FogQuest NEWS

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A NEWSLETTER FOR MEMBERS AND SUPPORTERS OF FOGQUEST

"A minuscule share of the world's water - less than one-hundredth of 1 percent - is both drinkable and renewed each year through precipitation. And that freshwater supply is finite. The quantity available today is the same as when civilizations first arose thousands of years ago, so the amount of water available per person has declined steadily with time."

(Sandra Postel, UTNE READER, July - August 2000, p.63)

Editor
Dr. Robert Schemenauer

Contributions of short articles, news items and photographs for upcoming issues of the Newsletter are welcome. They should be sent to: FogQuest@rogers.com or to the address at the end of this Newsletter.

The Newsletter's primary purpose is to be a means of exchanging information with our members. We hope that it will also promote better communications between those working on water projects using fog, rainfall and dew collection, and those studying the many scientific aspects related to these atmospheric water sources. The Newsletter is sent three times a year to members of FogQuest: substainable water solutions. The current issue is available on the web site www.FogQuest.org. Information on membership can also be obtained on the web site.

The above words by Sandra Postel clearly state the problem. The rate of replenishment of the world's aquifers is limited and at the same time populations in developing countries are growing rapidly. The best estimates by UN agencies are that over one billion people do not have a supply of safe drinking water and three billion have no access to proper sanitation.

FogQuest is doing a small part in the fight to alleviate these problems by "thinking outside the box." Though it is generally true that aquifers are replenished by precipitation, it is not true everywhere. In some locations fog plays a significant role in delivering water from the atmosphere to the Earth's surface. What these locations have taught us is that by using appropriate fog collectors we can manage the flow of water that is passing over the surface of the hills and use it to improve the lives of people by providing them with clean water.

Veterinarios Sin Fronteras

Don Santos Xitamul is a coffee farmer from Panimaquip, Guatemala

Veterinarios Sin Fronteras

Girls in Chitulul near Lake Atitlan, Guatemala

FOG COLLECTION IN GUATEMALA

FogQuest is working with an NGO, Veterinarios Sin Fronteras - Francia, in Guatemala, on the development of a fog collection project to provide water to the people living in the mountains on the south edge of Lake Atitlan. We are actively looking for funding for the project, which should begin this December. VSF has worked with local communities on agricultural projects in the area since 1992. More water, particularly in the dry winter months, is needed to allow the people to grow a more diverse range of crops. Please watch the web site for more information.

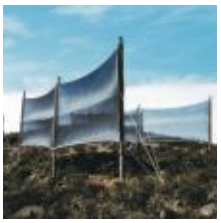
MEET THE STAFF

Stu McNair
Membership Secretary

Stuart joined FogQuest in 2002 to help build the membership base. He is a private consultant, working mostly in the area of environmental research management. Stu's background is in meteorology and air quality.

Stu loves nature. His vacations are usually spent travelling Canada with his wife, Nancy. They are avid wilderness canoeists and hikers. When he isn't working or travelling, Stu can be found painting or playing guitar. He is currently writing a book on spirituality.

"FogQuest represents a unique opportunity to derive a social benefit from meteorology. The idea of providing safe water from the atmosphere to people who have no other source is brilliant. We have the knowledge and desire to help more people. With the support of members and sponsors we will make dreams come true."



WHAT IS FogQuest?

FogQuest is an innovative, international, non-governmental, non-profit organization, which implements and promotes the environmentally appropriate, socially beneficial and economically viable use of fog, rain and dew as sustainable water resources for people in arid regions of developing countries.

MEMBERSHIP

Membership in FogQuest continues to grow. We currently have members in 16 countries on six continents. A solid network of members will be our means of spreading information on fog collection and generating support that is vital to our operations.

HOW CAN YOU HELP?

Please consider taking out a membership in FogQuest. The annual membership fee of $35.00 Canadian, or $25.00 US for those outside of Canada, can be paid by check or by credit card. We accept VISA or MasterCard. Students receive a $5.00 discount on their membership fee. Donations can be directed for general support or to our current projects in Guatemala, Haiti, Chile and Nepal.

Thilda Zorn

Boys in a toy shop in Santa Cruz, Lake Atitlan, Guatemala.

SEARCHABLE DATABASE

FogQuest now has available a powerful searchable database, which, among other things, presently includes over 3000 articles, videos, reports, audio tapes, etc. on fog, rain, dew, and water issues. The database is an extremely flexible resource that can be searched by author, location, topic, keywords, language, medium type, range of years and combinations of the above. It is currently available only in the FogQuest office in Toronto but will be available to members in the members' section of the FogQuest web site before the end of the year.

Darrell Piekarz

Lake Atitlan, Guatemala, looking south to a volcano on the shore.

FOG AND DEW COLLECTION IN ISRAEL

Submitted by: **Simon Berkowicz**

Water is a limited resource in Israel as well as in most of the Middle East. Though low rainfall and high annual rainfall variability are characteristic of Israel, dew occurs frequently (> 200 nights/year). Fog is less common (up to about 50 occurrences/year, depending on elevation). A project was initiated in 2001 and 2002 to establish a network of fog and dew collectors in the arid Negev and sub-humid/humid northern part of the country. In addition, both the fog and dew instruments are able to collect rainfall. The overall sums of water captured will shed light on possibilities for home, general garden and agricultural applications in such rural areas. Another aspect of the project is to assess the ecological role of such moisture inputs to the ecosystem.

Simon Berkowicz

The photo shows an SFC and meteorological station established in the Shivta archaeological park, northern Negev, Israel. Annual average rainfall here is 100 mm.

The dew collecting work is being carried out in partnership with Dr. D. Beysens & Dr. I. Mylymuk (Commissariat B L'Energie Atomique & Institut de Chimie de la MatiPre Condensée de Bordeaux du CNRS) and Dr. M. Muselli (Université de Corse), in conjunction with related dew research with Dr. A.F.G. Jacobs and Mr. B. Heusinkveld (Wageningen University, The Netherlands). In the selected measurements carried out so far, the dew receiving surface has produced almost 300 ml/m^2/night.

The fog collecting work was initiated with Dr. R. Schemenauer of FogQuest and Environment Canada. At an elevation of 900 m, one of the Negev Standard Fog Collectors was able to capture almost 3 litres/ m^2/night.

Contact:
berkowi@vms.huji.ac.il
Hebrew University
of Jerusalem
Minerva Arid Ecosystems Research Centre

REUNION ISLAND

Submitted by: **Gérald Gabriel**

Reunion (France) is a small island in the Indian Ocean east of Madagascar. It has two volcanic peaks (Piton des Neiges, 3069 m and Piton de la Fournaise, 2632 m). The regularity of the trade winds defines an upwind slope and a drier western slope. The rainfall is less than 2000 mm on the leeward coast and can reach 20,000 mm on the windward coast. The combination of this rainfall and the permeability of the volcanic substrata creates areas with very different water availability. There are also years when the entire island has water shortages. It is because of the lack of water that a fog-water evaluation project began on the western slope of the island. The conviction to examine the fog-water potential came in 2000 when the faculty of *Sophora denudata* (Petit tamarin des hauts) to collect fog was discovered. We now call it the "Reunion fountain tree."

Gerald Gabriel

The fountain tree on Reunion Island with a Standard Fog Collector and a smaller collector.

The quantitative study of the water potential of the fountain tree began October 2001. After 25 experiments, while the rain collector situated in a clearing recorded 92 mm, the optimum rain gauge under the tree collected 161 mm and, on average, the 15 rain gauges collected 25 % more water than in the clearing. Once the water production of this species was determined, it was decided to consider the tree as an ecological indicator of the fog-water potential on La Fournaise. It is only recently that the Standard Fog Collector (Schemenauer and Cereceda, 1992) was simultaneously located in the experiments (photo). On July 2, 2002, there were 5 litres of water collected in 1h30 and on July 15, 2002, there were 2.10 litres of water in 3h30. The experiments continue with fog collectors of smaller size because of the absence of subsidies and the impossibility to leave the SFC constantly in place for fear of vandalism.

Contact:
ggabriel@caramail.com

SPECIAL JOURNAL ISSUE ATMOSPHERIC RESEARCH

The journal *Atmospheric Research* has just published a special issue (Sept. - Oct. 2002, Vol. 64, Iss. 1-4, pp. 1-334) containing 28 selected articles based on papers at the 2001 Fog Conference. Jeff Collett served as lead, guest editor for the issue. The editors, including Howard Bridgman and Joerg Bendix, chose a variety of papers to reflect the breadth of topics covered at the conference. Our thanks are extended to them for an excellent job.

Veterinarios Sin Fronteras

DoZa Marina Cuj with her children at a training course in Pampojila, Guatemala.

TO CONTACT FogQuest

Mailing
P.O. Box 151
1054 Centre Street
Thornhill, Ontario
L4J 8E5 Canada

Office Location
6305 Yonge Street,
Suite 202
Toronto, Ontario
M2M 3X7 Canada

Email:
FogQuest@rogers.com
Tel. 1-416 225-7794
Fax 1-416 225-9801

NEWS ABOUT FOG

We are pleased to be able to tell you that a Memorandum of Understanding has been signed between FogQuest and the Department of the Environment in Canada. It will provide support for our projects and, at the same time, we will undertake some activities that will promote the joint goals of Environment Canada and FogQuest.

Dusty Becker of Kansas State University is working on the ecology of Loma Alta, **Ecuador**, where there is a fog forest. **Surender Singh** at CCS Haryana Agricultural University is engaged in dew and fog impact studies on agricultural crops in semi-arid regions of **India**. **Waldo Canto** and his associates at CONAF in **Chile** have recently set up large fog collectors to provide water to an agricultural community in the dry desert of the Province of Limari. **Sigrid Dengel** from Germany is doing a thesis on the fog and rain chemistry in a tropical montane forest ecosystem near Loja, **Ecuador**. **Pru Foster**, of Okayama University in Japan, is involved in the Andes Biodiversity Consortium project, which focuses on conservation in the tropical **Andes** and includes fog as an important component. **Pablo Osses** and **Pilar Cereceda** continue to work near Iquique in northern **Chile** to provide ground truth to observations of fog by GOES and NOAA satellites and to use a large fog collector to provide water for an irrigation experiment with natural vegetation. **Antonio Sabino** has completed a small fog collection project at Serra Malagueta in **Cape Verde**.

Thilda Zom

School girls making kites in Santa Cruz, Lake Atitlan, Guatemala.

A severe traffic accident involving 49 vehicles near Montreal, **Canada**, on 26 September, caused by dense fog, has renewed debate on forecasting and road safety issues.

I came across an interesting article published in 1999 by J.P. Baraybar entitled, "Diet and death in a fog oasis in central coastal **Peru**..." No, it wasn't about FogQuest staff working on a project but about people who lived at a site in the lomas (coastal hills) about one thousand years ago.

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