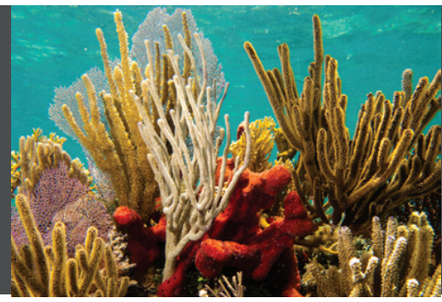
National Park Service

National Park Service
U.S. Department of the Interior

South Florida, Hawaii, U.S. Virgin Islands,
American Samoa

Protect Yourself, Protect The Reef!



NPS Photos by Thomas M. Strom

The impacts of sunscreens on our coral reefs

Discovering an underwater wonderland

A day on the water can be exciting and create lasting memories. When it comes to experiencing the coral reef, snorkeling and diving are the best ways to get up-close and personal. When we enter the water to explore these fascinating places, we may not consider the products that are rinsing off our bodies and how they may affect the tiny animals that make up our fragile coral reefs.

Our living reefs

Coral reefs are among the most biologically diverse ecosystems in the world, and have even been called "biodiversity hotspots." They cover less than 1% of the ocean's floor, but nearly one million species of fish, invertebrates, and algae are estimated to live in and around the world's reefs.

Corals are made up of tiny soft-bodied animals called polyps. They belong to a group called "Cnidaria" which includes species such as sea anemones and jellyfish. Symbiotic algae, called zooxanthellae, live within the coral polyps making them "solar powered" and provide coral with food energy through the process of photosynthesis. These algae give coral its vibrant colors, such as green, brown, or orange. The polyps of "stony" corals use calcium from seawater to manufacture cup-like limestone skeletons. Generations of polyps create adjoining cups that result in fantastically-shaped colonies resembling flowers, mountains, or animal antlers. When many colonies of various species grow in close proximity to each other, they create the living fortresses we call reefs.

Concerns and the steps we can take

Our understanding of coral reefs is constantly growing, and now we know that more than 60% of coral reefs are at risk of being impacted by a variety of sources including marine pollutants, overfishing, boat groundings, and disease. Each of us can take steps to reduce these effects. One step is to limit what we bring into the water.

Sunscreens: the double-edged sword

Sunscreens are among the products we are encouraged to use liberally to protect ourselves from the sun's harmful rays. However, researchers are finding that while protecting humans, some compounds in many sunscreens can harm the coral on our reefs. Researchers testing the effects of sunscreen on corals explain that chemicals in sunscreen can awaken coral viruses. The coral then becomes sick and expel their life-giving algae. Without these algae, the coral "bleaches" (turns white), and often dies.

We may not realize that the products covering our skin wash off when we enter the water, and it adds up! Research tells us that 4,000 to 6,000 TONS of sunscreen enters reef areas annually. This does not spread out rapidly or evenly over the entire ocean, but concentrates on popular tourist sites. It is estimated that 90% of snorkeling/diving tourists are concentrated on 10% of the world's reefs. This means that our most popular reefs, such as those in our national parks, are exposed to the majority of sunscreens.

Be reef friendly

As a visitor to the park and the reefs, you can reduce the risk of harming coral by taking a more "reef friendly" approach to sun protection.

CHECK THE LABELS: While no sunscreen has been proven to be completely 'reef-friendly,' those with titanium oxide or zinc oxide, which are natural mineral ingredients, have not been found harmful to corals. Sunscreens sold for children or for those with sensitive skin may contain these gentler compounds as the active ingredients.

COVER UP: You can protect yourself as well as the reef by 'covering-up' before you enter the water. On the water, wear hats, sunglasses and light, long-sleeved clothing to protect you. In the water, a long-sleeved shirt or rash guard will help prevent sunburn.

Remember, if it's on your skin, it's on the reef. Be reef friendly! Reduce the amount of sunscreen you leave behind…