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Japanese 'Wetlands' and their Conservation

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Throughout the world there is growing concern among scientists and naturalists over the rapid disappearance of "wetlands". As a visiting ecologist, I have been glad to find that there are still some splendid examples of "mires" and other wetland habitats in Japan. I have greatly appreciated the opportunity to visit several of these, including Sarobetsu and Kushiro moors in Hokkaido, the high altitude moors at Oze and Kirigamine, and other smaller areas both in the mountains and the lowlands, and to give special consideration to the problems of nature conservation in such places.

Wetlands are in danger

In mountain regions mires are generally safe from destruction, especially where they are protected within the boundaries of National Parks, although they may suffer much damage from trampling by the feet of many tourists who come to enjoy the Parks. But in the lowlands there is great demand for land, and modern machinery makes it easy to reclaim for purposes of agriculture, forestry or building. For example, considerable inroads have been made into the margins of the Sarobetsu and Kushiro moors, while the fens in the Yufutsu district are rapidly being engulfed by the spread of industry and housing.

My observations show that each of the areas visited is distinctive: they are not merely repetitions of a single theme. There are marshes, fens, flood-plain mires, sloping bogs, bogs composed of a 'staircase' of pools, and 'high moor' or 'raised bogs' in which the peat surface has grown into a big, convex dome. Some of them are as good examples of their kind as can be found anywhere in the world, and so may be ranked as of international importance.

Protection of Wetlands

These mires are the habitat of many interesting and specialized plants, animals, brids and insects. Some of these are conspicuous and attractive, such as the large

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flowers of (*Hemerocallis, Hosta, Lysichiton, Veratrum*), the wild cranes and the dragonflies. When we ask the question: "Does it matter if the wetlands are damaged or destroyed?", many people would agree that it would be a shame to lose these beautiful features of our environment. But perhaps it is even more important to realize that every mire is a living, developing and changing 'system' in which all the members, whether conspicuous or inconspicuous, are interdependent. In Japan, as well as in Britain and numerous other countries, very many of these complex systems have now disappeared without trace. Are those which remain to be lost in the same way? If we are to hold on to our opportunities to study, understand and appreciate our environment, it is very urgent that we should protect good examples of each type of system. In the case of mires, this means more than protecting a small area somewhere in the middle and abandoning the rest, because wetland vegetation depends on a continuous supply of water and if we change the drainage pattern around the mire too much its surface will dry out. This will cause change into entirely different kinds of plant community.

Another reason for protecting examples of wetlands is that they are storehouses of the history of vegetation. Preserved in the peat are the remain of plants which grew in the mire in former times, together with pollen grains blown onto the mire surface from surrounding trees. Careful analysis enables us to gain a remarkably clear picture of the changing patterns of forest and mire vegetation in the neighbourhood. There is no other way in which we can obtain this valuable information, so it is important that the record should not be lost.

Of course it is necessary to provide land for food crops and building. But it should be possible to find a compromise, because the total area needed to ensure the protection of complete, functioning mire systems is small compared to the rest of our land surface. It is especially important to preserve examples which are the best of the kind in the world, but in a sense each one of the surviving areas is unique. Some of their wild plants and animals are to be found only in Japan, and furthermore if we compare the mires of Hokkaido with those of more southern parts of Japan we find considerable differences in the flora and fauna. It is important to ensure the survival of representatives of this regional variation in mire types.

Reccommendation

It may be presumptuous for a visitor to make recommendations, but perhaps I might be allowed to make some suggestions. I have read with interest the published accounts of excellent and thorough research work which has been carried out on some of the major mire systems. I suggest that this type of work should be ex tended to all surviving examples of wetlands, large or small, with the aim of producing a complete survey. Such a survey will provide the evidence for terating some examples as of prime, international importance, and others as of national or regional importance. Clear objectives for conservation on a nation-wide basis can then be established. In this connection, it is worth noting that there may be small areas of lowland mire, in the many valleys, water courses, and flat plains,

which might otherwise be overlooked and which may have special features making them worthy of protection.

Once such a programme has been agreed, in each of the important localities consideration should turn to the question of the extent of the area which must be left undisturbed if the whole system is to survive. This will involve careful study of the hydrology of the system, its water supply and drainage pattern, and the degree to which these have already been modified by man. The results will determine whether or not some parts could be sacrified to other uses without risking serious effects on the rest, and whether various kinds of management may be needed to counteract the influence of changes which have already occurred.

One example of management necessitated by recent human impact is the repair of vegetation destroyed by trampling, leaving the peat surface bare. In the recent past, in parts of the Oze moor complex this had reached serious proportions. I was, however, greatly encouraged to see the excellent results achieved both by controlling the routes followed by walkers (with the provision of wooden 'walkways') and by research into the best methods of replanting and re-seeding the trampled areas. In some cases, good recovery has taken place, with the vegetation gradually approaching its former composition.

A visitor is in a good position to make comparisons of what he sees with related types in other parts of the world. I have no hesitation in saying that in Japan there is a series of mire types which is of outstanding importance. They make a significant contribution to our knowledge of wetland ecology, and at the same time add much to the beauty of the landscape. I believe we should do all we can to see that we pass on to future generations some examples of what we have inherited from the past.