



This section explores the variety and extent of coral diseases attacking the reef of the Florida Keys. This work is a result of the Coral Monitoring Survey directed by REEF RELIEF founder and Director of Marine Projects, Craig Quirolo from 1990--2007. Major support for the program was provided by Turner Foundation, the Edith and Curtis Munson Foundation and the Henry Foundation.

## White Pox Disease



White Pox Disease is a newly discovered disease that appears as blotches all over the coral, from base to tip. In its advanced stages the living tissue of the coral is reduced 50-80% in Dr. James Porter's photo-monitoring sites. It is attacking corals at Rock Key and Eastern Dry Rocks reefs near Key West. At these locations, it has decimated 50-80% of elkhorn corals (*Acropora palmata*), the major reef-building coral for shallow reefs. Elkhorns only inhabit western Atlantic and Caribbean waters. It was first observed at Key West-area reefs in the summer of 1996 by REEF RELIEF's Craig Quirolo, who alerted coral reef scientist Dr. James Porter (Un-Ga), Debbie Santavy of the USEPA Gulf Breeze Lab and Florida Keys National Marine Sanctuary personnel.

## Sea Fan Browning and Fungus





1995 was the year REEF RELIEF's Craig Quirolo observed that the majority of purple sea fans were turning brown. The filter feeders appear to be "stuffed" with particulate matter. Some have lesions that create gaping holes while others were infected with a fungus that causes deep purple spots on the sea fan. Quirolo shared his data with Drew Harvell of Cornell University, who is studying the sea fans along with Kio Kim (Un Buffalo), and Garriett Smith (Un-N.C.). They have learned that the fungus attacking the fragile gorgonians is aspergillus, typically found in soil. Sea fans in Puerto Rico, the Bahamas and Jamaica are also turning brown.

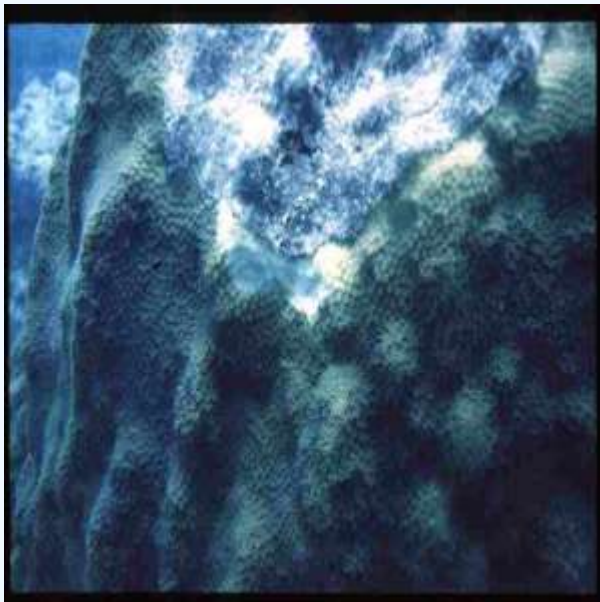
## Blackband Disease





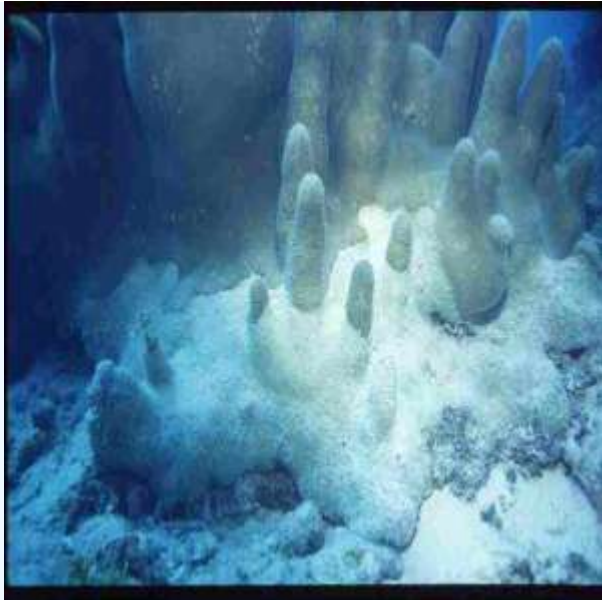
Blackband disease has attacked boulder corals like the lesser and greater star corals for many years, but an acceleration of diseased coralheads began in the late 1980's at Keys reefs. The leading edge of the disease is a cyanobacteria. Healthy coral growth appears to mushroom up and around the dead area over time. Harold Hudson, formerly with the Florida Keys National Marine Sanctuary, developed a method of preventing its spread by vacuuming the disease off corals and applying protective clay to the affected tissue. Since the disease is high in phosphates, REEF RELIEF introduced and fought hard for passage of a phosphate ban on soaps and detergents used throughout the Florida Keys that is one of the strongest phosphate bans in America.

## Yellowband or Yellow Blotch Disease



Yellowband or Yellow Blotch Disease was first observed by REEF RELIEF's Craig Quirolo at Key West area reefs in 1994. The disease is characterized by wide, irregularly shaped bands or blotches on the leading edge of the disease, which progressively consumes live coral tissue, leaving behind only white substrata. It usually affects boulder corals (*Montastria anularis*). Very little is known about the disease. REEF RELIEF provided Dr. Debra Santavy with tissue samples which she is currently processing.

## White Plague Type II Disease



White Plague Type II is the fastest growing new disease to attack Keys coral reefs. First observed on up to 16 species by Dr. Steve Miller in the Upper Keys, it usually affects small star corals, *Dichocoenia stokesii*. Craig Quirolo first recorded this disease in the Lower Keys where it was affecting Pillar Corals, Boulder Corals, and Star Corals and documented that it destroys tissue at an alarming rate. This may occur several times during the course of a season. This disease has also been reported in the Bahamas.