



**Project Proposal**  
**Ultra Baseline Studies**  
**1/15/2019**

**Background**

Moving the Ultra music festival – an event characterized by loud music, intense light shows, pyrotechnic displays, and attendance by 150,000 partygoers – poses significant environmental risks to the ecologically sensitive habitats of Virginia Key and its adjacent Sadowski Critical Wildlife Area. Numerous resident and migratory animals are located in Virginia Key, particularly the Virginia Key Historic Beach Park, as well as threatened and endangered plants that may be at risk from concert activities. In addition to the potentially severe negative impacts on the flora and fauna on the Key, water quality in the areas of Biscayne Bay that surround Virginia Key may suffer due to the stressors caused by the sanitary needs of 150,000 participants, including the significant numbers of boaters expected to anchor in or drive through the waters surrounding the Key. Biscayne Bay, a Florida Outstanding Water, is severely stressed by numerous terrestrial sources of pollution, resulting in, among other things, numerous beach closures throughout the year in the area, as well as degraded marine habitats.

**Baseline Survey Plan**

To complement other baseline studies to be conducted in the area, Miami Waterkeeper proposes to carry out two sets of surveys both prior to and after Ultra is held in order to determine what, if any, negative impacts have resulted in terms of (a) water quality; and (b) physical damage to terrestrial, shoreline, and shallow-water vegetation and other natural features. Collected data will be provided to the Key Biscayne Community Foundation and other stakeholder partners.

A. Water Quality Monitoring Survey

For the three days prior to Ultra, Miami Waterkeeper staff will sample water at four shoreline points and one offshore point near the concert venues (see attached map), and test those waters for the presence of *enterococcus*, a fecal indicator bacteria ubiquitous in human waste. *Enterococcus* operates as proxy for sewage-born pathogens generally, as its presence often means that other dangerous pathogens are also present. The EPA has determined that *enterococcus* is an ideal organism to test for in marine waters to identify human health risks from those waters. Miami Waterkeeper already tests multiple sites on Key Biscayne in partnership with the Key Biscayne Community Foundation. New sampling stations will be designated in Virginia Key and adjacent waters and samples will be collected for three days prior to Ultra by hand. Samples will be taken to Miami Waterkeeper's laboratory which is headquartered at Ransom Everglades school, incubated, and analyzed for enterococci. Immediately following Ultra, the same sites will be tested using the same testing and analysis protocols to determine whether fecal indicator bacteria have increased, and if so to the extent to which they have done so and any spatial variations.

B. Drone and land-based survey

Preceding Ultra, on a date shortly before Ultra begins to set up its facilities, Miami Waterkeeper staff will conduct transects by foot and by aerial drone to identify areas sensitive to disruption (e.g. vegetation, sand dunes, mangroves, seagrass) that are in the vicinity of the concert venues (see map). Drones will conduct video transects, while staff on foot will conduct ground and shallow water surveys. Preliminary transects are set forth on the map, but are subject to change based on additional information becoming known regarding species or sites of particular concern.

### **Project Staff**

Rachel Silverstein, PhD (Executive Director): Rachel will manage the overall project.

Andrew Carter, PhD (Research Director): Andrew will lead in-field water quality monitoring data collection and assist in foot- and drone-based transects.

Cate Gelston, MPS (Research Assistant): Cate will assist in water sampling and conducting foot-based transects.

Dana Tricarico, MPS (Outreach Coordinator): Dana will assist in collecting water sampling and conducting foot-based transects.

Greg Clark (drone operator): Greg will lead the drone-based surveys.

### **Budget**

Miami Waterkeeper is seeking \$5,000 for staff time, sampling and drone equipment, and laboratory supplies. A breakdown of estimated costs is set forth below:

<b><u>Quantity</u></b>	<b><u>Description</u></b>	<b><u>Unit Price</u></b>	<b><u>Total</u></b>
5 sites	Intensive daily water quality testing at 5 sites for 6 days with the IDEXX system (4 shoreline sites, one off-shore site)	\$650	\$3,000
8 sites	Drone-based transects/video capture	\$200	\$1,600
5 sites	Foot-based transects/video and photograph capture	\$80	\$600



Map of Virginia Key; the map provided by Ultra is superimposed over satellite imagery of the Key. Areas in yellow have been identified as venue areas.