CRMC INTERIM GUIDELINES FOR SMALL WETLAND RESTORATION PROJECTS

A. Small Projects: Small wetland restoration projects shall be considered those projects which are typically range from less than one acre to several acres in overall size. In most cases, these projects are undertaken on private residential properties, small commercial sites or by residential homeowner's associations. Typically, these projects rely primarily on invasive species control utilizing herbicides and are not often designed to restore tidal flow.

B. Preliminary Determinations: The CRMC requires the submission of a preliminary determination for all wetland restoration projects. The purpose of the preliminary determination shall be for the applicant and CRMC Staff to discuss the wetland restoration project proposed and to determine the potential viability of the project based on an initial assessment of the site and restoration method being considered. A pre-application meeting must also be held with the CRMC prior to the submission of a wetland restoration application.

C. Ecological Units: In order for wetland restoration projects to have a reasonable probability of success, the entire wetland and bordering upland habitats must be assessed and evaluated as an ecological unit. Projects which propose to treat isolated segments of a wetland system or ecological unit will be considered to have a low probability of success. Those projects where the CRMC believes there is a low probability of restoration success will be considered a "wetland alteration" and will be evaluated by CRMC Staff under the applicable rules for wetland alterations.

D. Impact Assessment: All wetland restoration projects shall provide a written impact assessment. The purpose of the assessment shall be to identify conditions on site which may have led to the degradation of the wetland including the displacement of native plants by invasives. Typical impacts to consider include the flow of runoff from developed areas into wetlands which may contain sediments and excess nutrients etc., fertilization practices, septic system locations, lack of buffer zones, prior disturbance, seed or propagule (seed, rhizome) sources, etc. Identifiable impacts such as nearby propagule sources, stormwater discharges, including point discharges and areas of overland flow to wetlands shall be identified on the existing habitat conditions map (see below).

E. Impact Mitigation: All wetland restoration projects shall include an impact mitigation strategy designed to address potential causes or sources of the wetland degradation. Projects which propose to restore the wetland without attempting to address the potential sources or causes of the degradation may be considered alterations of wetlands.

F. Habitat Mapping Requirements:

1. **Existing Habitat Conditions Map:** All wetland restoration projects must include an existing conditions habitat map which identifies the species of vegetation present both within and surrounding the proposed wetland restoration area. The habitat map shall also illustrate and describe the primary communities of vegetation present. For each vegetation community identified, an inclusive plant species list shall be developed which provides the relative abundance (or percent cover) of each species identified within each community type illustrated on the existing habitat conditions map.

2. **Proposed Habitat Map:** All wetland restoration projects must include a proposed habitat map based on the anticipated restoration program for the site. Habitat areas to be preserved shall be identified along with proposed habitats to be restored by vegetation community type. Generic planting plans and seed applications such as those designed for stormwater basins shall not be considered appropriate planting plans. Rather, planting plans shall be provided based on the species of vegetation that has been displaced by invasive plants. Displaced species shall be identified through remnant populations on site or in adjacent wetland areas. These species and the community of species that comprised the prior habitat shall be considered the most likely species to inhabit the area based upon their existence prior to displacement. The restoration effort shall be designed around restoring wetland habitat by providing a diversity of appropriate species of vegetation common to wetland plant communities typical of the area.

3. **Wetland Buffer Requirements:** All wetland restoration projects shall require the establishment of a protective buffer zone. The buffer zone must consist of existing naturally vegetated areas to be preserved and those areas to be restored though appropriate plantings. The buffer zone shall be clearly labeled on the proposed habitat map and shall be bounded by permanent buffer zone markers which shall be installed on site consistent with the map provided. Buffer areas (widths) may be negotiated based on the restoration needs and limitations of the site.

G. Description of Wetland Restoration Methods:

1. **Herbicide Description and Time of Year for Application:** All wetland restoration projects shall identify the herbicide to be utilized, including surfactants and the time of year the herbicide will be applied. An annual RIDEM permit to control aquatic nuisances using pesticides must be obtained and all herbicide treatments must be performed by a RIDEM licensed applicator. No deviations from the specified herbicides or time of year specified within the application shall be allowed without prior CRMC approval. Any failure to apply the herbicides during the time of year specified in the application shall be grounds for suspension or voiding of the permit. Tolling legislation shall not apply to wetland restoration projects.

2. **Herbicide Application Method:** The methods of herbicide application must be specified within the application. For small wetland restoration projects, widespread "broadcast" spraying shall be minimized particularly after the year 1 application. Following the year 1 application, follow up treatments shall be performed by low-volume, low pressure backpack sprayers, "wick" or "cut stem" application only. For small projects and in areas where there is a mix of vegetation including native plants, the wick application method may be the preferred herbicide application method for treatments including the initial (year 1) treatment.

3. **Cutting and Removal of Treated Invasive Plants:** In most cases, invasive plants including Phragmites should be cut and removed from the wetland following treatment. For small wetland restoration projects, the mulching of invasive plants including Phragmites should be avoided and will only be allowed where cutting and removal is not practical. Mulching will not be allowed over soft sediments or where the mulch material is expected to impact the marsh restoration by suppressing the re-growth of preferred wetland plants or the restoration seed mix proposed or where the mulch may be transported by tides or water flow. The disposal method for invasive plant cuttings shall be specified and subject to CRMC approval.

4. **Planting Schedules:** In most cases, planting and seeding shall be performed during the early part of the first growing season following herbicide treatment. If the need for more than one herbicide treatment is anticipated prior to planting or seeding, a spring and fall treatment should be considered for "year 1" of the restoration program. However, the CRMC acknowledges that in some cases two treatment seasons may be required prior to seeding and/or replanting of the treatment area.

H. Restoration Design, Monitoring, Project Oversight and Reporting Requirements: All wetland restoration projects shall be designed and monitored by a wetland scientist. If the work is to be conducted by a certified Invasives Species Manager (IM), the IM must have a wetlands science background. The wetland scientist must provide "on location" project oversight during herbicide applications, cutting and removal of invasive plants, and during the restorative planting and seeding phase. Monitoring reports shall be provided by July 1 during each year the restoration permit is valid (permit length may vary by project). All monitoring reports shall include a description of work performed to date and a description of work to be completed during the upcoming growing season and following years. The monitoring report shall include a restoration habitat map which describes the conditions of the site, communities of vegetation present, relative abundance of each species within each community and a discussion of trends in community development. Representative photos shall be provided for each community type present. The narrative shall include a comparison of the present conditions relative to the restoration habitat map originally proposed.

I. Duration of Restoration Effort: Based on CRMC's monitoring of wetland restoration projects over the years, the CRMC has concluded that the most successful restoration projects are those which have been undertaken over the "long term". Experience has shown that invasive wetland plants quickly become re-established once the treatment program has ended. And, once several years have gone by without monitoring or treatment, a substantial re-infestation often occurs resulting in the need for the wide spread use of herbicides to regain control of the restoration effort. In such cases, the excessive re-use of herbicide is an environmental concern as well as the creation of expansive "kill zones" where vegetation has again been eliminated by herbicides. The goal of all restoration efforts should be to minimize the use of herbicides and the associated temporary elimination of vegetation within wetlands (even where the vegetation is composed on non-native plants since nonnative plants retain some habitat value and provide other functions such as nutrient uptake and shoreline stabilization). Conversely, restoration efforts undertaken over the long term result in minimal use of herbicide typically limited to "wick applications" and/or hand pulling of remaining invasives with little or no reduction in plant cover within the wetland. For these reasons, a 5 year minimum restoration program is considered acceptable while a 10 year program is highly recommended.

J. Contract Requirements and Cost Estimates: All wetland restoration projects shall provide a complete itemized cost estimate for the full term of the restoration effort proposed. The cost estimate must be submitted with the application and include the applicant's signature as an acknowledgement of the cost involved to carry out the project to completion. In addition, the applicant must provide a signed contract with the wetland scientist who will provide the design, monitoring, project oversight and reporting requirements. The contract shall be for a minimum period of 5 years or the length of the restoration effort, whichever is greater. Any cancellation or modification in the contract for the required wetland restoration services must be approved by the CRMC within 30 days of such cancellations or modifications. In some cases, depending on the complexity of the restoration effort and other considerations, the applicant may be required to post a performance bond or establish an escrow account in the amount determined by the CRMC to complete the restoration effort proposed.

K. Failure to Carry the Project to Completion: Any wetland restoration project which is not carried through to completion will be considered an unnecessary alteration of a wetland resulting in cancellation of the remaining term of the assent. Furthermore, the CRMC may issue a restoration order may require the replanting of areas altered by herbicides which have not yet become revegetated. Performance bonds or escrow accounts established as financial security may be accessed by the CRMC to complete the restoration effort.

L. A CRMC note on Pesticides: The applicant is advised that the CRMC does not regulate the type, use or application of pesticides used in restoration projects. Rather, the CRMC requires the use of EPA registered pesticides and the issuance of a "Permit to Control Aquatic Nuisances Using Pesticides" by RIDEM to determine whether the proposed use is in conformance with the manufacture's label and instructions for its use. The CRMC acknowledges that the herbicide "glyphosate" has been determined by the World Health Organization to be a potential human carcinogen and that there is currently some controversy in this regard. The applicant should always consider and understand the risks and safety precautions associated with the use of pesticides.