

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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INTERAGENCY REVIEW TEAMS

Layering Multiple Credit Types in Mitigation Banks

Conservation banking, or banking credits to offset impacts to species listed as threatened or endangered under the federal Endangered Species Act (ESA), has developed on a parallel path with mitigation banking, or banking credits to offset impacts to wetlands under the Clean Water Act (CWA). Although developed separately and under different federal jurisdictions, these two types of resource credits (ESA and CWA) can be compatible within the same bank and even on the same acreage, and it makes ecological sense for a project that is going to impact multiple resources to compensate for those impacts in one place. Steve Martin's column in the September-October 2010 *National Wetlands Newsletter* discusses the legal aspects of offering multiple credit types in a mitigation bank; here, I will give some practical considerations based on banking in California.

The Compensatory Mitigation for Losses of Aquatic Resources Final Rule (33 C.F.R. parts

325 and 332, 2008) published jointly by the U.S. Army Corps of Engineers (the Corps) and the U.S. Environmental Protection Agency (EPA), outlines a framework for mitigation banking similar to the "Guidance for the Establishment, Use, and Operation of Conservation Banks" published by the U.S. Fish and Wildlife Service (FWS) in 2003. Both documents build on earlier guidance published over the years by the Corps and other agencies. Both jurisdictions recognize the need for basic protections of land set aside for banking, in the form of perpetual easements, permanent funding mechanisms, agency-approved management plans, and monitoring regimes.

Depending on the resources involved, these two credit types, ESA and CWA, can be accommodated in the same bank, and even on the same piece of ground. It is common practice in California to combine different credit types this way, and is likely a major factor in the success of the

banking industry and the large number of banks located in this state. Some consider the practice of overlapping credit types to be “stacking,” which has negative connotations of selling the same piece of ground twice—known as “double-dipping” in the industry—but this is not the case as practiced in California.

A good tracking system and procedures that are standardized across the separate jurisdictions are essential for a multiple-credit system to work. Detailed credit ledgers that account for all credits released, available, and sold must be in place for any bank, even those with only one credit type. On a bank with ESA and CWA credits on separate ground, it is very easy to account for each credit type as credit releases occur and as credits are sold. These credits do not overlap, so they can be used for different impact projects, and once sold are taken off the books, or “retired” permanently, and cannot be used as compensation for any other projects.

The accounting becomes a little more complicated on banks with ESA and CWA credits that overlap on the same acre. This works best with the “1 acre = 1 credit” model, which is by far the simplest method, leaving compensation ratios to be worked out on the impact side of the equation. As practiced on such banks in California, credits can be sold in a number of ways, as shown in two examples, one fairly simple, the other more complex. The Van Vleck Ranch Mitigation Bank in Sacramento County has credits that may be used for CWA, ESA, CWA+ESA, or CESA (CESA credits are used to offset impacts to species listed as threatened or endangered under the California ESA) (Table 1). Although a CWA+ESA credit can be used to compensate for impacts to either CWA or ESA resources, or both, the two resources can never really be separated. If such a credit is used as CWA only, then the ESA component is retired as well—it cannot be used. This combined credit could be used for impacts to both CWA and ESA resources, but only for the same impact project. In the case of the Van Vleck bank, the CWA+ESA credits are for vernal pools (a CWA resource) that contain vernal pool fairy shrimp (an ESA resource); impacts to vernal pools in Sacramento County often impact fairy shrimp as well, so it is advantageous for a bank to have this combined resource.

Table 1: Van Vleck Ranch Credit Table	
Credit Type	Number of Credits
Vernal Pool Creation (CWA+ESA)	16.24
Vernal Pool Preservation (ESA)	27.10
Swanson's Hawk (CESA)	722.11
Total Credits	765.45

Table 2: Hale Mitigation Bank Credit Table	
Credit Type	Number of Credits
CTS (ESA+CESA)	34
LIVI or LIVI+CTS (ESA+CESA)	7.6
LIVI or LIVI+CTS or BLBA or BLBA+CTS or BLBA+LIVI or BLBA+LIVI+CTS (CWA+CESA)	1.7
Wetland or Wetland+CTS (CWA+ESA+CESA)	1.75
Total Credits	45.05

The Hale Mitigation Bank in Sonoma County presents a far more complicated example, with plant preservation credits for two different listed plant species, Sebastopol meadowfoam (*Limnanthes vicularis*, or LIVI) and Sonoma sunshine (*Blennosperma bakeri*, or BLBA), as well as the California tiger salamander (*Ambystoma californiense*, or CTS) and wetlands (Table 2). In this case, an existing mitigation bank with CWA credits was amended to add the ESA credits (the plants and CTS). Further complicating this model, the CTS uses both the created and preserved wetlands, so their credits spatially overlap with the wetland and plant credits. However, the plants are present only in the preserved wetlands, and therefore the plant credits do not overlap with the wetland credits. Row 3 column 1 of Table 2 shows a credit type that can be used in a number of ways, for impacts to the listed plants and/or CTS. If a purchaser wished to compensate for project impacts to LIVI, BLBA, and CTS for the same project and wished to do so by purchasing credits at the Hale Mitigation Bank, and needed to purchase 0.25 credits for all three, those would be deducted from the 1.7 credits available for this use. If they only needed 0.25 credits of BLBA and not the other two, then the 0.25 would still be deducted from the 1.7 credits available. In this case, the CTS and BLBA components would be

retired as well, and could not be used to compensate for impacts to those species. This bank also has a unique prohibition against using the CTS+Wetland credits (Table 2 Row 4) for CTS only. In allowing the mitigation bank to be amended to add ESA credits, the Corps was concerned that all of the combination wetland/CTS credits could be sold to compensate for impacts to CTS only, leaving no credits to compensate for impacts to wetlands, so those credits may only be used as combination wetland/CTS credits, or as wetlands only.

Standardizing the procedures used to establish banks can alleviate some of the complications involved with setting up and tracking banks that have multiple credit types. This also requires coordination by and among regulatory agencies that wish to authorize bank credits as compensatory mitigation. Seven regulatory agencies in the state of California—the California Department of Fish and Game, the California Resources Agency, the Corps, EPA, the FWS, the National Marine Fisheries Service, and the Natural Resources Conservation Service—signed a memorandum of understanding agreeing to work together to develop standardized practices for mitigation and conservation banking that would be followed throughout the state. This led to a suite of templates, which are used to streamline the process of authorizing banks. The templates are designed to deal with the complexities of including several signatory agencies with different regulatory jurisdictions, and multiple credit types in each bank. They include the Bank Enabling Instrument, Conservation Easement, Property Assessment and Warranty, Long-Term Management Plan, and checklists explaining mitigation banking proposal procedures. These templates are available on the Sacramento Fish and Wildlife Office's website, www.fws.gov/sacramento/es/cons_bank.htm. The next step is to get all of the banks uploaded into the Corps' Regulatory In-Lieu Fee and Bank Information Tracking System, known as RIBITS, which will enable the regulatory agencies who authorize compensation credits, and the public, to track the use of mitigation and conservation bank credits. ■

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