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Comments:

The work of the Charleston County Mosquito Control Program (CCMCP) is performed by the Mosquito Control Division of Charleston County Public Works. We appreciate the opportunity to offer the following comments in the hope that we can assist in achieving the stated theme to "Improve the quality of life and health for the public".

The CCMCP is prohibited by the South Carolina Department of Natural Resources (SCDNR) from conducting the basic, highly effective mosquito control practices of aquatic stage mosquito (larvae) surveillance and treatment (larviciding) on the Santee Coastal Reserve managed wetland impoundments (the Santee Coastal Reserve currently contains 1,000 acres of diked impoundments). A study conducted in 1981 and 1982 by researchers from The Citadel's Vector Biology Program found mosquito larvae production as high as 32,000 larvae per square meter in standing water on one sampled impoundment. Research conducted by the U.S. Navy on similar sites discovered that they can produce up to four million adult female mosquitoes per acre (on non-larvicided sites) after sufficient rainfall, tide, or man-made flooding event. These adult salt-marsh mosquitoes easily fly to and affect communities eight to ten miles from their impoundment breeding grounds, utilizing the Francis Marion National Forest (FMNF) and other adjacent natural zones as flight paths and resting areas.

Due to the adult mosquito populations generated by the Santee Coastal Reserve, grossly disproportionate amounts of CCMCP resources are devoted to controlling the adult mosquitoes that are infesting McClellanville, Germantown, Awendaw, and other local communities, all of which are located in or have relevant geographical proximity to the FMNF. As stated in the Citadel study, in 1983, the CCMCP determined that 20% of its total budget was expended to control salt-marsh mosquitoes in the McClellanville area alone. In 2010 a cost analysis was conducted by the CCMCP of the previous four years of the mosquito control carried out in the area bordered by Darrell Creek Trail northward to the South Santee River. 61% of the CCMCP's total budget for those four years was expended in this area, including 33% of the adult mosquito spraying by truck-mounted units. In 2013 from January through September, 11% (159) of the total CCMCP spray truck missions countywide were carried out in the McClellanville area, in addition to 9% (84,346) of the total County spray truck acreage.

Although spray truck missions can at times sufficiently control adult mosquito outbreaks, aerial spray missions are sometimes necessary in this and other regions due to the geographical spread, intensity, and duration of the outbreaks (adult mosquito "counts" of 10 to 100 per minute or more over several days). The aerial spray missions conducted in the McClellanville, Germantown, and Awendaw regions by necessity encompass much of the FMNF. The CCMCP has been prohibited by the USDA Forest Service (UFS) from using any other product except Malathion (active ingredient) by air in the FMNF for decades. As a result, a large percentage of the mosquito population is resistant to (will survive) the necessary aerial treatment; so much so that, at times, as little as 50% control is achieved per mission. Continued aerial spraying, utilizing Malathion as the sole pesticide, will soon increase the resistance factor until the point is reached that aerial spraying is ineffective, resulting in dire quality of life and potential public health consequences for the human population. Since the late 1990's, the UFS has required that an Environmental Impact Study (EIS) be conducted to determine whether other pesticides would be approved for aerial application for adult mosquito treatment over the FMNF. At that time the cost of the requisite EIS was estimated to be approximately \$3 million. No agency at any level has decided to fund this EIS.

The CCMCP has also been prohibited by the UFS since the late 1990's from conducting larval mosquito surveillance and treatment by air at a known salt-marsh mosquito breeding impoundment (approximately 35 acres in area) in the Tibwin Forest section of the FMNF adjacent to the Atlantic Intracoastal Waterway (AIWW).

In consideration of the Francis Marion Forest Draft Plan's stated goal of improving quality of life and health for stakeholders, the CCMCP requests that the Revised Forest Plan contain specific provisions and goals to address the aforementioned issues that are currently severely impacting residents living in and adjacent to the FMNF as well as visitors to the FMNF, in addition to straining the resources of the CCMCP and Charleston County taxpayers. Specifically:

1. That an Environmental Impact Study (EIS) be funded and carried out within five years of the finalization of the Revised Forest Management Plan with the goal of

approving the use of alternative aerial adult mosquito control products, or that the UFS grant the CCMCP an indefinite waiver immediately (beginning in 2016) for permission to utilize other products commonly used by CCMCP until such a time that an EIS is completed and alternative products are approved.

2. That the UFS immediately (by February 2016) allow the CCMCP to conduct larval mosquito surveillance and aerial treatment at the previously mentioned AIWW impoundment in the Tibwin section of the FMNF.

3. That the UFS partner with the CCMCP and other stakeholders to address the SCDNR prohibition against implementing the effective, well-established basic preventive mosquito control practices of larval surveillance and treatment in the Santee Coastal Reserve. The adult mosquito population generated by the Santee Coastal Reserve could be significantly reduced by these practices, resulting in greatly increased quality of life for the human population and significant cost savings to the County taxpayers.

All of the products used by the CCMCP for control of aquatic stage and adult mosquitoes are approved by the EPA and are utilized in accordance with Federal and State Law. The CCMCP also follows the guidelines established by the American Mosquito Control Association (AMCA) and the U.S. Center for Disease Control (USCDC) as Best Management Practices (BMP). Among the most important BMPs is the implementation of a high degree of surveillance to evaluate larval and adult mosquito populations to determine the most appropriate mosquito control methods to be used, if any.

The CCMCP currently conducts mosquito control BMP's in the Cape Romain Refuge, the ACE Basin, State and County Parks, and thousands of acres of freshwater wetlands, salt marshes, marsh estuaries, woodlands, and other natural areas and ecosystems across Charleston County. We are confident that their use in the FMNF would not pose an unreasonable risk and would improve the quality of life and health for the public.