

## Reconciling Watersheds and Ecoregions: What's in a Number?

"Pick a number. Is it a 6, an 8, a 10, or a 12?" To most people, other than mind readers at the carnival, this means very little. However, to wetland ecologists, academics, agency regulators, and mitigation bankers, it is one of the hottest topics in the compensatory mitigation discussion today.

Under the joint U.S. Army Corps of Engineers (the Corps) and U.S. Environmental Protection Agency Final Mitigation Rule (the Rule; Compensatory Mitigation for Losses of Aquatic Resources, 33 C.F.R. §332.2(b) (2008)), the entire focus of compensatory mitigation was reset to the needs of the watershed, rather than on-site mitigation. The common metric in classifying a watershed is the U.S. Geological Survey Hydrologic Unit Code (HUC) classification, which gives a number to the size of a watershed. Smaller numbers tend to be larger watershed areas consisting of a major riverine system with several rivers and streams, where smaller numbers (HUC-8, -10, -12) relate to rivers and their streams. When considering service areas for mitigation banks, they may be sized according to several factors, including the type of aquatic resources being impacted, regional habitat or species recovery plans, locations within watershed, governmental jurisdictions, and the economic viability of mitigation banks.

Unfortunately, the options for determining the size of service areas has resulted in a lack of consistency and generated debate over how to determine appropriate areas. Given the differences in regional hydrogeomorphic features, physical jurisdictions, habitat and species recovery

efforts, and impacts on wetlands, focusing on watersheds may not be the most ecologically beneficial for a given resource. The Rule integrated the watershed approach into determining service areas, but also included other specific considerations, such as landscape position, habitat requirements for important species, and conversion trends. In addition, the considerations section of the Rule stated that compensatory mitigation "should not focus exclusively on specific functions," e.g., water quality, but rather on a "suite of functions typically provided by the affected aquatic resource." Thus, a process that incorporates all the ecological factors, along with more flexible service area ratios, may be a more prudent approach to determine service areas, rather than a fixed watershed number.

The typical approach to dealing with compensatory mitigation within a watershed calls for keeping all mitigation within the affected watershed. However, this is more difficult than it sounds. A HUC-6 usually consists of a large river basin comprising several thousand square miles and several rivers and streams, whereas a HUC-12 can be as small as a drainage basin for a creek. While the Rule did not specifically establish one size of watershed, it did suggest a HUC-8 in urban areas and a HUC-8 or HUC-6 in rural ones. Unfortunately, sometimes the mere suggestion of a number can become the default position for regulatory implementation.

Another approach to addressing an appropriate area for which compensatory mitigation can occur is ecoregions or bioregions. The definition for these terms is loosely related to areas that

have similar ecological or biological functions. In terms of aquatic habitats, this could include wetland habitats with similar features, such as estuaries, tidal wetlands, seasonal wetlands, or unique habitats, such as bogs, fens, or vernal pools. For other important biological functions, such as species habitats or rare or endangered species, the ecoregion could be rivers or streams with similar fish species, or vernal pools with rare or endangered crustaceans, such as fairy shrimp. While these important areas do occur within a watershed, the range of habitat for the rare or threatened species may be an ecoregion that crosses over a number of adjacent watersheds. While watersheds may focus more on the water quality, flooding, groundwater recharge, or flow issues related to rivers and wetlands, ecoregions may focus more on the species assemblage or target habitat amounts needed for species health and sustainability. This approach to allowing compensatory mitigation within service areas by "watershed, ecoregion, physiographic province" is also clearly called out in the Rule.

In a recent article by Philip Womble and Martin Doyle in the *National Wetlands Newsletter*, "Setting Geographic Service Areas for Compensatory Mitigation Banking," the authors noted very wide differences both in approach to determining watershed and the actual watershed HUC units applied throughout the different Corps districts. While there are a number of ecological, administrative, and statutory reasons for the wide differences to approach this issue, a standardized approach could help reduce conflicts and add protection for resources that do not benefit fully from using watersheds as service areas.

For example, vernal pools, classified under the Hydrogeomorphic Classification System as depressional wetlands, typically are found within certain similar elevations and soil types found across a number of adjoining watersheds. There are a number of identified key vernal pool ecoregions that have been designated for protections. However, often the classic HUC-8 only includes a small portion of the designated vernal pool complexes that have been designed for recovery within the vernal pool region.

Estuarine wetlands are only found at the lower end of a watershed and typically have very limited reach up to the higher elevation areas of the watershed. Thus, the functions and values of these wetlands are more similar to areas within adjacent watersheds occupying similar landscape

position than to other wetlands in different ecoregions within the watershed.

While there is general agreement among the wetland biologists, regulators, and even the mitigation community that the new focus on watersheds in addressing compensatory mitigation is a step in the right direction, these examples provide a good indication of the challenges with relying too heavily on watersheds.

Given the wide variety of geomorphic, hydrologic, and ecologic factors related to any wetland habitat, it is still generally accepted that the appropriate service area or mitigation area should be determined on a case-by-case basis. However, that is as far as the general consensus goes. Agency regulators still tend to apply their individual regulatory requirements to their interpretation of the appropriate mitigation. For example, federal and state wetland regulators tend to promote a strict watershed approach, whereas other members of the mitigation community, such as the federal and state wildlife or environmental quality entities, focus more on ecoregions, while members of the regulated community, either the project applicants or mitigation providers, such as bankers, look more for consistency and socioeconomic factors.

However, amid all the competing influences and interpretations of deciding what and where appropriate compensatory mitigation should be located, it is generally accepted that it is important to provide some balance in determining the most appropriate service area, which, at a minimum, should include watershed, ecoregion, and economic considerations.

Thus, a prudent approach to addressing the potentially conflicting ecological and economic issues surrounding this watershed issue would be to develop a consistent and documented process for how to determine compensatory mitigation areas and service areas. A process that requires that all the relevant factors be considered and documented would ensure that not just one approach is used.

This formal process would require that the following items be included and documented in the development of compensatory mitigation or service area.

**Watershed:** Use a general watershed approach when considering the appropriately sized basin that may encompass a service area. Areas with greater topographic variation should support service areas identified by ecoregions within larger HUC designations and/or adja-

cent HUC areas. In addition, as mentioned in the Rule, designation for urban and rural banks should be called out and larger service areas provided to those more rural areas with lower potential for impacts.

**Ecoregions:** The language in the Rule calls for including the requirements of various aquatic or terrestrial federally or state-listed threatened or endangered species in the determination. Areas with designated recovery plans, such as salmonid recovery plans in coastal zones, vernal pool recovery units, and other appropriate habitat plans, should be incorporated into the watershed calculations.

**Other relevant factors:** Finally, the issue most challenging for regulators is the "other relevant factors" designation that is called for in the Rule. This addresses issues such as "development trends, anticipated land use changes and other issues." While this is often not an issue of major interest to the regulators, nor is it something that is within their general expertise, it is still important to any mitigation project, especially a bank or in-lieu fee project. If the watershed or ecoregions area is not expected to experience many impacts,

then the need for compensatory mitigation site is very limited. This will lead to the establishment of extremely small-size mitigation sites, which has already been listed as one factor for failure in earlier studies on mitigation success.

One approach that provides some flexibility is the use of ratio or penalty factors that allow greater use of existing banks by providing larger service areas, but applies a higher ratio or penalty factors for more distant mitigation outside of the more immediate watershed. As one would suspect, this approach is favored by the mitigation banking community.

We all recognize that the statement "one size doesn't fit all" should not only apply to people, but to watershed selection. Thus, rather than try and make all decisions on the best location and size for compensatory mitigation fall into one standard HUC size, we should develop a formal process to ensure that all the relevant factors are being considered in a balanced fashion. Again, what is in a number? ■

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