Science in paradise still hard work

FRENCH POLYNESIA: Former North Vancouver resident is top researcher on Pacific island

BY SHANNON MELNYK
SPECIAL TO THE PROVINCE

Frank Murphy is giving a tour of the University of California Berkeley's Richard B. Gump South Pacific Research Station.

In jar- and microscope-laden labs, grad students and biologists busily extract spider legs and poke at wet coral in sterile containers while collecting data that will have international implications.

A typical academic environment — until you peer outside Murphy's modest office window.

Overlooking the idyllic Cook's Bay in Moorea, Tahiti's sister island, the research station has a front-row seat to paradise.

Quirky, quiet Moorea, a micro-speck on the world map and the setting for the Hollywood portrayals of *Mutiny on the Bounty* and *Love Affair*, at first seems an unlikely satellite for UC Berkeley or its partner, the U.S. National Science Foundation.

But the station's curious existence starts to make sense if you understand what it has to offer other island communities and ecosystems.

As a station associate director, 51-year-old Murphy has been witness to findings and scientific collaborations for almost two decades.

Born in North Vancouver, he moved to Southern California in his early years, where he pursued his academic career.

After a stint of coral studies in the South Pacific following his masters, what became the quintessential control in a nesting experiment with Tahitian wife Hinano, and their children who have been raised on the island, Moorea is decidedly home for the geographer who still holds a Canadian passport.

Contribution to the station is a family affair: with Hinano's extensive background in both education and Tahitian language and culture, she too holds an associate directorship at the station, through Gump's Atitia Center, a non-profit outreach initiative devoted to pursuing educational and research programs in marine and terrestrial biodiversity, traditional knowledge, culture and the relationship between human societies and natural ecosystems.

It does not take a scientist to see why Murphy traded in the bustle of city life and slightly colder climes for a simpler, balmy way of life in the octopus's garden that is Moorea.

He is a calm and thoughtful man in tropical garb reminiscent of the old TV series, *Magnum P.I.*

"Look around you," Murphy smiles, waving at nothing in particular, perhaps embarrassed to state the obvious. "There is very little to complain about; my commute is a couple of minutes," he says.

"Moorea's a great place to live and a wonderful place to raise children."

The station's aim is to promote research, education and public service in global-change science, tropical biocomplexity and sustainable development.

With its local and international partners, the University of California is working to develop the island as a model system to understand how physical, biological and cultural factors interact to shape tropical socio-ecosystems, particularly coral reefs. In this neck of the woods, coral reefs are the "rainforests of the sea," an essential habitat that affects the entire food chain.

Among the world's most pristine but sensitive habitats, the reefs of French Polynesia are proverbial canaries in the mine — crucial indicators of how the natural world is responding to unprecedented global change. With 20 per cent of the world's coral reefs lost and another 35 per cent in serious danger of disappearing by 2050, the Gump program leads the charge on using data to predict future patterns and possible solutions.

What makes coral studies at the station unique, Murphy says, is twofold: Moorea is a complete socio-ecosystem, complex yet small enough to study the ecology in its entirety.

What is called the Moorea Biocode Project, for example, is enabling them to genetically sequence every species on the entire island from mountain tops to ocean depths.

Secondly, international participation enables a much-needed long-term approach in understanding the effects of global climate change, overfishing and coastal development.

While coral reefs appear to be the sexy issue of the moment, the research station is also ambitious in their holistic approach to field studies and research.

Here, disciplines encompass biocultural organization, from genetics and molecular biology, through organism and population biology, to anthropology, economics and the social sciences.

There is a genuine desire to connect with the islanders and the public in sharing their findings and facilitating education and ecotourism in these areas.

Lush emerald peaks surround the quiet bay, where a hodgepodge of activity ensues.

Murphy passes a bikini-clad student preparing a field study amid enormous blue barrels of sea water.

He approaches a freshly constructed structure called the "Chantier du prototype du fare bio climatique" and earnestly describes this co-op development project as the first model for sustainable, green homes in all of French Polynesia.

We then pass an ethnobotanic garden, where a fare pote'e (a traditional Tahitian meeting house) plays a central role in the Atitia Center's community outreach activities led by Hinano Murphy. Murphy explains a wealth of educational exchange happens here; he points at the ahimaa, what looks like a fire pit for Tahitian feasts called tamaaraa.

"We've had really interesting dialogue here," Murphy says.

"Elders have shared important pieces of Polynesian culture and anthropology . . . it's been great for the station and great for the community."

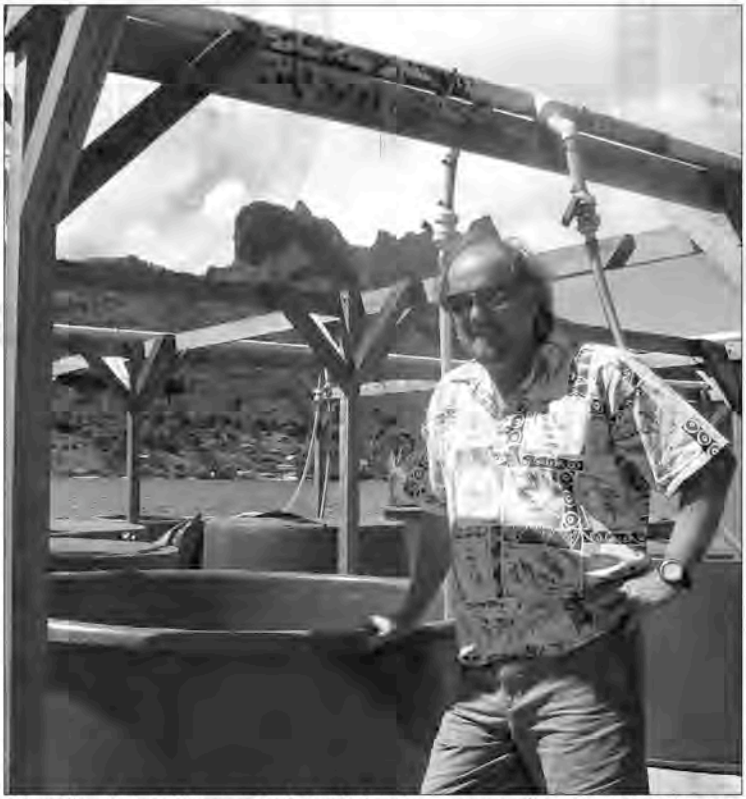
Our final destination is only steps away, where Maori carver Matahi Brightwell stands in a narrow shadow allowed by the large sculpted trunks of New Zealand totara wood that pierce the sky. Barefoot and sporting a red backwards ball cap, the tribal artist is a long-term guest on station land.

He's here to finish the work of his father-in-law, Tahitian navigator Francis Cowan.

Tour complete, Murphy unties his hovercraft and pushes off from the pier into the territory of his second office, the Pacific Ocean.

Work and life as one, the eternal buzz of discovery masked by the gentle tides and fragrant sense of infinity.

Murphy shoots off across Cook's Bay; it's time to have lunch on the most studied island in the world.



Although born in North Vancouver, Frank Murphy doesn't seem too upset his work with the University of California has taken him to the French Polynesian island of Moorea. SHANNON MELNYK — FOR THE PROVINCE

> **"Look around you. There is very little to complain about; my commute is a couple of minutes. Moorea's a great place to live and a wonderful place to raise children."** — *UC Berkley researcher* ***Frank Murphy***