Kalmia angustifolia - effects of water drainage

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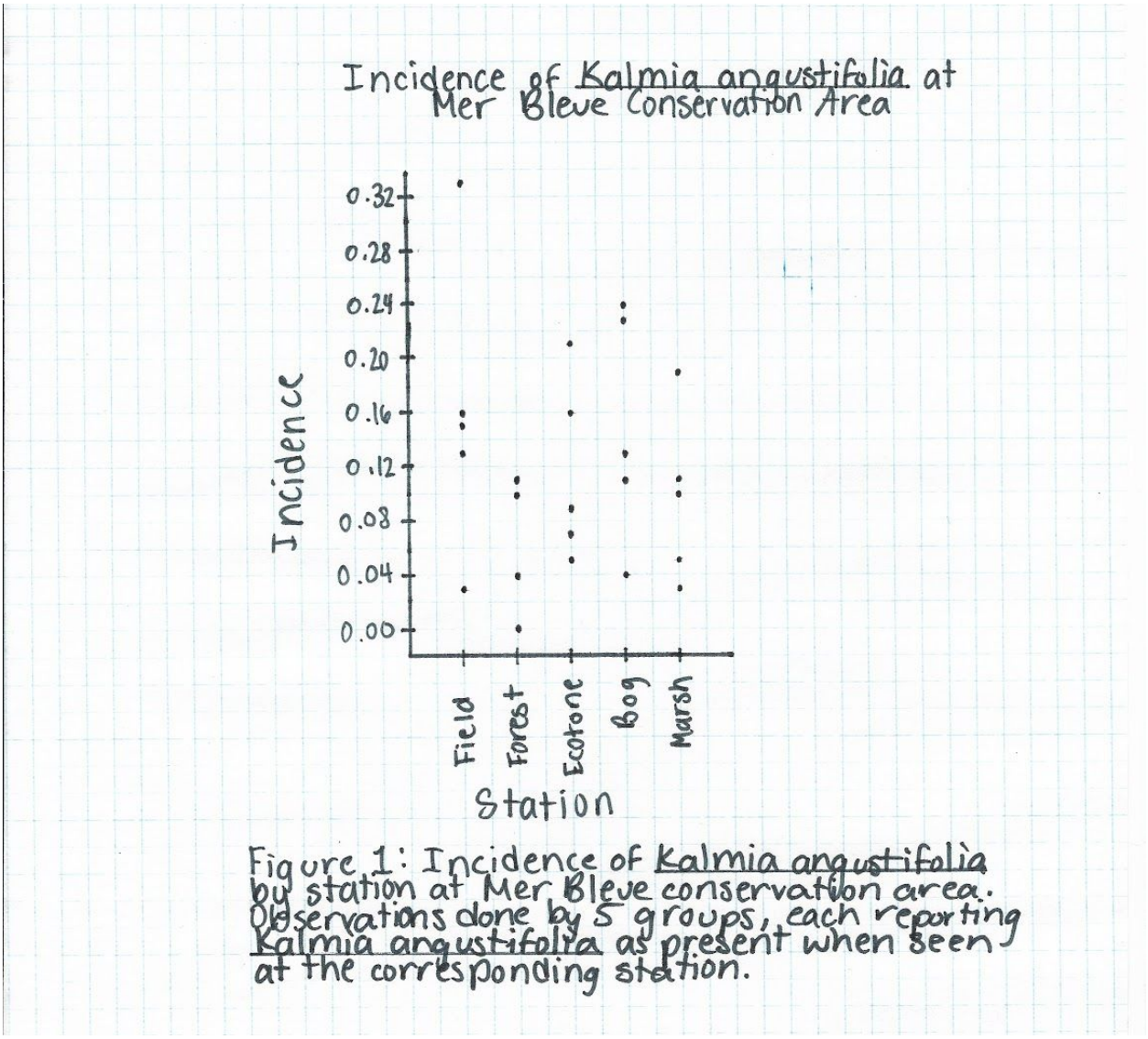

Figure 1: Incidence of Kalmia angustifolia by station at Mer Bleue conservation area. Observations done by 5 groups, each reporting Kalmia angustifolia as present when seen at the corresponding station.

Hypothesis: From the graph, it can be concluded that *Kalmia angustifolia* is adapted to moist environments, but is still capable of surviving in drier environments. *Kalmia angustifolia* was most commonly found in the bog, as well as being commonly found in the marsh and ecotone. Given that these environments have the highest moisture levels, it is evident that the species thrives in habitats with more water available and that have very moist soils. Despite this, the species was still decently abundant in the drier environments; the field and forest. Ultimately, *Kalmia angustifolia* prefers moist environments, the bog being its preferred habitat, but will survive in environments with less moisture available as well.

Prediction:

a) With an average moisture level of 95%, the soil of a bog would not be greatly affected by a drainage of half the water of the marsh. In a drainage, it is expected that the moisture level of the soil in a bog would drop only to about 80%. Because the acrotelm layer is not resistant to lateral and vertical water movement, it is likely it would be most affected by the drainage. Oxygen would then reach the catotelm layer and oxidative decomposition would begin. Some plant material would be lost in the form of CO_2.

b) Given that *Kalmia angustifolia* was found to be slightly abundant in drier environments in addition to its abundance in moist environments, it is likely that it would survive drainage. It is probable the species knows how to adapt to less moisture being available. Despite this, due to the oxidation of the catotelm layer of the bog and the oxidative decomposition that would likely occur, it is expected that the abundance of the species would decline. Fortunately, it would survive more often than other species in the bog that cannot be found in environments with less water in the soil.