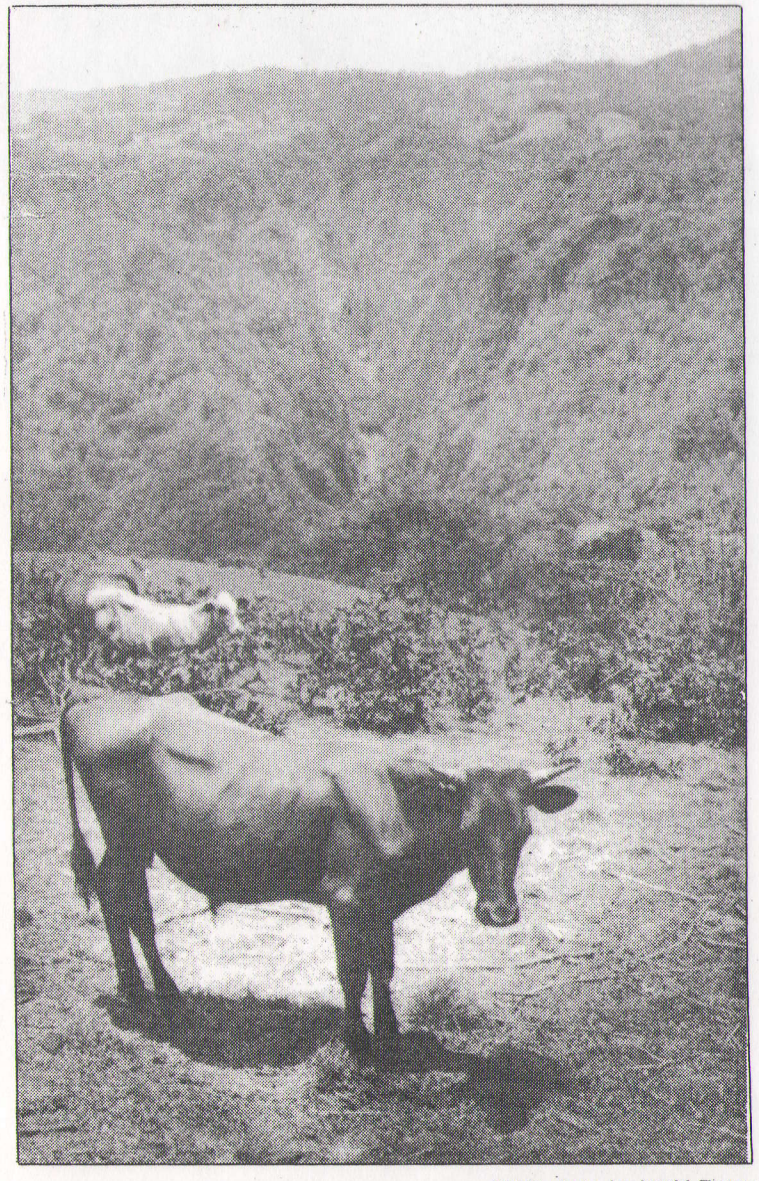
Where has all the water gone?

No bones about it — Reservoirs feeling impact of island land use practices



STAR photo by Ingrid Torres

Cows graze in the area around San Cristóbal Canyon in Barranquitas and many other places around the island.

The metropolitan water supply is within days of going bone dry, and everybody seems to be holding the Aqueduct and Sewer Authority responsible.

On occasion, I, too, have railed against their wasteful distribution system, which wastes or loses a third to a half of supplies during delivery. But the current shortage extends beyond ASA's doorsteps.

Land use greatly influences the amount of water available before it even reaches ASA.

The Puerto Rico Conservation Foundation brilliantly illustrated the connection between water and vegetation in its Biodiversity Week exhibit in Plaza Las Américas, which continues through Saturday.

The Foundation display, one of 18 worthwhile exhibits, shows the decline of a miniature ecosystem in series of six concrete pots roughly a meter wide.

By the fourth stage, the assault on nature (in this example, with undefined chemicals) has shriveled the grasses that replaced the trees earlier on — and dried up the water that flowed through the first three ecosystems.

By the sixth stage, the area has become a desert. It even has a cow skull sticking out of the dirt, lending a dreamscape image to the nightmare of drought and famine.

Cow skulls made me think of Africa or the Southwestern United States. I didn't really associate it with Puerto Rico until later in the week, after a conversation with Alexis Molinares of the Puerto Rico Conservation Trust.

During a drive to San Cristóbal Canyon in Barranquitas, our panoramic view took in quite a number of barren hills along with those hosting trees. It looked like at least a third of the mountains were denuded, as an off-the-cuff guess.

MELANIE LENART
EcoLogic

suggested that cows may be a main reason for the clearing.

Department of Agriculture data indicates the cattle on the island number about half a million, though that figure appears relatively stable since about the '70s. The animals might be expanding their range as grasslands falter, especially in times of drought.

Augusto V. Ingellis, a member of Highland Friends of the Environment, strongly suspects there's been a recent increase in tree-cutting. He lays the blame on the advent of a new type of coffee — *café a sol* — that doesn't require shade trees for its growth.

The Department of Agriculture just started collecting data in 1993 on the switch to *café a sol*, public relations officer Isoly Colón said. Already, it shows close to half of the island's 72,800 acres of coffee farms have been converted to this erosion-creating type, which became available only a few years ago.

Ariel Lugo, director of the International Institute of Tropical Forestry based in Río Piedras, said a 1990 Forest Service survey deduced island forest coverage was 40 percent, up from 35 percent in 1985. But he, too, sensed a "backlash" since then that has decreased the island's forest cover. He cited road construction as a contributing factor.

eroding water resources. Population density takes its toll.

Whatever the reason, and it's probably a combination of the above, there's certainly a lot of sediment reaching our water reservoirs. When the rain hauls in more sediment than water during its long awaited bouts, as it did into Lake Carraízo over the weekend, there's cause for concern.

Especially when we consider that rainfall patterns are not *that* bad. Israel Matos, a meteorologist with the National Weather Service, said Thursday that rainfall was about two-thirds of its normal rate since Jan. 1. Further, rainfall last week was right up to par, at 98 percent of the amount the island received for the same week last year.

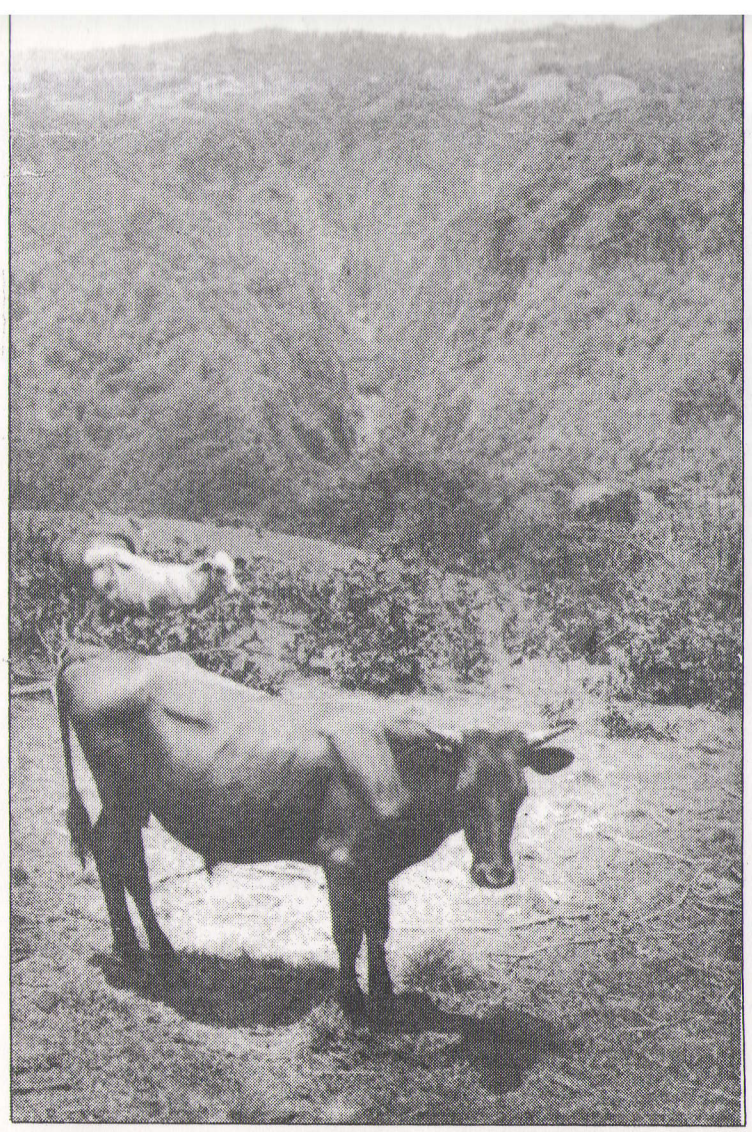
You'd never guess this when standing at the source of the La Plata River — called the Usabon River at this point — which Molinares pointed out when we reached the bottom of San Cristóbal Canyon.

On Wednesday, one of the two streams feeding the Usabon had completely disappeared, while the other was a trickle of its normal self. The surrounding rocks spoke of a different past, with water marks reaching the 15-foot mark.

We could take a lesson from another Caribbean island while contemplating the water problems here. Consider these words from a 1984 report by the U.S. Office of Technology Assessment in Washington, D.C.:

"Perhaps the most important value of forests on these tropical islands is regulation of water regimes. For instance, because of deforestation, the U.S. Virgin Islands [excluding St. John's] no longer has permanent streams. Most other islands have also experienced problems with water quality and quantity."

It's enough to put some fear into



STAR photo by Ingrid Torres

Cows graze in the area around San Cristóbal Canyon in Barranquitas and many other places around the island. There's a perception that green land is being turned over to cows, coffee and development, land use practices that can lead to to water problems.

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Molinares agreed forest coverage may be dropping again after years of recovery. He

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Trust Director Francisco Javier Blanco points to urban development as a having a role in

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It's enough to put some fear into our bones. Maybe it'll knock some sense on land usage into our thick skulls.