



Overview of Vol.4, No.1 – British Isles

Restoration and Reclamation in the British Isles

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The British Isles, off the northwestern coast of continental Europe, are at the same latitude as Hudson Bay. However, the warming effect of the Gulf Stream moderates the climate in the British Isles. In addition, prevailing winds from the Atlantic Ocean bring abundant rainfall. Together, these factors help to foster an unusual diversity of ecosystems from dense forests to heathlands, moorlands and peat bogs over much of the islands. But not all is idyllic in this temperate haven. The proximity of the islands to the continent has permitted the invasion of aggressive species that threaten native vegetation. Forest clearing for agriculture, degradation due to coal and metal mining, and changes in hydrology have brought increasing pressures to bear on these often fragile habitats. Thoughtful and innovative solutions are required to restore these areas and enhance their value as home to a broad array of plant, bird, and invertebrate species.

The British Isles can be considered a collection of island habitats, and because of this introduced species can easily upset the delicate balance among existing species. In some cases, invasive species in the British Isles have been innocuously introduced as garden plants. Kim Swenson describes the problems caused by one such introduction, *Heracleum mantegazzianum* or Giant Hogweed. The plant's large leaves and copious amounts of wind-dispersed seed make it a formidable competitor. It is particularly problematic along streambanks where the bare soil left after the plant's annual dieback is prone to erosion. Chemical control efforts in Scotland and Ireland have produced promising results, but effective control is dependent upon additional regulation to restrict the planting of this invasive species.

Deforestation is not a unique problem to the British Isles, but one of great importance there. Particularly in Scotland, deforestation has reduced native forests to less than 1% of their original area. This has severely degraded wildlife habitats as well as reduced species diversity. Angela Rose discusses an ambitious initiative, the Millennium Forest for Scotland, launched by the World Wildlife Fund. This project brings together a variety of environmental groups and receives funding from a myriad of sources including the National Lottery of Scotland. An impressive aspect of this program is the degree of its coordination among 77 forest restoration projects spanning 500 sites.

While deforestation can have devastating consequences, the planting of a monoculture of tree species can be nearly as destructive. Afforestation with conifers for timber threatens the oakwoods habitats being restored by the Millennium Forest project as well as another type of critical Scottish habitat. This type is the bog, a wetland habitat where groundwater is maintained by slow seepage or by a high water table. Christine Gruber describes Langlands Moss, an area of raised bogs where the vegetative community is comprised primarily of sphagnum species. The

region is also a key habitat for a number of important breeding populations of bird species. Changes in hydrology and planting of commercial forests, which exclude the shade-intolerant *Sphagnum* moss species, have threatened this rare environment. An expensive whole tree removal effort was undertaken, combined with damming of the drainage system. Results from an extensive monitoring program are still being evaluated, but offer promise. Even more promising is the cooperation among environmental groups and regulatory agencies that helped to promote and guide this important effort.

Another type of habitat that has been imperiled in the British Isles is heathland, a community dominated by heather, a dwarf ericaceous shrub. Destruction and fragmentation of these plant communities due to agricultural uses have threatened not only rare heather species, but also important faunal species. Bill Schuna compares methods for restoration of heathland and points out the importance of controlling invasive species such as bracken fern.

As in other countries, the most severe degradation of the British Isles landscape comes from mining operations. As in other countries, governmental agencies are regulating and supporting restoration and reclamation efforts on these lands. Karen Javurek reviews techniques for reclamation of these areas. Site preparation and restoration of neutral pH to the soil are significant components of these projects. Selection of appropriate species, planting techniques, and stock quality are other keys to successful plant establishment.

The papers in this section address restoration issues in a variety of habitats found in the British Isles. They highlight the importance of cooperation between and among environmental groups and governmental agencies. They note problems with the lack of coordinated regulation and cite circumstances where additional efforts are needed. They point out the necessity of long-term planning and monitoring in restoration efforts. They discuss the reality of funding for such projects and the importance of public support and involvement. Most importantly, the projects and techniques included here provide hope that unique and fragile ecosystems can be restored and that their place in future generations will be assured.