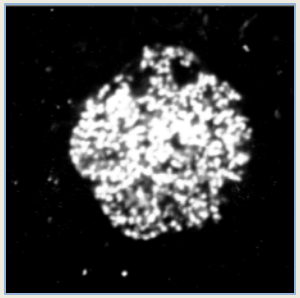
Survivors at Foundry Cove

How did the worms in Foundry Cove survive when their environment became highly contaminated by toxic cadmium?

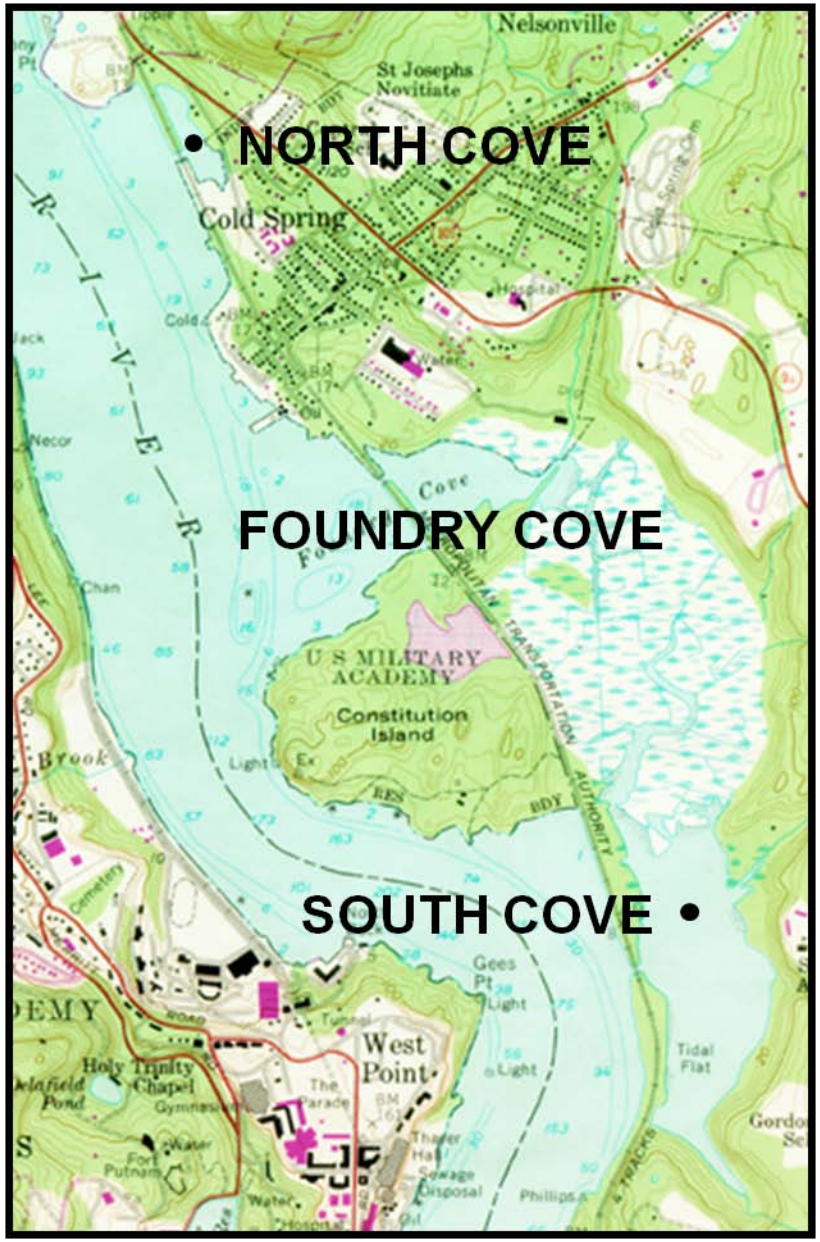
Scientific experiments were conducted on *Limnodrilus hoffmeisteri* worms.

Sampling for worms in Foundry Cove



cadmium

L. hoffmeisteri

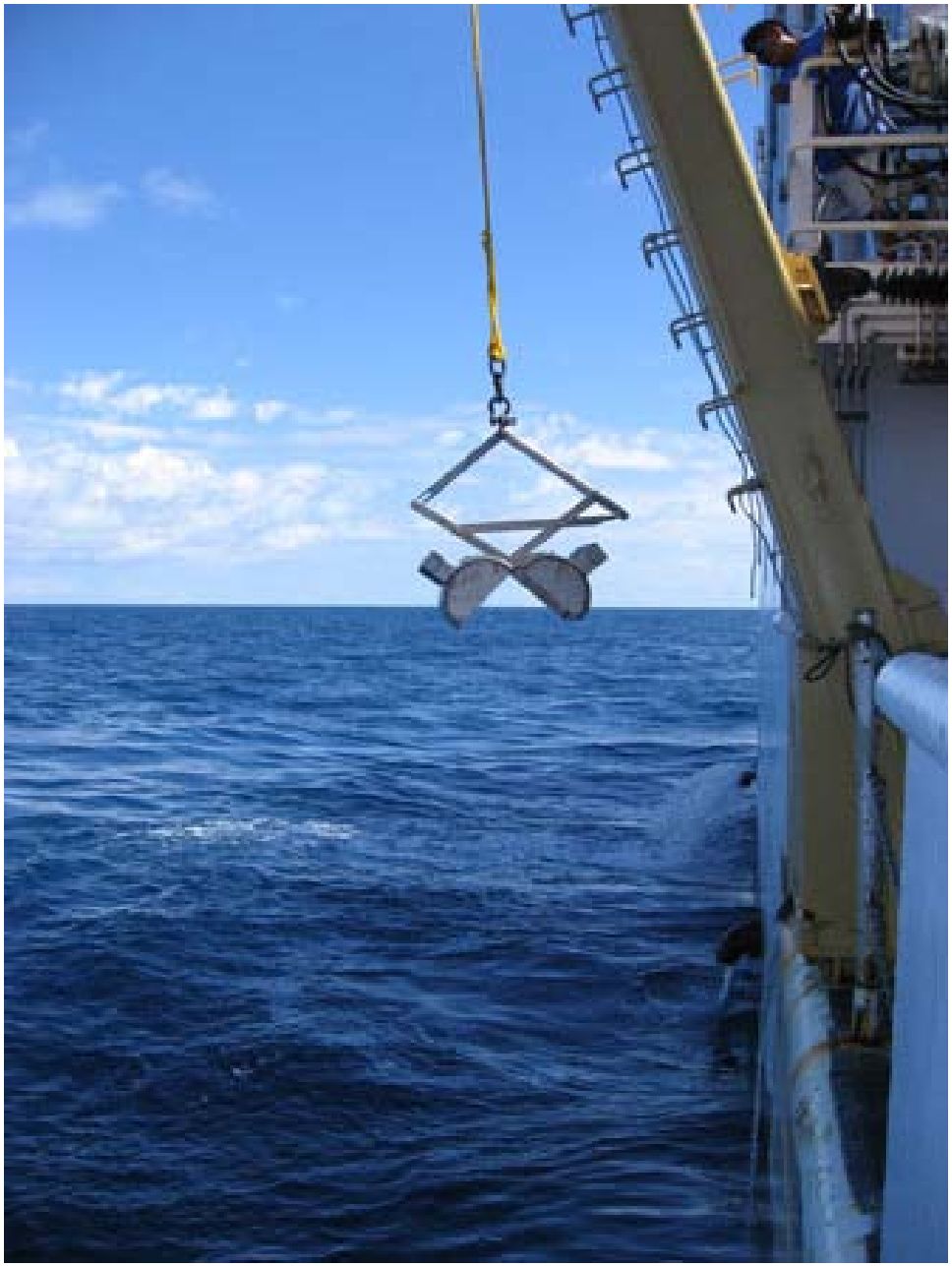


Foundry Cove	South Cove
Very similar environments	
Extreme Cd contamination 50,000 ppm	Lower level of Cd contamination 19 ppm
Mud worm dominant mud-dwellers	

Are *L. hoffmeisteri* worms usually resistant to cadmium?

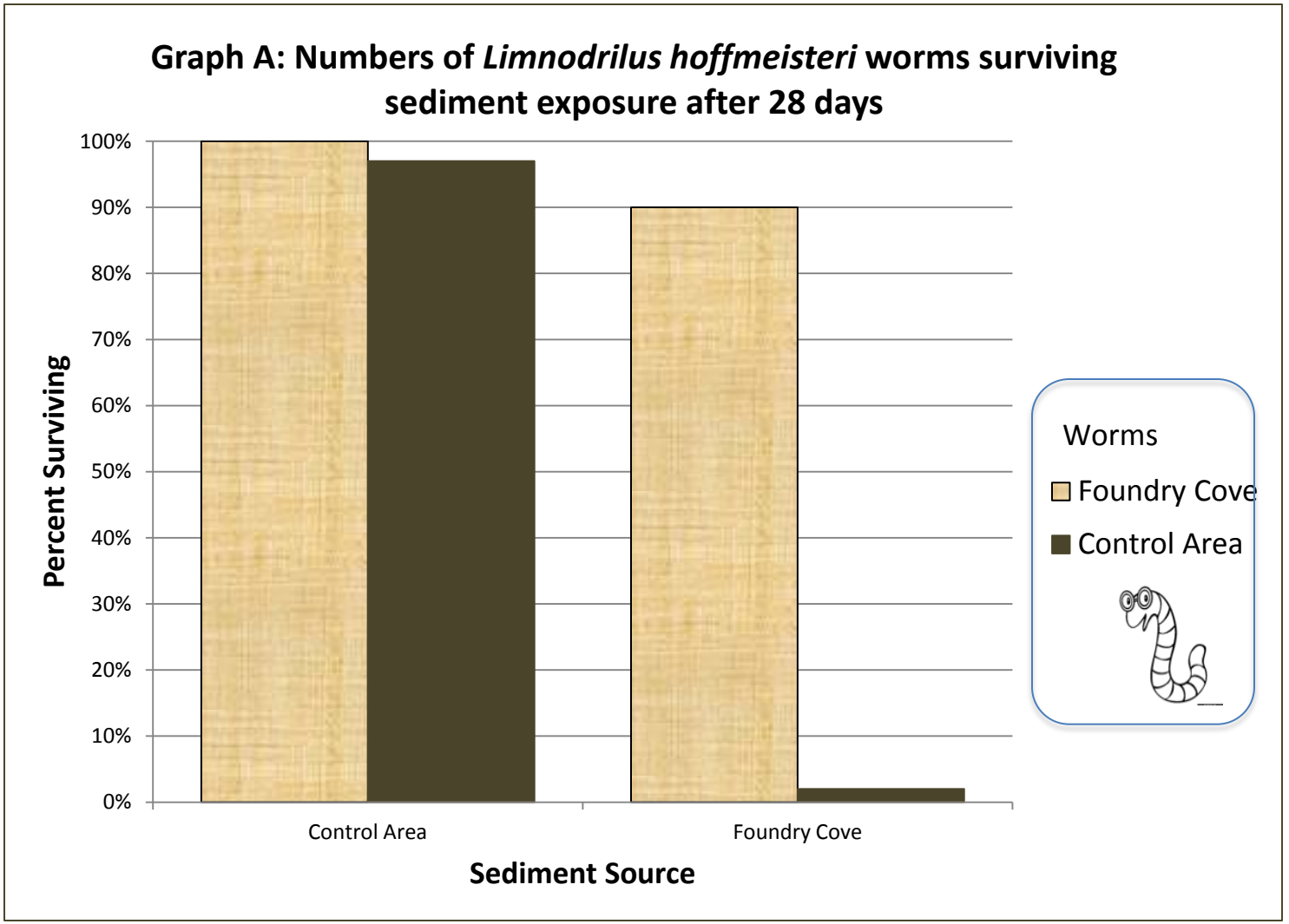
What kind of experiment could be done to find out?

Pause here to discuss your ideas. Then describe and sketch an idea for an experiment to answer the question.



Ekman grab

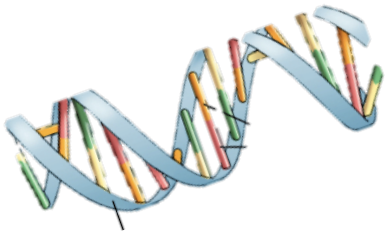
Are all *L. hoffmeisteri* worms resistant to cadmium?



Two Types of Resistance to Toxins

- **Plasticity / acclimation**:
  - In ***individual organisms***
  - Depends on environmental conditions
  - Disappears if returned to a clean environment

- **Heritable trait**:
  - In ***populations of organisms***
  - Increased through natural selection
  - Persists in offspring for at least a few generations



Are the worms in Foundry Cove resistant to cadmium through plasticity or inherited traits?

What could you do to find out?

Did Foundry Cove worms pass their cadmium resistance to their offspring?