



Applying knowledge to improve water quality

# Southwest States & Pacific Islands Regional Water Program

A Partnership of USDA CSREES & Land Grant Colleges and Universities

# Water Quality and Human Health: Addressing the Connections

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## Regional focus areas continue to be:

- ≈ Animal Manure Management
- ≈ Drinking Water and Human Health
- ≈ Water Conservation and Agricultural Water Management
- ≈ Watershed Management

Within these focus areas, the Southwest States and Pacific Islands Regional Water Program has worked to address various connections between water quality and human health. This poster illustrates a few of the many projects and programs supported throughout the region in 2007.

## Balancing water quality protection with food safety initiatives

### In California:

- Co-sponsored a conference for researchers from both the water quality and food safety arenas; follow-up from which has included:
    - a survey of participants to identify research priorities.
    - efforts to develop a Coordinating Council to gather and disseminate information on coordinated management.
    - additional presentations at other venues, (including a symposium here in Sparks, Monday 1 - 5 pm).
- (more information available online at: [groups.ucanr.org/wqfscnf/](http://groups.ucanr.org/wqfscnf/))

### In Hawaii:

- Developed a solar water pasteurizer for agricultural wash water.
- Offering one-on-one, on-farm food safety coaching.
- Conducted a survey on available water sources for island farmers.



Food safety and water quality researchers listen to a farmer discuss challenges faced when one group encourages the riparian buffer zone (left) while the other fears it will attract wildlife that will contaminate the nearby field crops.



## Keeping animal waste out of streams

Leptospirosis, a significant waterborne disease throughout the Pacific islands, is spread, in part, through contact with pig wastes. Keeping pig wastes away from streams and other water bodies is an effort that will help reduce the risk of infection for those who come in contact with those waters. Examples of two efforts to achieve this goal are:

- Demonstration projects on management alternatives including the dry litter waste management system in the CNMI, Guam, and Palau. (See poster "Dry Litter Waste Management System for Small-scale Piggeries in the Western Pacific")
- Mapping all known piggeries in American Samoa and dispensing information on leptospirosis; piggery management; and current regulations.



Traditional "sprayout" method of cleaning pig pens. Water washes out the wastes and frequently ends up flowing into nearby streams.



A piggery adjacent to a stream.



Upstream from this child playing in a stream is a piggery disposing wastes directly into the stream.

## Clean drinking water for good health

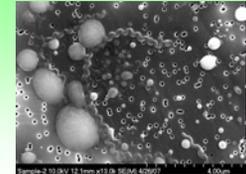
- Workshops, student demonstrations, and conferences to train Pacific islanders on how to test and treat rainwater catchments to ensure drinking water safety.
- Assistance to families in the Navajo Nation using private wells from student interns at Diné College. Students gain valuable experience working with their communities and communities gain valuable water quality information and support from the students.
- Web-based water test interpreter tool, already available for Nevada, is under way to help residents of Arizona, California, Guam, and Hawaii understand the results of domestic water analysis.
- Private well-owner fact sheets and workshops being piloted in Arizona.



A worker logs results from H<sub>2</sub>S tests on water from local rainwater catchments.

## Does composting really kill the bacteria? *Leptospira*, beware.

- Supporting research to determine specific conditions under which *Leptospira* spirochetes will die. Factors of temperature, pH, and time were tested. Further testing with different strains of the bacteria is being conducted.
- Developing instructional materials to make compost that is *Leptospira* free.



Spirochetes in fluids with fixed pH and temperature.