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A Light Delusion: The Effects Of Light Pollution On Algae

Much research has gone into the effects of light pollution on animals. However, this project was made to test the effects of incandescent, fluorescent, and high pressure sodium light pollution on Chlorophyta algae. The test was performed in a controlled area to simulate light pollution in a semi-natural environment. Each section of a large cardboard box contained two containers of algae, one with a single strand, the other with a cluster of them. One side of each section was exposed to sunlight during the day, the other sides were lightproof. The control group, was made to be in complete darkness at night. Meanwhile, the light board was plugged in and positioned over the other sections. The light board was constructed from a piece of plywood that had three light fixtures mounted on it. The fixtures were connected in a basic circuit, and a ballast was connected to the high pressure sodium bulb. After observing the algae under a stereoscope over a period of fourteen days, the control group grew to a total of nine strands. Both the algae exposed to high pressure sodium light, and the algae exposed to fluorescent light grew to seven cells. The algae exposed to incandescent light grew to five cells halfway through, but then died back until only one strand was left. The results showed that light pollution considerably stunts algae's growth. Light pollution from incandescent light may also kill algae, perhaps due to heat. The cheapest alternative light form is fluorescent light, although it produces much more glare than high pressure sodium light.