HERE'S HOW FARMERS

PROTECT GUAM'S WATER•ECONOMY•FUTURE

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NONPOINT POLLUTION IS...

- ⇨ pollution from human activities
- ⇨ small scale
- ⇨ mostly unnoticeable by itself
- ⇨ harmful mostly when it accumulates
- ⇨ manageable
- ⇨ capable of ruining our economy
- ⇨ inexpensive to manage
- ⇨ prevented with good housekeeping

THE PROBLEM

POLLUTION OF OUR COASTAL AND SURFACE WATERS BY NORMAL FARMING

Farmers are usually very good at taking care of their land. Your farm may not have many obvious problems, but there are common farming activities that do contribute to pollution of our coastal and surface waters. Your contribution may be small, but it can add up to a big water pollution problem that affects our whole island.

Let's walk around your farm, and point out how normal everyday activities can pollute our coastal waters.

ALL THESE NAMES!

POLLUTED RUNOFF

DIFFUSE SOURCE POLLUTION

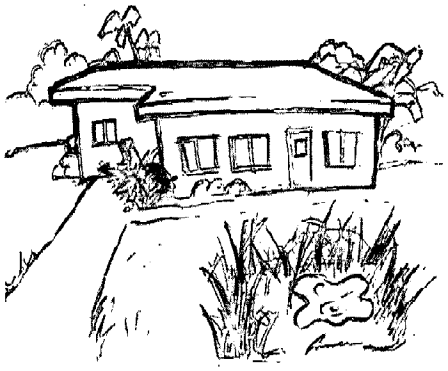
STORM WATER POLLUTION

➡ NONPOINT SOURCE POLLUTION

It can get confusing, that's why we picked one name that covers it all:

➡ NONPOINT SOURCE POLLUTION or "NPS"

NPS comes from normal human activities and is not limited to agriculture. NPS includes:



- pesticides
- fuels
- chemicals

- septic system overflows.
- fertilizer and animal waste

  (Too much can overload coastal waters with nutrients, causing them to overgrow with algae.)

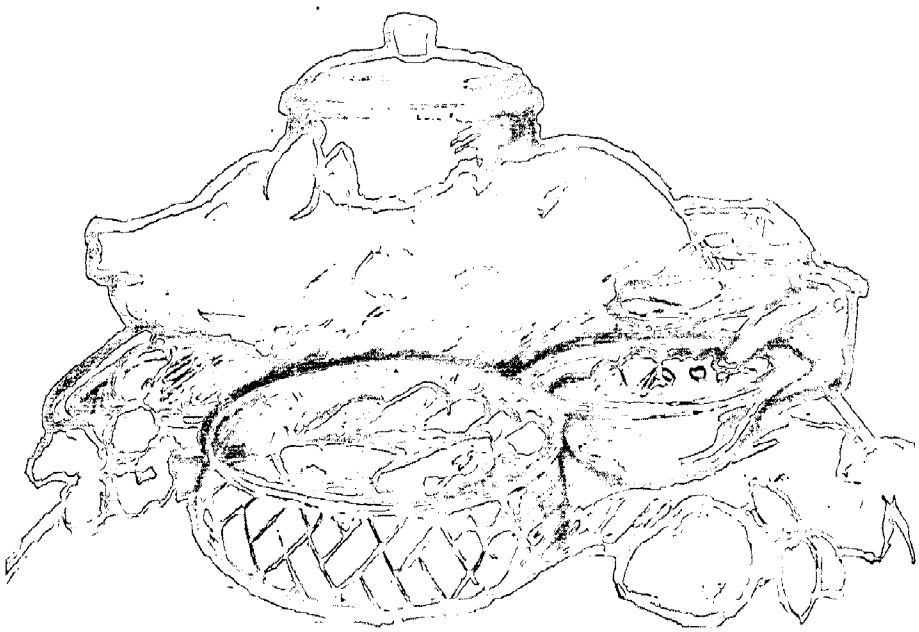
NPS pollution is not like other pollution in that only one source causes a problem.

NPS creates a problem when a number of individual sources make small, mild contributions of pollutants.

It's called "Cumulative Impact."

WHAT'S THAT?

CUMULATIVE IMPACT is a formal term for the way little contributions add up to something BIG!



We all enjoy the cumulative impact known as the fiesta. Everyone contributes a little, and the results can include the entire village.

Not all cumulative effects are this good. Polluted storm water is a negative cumulative impact.

Everyone contributes to this pollution.

Yes, everyone.

So now it's time to ask yourself:

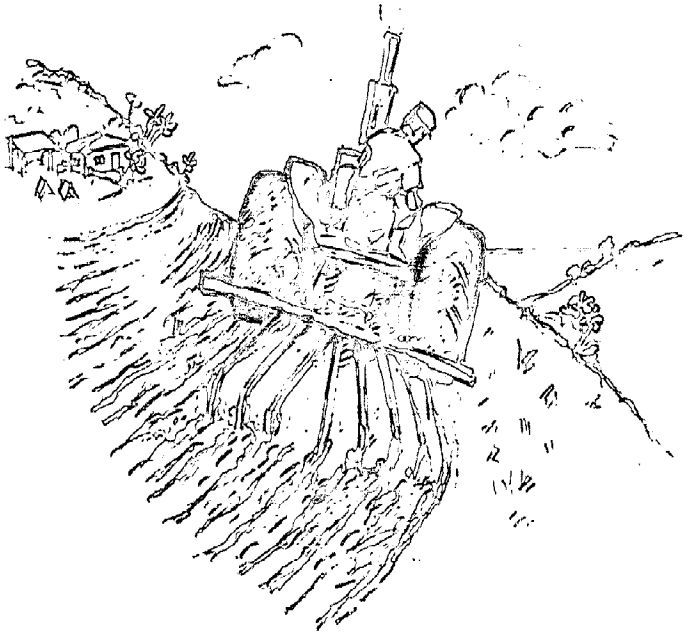
➪ *"What am I contributing"?*

FARMING POLLUTION

SOILS

Farmers have always known that soil can be very difficult to retain on site. Soil has to be tilled and weeded, so that the intended crops can grow, but loose soil is easily washed away by excess irrigation water and rain water. Our soils are somewhat delicate because of Guam's geology. The result is that any disturbance of ground cover lets soil move to the coast in the next rain.

The use of conservation tillage, where the soil is not cleared entirely of vegetable matter, is a way to protect soil from the force of a hard rain storm. Tilling and furrowing should cross slopes instead of going up and down. Keeping bare soil in place until vegetation is established can be easier if some areas are left untilled and grassy buffer strips are left in place.



FARMING POLLUTION

PESTICIDES

Pesticides are chemicals that are poisonous to a particular type of living organism. Unfortunately, pesticides in large enough quantities can also be harmful to humans. Pesticides, when used properly, will not travel far from where they were applied, but excessive use of pesticides provides another opportunity for rain water to carry that excess to our coastal waters.

ANIMAL WASTE

Animal waste creates pollution problems in two ways. First, the germs or bacteria that occur in animal waste can be very harmful to humans. Our drinking water is treated to prevent these bacteria from living in our drinking water, but our recreational waters become sources of illness. You've probably heard of beach closings due to these bacteria.

Another problem is caused by nutrients. Animal waste can provide lots of nitrogen, which is why manure is used as a fertilizer. This nitrogen also encourages growth

FARMING POLLUTION

in algae and other marine organisms. When algae grows faster than the sea life that eats it can keep up, real problems with algae washing onto our beaches occur. When this algae decomposes, it is smelly and ugly, reducing Guam's attractiveness to visitors.

ANIMAL WASTE

Animal waste from your farm can be used in moderation on your land as a fertilizer. Soil tests should be used to determine if the animal waste would provide the nutrients that your plants really need. Excess nutrients just wash off or soak into the ground, where they get carried into our water lens.

COMPOSTING TIP

If you must stockpile animal waste, keep it out of the rain. cover manure and keep it out of the way of the storm water.

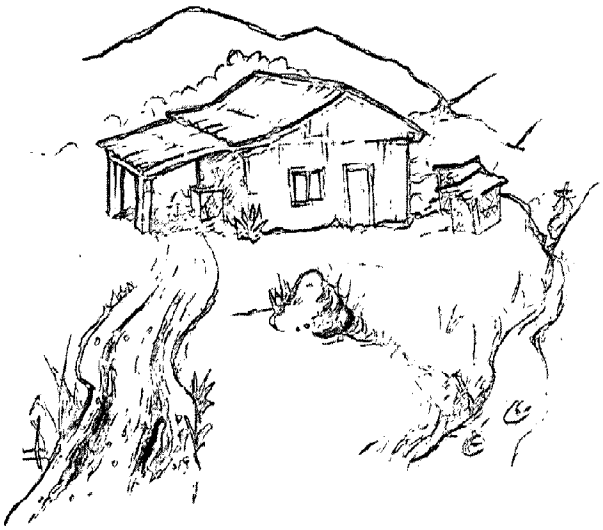
FARMING POLLUTION

GRAZING

Grazing animals should get their water from troughs. If they walk into a stream to drink, they will usually wear down any vegetation on the stream bank and leave exposed soil that will wash directly into the stream. The stream also becomes the target for "bored animal bombing runs" which are obvious pollutants.

DIRT ROADS

Dirt roads lose large amounts of soil from rain water erosion and from soil that sticks to tires. A paved road is best; a good coral road provides some protection, and reduces the amount of soil tracked onto our highways. Soil that is carried onto the street will indeed travel to the reefs. Where practical, having a wash off area for vehicles at the point where they move onto paved roads can help.



HERE'S HELP!

In this booklet, we have shown some of the more common ways that farming contributes to pollution. We hope that we've explained why we need your help and support and that you will want to make the simple changes that would really help protect the island's resources.

If you need more information about these practices, or for more general information on nonpoint pollution, there are lots of folks with information. You probably know most of them, and we promise you a warm welcome from all:

- For general information on nonpoint pollution, pesticides, and feedlot waste disposal, contact the Guam Environmental Protection Agency at 472-8863.

- For help with planning your use of animal wastes, fertilizer, and pesticides, contact the Agricultural Experiment Station at the University of Guam College of Agriculture at 735-2134.

- For help with planning your farm for resource conservation, contact the Natural Resources Conservation Service Guam Field Office at 735-2111/2/3. They can also help you contact your local Resource Conservation District.

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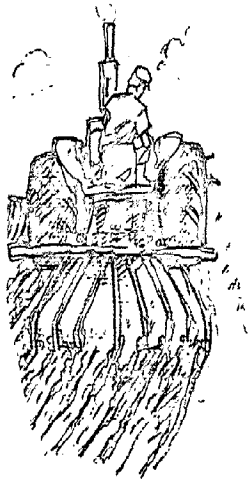

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