



Overview of Vol.1, No.1:

Large Scale Restorations

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The majority of ecosystem restorations are conducted on relatively small scales and usually by one agency or organization. In addition, they are usually performed on property owned solely by the party conducting the restorations. In many cases, the disturbances to the system being restored are limited: the mitigational restoration of wetlands impacted from road construction for example. In other cases, impacts to an ecosystem are widespread but, for a wide variety of reasons, attempts at restorations are relatively small: isolated prairie pothole restorations within an expansive agricultural region, for example. In either situation, restorations at this small scale are quite different than restorations that are undertaken on much larger scales.

What is it that makes large scale restorations different than restorations conducted on a more modest scale? First, large scale restorations are often the result of large scale intensive, ecologically destructive human interactions with the land. In some cases, the Kissimmee and Platte Rivers for example, these interactions were deliberate alterations of ecosystems to better meet perceived human needs and desires. The fact that we are attempting to reverse these alterations is perhaps a reflection of changing perspectives that our culture is undergoing with respect to our relationship to the land. This becomes especially salient when one considers the scale at which some of these restorations are occurring and the tremendous costs involved.

The scale of a restoration, however, can also be a detriment. In many ways, the scale of a project drives decisions about what interactions are feasible. Applying soil amendments to a 3 acre restoration may be feasible; applying the same amendments to a 3000 or 30,000 acre restoration becomes unfeasible. As in the case of the Kissimmee River restoration, there was no money or time to conduct any site preparation or plantings, things that hardly ever go ignored on small scale restorations. Oftentimes, these decisions are purely economic and must be made regardless of the actually ecological need. Thus, in large scale projects restorationists often need to conduct the restoration without the resources that are required to pay attention to detail. This is true for interventions that can and cannot be made and also for the monitoring process. These factors may become especially evident because large scale restorations are often high profile projects where achieving "success" becomes very important.

Another difficulty in dealing with large scale restorations is the problem of logistical coordination. Because a large amount of land is usually involved many individuals, organizations and agencies have a stake in the restoration. This can sometimes result in logistical grid locks. As reported in the case study of the

Anacostia River Restoration, over 60 governmental agencies were involved in this project. Depending on the circumstances, this can also provide technical expertise in many different areas that could be valuable to the restoration process.

Another common thread that runs through these case studies is the high amount of community involvement in the restoration projects. In some cases, the community involvement is a critical factor in implementing the interventions and monitoring the success. Once again, this is a factor of a larger scale restoration having more "neighbors". Since there are more people effected by the restoration, it is likely that more people will become involved.

As we have seen, restoration ecology is an extremely diverse field encompassing disciplines like hydrology, botany, ecology, wildlife biology, geology, genetics, population ecology, soil science, economics and sociology. Large scale restorations are unique in that they often involve more of these disciplines on a single restoration site. The restoration of a small patch of prairie in Iowa, for example, would probably involve a botanist and a soil scientist. The restoration of 8,000+ acres as in the Walnut Creek restoration project, however, also involves hydrologists, wildlife biologists, botanists, ecologists and people to work on the social aspects of this restoration.

Finally, large scale restorations offer the challenge of viewing and managing ecosystems on a landscape level. This is perhaps the true test of our understanding of landscape ecological processes as they function on the large scale. These "landscape" restorations permit us to stop delineating specific, single unit ecosystems and allow us to view ecosystems as they should be viewed: in the larger landscape context taking into account ecotones and the interrelationships between different ecosystems. This also permits us to consider the restoration of habitat for species that require large tracts of land. In a landscape that is riddled with small unconnected islands of habitat, these large scale restorations may be extremely important for the survival of some species.

For all of their differences, large scale restorations in practice are very similar to small scale restorations. Many times, the same techniques are used in both: using agroforestry to decrease erosion in the mountains of Guatemala employs the same techniques if it is conducted on 5 acres or 5000 acres. This, however, means that there is much overlap in the problems that plague both types of restorations. As the science of restoration ecology grows, so will our understanding of how to overcome these difficulties and restore even large scale ecosystems to their naturally functioning state.