

The washout phase of construction painting: a harmless move? The effects of latex paint on local environments

Elizabeth Eskildsen and Ashley Spring, Ph.D.

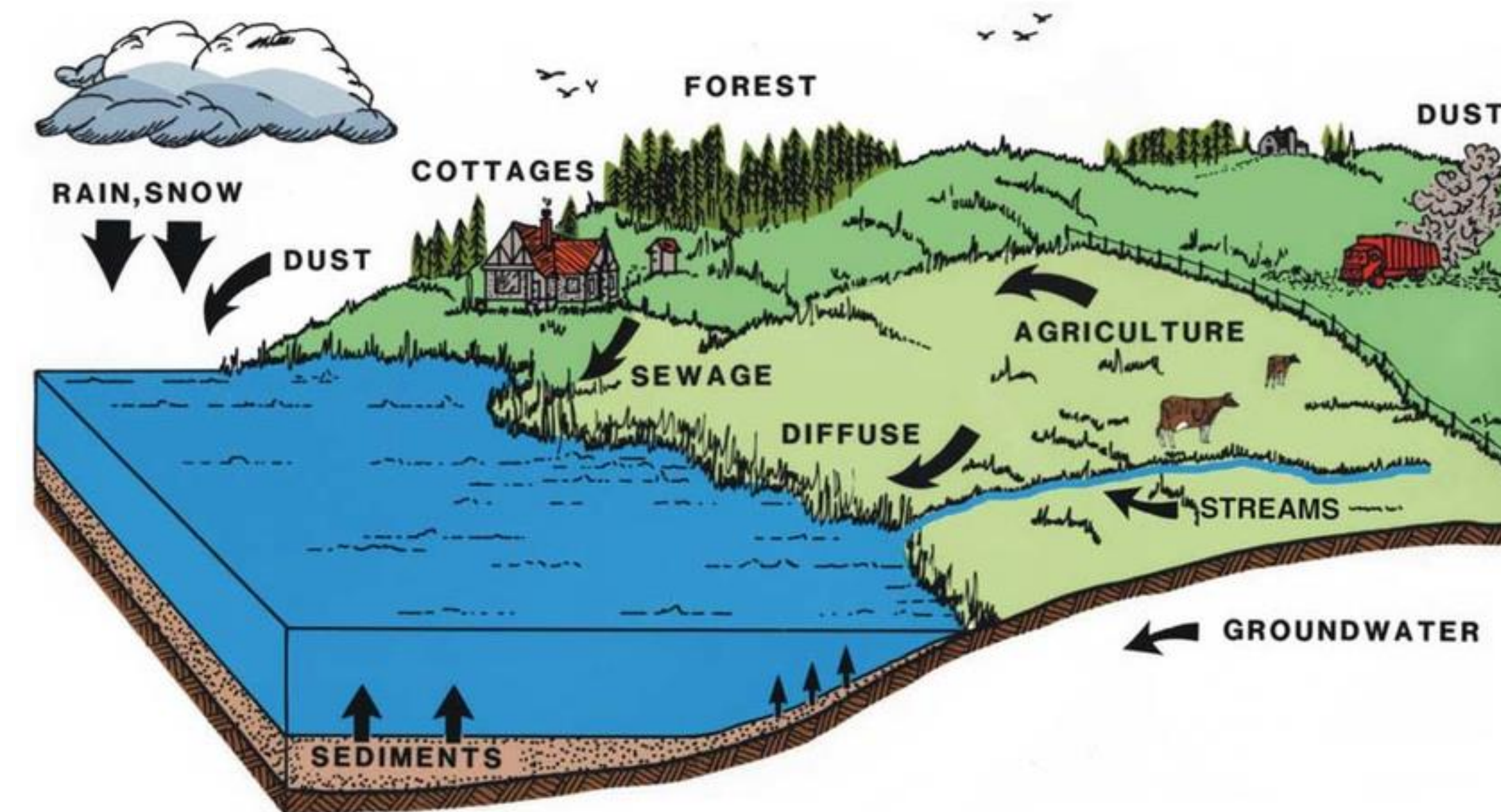
Introduction

The health of the Indian River Lagoon has decreased because of increased discharge and groundwater runoff (Trefry and Fox 2021). This inspired the exploration of the relationship between latex paint disposal methods, including equipment washout, and effects of runoff on both terrestrial and aquatic organisms. Latex paint is the most widely-consumed paint on an annual basis (Jolly et al. 2012) creating a need for improved recycling methods to prevent environmental runoff (Mohammed et al. 2008). **Hypothesis:** The presence of latex paint at low, medium, and high levels will decrease activity and increase mortality of earthworms and garden snails.

Materials & Methods

In each 37-liter glass terrarium, 10 earthworms (*Lumbricina* sp.) and 10 garden snails (*Cornu aspersum*) will be paced onto soil with a depth of 25 cm of soil. These specimen have been chosen because of their ability to survive at a variety of soil depths (Ojha and Devkota 2014). The treatments include 3 replicates of each of the following: no paint added, (low) 50 mL of paint, (medium) 200 mL, and (high) 500 mL.

Specimen activity and mortality will be recorded over a period of 2 weeks.



Article Source: Lac Cardinal Water Quality Monitoring Report Provincial Parks Lake Monitoring Program, 2006 Ron Zurawell.

This image shows a visual example of groundwater runoff and the interconnectedness of water flow between terrestrial and aquatic sources.

Secondary Research

If the experiment concludes that terrestrial biology *is* negatively affected by the presence of latex paint, then two experiments will take place studying the direct effects of latex paint on (a) common aquatic organisms of the Indian River Lagoon and (b) plant recovery time after latex paint is introduced to the environment.

Possible Results & Conclusions

If there is a significant decrease in activity levels and a significant increase in mortality of organisms exposed to latex paint, then it may be concluded that the presence of paint negatively effects terrestrial organisms.

If there are no significant differences in activity levels or in mortality of organisms exposed to latex paint, then it may be concluded that the presence of paint may not effect terrestrial organisms as hypothesized.

If the presence of paint exhibits effects on the terrestrial organisms, the secondary research experiments will proceed as expected.

Literature Cited

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