CAN-022-Cures for serious ailments-World's Oceans

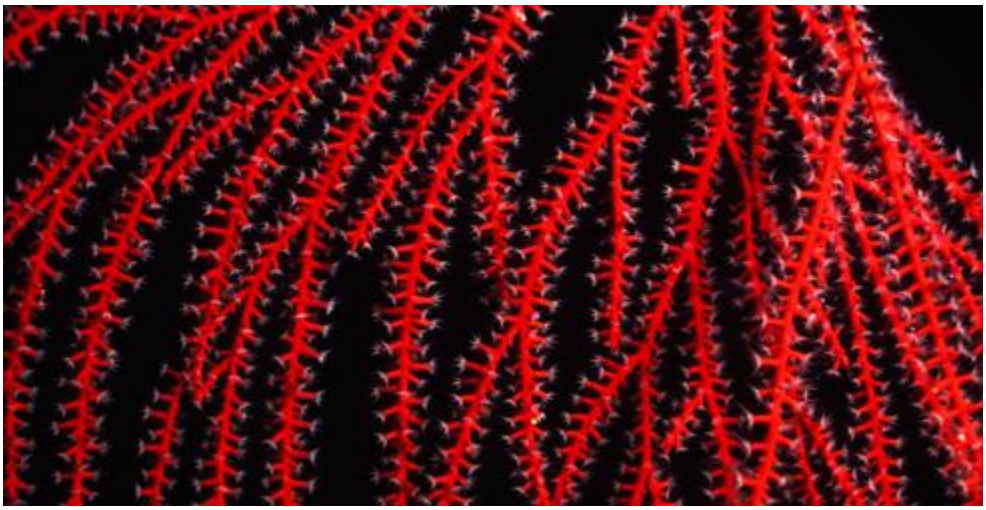
How do we save coral reefs?

Vic Ferguson

The World Federation for Coral Reef Conservation 281.971.7703 P.O. Box 311117 Houston Texas 77231

Oceans and Coasts

Coral Reefs: Nature's Medicine Cabinet



Coral reefs could hold the cures for some of the human race's most common – and serious – ailments.

STORY HIGHLIGHTS

- Surprisingly, coral reefs hold the cures to some of our most common medical ailments.
- Climate change is affecting the health of coral ecosystems — and that puts a strain on the medicinal benefits derived from our oceans.
- By protecting marine environments across the world, The Nature Conservancy is safeguarding marine biodiversity and ensuring coral reefs will be around for future medicinal discoveries.

"A DEVASTATING LOSS OF BIODIVERSITY COULD MEAN THAT FEWER SPECIES WILL BE AROUND FOR FUTURE MEDICINAL RESEARCH AND BIOMEDICAL STUDIES."

Stephanie Wear, Nature Conservancy marine scientist

By Nicole Levins

What are some of the things you think about **when you hear the words "coral reef"**?

Maybe the threats faced by these fragile ecosystems cross your mind: climate change, ocean acidification and unsustainable fishing practices. Or maybe, if you're more of a "glass-half-full" type, you visualize the happy images: starfish and sea urchins, clownfish and parrotfish, sea turtles and giant clams. But **you probably don't think about medicine**.

CAN-022-Cures for serious ailments-World's Oceans

How do we save coral reefs?

Vic Ferguson

The World Federation for Coral Reef Conservation 281.971.7703 P.O. Box 311117 Houston Texas 77231

It's true — these colorful and sometimes crazy-looking underwater structures host a lot more than just cool sea creatures. **Coral reefs could hold the cures** for some of the human race's most common — and most serious — ailments.

By protecting these "rainforests of the sea," The Nature Conservancy is ensuring that coral reefs will be around — and healthy enough — to **facilitate future medicinal discoveries**.

Find out how you can help by adopting a coral reef today.

AN UNDERWATER PHARMACY

Scientists have already developed many medical treatments from resources found in the world's oceans, For instance:

- Secosteroids, an enzyme used by corals to protect themselves from disease, is used **to treat asthma, arthritis and other inflammatory disorders**.
- Bryozoan *Bugula neritina*, a common fouling organism (similar to barnacles) that's found in both temperate and tropical climates, is a source for the **anti-cancer compound** bryostatin 1. The U.S. National Cancer Institute recently collected more than 26,000 pounds of the organism from docks and pilings with little impact on the population.
- **Blue-green algae**, commonly found in Caribbean mangroves, are used to treat small-cell lung cancer. The National Cancer Institute also endorsed blue-green algae for the treatment of melanoma and some tumors.
- Two drugs currently on the market for cancer and pain come from **marine sources**. Twenty-five more marine-derived medicines are being evaluated in human trials right now.
- Yondelis®, the first new treatment in 30 years for soft-tissue sarcoma, is extracted from the sea squirt, a sac-like filter feeder.
- And with just a few more years of research, it seems likely that scientists will uncover even more therapeutic secrets in the sea:
- A series of organic chemicals isolated from a soft coral called the Caribbean sea whip seem to have an impressive **anti-inflammatory effect** on human skin.
- Bioactive molecules produced by marine invertebrates such as sea sponges, tunicates and sea hares have displayed potent **anti-viral, anti-tumor and antibacterial activity**.

CAN-022-Cures for serious ailments-World's Oceans

How do we save coral reefs?

Vic Ferguson

The World Federation for Coral Reef Conservation 281.971.7703 P.O. Box 311117 Houston Texas 77231

- Researchers are studying bivalves, a class of mollusks, to learn more about **aging processes**, including metabolic activity and environmental stressors.

In fact, one coral reef ecologist says that we're **300 to 400 times more likely to find new drugs in the oceans than on land**.

PROTECTING REEFS FOR HUMAN AND MARINE HEALTH

Climate change is already affecting the health of coral ecosystems. Microbial communities — where many new drugs could likely be found — are especially susceptible to these changes, and some are already beginning to decline or migrate.

"An estimated 95 percent of the world's oceans remain unexplored, so it's possible that we might lose significant marine organisms without ever knowing they existed in the first place," explains Stephanie Wear, a marine scientist on the Conservancy's Global Marine Team. "A devastating loss of biodiversity could mean that **fewer species will be around for future medicinal research and biomedical studies**."

By protecting marine environments through the creation of marine protected areas and the development of adaptation strategies, **the Conservancy is safeguarding marine biodiversity**. People and nature are already benefitting in so many ways from these marine protected areas. Just imagine what medical benefits may still lay undiscovered beneath the sea.

Vic Ferguson
The World Federation for Coral Reef Conservation
Executive Director
P.O. Box 311117
Houston, Texas 77231
vic.ferguson@wfcrc.org
www.wfcrc.org
281.971.7703 (office)
512.986.1902 (cell)

*The only thing necessary for the triumph of evil is that good men do nothing"….**Edmund Burke***