

# BC's Natural Selection, Adaptive Radiation, Endemic Species and Risks to Biodiversity

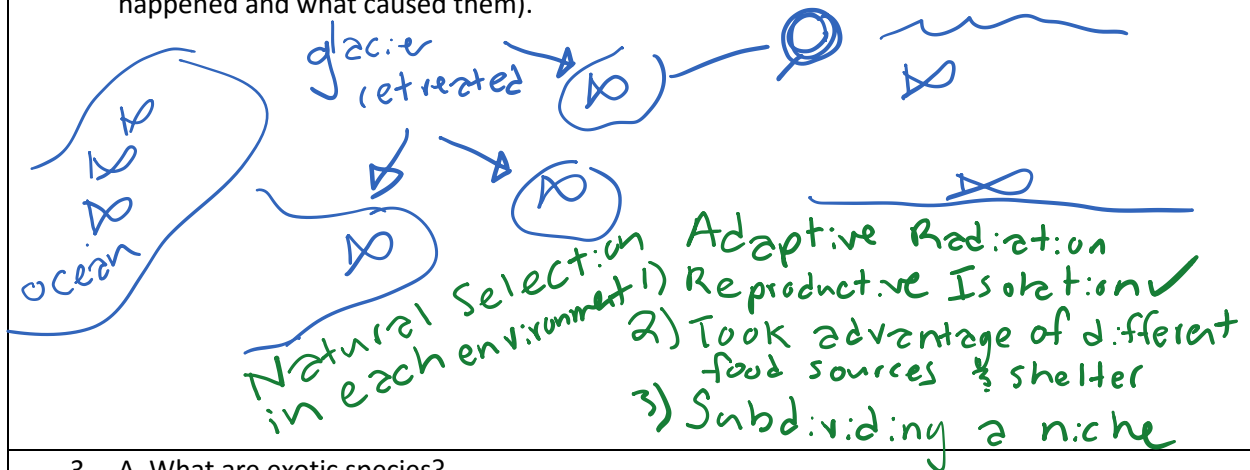
**Answer the question below related to your article. Read your article to the group and collaborate on answers for each section.**

1. A. What traits were selected for in the Haida Gwaii Black Bear? Why?  
B. What are the steps required for Natural Selection to occur?

Trait selected- strong jaws to break sea shells for food

- Variation in traits- strong jaws vs weaker jaws
- Differential reproduction- stronger jaws because it made them stronger and better able to reproduce
- Hereditary- yes
- End result: individuals with stronger jaws reproduce more and therefore the next population has strong jaws as being a more common trait

2. Explain how new species of sticklebacks have evolved. (What evolutionary processes happened and what caused them).



3. A. What are exotic species?  
What problem did Deer cause?  
B. Why were racoons so successful? What options do sea birds have if they want a chance at survival?

A- exotic species- species that did originally belong to an area

Deer problem- ate shrubs on ground → depleted bears food source and inhibited/ prevented future growth of forest

B. easy prey—because seabirds were not used to having racoons as predators

-- adaption requirement → stop nesting in colonies and have nests higher up (trees?)

Name: \_\_\_\_\_

Div: \_\_\_\_\_

Date: \_\_\_\_\_

### Wolves on B.C.'s Islands and Mainland genetically different

1. What are the differences in diet and hunting between island wolves and mainland wolves? Why did the island wolves require different diets?

- Island wolves- eating fish, clams, mussels → learning how to hunt fish, break open and find shells → ate this way due to the availability of food
- Mainland wolves- deer, moose, beavers → learning how hunt → they ate this way because there is more meat available due to more forest

2. What causes the resource use to be passed down through generations?

- parents teach the wolves how to eat and what to eat

3. What observations were made on the wolf populations based on Traditional Ecological Knowledge (Indigenous knowledge) and what observations were made based on scientific analysis?

TEK- two types of BC wolves

- Noticed as areas were logged, more wolves moved onto islands
- Saw wolves get salmon out of river
- Saw wolves in rivers and estuaries

Scientific Analysis:

- Looked at Feces
- Island wolves- 90% diet was seafood- salmon, clams, mussels
- Mainland- almost exclusively hunt land animals such as deer, moose and beaver

4. Do you think that Natural Selection and or Adaptive Radiation has occurred with the wolf populations? Why or Why not?

Natural Selection: Yes/Maybe

1. Variation in traits- behaviour – one eats seafood, other eats meat
2. Differential reproduction- would need more info
3. Heredity- behaviour is being taught by parents
4. End result- each type of wolf is suited to its environment

Name: \_\_\_\_\_

Div: \_\_\_\_\_

Date: \_\_\_\_\_

Adaptive Radiation: Yes

1. Reproductive isolation – yes
2. Taking advantage of different food sources or shelter- yes
3. Availability of new niches – yes ... moving to islands after their area is logged

5. What human factors may risk the health of the island wolf population?