On-The-Ground Challenges & Practicalities of Sargassum Management

Photo: Les Fruits de Mer

May 2019

MIAMIBEACH

Margarita Kruyff
Assistant Director

City of Miami Beach
Environment & Sustainability Department

Tel: 305-673-7084
E-mail: margaritakruyff@miamibeachfl.gov

www.miamibeachfl.gov

Mark Richard
Senior Region Manager

Miami-Dade County
Parks, Recreation and
Open Spaces Department
Heritage Parks, Beaches,
Causeways and Marinas

Tel: 305-365-3015
E-mail: mark.richard@miamidade.gov

www.miamidade.gov/parks

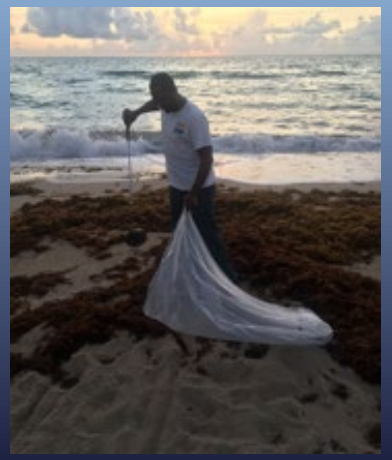
Miami-Dade County
PROS Beach Operation

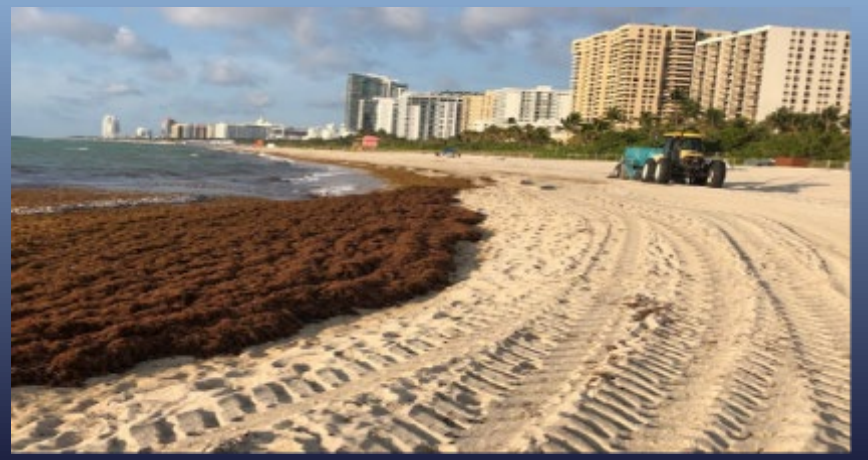
- **Existing Practices:**
  - 15 miles of beaches – 7 days / week – 8 hrs. / day;
    2 miles of beach of beach at Crandon Park on Key Biscayne
  - Debris removal, grooming, sifting, dune cleaning along shoreline from Government Cut to Golden Beach
  - Tractors with blades cut and turn the seaweed at the shoreline
  - Blade seaweed helps stabilize the shoreline and protect against severe erosion

Miami-Dade County
PROS Beach Operation

- **Existing Practices:**
  - Seaweed is collected and removed by a vendor from 3 “hotspots” where there are manmade beach structures
  - During peak seasons and when staffing permits, 2-3 tractors are deployed; one to follow the other in order to accomplish 4-6 passes in a single round trip. This practice allows beach staff to complete the task and remove the tractors from the beach as it becomes populated.
  - Requires State permit

MDC PROS
Current Practice





Shared Management Responsibility

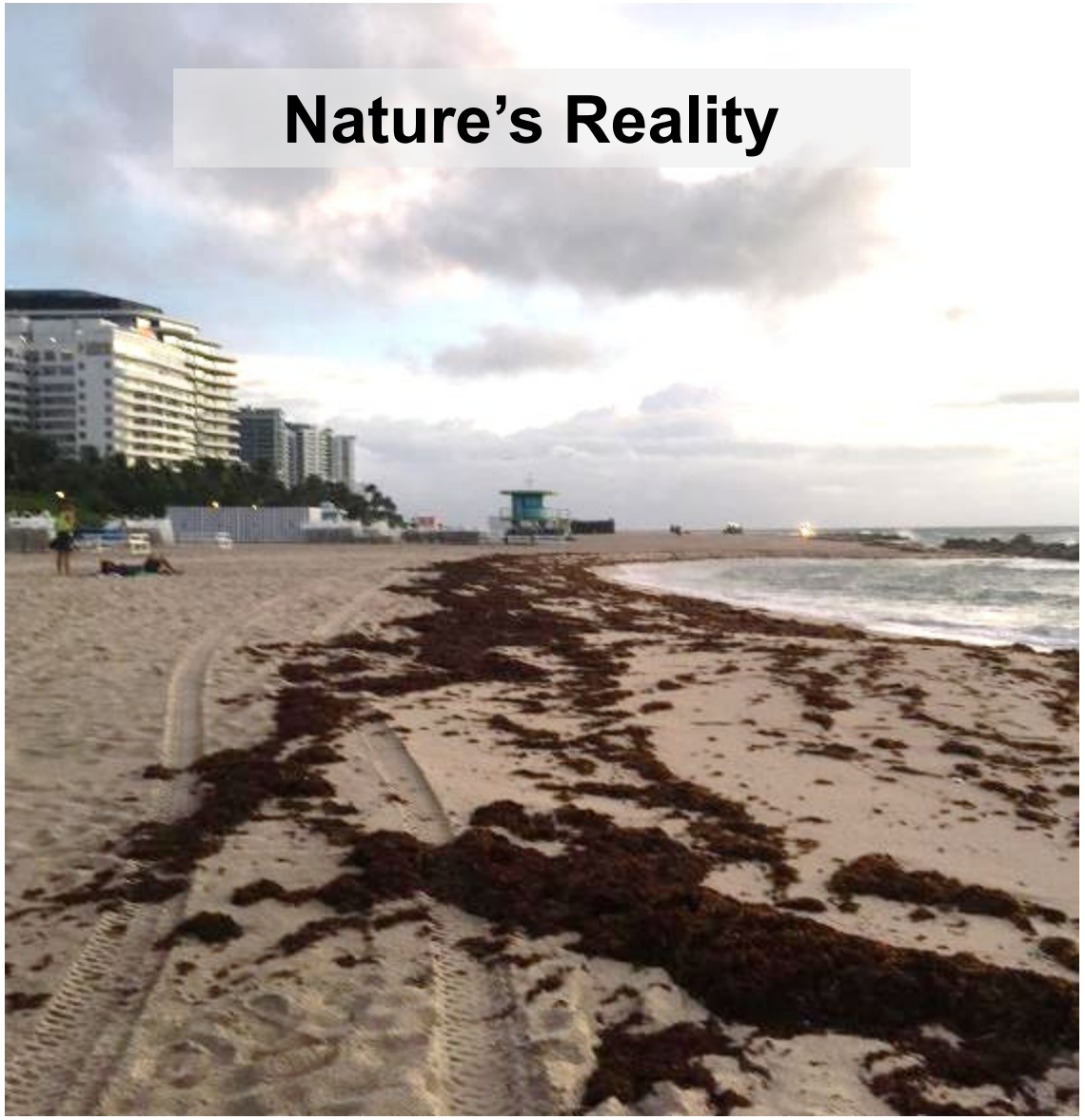
- State Owned Beach
- County & Cities Managing Locally
- City of Miami Beach Beachfront Management Plan

What are the challenges of managing seaweed?

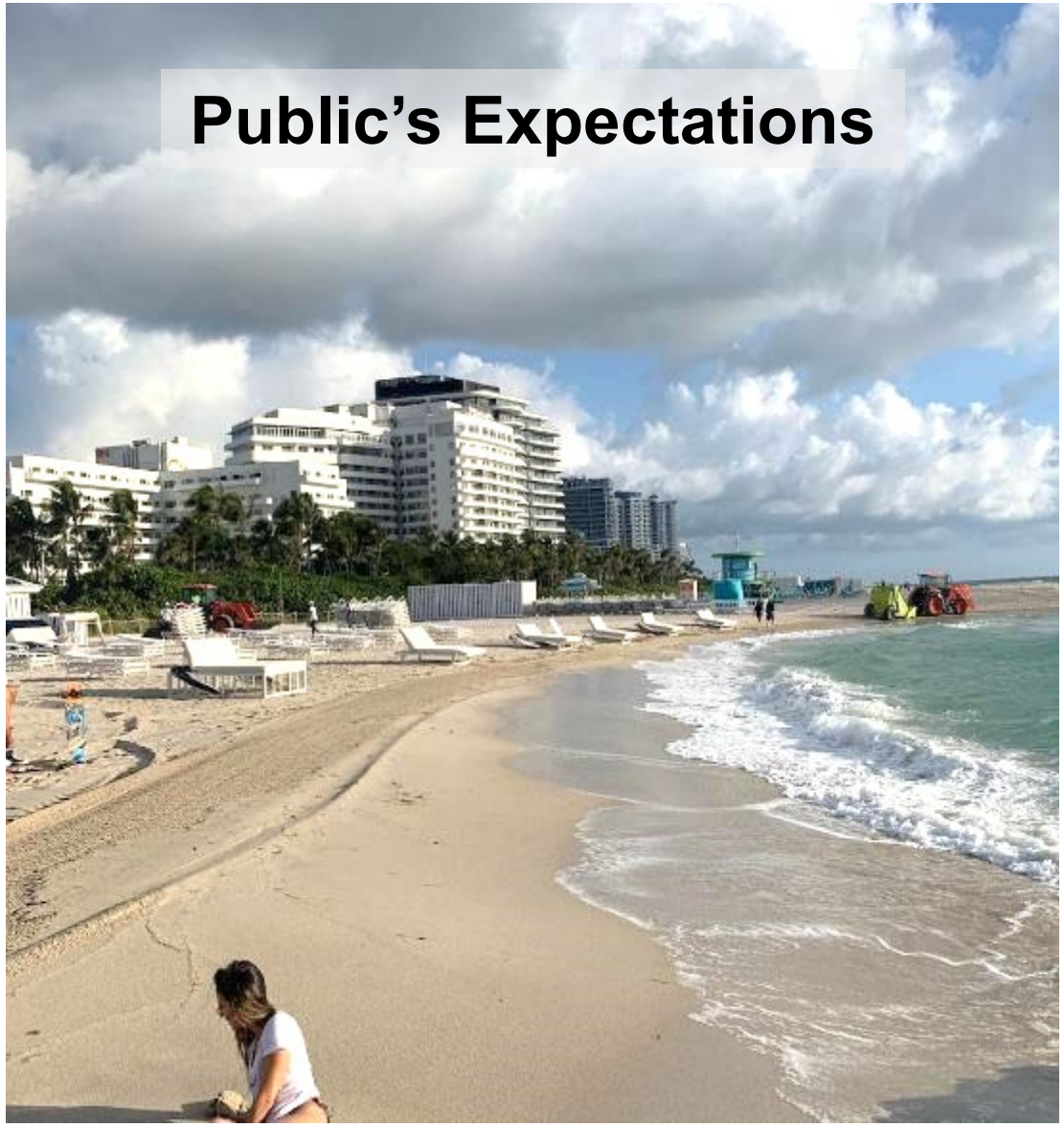
Challenge 1: Balancing beach user needs

- Maintaining a healthy ecosystem
- Attracting visitors
- Protecting resident quality of life
- Meeting needs of different coastal communities

Nature's Reality



Public's Expectations



Challenge 2: Maintaining 17 miles of beaches

Beach segments under maintenance by Miami-Dade County PROS & enhanced contractor services:

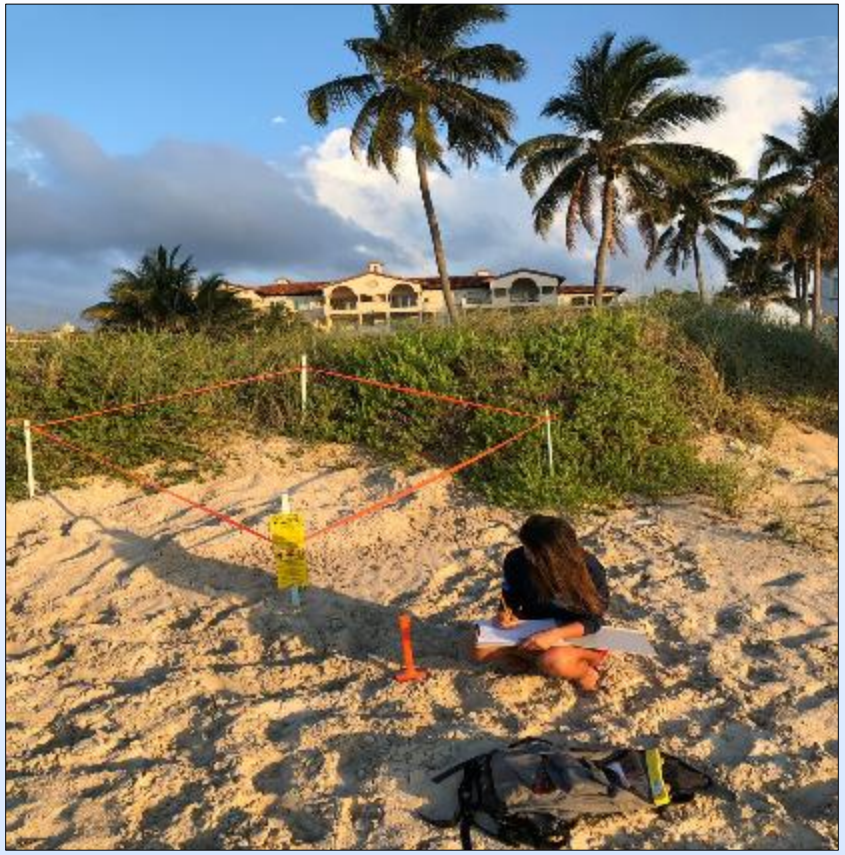
- Miami Beach: 7 miles
- Surfside: 1.5 miles
- Bal Harbour: 1.4 miles
- Haulover Park: 1.5 miles
- Sunny Isles: 2.5 miles
- Golden Beach: 1 mile
- Removal at “4 hotspots”
- Crandon Park: 2 miles

Total: 17 miles of beaches

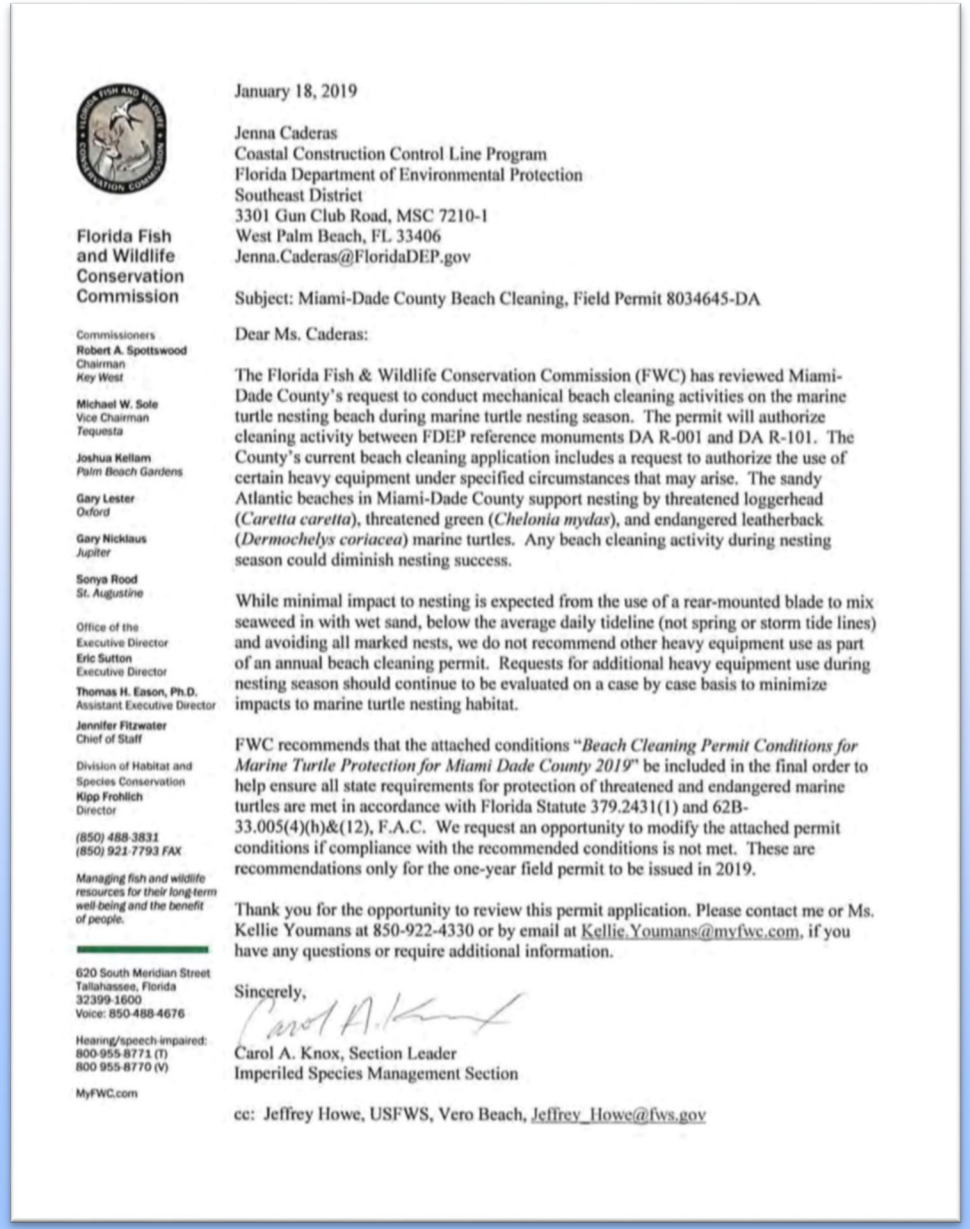
Challenge 3: Obtaining State permits

- State of Florida owns beaches up to the high water mark
- Yearly permit from FDEP to maintain beaches
- Seaweed “season” coincides with turtle nesting
- Requires a Special Conditions Permit approval for equipment
- Turn around from request to approval (FDEP & FWC)

Sea Turtle Conservation Program



Florida Fish and Wildlife Conservation Commission



January 18, 2019

Jenna Caderas
Coastal Construction Control Line Program
Florida Department of Environmental Protection
Southeast District
3301 Gun Club Road, MSC 7210-1
West Palm Beach, FL 33406
Jenna.Caderas@FloridaDEP.gov

Subject: Miami-Dade County Beach Cleaning, Field Permit 8034645-DA

Dear Ms. Caderas:

The Florida Fish & Wildlife Conservation Commission (FWC) has reviewed Miami-Dade County's request to conduct mechanical beach cleaning activities on the marine turtle nesting beach during marine turtle nesting season. The permit will authorize cleaning activity between FDEP reference monuments DA R-001 and DA R-101. The County's current beach cleaning application includes a request to authorize the use of certain heavy equipment under specified circumstances that may arise. The sandy Atlantic beaches in Miami-Dade County support nesting by threatened loggerhead (*Caretta caretta*), threatened green (*Chelonia mydas*), and endangered leatherback (*Dermochelys coriacea*) marine turtles. Any beach cleaning activity during nesting season could diminish nesting success.

While minimal impact to nesting is expected from the use of a rear-mounted blade to mix seaweed in with wet sand, below the average daily tideline (not spring or storm tide lines) and avoiding all marked nests, we do not recommend other heavy equipment use as part of an annual beach cleaning permit. Requests for additional heavy equipment use during nesting season should continue to be evaluated on a case by case basis to minimize impacts to marine turtle nesting habitat.

FWC recommends that the attached conditions "*Beach Cleaning Permit Conditions for Marine Turtle Protection for Miami Dade County 2019*" be included in the final order to help ensure all state requirements for protection of threatened and endangered marine turtles are met in accordance with Florida Statute 379.2431(1) and 62B-33.005(4)(h)&(12), F.A.C. We request an opportunity to modify the attached permit conditions if compliance with the recommended conditions is not met. These are recommendations only for the one-year field permit to be issued in 2019.

Thank you for the opportunity to review this permit application. Please contact me or Ms. Kellie Youmans at 850-922-4330 or by email at Kellie.Youmans@myfwc.com, if you have any questions or require additional information.

Sincerely,

Carol A. Knox, Section Leader
Imperiled Species Management Section

cc: Jeffrey Howe, USFWS, Vero Beach, Jeffrey_Howe@fws.gov

Florida Fish and Wildlife Conservation Commission

Commissioners
Robert A. Spottswood
Chairman
Key West

Michael W. Sole
Vice Chairman
Tequesta

Joshua Kellam
Palm Beach Gardens

Gary Lester
Oxford

Gary Nicklaus
Jupiter

Sonya Rood
St. Augustine

Office of the
Executive Director
Eric Sutton
Executive Director

Thomas H. Eason, Ph.D.
Assistant Executive Director

Jennifer Fitzwater
Chief of Staff

Division of Habitat and
Species Conservation
Kipp Frohlich
Director

(850) 488-3831
(850) 921-7793 FAX

Managing fish and wildlife resources for their long-term well-being and the benefit of people.

620 South Meridian Street
Tallahassee, Florida
32399-1600
Voice: 850-488-4676

Hearing/speech-impaired:
800-955-8771 (T)
800 955-8770 (V)

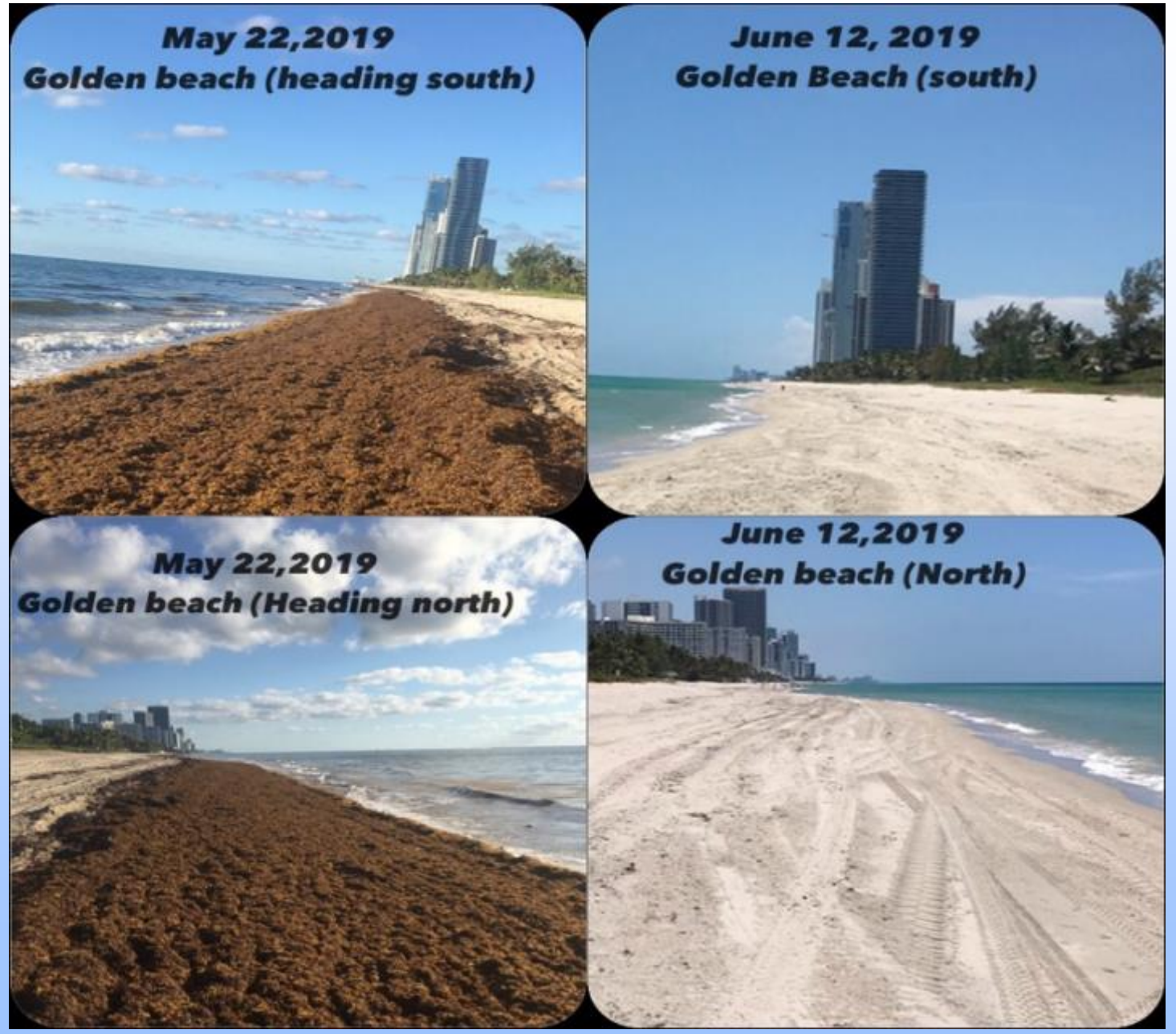
MyFWC.com

Challenge 4: Operational constraints

- Seaweed volumes
- Start times, waiting for sea turtle conservation morning surveys
- Obstructions on the beach, chairs, concessions
- Persons using the beach
- Special events
- Access locations to the beach
- Staffing
- Equipment staging areas
- Equipment availability, replacement, harsh environment
- King Tides, hurricanes, beach erosion

Operational constraints: Seaweed volumes

Miami Beach
March 15, 2019

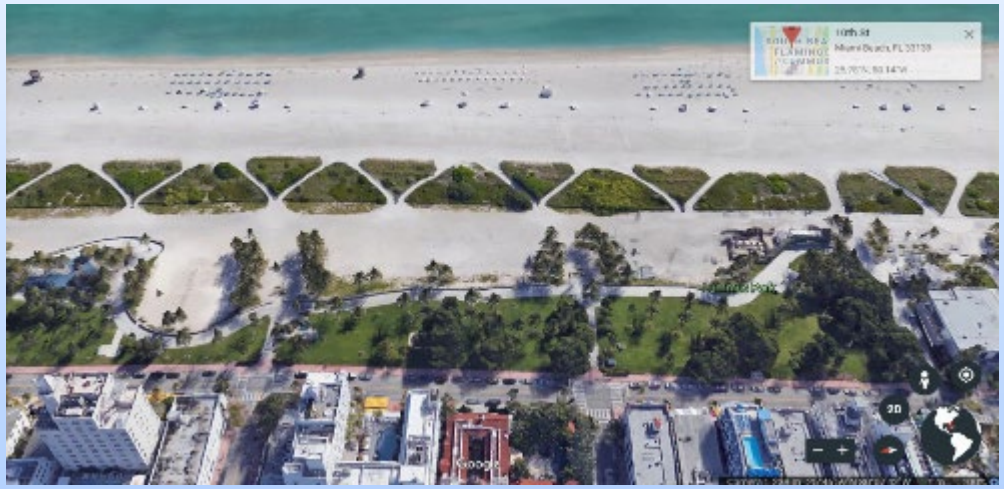

May 22,2019
Golden beach (heading south)
June 12, 2019
Golden Beach (south)
May 22,2019
Golden beach (Heading north)
June 12,2019
Golden beach (North)

Miami Beach
July 21, 2019

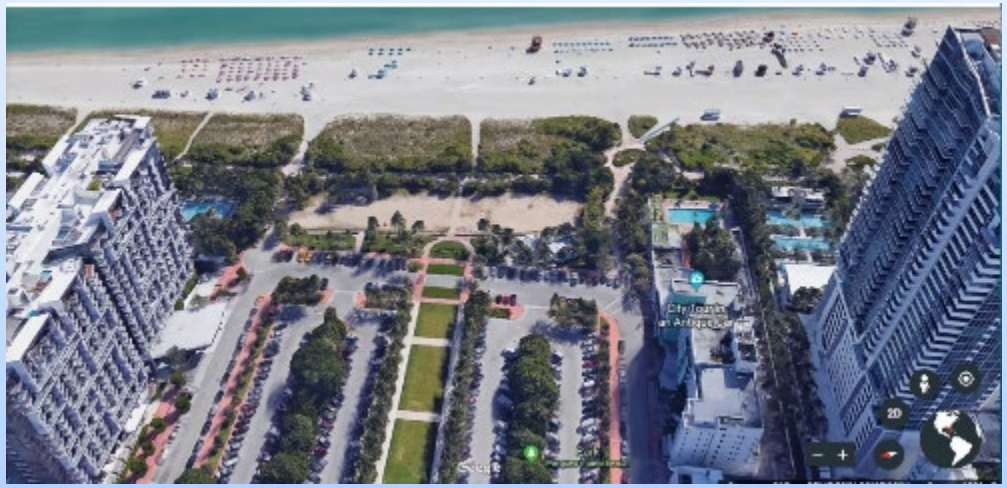
Operational constraints: Obstructions on the beach

Operational constraints: limited beach access

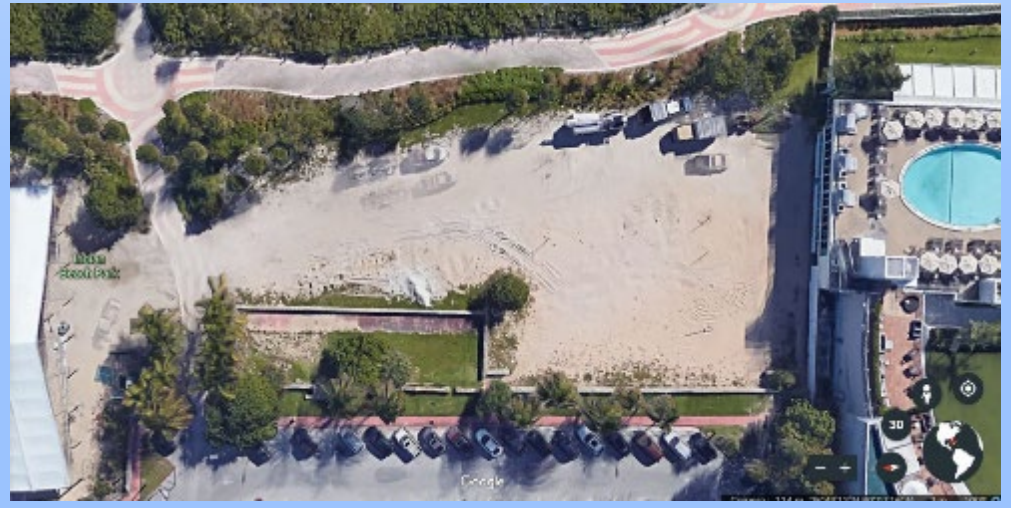
10th Street



22nd Street

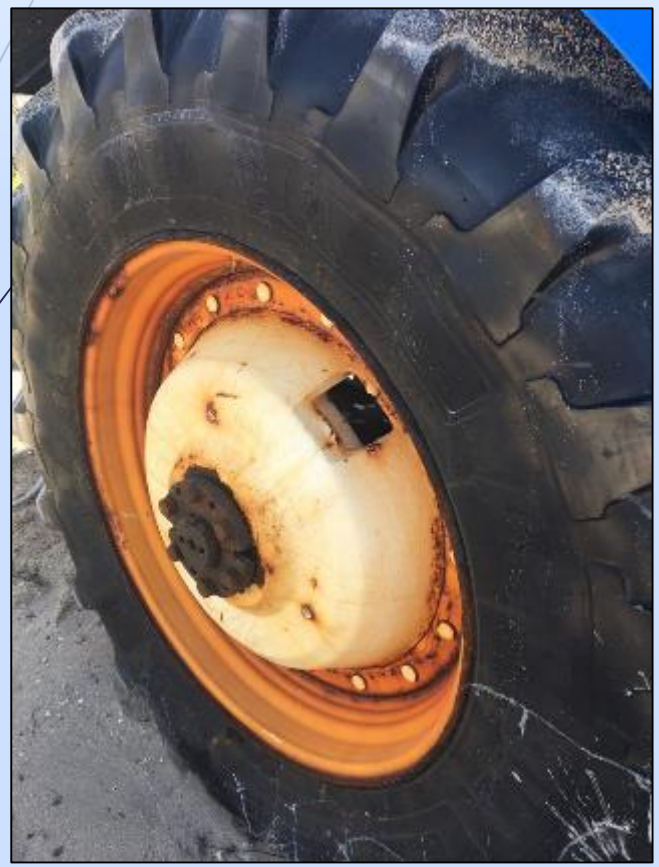


46th Street

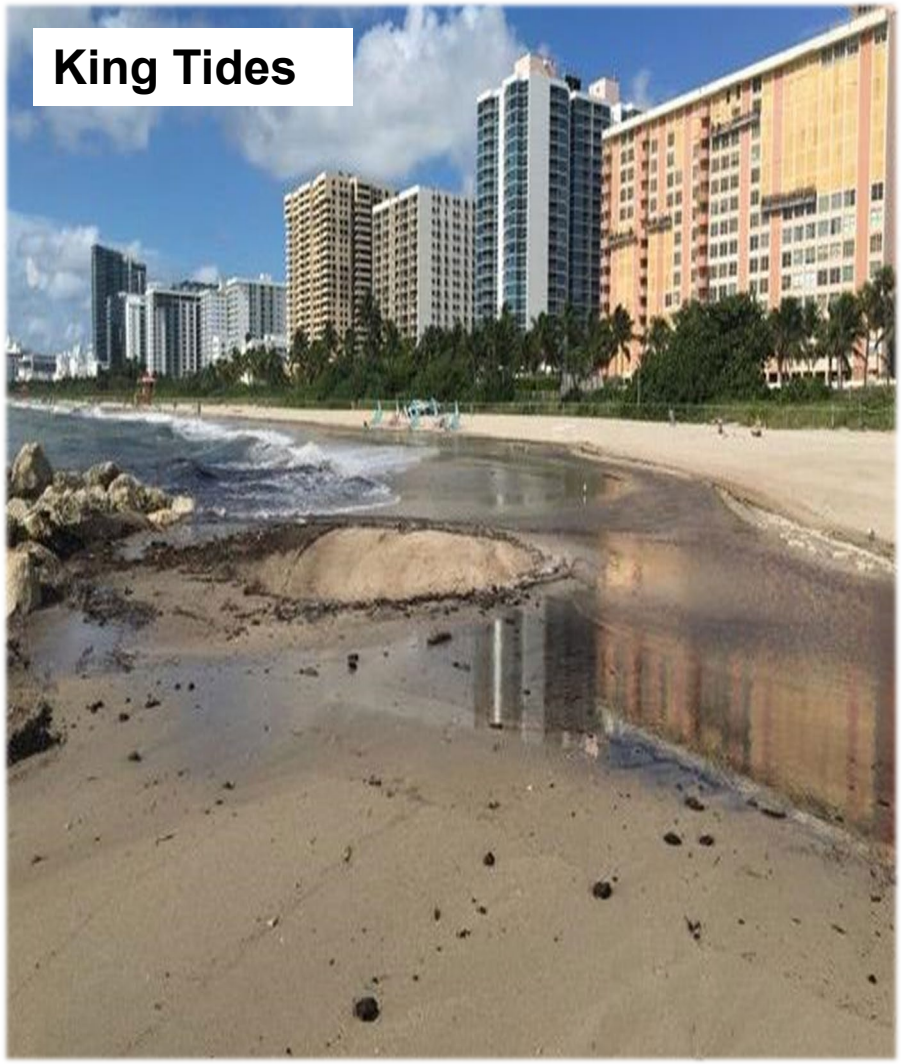


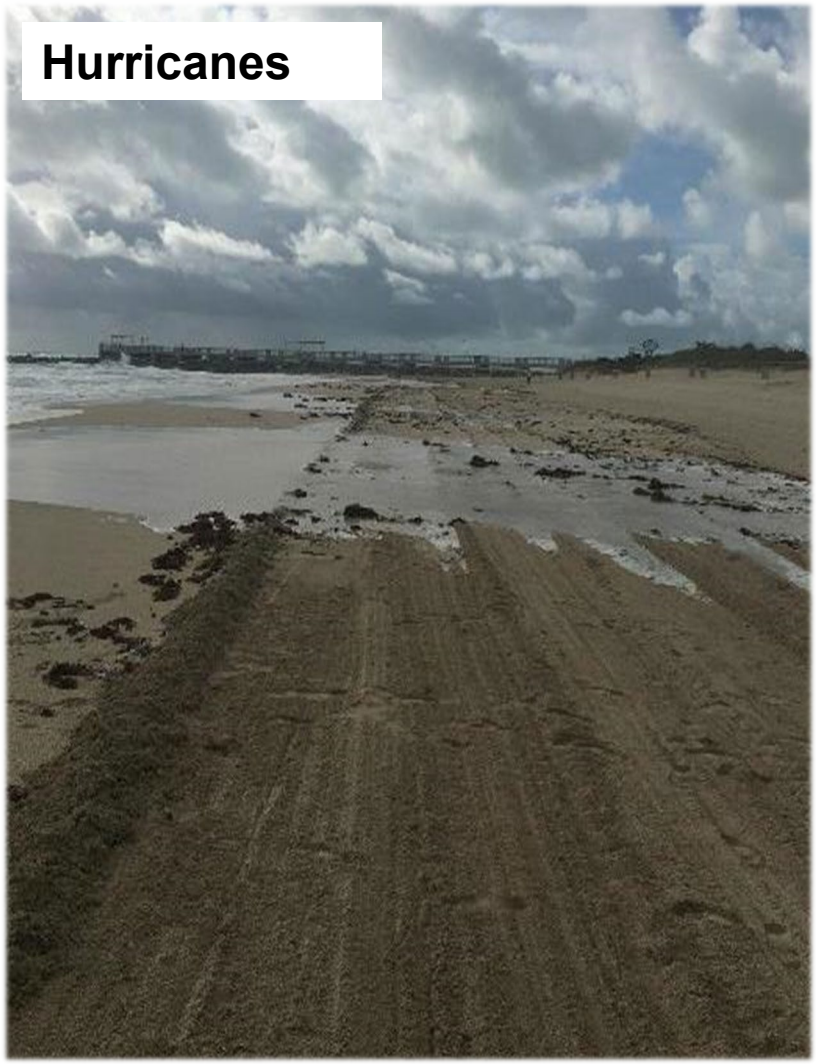
79th Street

Operational constraints: Harsh conditions reduce equipment life expectancy



Operational constraints:
King tides, hurricanes and beach erosion





What does it take to remove 15 miles of seaweed 6 inches deep, 12 feet wide?

- Equates to approximately 17,600 cubic yards of seaweed to remove
- Must obtain FDEP permit, with Special Conditions Request during sea turtle season
- Equipment required:
  - 20 tractors with surf rakes
  - 55 dump trucks
  - 8 front end loaders making 880 trips from beach to staging area in 20 cubic yard dump truck
- Staging required:
  - 8 staging areas
  - 55 dumpsters/dump trucks operating 8 hours per day
  - Space for 440, 40 cubic yard dumpsters/dump trucks
- Personnel required: 20 crews, 83 operators, 1 supervisor
- Funding

Examples of Equipment Used for Seaweed Removal

Four Loads with Barber

Funding Challenges

- 4,926,200 million for 15 miles of Beach
- 2.8 million to remove at the 4 " Hotspots"
- 1 million plus in capital equipment replacement yearly
- Pending State funding bill HB 2913


09/06/2019

Questions

Photo: Alain Brin, Blue Glass Photography