

What Exactly is a Watershed?

Every now and then a word comes up for which you ought to know it's meaning or at least have an idea what it is about. Such a word is a "watershed" - what is it? Let us try to explain. A watershed is the total land area that contributes runoff to a specific body of water. The runoff is the water which flows off the land surface. The elevation and slope of the land determines which way the surface water will flow. The lowest areas in the watershed that act as collecting basins include our bays and saltponds. The natural rocky channels that carry water to these basins are locally called guts.

Where does the water in the watershed come from?

Precipitation: Precipitation may be in the form of normal rainfall up to 40 inches (average) per year or excessive rainfall events that accompany storms or hurricanes.

Groundwater: Precipitation infiltrates/percolates from the surface, surrounding sediment particles and filtering through the soil. This groundwater may collect in aquifers, or it may move to the surface by way of wells drilled into aquifers, by seeping from springs or flowing down guts.

Land Drainage: Precipitation may land on non-absorbent surfaces. This surface runoff drains to lower areas from the streets, down the storm drains and eventually flows into the lowest area, in our case, the nearest bay.

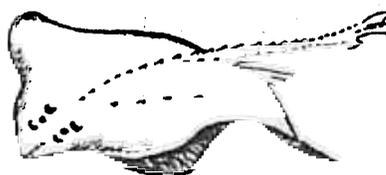
Every activity that occurs in a watershed flows downhill and eventually has an impact on nearshore water quality. A bulldozer clearing a house site on top of a hill contributes soil to a watershed which can affect the coral reefs in the bay at the base of the watershed. This is also true for the improper disposal of oil or other chemicals. It is important to remember the complex relationships that exist in a watershed and do our part in protecting them.

November 1998 - Redhook, St. Thomas
Temperature

Maximum	Minimum	Rainfall
89.2 °F	72.6 °F	4.08 inches

Marine-related Injuries Can Be Serious

Stingrays account for a large number of marine related injuries. They often lie motionless on a shallow sand bottom, lightly covered with sand, making them hard to see. If stepped on, the ray can arc its tail forward



using a barbed spine at the base of the tail to inflict a puncture wound. The spine is encased in a bacteria laden sheath that releases the pain-inducing proteins and may cause infection leading to blood poisoning and, in rare cases, gangrene.

Doctors recommend immediate irrigation of the wound in fresh water, then soaking the area in hot water, as hot as the patient can tolerate to relieve the temporary pain from the toxins. The degree of pain depends on the amount of toxin released under the skin. The onset of pain usually takes up to 30 minutes and generally lasts several hours. The pain may be accompanied by nausea, dizziness, a drop in blood pressure and occasionally anaphylactic shock. The faster you irrigate and apply heat, the shorter the duration of the pain.

Hospitals treat the pain from stingray injuries by soaking the wound in hot water and an antiseptic solution, then searching for foreign bodies. Until the patient reaches the hospital, he's on his own.

While the extreme degree of pain is the most memorable portion of many stingray wounds, it's the threat of long-term infection that poses the greatest health risk. Anything water-borne poses a major threat of infection. Getting all of the toxin out of the wound is the most difficult part, and that's why the infections can be so bad.

(continued on the back)

Quote

"Don't it always seem to go that we don't know what we got til it's gone. They pave paradise and put up a parking lot."

--- Joni Mitchell

For infections, doctors suggest a tetanus booster and antibiotics to prevent the onset of cellulitis, which in most cases is fairly easy to cure. A barb puncturing a bone may require surgery for removal and a second surgery if infection sets in.

Stingray aren't the only threats of injury to humans from the marine environment. Fish spines, fish bites, sea urchins, reef cuts, shrimp spines and even cuts from barnacles all pose potential health problems. Any puncture wound in the marine environment should be treated as potentially dangerous, even after the wound closes. Make sure you get the foreign body out, clean the wound and then seek medical attention.

Commercial fishermen soak their cuts in a mixture of bleach and water or soak scratched skin in alcohol. These treatments sterilize the skin and eliminate bacteria.

Other venomous marine life include hydrozoans and jellyfish, which contain nematocysts that inject toxins. Treatment for these injuries is a bit different from that of stingrays. Irrigate the area with saltwater. Then neutralize the nematocysts so they stop injecting toxins into the skin by applying vinegar, alcohol, or baking soda. Then scrape off any foreign matter with a straight edge. Never use fresh water, since it causes the nematocysts to inject their poisons. Apply heat to help alleviate the pain.

Avoiding venomous marine life is difficult in this water-oriented environment, and precautionary procedures are faulty at best, if they fall short of full body armor. It's knowing what to do when exposed that will help minimize the pain and reduce the chance of future infection.

Article excerpted from, Tight Lines Bulletin, Aug./Sept. 1998. VOL 64 NO. 3

Saltpond Video: To be available soon.

The Division of Fish and Wildlife is nearing completion of the fourth video in our series of videos entitled "Our Natural Virgin Islands". This new video is entitled "Saltponds: Nature's Water Pollution Prevention System". The video reviews salt pond formation, their values to nearshore marine ecosystems, the wildlife that depend on them, the threats facing our salt ponds, reasons for protecting them and what can be done to protect them. The video is being produced with Digital Dudes of Coral Bay St. John and is filmed entirely in the Virgin Islands. Final editing should be completed in December and the video should be ready for distribution by March of 1999. All of our videos are distributed free to teachers, educators and special interest groups. There is a postage fee of \$3.00 (in stamps) per video. Individuals may borrow copies for personal viewing from Division offices on St. Thomas or St. Croix. Please call 775-6762 (St. T.) or 772-1955 (St. X.) if you are interested.

Note: We apologize for the lateness of this issue and following issues. Due to unforeseen reasons we are unable to mail out issues at our monthly intervals. We anticipate regular mailings within 60 days.



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