

Final technical activity report
Project: LIFE99 NAT/S/006355

Restoration of Lake Östen - a wetland of international importance for migrating birds.

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Section 1. Introduction

Background

Lake Östen is a wetland of international importance. It qualifies as a SPA; 13 bird species in Annex I of the Birds Directive are breeding and an additional 18 species stay during migration or in winter. Above all, Östen is known for its large number of resting whooper swans (500-1,000 simultaneously) and bean geese. In recent years more than 10,000 geese have been counted resting here during both autumn and spring. The proportion of whooper swans staging at Lake Östen is 2-15% of the EU population. The site is listed under the Convention on Wetlands, and in the national wetlands inventory the lake has been classified as a wetland of outstanding scientific interest.

Two major threats to the lake are identifiable, namely the diminishing expanse of wetlands and the eutrophication of the lake itself. Both threats are in some way linked to the clearance of the outlet in 1986.

The new water regime entailed by the clearance mentioned above means that the water level in May and June is lower than previously, and this has the effect of accelerating the lake's eutrophication. Clearance, by shortening the length of time for which water remains in the lake, has reduced both the amplitude of water-level fluctuations and the duration of different water levels. The reduction of the monthly mean water levels is between 10 and 40 cm. The measurements show the eutrophication rate to have accelerated since the 1986 clearance.

The possibility of changing the water level regulation of Lake Östen as a measure to preserve the area has been discussed ever since the negative effects of the clearing of

the outlet in 1986 became evident. Several investigations have been carried out. Researchers from the University of Lund came to the conclusion already in 1990 that the water regulation would have to be changed. The same conclusion was reached in 1998, following a study of changes in reed and sedge belts in Lake Östen. That study was based on vegetation maps compiled from IR photographs (air photography) taken in 1974, 1988 and 1993.



Lake Östen with circular stands of Scirpus lacustris

We want to have a water level regulation which will prevent Östen from becoming choked up, and will better benefit its function as a CW area. The water regime shall permit inundation of the upper land shore, so as to safeguard the function of the lake as a resting locale for migrant birds. We also want to have open and maintained wet meadows with a larger number of low-sedge and high-sedge zones where natural

conditions exist or have existed recently round about Östen.

At the beginning of 1990, the interested parties concerned combined to form what is called the Östen Group, comprising representatives of landowners, public authorities, NGOs and power companies. The Östen Group constitutes a neutral forum for discussing the restoration of Lake Östen and for gathering and disseminating information. In 1991 the Group agreed on a number of objectives for the ongoing conservation of the lake. All parties agree that the lake is to be preserved in such a way that its qualities as a CW area under the Ramsar Convention will endure and develop. The Östen Group has been instrumental in facilitating the preservation of Östen as a nature reserve. The County Administrative Board has agreements with several landowners concerning the care and maintenance of various biotopes within the reserve.

The landowners are generally opposed to the water level being raised in spring and early summer, because this impedes the drainage of agricultural land, thereby affecting the feasibility of existing land use.

The owners of power production facilities have not raised any objections of principle to the restoration, so long as they are compensated for the losses, which the project is expected to entail.

Objectives and expected results

The overriding objective is to develop and improve the function of Lake Östen as a SPA and CW wetland of international importance and a habitat for the flora and fauna associated with a eutrophic plainland lake with farmed wet meadows.

The good potentialities of the area for nature studies, fishing and other nature-

related outdoor activity in a living countryside are to be made use of.

The project objective is to provide 375 ha of wet meadows suitable for birds, by soil and vegetation restoration. 159 ha of degraded wet meadows will be restored up to an appropriate level of biotope quality. In addition, a minimum of 25 ha will be restored, out of the 192 ha of agricultural land judged to have been damaged by the construction of the dam.



Grazed wet meadows near Flistad, at the east part of Östen.

The project goal is to increase, by a minimum of 184 ha, the area of wet meadows in order to achieve the target of 375 ha, for the benefit of bird species of Annex I of the Birds Directive.

This forms part of the general objective of preventing further eutrophication of the lake, heightening its importance as a valuable resting locale for whooper swan, bean goose and other species; further augmentation of knowledge among the public at large of the great natural qualities of Östen, and attraction of more visitors to the lake and its surroundings.

Section 2. Overall project summary

Summary of actions undertaken since start

Alteration of the water levels requires permission from the Water Rights Court. The Legal, Financial and Administrative Services Agency applied on the project's behalf to the Vänersborg Water Rights Court for an alteration of the water levels in the lake. The application was refused, whereupon the Agency and the Swedish Ornithological Society lodged an appeal. This is still pending. Comprehensive supporting data have been compiled to accompany the application for an adjustment of the Lake Östen water level. Among other things, five different restoration schemes have been examined, as well as a sediment study and mapping of the lake's vegetation. Resting birds have been counted annually in the course of the project.

A management plan for the Östen nature reserve was adopted in the autumn of 1994. This is a detailed plan, setting out 85 different management zones and supplementary structures for the requirements of outdoor recreation. The project team has devoted a great deal of effort to restoring coastal meadows, in keeping with the management plan. This work has comprised tree felling, clearance of vegetation, fencing and soil preparation.

Östen and its surroundings attract some 50,000 visitors annually. The lake is a popular excursion point, especially during the thaw and early spring. To reduce the negative effects (e.g. disturbance), it is important to steer the visitors to areas, which will not be damaged. For the convenience of visitors the project team has constructed bird-spotting towers, additional hiking trails and improved parking facilities, and has put up information boards.

The project team has also devoted a great deal of effort to project information, e.g. in the form of "Open House meetings", newsletters, press releases, official openings of bird-spotting towers and the project's home page on the Internet.

Final results of the project

Restoration measures of several different kinds have been carried out within 219. Above all we have felled trees, cleared undergrowth and removed tussocks in the coastal meadows. This represents a higher level of aspiration compared with the 159 ha indicated in the application. In addition we have put up 3,850 metres of fencing, built a cattle pen and built three cattle bridges over ditches.



The MB truck removing tussocks at the north east side of Östen.

A wheelchair-accessible platform has been constructed during the project. This commands a view of the Southern Water Meadows to the south of Odensåker. A small car park has been constructed next to the platform. The motor road to the platform has been drained and gravelled and is also used for walking. A bird-spotting tower has been built at Öja, at the northern end of the lake. This tower takes the form of a hexagonal, glazed structure with a thatched reed roof. The roof affords a fine view of the northern parts of the lake. Next to the tower an existing car park has been enlarged and a hiking trail laid out between this and the tower. The new attractions are now clearly indicated by

road signs. Improvements have also been made to the signage for Logården, our existing information centre.

Information boards have been erected at three points beside the lake.

Summary of overall project assessment

The adverse decision by the Water Rights Court in Vänersborg was of course a setback. We have not been able to adjust the water levels in such a way as to secure the lake's natural qualities for the long term. The issue remains open, however, as a result of the appeal to the Environmental Court of Appeal, and a favourable solution for the future may possibly be achieved in due course.

The target of carrying out restoration measures in 159 ha of coastal meadows has been achieved. In the course of the project we have raised our sights and carried out measures in 219 ha. Many coastal meadows have been successfully restored. The LIFE funding has enabled us to cover large areas in a relatively short space of time, thereby achieving clear results.

In the course of the project we have constructed 2 out of 3 bird-spotting towers. We have also constructed parking facilities to the extent planned. We have put up information boards about the natural qualities of the lake, but the intended tourist brochure has not materialised..

Summing up, we have achieved the targets for restoration of the coastal meadows and have improved access to the lake.

Our long-term objective for the SPA site has not been achieved, owing to the no-adjustment of the water levels, but we may note that Östen is already of great importance to several bird species mentioned in Annex I of the Birds

Directive. Thus the wetlands qualify for classification as an SPA site. With changed water levels and good husbandry, however, the preservation status would be significantly higher than at present.

Despite opposition to the adjustment of water levels, the project team has maintained good relations with the majority of landowners. The measures taken, such as the reinstatement of the coastal meadows and the construction of the bird-spotting towers and parking facilities, have been appreciated by the local community. These measures will of course have to be followed through in future. Management of the coastal meadows will remain the joint responsibility of the County Administrative Board and the users/landowners concerned.

The future: long-term effects of the project and further actions recommended

Östen will in future be managed in accordance with the management plan drawn up at the formation of the nature reserve. In the course of the project, numbers of grazing livestock by the lake have shown a slight but unmistakable declining trend. In this long term this can develop into a major problem.

Maintenance of the land is a prerequisite of Östen's preservation as an important resting and nesting habitat in the Natura 2000 network.

We will continue working together with landowners to achieve good management of the coastal meadows, albeit through a new organisation. The unit maintaining the Hornborga Lake nature reserve will, as from April 2003, also be responsible for the County Administrative Board's maintenance activities at Lake Östen.

Air photographs (IR) will be taken at regular intervals to monitor the

eutrophication of the lake. The Skövde Ornithological Club plans on continuing the bird counts undertaken during the project.

The project home page will be kept up in one form or another.

Section 3: Detailed report activities

Preparatory actions and management plans

Legal Assessment

Alteration of the water levels requires permission from the Water Rights Court. The Legal, Financial and Administrative Services Agency has filed an application with the Water Rights Court in Vänersborg to this end. The work undertaken by the Agency included compilation of technical reports concerning the dam construction, land damage assessments, placement of construction contracts (design/construct) and negotiations with the landowners and hydro-power producers affected. The measure should result in permission being granted, under the Environmental Code, for altering the regulation of the lake, and in the procurement of a design/construct contract for the dam facility.

As supporting documentation for the application the Agency has among other things commissioned five different restoration alternatives. These are presented in the "First interim activity report". The aims of the project are best provided for in alternative 2, which is based on Olof Pehrsson's report "Östens vattenregim – förslag till reglering". See list of identifiable products in Appendix 1. Under this alternative, the lake is regulated so as to give us a high water level when the snow melts (in February/March), after which the water level will be lowered and kept about 3-4 dm above the lake's natural low water level in May-June. In summer the lake water level will be as low as possible, rising again in the autumn to the same level as in May and June. The lake will be unregulated in winter.

At the beginning of October 2000 the Swedish Legal, Financial and Administrative Services Agency put the finishing touches to the application for

changed waters levels, and the application was filed with the Vänersborg District Court, Environmental Court, on 12th October 2000. The application is summarised on page 8 of the second interim activity report. The Environmental Court proceedings dragged on, and the project staging post for a conclusive environmental judgement was put back a year, to 31st July 2002. This change was cleared with the Commission. The main hearing in the case took place before the Environmental Court in Vänersborg on 13th-14th June 2002. In its judgement, delivered on 12th July 2002, the Environmental Court refused the Agency's application; see App. 6 in the third interim activity report. The application was refused mainly on legal grounds. In addition, the court found deficiency's in the supporting documentation provided by the Legal, Financial and Administrative Services Agency, but it did not doubt the necessity of restoration measures being undertaken in the lake.

The Legal, Financial and Administrative Services Agency and the Swedish Ornithological Society appealed the environmental judgement in the Environmental Court of Appeal..

In January 2003 the Environmental Court of Appeal called for statements from opponents and other interested parties. Statements have been filed with the Court and proceedings have commenced. The Court has not yet announced a timetable for the hearing of the case, but the County Administrative Board hopes that a decision will be reached not later than 2004. The County Administrative Board cannot take a decision concerning a dam until the environmental assessment has been conclusively made.

The work preceding legal assessment was both extensive and expensive. The technical studies and much of the other documentation can be fed into ongoing efforts to obtain new water levels.

Management plan

A management plan for the Östen nature reserve was adopted in the autumn of 1994. This is a detailed plan, setting out 85 different management zones and supplementary structures for the requirements of outdoor recreation.

For the time being we are following the current maintenance plan. This will be revised if and when modified water levels re approved for Lake Östen. Thus no updated maintenance plan has been compiled in the course of the project. The Commission has been informed of this in previous interim technical reports. .

Land purchase/leasing

Compensation for damage

The project affects several riparian landowners. The application refers to a

general, preliminary damage assessment, showing that 192 hectares of agricultural land will be damaged, to a greater or lesser degree, in such a way that continuation of its present-day use will not be possible. Of this area, a minimum of 25 ha will be restored to wet meadows.

A firm of consultants commissioned by the Legal, Financial and Administrative Services Agency has compiled a detailed damage investigation report. This detailed damage report shows a relatively large arable acreage to be affected – most of it, however, only marginally. The damage to the land corresponds to a loss of 27.4 hectares of full-value arable land. To these is added the riparian land between 64.8 and 65.0 metres asl, of which about 40 hectares of grazing land and 36 hectares of other land are affected. See also the table below.

Arable	Arable	Grazed arable	Grazed arable	Abandoned arable	Abandoned arable	TOTAL
Totally damaged	Partly damaged	Totally damaged	Partly damaged	Totally damaged	Partly damaged	
1.73 hectares	300.18 hectares	19.48 hectares	23.91 hectares	14.60 hectares	4.05 hectares	363.95 hectares

In the course of the project the County Administrative Board has monitored sales of forest and farm properties adjoining the lake. Only a few properties came up for sale, but the County Administrative Board did not succeed in acquiring any of them. One landowner, however, sold a minor holding, some 10 hectares, directly adjoining the Logården nature reserve and coming within the project site. This property consists of waterlogged forest and wetlands. The cost of the acquisition has been funded by the National Environmental Protection Agency and has not been charged to the project.

Since we did not obtain permission to adjust the water level, no compensation has been paid to landowners and power station

proprietors. In the main hearing before the Environmental Court the landowners took the view that the compensation for damage to land was too low. In the course of the main hearing the Legal, Financial and Administrative Services Agency reached an agreement with the proprietor of the power station upstream of the lake concerning compensation for effects on the power station. The compensation will not be disbursed until we have obtained permission to alter the water levels.

SEK 50,000 encroachment compensation has been paid for the construction of a bird-spotting tower and car park at Öja.

Non-recurring biotope management

Construction of dam

As part of the project, it was planned to regulate the lake by means of a dam across the outlet of Lake Östen. This was to be a spillway dam with three tilting gates for regulating the water level of the lake. Further studies have been carried out regarding the technical design of the dam. The new design, however, does not imply any functional change to the dam. In the new proposal the dam has two gates instead of the three proposed earlier.



Outline of the planned dam with three tilting gates. In the new proposal the dam has two gates instead.

Planning work on the projected dam has been completed and supportive documentation compiled for an inquiry. This documentation was circulated for procurement. The procurement process has been suspended and the water level adjustment will be reconsidered when the environmental assessment is concluded. The planning costs have not been in vain, because the documentation can of course be used when there is a binding environmental judgement.

As a basis for correct decision-making, we have carried out two studies, *viz* a sediment study and mapping of the lake's vegetation. The sediment study was completed in the autumn of 2000. As part of that study we also investigated the benthic fauna in the sediments. These studies have formed the basis of the water

levels for which the Legal, Financial and Administrative Services Agency has applied to the Environmental Court.



Tench (Tinca tinca) from the test fishing in 2002.

Test fishing of Lake Östen also took place during the summer of 2000, under the auspices of the County Administrative Board and entirely at its expense.

Land and vegetation conservation

As part of the ongoing maintenance conducted in accordance with the management plan adopted, certain wet meadows which have become overgrown need to be restored by means of soil improvement and vegetation clearance. The management plan is a detailed one, setting out 85 different management zones. For each zone there is a description of what kind of measures will have to be carried out to maintain the values of the zone.

In the Life grant application it was stated that 159 ha would be affected by these restoration measures. The measures to be taken comprise tree felling, clearance of vegetation, fencing and soil preparation. The restoration target was upgraded in 2000 with the aid of air photograph interpretation and field surveys, as can be seen from the table below and from the maps appended to Interim Reports 2 and 3. These changes have been cleared with the Commission.

In the first instance, maintenance agreements have been signed with the

landowners themselves. In the second instance and for major restoration works, the work has been outsourced.. As a result, maintenance measures have been taken in about 219 hectares, see map in appendix 2. The higher level of aspiration concerning maintenance measures has to some extent offset the effects of failure to obtain permission for new water levels in the lake. The higher level of aspiration also means that restoration costs exceeded the budgeted amount. These expenditure changes have been cleared with the Commission; see the Commission's letter of 9th January 2003..

Planning of restoration measures and discussions with the landowners have been appreciably more extensive than anticipated, due very much to the landowners' objections to the new water levels proposed for the lake. The project team have devoted a great deal of working time to contacts with the landowners, as can be seen from the financial report.

Restoration measures of several different kinds have been taken within 219 ha. Above all we have felled trees, cleared undergrowth and eliminated tussocks in the coastal meadows. Varying water levels and fluctuating temperatures have put difficulties in the way of these measures during the project. Thanks to good

conditions in the autumn and winter 2002/03, with low water levels and, intermittently, a load-bearing ice cover, nearly all the measures planned have been accomplished. Measures are outstanding in no more than about 3 ha, see table below.



Eliminating tussocks in the northeast part of Östen, with a special made amphibic wetland machine.

In addition we have put up 3,850 metres of fencing, built a cattle pen and constructed three cattle bridges over ditches. Two of these are concrete tubes and the third a timber structure. All in all this has meant positive changes for the landowners using the coastal meadows for grazing. Improved prospects of good, efficient grazing of the coastal meadows also enhance the value of Östen as an SPA site.

Date	Measures needed	Measures as per application	Measures begun	Measures concluded
August 2000	About ? ha	159 ha	39 ha	29 ha
August 2001	205 ha	159 ha	50 ha	120 ha
August 2002	222 ha	159 ha	21 ha	175 ha
Mars 2003	222 ha	159 ha	-	219 ha

Regardless of whether we obtain an environmental decision, the future management of the wet meadows is important for the maintenance of Lake Östen as an SPA. One of the main livestock owners has had his livestock confiscated due to shortcomings of animal husbandry. During 2000 we had a felling agreement with the landowner concerned.

The legal position in this case is not yet clear, with the result that these wet meadows are not being grazed at present. In the longer term, the County Administrative Board believes that maintenance agreements may come to be signed. This has not come to pass, however, during the project. The County Administrative Board attaches importance

to the continuation of the land conservation measures, despite problems with the management of certain lands.

Recurring biotope management

In our application to the LIFE-fund, we did not apply for money for grazing and haymaking or other ongoing maintenance in accordance with the management plan. This is being funded through the national conservation allocation and through the European union agri-environmental scheme, under agreements between the County Administrative Board and landowners.

Public awareness and dissemination of results

Information brochures

The project team planned to produce an information brochure, for visitor, describing Lake Östen and its natural qualities. The brochure was to be published in four languages, with a total print run of 100,000 copies. It has not been produced, and the Commission has been informed of this.

To keep landowners and the local population informed, the project team intended producing an information brochure about the project. In the course of the project this has been replaced with a series of newsletters, which have been distributed to a large number of interested persons. The newsletter has had a circulation of about 1,350 copies. Eight bulletins have been produced altogether, and the latest of them is appended, Appendix 2. The change of plan has been approved by the Commission. The newsletters have been well received by local residents. We have also held two Open House meetings for the information.

As an adjunct, we have produced a web site, <http://www.o.lst.se/projekt/osten/>. New information, e.g. reports, newsletters

and press releases, has been continuously uploaded onto the website.

Improved access

Östen and its surroundings attract some 50,000 visitors annually, and Östen is a popular excursion point, especially during the thaw and early spring. To reduce the negative effects (e.g. disturbance), it is important to steer the visitors to areas, which will not be damaged. To facilitate access to the area, additional hiking trails, information boards, three bird-spotting towers, cycle paths and rudimentary parking facilities would be constructed in the area surrounding the lake.

A wheelchair-accessible platform has been constructed during the project. This commands a view of the Southern Water Meadows to the south of Odensåker. The platform is built of larchwood and offers wheelchair users a good opportunity of experiencing a wetland at close quarters. A small car park, with space for 2 vehicles, has been constructed next to the platform. This parking facility is for mobility-impaired persons only. The motor road to the platform has been drained and gravelled and is also used for walking. The bird-spotting platform was officially opened on 1st May 2002, at a ceremony attended by 70 people.

A bird-spotting tower has been built at Öja, at the northern end of the lake. This tower takes the form of a hexagonal, glazed structure with a thatched reed roof. The roof affords a fine view of the northern parts of the lake. Our hope is that the tower will not only serve as a traditional bird-spotting tower but will be a meeting point for school parties, local inhabitants, groups and nature-loving members of the general public. Since the opening ceremony on 15th March 2003, which nearly 120 people attended, the tower has attracted large numbers of interested visitors. An existing car park next to the tower has been

enlarged and a hiking trail laid out between this and the tower.



The bird-spotting tower at Öja.

Both the bird-spotting tower at Öja and the observation platform at Odensåker have been very well received by riparian residents. The new attractions are now clearly indicated by road signs.

Improvements have also been made to the signage for Logården, our existing information centre.

The bird-spotting tower planned for the north-western part of the lake will not be built. Owing to animal protection proceedings against the landowner concerned, there is no possibility at present of siting a bird-spotting tower on his land. We have investigated the possibilities of siting the tower elsewhere, but have been unable to find a suitable location.

Two signs referring to the project were planned. In view of the adverse court decision the text has been reviewed and now deals with the maintenance of the wetlands and the natural qualities of the reserve. These signs have been erected next to the bird-spotting tower and the parking space by the lake, in 3 places hitherto. During the spring of 2003 we will probably be putting up signs at two more

points. The signs measure 75 x 105 cm; see Appendix 2.

Additional parking space locations have been discussed during the project. As described above, this resulted in a parking facility at the wheelchair-accessible platform and a substantial enlargement of the car park at the Öja bird-spotting tower. Landowners at the southern end of the lake are refusing to release land for a car park, in protest against the proposed new water levels. There is a great deal of conflict in this area at present between the landowners and people wishing to visit the lake. We hope that the improved signage and the new bird-spotting towers will also have the effect of allaying discord at the southern end of the lake..

Workshops, seminars

Some networking activities with other LIFE/Nature projects on the theme of lake restoration were planned as part of the project.

On 2nd-4th October 2000 the management group visited Danish Life projects, namely: Varde Å, Vest Stadil Fjord and Skjern Å. This interesting field trip resulted in the Östen project being visited during November 2000 by representatives of the Danish Forest and Nature Agency.

Several meetings have been held with interested parties to inform them concerning the project. In December 2000, for example, an interesting seminar took place concerning the environmental studies carried out during the year and summarised in "Miljöövervakning i sjön Östen – undersökningar utförda år 2000", see interim report 2, Appendix 3.

Overall project operation

The project has for the most part been organised in accordance with the LIFE application. The County Administrative Board has been responsible for co-ordination. To support the County Administrative Board in this connection, a

project co-ordinator, Kjell Hansson (Empirikon AB), has been engaged on a consulting basis. Kjell Hansson had the tasks of ensuring that the project process was efficient and constructive and was experienced in a positive light by the community at large. Empirikon was commissioned by the project leader to assist with landowner contacts, construction of funding management systems, organisational aspects, information activities and other matters.

Partners in the project have comprised the Municipality of Skövde, the Municipality of Mariestad, the Municipality of Töreboda, the Legal, Financial and Administrative Services Agency, the Environmental Protection Agency and Skövde Ornithological Club. All of these organisations have contributed towards the funding of the project. The municipal share of funding has been channelled through the Local Investment Programmes (LIP).

Steering group

The Steering Group has comprised Deputy County Governor Göran Bengtsson and representatives of the municipal authorities, the Environmental Protection Agency and the Legal, Financial and Administrative Services Agency. Bertil Ström of the County Management Staff has also been included, together with the project leader.

The Federation of Swedish Farmers (LRF), Sjön Östens Sänkningsförening, Tidans Vattenförbund and the Skövde Ornithological Club have been fully entitled to attend and speak at meetings of the steering group.

The steering group has been a forum of discussion and interchange between the various EU/ LIP projects and offers guidance in matters relating to the implementation of the project. It was thus able to adopt recommendations to the project management group. During the project, the steering group has held nine

meetings. In addition, it had the opportunity, in May 2000, of discussing the Östen project with Seppo Vuolanto of the EU Commission.

Management group

The project was headed by Johan Jannert of the CAB Nature Conservation and Fisheries Section. He and Bertil Ström, of the CAB Coordination Staff, together with the sub-project leaders and a project co-ordinator, have made up the project management group. This group held 22 meetings in the course of the project..

The management group was accountable to the CAB directorate for the project's compliance with the project plan adopted.

Sub-projects

Sub-project groups have been formed as the project proceeds. The sub-projects have been divided up according to function and have been composed according to the competencies needed. There has been room for participation by the CAB, municipalities, landowners, the Skövde Ornithological Club and others. The sub-projects got initially organised in consultation with the parties affected. The following three groups were active during the project:

1. The Land Conservation Group, which was in charge of wetland restoration measures. Benny Lönn of the CAB Nature Conservation and Fisheries Section was in charge of the Group's activities. During the project the Group held five meetings, which landowners and users were invited to attend..
2. The Tourism/Outdoor Activity Group, which is responsible for brochures, bird-spotting towers, parking facilities and hiking trails. Between 1999 and 2001 the Group's activities were co-ordinated by Jörel Holmberg from the Municipality of Skövde. Following Jörel Holmberg's termination of her employment with the Municipality of

- Skövde, these matters were further pursued by the project leader. .
3. The Environmental Monitoring Group, which is responsible for the proper conduct of environmental monitoring. As part of this follow-up, developments will be kept under observation by means of recurrent bird counts. These have been taken by the Skövde Ornithological Club, which has been observing birds at the lake since the 1970s. Between 1999 and 2001 the Group's activities were headed by Hans Lann of the CAB Environmental Protection Section. During the latter part of the project Hans Lann was on sabbatical leave and the task of environmental monitoring was carried on by Benny Lönn.

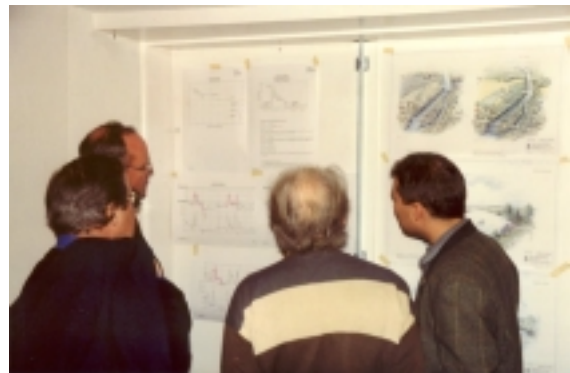
The organisation for building the dam has been discussed and modified during the project. Planning of the regulating dam, permit applications under the Environmental Code for permission to build it and matters of compensation have been handled by the Legal, Financial and Administrative Services Agency. To ensure continuity in work on the regulating dam, the Agency would also be responsible for its construction. Thus Gunnar Edenman of the Agency would be in charge of the procurement and completion of contracts for the building of the dam. Lars Arvidsson, Technical Manager of the Municipality of Mariestad, would be responsible, on the Agency's behalf, for site management and the inspection of contracting works. To ensure good information interchange between the different parts of the project, Lars Arvidsson would be included in the management group. Owing to the judgement by the Environmental Court, this part of the organisation has only commenced work on planning the dam. That work was discontinued after the court decision.

Staging post deadline

A staging post deadline had been set for the project. There was to be a conclusive environmental judgement by 31st July 2001 at the latest, failing which the project could be curtailed. During the project this date was put back to 31st July 2002, due above all to delays in the Environmental Court proceedings. The change of plan was cleared with the European Commission.

The Östen group

The Östen Group, which during the 1990s took part in work relating to Lake Östen, has been dissolved. Instead of reviving it we opted for another way of discussing the project with various interested parties. Landowners' representatives had the opportunity of attending the steering group's ordinary meetings. We have also held two Open House meetings which all interested local residents had been invited to attend, through advertisements in the daily papers and through our newsletter. Each of these Open House meetings attracted over a hundred people. In addition, the project management has had several meetings with organisations concerned and has conducted a dialogue concerning the project, as well as meeting twenty or more of the farmers affected. These meetings have provided a constructive dialogue, and it is our opinion that this means of communicating with the parties affected has been more viable than resuscitating the Östen Group.



Discussions during an Open House meeting with landowners and others, in 1999.

The measures taken have been funded through EU LIFE Nature, the Environmental Protection Agency, the Legal, Financial and Administrative Services Agency, the County Administrative Board, the Municipalities of Mariestad, Skövde and Töreboda, and Skövde Ornithological Club, which have monitored bird life on a voluntary basis.

Section 4: Overall project assessment

In the media, at various meetings and in other connections, the project has encountered strongly adverse opinion on the part of landowners and certain other interested parties connected with the lake. This adverse opinion mainly concerns the proposed alteration of the lake's water levels. The local residents wanting a change in water management have kept a lower profile during the project. Following the adverse decision by the Environmental Court in Vänersborg, the project has experienced a clearer division of opinion in the locality regarding the need for changed water levels. Time may possibly operate in favour of a new water regime that will benefit both bird life and local development.

During the terminal phase of the project the County Administrative Board compiled a report describing the organisation of the project, its main thrust and media coverage of the project, "Projekt restaurering av sjön Östen – Projekt – och erfarenhetsrapport"; see Appendix 2. That report may provide the basis of continuing work relating to Östen.

Co-operation within the project organisation has for the most part run smoothly. The County Administrative Board and the Legal, Financial and Administrative Services Agency have taken charge of the heavier parts of the project, while the municipalities have mainly attended meetings and worked more actively concerning the bird-spotting towers. Co-operation with the Skövde Ornithological Club has been positive. The Club has a very close knowledge of the lake's bird life and has been able to supply a continuously updated picture in this respect..

The work of the Steering Group to unite different layers on priorities and the investigations to be carried out has also furthered the progress of the project, in spite of many conflicts of interest within its ranks.

Co-operation with the landowners regarding maintenance and restoration of the coastal meadows has been impeded by the water level issue. Most landowners have taken a positive view of maintenance issues affecting the coastal meadows and visitor reception initiatives, while others have been unwilling to participate unless the question of changed water levels was dropped. One the bird spotting towers, parking facilities and fine coastal meadows were presented, a positive response was received from users and local residents.

The viewpoints tendered and the discussions held during the project between the commission and the project team have, in the opinion of the project management, been constructive and useful. The support received from Nature link international G.E.I.E. has also been of value in this connection.

Has the project achieved its objectives? Successes and failures

Basically the project has consisted of three parts: changing the water levels, restoring coastal meadows, and issues relating to tourism/outdoor recreation. The first two of these have had a direct bearing on the overriding objective of the project, which has been to develop and improve the function of Lake Östen as a SPA and CW wetland of international importance and a habitat for the flora and fauna associated with a eutrophic plainland lake with farmed wet meadows.

The initiative concerning bird-spotting towers etc., by endeavouring to channel visitors to places where they will not disturb the birdlife, contributes indirectly

towards achievement of the overriding objective defined for the project. At the same time visitors are given good opportunities of seeing and experiencing an internationally outstanding wetland environment from good observation points.

The adverse decision by the Water Rights Court in Vänersborg was of course a setback. We have not been able to adjust the water levels in such a way as to secure the lake's natural qualities for the long term. The issue remains open, however, as a result of the appeal to the Environmental Court of Appeal, and a favourable solution for the future may possibly be achieved in due course.

The target of carrying out restoration measures in 159 ha of coastal meadows has been achieved. In the course of the project we have raised our sights and carried out measures in 219 ha. In this way we have laid solid foundations for the continuing management of these lands. But these measures proved more costly than expected, due partly to numerous and protracted discussions with the landowners and to difficult working conditions on waterlogged ground.



Clearing up stumps at wet meadows.

In the course of the project we have constructed 2 out of 3 bird-spotting towers. We have also constructed parking facilities to the extent planned. These have materialised in different locations from those originally planned. We have put up information boards about the natural

qualities of the lake, but the intended tourist brochure has not materialised, due in part to our failure to achieve viable water levels. We also failed to achieve viable co-operation with the NGOs concerning the brochure. Many active members of the NGOs associated the tourist brochure with changed water levels. Summing up, we have achieved the targets for improved visitor access to the lake.

Information to landowners and local residents during the project has been supplied in a somewhat different manner from that originally planned. A series of newsletters and a home page, for example, were substituted for a brochure. As a result of these changes, our information output has probably been better and clearer than originally planned.

Conservation benefits for SPA and species targeted

Östen is a wetland of international importance. It qualifies as a SPA; 13 bird species in Annex I of the Birds Directive are breeding and an additional 18 species stay during migration or in winter. Above all, Östen is known for its large number of resting whooper swans (500-1000 simultaneous) and bean geese. In recent years more than 10,000 geese have been counted resting here during both autumn and spring.

The water levels have not been adjusted, and so our long-term aim for the SPA site will not be achieved through this project. We may note, however, that Östen is already of great importance to several bird species mentioned in Annex I of the Birds Directive. Thus the wetlands qualify for classification as SPA site. With changed water levels and good husbandry, however, the preservation status would be significantly higher than at present.

We will shortly be starting work on a preservation plan for Östen. This will be compiled in accordance with the guidelines

to be laid down by the Environmental Protection Agency. A draft version of the preservation plan is to be presented not later than April 2004. The plan is then to be circulated and approved, after which it will be processed and a definitive version presented before August 2005.

Incentive/ pump-priming effects and networking

There are several active NGOs in the vicinity of Östen addressing local heritage issues. On a couple of occasions the Östen project team arranged meetings with local heritage associations, and the proceedings included an expert lecturing on Östen, e.g. the wetland flora and its habitat. In this way the project has contributed towards an intensive discussion of wetlands issues in the local community.

Last year Odensåker Vicarage was sold to a newly formed incorporated partnership, which eventually plans to run it as a youth hostel. The project as such has not contributed towards the acquisition, but the lake, with its abundance of bird life, and the beautiful wooded pastures of Odensåker are a precondition for the youth hostel plans succeeding. The partnership has also established co-operation with about 20 entrepreneurs round the lake. Together they propose investing in tourism round about Lake Östen. Participants in this venture include cafés, art galleries, boat rental firms, food stores and farmers. For the 2003 season a guide has been produced showing the locations of 66 different business enterprises round the lake and presenting Östen's natural qualities and bird life attractions.

Innovation, demonstration and value added by EU funding

The constructive innovations within the project were above all connected with the intended dam construction. The technical solutions proposed in the planning documentation for the dam have not been

used previously in Sweden for conservancy-related regulation of lake water levels. Since, for legal reasons, the dam has not been constructed, nothing further will be added on the subject in this final report.

The heavy investments made in land management have resulted in many coastal meadows now being restored to good condition. The LIFE funding has enabled us to cover large areas in a relatively short space of time, thereby achieving clear results.

For clearing coastal meadows of tussocks we have made very successful use of machinery developed in connection with the restoration of the Hornborga Lake. This technique will also be employed for subsequent wetland works in the County of West Götaland.

During these years the project management has been in touch with several other projects and countries which have shown interest in Östen. We have received a number of field trips, e.g. from Ramsar, the Swedish Environmental Protection Agency, the Royal Swedish Academy of Agriculture and Forestry, the WISP project (Interreg II C) and the Danish Forest and Nature Agency.

The project management have also attended several conferences and other gatherings, where they have described the project, and several other county administrative boards in Sweden have contacted the project team to discuss lake restoration methods and funding.

On 2nd-4th October 2000 the management group visited Danish Life projects, namely: Varde Å, Vest Stadil Fjord and Skjern Å. On this journey we took the opportunity of visiting Draven, a newly restored lake in the Swedish province of Småland.

The County Administrative Board and the municipalities concerned are currently

processing an application for Interreg III B funding. This application has not yet been finalised, but is intended to include the Hornborga Lake, Östen and Valle. The overall expected outcome is to make a model for preservation, restoration and management of bird rich wetlands, nature reserves and cultural landscapes. This model is supposed to be the source for other regions and countries in Europe where to get knowledge and information. Among other things, we are planning to co-operate with regions of Russia, Latvia, Finland and Germany.

Socio-economic effects

The project has caused a great deal of discussion and fierce opposition to changes in the lake's water levels, for fear of adverse effects on agriculture.

Landowners, NGOs and others round about the lake all wish to preserve and develop its natural qualities for the future. What we have not succeeded in explaining, despite all our efforts to do so, is that the lake's water levels have to be secured during certain seasons of the year if we are to achieve the common objective in the long term.

Despite opposition to the adjustment of water levels, the project team has maintained good relations with the majority of landowners. The measures taken, such as the reinstatement of the coastal meadows and the construction of the bird-spotting towers and parking facilities, have been appreciated by the local community. These measures will of course have to be followed through in future. Management of the coastal meadows will remain the joint responsibility of the County Administrative Board and the users/landowners concerned.

Much of the practical work has been done by people living locally. In this way a significant share of the funding committed to the project has benefited the local

community. Landowners and users have been the first to be approached concerning restoration measures. Major works have been outsourced in compliance with national provisions. The only maintenance measures not to have been carried out by local residents are tussock clearance of the wetlands, which calls for specialised machinery. Bird-spotting towers, parking facilities etc. have been constructed by local contractors..

We believe that the investments made above all in bird-spotting towers and parking facilities will result in more people visiting the lake, which will ultimately have a favourable impact on local businesses. Since the Öja bird-spotting tower opened, we have noticed a distinct rise in the numbers of people visiting the northern parts of the lake, though it is hard to tell whether this trend will continue in coming years. A couple of landowners contemplate expanding their business activities, e.g. room/house rental services for visitors.

Summing up, despite opposition to the water level changes, we have obtained good support for other measures taken, and we have helped, at least temporarily, to raise the level of employment in the local community..

The future: Prolonging the effects of the project/further action needed

IR imaging

The problems of eutrophication have not yet been solved, and they present a complex picture. During the project period and in the years immediately preceding it, numbers of greylag geese rose dramatically in summer. Their grazing of reeds and sedge has helped to counteract eutrophication of the lake. As a means of monitoring vegetation changes in the lake we are planning regular air photography with IR imaging. Should eutrophication

prove to be continuing, this will increase the necessity of eventually changing the water levels in accordance with the intentions of the LIFE project. .

Feasibility of grazing

In the course of the project, numbers of grazing livestock by the lake have shown a slight but unmistakable declining trend. In this long term this can develop into a major problem. Maintenance of the land is a prerequisite of Östen's preservation as an important resting and nesting habitat in the Natura 2000 network. The most cost-effective expedient is for the coastal meadows to be put down to grazing, and we are therefore greatly concerned at the changes now being proposed to EU agricultural policy. The Commission has described how the decoupling of livestock payments will lead to a fall in beef production. This can have adverse consequences for the Swedish landscape and for the Natura 2000 habitats, which depend on grazing. If any such decoupling takes place, agri-environment support will have to be heavily reinforced.



Grazing cows at the west part of Östen.

Continuing management

Östen will in future be managed in accordance with the management plan drawn up when the nature reserve was

formed. The nature reserve is administered by the County Administrative Board. As from April 2003, administrative responsibility will be exercised from the County Administrative Board's Hornborga Lake office.

Future of the home page

For practically the whole of the project period the project has had a home page and this has been updated continuously. The home page will continue to exist, and during the year we will somehow be making it a permanent feature. This work will also be done from the County Administrative Board's Hornborga Lake office.

Continued studies of bird life

The Skövde Ornithological Club has been inventorying wetland birds for many years. During the project period these bird counts have been collated annually. The Club intends continuing with them in coming years.

Appendix

1. List of identifiable products already submitted in previous reports
2. Identifiable products since last reports
3. Set of photos illustrating the project actions and results
4. Press cuttings