

USING A WATERSHED APPROACH TO MANAGE RESOURCES WITHIN JURISDICTION OF THE US ARMY CORPS OF ENGINEERS, SAVANNAH DISTRICT REGULATORY PROGRAM

Carol L. Bernstein and Jeffrey K. King

AUTHORS: US Army Corps of Engineers – Savannah District, Regulatory Division, Coastal Branch, 100 W Oglethorpe Avenue PO Box 889 Savannah Georgia 31402, 912 652-5133

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Abstract The US Army Corps of Engineers (USACE) recognizes the importance of implementing a watershed approach within the regulatory program, and efforts are underway nationwide to implement watershed management strategies within the permitting program. Within the USACE, Savannah District, we have targeted our watershed approach to include building stakeholder relationships, data acquisition/analysis, cumulative impact assessments and compensatory mitigation requirements. Our efforts are on-going and continue to evolve as new information and guidance from our Headquarters becomes available. Regulating impacts to waters of the United States (US) and ensuring no net loss of aquatic habitats are fundamental components to our watershed approach. Likewise, communication with stakeholders will continue to be a priority of the Savannah District, Regulatory Division.

INTRODUCTION

The USACE (Corps) concept of “the watershed approach” dates back to The Flood Control Act of 1917. This act authorized the Corps to look at the effects of flood control, navigation, hydropower and other water resource uses at a basin level (Arnold, 1988). In 1986, passage of the Water Resources Development Act (WRDA) provided another means by which the Corps could initiate water resource studies and/or projects with a primary focus of preserving or enhancing the natural environment (WRDA, 1986). As the watershed approach gained momentum, subsequent WRDA authorization refined the scope of water resource initiatives to address the needs of watersheds within the United States and specifically targeted improved cooperation between Federal agencies, interstate and local government entities (WRDA, 2000). In fact, the last decade has resulted in an evolution in the Corps’ civil works program, which includes policy guidance that “encourages collaborative efforts which advocate the integration of interests in the watershed by identifying, scoping, and developing comprehensive water resources management goals” (USACE, 1999). The Civil Works Strategic Plan issued in Septem-

ber 2002 identified the watershed as the best unit of analysis and restates the importance of using a watershed approach to integrate water resource management (USACE, 2002). In brief, the plan stresses the use of an approach that should balance economic, environmental and social goals while delivering water resource solutions.

The aforementioned history of the Corps’ collective approach to watershed management is primarily represented in the civil works program. It is important to note that the Corps does not issue itself permits for civil works projects. However, a permit is required for all other entities with projects that require placement of fill or dredged material in waters of the United States (US). For those projects, the Corps’ Regulatory Division must still evaluate the proposed actions with respect to impacts on the environment. Thus, the Savannah District, Regulatory Division has also adopted a watershed approach to allow us to more holistically address potential impacts to aquatic resources.

SAVANNAH DISTRICT WATERSHED APPROACH

As previously described, the Corps’ regulatory program is challenged to make permitting decisions on a watershed scale. Since permit applications are generally reviewed when applicants apply for a permit, on a project-by-project basis, ensuring “no net loss” of aquatic resources within a watershed remains a challenge. Applying the 404(b)(1) Guidelines and requiring “in kind/in basin” compensatory mitigation are fundamental tools utilized by the Savannah District (US Environmental Protection Agency, 2006; Dunlop, 2007). However, the evolution of our watershed approach has resulted in the adoption of “anticipatory” measures that further promote and encourage environmental sustainability.

There are five distinct components to the watershed approach developed by Savannah District’s regulatory program. First, we systematically conduct outreach with local governments and municipalities, and other stakeholders. Second, Corps project managers are named as “watershed champions”; each champion collects/retains information on environmental issues and serves as a point

of contact. Third, the Corps is implementing broader use of new tracking software identified as the OMBIL Regulatory Module (ORM). Fourth, we have improved our cumulative impacts assessment methodology to include a more robust analysis of past, present and future-anticipated impacts within a given watershed. And finally, with the release of the new Mitigation Rule published on April 10, 2008, the focus from on-site mitigation has shifted to off-site mitigation in the form of mitigation banking.

OUTREACH AND PARTNERING

The Savannah District, Regulatory Division has grown to appreciate the value in seeking public participation in our program, and outreach initiatives provide opportunities to educate the public on current laws, guidelines and policies that are applicable to the Corps. In addition, we have found the interaction useful in building long-term relationships. Such relationships have resulted in fewer Clean Water Act (CWA) violations and the Corps' participation in applicants' master planning initiatives. All of the Corps' interactions with the public cannot possibly be discussed within the limits of this manuscript. However, the following examples are provided to illustrate how important partnering is to the Corps' watershed approach.

Typically, the Regulatory Division schedules informal meetings with city, county, and other local governments, planning and zoning agencies or development authorities, health departments, non-governmental organizations (NGOs), military installations, and others to ensure a basic understanding of the Corps Regulatory permitting process. No established protocol exists for initiating first contact with the Corps. Sometimes, a first meeting originates following a series of repeated CWA violations within the same geographic region. We have found that these meetings usually result in a better understanding of the magnitude and complexities of the Corps' regulatory program, which leads to more proactive permitting by a local government. On a few occasions, our outreach efforts have even resulted in local governments hiring additional staff to review records and make a preliminary determination as to whether a Corps permit may be required.

Another example of how our outreach program has resulted in early planning initiatives would be expanded use of geographic information systems (GIS) by Georgia counties. Counties that have embraced this technology, now review tax plats by superimposing them over National Wetland Inventory (NWI) maps to make a general determination of whether jurisdictional wetlands are present on a site. The county can then delay issuing their Land Disturbing Activity (LDA) permit until a Corps' jurisdictional determination or permit is obtained. This approach was modeled after the City of Savannah and

Chatham County Metropolitan Planning Commission (MPC) ordinances (MPC File No. 9912741-S) which are based on the State of GA Environmental Planning Criteria (Chapter 391-3-16) (MPC, 1999; Georgia Department of Natural Resources, 1992).

Once state and local governments gain familiarity with the Corps' regulatory program and staff, development of a strong working relationship usually ensues. In many instances, Corps personnel are contacted to provide insight on how municipal projects and/or long-term master plans can be designed such that impacts to aquatic resources are avoided and minimized. With a project's environmental impacts reduced, permitting is streamlined and cost decreased. Thus, a "win-win" strategy for development is achieved within the context of watershed sustainability.



Figure 1. Project Manager with Savannah District, Regulatory Division provides information on Corps' Mitigation Banking Program to consultants at the 2007 "Consultant Workshop" in Morrow, Georgia.

The Corps relationship with NGOs is also an example of how an on-going dialogue benefits the regulatory program. Over the last several years, the Regulatory Division has worked closely with NGOs to identify issues of mutual concern. Through the successful partnering of NGOs with the Corps, a large number of violations have been identified and unauthorized activities stopped. Overall, the result has been a greater appreciation by the Corps for the charters and missions of the NGOs. Likewise, the NGOs have gained a better understanding of the Corps' regulations, jurisdictional classification, and/or enforcement capabilities.

WATERSHED CHAMPIONS / DATA ACQUISITION

In 2007, the Regulatory Division established "watershed champions" for the 14 river basins located within the State of Georgia (Figure 2). Although relatively new, this

approach has been useful from the standpoint of developing regulatory “experts” that are aware of issues that exist within a basin. A primary responsibility of a watershed champion is the collection of basin-specific documents, scientific reports and data. The information is then stored and made available to Corps project managers that have been assigned projects within a given basin. In turn, these documents can be incorporated into permit evaluations to ensure that no important habitats, sensitive areas, or priority restoration areas are overlooked.

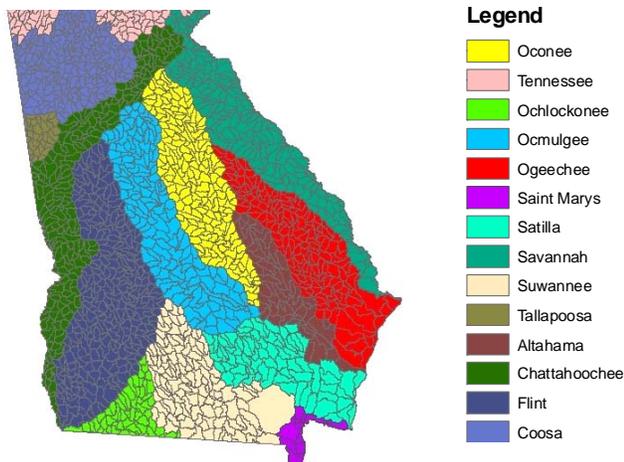


Figure 2. Illustration of the 14 river basins located within the State of Georgia.

Additionally, the champion, with their current understanding of basin issues, is often requested by the project manager to review a project-specific Environmental Assessment (EA) to ensure important elements (i.e., 404(b) (1) analysis, public interest factors and cumulative impacts) are satisfactorily addressed. The champion also serves as a point-of-contact for the respective Riverkeeper or local NGO. This relationship provides additional, two-way communication for relaying real time information concerning activities within a watershed.

IMPLEMENTATION OF ORM DATABASE

In addition to the previously described acquisition of basin specific data, the Savannah District also relies on data archived from 1990-2005 using the Regulatory Analysis and Management System (RAMS). In 2006, the Savannah District migrated from use of the RAMS database to the OMBIL Regulatory Module (ORM), and the new system continues to develop into a powerful resource management tool. In brief, the ORM system is a national database currently utilized by all Regulatory Divisions within the USACE. This system provides project manag-

ers the opportunity to utilize GIS technologies and geospatially represent project areas and the associated acreage and/or linear feet of impacts to water of the US (Figure 3).

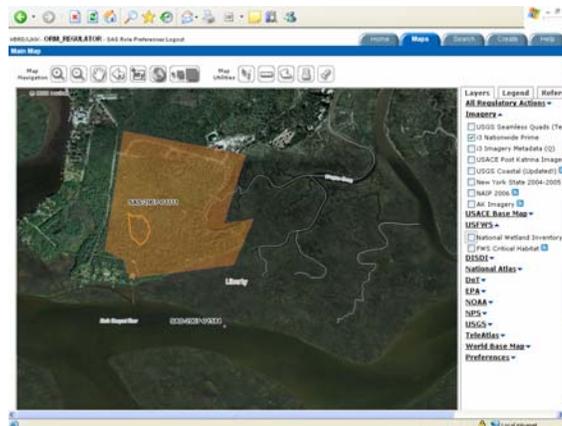


Figure 3. Illustration of geospatial data and project sites identified in the Corps’ ORM database.

The information retained in the database can then be cross-referenced to evaluate the types of actions that have occurred as well as the cumulative impacts relative to geopolitical boundaries and watersheds. In addition to tracking project impacts, the system also allows users to input data on required mitigation. Finally, an evaluation of ORM impacts and mitigation data can provide Corps districts with information as to their success in achieving the goal of “no net loss” to aquatic resources (Figure 4).

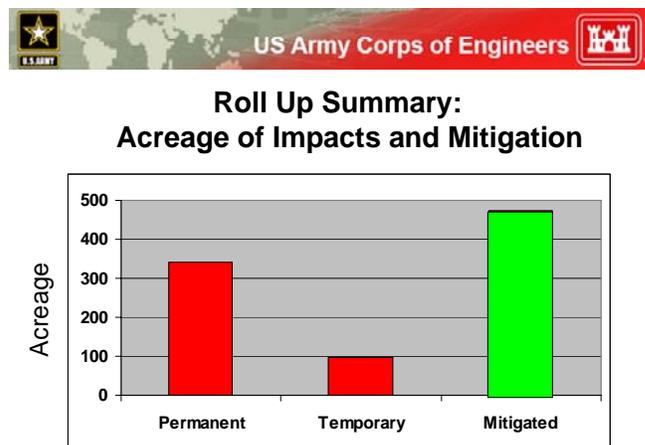


Figure 4. ORM output of Fiscal Year 2008 data concerning waters of the US impacts and mitigation.

Future updates to the ORM system would allow for migration of other GIS data layers specific to critical habitats, impaired waters, and land use.

CUMULATIVE IMPACT ANALYSIS

In 2002, the Savannah District, Regulatory Division collected and compiled applicable environmental data available from all potential sources, including but not limited to State and Federal agencies, academic institutions, counties and municipalities, and private firms. This data was the basis for assessing cumulative impacts of water resource projects (Bernstein *et al.*, 2003). In 2005, our efforts to evaluate cumulative impacts expanded to include a more rigorous evaluation of past, present and future-anticipated impacts (King and Bernstein, 2008). The current evaluation is now being performed for all standard and regional permits that require authorization under Section 404 of the CWA.

In brief, our evaluation includes an assessment of past and present day impacts that have occurred within an 8-digit Hydrologic Unit Code (HUC) (US Geological Survey, 1994). RAMS and ORM databases are utilized to extract relevant data. In addition, the present day analysis also includes an evaluation of: (1) Existing waters of the US quantities; (2) Recently approved and pending USACE permit actions; (3) Characterization of 303(d) listed streams; and (4) Evaluation of proposed mitigation. The Regulatory Division's evaluation of future-anticipated impacts relies on a predictive relationship which estimates percent impervious surface coverage as a function of population trends (King and Bernstein, 2008).

The development of Savannah District's expanded cumulative impacts assessment is of great value. By having the best available data to evaluate potential impacts, resource agencies are in a better position to approach the applicant, local government, and/or public with concerns prior to rendering a permit decision. Thus, there would be greater justification for mandating strategies that improve project design and reducing environmental impacts.

NEW MITIGATION RULE

On April 10, 2008, the USACE and US Environmental Protection Agency (USEPA) published new mitigation rules for losses of aquatic resources (USACE, 2008a). Traditionally, preferred mitigation plans prioritized some aspect of restoring, enhancing, and/or preserving on-site waters of the US. Under the Savannah District's purview, the actual amount (i.e., acreage) of mitigation required was calculated using the Corps' Standard Operating Procedure (SOP) (USACE, 2004). However, the on-site mitigation typically resulted in small, fragmented quantities of

waters of the US. These mitigation areas were also subject to future development pressures, which could affect the site's hydrology and ultimately decrease the likelihood of long-term success.

The new rule ensures the watershed approach is the primary component of mitigation planning, implementation, and management. Now all aspects of a proposed mitigation plan must be evaluated with respect to: project location, measurable/enforceable performance standards, regular monitoring, adaptive management plans, long-term protection of sites, identification of responsible parties and financial assurances (USACE, 2008a). The new rule also establishes a hierarchy for selection of mitigation options. The purchase of mitigation bank credits is now the most preferred choice followed by the purchase of in-lieu fee credits. Permittee responsible mitigation is the third option.



Figure 5. Representatives from USACE, USEPA, National Marine Fisheries Service and US Fish and Wildlife Service meet on-site to evaluate a proposed mitigation bank.

Requiring mitigation banks as the preferred option will promote establishment of larger mitigation areas that provide more ecologically valuable compensatory mitigation. In addition, controlling release of mitigation credits ensures that bank sites have performed, and will continue to perform, according to the project goals and expectations. The process of establishing a mitigation bank requires the expertise and approval of multiple resource agencies that are included in the planning and oversight of the project (USACE, 2008a). Finally, the new rule advocates use of mitigation banks and in-lieu fee programs since these areas have the opportunity to be protected in perpetuity by organizations dedicated to resource conservation. The Savannah District, Regulatory Division has been an advocate of mitigation banking for more than 10 years. We recognize the value and importance of this change in mitigation

priorities being implemented at a national level. It is our opinion that the new rule will further encourage development of mitigation banks and thereby promote “no net loss” of aquatic resources in the State of Georgia.

Perhaps most importantly, the new mitigation rule stresses the importance of maintaining a watershed perspective in which, “the type and location of compensatory mitigation follow from an analytically-based watershed assessment to assure that the proposed compensation furthers watershed goals” (USACE, 2008b). The mitigation rule suggests that an assessment may actually be a watershed plan, which may include regional planning efforts with stakeholders.

CONCLUSIONS

The Savannah District, Regulatory Division is committed to use of a watershed approach when evaluating regulated activities requiring placement of dredged or fill material in waters of the US. The information in this manuscript provides a brief description of the public interaction and data analysis that is conducted on a daily basis. The approach, tools and methodology described in this manuscript have been successful in many ways. However, we recognize that our program is extremely dynamic, and Regulatory Division must always seek out new information and/or tools as they become available. ORM will continue to expand in terms of capability and should provide additional insight in terms of watershed resources, concerns and management. Likewise, we recognize that our cumulative impact analysis will continue to evolve as more “user friendly” data sets and computations become available. Finally, it is likely that stakeholder participation in our permitting process will remain the cornerstone of our watershed approach. We have found that educating the public on the regulatory program and developing partnerships with stakeholders are critical to our success. There is no doubt that participation by an informed public is paramount to ensuring the Savannah District, Regulatory Division achieves a balance between economic development and watershed sustainability.

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