

American crocodiles in Turkey Point Power Plant

Mesozoic time (about 248 million years ago to 65 million years ago) is known as the Age of Reptiles. The ruling reptiles, or archosaurs, that dominated the Earth during much of the Mesozoic, include the world's favorite fossils, the dinosaurs. But other archosaurs also flourished. Two of these have left descendants in our time: birds and crocodiles. They lie closest to the dinosaurs on the tree of life.

Actually, three quite different sorts of crocodiles survive. The gavials have long narrow snouts and specialize in eating fish. The alligators have very broad snouts, so powerful that they can crush and eat turtles. The crocodiles with intermediate snouts are called simply crocodiles. You can recognize them easily because their snouts aren't quite broad enough to hide their teeth. Thus, their fabled winning smile. By comparison, alligators seem dour and closed-mouthed.

The US has no gavials. But it does have alligators aplenty. And it has a few crocodiles too, members of a rare and endangered species that ranges from the US into the Caribbean and down through central America to tropical South America. All the US crocodiles live in tropical Florida where they are very rare indeed.

I have seen the Nile crocodile in Africa and the huge salt-water crocodile in the Australian outback. But I have never been lucky enough to spot an American crocodile. On my last trip to Florida, I found out why. I had been looking in the wrong places. I should have looked along the interceptor ditch of the Turkey Point Power plant south of Miami.

The Turkey Point power plant, operated by the Florida Power & Light Company, has the job of generating electricity for southern Florida. It consists of two fossil-fuel generating units and two that run on nuclear fuel. Turkey Point emits a lot of hot water.

To cool off its effluent, Turkey Point dug an extensive system of canals. The system covers 6000 acres, and about 64% is open water. The shallow canals, each approximately 200 feet wide, run through the landscape like densely drawn zebra stripes from north to south. If placed end-to-end, they would be some 160 miles long.

To separate the 38 canals, the plant piled the dirt dredged to dig the canals into low lying berms about 80 feet wide. The berms support a variety of native and exotic plants, including buttonwood trees, red mangroves and casuarinas. Red mangroves also grow along the edges of the canals themselves.

THE CAREFUL FOOT

We can all agree that the cooling canals of Turkey Point were built to cool water, not to support diversity. If you had asked me, I would have guessed that they would be a terribly poor prospect for conservation. I would have been sadly mistaken.

In addition to the variety of plants growing on the berms, a large, healthy population of American crocodiles lives in the cooling canals. No one planned it. It just happened.

Although they did not intend to become conservationists, Florida Power & Light Company is behaving like a model citizen. They employ biologists to monitor the crocodiles and do what they can to ensure their continued success. The biologists discovered that 'their' crocs reproduce well. In fact, they are responsible for producing about 10% of all new young American crocodiles in the US (Gaby et al.).

Perhaps, this story has a moral. Never give up on a new habitat, no matter how dim its potential would seem to be. Life is remarkably tenacious and opportunistic. A little change here, a little addition there, and who knows? The habitat may get just what it takes to save a rare and marvelous species.

And even if that is the wrong moral, no one would suggest that the crocodiles interfere with the physical work of cooling the water. The cooling canals are reconciled with the needs of a very cool reptile. We should accept the accident of their reconciliation with a smile as broad as that of the crocodile itself.

In fact, like a gambling house in Las Vegas, reconciliation ecology depends on happy accidents. The Earth has at least two million — if not 20 million — species to save. We haven't the time, the space or the money to do a habitat study and reconciliation project for all of them. But if we stack the deck by improving the habitat for some of the species, we are going to win the continued existence of many others. The odds are that what one species finds tolerable, others, especially those once found with it in primeval landscapes, will also manage to tolerate.