THE REEF ECOSYSTEM

Biologist says farming practices are killing the reef

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Attitudes about the Keys’ reef have changed dramatically over the years — viewed as a shipping menace by many in the 19th century, and as a natural treasure to most today — but state agricultural practices are doing damage many experts fear is irreversible.

Water carrying an overabundance of nutrients plays a large role in the ailing health of the coral reefs, said Brian E. LaPointe, a research professor at the Harbor Branch Center for Marine Ecosystem Health at Florida Atlantic University in Fort Pierce. That water is flowing south from the large agricultural area north of the Everglades.

LaPointe gave a presentation called “Reef, Wreckers & Shipwrecks of the Florida Keys” at the History of Diving Museum, mile marker 83, Islamorada. The lecture was the December presentation of the monthly “Immerse Yourself” series at the museum.

LaPointe started with a brief history of shipwreck salvaging in the Keys, saying it began with the Caloosa Indians more than 500 years ago.

“The Caloosa Indians were going out and trying to salvage some of the Spanish ships that ran up on the reefs,” he said.

LaPointe said the Spanish started salvaging their own ships and other unfortunate vessels in the 1600s and 1700s and many Bahamians came to the Keys in the 1800s to establish salvage businesses.

Keys residents in the mid-1800s had a different attitude than we have today about the coral reefs, considering them to be huge nuisance and a hazard to ship traffic.

“They contracted Louis Agassiz, the noted Swiss naturalist who was at Harvard, to come to the Keys to see what could be done about getting rid of the coral,” he said. “Times have changed, right?”

Agassiz reported that the reefs along the island chain were so prolific that he could not see a way to hinder their growth within the limits of nature, LaPointe said.

But mainland water runoff loaded with high levels of phosphorous and nitrogen has slowly accomplished what Agassiz could not get done. The water contains fertilizers that wreak havoc on Keys water quality.

LaPointe showed videos with two segments shot at Looe Key, one on the 1980s and another in 2007. Elkhorn coral in the area has been decimated over the years, which also reduces the habitat for small fish and marine invertebrates.

Space explorers and oceanographers have long competed for funding, LaPointe said, but Jacques Cousteau was one of the first seafaring men to recognize the value of satellite images in monitoring the oceans.
“He ended up doing a lot of great PR for NASA,” Lapointe said. “Today with the sensors, the amount of data we can get from satellites is truly amazing.”

Satellite images have shown the effect water has coming south from the Everglades or from the Caloosahatchee River to the west or the St. Lucie River to the east. Discolored, nutrient-laden water flows from the agricultural areas into Lake Okeechobee, then is discharged into the rivers and the Everglades.

LaPointe said the large ships scuttled in the Keys to make artificial reefs have been a great boon to the natural reefs, but without better water quality, the reefs will remain in trouble.

“They are a benefit to the ecosystem, but they are not intended as a replacement for maintaining good water quality,” he said. “They must be used in conjunction with sound resource management.”

Drew Rutherford of Big Pine Key said Lapointe’s lecture, videos and photos were real eye openers.

“I thought it was very informative and I learned a lot about water flow that I didn’t know before,” he said. “I grew up on Big Pine Key, so this really hits close to home.”

Ray Yu of Key Largo said he has seen first hand how water quality has changed off Key Largo, and the damage it is doing to the reef.

“I started diving in the Keys in the early 1980s and there was almost unlimited visibility. You couldn’t believe it,” he said. “It’s shocking to see how much it has changed.”