

# **ISOLATED WETLANDS AND CAROLINA BAYS TASK FORCE**

## **SCOPE OF REPORT**

The Isolated Wetlands and Carolina Bays Task Force created this report to provide information about isolated wetlands and Carolina Bays in South Carolina. This report identifies the recommendations of the Task Force in response to the directives of its establishing act and presentations from state regulatory agencies including the Department of Natural Resources ("DNR"), the South Carolina Department of Health and Environmental Control ("DHEC"), as well as information provided by the United States Army Corps of Engineers ("Corps"). It includes information provided by Dan Tufford, Ph.D., University of South Carolina and Mark Robertson, Executive Director of the Nature Conservancy of South Carolina. With this report, the Task Force intends to increase awareness about the unique value Carolina Bays provide South Carolina as well as maximize voluntary preservation efforts to safeguard these wetlands.

## **TASK FORCE ORGANIZATION**

The Task Force was established pursuant to Act 198 of 2012. The goals of this task force, as provided by the Act, are to review, study, and make recommendations concerning issues related to isolated wetlands and Carolina Bays in South Carolina. The thirteen member task force<sup>1</sup> was chaired by Senator Paul Campbell and Representative Nelson Hardwick was the vice-chair.

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<sup>1</sup> Members and their respective organizations: Dale Herendeen, Chamber of Commerce; Charles Lane, Coastal Conservation League; Dr. Fred Holland, Conservation Voters; Alexander Stone, III, Association of Realtors; Karen

The Task Force met four times. The first meeting on September 12, 2012 included a presentation by DNR to discuss a common understanding and consistency of terminology for discussing isolated wetlands and Carolina Bays. The Task Force discussions drew from terms and definitions related to isolated wetlands and Carolina Bays as provided by Bob Perry, DNR's Region 2 Heritage Preserve Manager as well as a late 1980's inventory of isolated wetlands and Carolina Bays (based on aerial photographs from 1972-1983)<sup>2</sup>. A glossary of standard terms and definitions was compiled for describing Carolina Bays and isolated wetlands, including identifying their various types, and characteristics.<sup>3</sup> The second meeting of the Task Force took place on October 17, 2012. At the second meeting, DHEC made a presentation detailing the existing regulatory framework that includes isolated wetlands. Representatives from the U.S. Army Corps of Engineers, Tina Hadden, Chief of the Regulatory Division and Richard L. Darden, Ph.D., discussed issues related to identifying isolated wetlands and Carolina Bays including the difficulties associated with making jurisdictional determinations. The Task Force's third meeting was on November 13, 2012. This meeting focused on the functions and values of isolated wetlands and Carolina Bays, as well as current South Carolina conservation programs for wetlands and Carolina Bays. The Task Force discussed staff proposals, potential statutory provisions to institute a state-level permitting program, and mechanisms for statewide preservation of isolated wetlands and Carolina Bays. It included a presentation on recent research on isolated wetlands and Carolina Bays in North and South Carolina by Dan Tufford, Ph.D., a recognized wetlands expert from the University of South Carolina and Mark Robertson,

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Crawford, Association of Homebuilders; Charles Wingard, Farm Bureau; Nick Odom, Manufacturer's Alliance; Bob Guild, Sierra Club; Dr. Whit Gibbons, Wildlife Federation; Amy Armstrong, Environmental Law Project; Tom Effinger, Utilities Industry.

<sup>2</sup> Most recent data available.

<sup>3</sup> This glossary is located at <http://www.scstatehouse.gov/committeeinfo/IsolatedWetlandsandCarolinaBaysTaskForce/IsolatedWetlandsandCarolinaBaysTaskForce.php>

Executive Director of the Nature Conservancy of South Carolina. The Task Force's discussion also focused on current conservation efforts in place as well as the implementation of future programs. On August 27, 2013, the Task Force met to discuss the contents of this report.

### *ISOLATED WETLANDS AND CAROLINA BAYS*

Wetlands provide a broad array of natural resource functions, recreational opportunities, and considerable ecosystem services. The United States Environmental Protection Agency, as provided in the federal Clean Water Act (“CWA”), defines “wetlands” as those areas of land that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.<sup>4</sup> From a regulatory perspective, the term “isolated wetland” describes a particular subset of wetlands that have no chemical, physical, or biological connection to waters of the United States and have no connection to interstate or foreign commerce. Isolated wetlands may have a perched water table or may be connected to groundwater and are fed by rainfall. These wetlands are particularly important to “at risk” plant and animal species. Isolated wetlands may include depression meadows, high ponds, limestone sinks, pond cypress wetlands/savannahs, pond pine flatwoods and pocosins. Isolated wetlands can be very small or fairly large. It is estimated that there are approximately 400,000 acres of isolated wetlands in South Carolina, with the majority of those located in the coastal counties. Approximately 100,000 acres are located outside the coastal counties.<sup>5</sup> Isolated wetlands can

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<sup>4</sup> 33CFR §328.3(b) (1993).

<sup>5</sup> Isolated Wetlands in South Carolina, Presentation Handout.

provide the same environmental benefits but are subject to being lost due to the encroachment of human infrastructure and agriculture.<sup>6</sup>

In the regulatory context, the term “isolated wetland” has very limited use. Rather, the relevant question is whether a particular wetland is jurisdictional or non-jurisdictional. Jurisdictional wetlands are subject to federal regulation which requires a thorough permitting process implemented through the Corps in accordance with Section 404 of the Clean Water Act (CWA) before a landowner can take action to discharge fill into the wetland. Non-jurisdictional wetlands are not subject to federal regulation but may be subject to some state level review. .

To begin the regulatory process, a landowner that proposes to discharge fill into a wetland, must first delineate the wetlands onsite and determine whether or not a permit from the Corps will be required. In order to determine whether the wetlands onsite are jurisdictional, the Corps must apply guidance consistent with the Supreme Court's decision in the consolidated cases Rapanos v. United States and Carabell v. United States<sup>7</sup>. Under the holding in Rapanos, the federal government has jurisdiction over traditional navigable waters, wetlands adjacent to traditional navigable waters, non-navigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally.<sup>8</sup> The federal government also has jurisdiction over non-navigable tributaries that are not relatively permanent, wetlands adjacent to non-navigable tributaries that are not relatively permanent, and wetlands adjacent to but that do not directly abut a relatively

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<sup>6</sup> RTI International; North Carolina Department of Environment and Natural Resources, Division of Water Quality, Division of Coastal Management, Center for Geographic Information and Analysis; South Carolina Department of Health and Environmental Control, Office of Ocean and Coastal Resource Management; & the University of South Carolina, Assessing Geographically Isolated Wetlands in North and South Carolina - the Southeast Isolated Wetlands Assessment (SEIWA), February 11, 2011. Access the report at: <http://www.scstatehouse.gov/committeefinfo/IsolatedWetlandsandCarolinaBaysTaskForce/southeast%20isolated%20wetland%20assessment%20final%20report%202011.pdf>

<sup>7</sup> U.S. Corps of Engineers and Environmental Protection Agency Guidance, Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in Rapanos v. United States & Carabell v. United States, December 2, 2008.

<sup>8</sup> Id.

permanent non-navigable tributary if they have a significant nexus with a traditional navigable water.<sup>9</sup> In Rapanos the Court described wetlands having a significant nexus "if the wetlands, either alone or in combination with similarly situated lands in the region, significantly affect the chemical, physical, and biological integrity of other covered waters more readily understood as 'navigable.'"<sup>10</sup>

For jurisdictional wetlands, Sections 404 and 401 of the federal CWA are most often involved in the permit process for wetland alterations.<sup>11</sup> The federal Rivers and Harbors Act may also be implicated for wetland alteration permits.<sup>12</sup> An applicant seeking to discharge fill into jurisdictional wetlands must apply to the Corps who then coordinates the entire application process. The Corps conducts a federal level review of the application. "In evaluating whether a particular discharge activity should be permitted, the Corps applies the Section 404(b)(1) guidelines requiring, in sequence, the avoidance of wetland impact where feasible, minimization of impacts where practicable, and compensation for any unavoidable impacts through mitigation measures."<sup>13</sup>

On the state level, DHEC conducts a state level review with regards to the Section 401 Water Quality Certification<sup>14</sup> and, if the proposed activity occurs in the Coastal Zone<sup>15</sup> or critical area<sup>16</sup>, DHEC's Office of Ocean and Coastal Resource Management ("OCRM") conducts a review of the application to determine if the proposed activity is consistent with the Coastal Zone

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<sup>9</sup> Id.

<sup>10</sup> Id.

<sup>11</sup> South Carolina Department of Health and Environmental Control, A Brief Guide to Wetlands Regulations in South Carolina. Access the report at: <http://www.scdhec.gov/environment/water/docs/401guide.pdf>.

<sup>12</sup> Section 10, 33 U.S.C. § 403 (1899).

<sup>13</sup> S.C. Department of Health and Environmental Control, A Brief Guide to Wetlands Regulations in South Carolina. Access the report at: <http://www.scdhec.gov/environment/water/docs/401guide.pdf>.

<sup>14</sup> Id.

<sup>15</sup> The Coastal Zone is comprised of Horry, Georgetown, Charleston, Berkeley, Dorchester, Colleton, Beaufort, and Jasper Counties.

<sup>16</sup> The area seaward of the line marking the limit of salt tolerant vegetation.

Management Program.<sup>17</sup> For activities requiring a federal 404 permit involving a discharge to waters or wetlands, DHEC must take Section 401 certification action. Section 401 requires that the State either issue, deny or waive certification for any activity which requires a federal permit and may result in a discharge to State waters including wetlands. This certification must state that applicable effluent limits and water quality standards will not be violated. During review of applications for Water Quality Certification, DHEC looks at whether or not there are feasible alternatives to the activity, if the activity is water dependent, and the intended purpose of the activity. Under most circumstances<sup>18</sup> the federal 404 permit cannot be issued if 401 Water Quality Certification or Coastal Zone Consistency Certification is denied<sup>19,20</sup>.

Activities conducted in non-jurisdictional wetlands are not subject to that process. South Carolina's 401 Certification program only gives DHEC the authority to regulate jurisdictional wetlands.<sup>21</sup> If the proposed activities are in non-jurisdictional wetlands, and occur in the Coastal Zone, then OCRM must issue a coastal zone consistency determination before the activity may proceed. If the proposed activity does not occur in the Coastal Zone, there is no state review required and the landowner may proceed with his activity.

Carolina Bays are one type of isolated wetland, however not all Carolina Bays are isolated.<sup>22</sup> In fact, isolated wetland status can change over time.<sup>23</sup> The governing act for the Task

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<sup>17</sup> S.C. Department of Health and Environmental Control, A Brief Guide to Wetlands Regulations in South Carolina. Access the report at: <http://www.scdhec.gov/environment/water/docs/401guide.pdf>.

<sup>18</sup> On rare occasions the Corps has asserted an exemption to this requirement.

<sup>19</sup> Regulation 61-101 entitled Water Quality Certification directs DHEC in processing applications for certification.

<sup>20</sup> S.C. Department of Health and Environmental Control, A Brief Guide to Wetlands Regulations in South Carolina. Access the report at: <http://www.scdhec.gov/environment/water/docs/401guide.pdf>.

<sup>21</sup> John R. Dorney et al., Isolated Wetlands in the Southeastern United States: A Comparison of State Regulatory Programs and Implications of Recent Research, National Wetlands Newsletter, Vol. 34, No.3 (2012).

<sup>22</sup> Tina Hadden, Chief Regulatory Division & Richard L. Darden, Ph.D., U.S. Army Corps of Engineers Presentation, October 17, 2012.

<sup>23</sup> Id.

Force, under Act 198 of 2012, calls for individualized treatment for Carolina Bays because of their unique qualities and the ecological and historical value they provide South Carolina.<sup>24</sup>

Carolina Bays are shallow, poorly drained, elliptical, depressions found throughout the unconsolidated sediments of the Atlantic coastal plain that are characterized by distinctive features which may be exhibited totally or in part with any given bay and share various features with other isolated wetland types, including floristic composition, distribution of vegetation, substrate, and origin.<sup>25</sup> DNR identified ten distinctive features of Carolina Bays: (1) elliptical or oval shape; (2) northwest-southeast orientation; (3) parallel axes; (4) sand rims raised above general level; (5) interior surfaces below general level, (6) differences between interior and surrounding soils, (7) relatively shallow depths, (8) flat, sandy bottoms beneath interior fill, (9) independence of inflowing and out flowing streams, and (10) bays often overlap, and there are some bays within bays.<sup>26</sup> Every Carolina Bay exhibits the first two characteristics of an elliptical or oval shape and of a northwest-southeast orientation. Although the name "bay" implies a presence of water, these shallow basins range from nearly permanently inundated to frequently dry.<sup>27</sup> Carolina Bay hydrology, or the movement, distribution, and quality of water, is dominated by precipitation inputs and evapotranspiration losses.<sup>28</sup> Carolina Bays characteristically have no natural drainages into or from them and overland surface flows are minimal.<sup>29</sup> Evapotranspiration, especially during the warm growing season, can result in complete drying of

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<sup>24</sup> However, the presentations to the Task Force clearly demonstrated that Carolina Bays, while unique, are not treated differently in the regulatory regime overlaying wetlands so the Task Force unanimously agreed to consolidate its findings and recommendations into one document.

<sup>25</sup> S.C. Department of Natural Resources, Advance Identification of Carolina Bays for South Carolina Wetlands Protection, Land, Water, and Conservation Division. pp. 3-4 (1999). Access the report at: <http://www.scstatehouse.gov/committeeinfo/IsolatedWetlandsandCarolinaBaysTaskForce/Essential%20Terms.pdf>.

<sup>26</sup> S.C. Department of Natural Resources. 1999. Advance Identification of Carolina Bays for South Carolina Wetlands Protection. Land, Water, and Conservation Division. pp. 3-4

<sup>27</sup> Rebecca R. Sharitz, Carolina Bay Wetlands: Unique Habitats of the Southeastern United States (2003).

<sup>28</sup> Id.

<sup>29</sup> Id.

these shallow basins and many smaller Carolina Bays may dry completely during periods of low precipitation and high evapotranspiration.<sup>30</sup>

DNR provided Carolina Bay estimates per county and determined that a total of 2,651 bays have been identified.<sup>31</sup> This number is from a report and study in 1991 and includes only those bays two acres or larger. According to the report, the number of bays per county ranged from a low of three in Chesterfield County to a high of 410 in Horry County. Areas of high bay density occur in three regions; Aiken, Orangeburg, Barnwell, Allendale, and Bamberg Counties; Sumter and Clarendon Counties; and Darlington, Chesterfield, Dillon, Marion and Horry Counties.<sup>32</sup> There is a significant need to update and further document Carolina Bays in South Carolina. The Task Force recognizes such efforts should be supported to create a current inventory and mapping of Carolina Bays.

The most significant ecological function of Carolina Bays is providing habitat for diverse and unusual flora and fauna.<sup>33</sup> Carolina Bays provide a habitat for an abundance of species adapted to fluctuating water levels resulting in a far greater habitat diversity on the landscape than a single type of wetland would provide.<sup>34</sup> Water levels in Carolina Bays may vary seasonally and across years from inundated to dry, and organisms inhabiting Carolina Bays must be adapted to fluctuating and often unpredictable hydrologic conditions. The ecological importance of these wetlands as habitats for species that require an aquatic environment for a part of their life cycle has been well-documented. In addition to providing a habitat for many different species of plants and animals, wetlands provide relief from flooding, water quality

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<sup>30</sup> Id.

<sup>31</sup> Stephen H. Bennett & John B. Nelson, Distribution and Status of Carolina Bays in South Carolina, S.C. Department of Natural Resources, Heritage Trust (1991). Access the report at: <http://www.scstatehouse.gov/committeefinfo/IsolatedWetlandsandCarolinaBaysTaskForce/October172012Meeting/CarolinaBaysStudy.pdf>.

<sup>32</sup> Bennett & Nelson.

<sup>33</sup> Sharitz.

<sup>34</sup> Id.

improvement, open space and recreation, as well as groundwater recharge. The loss of these habitats may have serious consequences for rare plant species and for groups of animals, such as amphibians, that depend on temporary ponds as their primary breeding sites.<sup>35</sup>

The regulatory framework concerning wetlands administered by state and federal regulatory agencies does not differentiate between Carolina Bays and any other wetland types. The same process of delineation, jurisdictional determination, and the steps resulting from that determination are the same. Therefore, the task force chose not to make a distinction between Carolina Bays and other wetlands when making its findings and recommendations.

### *FINDINGS AND RECOMMENDATIONS*

Historically, South Carolina has lost an estimated 28% of its original isolated wetlands to human development and conversion of the landscape.<sup>36</sup> Evidence suggests that only ten percent of the remaining isolated wetlands are intact and functioning undisturbed and that the number of Carolina Bays that are functional or capable of restoration is dwindling. A majority of the Carolina Bays in South Carolina have been disturbed or impacted in some way. This is a result of degradation of these bays by human activities over the years. The alteration of hydrology in these systems has degraded habitats for many plant and animal species.<sup>37</sup> Carolina Bays are unique and an important asset to South Carolina. The legislature should take action to promote further preservation and/or restoration.

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<sup>35</sup> Id.

<sup>36</sup> S.C. Department of Natural Resources, Advance Identification of Carolina Bays for South Carolina Wetlands Protection, Land, Water, and Conservation Division. pp. 3-4 (1999).

<sup>37</sup> Scott Harder, A Hydrologic and Restoration-Feasibility Study of a Carolina Bay in Aiken and Barnwell Counties, South Carolina.

The Task Force has developed several recommendations to be presented to the General Assembly and the appropriate regulatory agencies to address the need for conservation and preservation of isolated wetlands and Carolina Bays. Although a statutory permitting program and associated regulations for isolated wetlands was a point of discussion, the Task Force decided against recommending an additional regulatory program to the existing regulatory framework. Instead, the Task Force determined that a broad voluntary, incentive-based approach would be best suited to address the preservation issues for Carolina Bays and isolated wetlands, including those privately owned.

The Task Force agreed on three general principles to guide its recommendations. First, the Task Force seeks to preserve the remaining isolated wetlands and Carolina Bays; second, the Task Force should remain committed to protecting the property interests of private landowners; and finally legislation should be developed to ensure that these efforts will be passed favorably by the General Assembly.

### *1. Conservation Bank*

The South Carolina Conservation Bank was established in Title 48, Chapter 59 of the South Carolina Code. The Bank is funded by a portion of the state's deed recording fee that is deposited in a special trust fund. Funding is granted to qualified state agencies, non-profit land trusts and municipalities for the fee-simple purchase of land, or purchase of conservation easements. The Conservation Bank uses a competitive grants process to determine which proposals to fund. Three criteria are used to evaluate proposals, based on the legislation: (1) conservation value of the project;<sup>38</sup> (2) degree of public use on the property; and (3) financial

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<sup>38</sup> The Task Force discussed the propriety of adding ecological value as an additional criteria. However, the members concluded that ecological value is a subset of the larger conservation value criteria already utilized.

leverage of the project, including the extent of funds from other sources or donated value from the landowner/seller.<sup>39</sup>

The Task Force recommends that the Conservation Bank statute be amended (1) to provide for language that creates conservation and restoration efforts to extend perpetually, and (2) to increase the amount of the existing document fee that is designated for Conservation Bank funding by five cents so that more funding would be available to the bank for land preservation. The Task Force recommends that targeted funding be directed to the Conservation Bank for the purposes of protection and restoration of non-jurisdictional, isolated wetlands and Carolina Bays in the context of landscape conservation and restoration. This funding will benefit isolated wetlands and Carolina Bays statewide based on a priority scale as determined from the inventory of regulatory state agencies and those that are currently in the Conservation Bank database.

## *2. Inventory of Isolated Wetlands and Carolina Bays*

The Task Force acknowledges the existing priority system managed by DNR to develop an inventory of non-jurisdictional, isolated wetlands and Carolina Bays that are in an undisturbed state and recommends that those able to be restored be identified and added to the database. This preservation will involve avoidance of future disturbance to these wetlands as well as efforts to minimize/mitigate the altering effects or restore the non-jurisdictional, isolated wetlands and Carolina Bays to a level of functionality. The Task Force recommends that the General Assembly direct the targeted funding increase to the Conservation Bank to be used to fund the identification of these additional isolated wetlands and Carolina Bays and their inclusion in the database.

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<sup>39</sup> Mark Robertson, Executive Director, Presentation of the South Carolina Conservation Bank, The Nature Conservancy of South Carolina.

### 3. Tax Incentives

Pursuant to Section 12-6-3515 of the South Carolina Code private landowners may receive a tax credit for making a "gift of land for conservation" to a "qualified conservation organization." Non-jurisdictional, isolated wetlands and Carolina Bays are currently eligible for this credit. The tax credit "may not exceed two hundred fifty dollars [(\$250)] per acre" and no more than two hundred fifty thousand dollars (\$250,000) may be claimed in any single tax year. Excess credits may be carried forward to succeeding tax years. This tax credit has been in place since 2000. It has been amended twice since its enactment, however, the amount of the allowable credit has remained unchanged. The credit also relates the transfer of real property as it exists. There is no allowance or incentive to restore or rehabilitate the property.

The Task Force recommends that the General Assembly increase the tax credit allowed per acre and in total for landowners that make a gift of land for conservation to a qualified conservation organization. Specifically, the Task Force recommends an increase to the per acre taxable amount to three hundred fifty dollars (\$350) and the total amount that may be claimed in a year to three hundred thirty five thousand dollars (\$335,000). These increases roughly account for inflation during the twelve years since the tax credit was originally enacted. The Task Force further recommends that the tax credit be amended, or enact a separate tax credit, to allow for credit to be given to a landowner who restores or rehabilitates a non-jurisdictional, isolated wetland or Carolina Bay. This credit should equal the amount provided for the gift of land for conservation.

### 4. DNR Heritage Trust Program

DNR already maintains the Heritage Trust Program that places certain property in trust for current and future generations so that they may enjoy the natural and cultural resources of our

State. Landowners' property rights are protected in that the trust may not acquire property by eminent domain. For private property to be included in the trust, a landowner has to offer to sell or donate the property, the property must fit within the statutory parameters, and, if the offer is for sale, the landowner and DNR must reach a mutually agreed upon price. The property dedicated to the Trust is available for public use and enjoyment subject to reasonable restrictions. Property that is "dedicated" is property that is included as a trust preserve, meaning that it is protected from future development or conversion to other uses.<sup>40</sup>

The Task Force recommends that the General Assembly amend Section 51-17-140 to exempt non-jurisdictional, isolated wetlands and Carolina Bays from the cap imposed on the amount of land the trust can acquire if the non-jurisdictional, isolated wetland and/or Carolina Bay acquired is ultimately dedicated. The Task Force further recommends that the General Assembly amend Chapter 15, Title 51 to specify that non-jurisdictional, isolated wetlands and Carolina Bays always fit within the parameters of the program.

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<sup>40</sup> More information related to the trust may be found on DNR's website:  
<http://www.dnr.sc.gov/mlands/hpprogram.html> (general description of the program)  
<https://www.dnr.sc.gov/mlands/heritage> (inventory of existing trust properties)