



# Effects of a Power Plant on Biodiversity of Macroinvertebrates

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## Abstract:

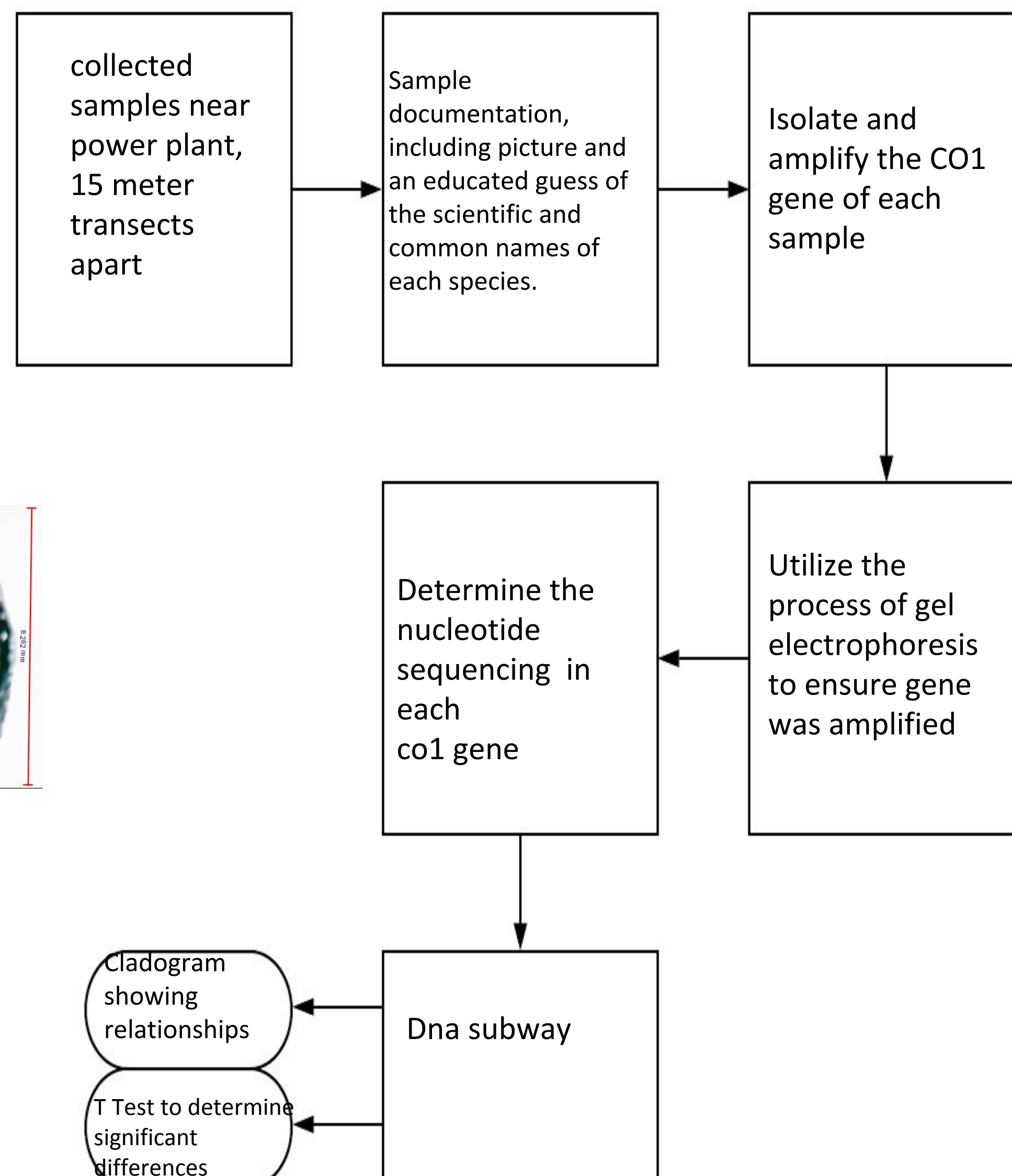
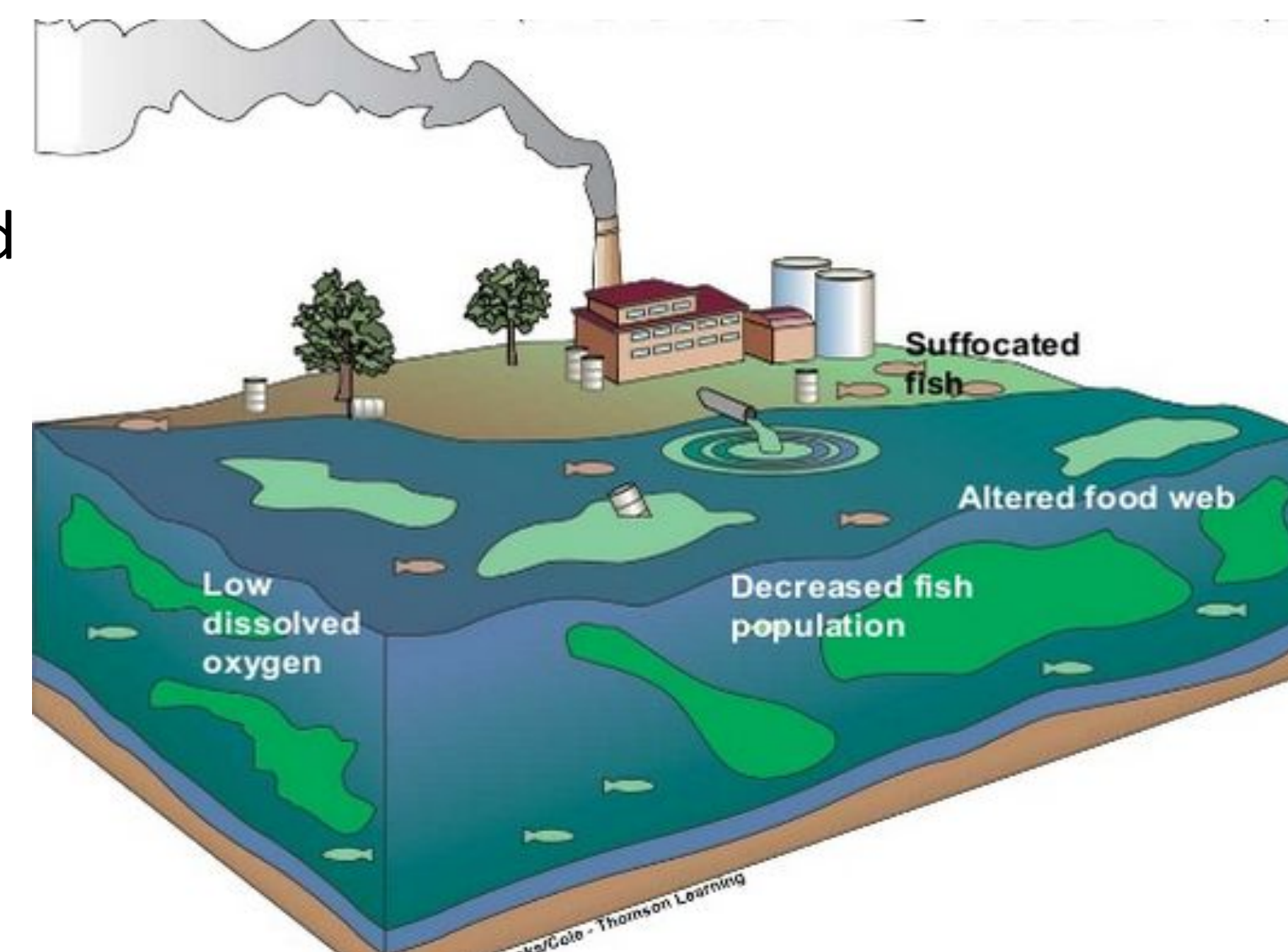
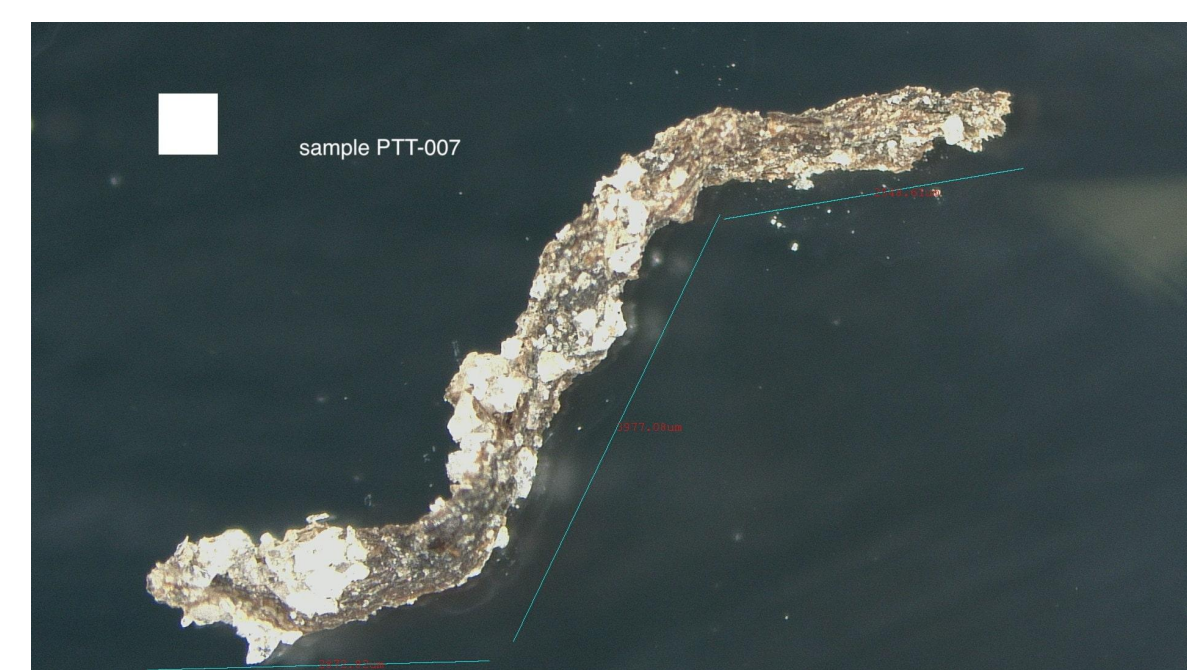
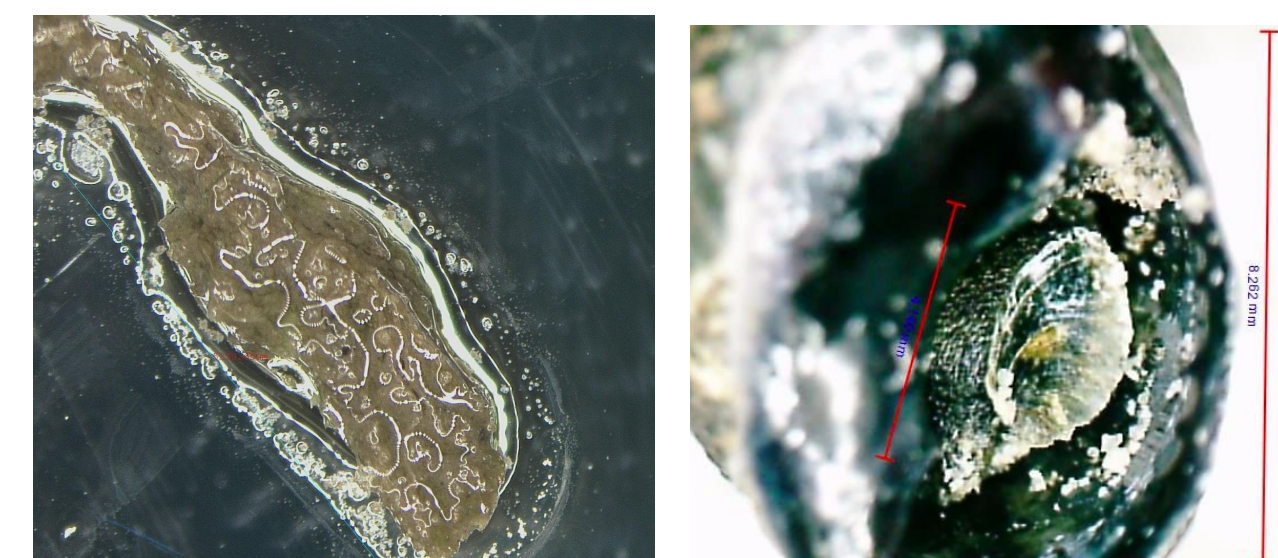
Organisms that can survive near a power plant depends on their distance from the structure. DNA barcoding can then be used to identify and determine the the species of the organisms collected at the location. CO1 gene is used along with DNA Subway to determine differentiation and biodiversity between the organisms.

## Introduction:

Research Question: Is there a variation in biodiversity of terrestrial macroinvertebrates that inhabit a area near power plant?

Previous studies of power plant environmental impacts concluded the following

- Decreased dissolved oxygen
- Decreased biodiversity
- Altered food webs



## Results:

Species Number & Distance from Power Plant



Figure 1: This illustrates a relationship between the number of species we collected, and the location where we collected. This map is an outline of the power plant in Wading River, whereas the circles present on the map indicate whether or not a large amount of species were present, and where.

Changes in pH & Distance from Power Plant



Figure 2: A relationship is illustrated between a species location in reference to the power plant, and the PH of the samples collected.

## Discussion:

Altogether from this data we can conclude that factors that remain constant are temperature, altitude, and for the most part, pH, as shown through figure 2, where pH did not change with distance. In figure 1, the greater number of species can be found farthest from the power plant, where there are more types of samples such as flies, fleas, and a snail, whereas closer to the nitrogen rich marsh, there is less amounts of different species, for example, only earthworms and tube worms.

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## References:

Pradhan, V., Kamble, Y., Ladniya, V., & Mogul, M. (2015). A overview of species identification by DNA barcoding. *International Journal of Current Microbiology and Applied Sciences*, 4(4), 127-140.