Amphibian Declines Due to Fertilizers
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Outline
- Different Chemicals
- How they kill
- Evidence
- Why this factor is most important
- Prevention
- Main Causes

Introduction
- What is a fertilizer
  - A substance (such as manure or a special chemical blend) that is added to soil to help with the growth of plants.
- Different types of Fertilizer
  - Granule
  - Liquid
Make up of Fertilizer

- Fertilizer are made of three key elements
  - Nitrogen
  - Phosphorus
  - Potassium

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How it kills

- Risk are highest in the spring
- The permeable skin makes amphibians susceptible to chemical uptake, leading to physiological and behavioral changes, for instance to reduced oxygen transport in blood, increased respiration and partly to suffocation

Where fertilizers are used

- Fertilizers can be used anywhere where the promotion of grass or crops is wanted.
- Lawn use
  https://www.youtube.com/watch?v=jqhB2mwebY
- Commercial use on tractor
  https://www.youtube.com/watch?v=1qU7jpxnT64
- Crop duster
  https://www.youtube.com/watch?v=3Tu-EQ0Erx

https://www.youtube.com/watch?v=jjqiN2mwchY
https://www.youtube.com/watch?v=PgU7IgxXT64
https://www.youtube.com/watch?v=3Tu-EQ0Erx
Evidence

- This deformed leopard frog was found in a Minnesota wetland. Wisconsin researcher Pieter Johnson says the animal’s deformities are caused by parasites. He believes fertilizers are making aquatic environments more inviting to snails that harbor parasite larvae.

Evidence

- Contamination of surface waters in agricultural landscapes by nitrogenous or phosphorus based fertilizers is wide-spread (Carpenter et al. 1998; Fenn et al. 2003; Naiman and Turner 2000)

Evidence

- Much of what we know about the effects of agricultural chemicals on amphibians is derived from laboratory studies on single compounds; however, it is clear from the observations on the contamination of surface waters in agricultural areas that amphibians are more likely to be exposed to mixtures of agricultural chemicals.
Why factor is most important

- If farmers are not required and held responsible for the substances that leave their farms through runoff and accidental contamination during application the problem will not slow down if die off happen year after year soon the population will be gone.

How it can be prevented

- Using buffer areas to keep the fertilizer from getting to water sources.
- Using fertilizers during no migration periods of frogs.

Works Cited

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