

# Setting Geographic Service Areas for Compensatory Mitigation Banking

*Geographic service areas limit where compensatory mitigation for impacts to aquatic resources can be performed. While the 2008 rule for compensatory mitigation requires mitigation to occur in the same watershed as the impacts for which it is compensating, geographic service areas still vary between Corps districts. This article provides a thorough accounting of each district's approach to setting geographic service areas and looks at the implications for wetland and stream mitigation banking.*

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Geographic service areas are a central tool in implementing a preference for mitigation banking and a watershed approach for aquatic resource compensatory mitigation. The joint 2008 U.S. Army Corps of Engineers (the Corps) and U.S. Environmental Protection Agency (EPA) Final Mitigation Rule (the Rule)<sup>1</sup> delegates service area decisionmaking to Corps districts and Inter-agency Review Teams (IRTs).<sup>2</sup> At the district level, effective service area criteria can reduce reliance on permittee-responsible mitigation (PRM) and in-lieu fee (ILF) programs and enable successful watershed planning. However, individual Corps regulatory districts view the flexibility of the Rule's provisions differently, creating divergent service area criteria across Corps district jurisdictions.<sup>3</sup> Capturing national variability in mitigation bank service area preferences can measure regional commitments to a watershed approach and expanding the practice of mitigation banking.

Service areas spatially constrain where a bank or other credit provider may sell wetland or stream credits to fulfill compensatory mitigation obligations for aquatic resource impacts authorized under §404 of the Clean Water Act (CWA).<sup>4</sup> Service areas effectively determine the market size with important implications: larger service areas increase competition, bolster credit demand, and may attract banker investment, but potentially amplify pollution hotspots.<sup>5</sup> Small service areas ensure local compensation, but excessively narrow limits may cause thin, inactive markets, potentially resulting in less ecologically desirable mitigation.<sup>6</sup> Regional delegation of service area decisionmaking allows flexibility to accommodate the many hydrologic and biotic regimes under §404 jurisdiction. However, within individual Corps districts, more consistency in service area preferences is needed to ensure a level playing field for all investors. ILFs should at least require the same service area standards as banks to avoid subverting the federal preference for mitigation banking.

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Also, until public mitigation banks are proven to provide better compensation, uniform service areas should apply to public and private banks. Developing robust wetland and stream markets relies upon predictable, transparent treatment of prospective bankers, and regulators must more carefully consider economic-ecological trade offs in setting service area limits.

## Background

The Rule integrates a watershed approach into service area decisions.<sup>7</sup> This requirement raises the critical question of appropriate watershed scale.<sup>8</sup> Although mitigation banks replace a suite of aquatic functions, typically one watershed or ecological geographic unit must define a service area. The 2008 Rule rejects a national service area preference, holding that “service area[s] must be appropriately sized to ensure that the aquatic resources provided will effectively compensate for adverse environmental impacts across the entire service area.”<sup>9</sup> Concerns regarding the “economic viability” of a bank may also influence service area size.<sup>10</sup> Before selling credits, a mitigation bank's respective IRT must approve the bank's service area, although Corps district engineers hold final authority for service area determinations.<sup>11</sup>

State preferences may also shape service areas through CWA §401 or IRT participation. Michigan and New Jersey have formally adopted §404 permitting, and other state agencies have signed Memoranda of Agreement (MOA) with the Corps or EPA concerning mitigation banking and service area policy. State regulation of wetlands outside federal oversight following U.S. Supreme Court cases, *Solid Waste Agency of Northern Cook County v. Army Corps of Engineers* and *Rapanos v. United States*, may also specify watershed scale for mitigation projects.<sup>12</sup>

Corps districts or states often specify hydrologic or ecological units as preferred sizes for service areas. Most common is the nationwide U.S. Geological Survey (USGS) Hydrologic Unit Code (HUC) classification (Table 1). HUCs vary from large two-digit water resource regions (HUC-2) to 14-digit subwatersheds (HUC-14).<sup>13</sup> Additionally, ecoregions developed by EPA are often integrated into service areas, with Level I ecoregions grouping the broadest divisions and Level IV providing the most specificity (Table 2).<sup>14</sup> Preferences for in-kind compensation

may inherently limit service areas, and political boundaries may also affect sales of mitigation credits. Occasionally credit use is restricted within county or city limits, and impacts and mitigation almost always occur in the same state.

### Analysis and Results

Our research identified mitigation bank service area preferences for all Corps districts and states with mitigation siting preferences.<sup>15</sup> We conducted Internet research from January to May 2009 to reveal public documentation. Subsequent phone and e-mail contact with cognizant personnel from May to October 2009 clarified district and state service area procedures. We classified Corps district service area policies as being “hard” and rigorous or “soft” and lenient.

Results show considerable nationwide variation in mitigation bank service area preferences (Table 3). Geographic limits applied to primary service areas include HUC-6s, HUC-8s, HUC-10s, HUC-11s, Level IV ecoregions, Albert ecoregions,<sup>16</sup> Ecological Drainage Units (EDUs), independent Corps district or state watershed assessments, and tidal/nontidal wetland boundaries. The most common watershed scale for primary service areas is the HUC-8 (25 of 38 Corps districts). New Jersey Watershed Management Areas, Washington Water Resource Inventory Areas, and Wisconsin Geographic Management Units are state-defined limits. Counties, cities, and simple 20- or 40-mile radii from compensation sites are also adopted in selected districts. In addition, Corps districts in Charleston, Fort Worth, Galveston, Louisville, Savannah, and Vicksburg employ policies for defining secondary service areas where permittees may purchase credits if no mitigation credits are available in their immediate watershed. In applicable districts, secondary service areas are defined by adjacent HUC-8 or HUC-6 watersheds, which may additionally be constrained by the HUC-3, river basin, or Level III ecoregion of the permitted impact. However, these existing geographic bounds to primary and secondary service areas are often modified to suit individual bank characteristics.

Both the rigor and specificity of service area preferences vary considerably between Corps districts and states, resulting in an amalgamation of strict, “hard” districts and flexible, “soft” districts (Table 3). Generally, regions with established mitigation banking communities are regulated with more explicit, stringent service area limitations. Corps districts in Alaska, Albuquerque, New England, Philadelphia, Sacramento, and Tulsa administer no consistent service area size to bank applicants, while all remaining districts utilize some form of geographic guidelines for service areas. Other “soft” Corps districts, such as Baltimore, Galveston, Huntington, and Memphis, prefer specific watershed extents, including HUC-8s, HUC-6s, or EDUs, but commonly utilize different service areas.

IRTs applying “hard” service area criteria are characterized by varying complexity. Districts such as Little Rock have strict, simple service area preferences, while districts similar to Norfolk have somewhat complex procedures. Stringency of service area preferences may also vary within Corps districts encompassing multiple states. The most detailed mitigation siting procedures are driven by strong state statutes and use PRM, mitigation banking, or ILFs based on the proximity of available compensation. Michigan, Minnesota, and New Jersey all maintain strict statutory mitigation siting schemes. However, nearly all IRTs will enter-

tain alternative service area proposals from prospective bankers, given adequate ecological justification.

Aside from IRT flexibility in the initial service area definition process, Corps districts and states may allow banks to sell mitigation credits outside of their primary service area. Bank instruments may specify where these credits can be sold, as with secondary service areas, or Corps and IRT officials may consider case-by-case exceptions. Typically, permittees are discouraged from bank use outside of primary service areas through higher credit ratios. A bank's instrument often defines credit ratios for secondary service areas, while ratio multipliers of 1.5, 2, or 4 often accompany case-by-case exemptions. Some states require progressively higher credit ratios for more distant mitigation banks. More rigorous districts may also refuse credit sales outside of approved service areas.

Before compliance with the Rule, ILF service areas varied tremendously, including HUC-12s, HUC-11s, HUC-10s, HUC-8s, HUC-6s, EDUs, state-defined river basins and marine regions, physiographic provinces, municipalities, counties, and states. ILF service areas are undergoing redefinition as programs seek compliance with new federal requirements.

The Rule relegated PRM behind all third-party mitigation and directed district engineers to promote watershed-based PRM over traditional on-site or off-site options.<sup>17</sup> Many Corps districts, states, and local governments previously developed PRM siting guidelines. Regulators use HUC-11s, HUC-10s, HUC-8s, HUC-6s, Level III ecoregions, Corps-defined watersheds, state-defined watersheds, locally defined watersheds, stream basins, parishes, counties, states, Corps districts, and islands to restrict off-site PRM. Higher credit ratios are also commonly applied to distant PRM projects.

Some Corps districts and states have finalized or drafted guidelines requiring different siting for stream mitigation. Tennessee prioritizes stream mitigation for acceptable impacts to exceptional or outstanding streams by HUC-12.<sup>18</sup> Draft stream mitigation rules in Tennessee would constrain compensation to the Level III ecoregion, HUC-8, and within one stream order of an impact.<sup>19</sup> North Carolina prefers locating stream compensation within one stream order of an impact, within the same HUC-8 and physiographic province as an impact, and on a stream of similar habitat designation.<sup>20</sup> Ohio's draft stream mitigation rules identify larger credit ratios for more distant compensation.<sup>21</sup> The Little Rock Corps District requires mitigation for impacts to significant streams in the immediate HUC-8, while other stream compensation may be outside of the immediate HUC-8 with a doubled credit ratio.<sup>22</sup> Omaha and Vicksburg Corps districts are also developing or operating under similar stream assessment methods.<sup>23</sup>

### Conclusions

The selection of proper scale is critical to a successful watershed approach. Ideally, decentralized decisionmaking will permit IRTs and district engineers to tailor service area preferences to regional environmental constraints and realities. Just as in all enforcement, there should be an emphasis on consistent application of service area criteria, and this may be best done through across-the-board reductions in case-by-case exemptions or by the mere establishment of service area preferences.

Some constraints on service areas are likely too limited to promote investment in compensation before impacts, and may not be grounded

in sound science. Indeed, the science underlying service area justification is woefully lacking.

While consistency is important, it is also imperative to encourage and reward mitigation projects that work. For mitigation projects that result in real, demonstrable, and empirically grounded ecological restoration, regulators should consider expanding the service area to increase the potential marketability of such credits. ■

#### ENDNOTES

1. Compensatory Mitigation for Losses of Aquatic Resources, 33 C.F.R. §332.3(b) (2008) [hereinafter Mitigation Rule].
2. *Id.* §332.8(d); *Id.* §332.8(b)(4); *Id.* §332.2.
3. Todd BenDor et al., *A Survey of Mitigation Banker Perceptions and Experiences Under the 2008 Federal Mitigation Regulations*, 32 NAT'L WETLANDS NEWSL. (Mar.-Apr.) 11-15 (2010).
4. Mitigation Rule, §332.2.

*Endnotes continue after tables*

**TABLE 1: AVERAGE AREA OF HUC SUBDIVISIONS IN NORTH CAROLINA<sup>24</sup>**

| Level  | Area (Square Miles) |
|--------|---------------------|
| HUC-6  | 4,043               |
| HUC-8  | 1,011               |
| HUC-11 | 120                 |
| HUC-14 | 33                  |

**TABLE 2: AVERAGE AREA OF ECOREGIONS IN NORTH CAROLINA<sup>25</sup>**

| Level | Area (Square Miles) |
|-------|---------------------|
| III   | 12,343              |
| IV    | 1,829               |

**TABLE 3: CORPS DISTRICT MITIGATION BANK SERVICE AREA SIZE PREFERENCES ("HARD" DISTRICTS)**

| Corps District   | Service Area Boundary Type   | Details  |
|------------------|--|--|
| *Buffalo         | HUC-8  | OH: 37 state-defined service areas based on 44 HUC-8s. Case-by-case exceptions considered. HUC-8 combinations used for category 2 and 3 wetlands (higher quality). Category 1 wetlands in OH within district. OH siting criteria may affect use of bank credits. <sup>26</sup> NY: HUC-8 preferred. <sup>27</sup>                      |
| Charleston       | HUC-8, HUC-3, Level IV Ecoregion                                     | HUC-8 preferred for primary service area, but decided case-by-case. Use of secondary/tertiary service area depends on bank site. Adjacent (secondary service area), nonadjacent (tertiary service area) HUC-8s in same HUC-3 and Level IV ecoregion considered. In nearly all cases, no credit use outside service area. <sup>28</sup> |
| Chicago          | Corps-defined watershed, county                                      | Service area is one of two designated watersheds: Upper Mississippi or Lake Michigan. Case-by-case consideration of credit use outside of watershed. Some counties require mitigation within boundaries or higher credit ratios for use outside of the county. <sup>29</sup>   |
| Detroit          | HUC-8, MI state-defined subwatersheds, watersheds, Albert ecoregions | IN: Service area is generally HUC-8, if site drains to two HUC-8s, may be expanded. Credit use outside of service area permitted case-by-case by Corps, IDEQ; requires higher credit ratio. <sup>30</sup> MI: State-assumed §404 program, uses state-defined subwatersheds, watersheds, and Albert ecoregions. <sup>31</sup>           |
| Fort Worth       | HUC-6, Level III Ecoregion   | Primary service area is overlap of HUC-6 and Level III ecoregion. Secondary service area is either same HUC-6 and different Level III ecoregion, or same Level III ecoregion and different HUC-6. Use of secondary service area requires credit ratio multiplied by 1.5. Open to case-by-case exceptions. <sup>32</sup>                |
| Huntington (OH)  | HUC-8  | 37 state-defined service areas based on 44 HUC-8s. Case-by-case exceptions considered. HUC-8 combinations used for category 2 and 3 wetlands (higher quality). Category 1 wetlands in OH within district. OH siting criteria may affect use of bank credits. <sup>33</sup>   |
| Jacksonville     | Modified HUC-8, HUC-6  | Service areas created case-by-case. Usually start with regional watershed (HUC-6 or HUC-8), remove smaller HUCs not appropriate for bank. IRT also considers ecoregions for unique habitat. Higher credit ratio out of service area used about 50 percent of the time. <sup>34</sup>   |
| Kansas City (MO) | EDU  | EDU is the largest possible service area for banks. Likely would allow credit use outside service area if accompanied by higher ratio. <sup>35</sup>   |
| Little Rock      | HUC-8  | HUC-8 strongly preferred; credit ratio doubled outside of HUC-8. May consider larger service areas case-by-case. <sup>36</sup>   |
| Los Angeles      | HUC-8  | HUC-8 is initially considered and then bank characteristics are used case-by-case to determine service area variations (generally similar or smaller). Stricter service areas in coastal regions. <sup>37</sup>  |
| Mobile           | HUC-8  | Mitigation ratio unaltered in same HUC-8, Proximity Factor Method used to raise credit ratio outside of HUC-8. Use of credits outside of river basin discouraged, accompanied by additional ratio of 1.5. <sup>38</sup>  |

| Corps District    | Service Area Boundary Type  | Details  |
|-------------------|---|--|
| *New York         | HUC-11, HUC-8, NJ Watershed Management Area (WMA)   | NJ: State-assumed §404 program. Typically use WMA (state-defined combination of HUC-8s). NJ siting criteria control bank use in freshwaters by integrating bank, permittee-responsible, and ILF options by HUC-11 and WMA. Tidal banks may vary. Credit use normally not permitted outside service area. <sup>39</sup> NY: IRT prefers HUC-8. <sup>40</sup>  |
| Norfolk           | HUC-8   | VA state law limits service areas to same HUC-8 or adjacent HUC-8 in same river basin. Exceptions allowed for specified government transportation projects. IRT preference for service areas in same physiographic province. <sup>41</sup>   |
| Philadelphia (NJ) | HUC-11, NJ WMA  | State-assumed §404 program. Typically use WMA (state-defined combination of HUC-8s). NJ siting criteria control bank use in freshwaters by integrating bank, permittee-responsible, and ILF options by HUC-11 and WMA. Tidal banks may vary. Credit use normally not permitted outside service area. <sup>42</sup>   |
| Portland          | HUC-10, HUC-8   | HUC-8 is generally preferred, but bank characteristics may allow exceptions, i.e., use of HUC-10. Ecoregions are also considered. Credit use allowed outside of service area with justification and adjusted credit ratio. <sup>43</sup>   |
| Rock Island       | HUC-8, HUC-6, EDU   | IA: Service area is HUC-8 and adjacent HUC-8s within the same EDU and same HUC-6. Credit ratio outside of service area doubles; limits on outside use of service area include crossing MO/MS River divide, being more than one HUC-8 away and outside of the HUC-6 or EDU, and crossing a HUC-6 and EDU boundary. IL: IA service area preference may be modified based on bank characteristics. MO: EDU is largest acceptable service area, may be smaller in urban or significant resource areas. <sup>44</sup> |
| Savannah          | HUC-8   | Primary service area is HUC-8 and secondary service area is generally an adjacent HUC-8 identified by district, which is modified when poor downstream options exist. Higher ratios are generally applied for credit use outside of ecoregion or watershed. <sup>45</sup>  |
| *Seattle          | WA Water Resource Inventory Areas (WRIA)  | Case-by-case determination of service areas based on bank location, ecological needs, and landscape position; service areas are limited by WRIA, but rarely encompass entire WRIA. Exceptional circumstances may merit larger area. Estuarine impacts are not replaced at freshwater banks. Rarely is case-by-case use outside service area considered. <sup>46</sup>  |
| St. Paul          | WI Geographic Management Units (GMUs), counties, 20-mile radius, city, MN state-defined service areas, MN minor/major watersheds, Minneapolis-St. Paul seven-county area, state | WI: Service area is GMU, county, and 20-mile radius. Banks may request smaller service areas. One city requires mitigation in city. MN: Banks use state-defined service areas; availability determined by MN siting criteria integrating bank and permittee-responsible options by state-defined minor watershed, major watershed, service area, county, metropolitan area, and state. <sup>47</sup> MN criteria consider historical wetlands losses and provide credit ratios. <sup>48</sup>                    |
| Vicksburg         | HUC-8   | Primary service areas generally coincide with HUC-8; secondary service areas include one or a maximum of two adjacent HUC-8s. Exceptions would be discussed case-by-case. <sup>49</sup>  |
| Walla Walla       | HUC-8   | HUC-8 service areas are required in developed areas and smaller service areas are considered case-by-case in very developed areas. In rural areas, larger areas may be permitted. <sup>50</sup>  |
| #Wilmington       | HUC-8, physiographic region   | In most cases, service area confined to HUC-8 and physiographic region; exceptions permitted. <sup>51</sup>  |

\*INFORMATION OBTAINED FROM NON-CORPS IRT MEMBER

#INFORMATION OBTAINED THROUGH INTERACTION WITH IRT

TABLE 3 CONTINUED (“SOFT” DISTRICTS)

| Corps District | Service Area Boundary Type | Details   |
|----------------|----------------------------|---|
| Alaska         | Case-by-case               | IRT determines service areas case-by-case. <sup>52</sup>  |
| Albuquerque    | Case-by-case               | Varying watershed scales used depending on bank characteristics. <sup>53</sup>  |
| Baltimore      | HUC-8, HUC-6               | Case-by-case determinations. HUC-8 considered first, may evaluate HUC-6 for rural banks. Current single-user banks use county boundaries. <sup>54</sup> |

| Corps District            | Service Area Boundary Type        | Details  |
|---------------------------|-----------------------------------|--|
| Galveston                 | HUC-8, HUC-6, Level III Ecoregion | Case-by-case determinations. HUC-6 typically is primary service area, adjacent HUC-8s are secondary service area. Level III ecoregion may define primary service area if it divides immediate HUC-6. Secondary service area may be outside HUC-6 or ecoregion, but not both. Secondary service area also requires higher credit ratio, i.e., 1.5. Service area may be limited by wetlands type (tidal/nontidal). <sup>55</sup> |
| Honolulu                  | Case-by-case                      | No banks in Honolulu District. <sup>56</sup>   |
| Huntington (WV)           | HUC-8                             | Case-by-case, HUC-8 usually initially proposed. Credit use not allowed outside service area. <sup>57</sup>   |
| Kansas City (KS)          | HUC-8                             | Currently decided case-by-case, but expected that IRT will choose HUC-8 preference. Likely would allow credit use outside service area if accompanied by higher ratio. <sup>58</sup>   |
| Louisville                | HUC-8, HUC-12, county, urban area | Case-by-case determinations. HUC-8 initially preferred, may be modified outside HUC-8 with other HUC-12s. IN generally uses HUC-8, KY uses HUC-8 with exceptions using counties or urban areas. No scale preference for secondary service areas, usually require higher ratios. <sup>59</sup>  |
| Memphis                   | HUC-8, HUC-6, EDU                 | Case-by-case determinations. HUC-8 is preferred scale, some banks have just one HUC-8 and others have all adjoining HUC-8s that are within the same HUC-6. EDU under consideration in MO. Higher credit ratios used for credit use outside of service area (2:1 for new bank, 4:1 for old banks). <sup>60</sup>  |
| Nashville                 | HUC-8                             | HUC-8 is preferred scale, but may be modified based on bank characteristics. Credit use allowed outside service area; proximity factor used to raise credit ratio. <sup>61</sup>   |
| New England               | Case-by-case                      | No current banks, but would consider scale proposed by a potential bank. Biophysical regions expected in ME. <sup>62</sup>   |
| New Orleans               | HUC-8                             | Typically, but not exclusively, based on HUC-8. Exceptions are considered case-by-case. <sup>63</sup>  |
| Omaha                     | HUC-8                             | Preference for HUC-8; may be larger if ecologically justifiable. Tribes may require mitigation to stay on their lands. <sup>64</sup>   |
| Philadelphia (DE, MD, PA) | Case-by-case                      | Varying watershed scales used for service areas based on project characteristics. <sup>65</sup>  |
| Pittsburgh                | HUC-8                             | HUC-8 is generally starting watershed scale; bank characteristics are used case-by-case to determine variations. <sup>66</sup>   |
| Sacramento                | Case-by-case                      | Case-by-case determinations, district is moving toward HUC-8 or HUC-10 watershed definition. Credit use outside service area allowed. <sup>67</sup>  |
| San Francisco             | HUC-8                             | HUC-8 generally considered first for service areas; bank characteristics used case-by-case to determine variation. <sup>68</sup>   |
| St. Louis                 | HUC-8, EDU                        | Typically use HUC-8, but larger units (EDU in MO) are permitted occasionally in rural areas. <sup>69</sup>   |
| Tulsa                     | Case-by-case                      | District has one bank. <sup>70</sup>   |

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7. Mitigation Rule, §332.2.

8. NATIONAL RESEARCH COUNCIL, COMPENSATING FOR WETLAND LOSSES UNDER THE CLEAN WATER ACT 47-48 (2001).

9. Mitigation Rule, §332.8(d)(6)(ii)(A).

10. *Id.*

11. *Id.* §332.8(b)(4); *Id.* §332.3(c)(4).

12. Jon Kusler, *The SWANCC Decision: State Regulation of Wetlands to Fill the Gap*, Association of State Wetland Managers, Inc., at <http://www.aswm.org/fwp/swancc/aswm-int.pdf> (last modified Mar. 4, 2004); Morgan M. Robertson, *Emerging Ecosystem Service Markets: Trends in a Decade of Entrepreneurial Wetland Banking*, 4 FRONTIERS IN ECOLOGY AND THE ENV'T 297, 302 (2006); Morgan M. Robertson & Nicholas Hayden, *Evaluation of a Market in Wetland Credits: Entrepreneurial Wetland Banking in Chicago*, 22 CONSERVATION BIOLOGY 636, 646 (2008).

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17. Mitigation Rule, 33 C.F.R. § 332.3(b) (2008).

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19. TENN. COMP. R. & REGS. 1200-4-3.06(2) (2008); Division of Water Pollution Control, Tenn. Department of Environmental Conservation, *Stream Mitigation Guidelines for the State of Tennessee*, available at <http://www.state.tn.us/environment/wpc/publications/pdf/StreamMitigationGuidelines.pdf>.

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