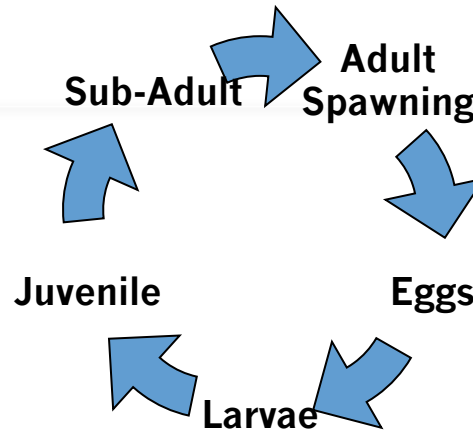
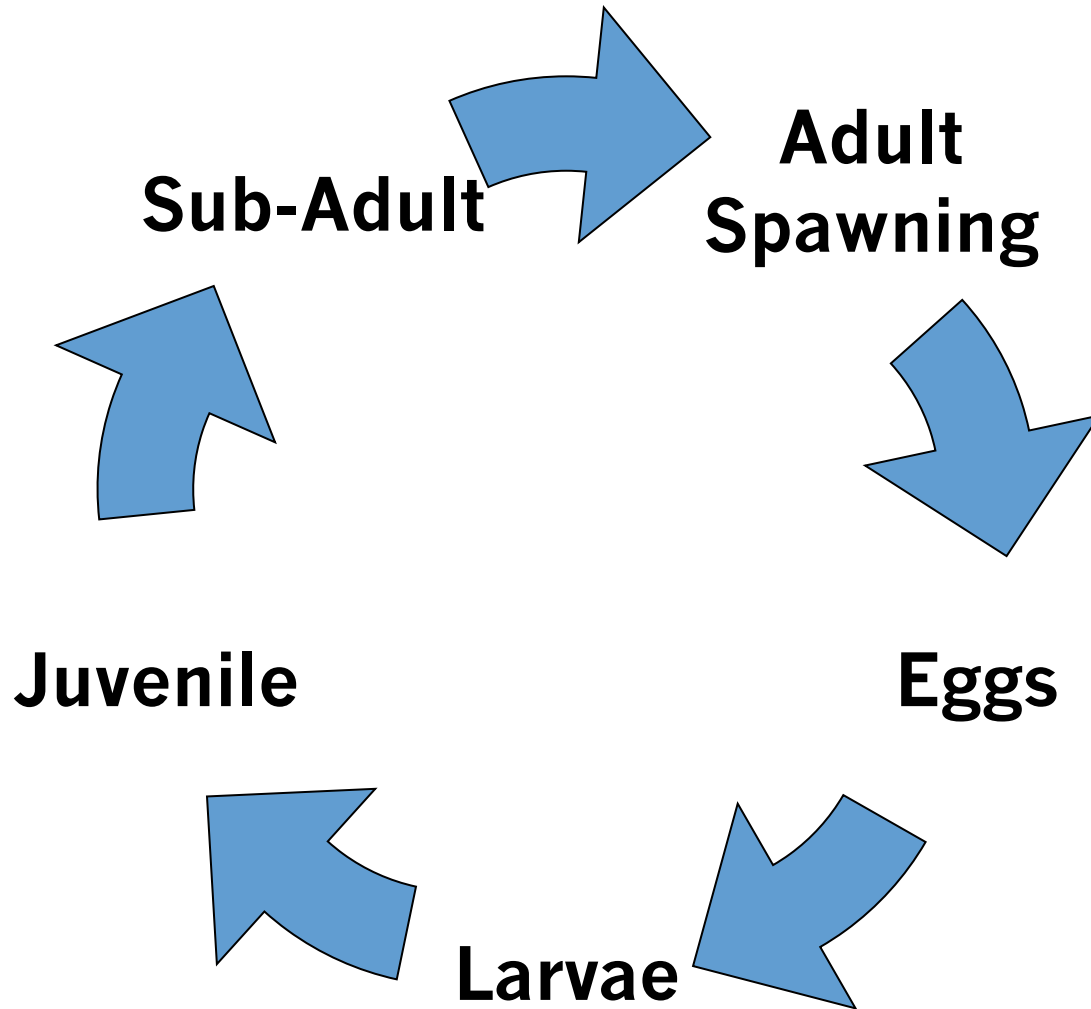


Unit 3: Nechako White Sturgeon Life Cycle



Sturgeon Life Cycle



Adults (reproductive)



Adults and Spawning

Spawning Age of Adults

- Females mature at 40 years of age.
- Males mature from 20-25 years old

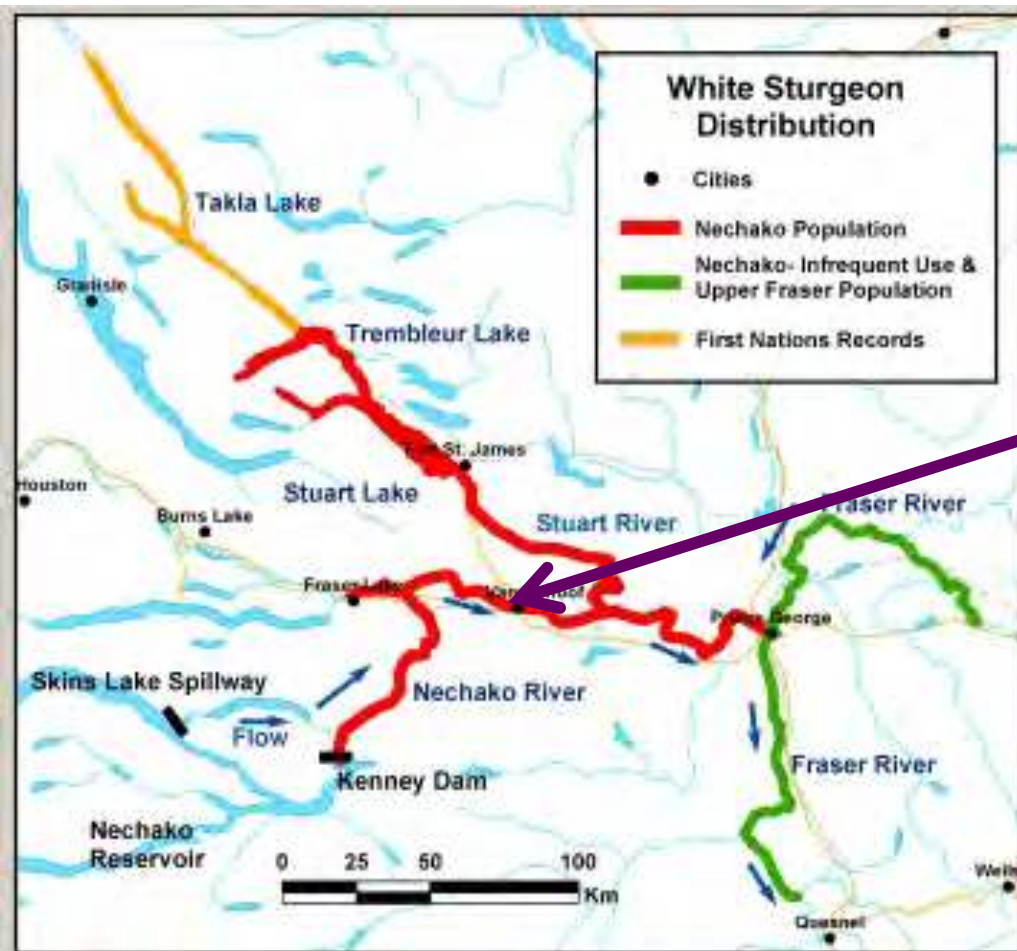
Ideal Spawning Conditions

- May to July
- 14°-18°C
- Fast water
- Deep areas
- Clean substrate



Only ONE known spawning location in the Nechako

Near the bridge in Vanderhoof!



[Click here to watch the only known video of sturgeon spawning in the Nechako River \(scroll to 02:07 to start\).](#)



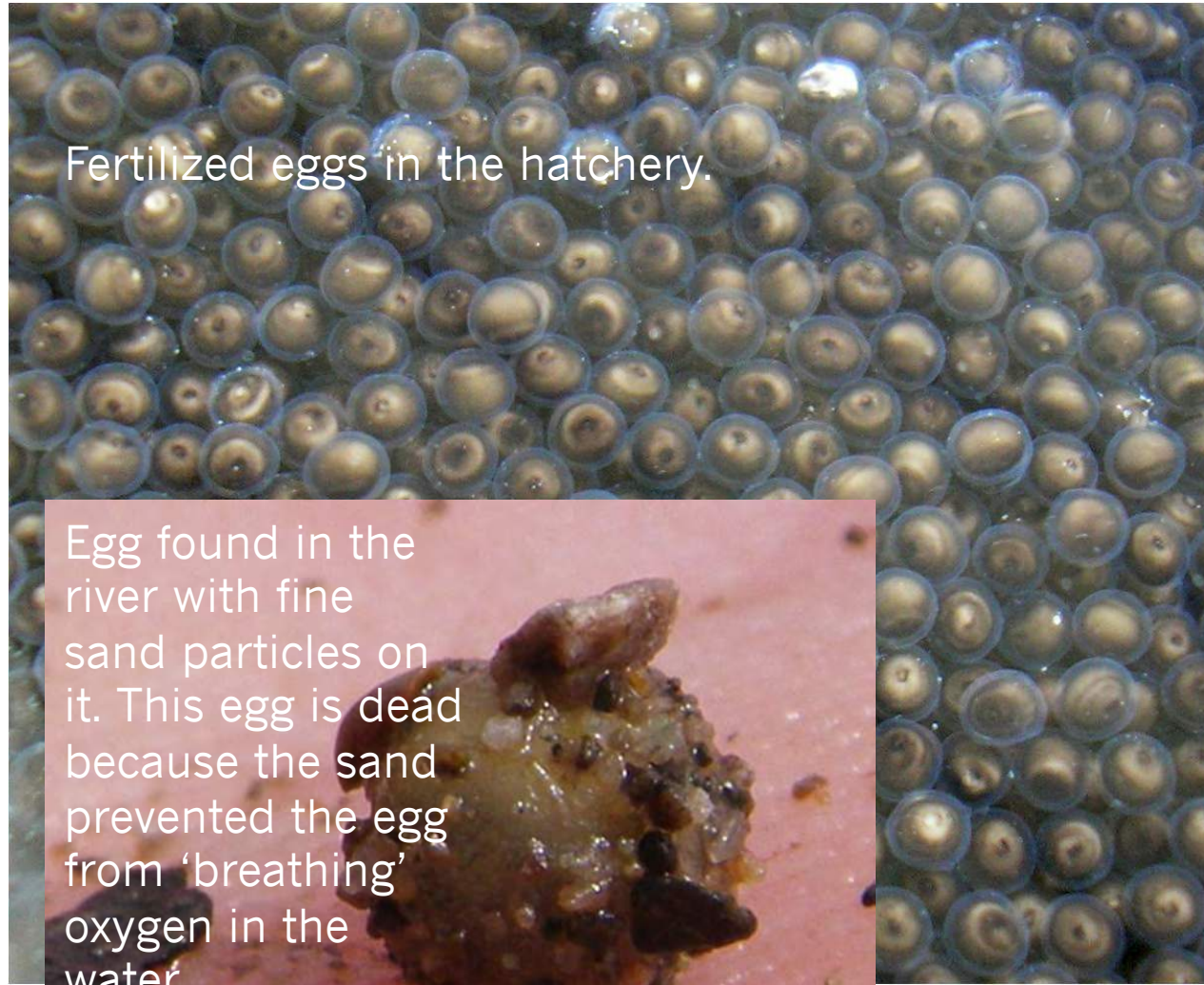
Spawning

- Females spawn every 2-6 years.
- Females release up to ONE MILLION eggs into the water column IF the conditions are good.
- The male swim along side the female. She releases eggs and he releases milt to fertilize the eggs.
- If spawning is not possible, the female resorbs the eggs and does not spawn.



Eggs

- Fertilized eggs sink to the bottom of the river and adhere to rocks and plants.
- They take 7-10 days to hatch, or longer if the water temperature is too cool.



Fertilized eggs in the hatchery.

Egg found in the river with fine sand particles on it. This egg is dead because the sand prevented the egg from 'breathing' oxygen in the water.



- In the hatchery, eggs and milt are collected in jars then mixed by hand.

Larvae



- Larvae hide the the gravel and feed from their yolk sac for 12 days.
- For the next 20 days they feed on aquatic insects and zooplankton. They can be swept downstream at this stage.

Juvenile (<1m length)



3 month old sturgeon

Juvenile

- From roughly 40 days old to the time they reach 1 m in length, sturgeon are called juveniles.
- Juvenile sturgeon look like adults – just smaller and non-reproductive!
- Only 0.1% of sturgeon survive to their first birthday.
 - That means for every thousand sturgeon only 1 gets to age 1, OR
 - Of every 1,000 sturgeon, 999 die in their first year of life. HOW COME?



Predators



Predation

To hide from predators, larval and juvenile Nechako white sturgeon need:

- Turbid or ‘dirty’ water
- In-stream structures like logs, large rocks and covered areas
- Lots of water in the river (increases the places to hide as well as increases the turbidity of the water)



Juvenile sturgeon out in the open in the Nechako River.

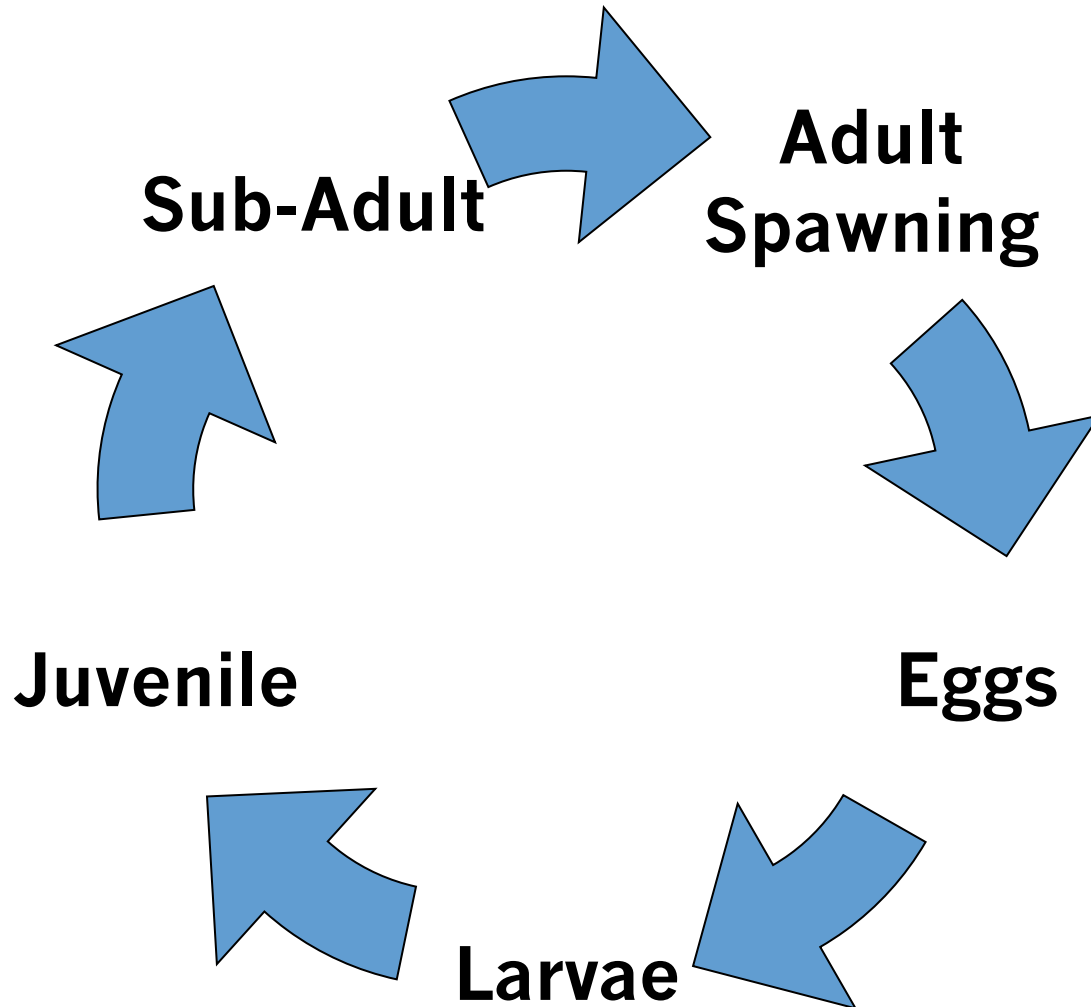
Sub-Adult

- Sturgeon are called sub-adults when they are over 1m in length but NOT reproductive age.
- Predation on this size sturgeon is greatly reduced compared to juvenile sturgeon.



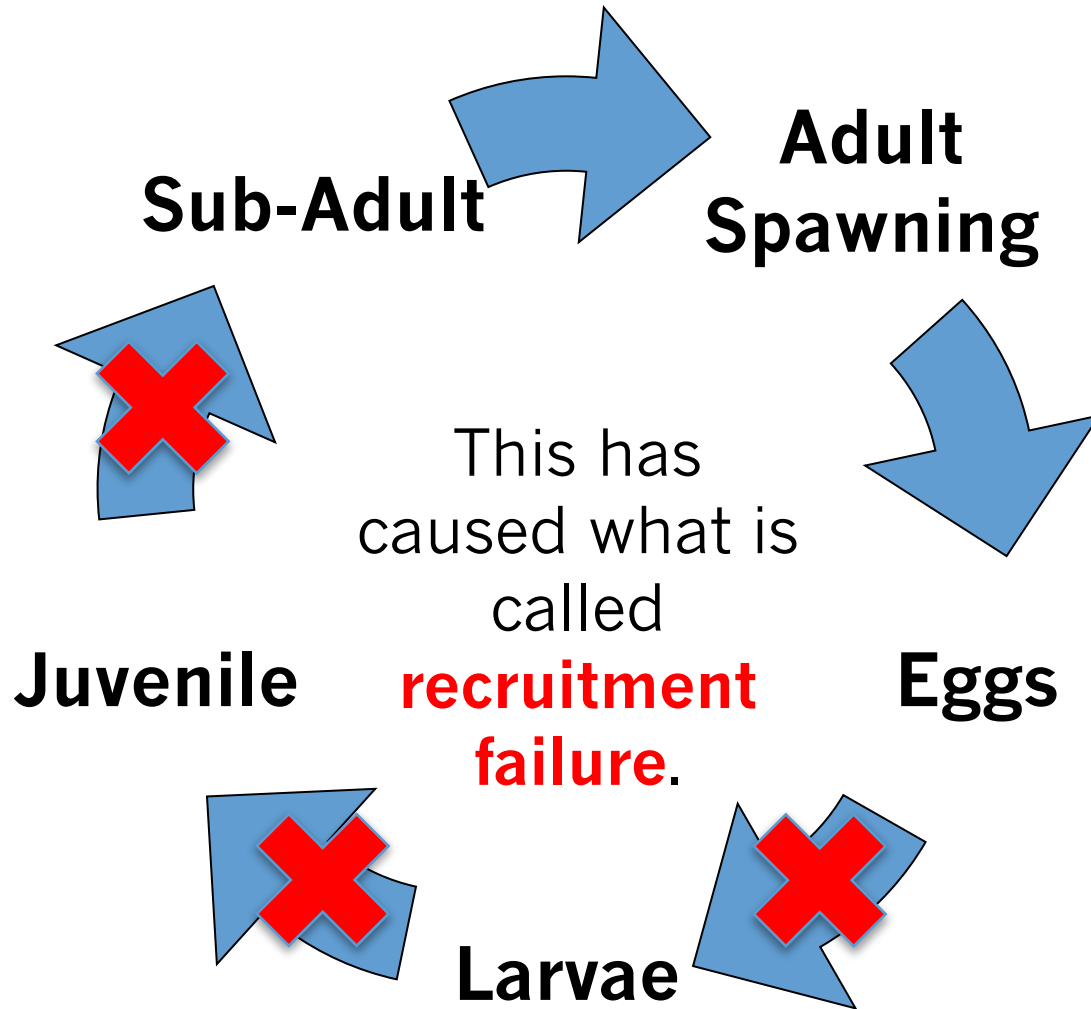
Recruitment

Recruitment is when young fish survive to reproductive age = the life cycle works!



Recruitment Failure!

Since the 1960s, very **few** young sturgeon have survived past the juvenile stage.



Recruitment Failure!

There are several possible reasons for recruitment failure. These are the main ideas:

- Habitat altered
 - Kenney Dam has changed the size and flow of the Nechako River
 - Development of towns and farms
- Biological reasons
- Human impacts: Fishing, Pollution
- Predation
- Climate change

