PotashCorp®
Helping Nature Provide

PCS Phosphate - White Springs
Stanley W. Posey

July 26, 2013

Via email

John Humphreys
Submerged Lands & Environmental Resources Coordination
Department of Environmental Protection
2600 Blairstone Road, MS 2500
Tallahassee, FL 32399

RE: Amendments to UMAM Proposed by the Florida Phosphate Industry to Improve Consistency and Accuracy

Dear Mr. Humphries:

PCS Phosphate-White Springs (PCS) is one of three companies (PCS, CF, and Mosaic) engaged in phosphate mining in Florida, which all have extensive involvement, experience and interest in activities and permitting programs involving wetlands. This correspondence is to provide unified comments concerning the Department's proposed changes to the Uniform Mitigation Assessment Method (UMAM) set forth in Chapter 62-345, Florida Administrative Code (F.A.C.). Mining activities performed by the phosphate industry require Environmental Resource Permits (ERPs) from the Department, which involve impacts to wetlands or other surface waters and require mitigation that is effectively determined by the application of UMAM. Accordingly, PCS and the other companies are substantially interested in and will be substantially affected by any revisions to the UMAM rules.

PCS is committed to UMAM rules that are scientifically sound, transparent, consistent, and unbiased. We applaud the Department's efforts to date to review the rule to ensure these goals are being met. We are committed to providing time and expertise to the DEP in this rule amendment process. Through the industry's collective experience, we have identified areas in which UMAM should be amended to improve consistency and accuracy in determining mitigation requirements.

The areas in which UMAM should be revised and the reasons for these revisions are set forth below. Specific rule language requiring changes, deletions, or additions is set forth on the attached draft revised rule.

T (386)397-8304 F (386)397-8390 C (386)397-0524 EMAIL SPOSEY@PCSPHOSPHATE.COM
15843 SE 78th Street, PO Box 300, White Springs, FL, USA 32096 **T (386) 397-8101** F (386) 397-8165
White Springs Agricultural Chemicals, Inc. | www.potashcorp.com

1) **Watershed Based Mitigation** - UMAM should be revised to recognize the additional ecological value generated from preserving, enhancing or restoring large tracts of land that provide benefits on a watershed basis. Many mitigation projects proposed to offset phosphate mining impacts are of sufficient size and location to provide ecological benefits to an entire watershed.

   Chapter 62-345's current language does not provide an adequate means for recognizing the additional benefits of these watershed-scale mitigation projects. Habitat specific wetland mitigation should be incorporated into the rule and projects incorporating habitat specific wetland mitigation should receive additional credit. To address this, appropriate amendments and revisions to rules 62-345.500(2), 62-345.500(3)(a)6., and 62-345.500(6)(a), F.A.C., are proposed.

2) **Determining Current Condition for Mitigation -** When evaluating a non-preservation mitigation project, UMAM requires that the current condition of an assessment area be determined. However, the existing rule language is unclear as to the date on which the current condition is determined. To clarify this issue, revisions to rule 62-345.500(1)(a), F.A.C., are proposed. In addition, changes to this rule are proposed to clarify the evaluation of the effects of previous or on-going exempt or permitted activities when determining current condition.

3) **Performing Part I Qualitative Characterization** – For larger scale projects, intensive multi-day site visits by agency personnel to verify the applicant's Part I Characterization often represents an unnecessary waste of agency and applicant resources given the wealth of data provided by the applicant to support the characterization. In such cases, site visits may be unnecessary or can be minimized if an adequate Part I Qualitative Characterization needed to develop a frame of reference can be performed using the background information referenced in rule 62-345.400, F.A.C. Conducting field visits where an adequate frame of reference can be developed without such visits wastes agency and applicant resources. Revisions are proposed to rule 62-345.400, F.A.C., to address this issue. We also support development of reference databases, including reference wetlands and reference streams that can be readily accessed to provide a uniform frame of reference to facilitate Part I characterizations. Most components of Part I can be completed prior to the field visit for the actual scoring, Part II.

4) **Recognizing the Ecological Value Generated from Stream and Floodplain Restoration or Enhancement** – Phosphate mining often involves the restoration or enhancement of streams and floodplains as mitigation. The current Chapter 62-345, F.A.C., language does not provide explicit guidance for restoration or

enhancement of streams and floodplains. To clarify the evaluation of stream and floodplain mitigation, revisions to rule 62-345.500((6)(b), F.A.C., are proposed. A Stream/Lotic System Work Group should also be established to assist in this effort.

5) **Evaluation of Risk** – UMAM currently requires that mitigation risk be evaluated in quarter-point increments. In practice this means that mitigation with even the smallest theoretical risk is assumed to have a 25% chance of failing and is treated as such under the rule. To make the risk assessment more precise, revision to rule 62-345.600(2), F.A.C., is proposed so that risk will be assessed on tenth-point increments (0.10). Currently, if a project has more risk, the amount of mitigation acres may increase. It is counterproductive to require more mitigation just because a project is more risky or poorly designed. Additionally, mitigation is substantially less risky where the entity proposing the mitigation has extensive past experience in successfully conducting that mitigation and has a proven track record for achieving success. Several wetland mitigation design factors developed in the phosphate industry should also be incorporated into other wetland mitigation projects. These factors include extensive hydrological modeling, specific topographic surveys for pre and post mitigation, design and construction oversight by a certified mitigation supervisor, acceptable nursery stock, transplanting, and specific corrective action plans. Similarly, mitigation should be considered less risky where the mitigation design and supporting documents are very detailed and well supported by data and information. Finally, risk should be reduced where the maintenance or adaptive management plans for the mitigation are detailed, intense, or frequent and where the mitigation is supported by adequate financial assurances. To address these considerations, revisions to rule 62-345.600(2), F.A.C., are proposed. Additionally, we support development of a Risk Workgroup as suggested in initial UMAM workshop.

6) **Miscellaneous** –

   a. Revisions to rule 62-345.200, F.A.C., are proposed to eliminate inconsistencies between terms defined in UMAM and the definitions of those same terms in the new Statewide Environmental Resource Permitting Rule, Chapter 62-330, F.A.C., and to clarify that the Chapter 62-330 terms also apply to UMAM.

   b. Revisions to rule 62-345.300, F.A.C., are proposed to clarify that DEP will provide guidance on the interpretation of the UMAM rule and will provide training on the use of the UMAM methodology.

c. For purposes of evaluating location and landscape support, we support creation of a Location and Landscape Support Workgroup that will develop field guides or reference location and landscape support attributes in selected reference wetlands. We do not recommend overly prescriptive checklists of attributes.

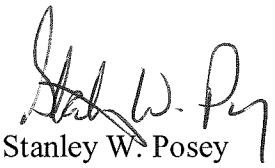
d. We recommend that DEP develop a field guide or reference attributes in selected reference streams to use in scoring streams and floodplains as the existing UMAM rule language lacks sufficient guidance in this area. Again, we do not recommend overly prescriptive checklists of attributes.

e. The rule should clarify that permits issued or applications filed before the effective date of the amendments will continue to be evaluated under the version of UMAM that pre-dated the amendments, unless the applicant or permittee elects to proceed under the amended rule. This is particularly important for permits that require mitigation wetlands to achieve certain UMAM scores prior to release.

f. The Department did an excellent job of addressing biases in the June webinar and measures should be taken to minimize any bias in evaluating and scoring wetlands. Additional quantitative measures for each scoring category (Location and Landscape Support, Water Environment, Community Structure, and Benthic and Sessile Communities).

Thank you for your consideration of our comments and recommendations. Please contact me if you have any questions regarding the contents of this letter or the attached rule draft.

Sincerely,



Stanley W. Posey
Manager, Environmental Affairs

Enclosure

c: Michael S. Batts, The Phoenix Environmental Group, Inc.

ADMENDMENTS TO UMAM PROPOSED BY THE FLORIDA PHOSPHATE INDUSTRY TO PROMOTE CONSISTENCY AND ACCURACY

CHAPTER 62-345
UNIFORM MITIGATION ASSESSMENT METHOD

62-345.100 Intent and Scope.

(1) The intent of this rule is to fulfill the mandate of subsection 373.414(18), F.S., which requires the establishment of a uniform mitigation assessment method to determine the amount of mitigation needed to offset adverse impacts to wetlands and other surface waters and to award and deduct mitigation bank credits. This chapter shall apply to those impacts subject to review under Section 373.414, F.S., excluding subparagraphs 373.414(1)(a)1., 3., 5., 6. and (b)3., F.S.

(2) Except as specified above, the methodology in this chapter provides a standardized procedure for assessing the functions provided by wetlands and other surface waters, the amount that those functions are reduced by a proposed impact, and the amount of mitigation necessary to offset that loss. It does not assess whether the adverse impact meets other criteria for issuance of a permit, nor the extent that such impacts may be approved. This rule supersedes existing ratio guidelines or requirements concerning the amount of mitigation required to offset an impact to wetlands or other surface waters. Upon a determination that mitigation is required to offset a proposed impact, the methodology set forth in this rule shall be used to quantify the acreage of mitigation, or the number of credits from a mitigation bank or regional offsite mitigation area, required to offset the impact. This method is also used to determine the degree of improvement in ecological value of proposed mitigation bank activities. When applying this method, reasonable scientific judgment must be used.

(3) This method is not applicable to:

(a) Activities for which mitigation is not required;

(b) Activities authorized under general permits under Part IV of Chapter 373, F.S., for which special forms of mitigation are specified in the rule establishing the general permit;

(c) Activities in North Trail Basin and Bird Drive Basin in Miami-Dade County for which mitigation is specified in Department of Environmental Protection Permit Number 132416479, issued February 15, 1995 to Everglades National Park for a mitigation bank in the Hole in the Donut, which is incorporated by reference herein;

(d) Activities for which mitigation is determined under Section 373.41492, F.S.;

(e) Florida Department of Transportation permit applications where mitigation is provided under a plan developed by a water management district and approved by Department of Environmental Protection final order pursuant to Section 373.4137, F.S., prior to the effective date of this rule;

(f) Activities for which mitigation is determined under Section 338.250, F.S. (Central Florida Beltway);

(g) Impacts that are offset under the net improvement provision of subparagraph 373.414(1)(b)3., F.S.;

(h) Fishing or recreational values, pursuant to subparagraph 373.414(1)(a)4., F.S.; or

(i) Mitigation for mangrove trimming and alteration as required and implemented in accordance with Section 403.9332, F.S.

(4) This method is not intended to supersede or replace existing rules regarding cumulative impacts, the prevention of secondary impacts, reduction and elimination of impacts, or to determine the appropriateness of the type of mitigation proposed.

(5) For the following types of secondary impacts, the amount and type of mitigation required to offset these impacts shall include measures such as the implementation of management plans, participation in a wildlife management park established by the Florida Fish and Wildlife Conservation Commission, incorporation of culverts or bridged crossings designed to facilitate wildlife movement, fencing to limit access, reduced speed zones, plans to protect significant historical or archeological resources, or other measures designed to offset the secondary impact, rather than the implementation of Rules 62-345.400 through 62-345.600, F.A.C.:

(a) Secondary impacts to fish or wildlife caused by collision with boat traffic, automobile traffic, or towers;

(b) Secondary impacts to aquatic or wetland dependent listed animal species caused by impacts to uplands used by such species for nesting or denning; or

(c) Secondary impacts to historical or archeological resources.

(6) An entity that has received a mitigation bank permit issued by the Department of Environmental Protection or a water management district under Sections 373.4135 and 373.4136, F.S., prior to the adoption of this rule, or any mitigation bank with an application pending pursuant to subsection 62-345.100(7), F.A.C., and permitted under the applicable rules, ordinances and special acts in effect prior to the adoption of this rule, must have impact sites assessed for the purpose of deducting bank credits using the credit assessment method, including any functional assessment methodology, that was in place when the bank was permitted. A permitted mitigation bank has the option to modify the mitigation bank permit to have its credits re-assessed under the method in this chapter, and thereafter have its credits deducted using the method adopted in this chapter. In accordance with Section 373.4136, F.S., the number of credits awarded must be based on the degree of improvement in ecological value expected to result from the establishment and operation of the mitigation bank, as determined using the assessment methodology in this chapter.

(7) Any application for a permit or other authorization involving mitigation, including mitigation banks, that is pending on or before the effective date of this chapter, or any amendments to this chapter, shall be reviewed under the applicable rules, ordinances, and special acts in effect before the effective date of this chapter, or the applicable amendment to this chapter, unless the applicant elects to amend the application to be reviewed under this chapter.

(8) Applications to modify a conceptual, conceptual approval, standard, standard general or individual permit that was either issued prior to the effective date of this chapter or reviewed under the applicable rules, ordinances and special acts in effect prior to the adoption of this rule pursuant to subsection 62-345.100(7), F.A.C., shall be evaluated under the mitigation assessment criteria used in the review of the permit, unless the applicant elects to have the application reviewed under this chapter or unless the proposed modification is reasonably expected to lead to substantially different or substantially increased water resource impacts. For the purposes of this subsection, applications to construct part or all of a project that are consistent with a valid conceptual approval permit or a valid conceptual permit shall be considered a modification of the conceptual approval permit or conceptual permit.

(9) An application for a permit under Part IV of Chapter 373, F.S., for an activity associated with mining operations that qualifies for the exemption in subsection 373.414(15), F.S., shall be reviewed under the applicable rules identified in subsection 373.414(15), F.S.

(10) The Department and Water Management Districts shall develop and conduct training workshops for agency staff, local governments, and the public on the application of this rule, prior to the effective date of this rule.

Specific Authority 373.026(7), 373.043, 373.414(9), (18) FS. Law Implemented 373.414(18) FS. History–New 2-2-04, Amended 4-27-05.

62-345.200 Definitions.

Except as otherwise provided in this chapter, the definitions of Chapter 62-330, including those incorporated by reference, shall apply to this chapter. Additionally, as used in this chapter:

(1) "Assessment area" means all or part of a wetland or surface water impact site, or a mitigation site, that is sufficiently homogeneous in character, impact, or mitigation benefits to be assessed as a single unit.

(2) "Reviewing agency" means the Florida Department of Environmental Protection, or any water management district, local government or other governmental agency required by subsection 373.414(18), F.S., to use this methodology.

~~(3) "Ecological value" means the value of functions performed by uplands, wetlands, and other surface waters to the abundance, diversity, and habitats of fish, wildlife, and listed species. Included are functions such as providing cover and refuge; breeding, nesting, denning, and nursery areas; corridors for wildlife movement; food chain support; natural water storage, natural flow attenuation, and water quality improvement which enhances fish, wildlife, and listed species utilization.~~

(3) ~~(4)~~ "Impact site" means wetlands and other surface waters as delineated pursuant to Chapter 62-340, F.A.C., that would be impacted by the project. Uplands shall not be included as part of the impact site.

(4) ~~(5)~~ "Indicators" means physical, chemical, or biological indications of wetland or other surface waters function.

(5) ~~(6)~~ "Invasive Exotic" for purposes of this rule means animal species that are outside of their natural range or zone of dispersal and have or are able to form self-sustaining and expanding populations in communities in which they did not previously

occur, and those plant species listed in the Florida Exotic Pest Plant Council's 2001 List of Invasive Species Category I and II, which is incorporated by reference herein, and may be found on the Internet at www.fleppc.org or by writing to the Bureau of Beaches and Wetland Resources, Department of Environmental Protection, 2600 Blair Stone Road, MS 2500, Tallahassee, FL 32399-2400.

~~(7) "Listed species" means those animal species that are endangered, threatened or of special concern and are listed in Rules 68A-27.003, 68A-27.004 and 68A-27.005, F.A.C., and those plant species listed in 50 Code of Federal Regulations 17.12, when such plants are located in a wetland or other surface water.~~

(6) ~~(8)~~ "Mitigation credit" or "credit" means a standard unit of measure which represents the increase in ecological value resulting from restoration, enhancement, preservation, or creation activities.

(7) ~~(9)~~ "Mitigation site" means wetlands and other surface waters as delineated pursuant to Chapter 62-340, F.A.C., or uplands, that are proposed to be created, restored, enhanced, or preserved by the mitigation project.

(8) ~~(10)~~ "With impact assessment" means the reasonably anticipated outcome at an assessment area assuming the proposed impact is conducted.

(10) ~~(11)~~ "With mitigation assessment" means the outcome at an assessment area assuming the proposed mitigation is successfully conducted.

(11) ~~(12)~~ "Without preservation assessment" means the reasonably anticipated outcome at an assessment area assuming the area is not preserved.

Specific Authority 373.026(7), 373.043, 373.414(9), (18) FS. Law Implemented 373.414(18) FS. History–New 2-2-04.

62-345.300 Assessment Method Overview and Guidance.

(1) The Department shall provide overall guidance on the interpretation of this chapter and training on the use of the methodgy set forth herein.

(2) ~~(1)~~ When an applicant proposes mitigation for impacts to wetlands and surface waters as part of an environmental resource permit or wetland resource permit application, the applicant will be responsible for submitting the necessary supporting information for the application of Rules 62-345.400-.600, F.A.C., of this chapter and the reviewing agency will be responsible for verifying this information and applying this assessment method to determine the amount of mitigation necessary to offset the proposed impacts. When an applicant submits a mitigation bank or regional mitigation permit application, the applicant will be responsible for submitting the necessary supporting information for the application of Rules 62-345.400-.600, F.A.C., of this chapter and the reviewing agency will be responsible for verifying this information and applying this assessment method to determine the potential amount of mitigation to be provided by the bank or regional mitigation area.

(3) ~~(2)~~ To determine the value of functions provided by impact and mitigation sites, the method incorporates the following considerations: current condition (see subsection 62-345.500(6), F.A.C.); hydrologic connection (see paragraph 62-345.400(1)(d), F.A.C.); uniqueness (see paragraph 62-345.400(1)(f), F.A.C.); location (see subsections 62-345.400(1) and 62-345.500(7), F.A.C.); fish and wildlife utilization (see paragraph 62-345.400(1)(h), F.A.C.); time lag (see subsection 62-345.600(1), F.A.C.); and mitigation risk (see subsection 62-345.600(2), F.A.C.).

(4) ~~(3)~~ The assessment method is designed to be used in any type of impact site or mitigation site in any geographic region of the state. The inherent flexibility required for such a method is accomplished in a multi-part approach that consists of the following processes:

(a) Conduct qualitative characterization of both the impact and mitigation assessment areas (Part I) that describes the assessment area, identifies its native community type and the functions to fish and wildlife and their habitat. The purpose of Part I is to provide a framework for comparison of the assessment area to the optimal condition and location of that native community type. Another purpose of this part is to note any relevant factors of the assessment area that are discovered by site inspectors, including use by listed species.

(b) Conduct quantitative assessment (Part II) of the impact and mitigation sites and use the numerical scores to compare the reduction of ecological value due to proposed impacts and the gain in ecological value due to proposed mitigation and to determine whether a sufficient amount of mitigation is proposed.

(c) Adjust the gain in ecological value from either upland or wetland preservation in accordance with subsection 62-345.500(3), F.A.C.

(d) For mitigation assessment areas, assess the proposed mitigation for time lag and risk.

(e) The functional gain or loss for mitigation and impact assessment areas, respectively, is determined by applying the formulas in subsection 62-345.600(3), F.A.C., to ascertain the number of mitigation bank credits to be awarded and debited and the amount of mitigation needed to offset the impacts to wetlands and other surface waters.

(5) ~~(4)~~ Part I of this method provides a descriptive framework to characterize the assessment area and the functions provided by that area. Part II of this method provides indicators of wetland and other surface water function, which are scored based on the framework developed in Part I. Part I must be completed and referenced by the user of this method when scoring the assessment area in Part II. An impact or mitigation site may contain more than one assessment area, each of which shall be independently evaluated under this method.

(6) ~~(5)~~ The degree of ecological change on a site must be determined for both the impact and mitigation assessment areas by the mathematical difference in the Part II scores established pursuant to Rule 62-345.500, F.A.C., between the current condition and with-impact condition assessment, and between the current condition or without preservation and the with mitigation condition assessments. This difference is termed the "delta." This formula must be applied to all assessment areas within both proposed impact sites and mitigation sites (including mitigation banks and regional offsite mitigation areas when applicable).

Specific Authority 373.026(7), 373.043, 373.414(9), (18) FS. Law Implemented 373.414(18) FS. History–New 2-2-04, Amended 9-12-07.

62-345.400 Qualitative Characterization – Part I.

An impact or mitigation assessment area must be described with sufficient detail to provide a frame of reference for the type of community being evaluated and to identify the functions that will be evaluated. When an assessment area is an upland proposed as mitigation, functions must be related to the benefits provided by that upland to fish and wildlife of associated wetlands or other surface waters. Information for each assessment area must be sufficient to identify the functions beneficial to fish and wildlife and their habitat that are characteristic of the assessment area's native community type, based on currently available information, such as aerial photographs, topographic maps, geographic information system data and maps, site visits, scientific articles, journals, other professional reports, field verification when needed, and reasonable scientific judgment. For artificial systems, such as borrow pits, ditches and canals, and for altered systems, refer to the native community type it most closely resembles. Prior to conducting any field verification, the regulating agency shall attempt to determine the frame of reference for the type of community being evaluated and identify the functions being evaluated using the other information described in this section. The information provided by the applicant for each assessment area must address the following, as applicable:

(1) Special water classifications, such as whether the area is in an Outstanding Florida Water, an Aquatic Preserve, a Class II water approved, restricted, conditionally approved, conditionally restricted for shellfish harvesting, or an Area of Critical State Concern;

(2) Significant nearby features that might affect the values of the functions provided by the assessment area, such as areas with regionally significant ecological resources or habitats (national or state parks, forests, or reserves; Outstanding National Resource Waters and associated watershed; Outstanding Florida Waters and associated watershed; other conservation areas), major industry, or commercial airport;

(3) Assessment area size;

(4) Geographic relationship and hydrologic connection between the assessment area and any contiguous wetland or other surface waters, or uplands, as applicable;

(5) Classification of the assessment area's native community type, considering past alterations that affect the classification. Classification shall be based on Florida Land Use, Cover and Form Classification System (1999) (FLUCC) codes, which is incorporated by reference herein. In addition, the applicant may further classify the assessment area using the 26 Communities of Florida, Soils Conservation Service (February 1981), which is incorporated by reference herein; A Hydrogeomorphic Classification for Wetlands, Wetland Research Program Technical Report WRP-DE-4, Mark M. Brinson (August 1993), which is incorporated by reference herein; or other sources that, based on reasonable scientific judgment, describe the natural communities in Florida;

(6) Uniqueness when considering the relative rarity of the wetland or other surface water and floral and faunal components, including listed species, on the assessment area in relation to the surrounding regional landscape;

(7) Functions performed by the assessment area's native community type. Functions to be considered are: providing cover, substrate, and refuge; breeding, nesting, denning, and nursery areas; corridors for wildlife movement; food chain support; and

natural water storage, natural flow attenuation, and water quality improvement, which enhances fish, wildlife, and listed species utilization;

(8) Anticipated wildlife utilization and type of use (feeding, breeding, nesting, resting, or denning), and applicable listing classifications (threatened, endangered, or species of special concern as defined by Rules 68A-27.003, 68A-27.004 and 68A-27.005, F.A.C.). The list developed for the assessment area need not include all species which use the area, but must include all listed species in addition to those species that are characteristic of the native community type, considering the size and geographic location of the assessment area. Generally, wildlife surveys will not be required. The need for a wildlife survey will be determined by the likelihood that the site is used by listed species, considering site characteristics and the range and habitat needs of such species, and whether the proposed system will impact that use;

(9) Whether any portion of the assessment area has been previously used as mitigation for a prior issued permit; and

(10) Any additional information that is needed to accurately characterize the ecological values of the assessment area and functions provided.

Specific Authority 373.026(7), 373.043, 373.414(9), (18) FS. Law Implemented 373.414(18) FS. History–New 2-2-04, Amended 9-12-07.

62-345.500 Assessment and Scoring - Part II.

(1) Utilizing the frame of reference established in Part I, the information obtained under this part must be used to determine the degree to which the assessment area provides the functions identified in Part I and the amount of function lost or gained by the project. Each impact assessment area and each mitigation assessment area must be assessed under two conditions.

(a) Current condition or, in the case of preservation mitigation, without preservation –

1. The current condition shall be determined as of the date the permit application for the regulated activity requiring the functional assessment has been submitted. For assessment areas where previous impacts that affect the current condition are temporary in nature, consideration will be given to the inherent functions of these areas relative to seasonal hydrologic changes, and expected vegetation regeneration and projected habitat functions if the use of the area were to remain unchanged. For purposes of this section, an impact is considered temporary in nature if the assessment area can recover from the impact within one year without input of human activities.

2. The effects of previous or on going activities not requiring a permit under Part IV, Chapter 373, F.S. or Sections 403.91-919, F.S. (1984 Supp.) such as silviculture or agriculture operations, and the effects of lawfully permitted activities, shall be considered when evaluating the current condition or without preservation condition. The effects of such activities shall not be considered temporary in nature if they can be expected to recur in the current condition or without preservation condition. Additionally, when evaluating the without preservation condition, the potential effects of reasonably likely future activities not requiring a permit shall be considered, and the stability of the current condition should be considered. The extent to which the wetland or surface water or portions thereof are degraded, incised, eroded, or unstable shall be taken into consideration in assessing the current condition and without preservation condition.

3. When evaluating impacts to a previously permitted mitigation site that has not achieved its intended function, the reviewing agency shall consider the functions the mitigation site was intended to offset and any delay or reduction in offsetting those functions that may be caused by the project.

4. Previous construction or alteration undertaken in violation of Part IV, Chapter 373, F.S., or Sections 403.91-.929, F.S. (1984 Supp.), as amended, or rule, order or permit adopted or issued thereunder, will not be considered as having diminished the condition and relative value of a wetland or surface water, when assigning a score under this part. When evaluating wetlands or other surface waters that are within an area that is subject to a recovery strategy pursuant to Chapter 40D-80, F.A.C., impacts from water withdrawals will not be considered when assigning a score under this part.

(b) "With mitigation" or "with impact" – The "with mitigation" and "with impact" assessments are based on the reasonably expected outcome, which may represent an increase, decrease, or no change in value relative to current conditions. For the "with impact" and "with mitigation" assessments, the evaluator will assume that all other necessary regulatory authorizations required for the proposed project have been obtained and that construction will be consistent with such authorizations. The "with mitigation" assessment will be scored only when reasonable assurance has been provided that the proposed plan can be conducted.

(c) When the "with impact" outcome is upland, the "with impact" scores for each of the wetland indicators of function shall be zero (0).

(2) Upland mitigation assessment areas shall be scored using the location and community structure indicators listed in subsection 62-345.500(6), F.A.C. Scoring of these indicators for the upland assessment areas shall be based on benefits provided to the fish and wildlife of the associated wetlands or other surface waters, considering the current or anticipated ecological value of those wetlands and other surface waters. These indicators can be scored higher when the upland mitigation provides benefits on a regional watershed basis, provides enhanced protection against indirect water quality impacts in adjacent wetlands or surface waters, or provides enhanced habitat and corridors for movement for wildlife.

(a) For upland preservation, the gain in ecological value is determined by the mathematical difference between the score of the upland assessment area with the proposed preservation measure and the upland assessment area without the proposed preservation measure. When the community structure is scored as "zero", then the location and landscape support shall also be "zero". The resulting delta is then multiplied by the preservation adjustment factor contained in subsection 62-345.500(3), F.A.C.

(b) For upland enhancement or restoration, the value provided shall be determined by the mathematical difference between the score of the upland assessment area with the proposed restoration or enhancement measure and the current condition of the upland assessment area.

(c) For uplands proposed to be converted to wetlands or other surface waters through creation or restoration measures, the upland areas shall be scored as "zero" in their current condition. Only the "with mitigation" assessment shall be scored in accordance with the indicators listed in subsection 62-345.500(6), F.A.C.

(3)(a) When assessing preservation, the "with mitigation" assessment shall consider the potential of the assessment area to perform current functions in the long term, considering the protection mechanism proposed, and the "without preservation" assessment shall evaluate the assessment area's functions considering the extent and likelihood of what activities would occur if it were not preserved, the temporary or permanent effects of those activities, and the protection provided by existing easements, restrictive covenants, or state, federal, and local rules, ordinances and regulations. The gain in ecological value is determined by the mathematical difference between the Part II scores for the "with mitigation" and "without preservation" (the delta) multiplied by a preservation adjustment factor. The preservation adjustment factor shall be scored on a scale from 0 (no preservation value) to 1 (optimal preservation value), on one-tenth increments. The score shall be assigned based on the applicability and relative significance of the following considerations:

1. The extent to which proposed management activities within the preserve area promote natural ecological conditions such as fire patterns or the exclusion of invasive exotic species and the scope, intensity or frequency of such management activities.

2. The ecological and hydrological relationship between wetlands, other surface waters, and uplands to be preserved.

3. The scarcity of the habitat provided by the proposed preservation area and the degree to which listed species use the area.

4. The proximity of the area to be preserved to areas of national, state, or regional ecological significance, such as national or state parks, Outstanding Florida Waters, and other regionally significant ecological resources or habitats, such as lands acquired or to be acquired through governmental or non-profit land acquisition programs for environmental conservation, and whether the areas to be preserved include corridors between these habitats.

5. The extent and likelihood of potential adverse impacts if the assessment area were not preserved.

6. The extent to which the wetlands, other surface waters, and uplands to be preserved provide benefits on a watershed or regional basis, provide enhanced protection against indirect water quality impacts, or provide enhanced habitat and corridors for movement for wildlife.

(b) The preservation adjustment factor is multiplied by the mitigation delta assigned to the preservation proposal to yield an adjusted mitigation delta for preservation.

(4) The evaluation must be based on currently available information, such as aerial photographs, topographic maps, geographic information system data and maps, site visits, scientific articles, journals, other professional reports, and reasonable scientific judgment.

(5) Indicators of wetland and other surface water function listed in this part are scored on a relative scale of zero to ten, based on the level of function that benefits fish and wildlife. For the purpose of providing guidance, descriptions are given for four general categories of scores: optimal (10), moderate (7), minimal (4), and not present (0). Any whole number score between 0-10 may be used that is a best fit to a single or combination of descriptions and in relation to the optimal level of function of that community type or habitat.

(6) Three categories of indicators of wetland function (location and landscape support, water environment and community structure) listed below are to be scored to the extent that they affect the ecological value of the assessment area. Upland mitigation

assessment areas shall be scored for location and community structure only.

(a) Location and Landscape Support – The value of functions provided by an assessment area to fish and wildlife are influenced by the landscape position of the assessment area and its relationship with surrounding areas. While the geographic location of the assessment area does not change, the ecological relationship between the assessment area and surrounding landscape may vary from the current condition to the "with impact" and "with mitigation" conditions. Many species that nest, feed or find cover in a specific habitat or habitat type are also dependent in varying degrees upon other habitats, including upland, wetland and other surface waters, that are present in the regional landscape. For example, many amphibian species require small isolated wetlands for breeding pools and for juvenile life stages, but may spend the remainder of their adult lives in uplands or other wetland habitats. If these habitats are unavailable or poorly connected in the landscape or are degraded, then the value of functions provided by the assessment area to the fish and wildlife identified in Part I is reduced. The location of the assessment area shall be considered to the extent that fish and wildlife utilizing the area have the opportunity to access other habitats necessary to fulfill their life history requirements. The availability, connectivity, and quality of offsite habitats, and offsite land uses which might adversely impact fish and wildlife utilizing these habitats, are factors to be considered in assessing the location of the assessment area. The location of the assessment area shall be considered relative to offsite and upstream hydrologic contributing areas and to downstream and other connected waters to the extent that the diversity and abundance of fish and wildlife and their habitats is affected in these areas. The opportunity for the assessment area to provide offsite water quantity and quality benefits to fish and wildlife and their habitats downstream and in connected waters is assessed based on the degree of hydrologic connectivity between these habitats and the extent to which offsite habitats are affected by discharges from the assessment area. It is recognized that isolated wetlands lack surface water connections to downstream waters and as a result, do not perform certain functions (e.g., detrital transport) to benefit downstream fish and wildlife; for such wetlands, this consideration does not apply. <u>It is also recognized that large scale mitigation projects may provide watershed or regional benefits, enhanced protection against indirect water quality impacts, or enhanced habitat and corridors for movement for wildlife, warranting a higher location and landscape support score in the "with mitigation" or "with preservation" condition.</u> Subject to field verification if necessary, a location and landscape support score shall initially be determined based on a <u>desktop assessment of the relevant factors listed below.</u>

1. A score of (10) means the assessment area is ideally located and the surrounding landscape provides full opportunity for the assessment area to perform beneficial functions at an optimal level. The score is based on reasonable scientific judgment and characterized by a predominance of the following, as applicable:

a. Habitats outside the assessment area represent the full range of habitats needed to fulfill the life history requirements of all wildlife listed in Part I and are available in sufficient quantity to provide optimal support for these wildlife.

b. Invasive exotic or other invasive plant species are not present in the proximity of the assessment area.

c. Wildlife access to and from habitats outside the assessment area is not limited by distance to these habitats and is unobstructed by landscape barriers.

d. Functions of the assessment area that benefit downstream fish and wildlife are not limited by distance or barriers that reduce the opportunity for the assessment area to provide these benefits.

e. Land uses outside the assessment area have no adverse impacts on wildlife in the assessment area as listed in Part I.

f. The opportunity for the assessment area to provide benefits to downstream or other hydrologically connected areas is not limited by hydrologic impediments or flow restrictions.

g. Downstream or other hydrologically connected habitats are critically or solely dependent on discharges from the assessment area and could suffer severe adverse impacts if the quality or quantity of these discharges were altered.

h. For upland mitigation assessment areas, the uplands are located so as to provide optimal protection of wetland functions.

2. A score of (7) means that, compared to the ideal location, the location of the assessment area limits its opportunity to perform beneficial functions to 70% of the optimal ecological value. The score is based on reasonable scientific judgment and characterized by a predominance of the following, as applicable:

a. Habitats outside the assessment area are available in sufficient quantity and variety to provide optimal support for most, but not all, of the wildlife listed in Part I, or certain wildlife populations may be limited due to the reduced availability of habitats needed to fulfill their life history requirements.

b. Some of the plant community composition in the proximity of the assessment area consists of invasive exotic or other invasive plant species, but cover is minimal and has minimal adverse effect on the functions provided by the assessment area.

c. Wildlife access to and from habitats outside the assessment area is partially limited, either by distance or by the presence of

barriers that impede wildlife movement.

d. Functions of the assessment area that benefit fish and wildlife downstream are somewhat limited by distance or barriers that reduce the opportunity for the assessment area to provide these benefits.

e. Land uses outside the assessment area have minimal adverse impacts on fish and wildlife identified in Part I.

f. The opportunity for the assessment area to provide benefits to downstream or other hydrologically connected areas is limited by hydrologic impediments or flow restrictions such that these benefits are provided with lesser frequency or lesser magnitude than would occur under optimal conditions.

g. Downstream or other hydrologically connected habitats derive significant benefits from discharges from the assessment area and could suffer substantial adverse impacts if the quality or quantity of these discharges were altered.

h. For upland mitigation assessment areas, the uplands are located so as to provide significant, but suboptimal, protection of wetland functions.

3. A score of (4) means that, compared to the ideal location, the assessment area location limits its opportunity to perform beneficial functions to 40% of the optimal ecological value. The score is based on reasonable scientific judgment and characterized by a predominance of the following, as applicable:

a. Availability of habitats outside the assessment area is fair, but fails to provide support for some species of wildlife listed in Part I, or provides minimal support for many of the species listed in Part I.

b. The majority of the plant community composition in the proximity of the assessment area consists of invasive exotic or other invasive plant species that adversely affect the functions provided by the assessment area.

c. Wildlife access to and from habitats outside the assessment area is substantially limited, either by distance or by the presence of barriers which impede wildlife movement.

d. Functions of the assessment area that benefit fish and wildlife downstream are limited by distance or barriers which substantially reduce the opportunity for the assessment area to provide these benefits.

e. Land uses outside the assessment area have significant adverse impacts on fish and wildlife identified in Part I.

f. The opportunity for the assessment area to provide benefits to downstream or other hydrologically connected areas is limited by hydrologic impediments or flow restrictions, such that these benefits are rarely provided or are provided at greatly reduced levels compared to optimal conditions.

g. Downstream or other hydrologically connected habitats derive minimal benefits from discharges from the assessment area but could be adversely impacted if the quality or quantity of these discharges were altered.

h. For upland mitigation assessment areas, the uplands are located so as to provide minimal protection of wetland functions.

4. A score of (0) means that the location of the assessment area provides no habitat support for wildlife utilizing the assessment area and no opportunity for the assessment area to provide benefits to fish and wildlife outside the assessment area. The score is based on reasonable scientific judgment and characterized by a predominance of the following, as applicable:

a. No habitats are available outside the assessment area to provide any support for the species of wildlife listed in Part I.

b. The plant community composition in the proximity of the assessment area consists predominantly of invasive exotic or other invasive plant species such that little or no function is provided by the assessment area.

c. Wildlife access to and from habitats outside the assessment area is precluded by barriers or distance.

d. Functions of the assessment area that would be expected to benefit fish and wildlife downstream are not present.

e. Land uses outside the assessment area have a severe adverse impact on wildlife in the assessment area as listed in Part I.

f. There is negligible or no opportunity for the assessment area to provide benefits to downstream or other hydrologically connected areas due to hydrologic impediments or flow restrictions that preclude provision of these benefits.

g. Discharges from the assessment area provide negligible or no benefits to downstream or hydrologically connected areas and these areas would likely be unaffected if the quantity or quality of these discharges were altered.

h. For upland mitigation assessment areas, the uplands are located so as to provide no protection of wetland functions.

(b) Water Environment – The quantity of water in an assessment area, including the timing, frequency, depth and duration of inundation or saturation, flow characteristics, and the quality of that water, may facilitate or preclude its ability to perform certain functions and may benefit or adversely impact its capacity to support certain wildlife. Hydrologic requirements and tolerance to hydrologic alterations and water quality variations vary by ecosystem type and the wildlife utilizing the ecosystem. Hydrologic conditions within an assessment area, including water quantity and quality, must be evaluated to determine the effect of these conditions on the functions performed by area and the extent to which these conditions benefit or adversely affect wildlife. Water

quality within wetlands and other surface waters is affected by inputs from surrounding and upstream areas and the ability of the wetland or surface water system to assimilate those inputs. Water quality within the assessment area can be directly observed or can be inferred based on available water quality data, on-site indicators, adjacent land uses and estimated pollutant removal efficiencies of contributing surface water management systems. Hydrologic conditions in the assessment area are a result of external hydrologic inputs and the water storage and discharge characteristics of the assessment area. Landscape features outside the assessment area, such as impervious surfaces, borrow pits, levees, berms, swales, ditches, canals, culverts, or control structures, may affect hydrologic conditions in the assessment area. Surrounding land uses may also affect hydrologic conditions in the assessment area if these land uses increase discharges to the assessment area, such as agricultural discharges of irrigation water, or decrease discharges, such as wellfields or mined areas. Additionally, signficant benefits to fish and wildlife may result from the restoration or enhancement of streams and floodplains, which should be recognized in the scoring.

1. A score of (10) means that the hydrology and water quality fully supports the functions and provides benefits to fish and wildlife at optimal capacity for the assessment area. The score is based on reasonable scientific judgment and characterized by a predominance of the following, as applicable:

a. Water levels and flows appear appropriate, considering seasonal variation, tidal cycle, antecedent weather and other climatic effects.

b. Water level indicators are distinct and consistent with expected hydrologic conditions for the type of system being evaluated.

c. Soil moisture is appropriate for the type of system being evaluated, considering seasonal variation, tidal cycle, antecedent weather and other climatic effects. No evidence of soil desiccation, oxidation or subsidence is observed.

d. Soil erosion or deposition patterns are not atypical or indicative of altered flow rates or points of discharge.

e. Evidence of fire history does not indicate atypical fire frequency or severity due to excessive dryness.

f. Vegetation or benthic community zonation in all strata are appropriate for the type of system being evaluated and does not indicate atypical hydrologic conditions.

g. Vegetation shows no signs of hydrologic stress such as excessive mortality, leaning or fallen trees, thinning canopy or signs of insect damage or disease which may be associated with hydrologic stress.

h. Presence or evidence of use by animal species with specific hydrologic requirements is consistent with expected hydrologic conditions for the system being evaluated.

i. Plant community composition is not characterized by species tolerant of and associated with water quality degradation or alterations in frequency, depth, and duration in inundation or saturation.

j. Direct observation of standing water indicates no water quality degradation such as discoloration, turbidity, or oil sheen.

k. Existing water quality data indicates conditions are optimal for the type of community and would fully support the ecological values of the area.

l. Water depth, wave energy, currents and light penetration are optimal for the type of community being evaluated.

2. A score of (7) means that the hydrology and water quality supports the functions and provides benefits to fish and wildlife at 70% of the optimal capacity for the assessment area. The score is based on reasonable scientific judgment and characterized by a predominance of the following, as applicable:

a. Water levels and flows are slightly higher or lower than appropriate, considering seasonal variation, tidal cycle, antecedent weather and other climatic effects.

b. Water level indicators are not as distinct or as consistent as expected for hydrologic conditions for the type of system being evaluated.

c. Although soil oxidation or subsidence is minimal, soils are drier than expected for the type of system being evaluated, considering seasonal variation, tidal cycle, antecedent weather and other climatic effects.

d. Soil erosion or deposition patterns indicate minor alterations in flow rates or points of discharge.

e. Fire history evidence indicates that fire frequency or severity may be more than expected for the type of system being evaluated, possibly due to dryness.

f. Vegetation or benthic community zonation in some strata is inappropriate for the type of system being evaluated, indicating atypical hydrologic conditions.

g. Vegetation has slightly greater than normal mortality, leaning or fallen trees, thinning canopy or signs of insect damage or disease which may be associated with some hydrologic stress.

h. Presence or evidence of use by animal species with specific hydrologic requirements is less than expected or species present

have more generalized hydrologic requirements.

i. Some of the plant community composition consists of species tolerant of and associated with moderate water quality degradation or alterations in frequency, depth, and duration in inundation or saturation.

j. Direct observation of standing water indicates slight water quality degradation such as discoloration, turbidity, or oil sheen.

k. Existing water quality data indicates slight deviation from what is normal, but these variations in parameters, such as salinity or nutrient loading, are not expected to cause more than minimal ecological effects.

l. Water depth, wave energy, currents and light penetration are generally sufficient for the type of community being evaluated but are expected to cause some changes in species, age classes and densities.

3. A score of (4) means that the hydrology and water quality supports the functions and provides benefits to fish and wildlife at 40% of the optimal capacity for the assessment area. The score is based on reasonable scientific judgment and characterized by a predominance of the following, as applicable:

a. Water levels and flows are moderately higher or lower than appropriate, considering seasonal variation, tidal cycle, antecedent weather and other climatic effects.

b. Water level indicators are not distinct and are not consistent with the expected hydrologic conditions for the type of system being evaluated.

c. Soil moisture has deviated from what is appropriate for the type of system being evaluated, considering seasonal variation, tidal cycle, antecedent weather and other climatic effects. Strong evidence of soil desiccation, oxidation or subsidence is observed.

d. Soil erosion or deposition patterns are strongly atypical and indicative of alterations in flow rates or points of discharge.

e. Fire history evidence indicates that fire frequency or severity may be much more than expected for the type of system being evaluated, possibly due to dryness.

f. Vegetation or benthic community zonation in most strata is inappropriate for the type of system being evaluated, indicating atypical hydrologic conditions.

g. Vegetation has strong evidence of greater than normal mortality, leaning or fallen trees, thinning canopy or signs of insect damage or disease associated with hydrologic stress.

h. Presence or evidence of use by animal species with specific hydrologic requirements is greatly reduced from expected or those species present have more generalized hydrologic requirements.

i. Much of the plant community composition consists of species tolerant of and associated with moderate water quality degradation or alterations in frequency, depth, and duration in inundation or saturation.

j. Direct observation of standing water indicates moderate water quality degradation such as discoloration, turbidity, or oil sheen.

k. Existing water quality data indicates moderate deviation from normal for parameters such as salinity or nutrient loading, so that ecological effects would be expected.

l. Water depth, wave energy, currents and light penetration are not well suited for the type of community being evaluated and are expected to cause significant changes in species, age classes and densities.

4. A score of (0) means that the hydrology and water quality does not support the functions and provides no benefits to fish and wildlife. The score is based on reasonable scientific judgment and characterized by a predominance of the following, as applicable:

a. Water levels and flows exhibit an extreme degree of deviation from what is appropriate, considering seasonal variation, tidal cycle, antecedent weather and other climatic effects.

b. Water level indicators are not present or are greatly inconsistent with expected hydrologic conditions for the type of system being evaluated.

c. Soil moisture has deviated from what is appropriate for the type of system being evaluated, considering seasonal variation, tidal cycle, antecedent weather and other climatic effects. Strong evidence of substantial soil desiccation, oxidation or subsidence is observed.

d. Soil erosion or deposition patterns are greatly atypical or indicative of greatly altered flow rates or points of discharge.

e. Fire history indicates great deviation from typical fire frequency or severity, due to extreme dryness.

f. Vegetation or benthic community zonation in all strata is inappropriate for the type of system being evaluated, indicating atypical hydrologic conditions.

g. Vegetation has strong evidence of much greater than normal mortality, leaning or fallen trees, thinning canopy or signs of insect damage or disease which may be associated with hydrologic stress.

h. Presence or evidence of use by animal species with specific hydrologic requirements is lacking and those species present have generalized hydrologic requirements.

i. The plant community composition consists predominantly of species tolerant of and associated with highly degraded water or alterations in frequency, depth, and duration in inundation or saturation.

j. Direct observation of standing water indicates significant water quality degradation such as obvious discoloration, turbidity, or oil sheen.

k. Existing water quality data indicates large deviation from normal for parameters such as salinity or nutrient loading, so that adverse ecological effects would be expected.

l. Water depth, wave energy, currents and light penetration are inappropriate for the type of community (species, age classes and densities) being evaluated.

(c) Community Structure – Each impact and mitigation assessment area is evaluated with regard to its characteristic community structure. In general, a wetland or other surface water is characterized either by plant cover or by open water with a submerged benthic community. Wetlands and surface waters characterized by plant cover will be scored according to subparagraph 62-345.500(6)(c)1., F.A.C., while benthic communities will be assessed in accordance with subparagraph 62-345.500(6)(c)2., F.A.C. If the assessment area is a mosaic of relatively equal parts of submerged plant cover and a submerged benthic community, then both of these indicators will be scored and those scores averaged to obtain a single community structure score.

1. Vegetation and structural habitat – The presence, abundance, health, condition, appropriateness, and distribution of plant communities in surface waters, wetlands, and uplands can be used as indicators to determine the degree to which the functions of the community type identified are provided. Vegetation is the base of the food web in any community and provides many additional structural habitat benefits to fish and wildlife. In forested systems, for example, the vertical structure of trees, tree cavities, standing dead snag, and fallen logs provide forage, nesting, and cover habitat for wildlife. Topographic features, such as flats, deeper depressions, hummocks, or tidal creeks also provide important structure for fish and wildlife habitat. Overall condition of a plant community can often be evaluated by observing indicators such as dead or dying vegetation, regeneration and recruitment, size and age distribution of trees and shrubs, fruit production, chlorotic or spindly plant growth, structure of the vegetation strata, and the presence, coverage and distribution of inappropriate plant species. Human activities such as mowing, grazing, off-road vehicle activity, boat traffic, and fire suppression constitute more direct and easily observable impacts affecting the condition of plant communities. Although short-term environmental factors such as excessive rainfall, drought, and fire can have temporary impacts, human activities such as flooding, drainage via groundwater withdrawal and conveyance canals, or construction of permanent structures such as seawalls in an aquatic system can permanently damage these systems. The plant community should be evaluated to consider whether natural successional patterns for the community type are permanently altered. Inappropriate plants, including invasive exotic species, other invasive species, or other species atypical of the community type being evaluated, do not support the functions attributable to that community type and can out-compete and replace native species. Native upland and wetland vegetation, such as wax myrtle, pines and willow, which are not typically considered as invasive, can occur in numbers and coverage not appropriate for the community type and can serve as indicators of disturbance. The relative degree of coverage by inappropriate species, inappropriate vegetation strata, condition of vegetation, and both biotic and abiotic structure all provide an indication of the degree to which the functions anticipated for the community type identified are being provided.

a. A score of (10) means that the vegetation community and physical structure provide conditions which support an optimal level of function to benefit fish and wildlife utilizing the assessment area as listed in Part I. The score is based on reasonable scientific judgment and characterized by a predominance of the following, as applicable:

I. All or nearly all of the plant cover is by appropriate and desirable plant species in the canopy, shrub, or ground stratum.

II. Invasive exotic or other invasive plant species are not present.

III. There is strong evidence of normal regeneration and natural recruitment.

IV. Age and size distribution is typical of the system, with no indication of deviation from normal successional or mortality pattern.

V. The density and quality of coarse woody debris, snag, den, and cavity provide optimal structural habitat for that type of system.

VI. Plants are in good condition, with very little to no evidence of chlorotic or spindly growth or insect damage.

VII. Land management practices are optimal for long term viability of the plant community.

VIII. Topographic features, such as refugia ponds, creek channels, flats or hummocks, are present and normal for the area being

assessed.

IX. If submerged aquatic plant communities are present, there is no evidence of siltation or algal growth that would impede normal aquatic plant growth.

X. If an upland mitigation assessment area, the plant community and physical structure provide an optimal level of habitat and life history support for fish and wildlife in the associated wetlands or other surface waters.

b. A score of (7) means that the level of function provided by plant community and physical structure is limited to 70% of the optimal level. The score is based on reasonable scientific judgment and characterized by a predominance of the following, as applicable:

I. Majority of plant cover is by appropriate and desirable plant species in the canopy, shrub, or ground stratum.

II. Invasive exotic or other invasive plant species are present, but cover is minimal.

III. There is evidence of near-normal regeneration or natural recruitment.

IV. Age and size distribution approximates conditions typical of that type of system, with no indication of permanent deviation from normal successional or mortality pattern, although there may have been temporary deviations or impacts to age and size distribution.

V. Coarse woody debris, snags, dens, and cavities have either slightly lower than or slightly greater than normal quantity due to deviation from expected age structure or land management.

VI. Plant condition is generally good condition, with little evidence of chlorotic or spindly growth or insect damage.

VII. Land management practices are generally appropriate, but there may be some fire suppression or water control features that have caused a shift in the plant community.

VIII. Topographic features, such as refugia ponds, creek channels, flats or hummocks, are slightly less than optimal for the area being assessed.

IX. In submerged aquatic plant communities, there is a minor degree of siltation or algal growth that would impede normal aquatic plant growth.

X. If an upland mitigation assessment area, the plant community and physical structure provide high, but less than optimal, level of habitat and life history support for fish and wildlife in the associated wetlands or other surface waters.

c. A score of (4) means that the level of function provided by the plant community and physical structure is limited to 40% of the optimal level. The score is based on reasonable scientific judgment and characterized by a predominance of the following, as applicable:

I. Majority of plant cover is by inappropriate or undesirable plant species in the canopy, shrub, or ground stratum.

II. Majority of the plant cover and presence is comprised of invasive exotic or other invasive plant species.

III. There is minimal evidence of regeneration or natural recruitment.

IV. Age and size distribution is atypical of the system and indicative of permanent deviation from normal successional pattern, with greater than expected amount of dead or dying vegetation.

V. Coarse woody debris, snags, dens, and cavities are either not present or greater than normal because the native vegetation is dead or dying.

VI. Generally poor plant condition, such as chlorotic or spindly growth or insect damage.

VII. Land management practices have resulted in partial removal or alteration of natural structures or introduction of some artificial features, such as furrows or ditches.

VIII. Reduction in extent of topographic features, such as refugia ponds, creek channels, flats or hummocks, from what is normal for the area being assessed.

IX. In submerged aquatic plant communities, there is a moderate degree of siltation or algal growth.

X. If an upland mitigation assessment area, the plant community and physical structure provide moderate level of habitat and life history support for fish and wildlife in the associated wetlands or other surface waters.

d. A score of (0) means that the vegetation communities and structural habitat do not provide functions to benefit fish and wildlife. The score is based on reasonable scientific judgment and characterized by a predominance of the following, as applicable:

I. No appropriate or desirable plant species in the canopy, shrub, or ground stratum.

II. High presence and cover by invasive exotic or other invasive plant species.

III. There is no evidence of regeneration or natural recruitment.

IV. High percentage of dead or dying vegetation, with no typical age and size distribution.

V. Coarse woody debris, snags, dens, and cavities are either not present or exist only because the native vegetation is dead or dying.

VI. Overall very poor plant condition, such as highly chlorotic or spindly growth or extensive insect damage.

VII. Land management practices have resulted in removal or alteration of natural structure or introduction of artificial features, such as furrows or ditches.

VIII. Lack of topographic features such as refugia ponds, creek channels, flats or hummocks, that are normal for the area being assessed.

IX. In submerged aquatic plant communities, there is a high degree of siltation or algal growth.

X. If an upland mitigation assessment area, the plant community and physical structure provide little or no habitat and life history support for fish and wildlife in the associated wetland or other surface waters.

2. Benthic Communities – This indicator is intended to be used in marine or freshwater aquatic systems that are not characterized by a plant community, and is not intended to be used in wetlands that are characterized by a plant community. The benthic communities within nearshore, inshore, marine and freshwater aquatic systems are analogous to the vascular plant communities of terrestrial wetland systems in that they provide food and habitat for other biotic components of the system and function in the maintenance of water quality. For example, oyster bars and beds in nearshore habitats and estuaries filter large amounts of particulate matter and provide food and habitat for a variety of species, such as boring sponges, mollusks, and polycheate worms. Live hardbottom community composition varies with water depths and substratum, but this community type contributes to the food web, as well as providing three-dimensional structure through the action of reef-building organisms and rock-boring organisms and water quality benefits from filter-feeding organisms. The distribution and quality of coral reefs reflect a balance of water temperature, salinity, nutrients, water quality, and presence of nearby productive mangrove and seagrass communities. Coral reefs contribute to primary productivity of the marine environment as well as creating structure and habitat for a large number of organisms. Even benthic infauna of soft-bottom systems stabilize the substrate, provide a food source, and serve as useful indicators of water quality. All of these communities are susceptible to human disturbance through direct physical damage, such as dredging, filling, or boating impacts, and indirect damage through changes in water quality, currents, and sedimentation.

a. A score of (10) means that the benthic communities are indicative of conditions that provide optimal support for all of the functions typical of the assessment area and provide optimal benefit to fish and wildlife. The score is based on reasonable scientific judgment and characterized by a predominance of the following, as applicable:

I. The appropriate species number and diversity of benthic organisms are optimal for the type of system.

II. Non-native or inappropriate species are not present and the site is not near an area with such species.

III. Natural regeneration, recruitment, and age distribution are optimal.

IV. Appropriate species are in good condition, with typical biomass.

V. Structural features are typical of the system with no evidence of past physical damage.

VI. Topographic features, such as relief, stability, and interstitial spaces for hardbottom and reef communities or snags and coarse woody debris in riverine systems, are typical of that type of habitat and optimal for the benthic community being evaluated.

VII. Spawning or nesting habitats, such as rocky or sandy bottoms, are optimal for the community type.

b. A score of (7) means that, relative to ideal habitat, the benthic communities of the assessment area provide functions at 70% of the optimal level. The score is based on reasonable scientific judgment and characterized by a predominance of the following, as applicable:

I. Majority of the community is composed of appropriate species; the number and diversity of benthic organisms slightly less than typical.

II. Any non-native or inappropriate species present represent a minority of the community or the site is immediately adjacent to an area with such species.

III. Natural regeneration or recruitment is slightly less than expected.

IV. Appropriate species are in generally good condition, with little reduction in biomass from what is optimal.

V. Structural features are close to that typical of the system, or little evidence of past physical damage.

VI. Topographic features, such as relief, stability, and interstitial spaces for hardbottom and reef communities or snags and coarse woody debris in riverine systems, indicate slight deviation from what is expected and is less than optimal for the benthic community being evaluated.

VII. Spawning or nesting habitats, such as rocky or sandy bottoms, are less than expected.

c. A score of (4) means that, relative to ideal habitat, the benthic communities of the assessment area provide functions to 40% of the optimal level. The score is based on reasonable scientific judgment and characterized by a predominance of the following, as applicable:

I. Appropriate species number or diversity of benthic organisms is greatly decreased from typical.

II. Majority of species present is non-native or inappropriate species or the site is immediately adjacent to an area heavily infested by such species.

III. Natural regeneration or recruitment is minimal.

IV. Substantial number of appropriate species are dying or in poor condition, resulting in much lower than normal biomass.

V. Structural features are atypical of the system, or there is evidence of great or long term physical damage.

VI. Topographic features, such as relief, stability, and interstitial spaces for hardbottom and reef communities or snags and coarse woody debris in riverine systems, are greatly reduced from what is expected and is not appropriate for the benthic community being evaluated.

VII. Few spawning or nesting habitats, such as rocky or sandy bottoms, are available.

d. A score of (0) means that the benthic communities do not support the functions identified and do not provide benefits to fish and wildlife. The score is based on reasonable scientific judgment and characterized by a predominance of the following, as applicable:

I. Lack of appropriate species and diversity of those species; any appropriate species present are in poor condition.

II. Non-native or inappropriate species are dominant.

III. There is no indication of natural regeneration or recruitment.

IV. Structural integrity is very low or non-existent, or there is evidence of serious physical damage.

V. Topographic features, such as relief, stability, and interstitial spaces for hardbottom and reef communities or snags and coarse woody debris in riverine systems, are lacking.

VI. No spawning or nesting habitats, such as rocky or sandy bottoms, are present.

(7) The Part II score for an impact, wetland, or surface water mitigation assessment area shall be determined by summing the scores for each of the indicators and dividing that value by 30 to yield a number between 0 and 1. For upland mitigation assessment areas, the Part II score shall be determined by summing the scores for the location and community structure indicators and dividing that value by 20 to yield a number between 0 and 1.

Specific Authority 373.026(7), 373.043, 373.414(9), (18) FS. Law Implemented 373.414(18) FS. History–New 2-2-04, Amended 9-12-07.

62-345.600 Time Lag, Risk, and Mitigation Determination.

(1) Time lag shall be incorporated into the gain in ecological value of the proposed mitigation as follows:

(a) The time lag associated with mitigation means the period of time between when the functions are lost at an impact site and when the site has achieved the outcome that was scored in Part II. In general, the time lag varies by the type and timing of mitigation in relation to the impacts. Wetland creation generally has a greater time lag to establish certain wetland functions than most enhancement activities. Forested systems typically require more time to establish characteristic structure and function than most herbaceous systems. Factors to consider when assigning time lag include biological, physical, and chemical processes associated with nutrient cycling, hydric soil development, and community development and succession. There is no time lag if the mitigation fully offsets the anticipated impacts prior to or at the time of impact.

(b) The time lag factor under this section shall be scored as 1 when evaluating mitigation for proposed phosphate and heavy mineral mining activities in accordance with this rule to determine compliance with Section 373.414(6)(b), F.S.

(c) For the purposes of this rule, the time lag, in years, is related to a factor (T-factor) as established in Table 1 below, to reflect the additional mitigation needed to account for the deferred replacement of wetland or surface water functions.

(d) The "Year" column in Table 1 represents the number of years between the time the wetland impacts are anticipated to occur and the time when the mitigation is anticipated to fully offset the impacts, based on reasonable scientific judgment of the proposed mitigation activities and the site specific conditions.

TABLE 1.	
Year	T-factor

< or = 1	1
2	1.03
3	1.07
4	1.10
5	1.14
6-10	1.25
11-15	1.46
16-20	1.68
21-25	1.92
26-30	2.18
31-35	2.45
36-40	2.73
41-45	3.03
46-50	3.34
51-55	3.65
>55	3.91

(2) Mitigation risk shall be evaluated to account for the degree of uncertainty that the proposed conditions will be achieved, resulting in a reduction in the ecological value of the mitigation assessment area. In general, mitigation projects which require longer periods of time to replace lost functions or to recover from potential perturbations will be considered to have higher risk that those which require shorter periods of time. The assessment area shall be scored on a scale from 1 (for no or *de minimus* risk) to 3 (high risk), on tenth-point (0.10) ~~quarter point (0.25)~~ increments. A score of one would most often be applied to mitigation conducted in an ecologically viable landscape and deemed successful or clearly trending towards success prior to impacts, whereas a score of three would indicate an extremely low likelihood of success based on the ecological factors below. A single risk score shall be assigned, considering the applicability and relative significance of the factors below, based upon consideration of the likelihood and the potential severity of reduction in ecological value due to these factors.

(a) The vulnerability of the mitigation to and the extent of the effect of different hydrologic conditions than those proposed, considering the degree of dependence on mechanical or artificial means to achieve proposed hydrologic conditions, such as pumps or adjustable weirs, effects of water withdrawals, diversion or drainage features, reliability of the hydrologic data, modeling, and design, unstable conditions due to waves, wind, or currents, and the hydrologic complexity of the proposed community. Systems with relatively simple and predictable hydrology, such as tidal wetlands, would entail less risk than complex hydrological systems such as seepage slopes or perched wetlands;

(b) The vulnerability of the mitigation to the establishment and long-term viability of plant communities other than that proposed, and the potential reduction in ecological value which might result, considering the compatibility of the site soils and hydrologic conditions with the proposed plant community, planting plans, and track record for community or plant establishment method;

(c) The vulnerability of the mitigation to colonization by invasive exotic or other invasive species, considering the location of recruitment sources, the suitability of the site for establishment of these species, the degree to which the functions provided by plant community would be affected;

(d) The vulnerability of the mitigation to degraded water quality, considering factors such as current and future adjacent land use, and construction, operation, and maintenance of surface water treatment systems, to the extent that ecological value is affected by these changes;

(e) The vulnerability of the mitigation to secondary impacts due to its location, considering potential land use changes in surrounding area, existing protection provided to surrounding areas by easements, restrictive covenants, or federal, state, or local regulations, and the extent to which these factors influence the long term viability of functions provided by the mitigation site; and

(f) The vulnerability of the mitigation to direct impacts, considering its location and existing and proposed protection provided to the mitigation site by easements, restrictive covenants, or federal, state, or local regulations, and the extent to which these measures influence the long term viability of the mitigation site;

(g) The past experience and previous performance of the entity in conducting mitigation of that type, implementing protective measures, and implementing maintenance or adaptive management plans, if warranted;

(h) If relevant, the design of the mitigation and documentation and analysis supporting the design;

(i) The stringency and detail of commitments proposed for implementing the design, such as additional modeling or analysis or detailed planting or soil establishment plans;

(j) The scope, intensity or frequency of a maintenance or adaptive management program;

(k) The amount and type of financial assurance mechanism in place for the mitigation.

(3) The relative gain of functions provided by a mitigation assessment area must be adjusted for time lag and risk using the following formula: Relative functional gain (RFG) = Mitigation Delta (or adjusted mitigation delta for preservation)/(risk x t-factor). The loss of functions provided by impact assessment areas is determined using the following formula: Functional loss (FL) = Impact Delta x Impact Acres. When the acres of a proposed mitigation assessment area is known, the gain in functions provided by that mitigation assessment area is determined using the following formula: Functional gain (FG) = RFG x Mitigation Acres.

(a) To determine the number of potential mitigation bank credits a bank or regional offsite mitigation area can provide, multiply the relative functional gain (RFG) times the acres of the mitigation bank or regional offsite mitigation assessment area scored. The total amount of credits is the summation of the potential RFG for each assessment area.

(b) To determine the number of mitigation bank credits or amount of regional offsite mitigation needed to offset impacts, when the bank or regional offsite mitigation area is assessed in accordance with this rule, calculate the functional loss (FL) of each impact assessment area. The total number of credits required is the summation of the calculated functional loss for each impact assessment area. Neither time lag nor risk is applied to determining the number of mitigation bank credits or amount of mitigation necessary to offset impacts when the bank or regional offsite mitigation area has been assessed under this rule.

(c) To determine the acres of one mitigation area needed to offset impacts to one assessment area when not using a bank or a regional offsite mitigation area as mitigation, divide functional loss (FL) by relative functional gain (RFG). If the acreage of proposed mitigation is known, then functional gain (FG) must be equal to or greater than the functional loss (FL).

(d) If there are multiple impact assessment areas and/or multiple mitigation assessment areas with known acreages to offset those impacts, then the summation of the appropriate functional gains (FG) must be equal to or greater than the summation of the respective functional loss (FL).

Specific Authority 373.026(7), 373.043, 373.414(9), 373.414(18) FS. Law Implemented 373.414(18) FS. History–New 2-2-04, Amended 9-12-07.

62-345.900 Forms.

The forms used for the Uniform Mitigation Assessment Method are adopted and incorporated by reference in this section. The forms are listed by rule number, which is also the form number, and with the subject title and effective date. Copies of these forms may be obtained by writing to the Department of Environmental Protection, Division of Water Resource Management, Bureau of Beaches and Wetland Resources, MS 2500, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, or any local district or branch office of the Department.

(1) Part I – Qualitative Description, 2-2-04.

(2) Part II – Quantification of Assessment Area (impact or mitigation), 2-2-04.

(3) Mitigation Determination Formulas, 9-12-07.

Specific Authority 373.026(7), 373.043, 373.414(9), 373.414(18) FS. Law Implemented 373.414(18) FS. History–New 2-2-04, Amended 9-12-07.