



LOUISIANA WILDLIFE FEDERATION

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Louisiana Wildlife Federation's Response to Wetland Assimilation Assessment Reports

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Louisiana Wildlife Federation (LWF) has reviewed the South Slough Wetland Evaluation Report prepared by Naturally Wallace Consulting, LLC (NWC) as well as the Louisiana Department of Environmental Quality's (LDEQ) review of the wetland assimilation program per House Concurrent Resolution 42 (HCR 42) issued on June 4, 2019. As has been our position for several years now, LWF still believes that no new permits should be allowed for additional wastewater wetland assimilation (WA) projects. The NWC report makes it clear there are still several issues to be addressed in WA projects. LWF appreciates LDEQ's efforts to engage additional external review of the most highly criticized WA project, the City of Hammond/South Slough Wetland Wastewater Assimilation Project.

Naturally Wallace Consulting South Slough Wetland Evaluation Report

NWC recommends continuing discharge into the wetland citing that the system has been successful in reducing salinity and enhancing cypress growth. To the point of salinity reduction, the report does not take into account other factors that may have contributed to reduced salinity in the wetland. Increased rainfall, increased frequency of openings and total volume discharged via the Bonnet Carré Spillway, construction of the Hurricane & Storm Damage Risk Reduction System (HSDRRS), and closure of the Mississippi River Gulf Outlet (MRGO) are important factors that contribute to salinity values of Pontchartrain Basin – none of which were considered in the NWC report. In addition, WA projects are orders of magnitude smaller in fresh water than proposed Mississippi River sediment and freshwater diversion projects, and therefore less likely to substantially reduce salinities that could be adversely impacting freshwater wetland forests.

The report has little to no discussion on the impacts of altered hydroperiod on the receiving wetland. The depth, frequency, duration and timing of flooding is an important consideration, and this was not investigated in this report.

NWC conducted a tree core analysis from trees in the "MID" location, attributing cypress tree growth rates to the WA project. However, without also taking cores from the control forest, it cannot be assumed that any increase in growth is solely due to the WA project. Again, other possible contributing factors such as the closure of MRGO were not considered. This could have been better determined by also taking samples from the control forest and comparing the two to determine to what degree, if any, the WA project may have impacted cypress growth rates.

NWC noted that Hammond's WA project is "successful" in meeting WA objectives without expounding upon discharge data, permit compliance or regulatory review. The Hammond

wastewater plant has historically performed poorly, being out of compliance with permit requirements for 65% of a two-year term, failing BOD limitations 25 reported times, and failing Whole Effluent Toxicity limits 6 times.

LWF agrees with NWC in its recommendation of more comprehensive monitoring of the wetland. The use of three monitoring locations is insufficient to detail changes in vegetation. However, LDEQ's mission is tasked with the responsibility of pollution prevention and mitigation from wastewater sources, not to assign measures of "success" or "no impact" to changing biomes of ecology. Therefore, input and/or oversight from the Louisiana Department of Natural Resources (LDNR), the Louisiana Department of Wildlife & Fisheries (LDWF) and the Coastal Protection and Restoration Authority (CPRA) would be better served to evaluate coastal restoration activity success and impact.

LWF also concurs that there needs to be more thorough documentation and reporting of nutria control efforts, especially considering nutria herbivory has long been thought to be a contributing factor of destruction in WA areas. However, LWF *does not* agree that nutria alone are the cause of destruction in WA project areas. The degree to which nutria contribute to degradation could be more effectively analyzed by including data such as numbers of nutria captured/killed, man hours expended for the effort, expending the same effort in the control marsh to allow for comparison, etc. The LDWF, in a July 2019 response letter to the NWC report, stated that they found:

"...little to no evidence of nutria 'eat out' or nutrient loading being the dominant causes of vegetation change in the wetland assimilation system. Investigative site visits and historical annual surveys by LDWF biologists indicate that no evidence of nutrient damage has ever been recorded in this area. Furthermore, nutrient loading cannot be the sole cause of change because the wetland vegetation in the assimilation system adapted to the rapid change in nutrients introduced...[As] opposed to nutria 'eat out' or nutrient loading, LDWF maintains its position that the most probable causes of loss of vegetative community on Joyce WMA were induced pooling (inadequate dispersal of effluent) and issues with water control structure flow."

This directly contradicts the findings of the NWC report. Nutria herbivory alone does not negatively explain the loss of Net Primary Productivity (NPP). LDEQ's five-year assessment from 2012 to 2016 conducted for the 2018 Water Quality Integrated Report found the City of Hammond's project to be impaired, in addition to three other project sites (EDMS Document 12315879), based on the 20% reduction in NPP.

Similarly, the NWC report did not address findings of the Office of Coastal Management at LDNR, which issued an enforcement violation to the City of Hammond. LDNR penalized the project for the adverse impact on a total of 91.5 acres of emergent vegetation in the Joyce Wildlife Management Area (WMA), based on a November 2018 field report. The Joyce WMA is a public land managed by LDWF that is receiving secondarily-treated wastewater effluent. In their letter dated January 31, 2019, LDWF asserts the degradation is due to excessive pooling and high levels of nutrient introduction. LDWF asked for a re-evaluation of the discharge

methodology, for the project managers to perform more studies on surface flow and examine the possibility of redirection of flow elsewhere, and brought up the consideration that pipes may need to be removed if degradation of vegetation continues. The letter also addresses how the wetland loss from this WA could be mitigated by the City of Hammond. Simply put, a project that purported to enhance and preserve a wetland area has produced a loss of wetland quality significant enough to warrant mitigation measures and concern around continuation of the project as designed.

It is worth noting that the LDEQ is the authority responsible for implementing and enforcing the National Pollutant Discharge Elimination System (NPDES), and, therefore, wastewater discharges. However, the LDEQ is *not* the prime authority on the health and functionality of wetland systems. In this way, the LDWF and LDNR should review data and metrics, and be the authorities responsible for making statements about the impacts to wetlands or wildlife.

LWF agrees with the recommendation that additional information and data on each application zone should be documented. Capturing information related to the application of effluent volumes should be necessary for currently permitted projects.

While the NWC report mentions the need for more volume distribution data, it neglects to discuss the drastic changes to the hydroperiod that were altered by the project. The permittee reported that water levels rose approximately 30 cm above the baseline, however, this is not addressed in the report. In fact, there is no mention of hydrology or hydroperiod. Nor is there discussion regarding how permanently flooding the soil could cause weaker soils on its own or how it could interact synergistically with high nutrients.

Design and construction of hydraulic control gates would mitigate short-circuiting and other flow issues at this site. Certainly, implementing hydraulic control will improve the water flow across existing project sites, but this strategy is more of a policy point, where altering water flow can have expected and unanticipated outcomes. Wouldn't utilizing constructed wetlands for effluent application, where control of hydrology, vegetation, and subsurface substrate, better serve the wastewater operator?

The NWC report suggests that human intervention is necessary to reintroduce fresh water, nutrients, and sediments, without review of the degrading forces at work in these systems. The impacts, both positive and negative, should be taken as a whole and considered with other state agencies including LDNR, LDWF and CPRA to ensure the outcomes align with Louisiana's coastal restoration efforts. These agencies would also be better suited to evaluate plant community shifts than LDEQ.

General Concerns Regarding the Wetland Assimilation Program

In response to HCR 42, LDEQ submitted its report based on internal and external evaluations of the wetland assimilation program. The NWC report served as the external evaluation. However, based on concerns mentioned previously, LWF asserts the external evaluation is not adequate. Additionally, LDEQ's own internal evaluation does not come to a conclusion of program success. Instead, it brings up many questions that remain to be answered and considers potential

changes to permit requirements or the inclusion of additional requirements. There is clearly more work that needs to be done to improve the program with projects already permitted; this should be addressed before permitting additional projects – and consideration of additional WA projects should only be considered if it is determined that the program should continue or expand based on an in-depth analysis of changes yet to be made.

LAC 33:IX.1113.B.12.b states: “Wetland biological integrity will be guided by above-ground wetland vegetative productivity with consideration given to floral diversity. Due to effluent addition, the discharge area of a wetland shall have no more than a 20 percent reduction in the rate of total above-ground wetland productivity over a five-year period as compared to a reference area.”

LDEQ states that “[a] 20% reduction in [net primary productivity] is not equivalent to a 20% loss of wetlands. Rather, the 20% reduction is the criterion at which the facility must instigate corrective measures, modifying their management methods as necessary to ensure appropriate productivity.” Out of thirteen permitted projects, one (Breux Bridge) has been determined to be failing long-term while three others (Thibodaux, Mandeville’s Bayou Chinchuba and Hammond) were found to be impaired in a five-year assessment conducted for the 2018 Water Quality Integrated Report.

There are currently thirteen assimilation wetland projects approved in Louisiana with three more having submitted permit applications to LDEQ.

Louisiana Wildlife Federation has expressed concerns about the concept of wetland assimilation of wastewater for several years. In 2010, LWF adopted a resolution (Resolution No. 7C, 2010) urging the Louisiana Departments of Natural Resources and Health & Hospitals and the U. S. Army Corps of Engineers to independently evaluate the cumulative effects on receiving wetlands and that such evaluation include open discourse that considers the most current data regarding this strategy for wastewater treatment. No assessment of these projects has occurred with input from outside agencies.

In 2017, Pontchartrain Conservancy (formerly known as the Lake Pontchartrain Basin Foundation) released the white paper *Recommended Policy: Treated Municipal Wastewater Assimilation in Natural Wetlands in Coastal Louisiana*, which gave many useful recommendations for wetland assimilation projects. Some recommendations included:

- “Treatment plants associated with wastewater assimilation projects should treat the discharge to levels required for discharge into surface water. Discharge may need to be pulsed between assimilation wetland(s) and an open water body, to protect wetlands against extended periods of inundation. The current permitting structure may need to be altered to accommodate separate discharges to both the wetland and surface water. Therefore, effluent should be treated to the same standards, at a minimum, as those discharged to surface water.”
- “Correctly define the project assimilation area so nutrient loading rates are accurate and reflect project conditions.”

- “Monitoring needs to be conducted using independent science, for instance, Environmental Impact Statements, (EIS), baseline sampling, project design and post-project sampling should not all be conducted by the same entity.”
- “Investigate the fate, transport, and environmental impact of wastewater constituents that are not sufficiently removed or biologically inactivated by wastewater treatment processes discharged to wetlands. These emergent concerns include pharmaceutical and personal care products (PCPPs), and endocrine disrupting compounds (EDCs). Similarly, alternative pathogen indicators beyond fecal coliform should be used to assess viral and bacterial pathogens that are discharged to the assimilation wetland. While these emergent concerns are also a consideration for the discharge of wastewater to surface waters, the dilution volume in wetland systems can be considerably less.”

The paper concluded with a recommendation that “Louisiana agencies not permit any new projects discharging treated municipal wastewater into natural wetlands, including both marsh and forested wetlands”. LWF still agrees with the recommendations of this document.

In 2018, LWF passed another resolution (Resolution No. 1B, 2018) related to WA projects calling for LDEQ to require municipalities with wetland permits, relaxed or otherwise, to post warning signage clearly stating that exposure within the receiving wetland could constitute an increased health risk for humans and animals. In this resolution, LWF also recommended that, regardless of permit requirements, municipalities post warning signage on the boundaries of effluent wetland areas that are under their control and responsibility and that LDWF post similar signage at entry points of wildlife management areas impacted by permitted municipal sewage effluent. This signage should clearly state “Warning” or “Caution” and that there is a potential for increased health risks for humans and wildlife.

Louisiana Wildlife Federation continues to hold the position that there should be a moratorium on new wetland assimilation projects discharging into natural wetlands. WA projects have been allowed by LDEQ in an effort to stem the loss of coastal wetlands. HCR 42 was passed in 2019 to “urge and request [LDEQ] to study the overall impacts of wetland assimilation projects prior to approval of additional such projects.” There is not adequate evidence to affirm these projects have been successful. Additional requirements should be incorporated and changes implemented to projects that have already been permitted, and those changes need to be analyzed after an appropriate period of time before new permits are considered for additional projects in the wetland assimilation program.