Comment on Revisions of Boundaries, Regulations and Zoning Scheme for Florida Keys National Marine Sanctuary

June 29, 2012

To Whom It May Concern:

The Alex C. Walker Foundation, Georgia Aquarium, the Property and Environment Research Center (PERC), 19 endorsing organizations and 7 individuals thank you for this opportunity to comment on the Florida Keys National Marine Sanctuary (FKNMS) reevaluation of boundaries, regulations and zoning, as announced in the *Federal Register* on April 19, 2012. Our organizations are actively working with conservation groups and private groups in the Florida Keys and Florida more broadly with the objective of developing new models that could provide sustainable long-term financial sources to support ecosystem-level restoration of the marine environment.

In February 2012, we hosted the workshop "Market Approaches to Coral Reef Restoration – Investigating the Viability" that brought together approximately 30 professionals from the conservation, business, scientific, and government communities to discuss the application of market-based conservation programs to marine resources such as coral reefs. The workshop was subsequently highlighted by *Nature* in the article "Conservation meets capitalism in Florida" (http://www.nature.com/news/conservation-meets-capitalism-in-florida-1.10101). We have also actively engaged the following organizations, among others, in exploring ways to develop new sources of capital for ecosystem restoration: Coral Restoration Foundation (CRF), Georgia Institute of Technology, Environmental Defense Fund, Florida Atlantic University Harbor Branch, Florida Keys Dive Center, Florida Fish and Wildlife Conservation Commission, Keys Association of Diving Operators, Mote Marine Laboratory, The Nature Conservancy (TNC), National Oceanic and Atmospheric Administration (NOAA), Nova Southeastern University, Restore Capital, Royal Caribbean Cruise Lines, University of Miami Rosenstiel School of Marine and Atmospheric Science and University of South Florida.

We propose to develop markets for ecosystem restoration activities in the FKNMS to provide sustainable funding solutions that can endure beyond the current limited duration approaches, such as NOAA's TNC-administered coral restoration partnership grant funded by the American Recovery and Reinvestment Act (ARRA). While we have great respect for the restoration strategies developed by the ARRA partnership non-governmental organizations (NGOs), unfortunately these grants are time-limited. To confront the challenge of inconsistent fund flows provided by grants and to support long-term coral restoration and ecosystem recovery, we believe that competitive markets for restoration in the marine environment are needed, using approaches that have generated environmental and economic returns for numerous terrestrial resources. Four examples of terrestrial successes are:

- The Red Hills of Florida is proving to be an exception to sagging quail numbers in the Southeast. Since 1980, bobwhites outside the plantation community have been declining. But the coveys per hour and the number of quail found on the well-managed plantations of the Red Hills have been consistent, if not increasing--thanks to private property rights and markets for quail hunting (http://www.perc.org/articles/article824.php).
- In 1990, less than 20 white rhinos remained in South Africa. By 2010 their numbers had grown to more than 20,000. Contrast these numbers with the black rhino, which lives primarily in Kenya, Tanzania, and Zambia. In 1960 an estimated 100,000 black rhinos roamed across Kenya and the surrounding region, but by the 1990s poachers had reduced their numbers to less than 2,500. What's the difference? South Africa created markets for rhino conservation (http://www.perc.org/articles/article1409.php).
- Sustainable Harvest International's crop commercialization and market development initiative to create economic incentives for rural farmers to preserve tropical forests (http://walker-foundation.org/net/org/project.aspx?projectid=93032).
- The Paiter-Surui tribe of indigenous people who harnessed an innovative forest carbon project to shield their territory from illegal logging and preserve their chosen way of life by becoming the first indigenous tribe in the Amazon and globally to earn carbon credits under internationally

recognized standards for keeping carbon locked in trees (http://www.forest-trends.org/announcements.php?id=232).

Given the continuing weakness in the global economy and the recent calls for austerity in government budgets, we propose that market-oriented strategies deserve consideration and pilot testing. Recent cuts in the NOAA budget for coastal conservation have limited funding to only those projects with the highest priority and that provide essential services. Additional proposed cuts in the NOAA budget (e.g., Aquarius Reef Base) are a further example of the uncertainty inherent in relying on such funding mechanisms. ARRA funding provided one-time support to invest in the infrastructure and development of coral nurseries.

Coral nurseries established through the ARRA grant have proven to be highly successful at producing significant numbers of coral colonies for species that are threatened or endangered. For example, CRF alone has over 25,000 colonies in their nurseries, even after out-planting approximately 1,500. Now that coral nurseries have demonstrated proof-of-concept, the challenge is to move to ecosystem-scale restoration of reefs. Given the already degraded condition of many marine resources in FKNMS, active ecosystem-scale restoration must become a prominent, if not dominant, activity in the years ahead if the Sanctuary is to achieve the purpose for which it was established.

To accomplish large-scale restoration, substantial funding is needed now to rebuild degraded ecosystems and ensure the long-term viability of reefs and other habitats in the FKNMS. Market-based strategies have the potential to generate the necessary level and duration of funding. However, the open-access nature of FKNMS currently provides no opportunity for private investment because there is no mechanism through which to generate revenues from the on-site benefits created by an enhanced/restored marine ecosystem. *Allowing users to be charged for the exclusive right to access certain areas of the reefs to which they previously had unlimited, open, free access, plus a minimum level of tenure security would allow new sources of capital to be applied to reef ecosystem restoration.*

Progress on developing sustainable financial strategies has been limited to this point by the lack of enabling regulations that would allow non-traditional, market-based conservation initiatives to fund marine ecosystem restoration work. To address the situation and expand the funding opportunities beyond traditional grants and donations, we recommend that the FKNMS consider the topic of exclusive/restricted access, through zoning, in the Sanctuary Advisory Council (SAC) working group format with all affected parties at the table. As part of its marine zoning and regulatory review, NOAA's FKNMS should consider at least the following potential options:

1. **Update the value charged by NOAA for permitted damage to coral in the FKNMS**

   Code of Federal Regulations (CFR) Chapter 15 section 922.49 titled, "the notification and review of leases, licenses, permits, approvals, or other authorizations to conduct a prohibited activity" allows NOAA to charge companies or individuals that receive construction permits in the FKNMS a fee (technically a donation) to mitigate for corals affected by activities that cannot be avoided or minimized. This fee, set in 2006, is presently $1.06 per square centimeter of affected coral. This charge provides funds for maintenance and upkeep of the existing coral nursery structures (e.g., Key West rescue nursery co-located at NOAA's docks) including basic husbandry and care for corals in the nursery. NOAA uses what it believes to be the best information available on the costs to raise corals in a nursery environment to set the mitigation fee. The mitigation fee is typically a condition that is added to construction permits through the use of this letter of authorization that is legally binding.

   The six-year old program seems to have gained acceptance from the local community as a reasonable way to protect coral that would otherwise be lost. There are several potential ways that the coral mitigation program could be enhanced to increase revenues for NOAA and therefore enhance restoration values.

a. Update the mitigation fee charged by NOAA. Costs are estimated based on how long a coral is going to be in nursery (our understanding that a six-month assumption is typically used). The $1.06 per square centimeter calculation was based on coral production costs in 2006 and does not account for subsequently developed efficiencies in coral nursery operations (likely lowering the cost) or increasing scarcity values for threatened corals (likely increasing the cost).
    i. NOAA should update these production cost values and then apply a multiplier (e.g. production cost x 150%) to account for the scarcity value of threatened/endangered corals. Additionally, the value should also include some factor to account for the less-than-100% survivorship of outplanted coral colonies. In other words, each square centimeter of affected coral should be replaced by a higher amount of coral in the nursery in order to achieve the targeted square centimeter coverage area of successful outplant to the reef (e.g. place 3 square centimeters of coral in nursery for every 1 square centimeter of planned successful outplant). Precedence for this may come from the processes and replacement factors used for wetland mitigation.
    ii. Extensive cost data is available from ARRA-funded nursery operators to assist with updating the mitigation fee. For example, NOAA's own rescue nursery has quarterly reports with statements of work, maintenance, cleaning and data collection associated with the coral nursery.
    iii. Ensure that the fee includes the costs of actually outplanting the corals or monitoring afterward, not just time in nursery.
    iv. NOAA should consider building in aspects of the Natural Capital Declaration announced at the RIO+20 Conference in June 2012 whereby companies and countries will begin to use accounting methods for ecosystem services (see *BusinessWeek* "A Kinder, Gentler – and Greener – GDP Number", 6/26-7/1 edition, http://www.businessweek.com/articles/2012-06-21/a-greener-way-to-calculate-gdp#p1).
    v. Consider changing the scale of measurement used for expected impacts. One square centimeter is a very fine scale for assessment.

b. Mandate that NOAA staff biologists (or contractors) conduct pre- and post-construction assessments. Additional costs for these assessments should be added to the annual operating budget or be added to the mitigation fee calculation (as described in #1A). It is our understanding that post-construction surveys are irregularly completed. These are essential to analyze the effect on the corals in construction buffer zones and ensure that work was completed as permitted.

c. Consider charging mitigation fees post-construction to "true up" real costs for administering a project and managing the nursery vs. estimated costs at the beginning of the project. Under the current approach, NOAA essentially is accepting all unanticipated costs (risks) to corals for permitted construction. Our understanding is that no such fee has ever been charged post-construction.

d. Establish maximum levels of allowable impact as part of letters of authorization.

2. **Establish limited-access reef restoration zones**

Whether entirely new restoration zones or existing zones converted to restoration areas, cordon off special restoration sites and allow only permitted or certified restoration practitioners (please see #3 for more details about practitioners) and water usage industry organizations (e.g., dive shops, snorkel shops, recreational and commercial fishing groups) to access the site(s). Restoration practitioners and water usage industry organizations would charge visitation fees for these sites in return for their investment in the restoration efforts. Such an approach would allow NOAA to facilitate restoration of the reef ecosystem (including, but not limited to, coral nurseries, coral outplanting, *Diadema* urchin and fish reintroduction, removal of invasive species and marine

debris and other activities that may increase the success of restoration and overall health of the area) while allowing participants to observe and be a part of reef restoration. This strategy likely would be consistent with legislation and regulations in accordance with subsection 304(b)(1) of the National Marine Sanctuaries Act and the resolution prohibiting Sanctuary fees for allowed public uses because neither NOAA nor the State of Florida would be administering the fees. In the past, FKNMS-based dive shops and the Tourism Development Council have been able to circumvent this prohibition by creating voluntary fees to access sites, as in the case of the *USS Spiegel Grove*.

a. To address concerns by the public about loss of access to previously "free reef resources," such restoration zones could be designed to be temporary in nature, reverting back to previous level of access (i.e., original level of zoning, no- or reduced-fee) after the site achieved certain ecological success criteria measured against baseline pre-project monitoring (e.g., species diversity, population size and genetic diversity of select species, live stony coral cover, metrics of three-dimensional structure or benthic complexity, and resilience to natural disturbances, such as storms and very warm or very cold conditions). It is important to note that a minimum period of time of exclusive access should be guaranteed to the organization completing the restoration activities so that they have the opportunity to offset their costs of investing in the project. An additional consideration may be that the organization(s) that complete the restoration work be granted a percentage of the long-term income derived from the restored site.

   Reversion coupled with carefully crafted monitoring may help increase understanding of the contribution of various anthropogenic stresses to the restored natural resources. Post-restoration reversion could be entire or partial. Entire reversion may result in reestablishment of regulations according to the current FKNMS zoning plan, matching regulations in the restoration area to analogous areas.

b. To offset NOAA management costs associated with the new zones, NOAA could auction access rights to restoration zones by category, such as certified restoration practitioners/coral nursery operators and water usage industry organizations (e.g. NOAA Blue Star-recognized dive shop), among others. The auction should be open to NGOs and for-profit entities alike. NGOs could be competitive with for-profit entities by using their tax deductible donation status to partner with corporations interested in their cause to cover the auction costs, jointly bid, etc.
   i. The auction mechanism has to be determined based on restriction on "no user fees" which might prevent NOAA from auctioning. There may be precedence by categorizing the fee as a special product or service. NOAA's general policy is to recover the full cost of providing a special product or service unless specific legislation authorizes recovery of a lesser or greater amount (from Chapter 9 – fees for special products or services; http://www.corporateservices.noaa.gov/~finance/documents/CHAPTER9Final.pdf). For example, to offset costs when a movie is filmed in FKNMS. If this is not feasible, one alternative would be having the practitioner assume the management activities under NOAA's supervision. Another option is having the practitioners manage the auction activity and limiting auction participants to water usage industry organizations, for example.

c. Water usage industry organizations making use of coral restoration zones should be required to participate in NOAA's Blue Star program or a more stringent to-be-developed environmental education and enforcement program. Furthermore, in-water guides should be required for all recreational activities, with a maximum ratio of guests-to-guide to be determined. Guides may need to go through a certification snorkeling, diving or fishing course, which could be a newly developed component of the Blue Star program. This concept is similar to ratios that the SCUBA certification agency Professional Association of Diving Instructors (PADI) sets for the number of SCUBA students to diving instructor.

d. Additional restrictions, such as no take, no bottom-contacting fishing gear, and no anchoring, should also be required for the restoration zone to minimize damage to benthic organisms and facilitate ecosystem recovery. A permanent buoy system should also be incorporated to reef restoration zones and be maintained even after a reversion. These strategies are needed for real ecosystem restoration to take place.

3. Develop enabling regulations to help establish a market for ecosystem restoration

Our understanding is that only NGOs are currently permitted for coral nurseries and coral outplanting efforts, and the Sanctuary has been hesitant to consider issuing additional permits because they are comfortable with the number of market entrants. To achieve the scale of activity required for ecosystem restoration, expand the number of participants in the marine ecosystem restoration space by considering the following actions:

a. Develop a certification program for restoration practitioners. The criteria should be developed by working with CRF, TNC and other ARRA-partner NGOs who pioneered the practice of coral restoration. Dive certification agencies (e.g., PADI, Scuba Schools International -SSI, National Association of Underwater Instructors - NAUI) may be good candidates to operate the programs since they have experience in many aspects of curriculum development and insurance considerations. For example, CRF has worked with PADI on a coral restoration specialty which could be expanded to certify professional restoration practitioners. Certification should be achievement-based, not experiential.

   Reduce the level of complexity involved in getting permits to place nursery-raised corals back out on reefs TNC and CRF individually went through a staggering effort to receive permission to outplant corals grown in nurseries. Now that the various federal, state and local regulating agencies have become comfortable with the concept of active coral propagation and outplanting, the permitting process can be simplified and shortened using a programmatic Environmental Impact Statement (EIS) and related streamlining frameworks. The current speed of the permitting process is far slower than the exponential growth rate of coral now demonstrated in nursery environments. Corals can be grown much faster than permits to place them on reefs can be obtained.

b. Expand the number of coral nursery permits beyond those held by current participants. Other individuals or organizations with a conservation focus, regardless of entity type and tax status should be able to participate. For-profit and developing hybrid organizations, such as Low-Profit Limited Liability Companies (L3Cs) and B-Corporations, should be allowed to participate in restoration activities along with NGOs through full management of their own, permitted, coral nurseries.

c. Allow nursery and outplanting permits to be tradable between holders of such permits. Like the NOAA-backed catch-share fishing program, such an approach would create a tradable incentive for nursery operators. For example, this could allow different operators to buy or sell nursery permits based on current funding levels, operational efficiencies, etc. Additionally, if a new group wanted to enter the market, they could purchase a permit from an existing participant, lowering their startup costs while recognizing, via cash payment, the efforts of the seller in restoring coral reefs in FKNMS. This program could be modeled on the existing buying and selling of permits (Marine Life endorsements that accompany a Saltwater Product License issued through the Florida Fish and Wildlife Conservation Commission) that occur between marine aquarium trade collectors operating in FKNMS. As part of the design of the tradable permits, measures should be taken to prevent monopolization where only one organization holds all permits. The intent is to prevent individuals/entities from being priced out of the market due to a situation such as market speculators acquiring all permits without the intent of participating in ecosystem restoration (i.e. only making money by buying a permit at a low

price and selling it at a high price without actually adding any restoration value in the interim).

d. Consider turning ecosystem restoration into ecosystem aquaculture wherein the aquaculture product is habitat/ecosystem service instead of fish or liverock.

4. **Consider allowing corals grown through nurseries to be sold through a limited market**

   As ARRA partnership NGOs have demonstrated, large amounts of coral tissue can easily be grown once nurseries have been established. Current understanding is that all corals grown in Sanctuary-permitted nurseries belong to FKNMS because broodstock corals were collected under a FKNMS permit after the Endangered Species Act (ESA) listing in 2006. Corals can be given away for free (with appropriate permitting), but a sale between a nursery operator and a private third party (e.g., hotel, cruise line, port, dive shop) cannot take place (other than for the three "K" genomes of coral held by CRF for which donations can be accepted). Allowing the sale of corals is a first step in establishing third-party coral mitigation banks, a developing market-based solution being considered by NOAA and the U.S. Coral Reef Task Force. Note that these banks are different than the simple fee for destroying/damaging coral described in #1.

In conclusion, we recognize that these four proposed strategies may be entirely new approaches in the marine environment. Nonetheless, achieving the goal of restoring and conserving the FKNMS ecosystem requires at least the consideration of new approaches that have the potential to achieve a scale that the *status quo* cannot. Our organizations are committed to the long-term restoration of reefs in Florida and beyond, and we would welcome the opportunity to join a SAC working group to address these suggestions in more detail.

Please direct correspondence about this comment to Brett Howell, Walker Conservation Fellow, Georgia Aquarium, bwhowell1@gmail.com, 310-944-0757 (cell).

Sincerely,

Barrett P. Walker
Director, Alex C. Walker Foundation

Dr. Alistair Dove
Director of Research and Conservation

Brett Howell
Walker Conservation Fellow

Chris Whtye
Intern

Reed Watson
Director of Applied Programs

Endorsing organizations:

Kent Carter
Principal

Carter Ecosystem Services

Andy Drumm
Sustainable Tourism Specialist

Drumm Consulting

Winnie Lau
Forest Trends' Marine Ecosystem Services (MARES) Program

Marine Ecosystem Services Program
MARES
FOREST TRENDS

Josh Hottenstein
Managing Partner

informatix GROUP

Alexandra Sangmeister
Executive Director

Marine Watch International

Jonathan Gosse
Executive Director

ORACABESSA FOUNDATION

Storm Cunningham, CEO

ReCitizen, L3C

John Campagna
Managing Partner, Restore Capital LLC

r/c restore capital

Tundi Agardy
Sound Seas

Andrew Lewin
Founder, SpeakUpForBlue.com

Ramón de León
Bonaire National Marine Park Manager

Matthew Lybolt PhD
Marine Ecologist

Tim Grollimund
Freelance photographer/columnist

George Deriso
Director of Member Services, Toniic LLC

Dave Wager
Founder & President, Tree Ring Pens

Curtis Sears
Instructor

Austin Schell
Principal

Rob Bryan
Founder

Windhorse Lightships, L3C

Kurt A. Tetzlaff
President

WinWerks

Endorsing individuals:

Julie Brown
Sustainability Entrepreneur, Atlanta, Georgia

Conrad C. Lautenbacher, Jr.
Vice Admiral USN ret

Karena Mahung
Student, University of the West Indies

Arya Mazdyasni
Environmental entrepreneur, San Francisco Bay Area, California

James W. Porter, Ph.D.
Meigs Professor of Ecology, Odum School of Ecology, University of Georgia

Chris Sloan
Former President of Tennessee Ornithological Society, Nashville, Tennessee

David Wing
2012 Advanced Leadership Fellow, Harvard University