



Friends of Perdido Bay

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Tidings The Newsletter of the Friends of Perdido Bay

December 2024 **Volume 37 Number 6** **Jackie Lane-editor**

www.friendsofperdidobay.com

Thank you for your support

Your support means that the organization Friends of Perdido Bay continues to exist and promote a clean bay. So, thank you. We are financially sound (over \$10,000) in our bank account, but we can always use more. We can continue testing as our bank account allows us and putting pressure on the paper mill to clean up. One day our bay will be like the three weeks in January and February 2017 after the paper mill exploded and ceased operating; it will be magnificent.

And have a wonderful holiday season. We will celebrate the beauty of the bay.

Of Course it is Toxic

It was a real eye opener when IP exploded in January 2017. It was cold and windy. Everyone said it would take years for Perdido Bay to get cleaned up. They were wrong. Within a matter of days, algae began appearing on pilings and seawalls. Then came the small shrimp, crabs and baby pin fish. True the bottom was still toxic from the years of dumping heavy metals, dioxins and pine tree chemicals into the bay, but once the toxicity was taken out of the water, the bay returned to its normal productivity. It was a miracle. And also a condemnation of our industries and environmental agencies that they would do this to our property. Yes, Perdido Bay belongs to you, the residents of Florida and Alabama. Not to the paper industry to destroy. Yes, it is a lot cheaper to allow the 25-million gallons of water to flow out with the pollutants. Yes, the shareholders of IP might not get their expected 4% dividend, which might make the stock a lot cheaper. But to kill a bay

for a dividend is wrong. It has also killed the livelihood of shrimpers and fishermen who depend on our bays for producing seafood.

The obvious toxicity of the water has also made a mockery of the environmental agencies "toxicity tests". Once or twice a year, polluters are required to take a sample of water from their "discharge" point and send it to a lab for standardized tests. The organisms used for testing and the protocols have been standardized and carefully chosen by industry officials and government to not be overly "onerous". That is, organisms which would be most sensitive to pollution are usually not used in these toxicity tests - like larval forms of life. Most of the organisms used are tough. And to only test once or twice a year is hardly enough to capture toxicity when upsets and spills occur, which may be frequently. So, our environments are impaired despite industries' toxicity tests.

Perdido Bay is a great example of this impairment. There have not been oysters in Upper Perdido Bay for a very long time, although old maps and old tales have shown they were here. Adult oysters are very hardy. But oyster larvae are more sensitive and can be killed by very low salinities (>4 ppt) or other variables such as rapid changes in salinities or toxic pollutants. Recent research by Dr. Amanda Croteau of the University of West Florida, on the presence (or absence) of invertebrate larvae in different parts of Perdido Bay over a year has demonstrated the absence of oyster larvae in Perdido Bay north of the Lillian Bridge over an entire year. Oyster larvae were present south of the bridge. Salinity of the water should have been O.K. Why weren't oyster larvae present north of the Lillian bridge?

The lack of the clam, *Rangia*, at our beaches is another example of larval sensitivity to pollutants. This adult clam used to be present in huge numbers at our beaches but after 2017, it just disappeared. There were no recent examples of mass mortalities of this clam such as what happened in 1986. It just disappeared. What could have happened? Something in the water is toxic to the clam larvae. Dr. Livingston, the researcher from Florida State who worked on Perdido Bay for 17 years, also described life in Perdido Bay as just disappearing, no mass mortalities, just disappearing. This is most likely due to toxicity of the water in Perdido Bay to larval stages of life. The toxicity could be caused by some known or unknown chemical.

Using the toxicity tests which are offered by the various labs, Friends of Perdido Bay has tested the local waters for toxicity. When the papermill discharged into Elevenmile Creek, we used to test Elevenmile Creek just south of the discharge into the Creek. Occasionally, we would find the creek water was chronically (caused deformities) toxic. The paper mill only tested once a year and didn't find the discharge toxic. In 2023, we tested using mussel larvae (the EPA doesn't have a test using oyster larvae), and found that the water coming out of Elevenmile Creek (just after it came off the papermill site) was toxic, but the Upper Perdido Bay water

was not toxic. It wasn't apparent why Elevenmile Creek water should be toxic because IP is not supposed to be discharging to Elevenmile Creek, but rather to a wetland which runs into Perdido Bay. We sent a letter to the Florida DEP accusing the papermill of discharging into Elevenmile Creek. But the ever-faithful DEP said that IP did not have a discharge to Elevenmile Creek. OK, then why was the water toxic? Friends of Perdido Bay never got an answer for this one.

Not only is the water toxic to larval forms of life but also to small algae. Way back in 1995 when I was still doing research on snails in Upper Perdido Bay, suddenly I could not get algae to grow on glass plates which I had put into racks in the water. I had been doing this research since the mid 1980's, and never had any trouble growing algae. In 1995, the algae wouldn't grow anymore. Always suspecting the papermill, we looked for changes in the papermaking process. Sure enough, the papermill had switched bleaching from chlorine to chlorine dioxide. I tested the water coming out of Elevenmile Creek. Elevenmile Creek water floats by my beach. There it was. Chlorine dioxide was present at 0.4 mg/l at the head of the creek and also at the end of the creek as it enters Perdido Bay. Chlorine dioxide is a disinfectant. Also present was an herbicide, chlorate. This would explain why algae wouldn't grow on my glass plates. So at that point in 1995, we had a disinfectant and an herbicide entering Perdido Bay. According to DEP, IP is no longer doing any bleaching as of October 2023. However I cannot see too much difference in life in Perdido Bay, with or without the bleaching chemicals. Our testing has shown the presence of residual chlorine (up to 0.1 mg/l), which may be causing some of the problems.

Also, International Paper has been sampling phytoplankton in Upper Perdido Bay since 2012. The assemblage of phytoplankton, which IP lists, is poor quality i.e., blue green algae which does not make good food for the plankton feeders such as menhaden. This could be why menhaden come into the bay but don't stay or live in the bay as they used to do. The same could be true for the shrimp and the whole food chain. This is a sad state-of-affairs for a bay which provides food for the Gulf of Mexico. No wonder I see fresh shrimp in the grocery stores from India and Indonesia.

After IP returned to production in 2017 after blowing up, the bay seemed worse than before the explosion. There was less foam and the bay looked better, but life was less. The pH of the bay had obviously gone up (more alkaline) and there was much more oxygen in the bay. And the characteristic smell of rotten eggs, had disappeared from the air. Just recently I found out what had happened. IP had gotten a new air permit (no new discharge permit) where they were using more wet scrubbers on their air emissions. These "scrubbed" air pollutants were going into their treatment system into the wetlands and then into the bay. I had accused IP of dumping some of these scrubbed air pollutants down Elevenmile Creek (therefore

the positive toxicity tests). I had thought that IP was capturing carbon dioxide emissions by using sodium hydroxide wet scrubbers called “wet sodium alkali”. But DEP says IP was not capturing carbon and dumping anything down Elevenmile Creek. Here is what Ms. Orr, the director of DEP’s Northwest District Office wrote: *“IP does not perform carbon capture from their power boilers. They have three power boilers: 3,4, and 6 Only #4 has a wet scrubber, and that is for the removal of SO2 emissions when burning coal, wood waste or on-spec oil. Power boiler #4 wet scrubber’s wastewater discharge goes into the IP sewer system to the treatment plant and does not have an unpermitted discharge to Elevenmile Creek. On average, the flow from the scrubber to process sewer (and ultimately their wastewater treatment plant) is 265 gallons per min (which accounts for less than 2% of the treatment plant flow),”*

Ms Orr did include IP’s new 2017 air permit with her e-mail. We were not notified about this new air permit or the additional discharge of wet alkali scrubbers going to the treatment system which goes into Perdido Bay. But this would certainly explain the increasing pH of the bay (from the wet scrubbers). Basically what IP was doing was taking the pollutants out of the air and dumping them into the wastewater discharge treatment system and then Perdido Bay. Ms Orr also included IP’s 2017 air permit with her statement to me. So, I went through the air permit and found discrepancies between what she said and the permit.

For IP’s air permit, each source which emits something into the air at the mill, must get an air permit. At IP’s mill, there are approximately 32 different air emission sources and 32 different permits. There are some which say “wet electrostatic precipitator” which is lime kiln mud drier and others which say “wet scrubber – sodium alkali”. I assume all of these wet scrubbers go into the wastewater treatment system which goes into Perdido Bay. There are approximately ten of these wet scrubbers and they are all going into the wastewater treatment system. This would explain the increasing alkalinity and toxicity after 2017. And it is all legal and permitted through an air permit.

Membership and Renewals

Tidings is published six times a year by Friends of Perdido Bay and is mailed to members. To keep up with the latest news of happenings on Perdido Bay, become a member or renew your membership. For present members, your date for renewal is printed on your mailing label.

Membership is \$30.00 per **year per voting member**. To join or renew, fill out the coupon to the right and mail with your check to the address on the front.

Friends is a not-for-profit corporation, and all contributions are tax-deductible. Funds received are all used for projects to improve Perdido Bay. No money is paid to the Board of Directors, all of whom volunteer their time and effort.

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