

FWC-CRRSS Seawater System Description

The **FWC Coral Reef Restoration Seawater System** (FWC-CRRSS) was completed in March 2022 and provides reef-quality, temperature-controlled ambient seawater to twelve 240-gal flow-thru tables. All systems at KML have FWC approval as a **Land-based Master Coral Nursery****.

WHY THE NEED FOR FWC-CRRSS?

The Florida Reef Tract (FRT) has experienced a multi-year disease-related mortality event since 2014, that has resulted in massive die-offs in multiple coral species. This disease, termed **stony coral tissue loss disease** (SCTLD) affects approximately 21 species of coral, including both Endangered Species Act-listed and the primary reef-building species. The severity of this disease epidemic has resulted in an unprecedented concerted, collaborative, and organized effort among management agencies, researchers, conservation practitioners, non-governmental organizations, veterinarians, and engaged citizens. Research initiatives are testing the efficacy of outplanting new coral colonies to restore areas affected by SCTLD.

The goal of the **FWC Coral Rescue effort** was to relocate at-risk corals to land-based aquaria to **conserve and protect genetic diversity**. Propagation of these corals is commencing, and progeny of these corals will become a core component of the coral restoration in Florida. Additionally, there are efforts to propagate species that support essential ecosystem services such as herbivory. The propagation effort will utilize the FWC-CRRSS to receive progeny to **conduct research that will aid in the development of best practices for coral reef restoration**.

FWC-CRRSS Background:

Construction: The Florida Legislature appropriated to the FWC non-recurring funds to support the construction of the FWC-CRRSS system at the Keys Marine Laboratory (Layton, FL) **to provide added land-based capacity for temporary storage of newly propagated corals** arriving in the Florida Keys to be outplanted on coral reefs in response to the loss of corals from disease.

Operations: The Florida Legislature appropriated to FWC recurring funds to operate, maintain, and long-term management of the FWC-CRRSS system in collaboration with Florida Institute of Oceanography at Keys Marine Laboratory. The Legislative intent was

- 1) **to ensure long-term capacity for the progeny of rescue corals** propagated in land-based nurseries to have land-based site near their eventual outplant locations to acclimate prior to being moved onto coral reefs.
- 2) Provide funding to support the costs of operating, maintaining, and upgrading the FWC-CRRSS. KML will ensure that **FWC has access to FWC-CRRSS for the purpose of coral reef restoration and FWC approved projects using FWC-CRRSS** as part of the agreement.

Support of Commission mission/ROI: To ensure support of KML and FWC-led Coral Rescue effort and associated coral reef restoration activities necessary to make large-scale coral restoration in South Florida feasible.

****Land-based Master Coral Nursery Terminology:**

“Nursery” is a land-based facility or in-water permitted location where coral holding, propagation or rearing activities are occurring.

Short-term (up to 30-days)

- **Staging facility** is a land-based facility or in-water permitted location where corals are held to facilitate acclimation or outplanting activities.
- **Propagation facility** is a land-based facility or in-water permitted location where human-assisted activities associated with sexual or asexual reproduction are occurring, including but not limited to: fragmenting, broodstock holding/conditioning/spawning, cryopreservation, gamete/planula/larvae/medusa collections, and assisted fertilization/settlement.

Long-term (longer than 30-days) veterinary inspection required for outplanting if held longer than 30-days

- **Holding facility** is a land-based facility or in-water permitted location where corals are held and cared for.
- **Rearing facility** is a land-based facility or in-water permitted location where coral offspring are held post-settlement or post-fragmentation and cared for.