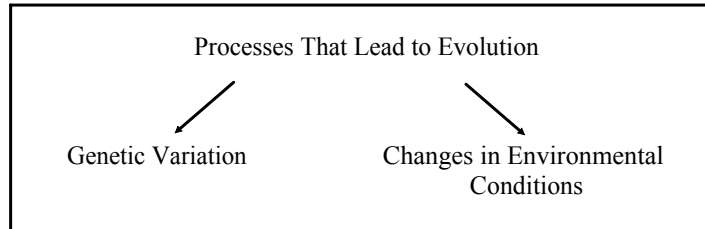


Notes - Biological Evolution, Adaptations and Natural Selection.pdf

## Biological Evolution, Adaptations and Natural Selection

(Draper - Page 83)

**biological evolution** - change in inherited characteristics of a population from generation to successive generation  
 - touted as the driving force of adaptation to environmental change



**genes** - segments of DNA found in chromosomes  
 - impart certain inheritable traits in organisms

**gene pool** - sum of all genes possessed by the individuals of a population

**mutations** - random and unpredictable changes in DNA molecules that can be transmitted to offspring  
 - can be caused by external environmental agents (X-rays, ultraviolet light) and toxic organic chemicals

**genetic variability** - result of millions of random changes in the DNA molecules of individuals in a population

**adaptation** - any genetically controlled characteristic (structural, physiological or behavioural) that enhances the chance for members of a population to survive and reproduce in their environment

**structural adaptations** - coloration, mimicry, protective cover, gripping mechanisms

**physiological adaptations** - ability to poison prey, give off chemicals to repel predators, hibernate during cold weather

**behavioural adaptations** - migration, resource partitioning, species interactions (ie/parasitism)

**natural selection** - process by which the best adapted organisms survive and reproduce in a given environment

**speciation** - the formation of two or more species from one as the result of divergent natural selection in response to changes in environmental conditions



**extinction** - process by which a species is eliminated from existence when it cannot adapt genetically and reproduce successfully under new environmental conditions

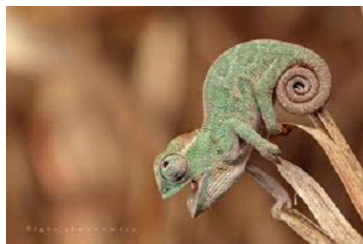
## **EcoPoint Opportunity...**

[Print Word Document and/or Email]

hallihana@nbed.nb.ca

- 2 species per adaptation (structural/physiological/behavioral)
- state the adaptation & need pictures for each

**5 ecopoints per adaptation**

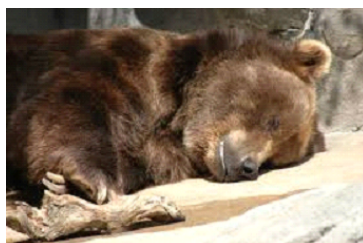


Structural adaptations

Chameleon- has the ability to change colour

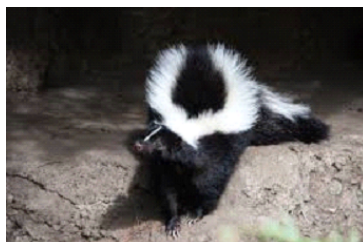


Turtle- has hard shell to protect against predators.



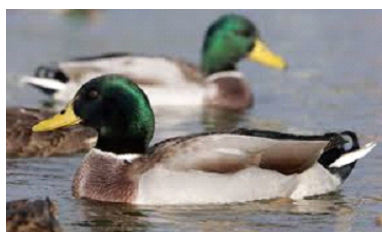
Physiological adaptations

Bear- can hibernate through winter



Skunk- can "spray" to get rid of predators

Behavioural Structures



Geese and ducks migrate during winter

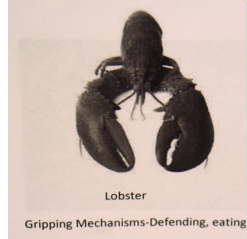
# Examples of Adaptions...

## Structural Adaptations:

Turtle - Protective Cover



Bald eagle – Gripping Mechanisms



Lobster  
Gripping Mechanisms-Defending, eating



Rabbit  
Coloration-Changes color to blend with the right environment.

## Psychological Adaptations:

Skunks – give off chemicals to repel predators



Bears – hibernate during cold weather



Snake  
Ability to Poison Prey-Has poisonous venom to use on prey.



Bear  
Hibernation-Hibernates through the cold winters.

## Behavioural Adaptations:

Monarch Butterfly – migration



Salmon lice – species interactions (ie/parasitism)



Zebra  
Migration-Migrates to greener land.



Geese  
Migration-Migrates to warmer weather in the cold.

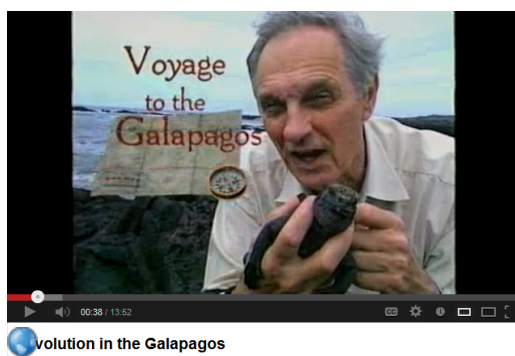


## ACTIVITY: Adaptations



## Processes that lead to Evolution...

1) Changes to the environment



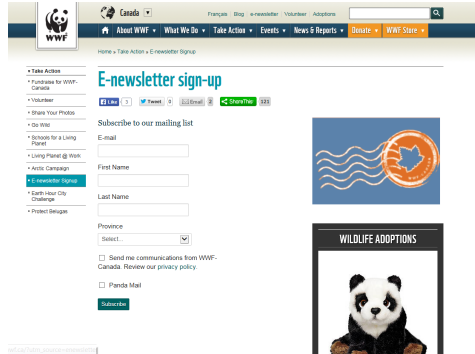
2) Changes to the genetics



## 5 ECO-POINTS...Join a Environmental Newsletters [Up to 20 EcoPoints Total]

Examples:

<http://www.wwf.ca/>



<http://asf.ca/main.html>



### Atlantic Salmon Federation News

Tuesday, Sept. 18, 2014

**ASF Rivernotes - Will Scotland's Referendum Affect Salmon?**

~~~~~  
 his week's update hits several points, including a new **PHOTO CONTEST**, as well as raising the question of impacts on salmon from the **Scottish Referendum** vote. Plus the latest on river reports across the Atlantic salmon range in North America  
<http://atlanticsalmonfederation.org/rivernotes/>

**ASF RESEARCH BLOG UPDATE -**

ASF researchers continue the process of bringing to the surface acoustic tracking devices with their valuable data, and the assessment of streams with electrofishing gear proves very successful.  
<http://asf.ca/research-in-the-field.html>

**Where have all the Miramichi Salmon Gone?**

~~~~~  
 ASF and the MSA raise the alarm that Miramichi salmon returns this year show the runs are in danger.

**ASF's Bill Taylor** discusses the issue on **CBC's AS IT HAPPENS**  
<http://asf.ca/bill-taylor-talks-salmon-on-as-it-happens-.html>

Another perspective is given with coverage in **video** and text.  
<http://asf.ca/miramichi-salmon-numbers-hit-record-low.html>

The need for bold action is emphasized:  
<http://asf.ca/bold-action-needed-to-save-atlantic-salmon.html>

## Attachments

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