

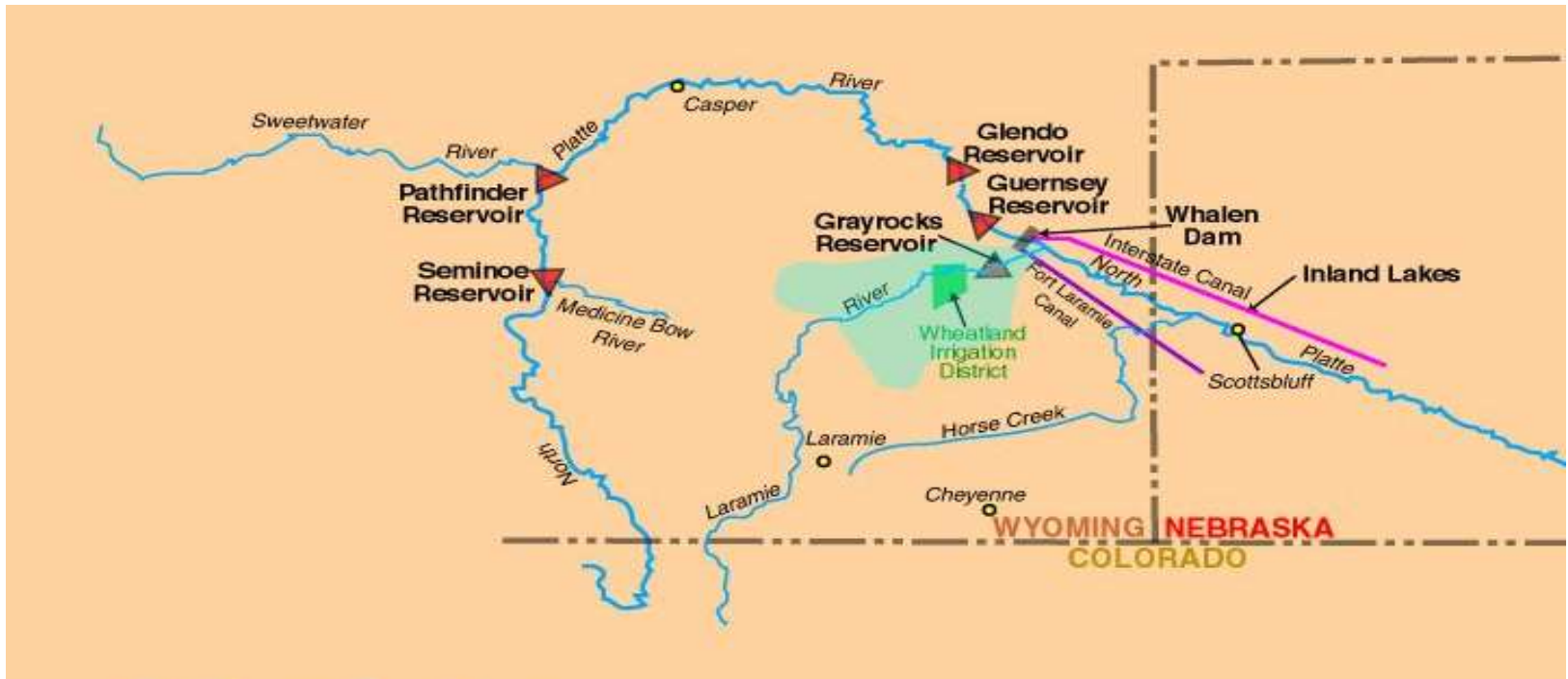
ERIN SIMS WITH DR. KARA PRATT

**THE EFFECTS OF THE LARAMIE  
RIVER EFFLUENT ON *XENOPUS  
LAEVIS* TADPOLES**

# INTRODUCTION



# THE LARAMIE RIVER

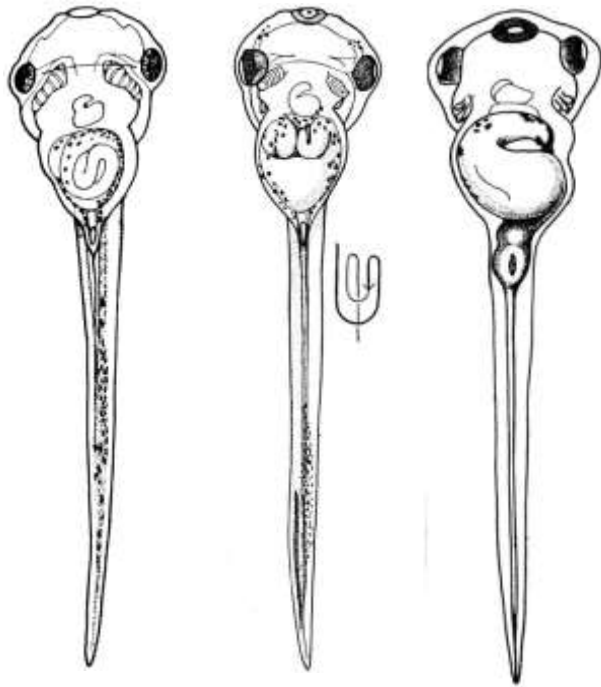


# LARAMIE RIVER EFFLUENT-TOXINS

This list includes, but is not limited to:

- Antibiotics
- Anti-depressants
- Anti-histamines
- Beta-blockers, which weaken the effects of stress hormones
- Benzoyllecgonine-the main metabolite in Cocaine
- Caffeine
- Carbamazepine-mood stabilizer for ADHD
- Diuretics
- Muscle relaxants
- Pesticides
- Recreational hallucinogens
- Temazepam-sleep-aid

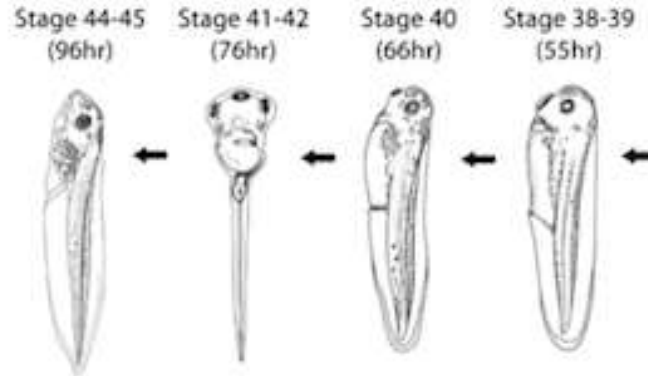
# XENOPUS LAEVIS TADPOLES-AFRICAN CLAWED FROGS



Stage: 46  
4d, 10h

44  
3d, 20h

42  
3d, 8h



Stage 44-45  
(96hr)

Stage 41-42  
(76hr)

Stage 40  
(66hr)

Stage 38-39  
(55hr)

# METHODS

- Set up two bowls, one with 400 mL of Steinberg's, one with 400 mL of LRE.
- Randomly choose 10 tadpoles to place in each bowl.
- On test days, set up third bowl of Steinberg's over a half black/half white environment.
- Transfer one group of tadpoles into the testing bowl, let acclimate for five minutes.
- Take note of the number of tadpoles on each side at time points 0, 1, 3, and 5.
- Transfer back into original bowl, test the other group of tadpoles.
- Once both groups have been tested twice, place tadpoles back onto black surface and clean the third bowl.

# PREVIOUS RESEARCH

Moriya et al. 1996

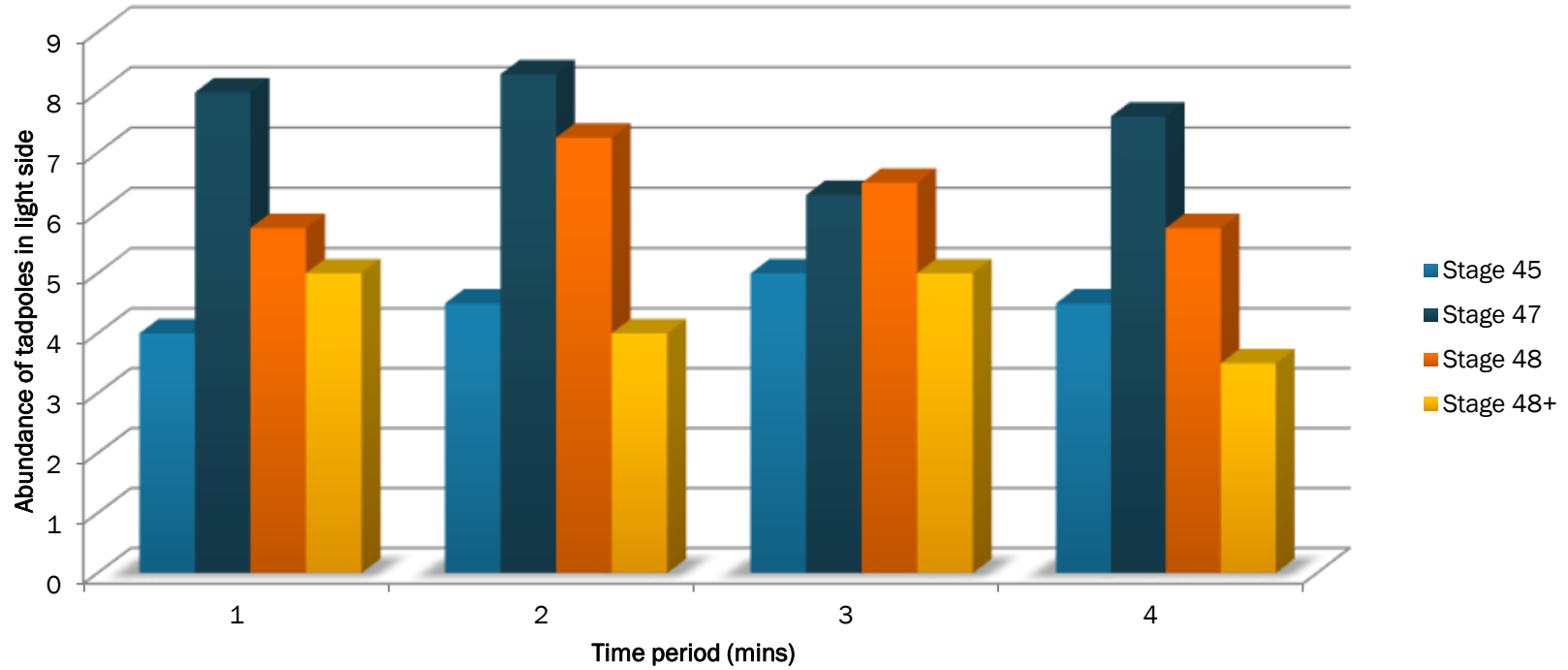
- Young, premetamorphic, and metamorphic tadpoles were tested.
- Young tadpoles chose white, premetamorphic had no preference, metamorphic chose dark.

Yamanaka et al. 2013

- Animal development is associated with innate behaviors to maximize survival before transition to adulthood.

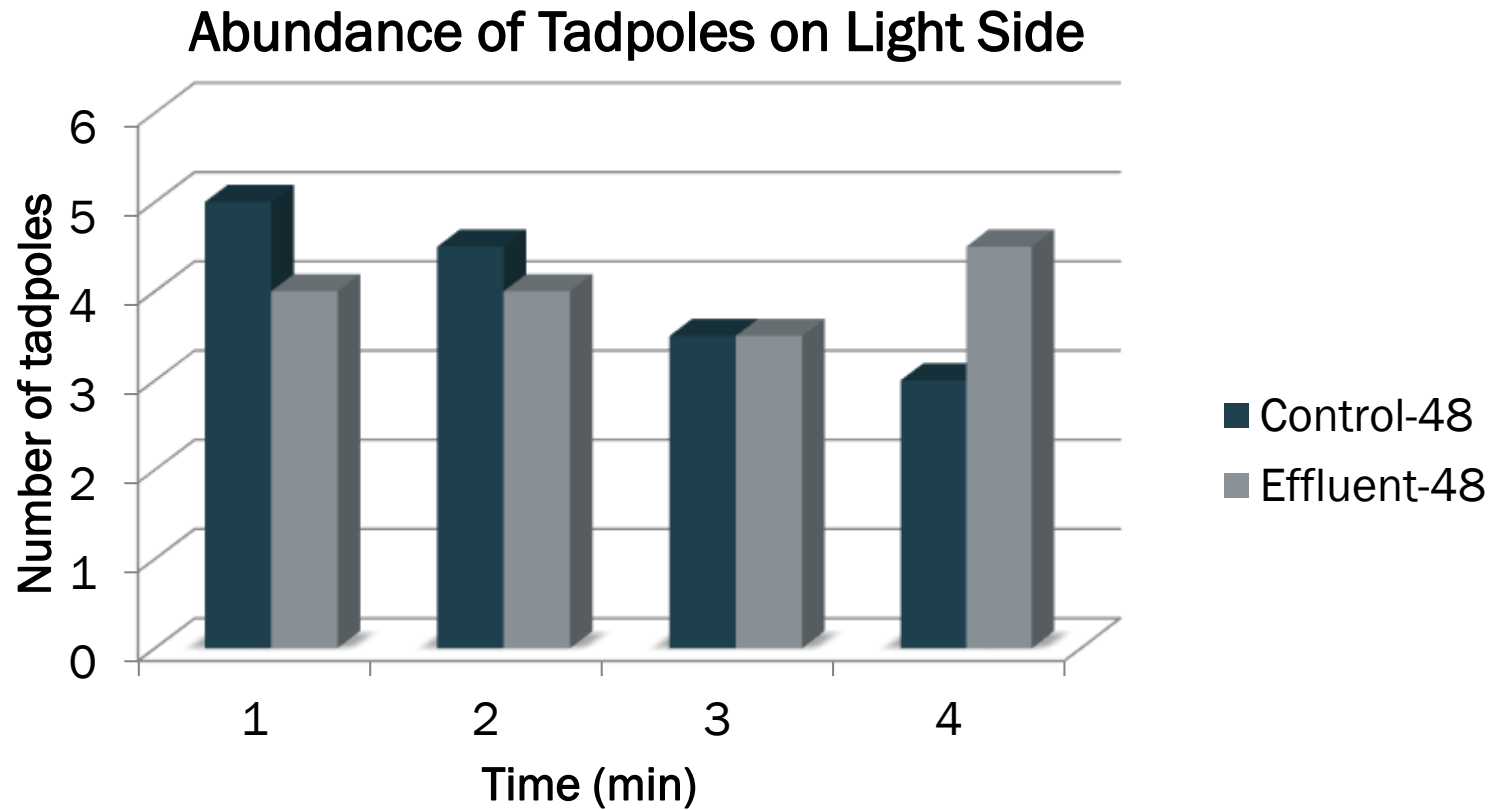
# FIGURES

Control only-stages 45-48+



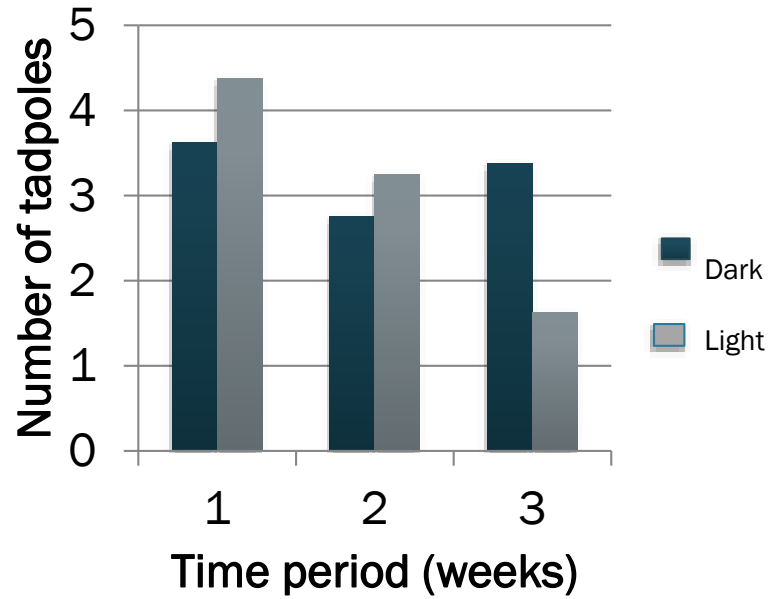


# FIGURES CONT'D

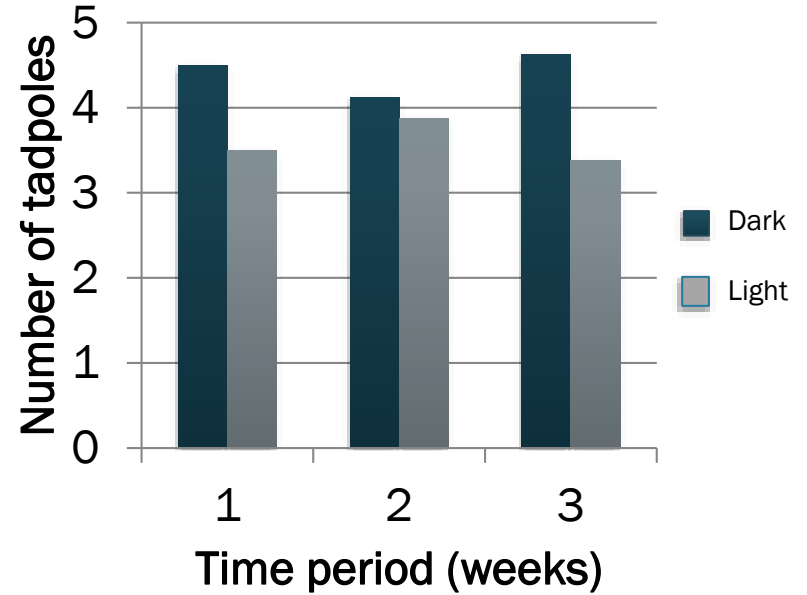


# FIGURES CONT'D

## Control over 3 tests



## Effluent over 3 tests



# RESOURCES

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