Introduction to the excursion

Franziska Tanneberger
### Programme

<table>
<thead>
<tr>
<th>Departure</th>
<th>Arrival</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:30</td>
<td></td>
<td>Breakfast</td>
</tr>
<tr>
<td>8.25 Uhr</td>
<td>8.35 Uhr</td>
<td>Ferry to Lauterbach</td>
</tr>
<tr>
<td>8.45 Uhr</td>
<td>9.55 Uhr</td>
<td>Travel to Karrendorfer Wiesen</td>
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<tr>
<td>10.00 Uhr</td>
<td>11.00 Uhr</td>
<td>Excursion Karrendorfer Wiesen</td>
</tr>
<tr>
<td>11.00 Uhr</td>
<td><strong>11.50 Uhr</strong></td>
<td>Travel to Demmin (via train station)</td>
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<tr>
<td>12.00 Uhr</td>
<td>14.00 Uhr</td>
<td>Boat trip across Peene river peatlands (lunch on board)</td>
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<tr>
<td>14.05 Uhr</td>
<td>14.40 Uhr</td>
<td>Travel to Malchin</td>
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<tr>
<td>14:40 Uhr</td>
<td>15:20 Uhr</td>
<td>Visit of peatland biomass heating plant</td>
</tr>
<tr>
<td>15.20 Uhr</td>
<td><strong>16.10 Uhr</strong></td>
<td>Travel to Altentreptow train station, bus goes back via Stralsund to Rügen Island</td>
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</tbody>
</table>
Aktualisierte Moorkarte von Mecklenburg-Vorpommern

Moore, 291.724 ha

Datengrundlage:
Küstenüberflutungsmoore (Stand: 5/2011), LUNG M-V.
Konzeptbodenkarte 1:25 000 – Moorbodenformengesellschaften (Stand: 15.5.2014), LUNG M-V.
Hydrologische Moortypen in Mecklenburg-Vorpommern

Datengrundlage:
Moorübersichtskartierung (Erstaufnahme 1995, letzte Änderung 1998); 1:50 000, LUNG M-V.
Küstenüberflutungsmaare (Stand: 5/2011), LUNG M-V.
Konzeptbodenkarte 1:25 000 – Moorbodenformengesellschaften (Stand: 15.5.2014), LUNG M-V.
Nutzung von Mooren in Mecklenburg-Vorpommern

Moor mit Feldblock (=landwirtschaftliche Nutzfläche), 166.291 ha
- Grünland, 143.804 ha
- Acker, 20.291 ha
- Forstwirtschaft, 2.077 ha

Moor ohne Feldblock, 125.434 ha
- Forstwirtschaft, 47.016 ha
- Sonstige, 78.417 ha

Gebiete mit Rohrmoor (außerhalb der Feldblöcke), Größe der Kreise ist unabhängig von der Größe der gemachten Fläche)

Datengrundlage:
Feldblockkataster (2016), MLUV M-V.
Basis-Landschaftsmodell, Objektgruppe Vegetation, Wald (Stand 2012?) orientiert sich an 1:10 000, LAIV M-V.
Küstenüberflutungs Moore (Stand: 5/2011), LUNG M-V.
Konzeptbodenkarte 1:25 000 – Moorformengesellschaften (Stand: 15.5.2014), LUNG M-V.
Bereits wiedervernässte Moore in Mecklenburg-Vorpommern

Datengrundlage:
Projektgebiete Moorschutz (Stand 7/2016) 1:25.000, LUNG M-V.
Küstenüberflutungsmoire (Stand: 5/2011), LUNG M-V.
Konzeptbodenkarte 1:25 000 – Moorlederbodengebürgesellschaften (Stand: 15.5.2014), LUNG M-V.
Feldblockkataster (2016), MLUV M-V.
„Karrendorf meadows“
- a successful coastal wetland restoration project

Christof Herrmann
Agency for Environment, Nature Conservation, and Geology
History: Dyking and drainage of a coastal fen
(according to Michaelis 2003)

- The Swedish register map from 1697 already shows some artificial ditches; at that time, the meadows were used as pastures and for mowing
- Around 1820, enhancement of the drainage system through the development of ditches
- 1850/51 construction of summer dykes; these were severely damaged during the storm floods 1872 and 1874; they were rehabilitated in 1910
- During the 1920s, construction of two wind-driven water pumps
History: Dyking and drainage of a coastal fen
(according to Michaelis 2003)

Land use situation in 1937:
- crop production on more elevated areas; pastures for cattle and horses on lower areas (salt meadows)
- This situation remained unchanged until the comprehensive amelioration project 1971 - 1974
• The situation of the Karrendorf meadows in 1991 still reflects the results of the amelioration efforts during the 1970s.
• In 1988/89, the drainage system was reinforced.
• 1987-1990 ploughing and sowing of perennial ryegrass.
Karrendorf meadows in 1991
The Karrendorf meadows in 1991

Dyke

Artifical ditches

Pumping station

Fotos: R. Abraham
The Karrendorf meadows in 1991

Asphalt road towards the Island Koos, telephone and electric wires

Abandoned objects: former milking parlour, chicken barns etc.

Fotos: R. Abraham

Vilm, September 13, 2016
Restoration of Karrendorf meadows – background information
Restoration of Karrendorf meadows – the reasons for the choice of the project site

Favourable circumstances for planning and implementation of the project:

- Land ownership: administration of property mainly by the privatisation agency
- Extensive grazing land: Availability of subsidies
- Availability of competent staff of governmental authorities for planning and implementation of the project within the region (State Agency for Environment and Nature Greifswald)
Restoration of Karrendorf meadows – actions taken
Restoration of Karrendorf meadows – actions taken
Autumn 1992: Project development, land survey

Fotos: R. Abraham
Restoration of Karrendorf meadows – actions taken:
Jan. - March 1993: Construction of a new dyke for the future protection of the village Groß Karrendorf

January 1993: Start of the construction works
Restoration of Karrendorf meadows – actions taken:
Jan. - March 1993: Construction of a new dyke for the future protection of the village Groß Karrendorf
Restoration of Karrendorf meadows – actions taken:
May 1993: The new dyke is covered by grass vegetation;
burial of telephone and electric cables
Restoration of Karrendorf meadows – actions taken:
Sept.-Oct. 1993: Elevation of the road to 1,30 m above zero
Restoration of Karrendorf meadows – actions taken:
Sept.-Oct. 1993: Elevation of the road to 1,30 m above zero
Restoration of Karrendorf meadows – actions taken:
Autumn 1993: Removal of the old dykes
Restoration of Karrendorf meadows – actions taken:
Autumn 1993: Backfilling of the ditches; re-shaping of the natural tideways
Restoration of Karrendorf meadows – actions taken:
Autumn 1993: Chopping the poplar trees, removal of concrete stone paths
Restoration of Karrendorf meadows – actions taken:
Autumn 1993: Levelling of the former drdge discharge pool on the Island Koos
Restoration of Karrendorf meadows –
First flooding on December 25, 1993

© R. Abraham
Restoration of Karrendorf meadows –
After the storm flood of November 04/05, 1995

© C. Herrmann
Restoration of Karrendorf meadows –
After the storm flood of November 04/05, 1995
Karrendorf meadows 1995
Karrendorf meadows after restoration

- Natural flood regime
Karrendorf meadows after restoration:

- Agricultural management (cattle grazing)
Karrendorf meadows after restoration:

• A paradise for birds – as well as for ornithologists and all people interested in nature
Karrendorf meadows after restoration:

• A site for research and monitoring
Thanks for your attention!

Furthermore, I am grateful to Ronald Abraham for supplying his photographs!
Engagement of the Michael Succow Foundation in Karrendorfer Wiesen
4. Karrendorfer Wiesen - Overview

Das Bild kann zur Zeit nicht angezeigt werden.
4. Karrendorfer Wiesen – MSF properties
Karrendorfer Wiesen – Management goals

Guarantees of protected area management given as basis for land transfer

• **Allowing natural processes** (reeds, tall forbs and open water bodies)
• Optimisation
  • … of hydrological systems
  • … of grazing regime
  • … of visitor guidance & wildlife management
• Monitoring of changes and development
Optimisation of hydrological systems:
Water exchange through road dam
Peatlands in Peene Valley

- very small hydraulic gradient (20 cm over 85 km) → fen complex of ~18,000 ha
- centuries of low-intensity mowing/grazing
- 1930‘s: polders, after 1960‘s deep drainage
- 1992-2009 restoration of c. 10,000 ha (27 Mio Euro) → Nature Reserve of c. 20,000 ha (and Nature Park)
- but not (yet?) a Ramsar site…
Fen biomass heating plant
Malchin

09:00

Excursion
Excursion to the “Karrendorfer Wiesen” (peatland on mainland);
Boat trip on the river Peene;
Visit of the first German peatland biomass power and heat supply station
in Malchin.
Mowing of 300 ha rewetted fen (12 km from plant)

Stands of *Phalaris* (3-7 t DM ha\(^{-1}\) y\(^{-1}\)) and *Carex* (2-10 t DM ha\(^{-1}\) y\(^{-1}\))
Harvest June-September with adapted machinery
Yield 4.200 – 6.500 bales → heat production 4.000 MWh/a, which equals
Heat production 4,000 MWh/a, which equals 350,000 l heating oil
Wertschöpfungskette

540 Haushalte, Kindergarten, Schule, Bürogebäude

Wärmeabnehmer: Stadt Malchin

Landwirtschaftsbetrieb: Hans Voigt

1.200 t Heu (300 ha)

Biomasseheizwerk: Agrotherm GmbH

Biomassekessel 800 kW (LIN-KA) → Wärmebereitstellung 4.000 MWh (Grund- und Mittellast)

Energieversorger/Netzbetreiber: Energicos GmbH (Berlin)

→ Wärmepreis c. 55 Euro/MWh = unter Bundesdurchschnitt
Potential for paludiculture in MV

→ rewetting of 20% of the total peatland area (56,000 ha): potential for 280 such biomass heating plants
→ possible emission reduction: 1.12 million t CO₂ a⁻¹