



JAMAICA'S COASTAL FOREST

“THE FRONT LINE VS. THE BOTTOM LINE”

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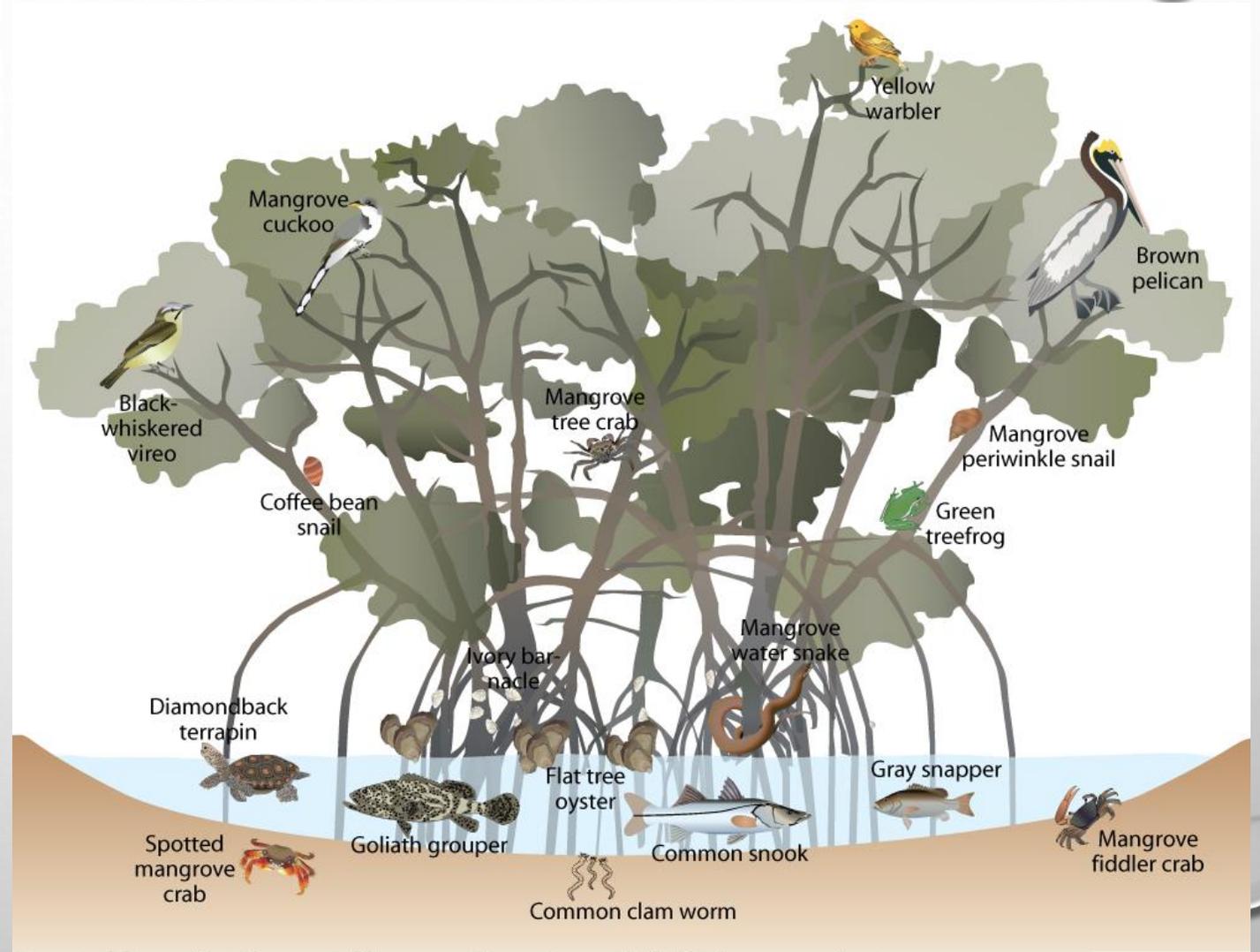
- ALLUVIAL WETLANDS(2% OF JAMAICA)
- ***97,000 HECTARES OF MANGROVE FORESTS**
- **LESS THAN 1% PROTECTED**
- FOUND IN ALL PARISHES ON 29% OF THE COASTLINE(NEPA, 2010)
- *GREATEST STAND IN PORTLAND BIGHT AREA*

MANGROVE VALUE

- **MANGROVE FORESTS PROVIDE OVER 200 DOCUMENTED USES WORLDWIDE**
- NUTRIENT FILTRATION, SEDIMENT TRAPPING AND LAND ACCRETION
- WIND BREAKS, EROSION CONTROL
- PROVISION OF BIRD HABITATS, FISH HABITAT(220 SP.) AND NURSERY GROUNDS
- 14% OF THE WORLD'S CARBON SEQUESTRATION BY COASTAL/OCEANIC ECOSYSTEMS(ALONGI, 2014)
- FOOD AND HOUSEHOLDS PRODUCTS, FODDER FOR ANIMALS
- WOOD PRODUCTS: HOUSING, FUEL-WOOD, FISH TRAPS, FENCE POSTS
- COASTAL BUFFER FOR STORM SURGE, PROTECTS COASTAL INFRASTRUCTURE AND LIVELIHOODS (FISHING, SHIPPING, TOURISM ETC.). *US\$ 1.6 BILLION ANNUAL VALUE (POLIDORO ,2010)*



- GIRI ET AL. (2010) - 75% OF WORLD'S MANGROVES ARE FOUND IN JUST 15 COUNTRIES
- **ONLY 6.9% ARE RECORDED AS BEING PROTECTED UNDER THE EXISTING GLOBAL PROTECTED AREAS NETWORK**



Conceptual diagram illustrating several of the more notable species provided habitat by mangrove forests. Diagram courtesy of the Integration and Application Network (ian.umces.edu), University of Maryland Center for Environmental Science. Source: Kruczynski, W.L., and P.J. Fletcher (eds.). 2012. *Tropical Connections: South Florida's marine environment*. IAN Press, University of Maryland Center for Environmental Science, Cambridge, Maryland. 492 pp.

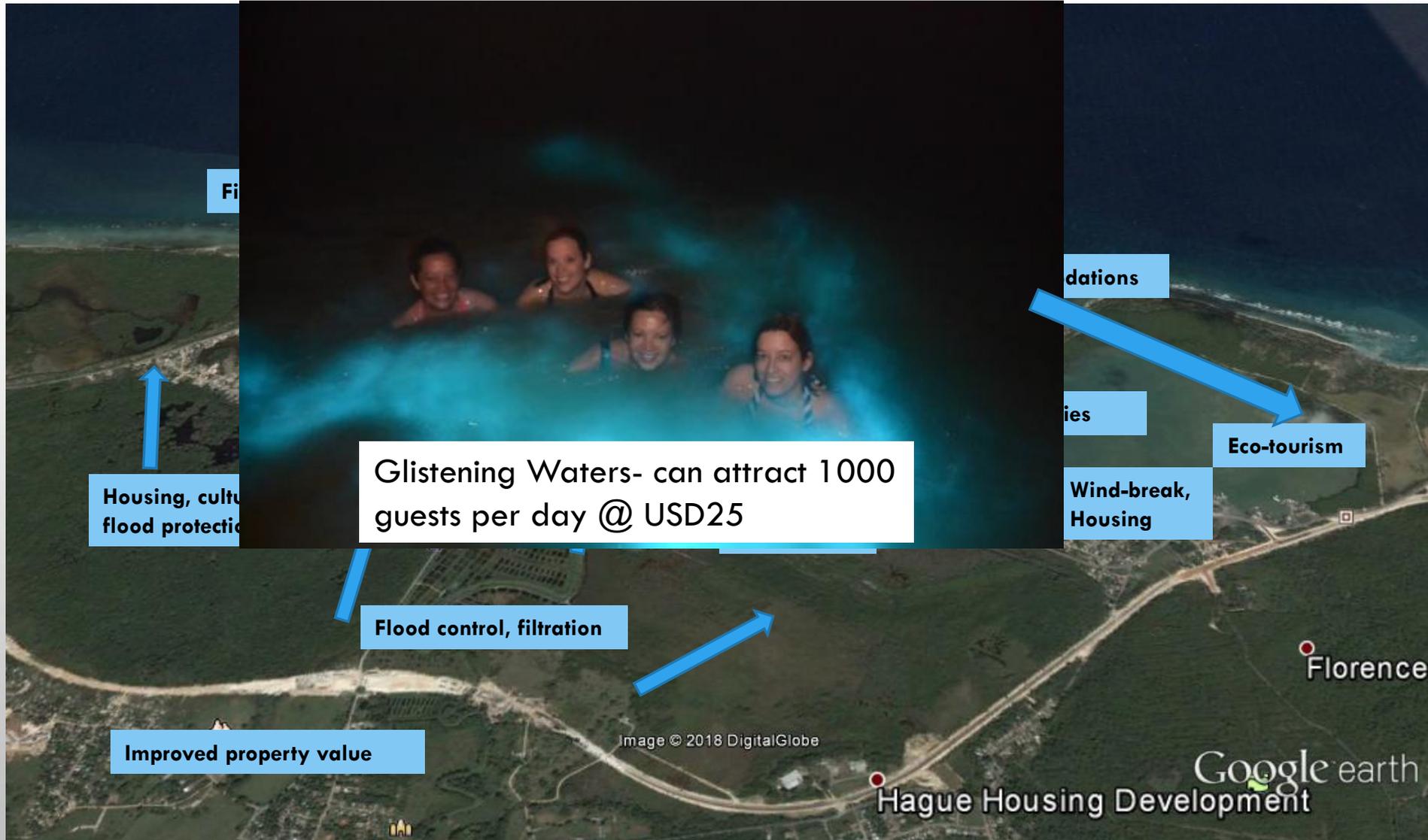
HUMAN/MANGROVE INTERACTIONS ARE HISTORICAL, VITAL, CONTINUOUS...SUSTAINABLE?

- 2 MAJOR AIRPORTS CONSTRUCTION, NUMEROUS MARINAS
- FLOOD WATER RETENTION(BLACK RIVER, PORTMORE
- ECO-TOURISM: BLACK RIVER SAFARI (*500 PER DAY**)
- NUTRIENT FILTER(FALMOUTH, HELLSHIRE, KINGSTON)
- WIND-BREAK FOR VARIOUS SHIPPING INTERESTS(CRUISE, BULK, TRANS-SHIPMENT, MARINAS ETC): COASTAL CITIES AND TOWNS
- RECREATIONAL AND CULTURAL(SMALL VESSEL SAFETY, TOURS, “CRAB-BUSH”, BIRD WATCHING, *BIRD-SHOOTING* ETC)
- **MAJORITY OF JAMAICA’S COASTAL TOWNS HAVE COASTAL FOREST ORIGINS**

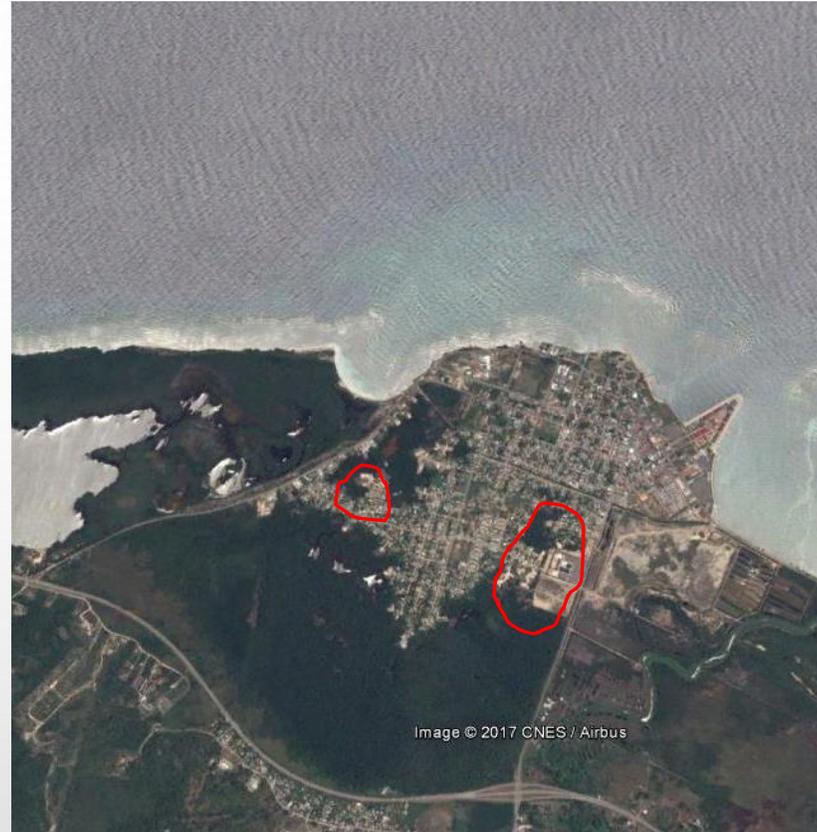
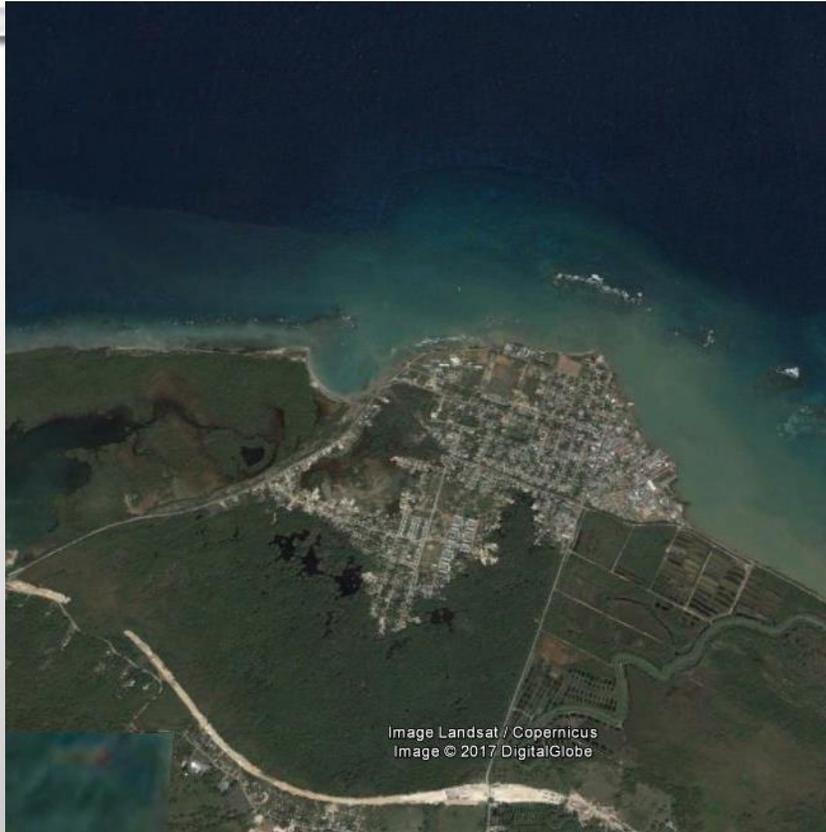
MONTEGO BAY WETLAND SERVICES-KEY TO GDP



TOWN OF FALMOUTH



FALMOUTH-WETLAND REPLACEMENT



***238 acres** in interior of Falmouth(housing*)

Oyster Bay + Royalton
: *120 acres

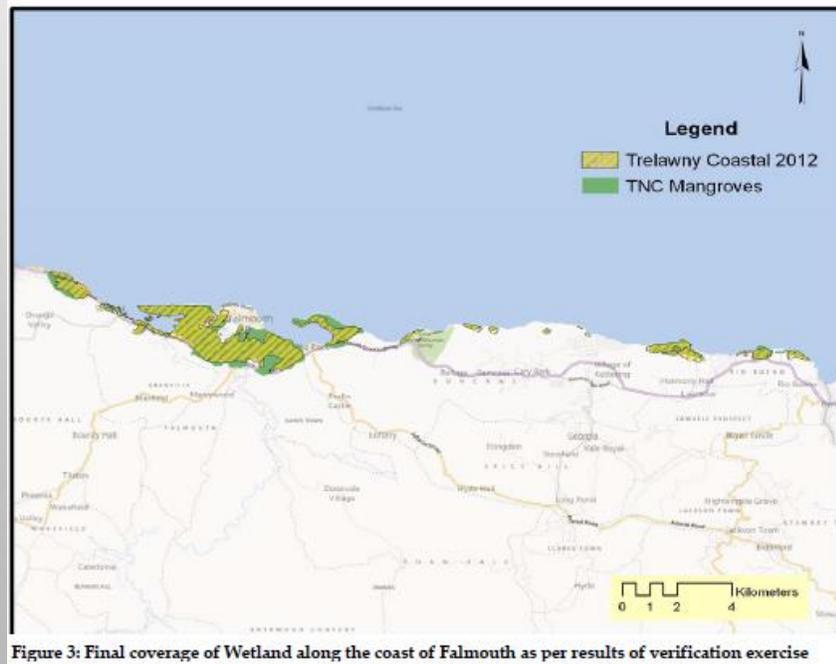
Since 2010: 200,000m²(**49 acres**) lost to informal settlement (reclamation), with roads etc.

= 196 “big” houses land space= **\$14m loss in building fees for Parish council**

*Sewage treatment, planned solid waste disposal, culverting = missing

OYSTER BAY-TRELAWNY (2017)

- TRELAWNY PARISH HAS LOST OVER 160 HECTARES OF MANGROVE FOREST BETWEEN 2005 AND 2010 (NEPA, 2010)



Photos: Dayne Buddo

PORT ROYAL, PALISADOES AND KGN HARBOUR ENVIRONS



KINGSTON HARBOUR-THE PERFECT PORT...EXCEPT?

“MOBAY WINDS BLOW TOP-FLIGHT CRUISE SHIP BACK TO KINGSTON”

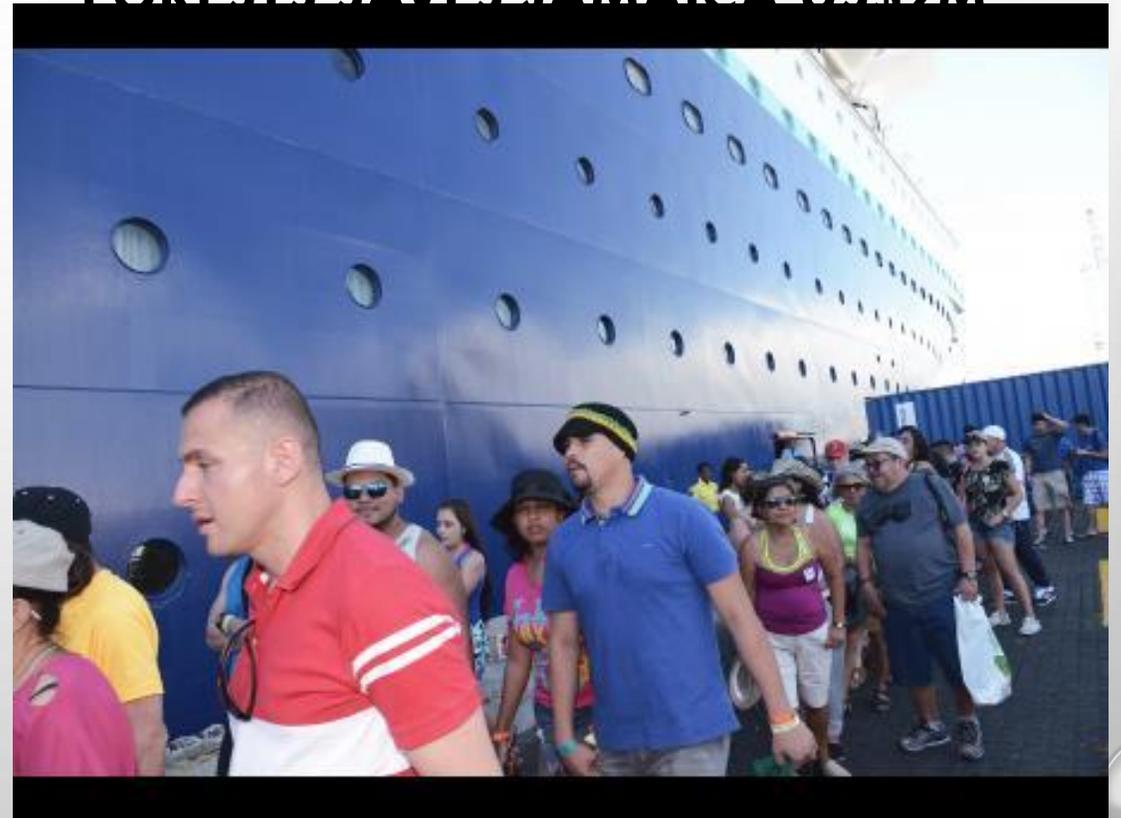
FOR THE SECOND TIME IN A YEAR, THE PORT OF KINGSTON WILL HOST A TOP FLIGHT-CRUISE VESSEL WHEN THE MS MONARCH MAKES AN UNSCHEDULED VISIT TO THE CAPITAL CITY TODAY.

THE SHIP, WHICH HAS A CARRYING CAPACITY OF 2,700 GUESTS PLUS AN ADDITIONAL 900 CREW MEMBERS, WILL DOCK WITH 1,953 PASSENGERS.

WILLIAM TATHAM, VICE-PRESIDENT, CRUISE SHIPPING AND MARINA OPERATIONS AT THE PORT AUTHORITY OF JAMAICA, SAID THAT THE MS MONARCH WAS **ORIGINALLY SLATED TO DOCK IN MONTEGO BAY IN ST JAMES BUT HAD TO BE DIVERTED DUE TO WEATHER CONDITIONS IN THE WESTERN CITY.**

- *FROM THE GLEANER, DEC 11, 2017*

- **HEADLINE OPTION 2: “ COASTAL FORESTS SAVES JAMAICA US\$2M**



MANGROVE THREATS

- MANGROVES GLOBALLY ARE THREATENED: MOSTLY THROUGH LAND RECLAMATION(DUMPING FOR ECONOMIC DEVELOPMENT AND HUMAN COMFORTS) AND OTHER ANTHROPOGENIC ACTIONS (POLLUTION ETC.)
- MARICULTURE ACCOUNTS FOR 52% OF CURRENT MANGROVE LOSS WORLDWIDE (VARIELA, 2001)
- MANGROVES ARE ALSO DEGRADED THROUGH NATURAL CATASTROPHES SUCH AS HURRICANES AND TSUNAMIS WORLDWIDE
- **WETLAND FORESTS (MANGROVES) ACCOUNT FOR ONLY 2% OF JAMAICA'S LAND MASS : JAMAICA HAS LOST OVER 2000 HECTARES OF MANGROVES BETWEEN 1989 AND 2010(NEPA, 2013)**

TRELAWNY HOTELS- MANGROVES ON WHITE SAND BEACHES !!!

18 ACRES OF HEALTHY FOREST



6 ACRES CONSERVED, OFF-SITE
MITIGATION FOR REMAINDER OF
ACREAGE



PROGRESS IN MANGROVE REHABILITATION IN JAMAICA

- “REHABILITATION” MEANS THE REPARATION OF ECOSYSTEM PROCESSES, SERVICES, AND PRODUCTIVITY BUT IT DOES NOT MEAN TO RESTORE THE ECOSYSTEM TO ITS PRE-EXISTING CONDITION.
- JAMAICA NOW HAS A SEEDLING BANK FOR RESTORATION PROJECTS(2009)
- RECOGNIZE FACTORS CRITICAL TO SAPLING SURVIVAL (PLANTING IS SECONDARY), **STAKEHOLDERS SENSITIZED TO ECOLOGICAL MANGROVE REHABILITATION APPROACHES.**
- SITE ASSESSMENT AND HYDRO-DYNAMIC STUDY IS CRITICAL. MANAGEMENT PLAN MUST BE THOROUGH AND FLEXIBLE
- LESSONS LEARNT FROM INTERNATIONAL COMMUNITY(MISTAKES AND BEST PRACTICES)- **APPROXIMATELY 5000 SEEDLINGS KILLED (VALUE= \$1,000,000 OR \$US10,000)**
- MORE RESEARCH, TRAINING AND TECHNOLOGY IS NEEDED LOCALLY

Portland Cottage project
Photos: Courtesy of NEPA



After 24 months; Transplants: 40% survival
Recruits: 127% increase

NWA-PALISADOES MANGROVE REHABILITATION



Photos: Courtesy of Hugh Small



OR BUSINESS

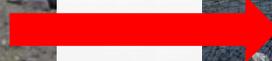
ERS TO OVER
YEAR AND
6 MILLION
AIR FREIGHT

- MITIGATION FOR THE DESTRUCTION OF ORIGINAL MANGROVE FOREST (REVETMENT CONSTRUCTION): NO PARENT TREES AND SOLID WASTE IMPACTS

SOLID WASTE MANAGEMENT(70% OF PROJECT BUDGET) KEY TO MANGROVE SAPLING SURVIVAL



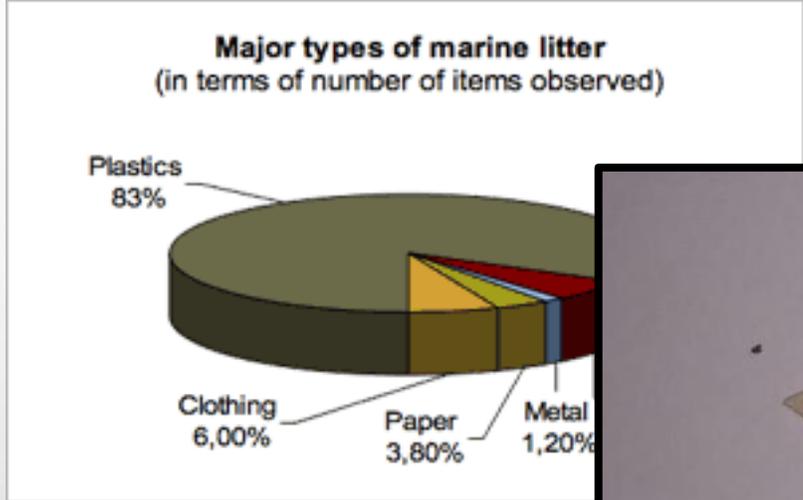
Photos: Courtesy of Hugh Small



- ✓ 70% survival over **12 months**
- ✓ Flowering *Avicennia*
- ✓ Increase in monitoring indices (height, # leaves)
- ✓ Faunal recruitment(snails, fishes, birds, **people ***)

- Govt. agency paused payments (no cleaning, fence breached)
- No new seedlings survive (despite falling from parents)
- **40% overall survival(18 months survey)**

THE PLASTIC PROBLEM –IMPACTING OUR COASTAL ECOSYSTEMS



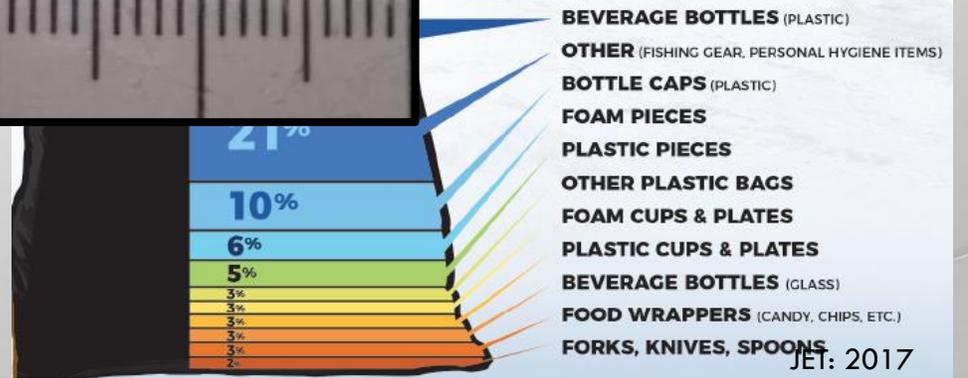
IMPACT OF PLASTICS ON COASTAL ECOSYSTEMS
 MARINE WASTE (76%) DOMINATED BRASILIAN MARINE WASTE (SUL, 2008), CHINA: PLASTICS ACCOUNT FOR 60 TO 80% OF ALL MARINE DEBRIS



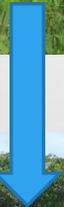
Photo: Deanna Rose

COMPOSITION OF WASTE COLLECTED

TOP TEN VERSUS OTHER CATEGORIES



LILLIPUT-ST. JAMES. PRE-EMPTIVE STEPS(CONSERVATION) URGENTLY NEEDED TO HAVE SUSTAINABLE COASTAL TOWNS



GOJ needs sustainable plans-or
unplanned developers will thrive:
25 acres here

SEVILLE HERITAGE SITE- ST. ANN



- **HERITAGE SITE:** COLUMBUS SHIP LANDING, 1ST SPANISH SETTLEMENT, FORTS, GREAT HOUSE ETC
- HISTORICAL MANATEE SITE
- LUSH SEAGRASS BEDS AND FISHERY GROUND(SAB, PRIORITY: OVER 200*)
- FILTRATION FOR UPPER COMMUNITY
- KEEPS BEACH/SAND INTACT AT PRIORITY BEACH
- *INCOME GENERATED – HORSEBACK RIDES ONLY..*
- *FUTURE ISSUES:*

IMPORTANT CONSIDERATIONS FOR JAMAICA'S COASTAL FOREST

- CONSERVATION IS KEY TO SUSTAINABLE USE, PRE-EMPTIVE ACTIONS NEED SPECIAL ATTENTION
- LEARN FROM BAD CASE STUDIES(KINGSTON, HELLSHIRE, NEGRIL).
- MANY TRELAWNY BEACHES STILL “MAKING” SAND- NOT TOO LATE
- **PARISH COUNCILS NEED TO PAY ATTENTION(UNPLANNED/UNREGULATED HOUSING SURPASSING HOTEL ACREAGE IN MOST PARISHES).** *SMALL SEWAGE CRISIS IS MORE DAMNING THAN BIG HOTELS
- MANGROVE REHAB. WORKS -BUT EXPENSIVE AND OFTEN IMPOSSIBLE
- SOME DEVELOPERS BEING PRE-EMPTIVELY DESTRUCTIVE (CLEAR YEARS BEFORE PERMIT APPLICATION). GOVT. AGENCIES HAVE TO COMPETE(BUDGET, TECHNOLOGY, PRIORITIES).
- WASTE MANAGEMENT SOLUTIONS NEEDED URGENTLY
- BILLIONS NOT BEING CAPITALIZED ON WITH COASTAL ECOSYSTEM BASED TOURISM

THANK YOU FOR LISTENING..

