lot of meetings with landowners, contractors, consultants, employees at different Swedish authorities and we have also attended to several seminars within EU to discuss the problem of barriers in streams and what can be done to avoid them. We think that our demonstration sites are really good sites to show the problems and the solutions, but we also realize that we could reach a much larger group of people through a video. For example, a lot of contractors have too much work during the short summer and are not able to attend to our excursions or seminars during summertime. To reach all target groups we think that our video has been a success. The video is found on our website and on Youtube and can be used for education after the project has ended.

### **D3. Action D.3 Manual, completed**

The manual is completed and printed in 1000 copies in Swedish and 100 copies in English. The manual has been popular at excursions and seminars, and because of this we printed more copies (500 more in Swedish and 500 more in English). Delivered in Progress report.

### **D4. Excursions and seminars for targeted groups – completed**

The goal for the project is 15 excursions between 2013 and 2015 according to the Grant agreement. We have done excursions according to table 6.

**Table 6.** Participants on excursions

Date	Place	Participants	Catchmentarea
18 Oct 2013	Varjisån	28	Varjisån
8 October 2014	Nordanås	13	Lögdeälven
4 June 2014	Botsmark	9	Sävarån
30 June 2014	Sävar	Appr. 30	Sävarån
15 October 2014	Sävarån	16	Sävarån
8 Maj 2015	Botsmark	17	Sävarån
19 Sept 2015	Umeå	Appr. 800	All
6 Oct 2014	Bredsel	14	Varjisån
24 May 2015	Varjisån	14	Varjisån
27 June 2014	Pålkem	Appr. 20	Råneälven
25 Sept 2014	Gunnarbyn	13	Råneälven
20 Sept 2014	Råneälven	8	Råneälven
26 June 2015	Gunnarsbyn	6	Råneälven
12 Sept 2015	Luleå	Appr. 800	All
12 June 2015	Nilivaara	7	Ängesån
28 April 2016	Kalix	21	Ängesån
21 May 2016	Teknikens hus Luleå	400	All
30 October 2016	Kulturens hus Luleå	700	All

Invitation was done through letters to landowners and through advertisement in newspapers. The total amounts of participants of all 18 excursions are 2916 persons. Our goal of 150 persons is reached by far. Especially the family days were popular events with approximately 800 persons in Umeå and 800 persons in Luleå.

Three half-day seminars has been arranged 2014, the target group was employees at different authorities and contractors. Two day seminars was held with target towards municipalities, foresters, authorities etc. The total number of attendants at all seminars were 134 persons, table 7.

**Table 7.** Participants on seminars

<b>Date</b>	<b>Place</b>	<b>Target group</b>	<b>Deltagare</b>
25 March 2015	Umeå Scandic Plaza	Authorities	24
7 May 2015	Luleå, Kulturens hus	Authorities	22
15 Sept 2014	Bjurholm Seminar ½ day	Authorities	20
17 march 2015	Umeå Seminar ½ day	STA employees, contractors	36
18 march 2015	Luleå Seminar ½ day	STA employees, contractors	32



**Picture 15.** Excursion at site Sävarån.

Two of the most popular events that the project arranged were the family days, picture 16 and 17. See 7.11 for example of dissemination material from the family days and Annex 7.21 for photos from the days. We had several stations with different tasks and things to do for children. One of the attractions was a famous Swedish TV host of a children's programme. We held the family excursions in the two larger cities to attract as many persons as we could. Our other excursions have been on more remote places with long distances and fewer participants. Families with children do not want to travel too far and with the excursions held close to the cities people can walk or take the bike. Through targeting children, we educate the next generation but at the same time we reach their parents.



**Picture 16.** Family day in Umeå



**Picture 17.** Family day in Luleå

We have bought some products that was handed out during the excursions (an accepted cost according to mail 2 September 2014 from EC). The reason for ordering more Give-aways than our goal of 210 persons at the meetings is because we have had more visitors at our excursions and seminars than planned. We also use the Give-aways when we are presenting and promoting the project at conferences and so on.

The Give-aways are:

250 notepads

500 pens

200 sitting pads



Picture 18. Notepad, pen and sitting pad with Remibar logos



## **D5. Exchange of experience – completed**

Exchange of experience with Department of Fish and Wildlife, Division of Ecological Restoration and the Department of Transportation, Massachusetts, US took place in May 2013. A group of 10 persons attended at the trip. We gave a presentation of Remibar and they were impressed by the volume of measures that we do. We got to listen to useful presentations and also got the opportunity to see some of their work in reality, in the field. The exchange of experience was greater than we expected and both countries could learn from each other. More details has been given in the Progress report, 30/11/2013.

The 1<sup>st</sup> of October 2014 we visited the Metsä-Hallitus (much like the Swedish Forest Agency) in Finland. They have for several years been working to restore the streams in the area around Pudasjärvi. The biggest problem in these waters is the sediment transport into the rivers from the forest ditches made in 1960's and 1970's.

Eero Moilanen and Pirkko-Liisa Lutha from Metsä-Hallitus welcomed the group in Pudasjärvi. From the Remibar project 7 persons attended. We gave a presentation of Remibar and we got the opportunity to listen to interesting presentations of their work and also spent one of the days with a field visit. More details in Midterm report, 30/08/2015.

Two groups from other countries has visited our project. The first visit was from Finland, a group of 13 persons joined a field trip in October 2013. In October 2014 we had visitors from Finland, Scotland and Norway, a group of 19 persons attended at the exchange of experience. In July 2016 we had visitors from the US, Massachusetts Department of Fish and Wildlife, division of Ecological Restoration.

## **D6. Final seminar – completed**

According to email from Ana Klenovsek 2015-12-07 the non-substantial changes of the final seminar was approved. According to the letter these conditions must be fulfilled:

- ReMiBar project should be presented at least at two international conferences in 2016, with oral presentations, reaching out to as minimum 100 professionals in the field of nature restoration, conservation or road management – completed see Annex 7.10
- The total costs of the new activities (local seminar, excursions and participation in international conferences) should not exceed the total cost of action C.6, being 30 000 € Completed, see table in chapter 6.5.
- The incurred costs should follow the principles of cost-effectiveness, and they have to be reasonable and well documented, completed see 7.10 and table in chapter 6.5.
- The new activities should be reported in action D.6 in the Final Report - completed.
- Given the fact that action D.6 is the responsibility of the associated beneficiary SEPA, the CB should explain in the FR how SWAM (earlier SEPA) has maintained an active role in the project implementation – completed see this chapter.

In the grant agreement we had intended to arrange an international seminar, but instead these are the new approved activities:

We have arranged six school excursions, and reached the goal of 150 pupils, we had 201 pupils visiting us out in the woods. For five of the excursions we rented buss for the school classes, for one of them, in Sävarån, it was possible for the pupils to walk to the excursion area Sävarån.

During the school excursion we had different stations for the kids, electrofishing, watching fresh water pearl mussels, try to decide the species for bottom dwelling insects, talking about roads and forestry's impact on water. Easy-read brochures was printed in 500 copies and were handed out to each kid during the excursion. These brochures have also been used during the events at the Culture house and the Technique house in D.4. We also handed out pens and notepads (500 pens and 154 notepads were ordered). Annex 7.9.



**Picture 19.** School excursion, where kids learn about what you can find in streams. Here they are trying to figure out the species of bottom dwelling insects.

We also arranged one evening seminar, the goal of 40 participants was reached by far, and we had 300 visitors at the seminar. The large number of visitors was due to our key speaker Mattias Klum, who is an internationally known nature photographer. Mattias showed his beautiful pictures and talked about large-scale environmental issues. How humans effect our world in different ways.

During the planning of action D6, SWAM has taken an active role and has contributed in meetings and preparation for the action. They also took part in the production of the school brochures.



**Picture 20.** Nature photographer Mattias Klum at the evening seminar together with Sofia Perä, CAB BD and Ida Schönfeldt, STA.

We have also attended at three international conferences where we presented the result of our project, the goal was to reach out to 100 persons attending at the conferences. At all of the conferences our presentation gave very positive reactions and spontaneous applauds. In Poland we reached approximately 80 persons, in Lyon approximately 300 persons and in Lund around 80 persons.

More details about the final seminar activities in annex 7.10.

### 5.3 Evaluation of Project Implementation

We have had great success in the project mainly due to the co-operation with all road owners, both authorities and forest companies. With a good co-operation, exchange of experience with the different partners have we opened up five big catchment areas.

The environmental benefits are much bigger when we work together. If, for instance, the STA removed a barriers in a stream and there are still barriers down streams or up streams the ecological benefits will not be as big as if all barriers are removed.

We have also learned that these measures are much more expensive than we thought in the beginning and that is something we have to consider when we do measures in the future.

Task	Foreseen in the revised proposal	Achieved	Evaluation
A1-A2 Work plan	4	4	Success
A3. 50 persons have attended	50	50	Success

landowner meetings			
C1-5 Open up five water systems	5	5	Success
C1-5 Removed 304 barriers	304	304	Success
C1-5 200 ha- 5 900 ha will be accessible for targeted species	2 km <sup>2</sup> - 59 km <sup>2</sup>	66 km <sup>2</sup>	Success
D1 Leaflet	1	1	Success
D1 Website	1	1	Success
D2 Demonstration sites	2	2	Success
D2 Folders for the demonstration sites	2	2	Success
D3 Manual	1	1	Success
D4 15 excursions with 150 persons	15 excursions 150 persons	18 excursions 2916 persons	Success
D4 4 seminars with 60 persons	4 seminars 60 persons	5 seminars 134 persons	
D5 10 persons to the US 10 persons to Finland	20	20	Success
D6 Final 6 seminar- school excursions with 150 pupils	6 excursions 150 pupils	6 excursions 201 pupils	Success
D6 Final seminar Local seminar	1 local seminar 40 participants	300	Success
D6 Final seminar Presented the project at two international conferences	2 seminars to 100 persons	3 international conferences, Krakow 80 persons, Lyon 300 persons, Lund 80 persons	Success

During the course of the project five drainage areas have been opened up and we have remediated 304 migration barriers. In total, 1 700 km of streams with a total surface area of 67 km<sup>2</sup> has been remediated and reconnected. As a result, fish and other animals in the streams can now reach areas that were previously difficult or impossible to reach. It means that the animals are able to access a larger number of habitats for

reproduction, growth, and in their search for food. In the longer term it can lead to increasing and sustainable populations in our rivers and creeks. The removal of migration barriers as part of Remibar has resulted in a nearly 40 % increase in area and a more than 50 % increase in length.

We can already see an increase in fish population in three of the water systems and we are expecting an increase in the other two in the future, see annex 7.5.

The follow-up of otter measures shows that all constructed underpasses have been used by medium-sized mammals. Animal tracking in snow shows that otter occurs in the vicinity of all the underpasses. Wintertime the animals can often pass on the ice underneath the bridge without using the constructed underpass. Monitoring using cameras revealed that otter has been using five of the constructed underpasses, namely those in Råneälven, Skrövån, Vettasjoki, Venetjoki, and Långbäcken, see annex 7.3.

The co-operation between authorities and forest companies will continue after the end of the project.

Due to the possibility to extend the project period we were able to do all measures, the school excursions and attend the international conferences.

We have attended several seminars and conferences with presentation and have got a lot attention and good response from other participants.  
The family days have been great successes with over 1600 happy visitors.

We have had some problems getting people to attend excursions at some of the sites. We think it is because the project areas are sparsely populated. For instance, in the municipalities of Överkalix there are 1,23 inhabitant/km<sup>2</sup> and it is the same for all municipalities that is not near the coast.

## 5.4 Analysis of long-term benefits

### Environmental benefits

Direct / quantitative environmental benefits:

The targeted species, salmon (*Salmo salar* 1106), freshwater pearl mussel (*Margaritifera margaritifera* 1029), bullhead (*Cottus gobio* 1163) and otter (*Lutra lutra* 1355) will have much more opportunities to move more naturally in and along the streams.

The fish species, salmon and bullhead, can reach areas that have not been available since the barriers were built. That means larger habitats for reproduction and foraging and an opportunity for the fish populations to increase.

Even in areas where there are stationary populations of fish, removal of barriers is vital for the survival since an exchange of genes is necessary for all species.

The measures done for fish also benefits freshwater pearl mussel since it needs a salmonid as a host during their larvae stage. It is also the only way for freshwater pearl mussel to migrate, when it is attached to the gills on a salmonid.

The mortality for otters will decrease with the measures that have been done in Remibar when they don't have to go up on the road while passing a bridge or a culvert.

The chances that the targeted habitats, fennoscandian natural rivers (3210) and watercourses of plain montane levels with the Ranunculion fluitans and Callitriche-Batrachion vegetation (3260), will continue to have good conservation status increases with the measure taken in the project.

The water bodies within the project areas have increase their status according to the Water Frame Directive. One of the biggest problems in the Water District of the Bothnian Bay is migration barriers. By removing them the status is increased and we are closer to good ecological status in all our water bodies.

1. Long-term benefits and sustainability

a. Long-term / qualitative environmental benefits

If we continue to remove, and not build more migratory barriers the targeted habitats and the species will have a promising future. We have already seen results from the measures done in the project areas (annex 7.5).

But removing barriers is just one part in our environmental work. We also have to continue with other issues such as the damage done by the timber floating. That is what the new LIFE-project ReBorN will continue to work with.

The work with barriers will continue and we have a good network of people working at the authorities and forest companies that will keep up the work.

A parallel project to Remibar is a national project called “Älvspecifik förvaltning av lax och havsöring samt återställning av vattenmiljöer” that started 2015 and will continue until 2018. We have also an Interreg project called “Kustmynnande vattendrag” were barriers has and will be removed.

We are continuously working with applying for more project money from both EU funds and national funds.

Read more about the plans after the Remibar project in Remibar After LIFE (annex 7.6)

We are also continuously working to preserve valuable ecosystems and we are creating new nature reserves every year.

- b. The long-term / qualitative economic benefits of the project can mostly be connected to benefits for fishing tourism and ecotourism. Both of these industries have large potential in Northern Sweden and is one of the largest growing industries. Through better connectivity within the water courses, and because the project has opened up areas that could not earlier be reached for spawning, feeding, breeding and shelter, our project has improved the possibility for populations to thrive. The targeted species salmon, bullhead, fresh water pearl mussel (through increased connectivity for brown trout) and otter are favoured by our measures but other species of fish and aquatic animals are also favoured. In our short monitoring we can see growing populations, due to our actions in combination with other restoration and legal actions. This will benefit the sport fishing tourism.

- c. Continuation of the project actions by the beneficiary or by other stakeholders. The work will continue with all the partners in Remibar. We have network with people that are working at authorities and forestry companies. The STA have special finances that will be used for environmental issues and some of that money will go to removing migration barriers. The CABs will continue to work with land owners and give them support on how they can apply for money and what kind of permits they need to remove barriers. The work with Natura 2000 conservation plans and also with the Water Frame Directives programme of measures that has been decided by the Swedish government.

It would be possible to replicate the project in other catchment areas in both Sweden and other European countries. The solutions are simple and cost effective on private roads but more expensive and complex on public roads. This is an area that needs more research, how can we build cheaper constructions on public roads that still fulfil all technical regulations and demands? What standard do we need on public roads concerning both bridges and ecological adaption? We already have plans for coming and ongoing project that uses some of the measures or complement measures done by Remibar. These projects are: ReBorN, Ecostreams, “Älvspezifisk förvaltning av lax och havsöring samt återställning av vattenmiljöer” and “Kustmynnande vattendrag”. The solutions used are:

culverts are replaced with

- Bridges/arches or larger culverts
  - Thresholds are built downstream the barrier
  - Dams have been removed and the riverbed is reconstructed. Where the fall is high, a wooden bar is constructed to keep the water level upstreams.
  - Underpassages for otters are built under bridges
    - Dry banks
    - Dry culverts
    - Shelves
    - Fencing to lead the animals towards a passage
2. The STA has also started up a review of regulations concerning culverts in streams, and STA have ongoing plans to develop ecological adaption and ecological effectiveness at stream crossing.

The demonstration sites will be used for coming excursions and education of targeted groups. The cooperation in the project will continue after the project has ended, we have a work group with representation from each partner that is already established and will continue work with barriers in streams after the project. The demonstration site of Remibar in Varjisån is nearby one demonstration site of ReBorN and will be used in excursions in ReBorN.

3. Our best practice lesson is that cooperation leads to more benefit for nature. Through our cooperation we have managed to open up entire water catchment areas. Working on our own it would have taken decades to reach the same goal. The measures that were used always needs to be site specific and therefore it is important to adjust the solution to the site. Stream crossings are constructions that

evolve the whole time, so if the project will be replicated you always have to use updated measures and solutions for stream crossings.

4. Innovation and demonstration value: The project has been very active with dissemination, we have had several excursions and educations towards targeted groups. The most successful event was the family day with over 800 visitors in Umeå and 800 visitors in Luleå. Our recommendation to other projects is to arrange activities for families. We have also produced a short movie that can be used for coming education and seminars both for our own authorities and companies and also within all EU. The movie was shown at the international seminars that we attended, and we got very positive reaction.

The project has had exchange of experience with Roadex through presentations at Roadex meetings. A link to the Remibar website can also be found on the Roadex website <http://www.roadex.org/roadex-and-the-remibar-project/>

5. Long term indicators of the project success is that there are no migration barriers in the five project areas. The conservation status of the species and habitat has been improved by the project but is also dependent on other factors such as legislation, other restorations etc.



## 6. Comments on the financial report

### 6.1. Summary of Costs Incurred

PROJECT COSTS INCURRED			
Cost category	Budget according to the grant agreement*	Costs incurred within the project duration	%**
1. Personnel	915 955	1 180 980	137,9
2. Travel	185 212	142 264	76,8%
3. External assistance	3 571 120	4 467 192	123,0%
4. Durables: total <u>non-depreciated</u> cost		93 386	
- <i>Infrastructure sub-tot.</i>		17 597	
- <i>Equipment sub-tot.</i>			
- <i>Prototypes sub-tot.</i>			
5. Consumables	2 880 625	5 532 254	192,1%
6. Other costs	81 800	18 219	22,3%
7. Overheads	<b>534 429</b>	<b>795 095</b>	148,8%
<b>TOTAL</b>	<b>8 169 141</b>	<b>12 153 601</b>	148,8%

- \*) If the Commission has officially approved a budget modification indicate the breakdown of the revised budget. Otherwise this should be the budget in the original grant agreement.
- \*\*) Calculate the percentages by budget lines: e.g. the % of the budgeted personnel costs that were actually incurred

#### 6.1.1 Total costs

The public bodies follow the procurement rules of LOU, with call for tenders, direct treaty or framework contracts to get the most cost-effective measures.

All forest companies are also interested in cheapest price. For smaller contracts, they negotiate to get best price. For larger contracts, the forest companies have done a simple form of competitive tendering.

During preparation of the final report it was revealed that in SCA's internal accounting has 50% of their costs (external and consumables) been accounted as infrastructure. Therefore they now have lower costs in external and consumables and instead have reported costs for the depreciation in infrastructure.

Overall have our associated beneficiaries managed to deliver their responsibility within budget. This is unfortunately not the case for STA, because of an overheated market and more internal requirements for the C-actions STA have exceeded the total budget with nearly 4 M€

#### 6.1.2 Personnel costs

The reason that our personnel costs are a bit high:

STA has exceeded personnel costs when the action A2.1 and C1-C5 has taken more time than anticipated. A portion of the excess has been financed through redeployment from E1.1. Action D1 has also exceeded when the STA has completed a large part of these actions with its own staff instead of using consultants to hold down costs.

The CAB AC have done the dam measures with own personnel and therefor transferred 79 000 € from External assistance to Personnel costs in action C4 and C5. This make the dam measures less expensive in total but the personnel cost higher. The change is discussed in e-mail conversation with Izabela Madalinska the 22/4 2014. This is described more in midterm report 30/08/2015. The CAB AC has also exceeded the budget for action A2.3 and E.1.3 with personnel costs because of the more extensive landowner consultation. The consultation process has taken longer time because of many landowners for each object, it takes time to coordinate and convince all landowners of the importance of our measures.

SWAM has exceeded personnel costs when planning activities around the final seminar called for more time.

STA and SFA has higher hour rate then estimated in the budget. The higher costs can be explained by exchange rate, parental leave, sick leave and retirement. A few persons also have higher salary than in the budget. For more details see midterm report 30/08/2015.

In the inception report, we have also mentioned that €59 850 is transferred from Personnel to External for Sveaskog. This change has already been approved.

#### 6.1.3 Travel costs

Travel costs are low as we have tried to minimize these costs because of the exceeding of the budget in other cost categories. Mainly it's because many field visits have been conducted at each trip.

#### 6.1.4 External

This cost category will be exceeded mainly because STAs costs are much higher than in the budget (approximately 1,3 M€). This is earlier described in the midterm report 30/08/2015.

Regarding CAB BD, we have previously discussed that they will exceed the budget for external and consumables because they got new objects in their responsibilities.

The CAB AC have done the dam measures with own personnel and therefor transferred costs from External assistance to Personnel in action C4 and C5. This make the dam measures less expensive in total. The change is discussed in e-mail conversation with Izabela Madalinska the 22/4 2014. This is described more in midterm report 30/08/2015. They have also transferred costs to the forestry companies, because change of responsible partner for some of our objects. More information about this is found in progress report 30/11/2013.

SFA has no outcome within the external, they have implemented its commitments with their own staff instead of (according to the budget) hire consultants, which also explains the low overall outcome for them.

SCA has higher outcome on both external and consumables due to the relocation from CAB AC. But they have low eligible costs in both external and consumables, because 50% of the costs have been treated as infrastructure.

Holmen has exceeded the budget quite a bit due to the relocation from CAB AC. But in the end a slightly low outcomes both in the external and consumables when their object has become cheaper than in the budget.

Sveaskog seems to have made a mistake in their initial calculation between external and consumables when they have exceeded a bit in external but instead undercut a bit more on consumables. In total they have a lower outcome than budget when their object has become cheaper than in the budget.

We have covered the extra costs with extra finances from the STA and SWAM.

Several measures got more expensive than what was stated in the application. Any activity involving the construction and implicates contractors results in higher costs now in relation to 2010 because the competition has increased with several planned and one newly opened mine in northern Sweden and also a lot of new infrastructure.

The calculations in the application were estimations that were too low. The STA also have new, higher safety demands (for example new rules for safety barriers on roads). We have solved this problem with more financing from the STA and SWAM.

The prices differ a lot between different types of roads. The public roads have high demands for safety and also for lifetime of the investments. The public roads also demands high safety for the contractors during work. Signs and safety barriers has to be used and the traffic is often lead to bypasses. It is important that the emergency services can pass even though a bridge is constructed. The road bank is often high and the length of the arch/bridge/culvert is often long under a public road. This makes the measures on public roads expensive. On forestry road the lifetime of the investment can be shorter, because these roads are used during a certain period and after that they are not maintained. The roads can even be closed if forestry is not taking part in the area for several years. Of course all measures follow standard and set rules (for example carrying capacity) for that specific type of road.

On public roads it has also been noticed that it is not a good solution to use arches when the slope is  $> 6\%$  due to erosion problems. In these sites concrete bridges are used instead of arches and they are more expensive. This was not known when the application was written.

The cost is higher than in the application but they are the most cost-effective and this is assured by public tenders to get the best price. The project has done everything possible to get the best price and to keep the cost down. The additional costs will be paid for by the STA and SWAM.

#### 6.1.5 Durables

During preparation of the final report it was revealed that in SCA's internal accounting has 50% of their costs (external and consumables) been accounted as infrastructure. Therefore they now have lower costs in external and consumables and instead have reported costs for the depreciation in infrastructure. Unfortunately we not have any budget for this depreciation costs when it has been revealed this late in the project. This also means that the outcome in eligible costs is much lower than expected for SCA. The difference between eligible costs and real costs incurred will be financed by SCA.

#### 6.1.6 Consumables

This cost category will be exceeded because STAs costs are much higher than in the budget (approximately 3 M€). This is earlier described in the midterm report 30/08/2015.

Regarding CAB BD, we have previously discussed that they will exceed the budget for external and consumables because they got new objects in their responsibilities. The CAB AC has a low outcome in consumables because they have transferred costs to the forestry companies due to change of responsible partner for some of our objects. More information about this is found in progress report 30/11/2013.

SCA has higher outcome on both external and consumables due to the relocation from CAB AC. But they have low eligible costs in both external and consumables, because 50% of the costs have been treated as infrastructure.

Holmen has exceeded the budget quite a bit due to the relocation from CAB AC. But in the end a slightly low outcomes both in the external and consumables when their object has become cheaper than in the budget.

Sveaskog seems to have made a mistake in their initial calculation between external and consumables when they have exceeded a bit in external but instead undercut a bit more on consumables. In total they have a lower outcome than budget when their object has become cheaper than in the budget.

SWAM has lower costs for consumables as we did a reconstruction of the final seminar which instead called for more personal time, previously discussed in a letter to Mrs Ana Klenovsek 04/12/2015 and answer from Mrs Ana Klenovsek 07/12/2015. Their overall costs became lower than expected because of this reconstruction.

Several measures got more expensive than what was stated in the application. Any activity involving the construction and implicates contractors are more expensive today than 2010 because the competition has increased with several planned and one newly opened mine in northern Sweden and also a lot of new infrastructure. See new approximate cost in annex 7.2.

The calculations in the application were estimations that were too low. The STA have new, higher safety demands (for example new rules for safety barriers on roads).

We have covered the extra costs with extra finances from the STA and SWAM.

The prices differ a lot between different types of roads. The public roads have high demands for safety and also for lifetime of the investments. The public roads also demands high safety for the contractors during work. Signs and safety barriers has to be used and the traffic is often lead to bypasses. It is important that the emergency services can pass even though a bridge is constructed. The road bank is often high and the length of the arch/bridge/culvert is often long under a public road. This makes the measures on public roads expensive. On forestry road the lifetime of the investment can be shorter, because these roads are used during a certain period and after that they are not maintained. The roads can even be closed if forestry is not taking part in the area for several years. Of course all measures follow standard and set rules (for example carrying capacity) for that specific type of road.

On public roads it has also been noticed that it is not a good solution to use arches when the slope is  $> 6\%$  due to erosion problems. In these sites concrete bridges are used instead of arches and they are more expensive. This was not known when the application was written.

The cost is higher than in the application but they are the most cost-effective and this is assured by public tenders to get the best price. The project has done everything possible to

get the best price and to keep the cost down. The additional costs will be paid for by the STA and SWAM.

#### 6.1.7 Other costs

Other costs are also a bit low and that's because the costs for these products have been cheaper than what we expected. Mainly because of the production of the manual (D3), where the SFA has been carried out this with its own staff rather than consultants and they have also taken parts of the printing cost.

## 6.2. Accounting system

All partners use different accounting systems (except the public bodies which all use Agresso). The systems and their accounting are done according to the Swedish law. Each partner has assigned specified codes that are only used for costs within Remibar (specified in Annex 7.10 midterm report, 30/08/2015).

Annex 7.11 delivered in the midterm report 30/08/2015 shows the detailed description of the invoice processing system for all beneficiaries.

All partners with personnel costs (STA, SFA, CAB BD and CAB AC) use Agresso for the time registration (STA used earlier Business Pilot). STA don't have any authorization in their system so STA uses manually timesheets (annex 7.12 in midterm report, 30/08/2015).

We try to get the reference LIFE10 NAT/SE/045 Remibar on each invoice that belongs to the project. We always demand a reference on each invoice. But unfortunately it happens that the reference is missing. In these cases we note the reference our self where it's possible on the invoice. In our accountancy system we have codes that are specified for the project. All invoices that belong to the project are connected to these codes. This makes it easy to see if an invoice belongs to the project or not. If these accountancy codes can be found on the invoice we know that the invoice belong to the project. The accountancy codes function as the project reference – LIFE10 NAT/SE/045 Remibar. So if any invoice lacks the reference, we still have the codes to verify that the costs belongs to Remibar.

## 6.3. Partnership arrangements

All partners report their own statement of expenditure (financial tables) and send it with copies of invoices etc to the CB after each 3<sup>rd</sup> month. When all partners have submitted their material it's checked by the CB's financial manager. One or two times per year the CB send a payment to each AB based on their expenditures. The payment corresponds with their part of the EU contribution (50%) but only as much as we have got in pre-financing.

Complementary partnerships agreement was signed by all partners due to the prolongation. The original Partnership agreements were submitted to the Commission in the inception report and there were some complements to them in the progress report. The last complement to the agreement will be attached to this report, see annex 7.1.

## 6.4. Auditor's report/declaration

Anders Rainer, Internrevisionen IR, Trafikverket, Röda Vägen 1, 781 89 Borlänge.

In the past STA has used their internal audit for several projects with financing from the EC. The independence of the internal audit (IR) is described in Annex 7.13, Midterm report 30/08/2015, which also describes the working process of the internal audit.

Audit report will be found in Annex 7.14.

## 6.5 Summary of costs per action

Also see Annex 7.15

Action no.	Short name of action	1. Personnel	2. Travel and subsistence	3. External assistance	4.a Infra-structure	6. Consumables	7. Other costs	TOTAL
A1	Work plan – Seminars, workshops and material, SFA	4 695,64	1 101,08	0,00		1 193,77	0,00	6 990,49
A2.1	Work plan – conservation actions and calls for tenders, the STA	80 248,88	1 140,40	241 603,00		328,10	0,00	323 320,38
A2.2	Work plan – conservation actions and calls for tenders, the County Administrative Board of Norrbotten	5 457,79	0,00	0,00		0,00	0,00	5 457,79
A2.3	Work plan – conservation actions and calls for tenders, the County Administrative Board of Västerbotten	9 416,03	156,27	0,00		0,00	0,00	9 572,30
A3	Land owner meetings for information, SFA	13 029,45	1 371,93	0,00		1 137,31	0,00	15 538,69
C1	Råneälven – Determined restoration actions	16 082,54	276,80	626 540,39	10 542,60	600 926,34	0,00	1 254 368,66
C2	Varjisån – Determined restoration actions	33 322,49	230,91	947 281,85		1 461 537,43	0,00	2 442 372,67
C3	Ångesån – Determined restoration actions	16 120,53	326,57	524 885,71		845 127,64	0,00	1 386 460,45
C4	Lögdeån – Determined restoration actions	91 651,34	19 590,67	1 457 043,31	7 054,08	1 479 138,97	0,00	3 054 478,38
C5	Sävarån – Determined restoration actions	138 745,56	14 112,61	655 759,72		1 053 039,53	0,00	1 861 657,42
D1	Communication plan – general communication	32 980,64	0,00	2 636,37		13 978,58	9 589,75	59 185,34
D2	Dissemination to targeted groups - demonstration sites	35 066,97	390,67	1 446,46		3 508,68	5 165,58	45 578,36
D3	Manual to be used in training for target groups	17 965,83	16,42	0,00		2 156,86	3 463,45	23 602,56
D4	Excursions and seminars for target groups	52 127,14	5 973,18	3 328,76		32 075,01	0,00	93 504,09
D5	Exchange of experience	19 453,07	28 854,92	0,00		972,63	0,00	49 280,62
D6	Final seminar	14 859,29	5 128,89	0,00		8 321,67	0,00	28 309,86
E1.1	Project management	315 757,93	22 245,37	0,00		15 987,21	0,00	353 990,52
E1.2	Project management and administration – the CAB of Norrbotten	131 369,98	7 303,31	0,00		727,19	0,00	139 400,48
E1.3	Project management and administration – the CAB of Västerbotten	43 622,32	1 097,78	89,61		0,00	0,00	44 809,71
E1.4	Project management and administration – the Swedish Forest Agency	55 434,66	5 640,45	0,00		1 911,74	0,00	62 986,85
E2	Networking	15 935,85	13 160,51	0,00		972,55	0,00	30 068,91
E3.1	Monitoring and evaluation - otter mitigations	19 268,39	2 744,29	6 576,96		6 316,23	0,00	34 905,87
E3.2	Monitoring and evaluation - fish migration, fresh water pearl mussel and habitats	18 367,86	11 400,54	0,00		2 896,60	0,00	32 665,00
E4	Financial audit	0,00	0,00	0,00		0,00	0,00	0,00
Over-heads								795 839,45
	TOTAL	1 180 980,19	142 263,50	4 467 192,13	17 596,68	5 532 254,05	18 218,78	12 153 600,78

STA has approximately 50% lower costs within A2.1 the outcomes are instead within C1-C5, and this is because some of the planning has been done during the construction time. CAB BD has a bit low yields in A2.2 because some of the time spent has been accounted in E1.2 The CAB AC has exceeded the budget for action A2.3 and E.1.3 because of the more extensive landowner consultation. The consultation process has taken longer time because of many landowners for each object, it takes time to coordinate and convince all landowners of the importance of our measures. In A3 we have carried out the landowner meetings with lower travel costs and lower other expenses within consumables (for example rental of meeting room).

C1-C5 Several measures got more expensive than what was stated in the application. Any activity involving the construction and implicates contractors are more expensive now than 2010 because the competition has increased with several planned and one newly opened mine in northern Sweden and also a lot of new infrastructure.

The budget in the application was underestimated, for example we many objects have larger dimensions and some of them are even bridges. The STA also have new, higher safety demands. We have solved this problem with more financing from the STA and SWAM.

In D1, we have a slightly higher outcome than budget, primarily because much time spent to make information materials for events and networking. D2 has lower outcome because our movie was much cheaper to make than the budget for the demonstration sites. Only 44% of the budget has been used in D3. Mainly because that the SFA has been carried out this with its own staff rather than consultants and they have also taken parts of the printing cost. In D4 we have carried out more excursions but we have managed it with lower travel costs and lower other expenses within consumables (for example rental of meeting room).

E1.1 has a bit lower costs than estimated because we have tried to minimize other costs as travel and consumables with regard to other violations. We have exceeded the budget for action E1.3, mainly with personnel costs because of the more extensive landowner consultation. E1.4 has a bit low outcome because the SFA have not had the opportunity to participate in all the project meetings as planned. And they have used a lot of their personnel budget/resources in action D3.

In E2 we have a bit higher outcome and this has been discussed at the visit from the EC-delegation. We got the impression that EC was happy about our networking efforts and that the higher costs were ok. E3.1 and E3.2 has lower outcome than budget, mainly because many field visits have been conducted at each trip.

E4 Is in progress but no costs has been reported this far. The estimation is that the costs will be within budget. But when this costs will be revealed later on and we exceed the budget in total this action will be financed by STA.



## 7. Annexes

List of previously submitted documents:

Submitted document	Delivered in report	Date
Leaflet general communication	Inception report – Annex 7.2, English version progress report – Annex 7.1	31/05/2012, 30/11/2013
Partnership agreement	Inception report – Annex 7.1, complemented in progress report – Annex 7.10	31/05/2012, 30/11/2013
Booklet/manual for seminars	Progress report – Annex 7.1	30/11/2013
Workplans	Progress report – Annex 7.3	30/11/2013
Travel story Massachusetts	Progress report, annex 7.8	30/11/2013
Output indicators	Inception report – Annex 7.4	31/05/2012
Roll-ups	Progress report – Annex 7.2	30/11/2013
Manual for construction of sedimentation dams	Midterm – Annex 7.2	30/08/2015
Evaluation of measures - Report to Forest Companies	Midterm – Annex 7.4	30/08/2015
Monitoring protocol – stream crossings	Midterm – Annex 7.5	30/08/2015
Exchange of experience with Finland	Midterm - Annex 7.9	30/08/2015
Internrevisionshandboken - The manual for internal audit of STA	Midterm – Annex 7.13	30/08/2015
List of participants for A3	Midterm – Annex 7.20	30/08/2015
Accountancy codes	Midterm – Annex 7.10	30/08/2015
Approving costs	Midterm – Annex 7.11	30/08/2015
Time registration	Midterm – Annex 7.12	30/08/2015
Analysis of Personnel cost	Midterm Annex 7.18	30/08/2015

**7.1 Complement to partnership agreement 2016**

**7.2 Updated table with objects from Midterm report Annex 7.6**

**7.3 Evaluation of Mitigation measures for otter in the Remibar project.**

**7.4 Evaluation of migration barriers remediated as part of Remibar.**

**7.5 The Impact of Migration Barrier Removal on Connectivity - Evaluation of Remibar.**

**7.6 After-LIFE conservation plan**

**7.7 Media contact**

**7.8 Brochures for each demonstration site**

[http://www.trafikverket.se/contentassets/57f12f204c7d42169e28a6cd3fc4d3dc/folder\\_re\\_mibar\\_savaran\\_150409.pdf](http://www.trafikverket.se/contentassets/57f12f204c7d42169e28a6cd3fc4d3dc/folder_re_mibar_savaran_150409.pdf)

[http://www.trafikverket.se/contentassets/57f12f204c7d42169e28a6cd3fc4d3dc/folder\\_re\\_mibar\\_varjisan\\_150409.pdf](http://www.trafikverket.se/contentassets/57f12f204c7d42169e28a6cd3fc4d3dc/folder_re_mibar_varjisan_150409.pdf)

**7.9 School brochure**

[http://www.trafikverket.se/contentassets/ef0d8ebb737e4f2d928ed13e13941986/remibar\\_skolbroschyr\\_160602\\_webb\\_o\\_utskrift.pdf](http://www.trafikverket.se/contentassets/ef0d8ebb737e4f2d928ed13e13941986/remibar_skolbroschyr_160602_webb_o_utskrift.pdf)

**7.10 Documentation from final seminar**

**7.11 Dissemination material**

**7.12 Abbreviations**

**7.13 Response to Issues mentioned in EC letters from 15 July 2015, 18 November 2015 and 29 November 2016**

**7.14 Audit report**

**7.15 Form FB Costs incurred**

**7.16 Signed cost statement from each partner**

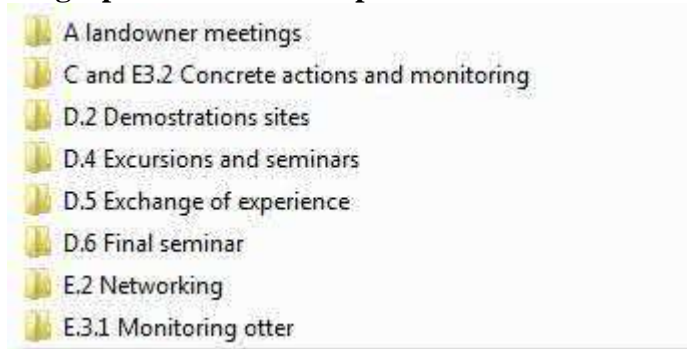
**7.17 New objects**

**7.18 Analysis of Personnel cost**

**7.19 Layman's report**

**7.20 Give-aways**

**7.21 Photographs/dissemination products/videos electronic format USB**



**7.22 Approving costs**

**7.23 Supporting documentation for personnel costs**

**7.24 Final table of indicators**

**7.25 Revised output indicators replacement of original table**

**7.26 Action E.2: Networking**

**7.27 The manual for internal audit of STA and certificate for Internal Auditor**