

**Perceptions of Restoration: Surprise Linkages with Wetland Replication Failures**  
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by Patrick C. Garner

Several years ago I informed a conservation commission that grant monies were available for pilot restoration projects on filled wetland areas. The chairman shrugged and said, "So what? All they'd be doing is making a bunch of cattails. At least we have trees there now." This comment, more than any pontificating, illustrates the perceived linkage between decades of failed wetland replication and future attempts to restore wetlands.

Wetland replication has rightly been given a bad rap. Conservation Commissions across the state look with skepticism at proposals to replace lost wetlands with created wetlands. Their skepticism arises from their experience. Consultant upon consultant has come before them, glowingly describing replication proposals. Actual construction of these areas, which we artfully call "replications," is almost always deficient. The majority of replications fail, and each failure is a measurable wetland loss for the Commonwealth.

The Wetland Protection Act allows certain levels of mitigation to occur when wetlands are impacted, but technical guidance regarding replication methodology within the legislation is minimal. In addition, DEP has issued replication guidance sufficiently vague to allow forested wetlands to be replaced with cattail meadows, and shrub swamp wetlands to be replaced with odd pockets of soft rush and loosestrife. This pattern of inept replacement is well documented in the recent Brown and Veneman Compensatory Wetland Mitigation in Massachusetts study (Sept 1998). Bad science, careless construction, basic misunderstandings and inadequate supervision have all contributed to the long history of these failures.

The wetland regulatory and consultant community knows this, both from specific examples and anecdotally. The biochemical, biological and habitat values of a forested wetland swamp are vastly different than those of a monocultural wetland meadow. And because we have allowed what I mindfully call "junk replications" to prevail, there is a strong negative linkage between replication and restoration. In fact, the two words are similar enough that they are frequently used interchangeably.

We should acknowledge that wetland replication and restoration, particularly for inland wetlands, will likely be perceived in the future, as they are now, as identical terms or techniques. The success of one will assume the success of the other. The driving scientific principles of successful wetland replication are identical to those for restoration, so this public perception itself is reasonable.

What is the effect of this linkage? Clearly, as EOE, moves toward broader implementation of wetland restoration, public education becomes a priority. Hand in hand, wetland scientists must continue to refine restoration techniques to insure consistently successful like-kind replications and restorations of inland wetlands.

The good news is that many of us in the wetland science community believe that the technical knowledge does exist to largely restore wetlands to their original kind. There are excellent scattered examples of successful replications in Massachusetts and throughout New England. Scientific understanding has advanced dramatically in the last five years. The best wetland specialists now understand how to create or recreate outstanding wetland areas. They understand why the previous failures occurred, and how to avoid them. Regulators are also becoming increasingly savvy during review and supervision of wetland replication. Regardless, the scientists, designers and regulators with this knowledge remain in the minority.

Consequently, regulatory standards for replication must be higher. The issuance of a detailed DEP Wetland Replication cookbook on par with the recent DEP Stormwater Management handbook (March 1997) would institute such standards. Similarly, systematic and consistent supervision of replication must always occur. Implementation of the recommendations in the Brown and Veneman Compensatory Wetland Mitigation in Massachusetts study would further insure a higher success ratio.

If wetland impacts continue to be allowed by regulation, they should be mitigated in all respects. If wetland restoration is to become widespread, its success too will be dependant on educational efforts, proper project implementation and subsequent thriving wetland re-creations.

I suggest that a year 2000 goal for the State of Massachusetts would be to strive for a 100% success rate of all future wetland replications in the ensuing century. The science exists to achieve that goal. And that level of mastery would truly eliminate controllable wetland losses, and would allow the movement for wide-scale restoration to rapidly gain momentum.