Keys Restoration Fund
In-Lieu Fee Mitigation Program

Final Instrument

July 1, 2013

Submitted to:

Regulatory Division
U.S. Army Corps of Engineers
Jacksonville District
701 San Marco Blvd.
Jacksonville, FL 32207

Submitted by:

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1. Introduction and General In-Lieu Fee Program Purpose, Goal, and Objectives

This In-Lieu Fee (ILF) Instrument establishing the Keys Restoration Fund (KRF) In-Lieu Fee Mitigation Program (ILF Program) is made and entered into by and among Coastal Resources Group, Inc., (Sponsor) a Florida-based 501(c)(3) not-for-profit organization incorporated in 2003, and the Interagency Review Team (IRT) composed of the U.S. Army Corps of Engineers Jacksonville District (ACOE), Region IV of the U.S. Environmental Protection Agency (EPA), the U.S. Fish and Wildlife Service (FWS), National Marine Fisheries Service (NOAA), Florida Department of Environmental Protection FDEP), and Monroe County Growth Management Marathon Office (MCGM). This ILF Instrument is a binding agreement among the parties and incorporates all attachments to the ILF Instrument as a part hereof.

This ILF Instrument sets forth guidelines and responsibilities for the establishment, use, operation, protection, monitoring and maintenance of the KRF ILF Program to assure the work associated with the KRF ILF Program produces the necessary compensatory mitigation credits to compensate for unavoidable impacts to waters of the United States, including wetlands, that result from activities authorized under Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act, provided such activities have met all applicable requirements and are authorized by the ACOE pursuant to 33 CFR 332.1 et seq. The KRF ILF Program will accomplish these objectives by creating, restoring, enhancing, and preserving in perpetuity mangrove, saltmarsh, buttonwood and freshwater wetlands, submerged seagrass habitats and associated upland buffers found throughout the interconnected Florida Keys (Keys) ecosystem that comprises the KRF ILF Program Service Area.

Compensatory mitigation for activities authorized under Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act in the Keys was previously provided through the Keys Environmental Restoration Fund (KERF) managed by Audubon of Florida (Audubon). Audubon will cease operation of KERF on the effective date of this ILF Instrument. The KRF ILF Program will assume the collected unspent federal compensatory mitigation funds from KERF and responsibility for 2 planned wetland mitigation projects and 2 seagrass mitigation projects (one each in the Lower Keys and one each in the Upper Keys) already identified to offset losses for which fees have been paid. The type and amount of habitat to be provided by future KRF ILF Program projects will be determined on a case-by-case basis in consultation with the IRT, and subject to the approval of the ACOE.

2. Federal Regulatory Authorities

The establishment, use and operation of the KRF ILF Program are carried out in accordance with the following authorities:

Clean Water Act (33 USC §1251 *et seq.*); Rivers and Harbors Act (33 USC §403);
Fish and Wildlife Coordination Act (16 USC §661 *et seq.*);
Regulatory Programs of the Corps of Engineers, Final Rule (33 CFR Parts 320-332);
Compensatory Mitigation for Losses of Aquatic Resources; Final Rule (2008). Department of Defense Department of the Army, Corps of Engineers (33 CFR Parts 325 and 332) and Environmental Protection Agency (40 CFR Part 230);
Guidelines for Specification of Disposal Sites for Dredged and Fill Material(40 CFR Part 230);

Endangered Species Act (16 USC §1531 *et seq.*);
Magnuson Stevens Fishery Conservation and Management Act (16 USC §1801 *et seq.*);
Memorandum of Agreement between the Environmental Protection Agency and the Department of the Army concerning the Determination of Mitigation Under Clean Water Act, Section 404 (b)(1) Guidelines, 1990;
Regulatory Guidance Letter No. 05-01. U.S. Army Corps of Engineers, February 14, 2005;
Regulatory Guidance Letter No. 08-03. U.S. Army Corps of Engineers, October 10, 2008;
National Environmental Policy Act (42 USC § 4321 et seq.);
National Historic Preservation Act, Section 106.

3. Qualifications of Program Sponsor

The Sponsor's established purposes include conducting all activity authorized by Florida law toward the ends of conserving, managing, preserving, and protecting the natural resources of Florida's coastal zone, including but not limited to seagrass, mangrove, coral reef, saltmarsh, and freshwater wetland habitats and the ambient water quality upon which they depend. The Sponsor has carried out many projects around the State of Florida since 2003 with a focus on the education and science related to habitat restoration and the Sponsor will continue this mission in the Keys with a conservation involvement broader than the KRF ILF Program. The KRF ILF Program will benefit from nearly 90 years of experience in hands-on habitat restoration by the principles of the Sponsor - Robin Lewis, Curtis Kruer, and Laura Flynn. The Sponsor will maintain a day to day presence in the Keys through the use of qualified resource management consultants.

Mr. Roy R. "Robin" Lewis III is President of the Sponsor and a certified Professional Wetland Scientist with the Society of Wetland Scientists where he also serves on the board of directors of the Society. Mr. Lewis' expertise includes the ecology, restoration and creation of fresh and saltwater marshes, mangrove forests, and seagrass meadows. He has studied the effects of oil spills on coastal ecosystems, plant and animal colonization of dredged material islands, and experimental re-vegetation of wetlands using both marine and freshwater species. He has designed more than 200 completed wetland restoration or creation projects in Florida, South Carolina, the U.S. Virgin Islands, Mexico, Puerto Rico, Nigeria and Thailand, and is currently working on mangrove projects in the Bahamas, Jamaica, El Salvador and Indonesia. He has published more than 100 papers on these subjects (most available at www.mangroverestoration.com and www.seagrassrestorationnow.com) and is the editor of *Creation and Restoration of Coastal Plant Communities*, published by CRC Press in 1982. Mr. Lewis is a Florida native, and regularly teaches the Mangrove Ecology, Restoration and Management Training Course and wetland restoration courses for the U.S. Army Corps of Engineers, Ohio State University, University of Wisconsin and Louisiana State University.

Mr. Curtis R. Kruer is Vice-President of the Sponsor. Mr. Kruer is a marine biologist with 37 years experience specializing in coastal ecology with a focus on coastal habitat restoration, coral reef ecosystem habitat mapping, and natural resource management and conservation. He has consulted for numerous agencies and conservation groups including the National Oceanographic and Atmospheric Administration, U.S. Department of Justice, U.S. Fish and Wildlife Service, Florida Marine Research Institute, Florida Department of Community Affairs, and the Florida Natural Areas Inventory. A Florida native, he lived and worked for 22 years in the Keys where, among

other efforts, he was the field biologist responsible for insuring compliance with ACOE dredge and fill permits during the Keys Bridge Replacement Project in the 1980s, he mapped all Keys wetlands for a formal USEPA advanced identification program, managed the Keys Environmental Restoration Trust Fund, and organized the Keys Invasive Exotics Task Force. He was also a member of the Technical Advisory Committee of the Florida Keys National Marine Sanctuary Water Quality Protection Program and for the USFWS South Florida Multi-Species Recovery Plan. He remains active in the Keys working with issues related to protection and management of native habitats and threatened and endangered species there. Mr. Kruer was involved in the beginnings of KERF in the early 1980s, and on behalf of Audubon helped rehabilitate the Fund in 1991 as an active practitioner of Keys habitat restoration. Under Mr. Kruer's direction and in cooperation with the ACOE, the Fund in about 1996 began to accept compensatory mitigation and other fees from state and federal permit holders in the Keys required to offset unavoidable impacts to waters of the United States authorized through the issuance of Department of the Army permits pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344) and/or Sections 9 or 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 401, 403). While managing the Fund, Mr. Kruer helped pioneer many seagrass restoration methods used in the Keys today including the filling of vessel blowholes, planting of prop scars, and the use of bird stakes to fertilize and aid revegetation.

Ms. Laura L. Flynn is Treasurer of the Sponsor Ms. Flynn provides multi-disciplinary natural resource assessment support and project design, negotiation and implementation of permit conditions and mitigation plans. Additionally, she provides expertise in GIS mapping and data analysis.

Recent clients of the Sponsor for work related to its mission of habitat restoration science and education include the U.S. Fish and Wildlife Service, the St. Johns River Water Management District, Everglades National Park, and the Gulf of Mexico Program. Collectively, our staff has designed, implemented and monitored more than 200 wetland mitigation/creation projects during their careers, ranging in size from less than a half acre to more than 600 acres. We have successfully relocated submerged seagrasses at over 20 sites, created mangrove forests at individual sites as large as 150 acres, and restored estuarine tidal marshes, and freshwater marshes as large as 500 acres. Given our knowledge of habitat ecology and plant biology, we are often able to offer substantially less expensive alternatives that are accepted by the agencies and which result in successful projects.

Most recently, the Sponsor is working to restore a 271 acre mangrove restoration project (64 acres currently dead, 207 acres currently stressed and likely to die) located at the Fruit Farm Creek, Collier County, Florida, USA, near the town of Goodland and the City of Marco Island. The Sponsor has secured initial funding of $50,000 towards a total restoration cost estimated to be $675,000 for design, permitting and implementation of construction.

The Sponsor is also committed to the providing educational opportunities to resource managers, regulatory staff, and private individuals. CRG experience, commitment to the environment, and ability to be flexible and work as a team will give the KRF ILF Program the support needed to design, implement and complete successful mitigation projects. Resumes of the Principles of the Sponsor, including examples of habitat restoration projects accomplished, are available

upon request.

4. In-Lieu Fee Program Operation

a. KRF ILF Program Service Area

The Service Area for the KRF ILF Program includes both islands and submerged lands within the boundaries of the Florida Keys National Marine Sanctuary (FKNMS), including County, State, and Federal waters (Figure 1). The KRF ILF Program Service Area encompasses approximately two-thirds of the 2,900 square nautical miles (9,800 square kilometers) of the FKNMS as defined in the 2007 FKNMS Final Revised Management Plan. The total landmass of the U.S. Highway One connected islands (Monroe County) is approximately 86,000 acres. The KRF ILF Program Service Area will not extend to the mainland portion of Monroe County in south Florida or beyond the boundaries of the adjacent Everglades National Park or Biscayne National Park.

The Sponsor will select and submit proposed projects from a Lower Keys Project Area (Figure 2) and an Upper Keys Project Area (Figure 3). These project areas were based on a number of factors including geology, development patterns, historic permitting activity and distinctive wetland plant community types. A more detailed discussion of the scientific justification for these Project Areas within a single Service Area is provided in Section 5b (Element 1) of this ILF Instrument.

b. Interagency Review Team (IRT)

The ACOE will initiate the assembly of the IRT to review documentation for the establishment and management of the KRF ILF Program. The designated representative of the ACOE shall serve as permanent Chair of the IRT. All decisions, approvals, consents and other actions of the IRT are implemented by its Chair, and all references in this ILF Instrument to a decision, approval, consent or other action by the IRT shall be deemed to refer to its Chair, unless the context clearly indicates otherwise. The ACOE will include representatives from the U.S. Environmental Protection Agency; U.S. Fish and Wildlife Service; NOAA's National Marine Fisheries Service Habitat Conservation Division and the Florida Keys National Marine Sanctuary; Monroe County Dept. of Growth Management and other state, local and federal agencies deemed appropriate by the ACOE. The ACOE retains final authority over the IRT composition, but shall not unreasonably exclude any government agency with an interest in IRT matters. Any of the IRT members may terminate participation upon written notification to all signatory parties. Participation of the IRT member seeking termination will end thirty (30) days after such written notification.

c. Credits, Fees, and Financial Assurances

KeyMig Fees

The ACOE has assessed KeyMig debits to be offset by compensatory mitigation work funded by KeyMig fees received or required to be received by KERF as a condition of a Department of the Army permit that was authorized by the ACOE prior to the approval of the KRF ILF Program. The

Sponsor will, through full project funding and cost accounting, and in conjunction with the IRT, complete the 2 wetland (Bahia Honda and Rachel Key) and 2 seagrass (Lignumvitae Seagrass and Lower Keys Seagrass) projects planned (see Appendix A) by Audubon for KERF, and use any remaining KeyMig fees to identify and implement additional projects needed to offset impacts authorized by Department of the Army Permits.

Advance Credits

To implement the KRF ILF Program, the Sponsor is authorized to sell advanced credits (via the direct receipt of compensatory mitigation fees) to provide compensatory mitigation for impacts authorized by Department of the Army Permits. The number and resource type of credits and debits are determined by utilizing Florida's Uniform Mitigation Assessment Method (UMAM). Through Department of the Army permit application review and UMAM, the ACOE will establish debits required to be offset by wetland or submerged habitat compensatory mitigation credits. UMAM considers the following functions: location and landscape support, water environment and community structure and factors in time lag, risk and preservation adjustment factor as appropriate. During the permitting process, the ACOE will evaluate impact(s) for each project utilizing UMAM and determine the number and resource type of credits required to provide appropriate compensatory mitigation for authorized projects on a case-by-case basis. Based on a review of permitting activity reported by KERF over the last 10± years, the Sponsor has determined an allocation (3 year period) of UMAM advance credits for the KRF ILF Program Service Area as follows:

Tidal Wetlands (mangrove and salt marsh)
12 advance credits (6 for the Upper Keys Project Area and 6 for the Lower Keys Project Area)

Non-tidal (Freshwater) Wetlands
2 advance credits in the Lower Keys Project Area

Seagrasses
8 advance credits (4 for the Upper Keys Project Area and 4 for the Lower Keys Project Area)

Credit Fees

The price charged permittees by the KRF ILF Program for credits is determined by the Sponsor. The cost per unit credit must take into account all expected costs (full cost accounting) associated with the restoration, enhancement and/or preservation of aquatic resources in the service area. Such costs must be based on full cost accounting according to 33 CFR§332.8(o)(5)(ii)) and will reflect, as appropriate, expenses for land or property interest acquisition, project location, planning and design, construction, plant materials, labor, legal fees, monitoring, remediation or adaptive management activities, long-term management, catastrophic events, as well as all costs associated with the administration of the KRF ILF Program. The cost per unit Credit shall also take into account contingency costs appropriate to the stage of project planning, including uncertainties in construction and real estate expenses. In addition, the cost must also include any cost of providing financial assurances necessary to ensure successful completion of mitigation projects, and may reflect other factors as deemed appropriate by the Sponsor and the ACOE. Based on the

above requirements, a review of costs associated with past wetland and seagrass restoration enhancement and preservation projects in the Keys, and the Sponsor's best professional judgment the fee schedule by resource type and credit throughout the Service Area is as follows:

Tidal Wetlands (mangrove and salt marsh)
$217,800.00/credit

Non-tidal (Freshwater) Wetlands
$217,800.00/credit

Seagrasses
$435,600.00/credit

The prices charged to permittees by the Sponsor for credits shall be reviewed by the Sponsor, the ACOE and the IRT on at least an annual basis. This review will take place within three months after the completion of the required Annual Report to the ACOE and the IRT, and will be aided by the proposal in Appendix B. The KRF ILF Program fee schedule will be provided to Department of the Army permit applicants. Compensatory mitigation credits generated at each KRF ILF Program project site will be determined on a project-by-project basis using UMAM as directed by the ACOE. The number and type of credits for each project will be evaluated by the ACOE in consultation with the IRT at the time each project is proposed for funding.

Credit Releases

Credit releases (indicating satisfaction of responsibility) must be approved by the ACOE and will be reviewed upon submittal of documentation to the ACOE for each KRF ILF Program project demonstrating that appropriate expenses have been accrued, and milestones for credit and fund releases have been achieved. Once the mitigation obligations associated with debited Advance Credits have been satisfied by Released Credits, that corresponding amount of Advance Credits is again available for use. Credits may be released as milestones are achieved in the Credit Release schedule approved for each KRF ILF Program project. Credits shall not be released for a project until the ACOE and IRT have acknowledged proof that appropriate land protection agreements are approved and required documents are in place.

The Sponsor shall maintain a separate ledger for each KRF ILF Program Project that will depict all Credit releases and Credit withdrawals associated with each KRF ILF Program Project. The final conservation easement or equivalent mechanism for long-term protection and management shall be submitted to the ACOE and IRT for review and approval prior to the initial release of KRF ILF Program project credits.

The project credit release schedule is as follows:

Released Credits will be applied to Advance Credits as milestones specified in each mitigation project plan are achieved. Credit release schedules may vary by project and will vary between restoration/enhancement and preservation. As projects are implemented any credits generated as a result of meeting ecological performance standards will first be used to secure the

mitigation obligations associated with debited "advance" credits (fulfilling advance credits and restoring the advance credit balance). A typical credit release schedule for a restoration and enhancement project will include:

- 10% release following ACOE approval of a KRF ILF Program project and compensatory mitigation plan, submittal of the baseline monitoring report, recording of an approved land protection agreement, setting aside necessary financial assurances for construction and implementation and long term management of the project.
- 10% release following project construction, production of an as-built drawing, and submittal of a time-zero monitoring report
- 15% after the first year of successfully meeting the monitoring performance standards and submittal of the first annual report,
- 15% after the second year of successfully meeting the monitoring performance standards and submittal of the second annual monitoring report,
- 15% after the third year of successfully meeting the monitoring performance standards and submittal of the third annual monitoring report,
- 15% after the fourth year of successfully meeting the monitoring performance standards and submittal of the fourth annual monitoring report,
- 20% after the fifth year of successfully meeting the monitoring performance standards, submittal of the fifth annual monitoring report, and concurrence by the ACOE in consultation with the IRT that the project has achieved final success after all activities have been implemented successfully and community specific criteria and/or hydrologic criteria have been attained in all assessment areas.

A typical release schedule for a strictly preservation project will be:

- 100% release upon approval of a project plan, recording of an approved land protection agreement and setting aside necessary financial assurances for long term management of the project.

The Sponsor will complete initial physical and biological improvements, and any land acquisition and land securement needed for a KRF ILF Program project no later than end of the third year after receipt of the first KRF ILF Program payment for each resource type. If the Sponsor fails to meet this deadline, the ACOE must either make a determination that more time is needed to plan and implement an in-lieu fee project or, direct the Sponsor to provide alternative compensatory mitigation to fulfill those compensation obligations. This alternative mitigation will entail disbursement of funds from the ILF Program Account.

Financial Assurances

Financial assurances are mechanisms used to guarantee some aspect of mitigation site performance and may include a contingency account, escrow account, performance bond, insurance, letter of credit, or other mechanism acceptable to the ACOE and the IRT. Financial assurances will be provided for construction and implementation and long term management of each KRF ILF Program project. Each KRF ILF Program project site will be protected in perpetuity and a long term management mechanism will be established sufficient to provide annual

maintenance and management for all aspects of site activities. A long term management plan will be developed for each KRF ILF Program project which will define how the site will be managed after performance standards have been achieved to ensure the long-term sustainability of the resources, including long-term financing and the party responsible for long-term management. The long term management plan will include a description of the long-term management needs, including remediation of catastrophic events, annual cost estimates for those needs, and identification of the funding mechanism to be used.

The Sponsor will provide financial assurances to ensure project completion and long-term management and oversight by setting aside adequate funds from the KRF ILF Program Account sufficient to guarantee the success of each KRF ILF Program Project Site, including remediation of catastrophic events and long-term management of each KRF ILF Program Project Site. Specific detailed information about the long- term financing will be proposed in each specific KRF ILF Program Project Site Long-Term Mitigation Plan and will explicitly describe the long-term financing mechanisms and the party responsible for the long-term management. The cost per unit credit for in-lieu fees will factor in the need for contingency costs that are appropriate to the scale and nature of the project (i.e. public vs. private lands), the stage of project planning, and include uncertainties in construction and real estate expenses, and will initially constitute 20% of fees charged. The Sponsor may be allowed to rely upon accumulated, unspent funds to address the need for remedial action or adaptive management at certain sites, upon approval by the ACOE and the IRT of specific KRF ILF Program project plans. Long-term management funding refers to funds set aside from credit fees to ensure that monies will be available to support the annual long-term management needs of the mitigation project. It is anticipated that specific project plans to be reviewed by the IRT will include these mechanisms and levels of assurances, depending on the anticipated long-term expense that is mainly related to site ownership. As most project sites are anticipated to be on already managed public lands, these expenses are expected to be relatively low once long-term management agreements are signed with land managers, and will be adequately covered by the 20% contingency portion of fees.

The Sponsor will submit an annual financial assurances and long-term management funding reports as part of the annual reporting for individual projects and accounting of fees and debits and credits. This report will be provided to the ACOE and IRT so that they are able to ensure that financial assurances are maintained for each project and will include:

- Beginning and ending balances of the accounts providing funds for construction and implementation financial assurances and long-term management financial assurances,
- Deposits into and any withdrawals from the accounts providing funds for construction and implementation financial assurance and long-term management financial assurances,
- Information on the amount of required financial assurances and the status of those assurances, including their potential expiration,
- Any relevant information on the transfer of long-term management responsibility to another entity.

All monies and fees collected by Audubon for KERF prior to the effective date of this ILF Instrument, and not allocated for expenditure for an approved Mitigation Site under the prior

1998 MOU between Audubon and the ACOE, shall be managed in accordance with this ILF Instrument.

d. KRF ILF Program Account and Accounting Procedures

The KRF ILF Program Account is the repository for all fees collected from permittees, as well as penalties, fines, and interest received by the KRF ILF Program from operation as a program carrying out compensatory mitigation. The establishment, operation, and use of the KRF ILF Program Account will be developed in full compliance with 33 CFR 332.8(i)/40 CFR 230.98(i). Upon ACOE approval of this ILF Instrument, the Sponsor will designate a separate bank account as the KRF ILF Program Account. Any funds accepted by the Sponsor from entities other than permittees shall be kept in a separate account.

The KRF ILF Program Account will collect deposits (fees) from the sale of credits to permittees and these funds will be used for all activities and program management related to the selection, design, acquisition, implementation, monitoring, management, and long-term protection of KRF ILF Program projects. The Sponsor will submit proposed KRF ILF Program projects to the ACOE for approval. Disbursements from the KRF ILF Program Account will only be made upon receipt of written authorization from the ACOE of approval of activities requiring the disbursement of funds, after the ACOE has consulted with the IRT. The ACOE does not need to authorize each individual disbursement from the account, but must provide written approval for the project, based on a review of the project mitigation plan, which will include a description of activities and projected costs. Once the project is authorized, funds disbursed from the account must be spent for the project in a manner consistent with the approved project mitigation plan. The ACOE shall have the authority to approve activities and proposals by the Sponsor that will entail expenditure of KRF ILF Program Account funds to alternative compensatory mitigation projects in cases where the Sponsor does not provide the required compensatory mitigation within the time frame specified in Section 332.8 (n)(4) of the Final 2008 Mitigation Rule.

The Sponsor will provide an Annual Accounting Report for the KRF ILF Program to the ACOE and the IRT. The Annual Report will include the following information:

(i) All income received, disbursements, and interest earned by the KRF ILF Program Account;
(ii) A list of all Department of the Army permits for which KRF ILF Program funds were accepted. This list shall include: the ACOE permit number, the project area in which the authorized impacts are located, the amount of authorized impacts, the amount of required compensatory mitigation, the amount paid to the KRF ILF Program, and the date the funds were received from the permittee;
(iii) A description of KRF ILF Program expenditures from the KRF ILF Program Account, such as the costs of planning, design, construction, monitoring, land acquisition, maintenance, contingencies, adaptive management, and administration;
(iv) The balance of advance credits and released credits at the end of the report period for each KRF ILF Program project area;
(v) The annual monitoring report described in Element 10 below; and

(vi) Any other information reasonably required by the ACOE.

The KRF ILF Program Account will be held at a financial institution that is a member of the Federal Deposit Insurance Corporation. All interest accruing from the account will be used to fund the KRF ILF Program to provide compensatory mitigation for impacts to aquatic resources authorized by Department of the Army permits. The KRF ILF Program account will be established before any fees are accepted. Upon reasonable prior notice the ACOE shall have the right to audit the Sponsor's records pertaining to the KRF ILF Program Account. Long-term management funds will be transferred from the KRF ILF Program Account to an endowment dedicated to fund long-term management of the KRF ILF Program project.

Funds paid into the KRF ILF Program Account may only be used, after payment of the administrative fee addressed below, for the restoration, establishment, enhancement, protection, and management of aquatic resources and associated upland buffers. This means the selection, design, land acquisition (i.e., appraisals, surveys, title insurance, etc), implementation, and management of in-lieu fee compensatory mitigation projects. This may include, but is not limited to, fees associated with securing a permit for conducting mitigation activities, activities related to restoration, enhancement, establishment, and/or preservation of aquatic resources and associated upland buffers, maintenance and monitoring of mitigation sites, or any other fee related to the mitigation process contemplated by this program.

The Sponsor will receive an administrative fee of 17.5% of the funds when funds are deposited into the KRF ILF Program account. The administrative fee will come from the deposited fees and is deemed to represent and reimburse reasonable overhead and related costs of administering the KRF ILF Program to accomplish the mitigation projects described herein in an area with a high cost of living and high construction costs. These fees will be used generally to defray such ordinary expenses involved in administering the KRF ILF Program, the administration of contractual agreements, record keeping, communications with partners, financial management and accounting, costs associated with coordinating project proposals as well as the management and presentation of proposals and coordination with those seeking proposal information, and specifically including but not limited to:

- Staff time and employment expenses, including relevant training
- Office expenses, rent, computer equipment, transportation costs, and office equipment and supplies related to program administration
- Phone, internet, and other communications expenses
- Site selection leading to project identification
- Fee and credit accounting for the KRF ILF Program account and KRF ILF Program project accounts, including accounting services as needed
- Legal services
- Data management
- Reporting regarding the program
- Correspondence and meetings with IRT and other regulatory agencies, including negotiation of modifications to this Instrument
- KRF ILF Program development
- Other program administration duties as necessary
- Bank and other fees associated with operation of the KRF ILF Program.

e. Functional Assessment Method

The Uniform Mitigation Assessment Method (UMAM) is a Florida rule (Chapter 62-345) authorized by subsection 373.414(18), F.S., which requires the establishment of a uniform mitigation assessment method to determine the amount and resource type of compensatory mitigation needed to offset adverse impacts to wetlands and other surface waters and to award and deduct mitigation bank credits..

UMAM analysis will evaluate the potential functional lift that is anticipated to be generated by the proposed compensatory mitigation activities. The resulting wetland Relative Functional Gain (RFG) quantifies the difference in wetland function between the pre-restoration scenario and the post-restoration scenario to determine the number of credits to be gained. The gain in functions provided by a mitigation assessment area is determined using the following formula: Functional Gain (FG) =RFG x Mitigation Acres. The UMAM assessment will include evaluating the following categories for each community type:

1. **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 the surrounding areas. The availability, connectivity, and quality of offsite habitats and offsite land uses that might adversely affect fish and wildlife utilizing these habitats, are attributes to be considered when evaluating the location of the assessment area. There are eight (8) attributes identified in UMAM to evaluate this category. These attributes are the support to wildlife by outside habitat; invasive exotics or other invasive plant species in proximity of the assessment area; wildlife access to and from outside (distance and barriers); functions that benefit fish and wildlife downstream (distance and barriers); impacts of land uses outside assessment area on fish and wildlife; benefits to downstream or other hydrologically connected areas; and, benefits to downstream habitats from discharges and protection of wetland functions by upland mitigation assessment areas.

2. **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. There are twelve (12) attributes identified in UMAM to evaluate this category. These attributes are seasonal water levels and flows; tides, wave energy; soil moisture/ erosion/ deposition; fire history; plant community zonation (appropriate for all strata); vegetative indicators of hydrologic stress (leaning or falling trees, insect damage); use by wildlife with specific hydrologic requirements; plant community composition; water quality degradation or alteration; standing water; water quality data; and, appropriate water depth, current, and light penetration.

3. **Community Structure:** The wetland is characterized either by plant cover or by open water with a submerged benthic community. When a plant cover is present, the area is assessed using the "Vegetation and Structural Habitat" section and when benthic communities are present the site is assessed using the "Benthic Communities" section.

Vegetation and Structural Habitat is the presence, abundance, health, condition, appropriateness and distribution of plant communities in wetlands used as indicators to determine the degree to

which the functions of the community type are provided. There are ten (10) attributes identified in UMAM to evaluate the Vegetation and Structural Habitat category. These attributes are appropriate and desirable plant species composition; absence of exotic invasive plants; normal regeneration and recruitment; appropriate age/size class distribution; density and quality of coarse woody debris (snag, den and cavity); plant condition (no evidence of insect damage, spindly growth); land management potential; topographic features present (refugia ponds, creek channels, flats or hummocks); low siltation or algal growth in submerged vegetation; and, upland buffers.

Benthic and Sessile Communities is intended to be used in marine or freshwater aquatic systems that are not characterized by a terrestrial or emergent plant community. There are seven (7) attributes identified in UMAM to evaluate the Benthic/Sessile category. These attributes are the number and diversity of benthic species; exotic or inappropriate species; optimal regeneration, recruitment, and age distribution; condition of appropriate species; structural feature integrity (no physical damage); topographic features such as relief, stability and interstitial spaces in hardbottom and reef communities or snags and coarse woody debris in riverine systems; and, spawning or nesting habitat.

4. **Time Lag:** The Corps has adopted a Temporal Loss (T-factor) table based on a 3% discount rate. The T-factor associated with mitigation equates to the period of time between the loss of functions at an impact site and the replacement of those functions through the implementation of mitigation. The time lag, in years, gives a value to the amount of additional mitigation needed to account for the deferred replacement of wetland functions, considering nutrient cycling, hydric soil development, and succession and community development of a mitigation area.

5. **Risk:** Will be incorporated into the UMAM analysis to account for the amount of uncertainty that a particular mitigation activity will not achieve the desired results. To that end, there are two components of risk. First, there is the risk that the mitigation activity will not succeed in the short term defined by performance criteria have not yet been met. Second, there is risk that the desired outcome of the mitigation activity will not persist in perpetuity, due to long-term management decisions or adjacent land uses.

6. **Preservation Adjustment Factor:** (PAF) is used in conjunction with preservation-only mitigation. PAF is scored on a scale from 0 (no preservation value) to 1 (optimal preservation value), on one-tenth increments. The score is assigned based on the applicability and relative significance of the following considerations:

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.

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

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

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.

The extent and likelihood of potential adverse impacts if the assessment area were not preserved. [This factor only applies when the site is Preservation Only]

f. *Force Majeure* and Catastrophic Events

Force Majeure shall mean an irreparable material and detrimental impact on a KRF ILF Program project site over which the Sponsor, or any entity controlled by the Sponsor, could not have anticipated or controlled such as a catastrophic event. Catastrophic events in the Keys with risks and impacts beyond the reasonable control of any involved party may include, but are not limited, to hurricanes, tropical storms, storm surges, flooding, drought, effects of climate change on habitat or hydrology, and wildfire. The ACOE and the IRT have sole reasonable discretion to determine whether an event is a "*Force Majeure*" event as defined herein, and the Sponsor shall bear the burden of demonstrating to the ACOE and IRT's satisfaction that:

(a) The *Force Majeure* event was caused by circumstances beyond the control or anticipation of the Sponsor and/or any entity controlled by the Sponsor, including its contractors and consultants;
(b) Neither the Sponsor nor any entity controlled by KRF, including its contractors and consultants, could have reasonably foreseen and prevented such an event;
(c) Damage was caused by such circumstances;
(d) Damage is irreparable by any practicable and reasonable means as determined in the discretion of the ACOE and the IRT;
(e) Possible remedial actions proposed by the Sponsor, including but not limited to, removal of debris, recontouring substrates if needed, ensuring tidal flows and proper flushing and/or drainage, revegetation as appropriate, and removal of invasive exotic vegetation shall be given proper timely consideration by the ACOE and the IRT.

g. Dispute Resolution

Resolution of disputes between Federal IRT agencies and the ACOE regarding the planning, approval and other aspects of KRF ILF Program Projects approved under this ILF Instrument shall be in accordance with ACOE regulations at 33 CFR §332.8(e), as well as any other applicable federal regulations governing mitigation bank operation.

h. Program Default, Closure, and Modification Procedures

If the ACOE determines that the Sponsor has failed to provide the required compensatory mitigation within the specified time frame, the Sponsor may be determined to be in default. Default determination could also be due to failure to:

1) meet performance-based milestones identified in the KRF ILF Program project-specific mitigation plans,
2) meet ecological performance standards specified in KRF ILF Program project specific mitigation plans,
3) submit monitoring reports in a timely manner,
4) establish and maintain an the appropriate annual report and individual ledgers for each project in accordance with provisions in Element 10 of the Compensation Planning Framework below,
5) provide required construction and implementation and long term management financial assurances and long-term management funding report,
6) report approved credit transactions,
7) complete land acquisitions and initial physical and biological improvements by the third full year after the initial sale of advance credits, and/or
8) otherwise comply with the terms of the Instrument and all approved mitigation plans.

The Sponsor or the ACOE, acting independently or in concert, may force closure or terminate this Instrument within 60 days of written notification to the other party and to the IRT members. In the event that the KRF ILF Program operated by the Sponsor is terminated, the Sponsor is responsible for providing to the IRT reports detailing credit and fee ledger balances, as well as status reports for all compensatory mitigation projects. The Sponsor will remain responsible for fulfilling any outstanding or pre-existing project obligations including the successful completion of ongoing compensatory mitigation projects, relevant maintenance and monitoring, reporting, and long-term management requirements. With funding from Project accounts, the Sponsor will remain responsible for fulfilling these obligations or ensuring the transfer of long-term management and maintenance of all mitigation lands to a separate party approved by the ACOE.

Funds remaining in the KRF ILF Program accounts after the above obligations are satisfied must continue to be used for the restoration, enhancement, and/or preservation of aquatic resources and associated upland buffers. Any expenditure of these remaining funds requires ACOE and IRT review and approval. If the KRF ILF Program has outstanding mitigation obligations at the time of closure which it is unable to fulfill, the ACOE, in consultation with the IRT, will direct the Sponsor to 1) use these funds to provide further restoration, enhancement or preservation activities, 2) secure credits from another source of third party mitigation, or 3) disburse funds to another entity such as a governmental or non-profit natural resource management entity willing to undertake further compensation activities. The ACOE itself cannot accept directly, retain, or draw upon those funds in the event of a default. If default is determined, the ACOE must take appropriate action to achieve compliance with the terms of the instrument and all approved mitigation plans. These actions may include suspending credit sales, decreasing available credits, requiring adaptive management measures, utilizing financial assurances or contingency funds, terminating the agreement, using the financial assurances or contingency funds to provide alternative compensation, or directing the use of in-lieu fee program account funds to provide alternative mitigation (such as purchasing credits from another mitigation provider).

Any delay or failure of the Sponsor to comply with the terms of this agreement shall not constitute a default if and to the extent that such delay or failure is primarily caused by any *force majeure* (as described above) or other conditions beyond the Sponsor's reasonable control and that significantly adversely affects its ability to perform its obligations hereunder, such as flood, drought, lightning, fire, effects of climate change on habitat or hydrology, condemnation or other legitimate taking or action by a governmental body. Other conditions beyond the Sponsor's control will include: interference by third parties; condemnation or other taking by any governmental body; change in applicable law, regulation, rule, ordinance, or permit condition, or the interpretation or enforcement thereof; any order, judgment, action or determination of any federal, state or local court, administrative agency or governmental body; and/or suspension or interruption of any permit, license, consent, authorization or approval. The Sponsor shall provide written notice to the ACOE and IRT if the performances of any of the ILF projects are affected by any such event as soon as it is reasonably practical.

Modification of the approved KRF ILF Program and ILF Instrument, including the addition of new sites or expansion of previously approved project sites, will follow the procedures outlined in 33 CFR 332.8 (d) and will utilize the streamlined review process (33 CFR 332.8(g)(2)) when deemed appropriate by the ACOE. The streamlined process will be proposed for Instrument modifications that reflect adaptive management of the overall ILF Program, changes in credit releases or release schedules, and any other changes the ACOE deems not significant.

5. Mitigation Project Establishment and Operation

a. Mitigation Project Identification and Site Review Procedures

Two wetland restoration projects have been identified by Audubon for KERF with fees set aside, and limited funds spent to date on preliminary assessment and design. The Rachel Key Lagoon Restoration Project (herein renamed "Crane Point Hammock") is located at the private, non-profit Crane Point Hammock in Marathon in the Upper Keys Project Area and the Bahia Honda Mangrove Restoration Project ("Bahia Honda") is located in the Lower Keys Project Area at Bahia Honda State Park. Existing file information for the two funded restoration projects has been reviewed by the Sponsor and is attached at Appendix A. The project sites will be assessed, and permit applications submitted to the responsible agencies once final designs are agreed upon. All requirements for long-term site protection and management as provided for herein will be met, and will be included in the final Site Development Plans (see below) submitted for approval to the ACOE with review by the IRT. Any funds remaining after these two projects have been completed (excluding funds set aside for long-term monitoring and maintenance) will be dedicated and transferred to other restoration projects in the respective Project Area following approval by the ACOE.

Recognizing that opportunities to provide large-scale habitat restoration and enhancement in the Keys at any one site are limited due to issues of scale, land ownership, and other factors, the Sponsor shall submit to the ACOE and IRT multiple mitigation project proposals (wetland and submerged habitats) for approval in accordance with this Instrument that are intended to

identify and address high-priority resource needs in the Keys. The extensive list of nearly 100 potential Keys restoration projects prepared through the collective effort of KERF and local, state, and federal agencies in 2010 (KERF 2010) will be used to initially identify potential projects in each KRF ILF Program Project Area for various habitat types. Coordination by the Sponsor with local, state, and federal agencies and other interests will be ongoing as a means of identifying new potential sites (wetlands and submerged) as new information become available. Ultimately, project sites will be located where they are most likely to successfully replace lost functions and services taking into account aquatic habitat diversity, habitat connectivity, relationships to hydrologic sources, trends in land use, ecological benefits, and compatibility with adjacent land uses. Project proposals will be based on the Compensation Planning Framework that follows. Each plan and associated funding requires approval by the ACOE in consultation with the IRT.

The KRF ILF Program will select sites for restoration generally based on the following criteria:

- In-Kind Mitigation Selection. So that the Sponsor may better directly mitigate for the diverse types of development impacts to Keys aquatic resources, the KRF ILF Program will consist of multiple wetland and seagrass restoration projects throughout the Keys rather than limiting its activities to a single site. Due to the linear nature of the Keys and the unique factors of differing geography, geology, plant communities, and climate that affect and control Keys habitats, and their dependent wildlife, the KRF ILF Program will also further refine its selection process to identify both Upper Keys projects and Lower Keys projects, to more precisely capture differing ecosystem functions through application of 2 Keys Project Areas within the KRF ILF Program Service Area (Figures 1-3, and see Element 1 below). The KRF ILF Program will endeavor at all times to maintain both Upper and Lower Keys wetland restoration projects, as well as Upper and Lower Keys seagrass restoration projects.

- Landscape Connectivity. Projects will be located where they pose minimal conflicts with adjacent land uses and where they meet regional conservation priorities related to unique habitats/plant communities and listed species, provide habitat corridors, and enhance and expand the effectiveness of nearby protected natural areas.

- Permanent Protection. Potential projects in areas already in conservation ownership (such as State Parks, National Wildlife Refuges, and local government and private conservation ownership) will be given preference over privately owned lands (unless permanent conservation status and perpetual maintenance can be secured through legal and binding mechanisms).

- Maintenance of Projects Post-Restoration. Mitigation projects on public lands will benefit from existing authorities for land protection on those sites and surrounding lands. Where possible, physical barriers will be used to preclude problematic public access. The existing program has a good history of protecting restoration sites and past problems have been minimal. The exception may be seagrass restoration sites, where, although success has been good, boating access continues to present new challenges for protecting the resource as well as restoration sites.

- Multiple Objectives. Projects will be evaluated for their ability to address multiple functions and services such as improvement of fish and wildlife habitat, support for listed species, water quality improvement, and recreational or educational values. Projects will target native plant community diversity and natural processes and the overall driver will be the ability to replace lost ecological services in perpetuity. Projects with greater functional and ecological gains (lift) will be given preference.

- Leveraging of Costs. Wherever possible, KRF ILF Program projects will utilize collaborative funding from multiple sources in order to reduce the time between resource impact from development and full restoration and mitigation of ecosystem functions. The Sponsor will maintain fully separate ledgers for documentation of fees (and credits) from the KRF ILF Program and from other funding sources. The Sponsor will maintain separate accounts for the KRF ILF Program and for other sources of funds (such as grants, appropriations, and donations).

- Timing of Projects. Preference will be given to project sites that are already in conservation ownership or otherwise perpetually secured for conservation in order to reduce delays in restoration of ecosystem functions. Effort will be made to complete mitigation work within a period of 3 years from the time of the resource impacts being mitigated.

- Likelihood of Success. Proposed projects must demonstrate the potential for a high likelihood of success through a sound wetland or submerged habitat restoration or enhancement concept and design. Threats from invasive species or vandalism should be low or manageable. The project will be evaluated for its ability to result in successful and sustainable net gain of resource acreage and function as required, with limited maintenance. Projects that can demonstrate a high likelihood of success and low maintenance requirements will receive priority due to the higher lift in ecological function that can be achieved, and the higher success rate in general of these types of projects in the unique Keys environment.

- Historical Preservation. Due to the unique and varied history of the Keys, the Sponsor will obtain archaeological site location data for the Keys and potential restoration sites from the Florida Dept. of State as well as information of sites listed on the National Register of Historic Places. The Sponsor will undertake no restoration measures that will adversely affect such sites. The Sponsor will undertake planning to avoid adversely affecting any archaeological sites recorded in the Florida Master Site File inventory and will develop an "unexpected discovery plan" for each project to be included in the project proposal. In accordance with the National Historic Preservation Act (1966), the effects upon cultural resources must be considered on any undertaking that is federally funded or permitted. Section 106 requires federal agencies to take into account the effects of their undertaking on historic properties, and provides the Advisory Council on Historic Preservation a reasonable opportunity to comment. Due to unique geological characteristics, historic sea levels and seafaring along the Florida coast that spans more than 500 years, the Keys contain a multitude of cultural resources.

To insure that cultural resources that may be affected by mitigation projects are identified, all information about existing or known sites on federal and non-federal lands will be gathered, to include historic properties/cultural resources listed in or determined eligible for the National Register of Historic Places, all known historic and archeological sites and locations that are potentially eligible for the National Register, and areas that have been surveyed, even if no sites were found. A historic property does not need to be formally listed on the National Register to receive NHPA protection. It need only be eligible for listing under one of the four National Register criteria. Historic property includes properties of traditional cultural importance to an Indian tribe or that meet the National Register criteria (36 CFR 800.16(l)). The National Park Service, National Marine Sanctuary, State Historic Preservation Office, and managers of the affected lands, as appropriate, will be consulted to determine presence of historic sites. The Sponsor will undertake no restoration measures that will adversely affect such sites. The Sponsor will undertake planning to avoid adversely affecting any known archaeological sites recorded in the Florida Master Site File inventory and will implement the "unexpected discovery plan" to be included in final mitigation project plans approved by the ACOE and the IRT. Sources for information on cultural resources include:

- State Historic Preservation Office Archeological Site Files
- NPS Site Files and the Archeological Site Management Information System
- SEAC-GIS
- NPS List of Classified Structures (LCS)
- National Register of Historic Places
- National Historic Landmarks

Following general approval by the ACOE of a proposed mitigation project site, the Sponsor shall submit for approval a Site Development Plan. Site Development Plans should include, if applicable, a description of the proposed mitigation project and site specific plan including location, ownership, project goals, funding available, baseline conditions, credit assessment methodology, a schedule for conducting the project, monitoring, maintenance and reporting provisions, performance standards for determining ecological success, and provisions for protection and management in perpetuity with appropriate real estate arrangements including transfer of long-term management authority. The IRT shall meet on a regular basis with the Sponsor to review proposed mitigation projects. The ACOE, after seeking comments from the IRT members**,** shall approve or deny specific mitigation project proposals for restoration, creation, enhancement, buffering, and preservation of aquatic resources and their adjacent uplands. Such approval or denial will be based on factors including site suitability, long-term sustainability, likelihood of success, maximum return on expended funds, benefits to rare and endangered species, and an acceptable mitigation plan.

Site Development Plans will include funding for costs associated with accomplishment of the project including, but not limited to, project design, project management, restoration, creation, monitoring, stewardship, labor, land acquisition, appraisals, legal, closing, equipment and materials necessary to fully accomplish the restoration and monitoring. In the event the Sponsor determines that modifications must be made in a Site Development Plan to ensure successful establishment of a mitigation project, the Sponsor shall submit a written request for

such modification to the ACOE for approval. Modifications to approved site plans, as well as the addition of new approved mitigation site plans will be through the modification of this instrument as required at 33 CFR §322.8 unless a streamlined modification review process is determined by the ACOE to be appropriate.

b. Restoration Guidelines

Due to the fact that many Keys wetlands were either filled or hydrologically altered or isolated during the early development of the Keys, wetland restoration consists of two primary methods: 1) removal of fill material to directly restore historic wetland elevations, or 2) removal of an impediment to water flow (such as a filled roadbed) in order to restore historic flows and enhance degraded wetlands (Hobbs, McNeese, and Kruer 2006). Complete restoration of historic hydrologic conditions will be the goal of all restoration projects, but may not be possible in all cases (for reasons including, but not limited to, conflicts with adjacent property uses, or the transition by the area of historical disturbance to another ecologically desirable habitat, such and tropical hardwood hammock, thereby making restoration counterproductive). Once historic hydrologic conditions have been restored to the maximum extent possible, sites with suitable substrates may be planted with appropriate native species in order to restore ecosystem functions as quickly as possible, although ensuring the availability of native seed sources to the site is critical to the success of restoration.

The shallow depth of many seagrass communities in the Keys, coupled with heavy usage of these areas for both commercial fishing and recreational purposes, had, as of the mid-1990s, resulted in damage to some 30,000 acres of Keys' shallow seagrass habitats (Sargent et. al, 1995). Many of these same impacts continue to the Keys benthic habitats today (ONMS 2011). The damage may consist of propeller scars, vessel grounding impressions, or blowholes from propeller wash as vessels attempt to power off of shallow areas. Tidal flow may then scour or deepen these scars if restoration is not undertaken quickly. If scouring or deepening has occurred, topographic restoration is first necessary to restore seagrass elevations. Once the appropriate topography has been restored, scarred areas may be planted with the appropriate donor seagrasses and bird stakes installed to provide nutrient input to facilitate quicker revegetation and coverage of denuded areas. In areas with smaller scars where recruitment from seagrasses immediately adjacent is possible, bird stakes alone may suffice to achieve complete restoration. All seagrass restoration projects and use of seagrass donor sites will be conducted through consultation with the appropriate resource agencies in accordance with guidelines and best management practices found in Fonseca et al. (1998) and NOAA and FDEP (2004).

Mitigation plans for each restoration project will outline which of the above techniques are necessary and appropriate for each site. Upon completion, each project will typically be monitored for a minimum of five years in order to ensure that quantifiable success criteria have been met, or to implement adaptive management techniques for projects that are not meeting quantifiable success criteria. These criteria will be established for each project through coordination with and input from the ACOE and the IRT.

c. Compensation Planning Framework

The purpose of the KRF ILF Program is to offset impacts to waters of the U.S., including wetlands and shallow seagrass habitats authorized by Department of the Army permits. Therefore, priority is given to mitigation that replaces lost functions and values of Keys wetland and submerged habitats, as determined by the ACOE and the IRT. No credits will be approved unless and until the IRT determines that the restoration work constitutes compensatory mitigation for the lost functions and values for permitted impacts to wetland and submerged habitats. The Compensation Planning Framework for the KRF ILF Program is based on a landscape approach and outlines the framework for selecting, securing, and implementing wetland and submerged habitat aquatic resource restoration and enhancement projects, and possibly, associated upland buffer preservation and restoration. The Compensation Planning Framework describes program elements designed to meet requirements of 33 CFR 332.8(c).

Element 1: The geographic service area, including a watershed based rationale for the delineation of the service area.

The overall service area for the KRF ILF Program represents a unique situation and includes both islands and submerged lands within the boundaries of the Florida Keys National Marine Sanctuary (FKNMS), mostly located within Monroe County (Figure 1). The service area for the KRF ILF Program encompasses approximately two-thirds of the 2,900 square nautical miles (9,800 square kilometers) of the FKNMS as defined in the 2005 FKNMS Draft Revised Management Plan, and will include state and federal waters within the FKNMS. The total landmass of the U.S. Highway One connected islands, including wetlands, is approximately 86,000 acres. Use of the typical, well defined watershed approach in setting service areas to receive mitigation fees is not appropriate for the KRF ILF Program.

Two distinctive Project Areas will constitute the single Service Area - the Lower Keys Project Area (Figure 2) and the Upper Keys Project Area (Figure 3) - with the boundary line between these 2 distinctive areas at the approximate center of the 7-Mile Bridge (the navigation channel. Fees generated within each Project Area will be committed to in-kind wetland or seagrass mitigation within that Project Area. These 2 Project Areas include all of the two 12 unit HUCs termed the *Lower Keys* (#030902030300) and *Upper Keys* (#030902030200) and the very south end of the HUC termed *Biscayne Bay* (#030902061700) which extends north into Biscayne National Park. The formal 12 unit HUC for the Upper Keys extends below the 7-Mile Bridge and includes Ohio, Bahia Honda, and West Summerland Keys, islands and shallow water much more closely related to the Lower Keys than the Upper Keys. For purpose of dedicating mitigation fees these islands will be included in the Lower Keys Project Area. The south end of the Biscayne Bay HUC will be included in the Upper Keys Project Area in order to capture the north end of North Key Largo, the Ocean Reef Club, and Card Sound.

The scientific justification for the boundaries of these 2 Project Area is based on several well known factors including appropriate size, geology (the upper region is Key Largo limestone based, the lower region is Miami oolite based), distinctiveness of the wetland and upland plant communities (Kruer 1992, Kruer 1995), pattern of boating impacts (Sargent et. al 1995) , tidal circulation patterns (the Upper Keys Project Area is influenced by Florida Bay), distinctive wetland associated threatened and endangered species distribution (i.e. Lower Keys marsh

rabbit, silver rice rat, and Key deer are all confined to the Lower Keys region), precipitation (the Lower Keys Project Area is significantly drier), elevations, human population density, land ownership and development patterns, and types and numbers of wetland and submerged impacts anticipated.

The Program will refine its selection process to identify both Upper Keys projects and Lower Keys projects, to more precisely capture differing ecosystem functions. It would seem contrary to goals of good mitigation planning, for example, to have impacts in listed species wetlands on Sugarloaf Key mitigated for in Marathon. Or, conversely, to have impacts to shoreline mangroves on Grassy Key mitigated for in Key West. The Program will endeavor at all times to maintain both Upper and Lower Keys wetland and seagrass habitat restoration projects. Projects within each Project Area will be located where they pose minimal conflicts with adjacent land uses and where they meet regional conservation priorities related to unique habitats and plant communities, listed species, provide habitat corridors, and enhance and expand the effectiveness of nearby protected natural areas.

Element 2: A description of the threats to aquatic resources in the service area, including how the in-lieu fee program will help offset impacts resulting from those threats.

Threats to aquatic habitats and resources of the Keys primarily take two forms - impacts from dredging and filling, shading, and vessel impacts to submerged resources, primarily seagrasses, and the filling of various wetland habitats on the shorelines and in the interior of islands. Much of the historic physical alteration of the Keys took place from the 1950's to the 1970's. During this time, tropical hardwood hammock or forest was cleared, and many acres of mangrove shoreline and adjacent seagrass beds were destroyed when finger canals were dredged and the spoil used to create "fastland". For example, between 1945 and 1991, the US Highway 1-connected islands of the Upper Keys (Key Largo south to Long Key) lost 66% of their hardwood hammock forests and 39% of their mangrove forests. Although on a smaller scale, these threats continue today requiring mitigation through habitat restoration and enhancement and other efforts to offset the loss. Ongoing, permitted impacts that often require mitigation include small scale fill of disturbed wetlands for residential and commercial development, bulkhead construction in canals, public infrastructure, transportation, and utility projects, private dock and marina construction, minor new dredging, maintenance dredging, vessel mooring fields, and the like. Illegal impacts often lead to agency enforcement actions at all levels of government. Historically KERF has also been a recipient of fines and penalties levied in an effort to offset resource impacts and loss. In particular, minor unauthorized dredging and filling and boat impacts (grounding and scarring) resulting in impacts to seagrass habitats were often resolved through the payment of fines to the mitigation program.

Through a review of the number of fees paid into KERF for the period 2007-2011 (KERF May 2012, *Work Performance Review for Project Mitigation*), it is possible to generally determine the level of federal permit activity in the Keys as a means of identifying the need for federally approved mitigation. A total of 323 fees were paid to KERF during this period and applied to seven different restoration/enhancement projects, averaging about 67 per year, with a maximum of 113 individual fees (corresponding to the # of issued federal permits) paid in 2007 and a minimum of 39 paid in 2009. Separate permitting data available for 2012 indicate

that 43 federal permits (individual permits, letters of permission, and general permits) requiring mitigation were issued in the Keys from Key Largo to Key West. It is assumed that with a strengthening economy this level of permitting activity will continue and potentially increase in the Keys.

Current Threats:
1) Nutrient enrichment
2) Wetland loss
3) Invasive and/or non-native species
4) Loss and destruction of buffer zones
5) Global climate change (especially sea level rise, drought, and temperature extremes)
6) Recreational use
7) Contaminant load through stormwater runoff
8) Development (e.g. dredge and fill and shoreline construction)
9) Alterations to hydrology and water flow
10) Sedimentation

The Keys Environmental Restoration Fund (KERF) has played a vital role in the restoration and preservation of the Keys' aquatic resources since its creation in 1981. By complying with the *2008 Final Mitigation Rule, 33 CFR PART 332, on Compensatory Mitigation for Losses of Aquatic Resources*, the KRF ILF Program will continue to focus, expand, and improve its efforts to mitigate against further losses to the unique and invaluable resources within the Keys.

Element 3: An analysis of historic aquatic resource loss in the service area.

Although the Keys were sparsely settled for many years, 1924 marked the construction of the first subdivision on Key Largo, with development continuing since that time (Strong and Bancroft 1994). Much of the physical alteration of the Keys resulting from dredging and filling took place from the 1950's to the 1970's. During this time, tropical hardwood hammock or forest was cleared, and many acres of mangrove shoreline and adjacent seagrass beds were destroyed when finger canals were dredged and the spoil used to create "fastland" (Kruczynski and McManus 2002). Between 1945 and 1991, the US Highway 1-connected islands of the Upper Keys (here Key Largo south to Long Key) lost 66% of their hardwood hammock forests and 39% of their mangrove forests (Strong and Bancroft 1994). Although similar figures are not available for Lower Keys islands, they are generally lower in elevation than much of the Upper Keys and their mangrove and wetland losses may have been even greater. Coastal wetlands perform vital environmental functions such as filtering upland runoff, absorbing nutrients, buffering upland systems from storm damage, providing critical nursery habitat to fish and invertebrate species and providing habitat for many terrestrial species.

The shallow depth of many seagrass communities in the Keys, coupled with heavy usage of these areas for both commercial fishing and recreational purposes, had, as of the mid-1990s, resulted in damage to some 30,000 acres of Keys' shallow seagrass habitats (Sargent et. al, 1995). The seagrass communities of the Keys are important both for maintaining water quality and for providing critical habitat for numerous fish and invertebrate species, including many of commercial importance. One of the most common seagrasses, *Thalassia testudinum,* is

commonly known as turtle grass and is a critical food source for the federally endangered green turtle, *Chelonia mydas*. The loss and damage to those acres can lead to an increase in suspended sediment, loss of available light, degradation of marine habitats, and an increase in algal blooms, all of which can result in further losses and degradation to seagrass beds (Durako et al. 2002).

Many of these same impacts continue to the Keys benthic habitats today (ONMS 2011). The damage may consist of propeller scars, vessel grounding impressions, or blowholes from propeller wash as vessels attempt to power off of shallow areas. Tidal flow may then scour or deepen these scars if restoration is not undertaken quickly. If scouring or deepening has occurred, topographic restoration is first necessary to restore seagrass elevations. Once the appropriate topography has been restored, scarred areas may be planted with the appropriate donor seagrasses and bird stakes installed to provide nutrient input to facilitate quicker revegetation and coverage of denuded areas. In areas with smaller scars where recruitment from seagrasses immediately adjacent is possible, bird stakes alone may suffice to achieve complete restoration. All seagrass restoration projects and use of seagrass donor sites will be conducted in accordance with guidelines and best management practices found in Fonseca et. al (1998) and NOAA and FDEP (2004).

The Keys support one of the largest commercial fisheries in the State of Florida, accounting for about 80% of the total spiny lobster harvest and about 40% of the total harvest for both stone crab and pink shrimp. In 2006, Monroe County was ranked the fifth most valuable port in the nation, with a dockside value of about $54.4 million (*http://www.fkcfa.org/Pages/aboutus.aspx*). In addition, the Keys economy is highly dependent upon tourism, with approximately 4 million visitor trips annually. The total contribution from tourism to the Monroe County economy, including multiplier effects, is about $2.23 billion and the value generated by tourism represented about 60% of the local economy (NOAA 2010). Most visitors are drawn by the natural beauty and resources of the Keys and tourism-related employment supports nearly 32,000 Keys jobs. In total, about 1.6 million people engaged in water-based activities (NOAA 2010). Further degradation and loss of Keys wetland and seagrass communities will result in negative economic effects to these critical Keys' business communities. Projects that result in restoration and enhancement of Keys wetland and nearshore habitats will improve conditions resulting in a positive effect on these communities.

The wetland and seagrass communities of the Keys are clearly much diminished from their pre-development extent and ecosystem functions. Continuing development places additional strain on the systems, both in terms of direct habitat loss and from changes to water quality associated with the human footprint, including stormwater runoff from developed areas. The need for conservation, habitat restoration and enhancement, and preservation of these aquatic resources has never been greater. In recent years this need has been recognized and reflected in numerous protective designations and measures to restore and enhance degraded resources:

- State Designation as the Florida Keys Area of Critical State Concern, 1974
- Establishment of the Key Largo National Marine Sanctuary, 1975
- Establishment of the Looe Key National Marine Sanctuary, 1981

- Establishment of the Florida Keys Environmental Mitigation Trust Fund, 1981
- Establishment of the Florida Keys National Marine Sanctuary, 1990
- Completion of the FKNMS Management Plan, 1996
- Creation of the South Florida Ecosystem Restoration Task Force, 1993
- Passage of the Water Resources Development Act in 1996
- Creation of the U.S. Fish and Wildlife Service's South Florida Multi-Species Recovery Plan, 1999.
- Numerous Everglades system restoration projects and water quality improvement measures to restore and enhance historic water flows to Florida Bay and the Keys
- Magnuson-Stevens Fishery Conservation and Management Act, Public Law 94-265 as amended through 2006

Element 4: An analysis of current aquatic resource conditions in the service area supported by field documentation.

There is extensive scientific documentation available for the Keys that establish the current conditions of aquatic resources, including threats and management efforts, and the need for active restoration and enhancement where possible. This documentation is associated with the FKNMS management plans and condition reports, USFWS Refuge management plans, the Monroe County Comprehensive Plan (and the current update process) , Florida Area of Critical State Concern documentation, various land use/land cover (LU/LC) and benthic habitat mapping projects, listed species reviews, sea level rise projections and reviews, scientific literature, and other programs. Of particular interest are the acreage figures derived from the updated 2009 Monroe County LU/LC mapping for various natural and developed land cover types:

Land Cover Type	Acres
Beach Berm	200.33
Buttonwood	4,127.51
Developed Land	13,436.03
Exotic	509.78
Freshwater Wetland	1,040.99
Hammock	8,940.30
Impervious Surface	3,155.90
Mangrove	33,006.53
Pineland	1,757.27
Salt Marsh	2,852.25
Scrub Mangrove	10,194.74
Undeveloped Land	2,694.41
Water	4,131.74
TOTAL	86047.78

Element 5: A statement of aquatic resource goals and objectives in the service area, including a description of the general amounts, types and locations of aquatic resources the program will seek to provide.

The goals and objectives for restoration, enhancement, and preservation of aquatic resources in the 2 Projects Areas of the Service Area will depend on the level of permitting activity and the amount of mitigation required to offset the permitted impacts (see the year to year variation in permitting activity noted in Element 2 above). As well, the location and general amount, and type of mitigation work will be a direct result of permitting. In general, areas restored, enhanced, and preserved will include shallow water seagrass and hardbottom habitats along with mangrove and transitional (saltmarsh and buttonwood) wetlands in both the Upper Keys and Lower Keys Project Areas, and freshwater wetlands in the Lower Keys eco-region. Restoration of wetland and seagrass habitats will be conducted using well established methods and procedures, and best management practices, while hardbottom habitat restoration, if pursued, will rely on recommendations of the FKNMS, and others, and typically simply involve fill removal to restore natural, exposed limestone or oolitic rock surfaces.

The best information available on the potential for future levels of mitigation work is derived from the work of the previous Fund program (projects funded variously by penalty funds, grants, and ILF mitigation) outlined in the 2006 summary report by KERF (Hobbs, McNeese and Kruer 2006). The Summary Table at the end of the report shows summary information for each project. KERF projects from 1981 to 2006, and those of its predecessor program, included full completion or facilitation of:

- The direct restoration of over 63 acres of habitat:
  - 3.9 acres of hardwood hammock
  - 7.4 acres of freshwater wetlands
  - 4.7 acres of buttonwood wetlands
  - 5.2 acres of salt marsh wetlands
  - 30.0 acres of mangrove wetlands
  - 6.7 acres of seagrasses
  - 5.8 acres of hardbottom, tidal lagoons and creeks, and salt ponds
- Removal of 4.26 miles of roadway
- Direct enhancement of over 1,000 acres of native habitat
- Mapping of:
  - Invasive exotic vegetation over the entire Keys
  - Vessel impact damage to 187 acres of seagrass habitat
  - Mosquito ditches throughout the Lower Keys refuges

<u>Element 6: A prioritization strategy for selecting and implementing compensatory mitigation activities.</u>

Mitigation projects will be evaluated for their potential to provide appropriate compensatory mitigation for impacts to aquatic resources in accordance with a strategic planning process based on sound science and adaptive management principles. Projects will be evaluated based on their potential to address multiple functions and services such as improvement of fish and wildlife habitat, support for rare species, water quality maintenance and improvement, resilience to sea level rise and climate change, and recreation or education values. Projects that can utilize native plant community diversity and natural processes will yield greater functional gains and be given higher preference. The overall driver will be to replace lost

ecological functions and services in perpetuity. The Sponsor will use targeting tools available to identify and prioritize projects based on ecological and functional values to increase the likelihood of success of mitigation projects. These spatial layering tools (e.g., historic and current aerial imagery, cadastral data, land use/land cover maps, GIS, etc.) will first help evaluate key restoration and/or preservation parameters. For example, ecological and functional parameters for successful restoration include an assessment of habitats, existing degradation, current and adjacent land use, elevations, existing and potential hydrology, site history and historical alterations of the property, landscape proximity to other preserved or restored lands, evaluation of the potential to improve habitat for threatened and endangered species, and evaluation of cultural resources. Projects should be located where they compliment adjacent land uses, meet regional conservation priorities, increase habitat diversity, support state wildlife action plans, reduce fragmentation, establish corridors, enhance the function of existing natural areas, and focus on the most degraded areas.

For land preservation funding, key prioritization parameters include, but are not limited to, surrounding landscape and potential to improve buffers for restoration sites, local, state and federal designation of important lands for preservation, a highly impacted and/or threatened landscape type, lands important for threatened or endangered species and habitat corridor establishment, lands important for water quality maintenance, willing landowners, and potential future threats.

In general, factors to aid in prioritization include:

- the sustainability of the proposed conservation action (restoration, enhancement, preservation) and the acreage (size) affected.
- the resource types to be restored, enhanced, or preserved and the degree to which the proposed project improves the functional benefits of impacted resources based on a functional assessment of the project (functional lift).
- the potential to include upland areas sufficient to protect, buffer, or support identified resource functions and ecological connectivity to other conservation areas or undeveloped large blocks of habitat.
- presence within or adjacent to habitat areas of conservation significance or other natural resource priority areas
- presence within or adjacent to public or private conservation lands to maintain and preserve habitat connectivity.
- presence of natural resources of significant value and rarity within the project site boundaries.
- documentation of landowner willingness to participate in proposed project, including conveying a conservation easement or fee title, with conservation covenants, to the property (for projects not on public or private conservation lands).
- level of project urgency (i.e. future risks to site)
- the value of the site in addressing issues of resilience to climate change and assists the landward migration of native habitats due to sea level rise
- likelihood that the project can meet the proposed schedule.
- likelihood that the proposed actions will achieve the anticipated ecological benefits and results.
- completeness and feasibility of long-term stewardship and monitoring plan, including

endowment.
- conformance with applicable ACOE and state mitigation policy, guidance and permitting requirements, including appropriate financial assurances for any construction activity.
- the extent to which the proposal meets the core program requirement to provide for long-term management and/or stewardship by a responsible state or federal resource agency, or conservation organization.
- presence of qualified, capable conservation entity willing to sponsor and/or maintain the project.
- level of support and involvement of other relevant agencies, organizations, and the local community.
- adequacy of long-term stewardship to ensure the project is sustainable over time and funding mechanisms for the associated costs are available (e.g., endowment or trust).
- the extent to which a project represents an efficient use of funds expended, and matches the availability and sufficiency of funds available in the applicable eco-region.
- the extent of threats from invasive species or vandalism should be low or manageable.

Element 7: An explanation of how any preservation objectives identified above satisfy the criteria for use of preservation.

If preservation is used to provide mitigation, to the extent appropriate and practicable the preservation will be done in conjunction with restoration or enhancement activities. In accordance with 33 CFR 332.3(h) of the 2008 Federal Mitigation Rule, preservation projects may be used to provide compensatory mitigation when the following criteria are met:

(i) The resource to be preserved provides physical, chemical, or biological function for the watershed.
(ii) The resource to be preserved contributes significantly to the ecological sustainability of the watershed.
(iii) Preservation is determined by the ACOE to be appropriate and practicable.
(iv) The resources are under threat of destruction or adverse modifications.
(v) The preserved sites will be permanently protected through an appropriate real estate or other legal instrument.

If mitigation fees are to be expended, preservation objectives will provide an approach to maximize ecological benefits to the Keys ecosystem. Preservation will support Keys conservation initiatives and will be compatible with the surrounding landscape. Projects will be located where they compliment adjacent land uses, meet conservation priorities, maintain habitat diversity, support state wildlife action plans, abate threats and prevent fragmentation, maintain habitat corridors and enhance the function of existing natural areas.

Element 8: A description of any public and private stakeholder involvement in plan development and implementation, including coordination with federal, state, and local aquatic resource management and regulatory authorities.

The recent ILF Programs in the Key had an excellent record of involving local resource management and regulatory authorities in project identification, planning, implementation, and

monitoring. This process will continue through coordination as required through the IRT as well as routine coordination with other public and private partners in the Keys including but not limited to:

Audubon of Florida, Tavernier Science Center
City of Marathon
Florida Department of Environmental Protection: Coastal and Aquatic Managed Areas
Florida Department of Environmental Protection: Keys Parks Managers
Florida Department of Environmental Protection: Regulatory Division Florida Fish and Wildlife Conservation Commission
Florida Keys National Marine Sanctuary
Islamorada, Village of Islands
Monroe County
NOAA National Marine Fisheries Service
South Florida Water Management District
The Nature Conservancy
U.S. Army Corps of Engineers
U.S. Environmental Protection Agency
U.S. Fish and Wildlife, Ecological Services
U.S. Fish and Wildlife, Keys Refuges
U.S. Navy, Boca Chica

The Sponsor will work closely with agencies, public and private organizations, conservation entities, and interested landowners to identify realistic wetland and shallow water mitigation opportunities and develop mitigation plans and assessment methods. Methods for assessing aquatic resource functions pre- and post-project implementation will be coordinated with ongoing efforts by the FKNMS, State Parks, the USFWS, and other entities in the Keys. This will allow efforts of the KRF ILF Program to dovetail with ongoing inventory and monitoring efforts, especially in regards to seagrass restoration efforts. The Sponsor's team of wetland and restoration biologists, GIS specialists, project managers, accountants, and attorneys can provide full service delivery of high quality mitigation projects (i.e., site identification, wetland construction and plan implementation, performance monitoring, long term protection via easements, adaptive management plans, and accounting and financial assurances).

Element 9: A description of the long term protection and management strategies, including financial, for activities conducted by the in-lieu fee program sponsor, including transfer of long-term management.

The Sponsor shall be responsible for developing and implementing a long-term protection and management plan for each KRF ILF Program project. On publicly-owned property, long-term protection and management may be provided through agreements with the appropriate agencies (i.e. USFWS, FL State Park System, Monroe County) tied to management or integrated natural resource plans. On privately-owned property, including property held by conservation organizations, real estate instruments shall be recorded to guarantee protection. The Sponsor will ensure that protection mechanisms are in place prior to release of credits. When appropriate, draft conservation easements or equivalent protection mechanisms will be

submitted to the IRT as part of each project mitigation plan for review and ACOE approval.

KRF ILF Program projects will be designed, to the maximum extent practicable, to require little or no long-term management efforts once performance standards have been achieved and shall be responsible for maintaining KRF ILF Program projects consistent with the mitigation plan to ensure long-term viability as functional aquatic resources. The Sponsor shall retain responsibility until the long-term management responsibility is formally transferred to a long-term manager (typically an agency) with ACOE approval. The long-term management plan developed for each KRF ILF Program project will include a description of anticipated management needs with annual cost estimates and an identified funding mechanism (such as non-wasting endowments, trusts, contractual arrangements with future responsible parties, or other appropriate financial instruments). The final formal agency agreement or conservation easement or equivalent mechanism for long-term protection and management shall be submitted to the ACOE and the IRT for review and approval prior to the final release of mitigation project credits. Upon achieving its performance standards and approved transfer of the project for long-term protection and management, KRF's responsibility will cease.

Element 10: Reporting protocols and a strategy for periodic evaluation and reporting on the progress of the program in achieving the goals and objectives above, including a process for revising the planning framework as necessary.

The Sponsor will provide annual reports, based on calendar years, to the ACOE with updates on the progress of mitigation work in each project area and project implementation work accomplished. The reports will be submitted no later than March 30 of the year following the reporting year. This report will provide an overview of what aquatic resource impacts were permitted, what approved mitigation projects were funded, and the amount of funds deposited in those project accounts. It will also summarize the successes and the challenges (lessons learned), and ways to improve the program for next year. The status of development of new mitigation project plans will be reported. For restoration and enhancement projects that may take several years to complete due to extended monitoring requirements, the Sponsor will summarize monitoring reports and the results of the work. For preservation projects, evidence of agency agreements, easements, or other protection details will be documented and reported.

Every five years, the Sponsor will produce a status and trends report summarizing the previous five years. The document will examine the goals for each eco-region and discuss how well the projects assisted with promoting those goals. As funds allow, every five years the Sponsor, along with the ACOE and the IRT, will reexamine and update the Compensation Planning Framework, including the involvement and cooperation from the broad range of stakeholders identified above.

The Sponsor will monitor completed KRF ILF Program projects using a mitigation monitoring plan to be developed by the Sponsor in conjunction with the ACOE and the IRT for each project. This mitigation monitoring plan will be consistent with current ACOE mitigation guidance and will provide consistent methods and measurements among sites, allowing the KRF ILF Program to ensure that performance standards are being met. The frequency and duration of monitoring and specific monitoring requirements will be defined in each individual mitigation plan, in accordance with requirements at 33 CFR 332.6. In general, monitoring reports will

include plans, maps, and photographs to illustrate site conditions (based on a pre-existing conditions as well as a Time Zero report), a narrative summarizing pre- and post-project implementation site conditions, monitoring results as compared to performance standards, and recommendations for contingency or adaptive management if needed. The monitoring duration designated in the mitigation plan may be extended by the ACOE if performance standards have not been met. The ACOE may also reduce or waive monitoring requirements upon determination that performance standards have been achieved. Monitoring and contingency reports will address adaptive management strategies that provide management guidelines and recommendations for future site restoration and monitoring. The responsibility of each participating party will be clearly defined and address procedures to improve or alleviate unforeseen threats to the restored wetland or shallow water habitat and functions. The monitoring and contingency plan will track progress towards measurable goals and their associated objectives.

d. Sponsor Responsibilities

a. The Sponsor will, for a fee to be paid by permittees, provide compensatory mitigation for impacts to waters of the United States authorized by Department of the Army permits and commit to create, enhance, restore, preserve and maintain the functions and values of aquatic habitats and associated buffers for each compensatory mitigation project approved under this ILF Instrument in accordance with the provisions of this ILF Instrument.

b. The Sponsor assumes all legal responsibility for satisfying the compensatory mitigation requirements (i.e., the implementation, performance, and long-term management of the compensatory mitigation project(s) approved under this ILF Instrument) of Department of the Army permits for which it transfers credits once a permittee has secured the appropriate number and type of credits from the Sponsor. The Sponsor will provide written documentation to the ACOE, in the form of a signed and dated credit sales letter, confirming that the Sponsor has accepted legal responsibility for providing the required compensatory mitigation.

c. The Sponsor is responsible for the performance of all necessary work to establish, monitor and maintain aquatic habitats and associated buffers as described in the Mitigation Work Plan for each compensatory mitigation project approved under this ILF Instrument until the Sponsor has demonstrated to the satisfaction of the ACOE, in consultation with the IRT, that the KRF ILF Program complies with all provisions contained herein.

d. The Sponsor will be responsible for maintaining KRF ILF Program account records, notifying the ACOE of credit sales, monitoring each compensatory mitigation project approved under this ILF Instrument for success, conducting remedial action as necessary to insure success, and providing this information to the ACOE in reports documenting KRF ILF Program usage and the results of monitoring in accordance with the provisions of this ILF Instrument.

e. The Sponsor will be responsible for notifying the ACOE of any pending sale, transfer or change in sponsorship of a compensatory mitigation project site approved under this ILF Instrument at least 60 days prior to the effective date.

f. The Sponsor will obtain all appropriate environmental documentation, permits and other

authorizations needed to establish and maintain any compensatory mitigation project site approved under this ILF Instrument and the KRF ILF Program. Compliance with this ILF Instrument does not fulfill the requirement, or substitute, for such authorization.
g. Unless any of the responsibilities identified above are transferred, with prior approval of the ACOE, to a new sponsor or long-term steward, the Sponsor remains responsible for: 1) the compensatory mitigation requirements for any Department of the Army permits for which it sold KRF ILF Program credits; and 2) the long-term management, maintenance, monitoring and protection of the compensatory mitigation represented by those credits.

6. Definitions

Adaptive Management - The development of a management strategy that anticipates likely challenges associated with compensatory mitigation projects in the coastal zone and provides for the implementation of actions to address those challenges, as well as unforeseen changes to those projects. It requires consideration of the risk, uncertainty, and dynamic nature of compensatory mitigation projects and guides modification of those projects to optimize performance.

Advance Credits - Credits associated with a compensatory mitigation project that are available for sale prior to initiation of a mitigation project conducted in accordance with this approved Instrument. For purposes of this Program credit sales equate to the payment of fees by permittees to KRF as directed by the ACOE.

Agreement – The Keys Restoration Fund ILF Instrument as prepared by Coastal Resources Group, Inc. in conjunction with the ACOE governing operation of the Keys ILF Program described under ACOE regulations at 33 CFR §332.8.

Buffer - An upland or wetland area that protects and/or enhances aquatic resource functions associated with wetlands and shallow water habitats from disturbances associated with adjacent land uses.

Compensation – Actions taken which have the effect of mitigating for, or substituting some form of, aquatic resource lost or significantly disturbed due to a permitted activity. This is generally accomplished through aquatic resource restoration or enhancement, and possibly preservation when provided as part of a mitigation project.

Credit – A unit of measure representing the accrual or attainment of aquatic resource function, condition, or other performance measure at an approved mitigation site.

Debit – A unit of measure representing the loss of aquatic resource function, condition, or other performance measure at an impact site.

Enhancement - The manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve specific aquatic resource functions. Enhancement results in the gain of selected aquatic resource functions, but may also lead to a decline in other aquatic resource functions. Enhancement does not result in a gain in aquatic resource area.

Financial Assurances – A mechanism used to guarantee some aspect of mitigation site performance. Financial assurances may include a contingency account, escrow account, performance bond, insurance, letter of credit, or other mechanism acceptable to the ACOE. Financial assurances may be required for varying aspects of the ILF Program including mechanisms to ensure that monitoring and maintenance of the site is completed, and mechanisms ensuring financing is available to address catastrophic events and required long-term management.

Full Cost Accounting - The process of collecting and presenting all cost information for each mitigation project. It is a conventional method of cost accounting that traces direct costs and allocates indirect costs. It includes all appropriate expenses such as administrative, site selection, planning and design, land acquisition, construction, planting, legal expenses, monitoring, maintenance, remediation, adaptive management, long-term management, and contingencies.

Functions – The physical, chemical and biological ecosystem processes of an aquatic resource without regard to its importance to society.

Hydrologic Unit Code – Divisions of the watersheds of the United States. For the purposes of this Agreement, Hydrologic Unit Code (HUC) shall refer to those divisions as defined by the United States Geological Survey

In-Kind - A resource of a similar structural and functional type as the impacted resource.

In-lieu Fee Program - A program involving the restoration, enhancement, and/or preservation of aquatic resources through funds paid to a governmental or non-profit entity to satisfy compensatory mitigation requirements for ACOE permits.

In-Lieu Fee Program Account – An account at a financial institution which contains any and all monies, including any interest associated with fees, and the sale or transfer of credits in accordance with this Instrument. Funds in this account can only be used to provide compensatory mitigation (including selection, acquisition, design, implementation, administration and management of mitigation projects).

Interagency Review Team (IRT) – An interagency group of federal, state, and local regulatory and resource agency representatives, and possibly others, that participates in the development of site development plans and oversees the establishment, use, operation, and long-term maintenance of a mitigation site with the ACOE acting as Chair.

Ledger – An accounting of mitigation credits and debits and other information maintained by KRF and reviewed annually by the ACOE and the IRT.

Long Term Management and Maintenance Plan – The plan that defines the goals and objectives of long-term stewardship of a mitigation site after success criteria monitoring (typically a monitoring period of up to 5 years following completion of physical work) has been

completed. The long-term management and maintenance plan shall be binding on the long-term steward.

Long-Term Steward – The party (landowner, easement holder or other party) responsible for long-term maintenance and management of the mitigation site. KRF will be the long-term steward for a mitigation site unless another steward has been designated and has accepted this responsibility. A different long-term steward may be designated, however, KRF is responsible for ensuring success criteria monitoring (typically a monitoring period of 5 years following project completion) until the project has been closed.

Mitigation – The process of sequentially avoiding impacts, minimizing impacts and compensating for impacts to aquatic resources that could not be avoided or minimized.

Mitigation Plan – A detailed portion of the site development plan that identifies specifically how aquatic resources and associated upland buffers will be restored, enhanced, preserved, managed and maintained on the mitigation site.

Mitigation Performance – The outcome of applying success criteria to a mitigation site in terms of identified goals and objectives.

Mitigation Project – The entire compensatory mitigation project including all activities described in the mitigation plan and undertaken on the mitigation site to generate credits.

Mitigation Site – A site or sites where aquatic resources are restored, enhanced or preserved expressly for the purpose of providing compensatory mitigation for authorized impacts to similar resources.

Preservation - The removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms, and may involve protection of upland buffers. Preservation does not result in a gain of aquatic resource area or functions.

Program Instrument - The legal document governing the establishment, operation and use of an ILF Program.

Real Estate Protection Document - The document or instrument intended to protect, restrict or preserve the land associated with a mitigation site and that will be recorded in local land records. The document may take the form of an easement, a declaration of restriction, or other similar legal document.

Released Credits – Credits associated with mitigation sites that have met their success criteria, as determined by the ACOE and the IRT.

Restoration - The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource.

Service Area - The geographic area within which impacts can be mitigated by an in-lieu fee program, as defined in its instrument. The overall service area may be divided into appropriate Project Areas to direct the use of fees in mitigating impacts.

Services - Benefits that human populations receive from functions that occur in ecosystems.

Site Development Plan – The overall plan governing the restoration, enhancement and/or preservation of aquatic resources and associated upland buffers on the mitigation site.

Sponsor - A public or non-profit entity responsible for establishing and operating an in- lieu fee program.

Success Criteria – The minimum standards required to meet the objectives for which the site was established.

Temporal loss - The time lag between the loss of aquatic resource functions caused by the permitted impacts and the replacement of aquatic resource functions at the compensatory mitigation site. Higher compensation ratios may be required to compensate for temporal loss.

7. <u>Additional Provisions</u>

- Controlling Language - The Parties intend the provisions of this Instrument and each of the documents incorporated by reference in it to be consistent with each other, and for each document to be binding in accordance with its terms. To the fullest extent possible, these documents shall be interpreted in a manner that avoids or limits any conflict between or among them. However, if and to the extent that specific language in this Instrument conflicts with specific language in any document that is incorporated into this Instrument by reference, the specific language within the Instrument shall be controlling. The captions and headings of this Instrument are for convenient reference only, and shall not define or limit any of its terms or provisions.

- Entire Agreement - This Instrument, and all exhibits, appendices, schedules and agreements referred to in this Instrument, constitute the final, complete and exclusive statement of the terms of the agreement between and among the Parties pertaining to the Program, and supersede all prior and contemporaneous discussions, negotiations, understandings or agreements of the Parties. No other agreement, statement, or promise made by the Parties, or to any employee, officer, or agent of the Parties, which is not contained in this Instrument, shall be binding or valid. No alteration or variation of this instrument shall be valid or binding unless contained in a written amendment. Each of the Parties acknowledges that no representation, inducement, promise or agreement, oral or otherwise, has been made by any of the other Parties or anyone acting on behalf of any of the Parties unless the same has been embodied herein.

- Reasonableness and Good Faith - Except as specifically limited elsewhere in this Instrument,

whenever this Instrument requires a Party to give its consent or approval to any action on the part of the other, such consent or approval shall not be unreasonably withheld or delayed. If a Party disagrees with any determination covered by this provision and reasonably requests the reasons for that determination, the determining Party shall furnish its reasons in writing and in reasonable detail within 30 days following the request.

- Successors and Assigns - This Instrument and each of its covenants and conditions shall be binding on and shall inure to the benefit of the Parties and their respective successors and assigns subject to the limitations on transfer set forth in this Instrument.

- Partial Invalidity - If a court of competent jurisdiction holds any term or provision of this Instrument to be invalid or unenforceable, in whole or in part, for any reason, the validity and enforceability of the remaining terms and provisions, or portions of them, shall not be affected unless an essential purpose of this Instrument would be defeated by loss of the invalid or unenforceable provision.

- Notices -Any notice, demand, approval, request, or other communication permitted or required by this Instrument shall be in writing and deemed given when delivered personally, sent by receipt-confirmed facsimile, or sent by recognized overnight delivery service, addressed as set forth below, or five days after deposit in the U.S. mail, postage prepaid, and addressed as set forth below. Notice by any Party to any other Party shall be given to all Parties. Such notice shall not be effective until it is deemed to have been received by all Parties.

  Addresses for purposes of giving notice are set forth below. Any party may change its notice address by giving notice of change of address to the other Parties in the manner specified in this Section.

  Program Sponsor:

  The Keys Restoration Fund, Coastal Resources Group, Inc., PO Box 5430, Salt Springs, FL 32134-5430

  ACOE and IRT:

  District Engineer, Jacksonville District - Regulatory Division, U.S. Army Corps of Engineers, 701 San Marco Blvd., Jacksonville, FL 32207

  Mr. Ron Miedema, U.S. Environmental Protection Agency, 400 North Congress Avenue, Suite 120, West Palm Beach, Florida 33401

  Dr. Constance L. Cassler, U.S. Fish & Wildlife Service, 1339 20th Street, Vero Beach, Florida 32960-3909

  Ms. Connie Bersok, FL Department of Environmental Protection - Mitigation Section, MS 2500, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400

Ms. Jocelyn Karazsia, NOAA, 400 North Congress Avenue, Suite 120, West Palm Beach, Florida 33401

Ms. Joanne Delaney, NOAA/Florida Keys National Marine Sanctuary, 33 East Quay Road, Key West, Florida 33040

Mr. Michael Roberts, Environmental Resources, Monroe County Growth Management, 2798 Overseas Highway, Suite 400, Marathon, Florida 33050

Mr. Stephen Werndli, NOAA/Florida Keys National Marine Sanctuary, P.O. Box 1083, Key Largo, FL 33037

Mr. Gus Rios, FL Department of Environmental Protection, South District Marathon Office, 2796 Overseas Highway, Suite 221, Marathon, Florida 33050

- Counterparts - This Instrument may be executed in multiple counterparts, each of which shall be deemed an original and all of which together shall constitute a single executed agreement.

- No Third Party Beneficiaries - This Instrument shall not create any third party beneficiary, nor shall it authorize anyone not a Party to the agreement to maintain any action, suit or other proceeding, including without limitation, for personal injuries, property damage or enforcement pursuant to the provisions of this Instrument. The duties, obligations and responsibilities of the Parties to this Instrument with respect to third parties shall remain as otherwise provided by law in the event this Instrument had never been executed.

- Availability of Funds - Implementation of this Instrument by the IRT is subject to the requirements of the Anti- Deficiency Act, 31 U.S.C. § 1341, and the availability of appropriated funds. Nothing in this Instrument may be construed to require the obligation, appropriation, or expenditure of any money from the U.S. Treasury. No agency of the IRT is required under this Instrument to expend any appropriated funds unless and until an authorized official affirmatively acts to commit to such expenditures as evidenced in writing.

- No Partnerships - This Instrument shall not make or be deemed to make any Party to this Instrument an agent for or the partner or joint venturer of any other Party.

- Governing Law - This Instrument shall be governed by and construed in accordance with the Clean Water Act, 33 U.S.C. § 1251 *et seq*., and other applicable federal and laws and regulations.

- Headings and Captions - Any paragraph heading or captions contained in this Instrument shall be for convenience of reference only and shall not affect the construction or interpretation of any provisions of this Instrument.

8. References

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9. Signatures

Keys Restoration Fund/Coastal Resources Group, Inc.

By: Roy R. Lewis III Date: 6/28/2013

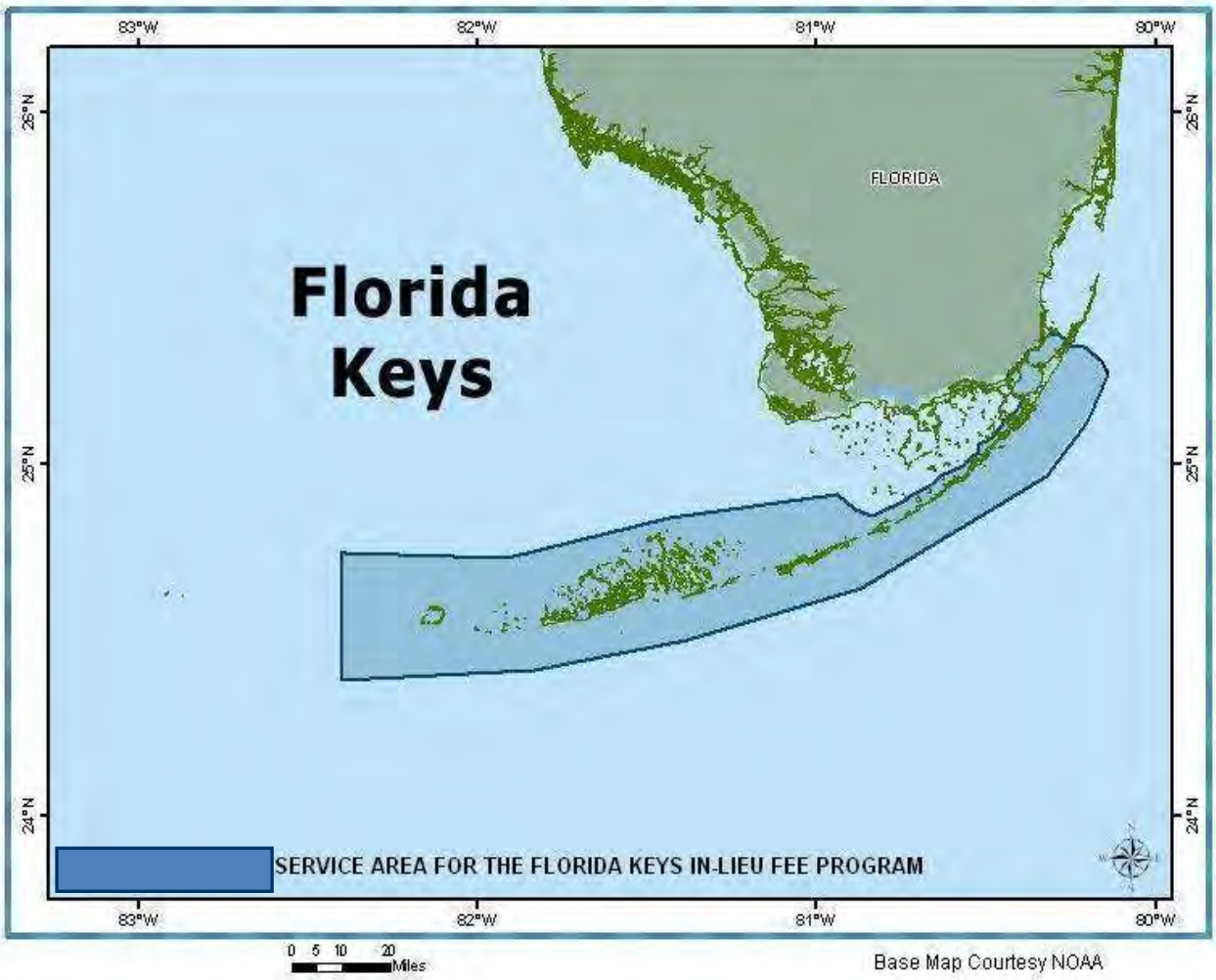
Its: President, Roy R. Lewis, III

U.S. Army Corps of Engineers:

By: for D W Kriiard Date: 7/1/2013

Its: District Engineer

Figure 1. Service Area for the Keys In-Lieu Fee Mitigation Program.



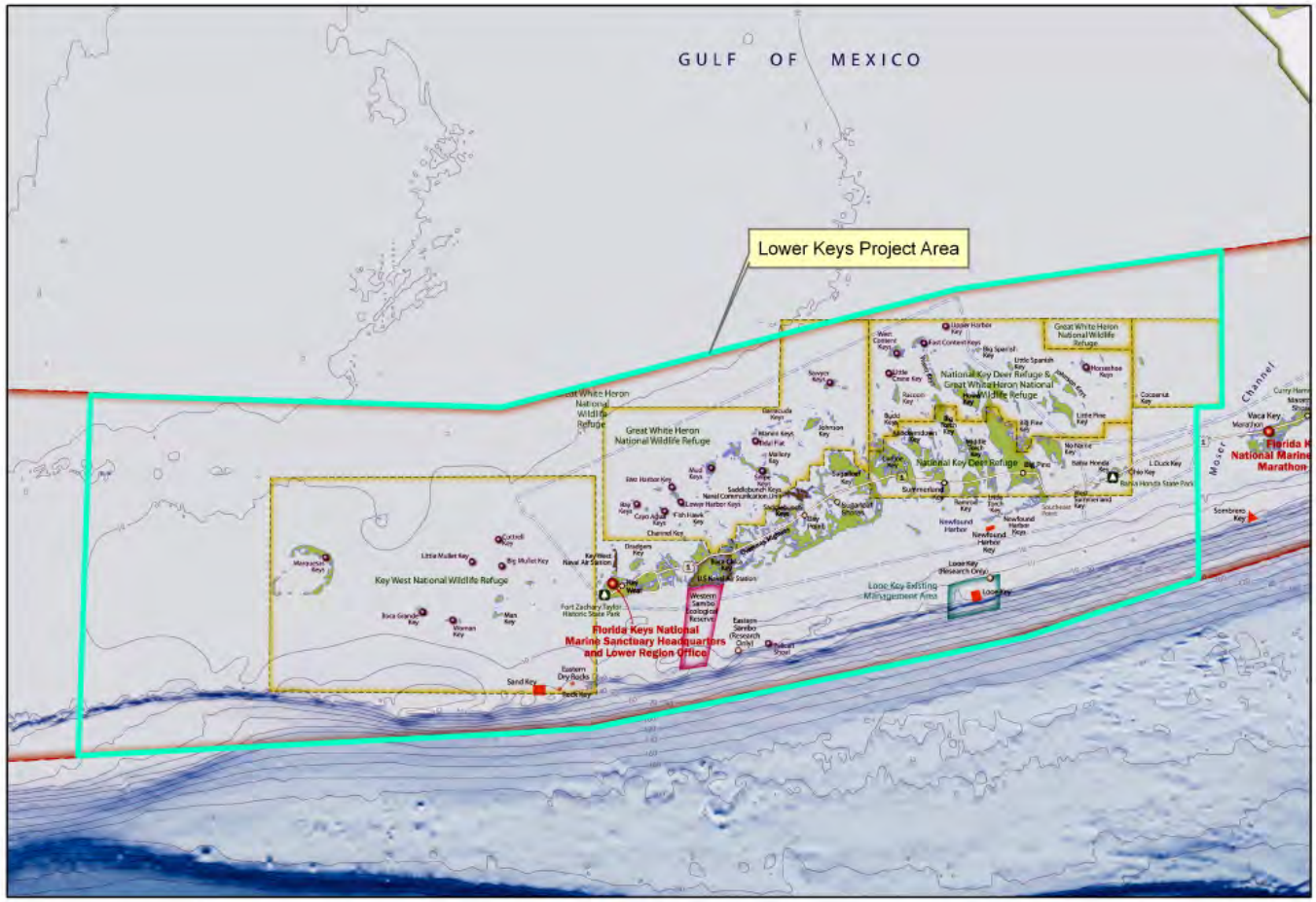


Figure 2. Lower Keys Project Area of the Florida Keys In-Lieu Fee Mitigation Program Service Area
Base Map Provided by the Florida Keys National Marine Sanctuary
Project Area Map Prepared by C. Kruer/Keys Restoration Fund
May 2013

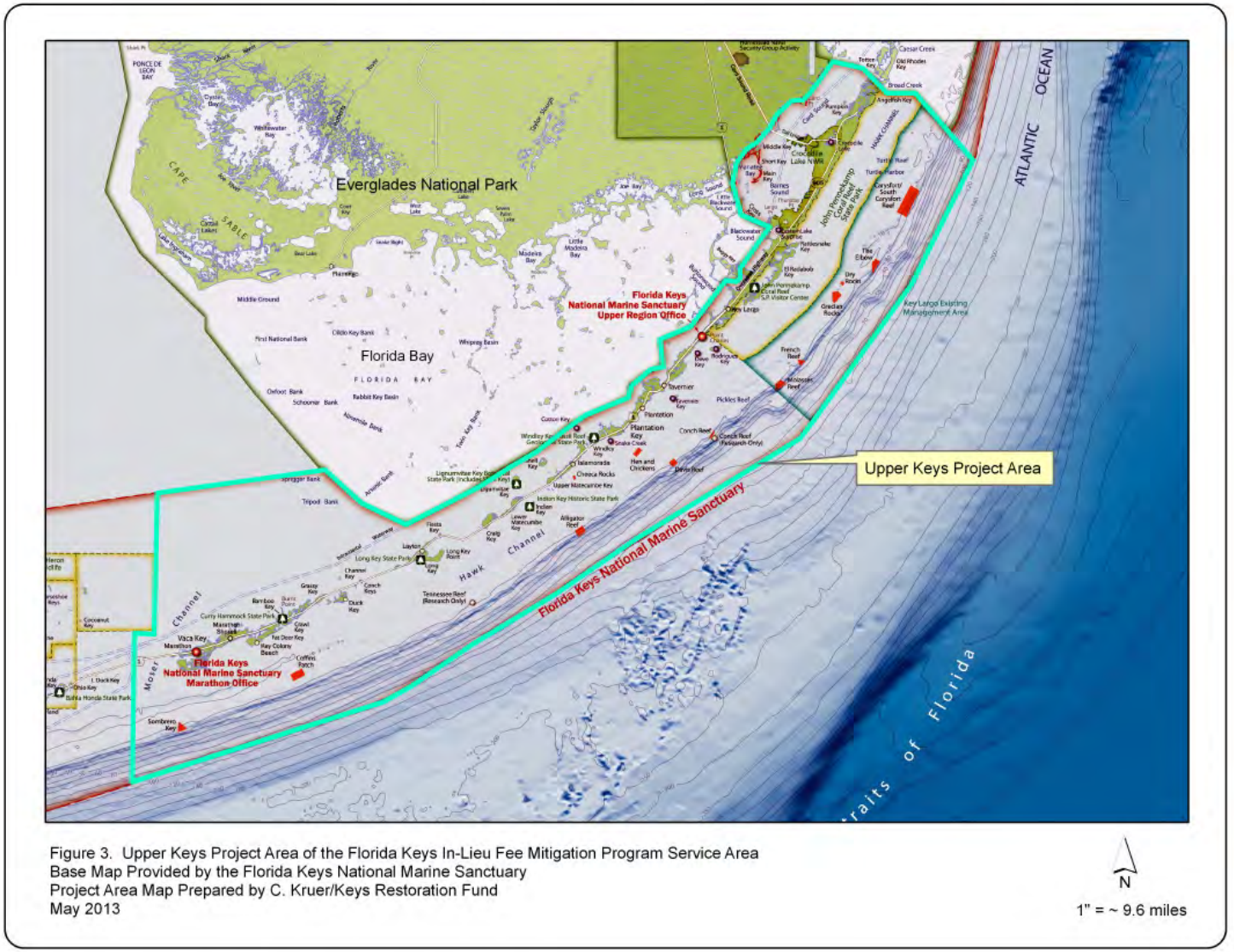


Figure 3. Upper Keys Project Area of the Florida Keys In-Lieu Fee Mitigation Program Service Area
Base Map Provided by the Florida Keys National Marine Sanctuary
Project Area Map Prepared by C. Kruer/Keys Restoration Fund
May 2013

APPENDIX A

Current Proposed Projects of the Florida Keys ILF Mitigation Program

1. Wetlands Restoration - Upper Keys Project Area

Crane Point Hammock Hydrological Enhancement Project (formerly Rachel Key Restoration Project)

Background - This project was originally proposed for mitigation funding by the Keys Environmental Restoration Fund (KERF) to the Army Corps of Engineers (ACOE) in about 2004 and at that time both culverting and bridging, as well as large-scale dredging to re-establish historic tidal channels and facilitate flows were discussed. A hydrological study had been conducted by Paul Lin and Associates in October, 2002. Crane Point Hammock is a privately owned parcel on the Gulf shoreline of Marathon known as the Crane Point Museum and Nature Center managed by the non-profit Florida Keys Land and Sea Trust (Figure 1). Communication with the owners in 2005 led to a letter agreement for KERF to proceed with project design and possible implementation. Dated July 27, 2011, Hydrologic Associates U.S. A., Inc. prepared a report to KERF on the "feasibility of culvert installation for wetland enhancement" at Crane Point Hammock. That report is attached here.

Project Design and Approximate Costs - Hydrologic Associates presented a minimal proposal to place 3 new 12" culverts under the easternmost road and 2 new 12" culverts under the westernmost road to restore tidal flows to the interior wetlands, approximately 10 acres in size and composed primarily of mangroves. The Sponsor will review all information acquired to date, conduct additional field reviews and surveys, coordinate with the landowner, and recommend to the ACOE and the Interagency Review team (IRT) a Mitigation Project Plan to accomplish the project goal of re-establishing the tidal flows and flushing and the marine habitat values of the interior wetlands at Crane Point Hammock. It is estimated that without large scale dredging the overall project costs with full cost accounting and long-term site protection and management plans in place will cost $100,000 to $200,000.

Figure 1. Location Map
Crane Point Hammock Hydrological Enhancement Project
Marathon, Monroe County, FL
2010 aerial photograph
Map by C. Kruer/Keys Restoration Fund

2. **<u>Wetlands Restoration - Lower Keys Project Area</u>**

<u>Bahia Honda State Park Wetlands Restoration and Enhancement Project</u>

<u>Background</u> - This project at Bahia Honda State Park was originally proposed to the ACOE for funding in the KERF April 2007 Work Performance Report and included the following:

Proposal for New Wetland Restoration Project at Bahia Honda State Park - *With the transfer of ownership of the Big Pine Boat Basin to Monroe County, that restoration project is no longer a possibility. I would like to propose moving the $349,794.70 to a new project at Bahia Honda State Park. Bahia Honda actually has 2 separate wetland restoration proposals that would be combined into a single project. The first, labeled by the Park as "Project 1" on the Florida Ecological Restoration Inventory, would entail installation of a culvert under an existing paved park road in order to re-open an impounded wetland area. The project would directly restore 1 acre of wetland, with enhancement to 2 acres. Preliminary work would involve a consultation with a hydrologist to determine best placement for and size of culvert needed to restore maximum water flow. The Park estimated a project cost of $100,000 in 2004. The second restoration need at Bahia Honda is referred to as "Project 6" on the Florida Ecological Restoration Inventory. This project consists of removal or scrapedown of an artificial berm (formerly a Monroe County dump site) which is impounding a 3-acre wetland and tidal lagoon. 3 acres of wetland restoration, and the additional 3 acres of enhancement would result. Cost estimate by the Park in 2004 was $25,000. Preliminary work to be done would include testing for soil contaminants, which may increase the cost of the project slightly.*

And in 2009 KERF prepared the following expanding the proposal and project to 3 different wetland sites (2 culvert sites and 1 wetland restoration site) within Bahia Honda State Park:

KERF: This project will consist of 3 components (see Figure 1):

1. *Scrapdown/fill removal from 1.3 acres of historic mangrove wetlands on the north side of Bahia Honda Key.*
2. *Possible culverting under the road on the north side of Bahia Honda to improve circulation to interior mangrove wetlands.*
3. *Restoring some flow to an impounded 2.5 acre wetland on the south side of Bahia Honda.*

Fill removal from the northern section will be straightforward; however, we are interested in improving water flow to that and the remainder of the northern wetlands by installing culverts (number and placement to be determined). Current road surface elevation is not substantial; therefore culvert (or other solution) would need to have a low profile. I think they make 12" tall precast culverts that are reinforced and can be driven over without fill cushioning. Whatever we do should be large enough and durable enough that it won't collapse or become blocked under normal conditions.

N

The impounded wetland to the south has a culvert underneath the roadbed to drain it, but the culvert has become blocked and no longer functions. Salinities move toward fresh conditions during the rainy season and become hypersaline during the dry-season drawdown. The most likely durable solution here would be replacement of the existing blocked culvert with box culverts. However, I'm concerned that this really won't do much for the health of the wetland except during extreme storm events when a culvert would allow storm surge to drain, thereby reducing hypersaline conditions during dry-season drawdown. I also don't see possibilities for another solution.

Figure 1 - BAHIA HONDA WETLAND RESTORATION AND ENHANCMENT PROJECT (by KERF)

Northern section of road for possible culverting

1.3 acres of fill in historic mangrove wetlands

Existing blocked culvert under existing road

2.5 acre impounded wetland

Project Design and Approximate Costs - In January, 2010, Hydrologic Associates U.S.A., Inc. prepared 3 individual reports for KERF incorporating preliminary designs for the 3 different aspects of this project, and estimating costs for 2 of the 3. Project accomplishments potentially include:

Tidal wetland restoration through fill removal - approx. 1.3 acres
Tidal wetland hydrologic enhancement through culvert placement north of US 1 - 16 acres
Tidal wetland hydrologic enhancement through culvert placement south of US 1 - 2.5 acres

Coastal Resources Group ("Sponsor") will review all information acquired to date, conduct additional field reviews and surveys, coordinate with the landowner (State of Florida), and recommend to the ACOE and IRT a Mitigation Project Plan to accomplish the project goals of wetland restoration and enhancement. It is estimated that the overall project (3) costs with full cost accounting and long-term site protection and management plans in place will cost $200,000 to $250,000.

3. Seagrass Restoration - Upper Keys Project Area

Lignumvitae Key Seagrass Restoration Project

Background - KERF has had a long standing involvement with seagrass restoration at what is now formally known as the Lignumvitae Key Botanical State Park due to the serious and ongoing boating impacts to the extensive shallow water seagrass habitats within the Park boundaries. Pioneering work in the use of scar and blowhole fill, bird stakes, nutrient additions and seagrass planting in scars was conducted by the original KERF program in conjunction with others in the 1990s. This involvement with the Park continued with additional work in 2005 (Phase I of new project) and early 2013 (State funds only) and with current proposals to work cooperatively with the Park staff. A Phase II project to work on scattered scars and impact sites was delayed. Following are excerpts from KERF proposals to use mitigation funds to perform additional work:

KERF June 2007 Work Performance Report:

Lignumvitae Seagrass Restoration, Permit and Violation Fees (ACOE and State Funding)
The ACOE and State approved this project for funding in October of 2003. The Lignumvitae Key Submerged Lands area is tricky to navigate, and prop scarring is frequent and often severe. This area is managed by the State of Florida DEP Parks and Recreation Division, and in 2003 they approached the Fund to propose a cooperative restoration effort, using both Fund fees and awards to the DEP from groundings on site. Lignumvitae has drafted a management plan for the area, and prop scars and groundings are prioritized according to severity of damage/need to repair.

2005 Phase I: *The first restoration project was carried out in January and February of 2005. Year 4 monitoring was scheduled for May of 2009*.

KERF November 2007 Work Performance Report:

2008 Phase II: *KERF is currently working on the scope of work for a second phase of restoration at Lignumvitae which will be done in the winter of 2007/2008. The work will involve both*

topographical restoration, planting of seagrass, and bird staking.

Lignumvitae Seagrass Restoration, Violations & Fines (ACOE and State Funding)
Both the ACOE and the State desired a seagrass restoration project that could direct fines and penalties resulting from submerged aquatic violations toward repairing submerged violations or un-permitted activities. A large number of the prop scars at the Lignumvitae Key Submerged Lands Management Area occur without the violator ever being known. Lignumvitae documents and assesses these "orphan" scars just as they do known violator scars, but no damage assessment monies are available for their repair. For this reason, both the ACOE and the State approved the use of submerged aquatic violation fines and fees for the repair of these orphan scars (October 2003 MOU meeting).

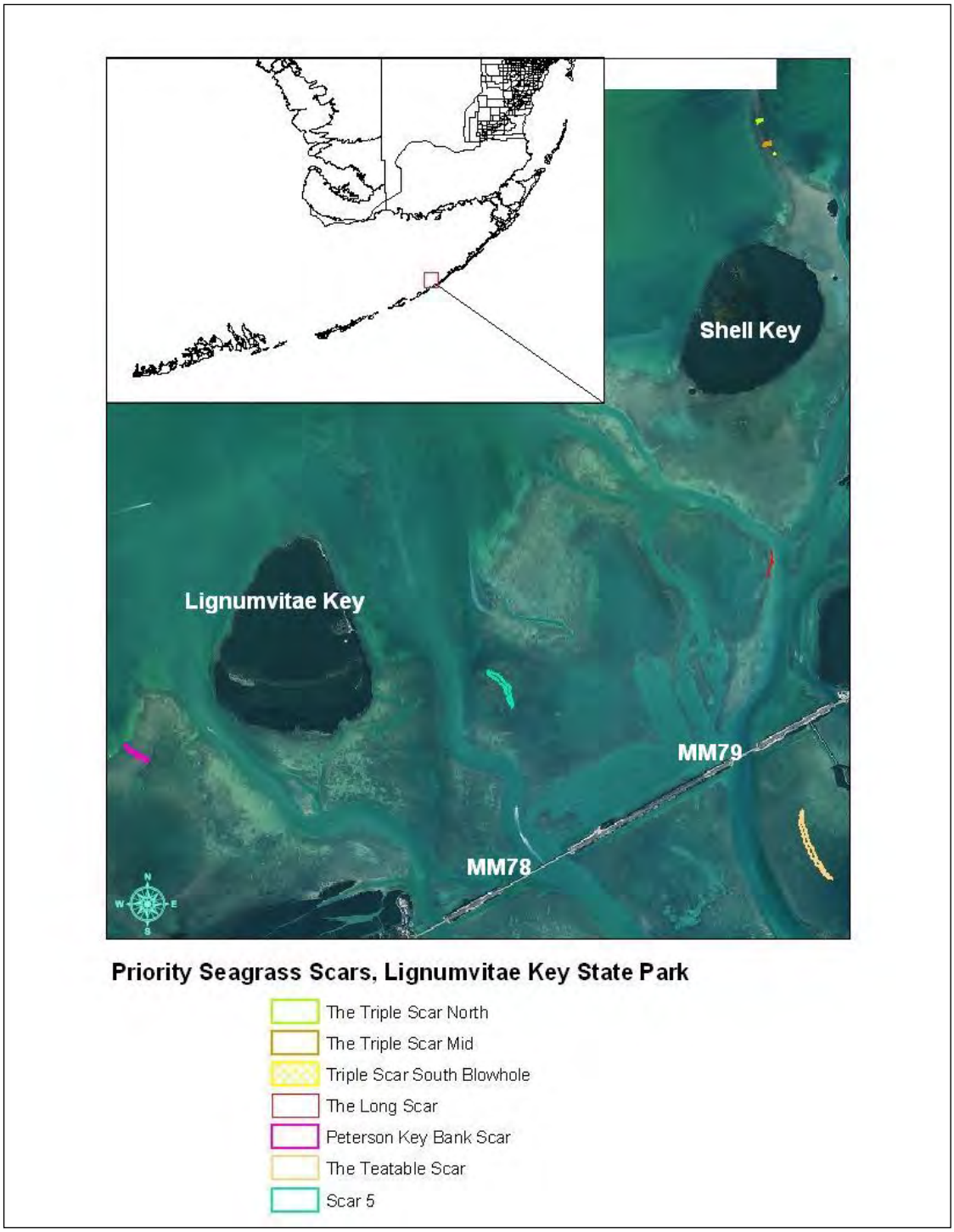
KERF April 2011 Work Performance Report:
Lignumvitae has drafted a management plan for the area, and prop scars and groundings are prioritized according to severity of damage/need to repair.

In about 2009 KERF prepared an undated "Draft Mitigation Plan" presumably for the Corps and the Park in an effort to expand on the planning for boat impact restoration at Lignumvitae, and also provided the following Table for the Park's review**.** The Peterson Key Bank Scar was filled using State funds in early 2013 and is being monitored by the Park. Presumably all other sites detailed here are still available for restoration work.

SCAR RESTORATION DETAILS, LIGNUMVITAE KEY STATE PARK - 2009

	Square footage	**Average depth**	**Cubic yards of fill needed**	**Stakes Needed**	**Planting Units Needed**
Triple Scar North	3,808.55	2.1'	296.2204	52	104
Triple Scar Middle	6,980.41	2.1'	542.9211	100	200
Triple Scar South	8,084.29	n/a	no topo required	yes?	none (already recruiting)
Triple Scar South Blowhole	609.493719	2.5'	56.43	10	20
The Long Scar	2,409.92	minimal		yes	probable
Peterson Key Bank Scar	38,845.98	5'	7,193.70	283*	566* (accomplished 2013)
Teatable Scar	137,672.53	6'	30,593.90	49	98
Scar 5	89,942.66	6'	19,987.26	TBD**	none required

* Cannot install this many stakes here at one time since there are others in the vicinity that need to be removed first.
**This will be a large array. Decision to place stakes on 2 or 3 meter centers will be made at time of installation based on the number of other stakes already installed in the vicinity.



Project Design and Approximate Costs - The Sponsor will review all information acquired to date, conduct additional field reviews and surveys, coordinate with the landowner (State of Florida), and recommend to the ACOE and IRT a Mitigation Project Plan to accomplish the project goal of seagrass habitat restoration. It is estimated that the overall project

costs with full cost accounting and long-term monitoring and management plans in place will cost $10/ft2.

4. **Seagrass Restoration - Lower Keys Project Area**

Lower Keys Seagrass Restoration Project

Background - This new project proposal is a continuation and extension of KERF's seagrass restoration work including boat impact sites initiated at Lignumvitae Key Botanical State Park in the 1990s. Extensive areas of seagrass habitats have been restored by KERF and others in the Keys since the 1980s and in addition to restoration of Keys shallow seagrass habitats through fill removal and backfilling of old dredged sites to mitigate for and offset permitted impacts, restoration of boat impact sites will also be reviewed for the Lower Keys Project Area. The following statement of this new Lower Keys project is excerpted from the KERF May 2012 Work Performance Report:

Lower Keys Seagrass (ACOE and State Funded)
The goal of the Lower Keys Seagrass project is to restore seagrass and submerged habitat within the waters of the lower keys. For purposes of this project, the lower keys area is defined as water south of Knights Key to Rebecca Shoal, within the boundaries of the Florida Keys National Marine Sanctuary. Audubon will work with representatives from the Marine Sanctuary and FDEP Coastal and Aquatic Managed Areas to prioritize suitable areas for restoration.

Project Design and Approximate Costs – The Sponsor will review all information acquired to date, assess lists of potential project sites, conduct additional field reviews and surveys, and recommend to the ACOE and IRT a Mitigation Project Plan to accomplish the project goals of seagrass habitat restoration. It is estimated that the overall project costs with full cost accounting, long-term monitoring, and site protection and management plans in place will cost $10/ft2.

5. **Service Area Mitigation Project Development**

Background - In order to offset development impacts to wetland and shallow water seagrass habitats beyond the 4 projects addressed above it will be necessary to locate and assess additional potential projects within the Service Area. As discussed in this Instrument, planned is the location and design of additional wetland and seagrass projects in both the Lower Keys Project Area and the Upper Keys Project Area. Extensive public lands in the Keys, along with ongoing acquisition by various government programs, present opportunities that need to be identified and assessed for an enduring mitigation program. As well, the availability of land acquisition funds from mitigation fees provides opportunities for acquisition of disturbed private property to facilitate and allow wetland restoration and enhancement work. Where possible, coordination with agencies, conservation entities, and the public will occur for collaborative, community-based efforts that may provide some level of matching funds.

Project Design and Approximate Costs - Coordination with members of the IRT, Keys land management agencies, conservation entities, the public, and others as appropriate, will take place to solicit suggestions for restoration and enhancement projects that can be prioritized for assessment based on field reviews. Past reviews by the previous ILF Program and the working group of agencies and organizations will be utilized to identify possible projects. Two reports (wetlands and seagrasses) reviewing potential mitigation project sites and including summary information (habitats, size, environmental benefits, ownership, approx. costs, etc.) will be prepared for submittal to the IRT. Anticipating that funds from previous fees will be available following completion of the mitigation projects described in #s 1-4 above, these additional Keys projects will be used to provide compensation for impacts associated with prior wetland and seagrass impacts, as well as for new permitted impacts.

As part of the ongoing ILF program related to project implementation, it is anticipated that meetings can be held, potential projects identified and preliminarily assessed and summarized, and 2 reports prepared in the first year of the new ILF Program at a cost between $50,000 and $100,000.

APPENDIX B

Proposal for Additional Work Needed for New Keys ILF Mitigation Program

As stated in the discussion sections of the 2008 Final Rule for Compensatory Mitigation (DOD and USEPA 2008), some of the noted shortfalls of past ILF projects included "fee credits are often too low" and "lower or looser standards than mitigation banks" (page 19599). Our preliminary review of the information in hand indicates to us, as we have previously noted to the ACOE, that the previous KERF credit fee structure, particularly for seagrass projects, seems very low for the types of projects and associated costs we are familiar with, especially when combined with additional requirements of the 2008 Mitigation Rule. We have reviewed and provided to the Corps the Kenworthy et al. (2013) publication reporting very high costs in the range of $10-20 per square foot for seagrass restoration, as well as the final KERF seagrass restoration project at Lignumvitae Key State Botanical Site (Hobbs 2013) which shows costs over $40 per square foot, mainly attributable to the extensive fill work needed. We anticipate the need to very carefully analyze the existing data for previous KERF seagrass and wetland restoration projects in order to accurately determine what past costs have been, what they covered and what did they not cover, and based upon this what future costs for successful projects, including all the monitoring and success criteria determinations and long-term management might be as required by the 2008 Rule.

The same need for investigation applies to how successful past seagrass and wetland projects have been, and what potential projects currently exist in the Keys (seagrass and wetland) to build on those successes, and learn from failures. Our preliminary review of available documents indicates that monitoring and reporting over a sufficient time to determine functional success of past projects has been very spotty. As we propose future projects we need to know what worked and what did not. Again, a lot of work is needed to improve upon the existing data base.

Based on our review of historical KERF credit fees, the additional requirements of the 2008 Final Rule, and our professional judgment we believe we have adequate preliminary information to propose per credit (UMAM) costs for our initial efforts, but going forward the Sponsor needs to undertake and complete four tasks for the new Keys Restoration Fund (KRF) ILF Mitigation Program. Any future proposals to revise credit fees and costs would be based upon these proposed analyses. As Program Sponsor and to address these very real needs of the new Keys ILF Program we propose:

Task 1 - A report after the examination and organization of all of the previous ILF Program files and data (12 boxes provided to the Corps by KERF, KERF DVD file information, ACOE scanned documents, maps and photography, 25 Year Summary Report, Kruer files, etc.) that will provide summaries and conclusions regarding costs (updated to 2013 costs), and that will identify and propose projects for site assessments. In addition, we propose to access and review comparative information from the Florida Keys National Marine Sanctuary Program and other sources for Keys seagrass restoration projects, to assemble a robust data base on both costs (updated to 2013) and reports of success or failure of the various types of historical seagrass restoration efforts in the Keys;

Task 2 - Two reports (one for wetland habitats, one for seagrass habitats) of the site assessments providing suggestions for improvement of monitoring future projects, confirm existing conditions and update where possible success or failure of various past KERF projects, and define efforts needed to conduct future KRF projects in compliance with the 2008 Rule;

Task 3 – Coordination with the IRT for two meetings. The first meeting is proposed to take place six months from the date of the signed instrument and will be a comprehensive meeting in the Keys with all Keys Restoration Fund (KRF) staff. Reviewed will be the project plans, designs, and estimated costs for the Bahia Honda and Crane Point Hammock wetlands restoration projects based on the information provided in Appendix A, KRF field reviews, and discussions with the property owners and managers. Provided also will be updates on plans for the Lignumvitae Key and Lower Keys Project Area seagrass restoration projects. The second meeting with the IRT will be scheduled at one year and will be an update by Mr. Lewis on KRF progress and the credit fee rate structure. Both meetings will include preparation and distribution of meeting agendas and minutes by the Sponsor.

All reviews, assessments and reports related to Tasks 1-3 above would be completed with the first year of operation of the KRF ILF Mitigation Program based on a final proposal for scheduling and budgeting to be submitted to the Jacksonville District of the Corps.

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