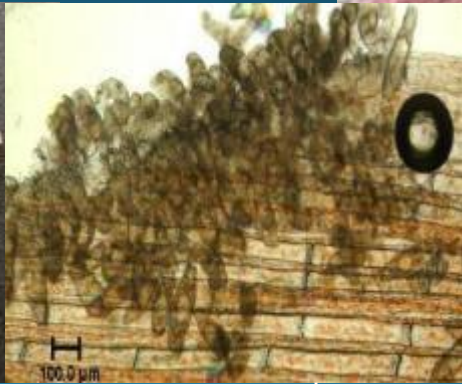
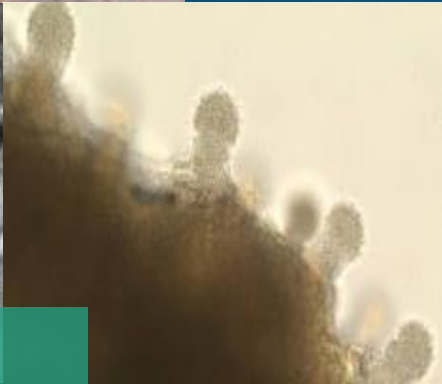
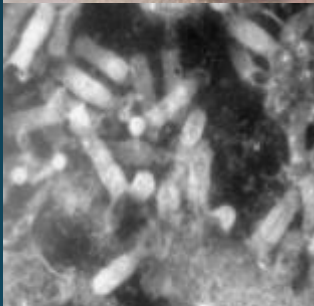
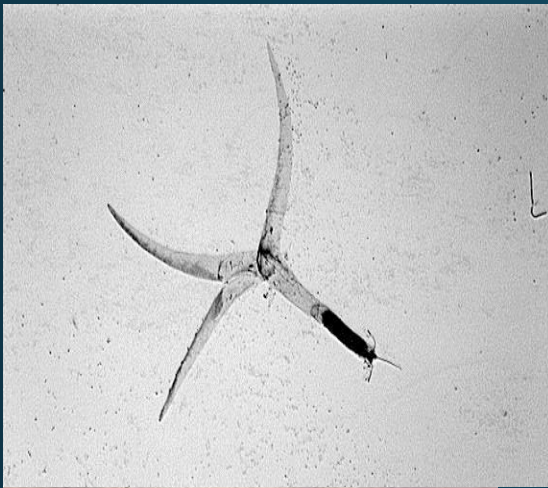


67th Annual Northwest Fish Culture Concepts
December 7, 2016



Fish Health Primer II: Common Pathogens and Treatments

Meghan Baker and Sean Roon
Washington Department of Fish & Wildlife, Fish Health Lab



Background

Common diseases by tissue location

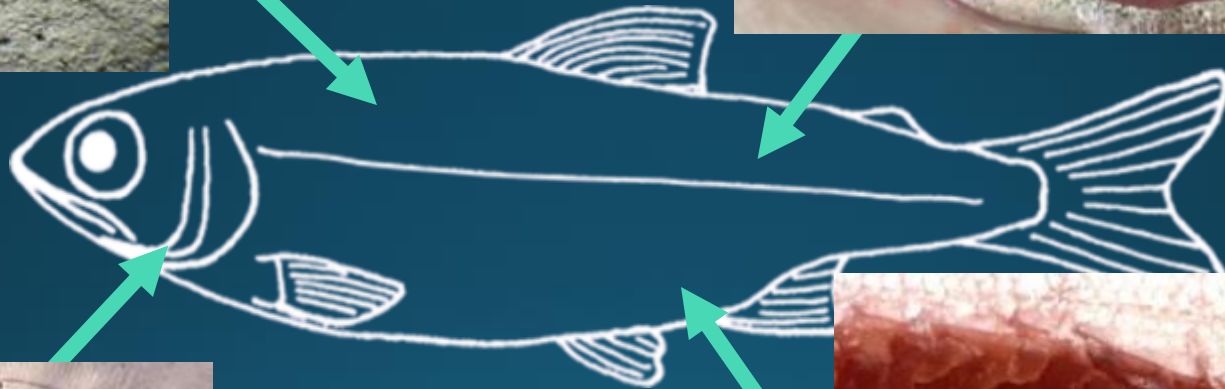
External

- Gills
 - Ichthyobodo (Costia)
 - Bacterial Gill Disease
- Gills/Skin
 - Ich (Ichthyophthirius multifiliis)
 - Trichodina
 - Columnaris

Internal

- Kidney/Spleen:
 - A. sal (Furunculosis)
 - Bacterial coldwater disease
 - Bacterial Kidney Disease
 - IHNV
- Intestine:
 - C. shasta

General necropsy walkthrough



Background

External



Gill conditions

Normal

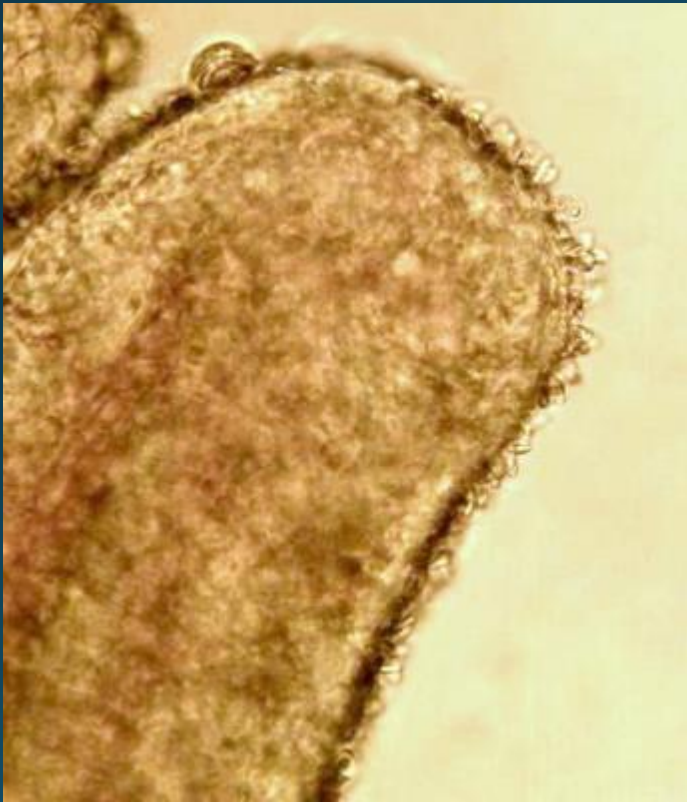


Diseased

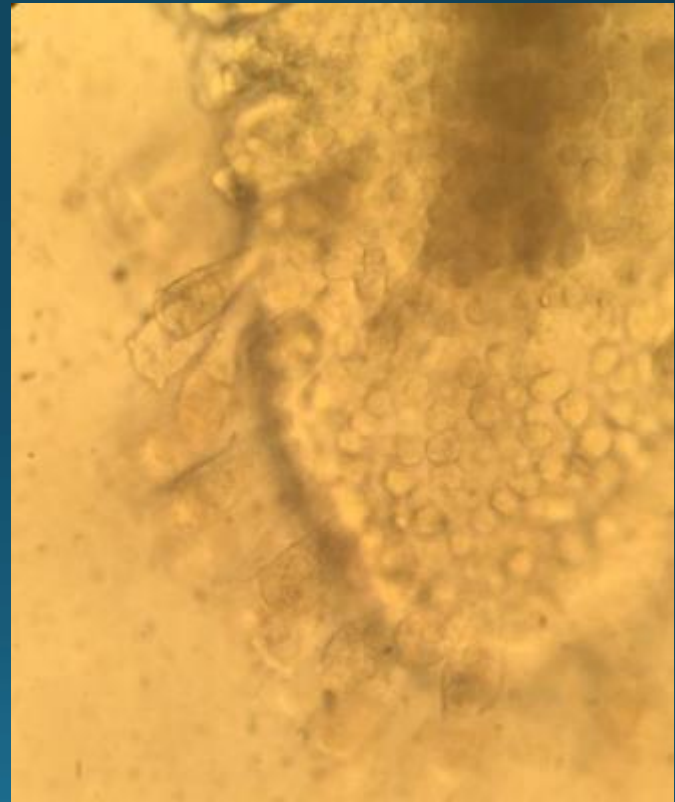


Commonly found gill parasites

Ichthyobodo (formerly Costia)



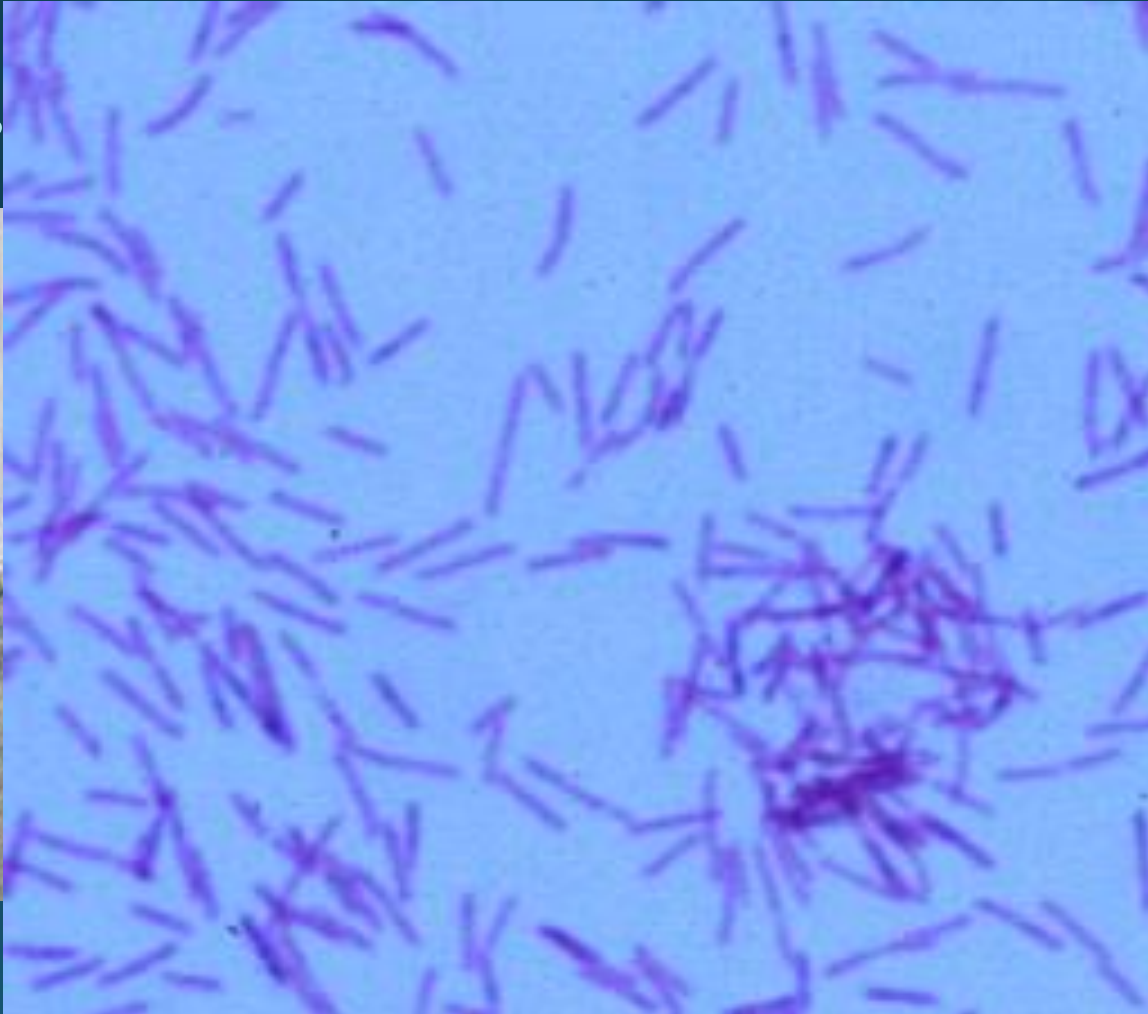
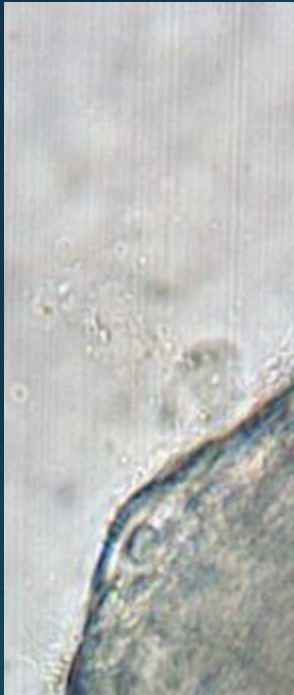
Ambiphyra



Bacterial Gill Disease

Flavobacterium

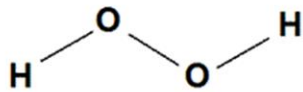
columnare



stacks)

Gills

Common Treatments

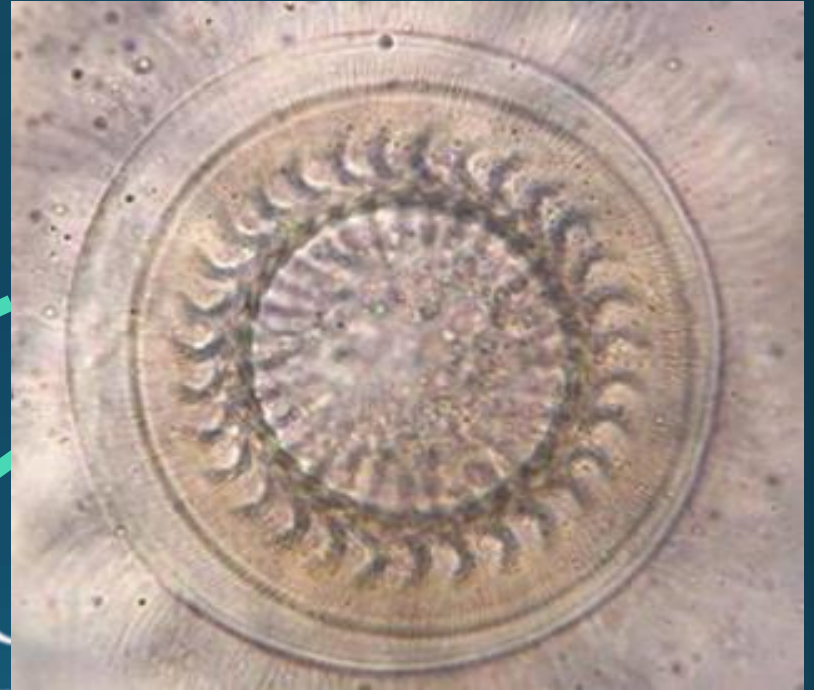


HYDROGEN PEROXIDE



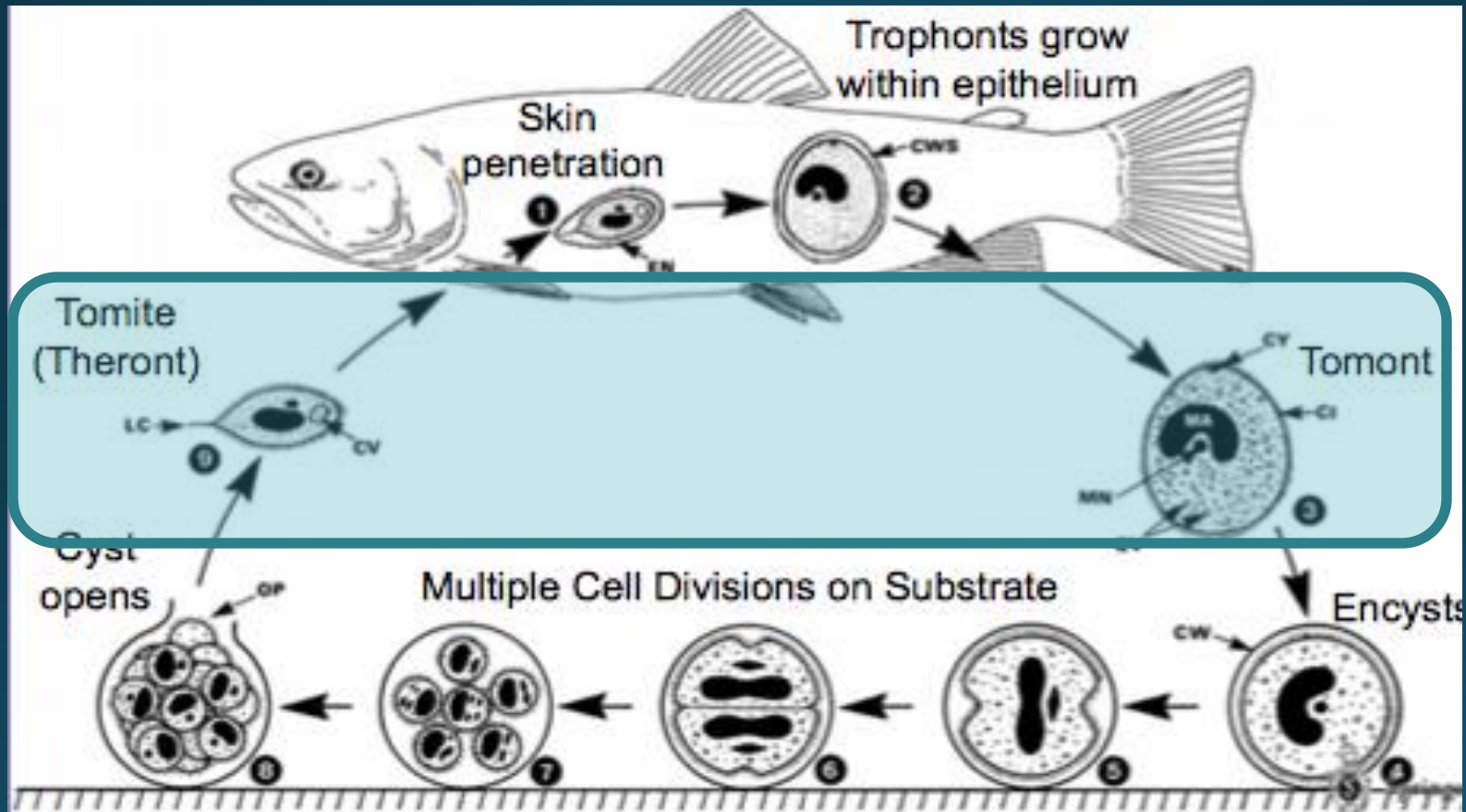
Commonly found external parasites

Trichodina



ICH

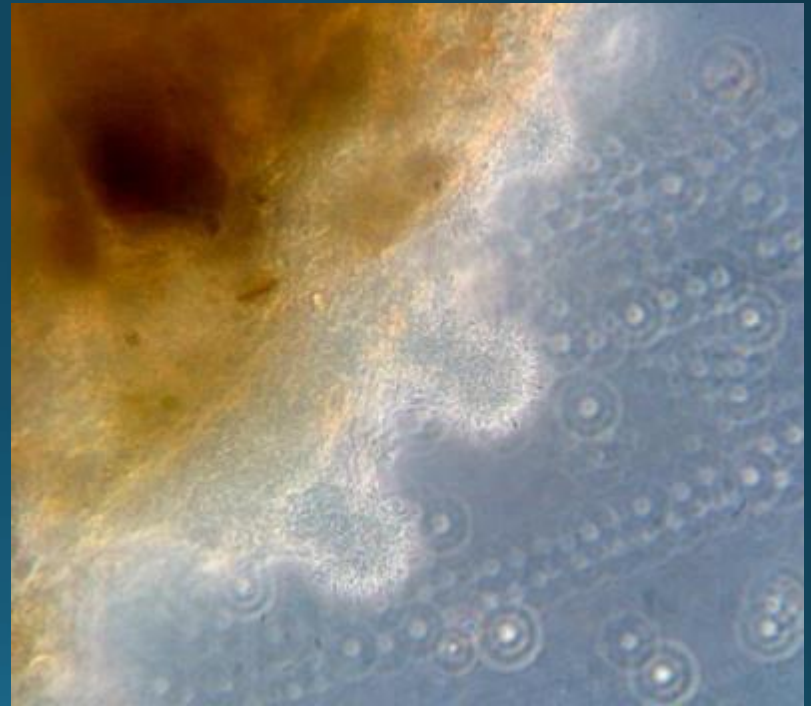
Ichthyophthirius multifiliis



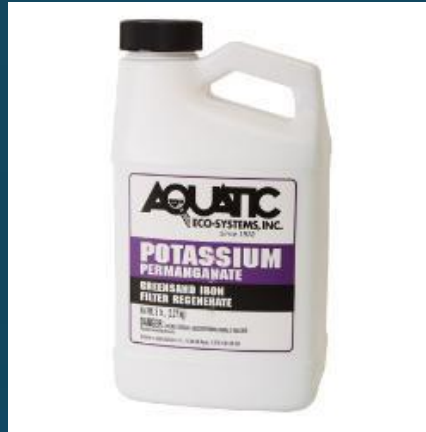
Life cycle is highly dependent on water temperature

Columnaris

Flavobacterium columnare



Common Treatments



Gills | Skin

Internal



Bacterial Kidney Disease

Renibacterium salmoninarum



Internal

Bacterial Coldwater Disease

Flavobacterium psychrophilum

- “Cold-loving” opportunistic pathogen
- External signs such as saddleback lesion
- Systemic infection
- Chronic infections can infect CNS (brain) leading to erratic swimming



Furunculosis

Aeromonas salmonicida

- Obligate pathogen
- Systemic hemorrhaging
- External, iridescent bruising

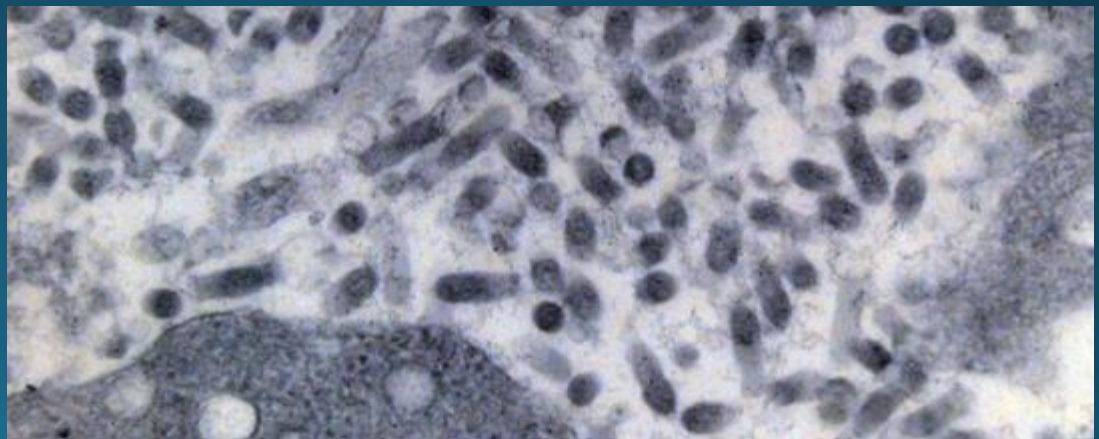


Internal

IHNV

Infectious hematopoietic necrosis virus

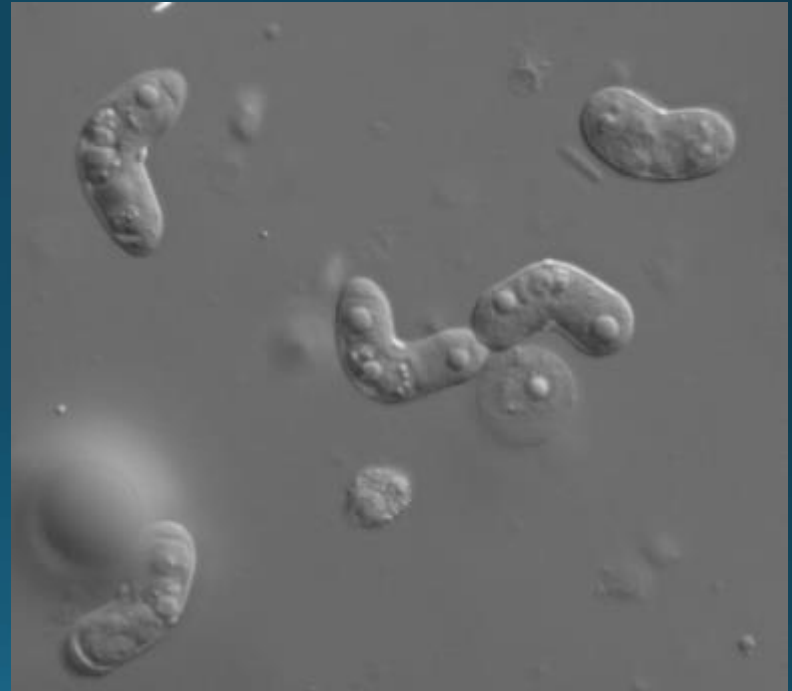
- Abdominal distension
- Bulging of the eyes
- Skin darkening
- Anemia
- Hemorrhaging externally and internally
- Organ necrosis



Ceratomyxosis

Ceratonova (formerly *Ceratomyxa*) *shasta*

Clinical signs



Common Treatments



Internal

Basic questions that help pinpoint issues

- Temperature?
- flow
- how the fish are eating
- % mortality/day
- overall behavior
- general signs
- any changes, etc.

Thanks for listening!

