

## **Optimizing nature management by using the PROMME-checklist, based on current ecological knowledge and practical experiences.**

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The success rate of restoration projects grows with increasing insight in ecosystem functioning as well as experience in carrying out restoration projects. Several problems and pitfalls in nature management seriously hamper the process of increasing success. If information on certain key processes in ecosystem functioning and biodiversity is lacking, unexpected negative effects may occur in restoration projects. E.g., if insufficient knowledge is available about local conditions or important biogeochemical processes affecting nutrient availability, rewetting a peatland can result in further degradation of the area.

To help optimising conservation and restoration measures the experience of European managers of nature reserves and the latest scientific knowledge of different disciplines was exchanged and integrated in the framework of an international LIFE Nature Co-op project, focussing on raised bogs and coastal dunes. Steps necessary to perform successful nature conservation and restoration projects were discussed with 130 site managers and scientists from 13 European countries. Based on common sense and experience, a checklist with six essential steps was made to help avoiding the most common ecological pitfalls: the PROMME-concept.

- Problem:** Description of the problem in terms of changes in flora, fauna and abiotic conditions on certain spots and the consequences of these changes for the ecosystem as a whole.
- Reason:** Identification of the biological, hydrological, chemical, and physical processes which led to the observed changes.
- Objective:** Formulation of a restoration goal, based on the current and future possibilities to invert the key processes that led to ecosystem degradation.
- Measures:** Selection of the optimal combination of restoration measures for restoring the ecosystem to the defined objective.
- Monitoring:** Determination of (a)biotic parameters that indicate (lack of) ecosystem recovery and of monitoring frequency and period; start of monitoring.
- Execution:** Actual application of the restoration measures and simultaneous monitoring and feedback.

By using this PROMME-checklist and the decision support tool site managers will be able to deal with ecological knowledge at the proper moments in the process of planning and taking conservation and restoration measures. Pitfalls encountered in previous projects can be avoided and successful solutions to problems in earlier projects can be adopted. This can significantly optimize the restoration and conservation measures and minimize the occurrence of unforeseen negative (side-)effects in ongoing and future nature conservation and restoration projects. More detailed background information is available in the freely accessible decision support tool at: [www.barger.science.ru.nl/life](http://www.barger.science.ru.nl/life).