

Land to Sea Mystery

Searching for the Source of Pollution





Pollutants from land



- *Toxoplasma gondii* – a parasite that causes neurological problems in California sea otters
 - Source: released in felid (cat) feces and enters the ocean in runoff water
 - **Conclusions**: Wild cats are involved in infecting sea otters, BUT domestic cats are also known to carry it



V. Yovovich

Still unsolved: How does the parasite get from the water into the sea otter?



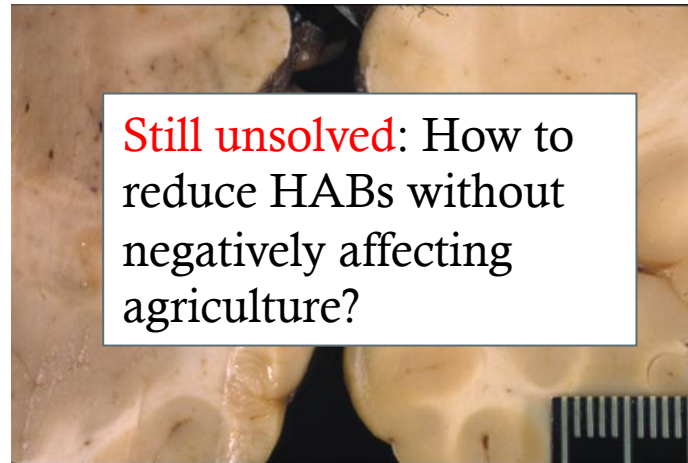
G. Zawacki

Pollutants from land



- **Domoic acid** – a toxin that causes brain damage and seizures in California sea lions
 - Source: Released by harmful algal blooms (HABs) in rivers or the ocean
 - **Conclusions: nutrients are often from agricultural fertilizers, BUT also from natural sources**

(left) A healthy sized hippocampus of a sea lion

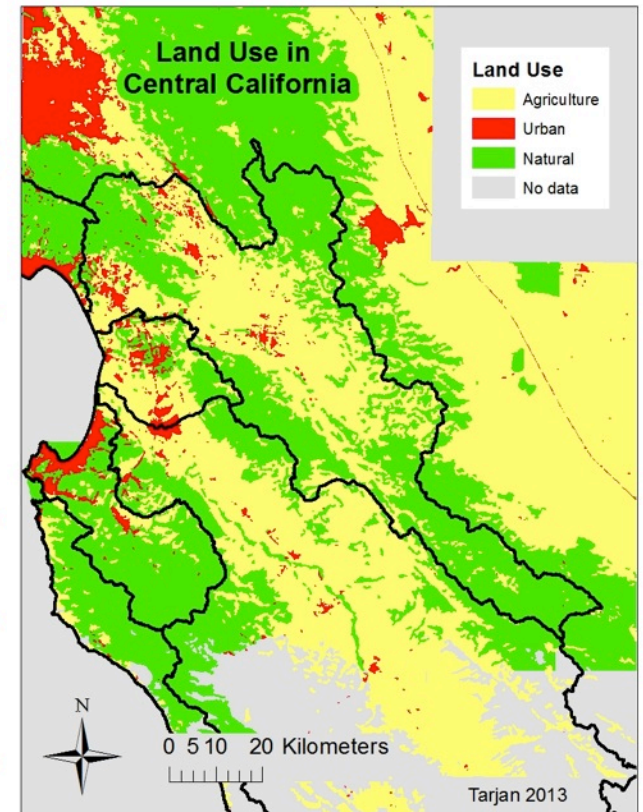


Still unsolved: How to reduce HABs without negatively affecting agriculture?

(right) shrunk hippocampus of a sea lion brain as a result of domoic acid toxicity (Marine Mammal Center)

Map Components

- Scale
- Legend



Actions to Minimize Land to Sea Pollution

Personal: Join beach clean-up groups, don't pollute, use fewer chemicals, don't flush cat litter, participate in conservation groups.

Charitable: Support local conservation groups.

Political: Tell your representatives that you support a healthy environment

