

# Highway Wilding



Build them and  
they will live.

A FILM BY LEANNE ALLISON WITH ADDITIONAL FOOTAGE FROM ALEX TAYLOR, MORGAN HEIM, AND DAN RAFLA  
DR TONY CLEVINGER DR RICHARD FORMAN KARSTEN HEUER NIKKI HEIM  
BARB JOHNSTON MARG GMOSEY BARB BERTCH JESSE WHITTINGTON JUSTIN THOMPSON  
TRACY LEE BILL ANDREE JOSH POLLOCK NICOLENA JOHNSON  
AERIAL PHOTOGRAPHY BY RON CHAPPLER PROVIDED IN-KIND BY BANFF LAKE LOUISE TOURISM AND THE BANFF CENTRE  
POST PRODUCTION MANAGER TODD LANGILLE FINISHING EDITOR JESSICA DYMOND SOUND DESIGN AND SOUND MIX MARTA OLKA AND MAGDALENA KASPEREK  
POST PRODUCTION PROVIDED IN-KIND BY THE BANFF CENTRE SALAMANDER ANIMATION TYLER JORDAN MAP ANIMATION MATT KNAPIK AND GREG CHERNOFF  
LONG-TOED SALAMANDERS PHOTO MIKE JOKINEN TRAIL CAM PHOTOS HIGHWAY WILDING AND PARKS CANADA BEAR 122 ANIMATION JESSE WHITTINGTON  
WITH SUPPORT FROM HIGHWAY WILDING MIISTAKIS INSTITUTE PARKS CANADA WOODCOCK FOUNDATION WESTERN TRANSPORTATION INSTITUTE AT MONTANA STATE UNIVERSITY  
PATAGONIA ENVIRONMENTAL GRANTS FUND THE GOVERNMENT OF ALBERTA AND THE ALBERTA SPORT, RECREATION, PARKS & WILDLIFE FOUNDATION  
THE COMMUNITY GRANTS PROGRAM AT THE CALGARY FOUNDATION TD FRIENDS OF THE ENVIRONMENT FOUNDATION THE EDMONTON COMMUNITY FOUNDATION  
MUSIC CHUCKWAGON BY ELLIOT BROOD SALAMANDRE BY SARAH HARMER COPPER MOUNTAIN BY BRIAN DENHERTOG  
SPECIAL THANKS TO DANAH DUKE RACHELLE HADDOCK TONY CLEVINGER  
KARSTEN HEUER WOODY MACPHAIL ROB AND LORETTA SCHAUFELLE

## Build Them & They Will Live: Highway Wilding Study Guide

Created by: Ron Clark

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**Highway Wilding**  
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# **Study Guide** **Highway Wilding**

## **'Highway Wilding' Teachable Central Themes**

- 1) 'Highway Wilding' reduces road kill; saves lives (both animals and humans), and is cost effective for our society.
- 2) Wildlife crossing structures reconnect wildlife habitat so they can meet their life needs (including long-distance movements) safely.

## **The 'Hook' Activity - Before You Show The Documentary**

Project this image on your white board or screen. Guide a discussion on what this is. Once the students have a grasp on this, discuss what its purpose is and its ramifications for wildlife.



## **Content Questions**

In groups of three to four, divide up the questions in each section. It is imperative to pay close attention to the film as the answers do come quite quickly. Once you have watched the documentary, share your answers in your small group. Once that is complete, come back as a whole class and fill in the areas that you missed.

### **Prologue (0 -1:47)**

1. What two perspectives are shown in the opening sequence?
2. What type of animal died on the road?
3. How did it make you feel? Why?
4. What purpose would the filmmakers have to open the documentary this way?

### **Performance Task**

1. Brainstorm a series of descriptive words that would describe this opening. Use <http://www.wordle.net/> to create a word cloud. Write a reflective paragraph to go along with each cloud on why you chose these particular descriptive words for the opening sequence.
2. Take on the role of the moose in the opening sequence; write down the moose's thoughts as it moves through the forest up to its death.

### **The Trans-Canada Highway (1:47 - 3:42)**

1. How many visitors does Banff National Park see each year?
2. What is the name of the main highway that goes through Banff National Park?
3. What is the average number of vehicles travelling on the highway per day? For every three seconds?
4. How many elk collisions occurred before the animal passages were created?
5. Define road ecology.
6. According to the professor, why are the issues of road ecology hidden to most people?
7. What issues do highways cause for wildlife and the environment?
8. Why was the study of Pluie an 'a-ha moment' for the wildlife conversation people?

### **Performance Task**

1. Create an interview between a CBC reporter and Dr. Forman. The focus of the interview should be on the impact of highways on wildlife and the environment. Make sure you create a script before you perform. In addition, you should dress up in costume and have props.

### **The Wolf and Wolverine (3:42 - 4:35)**

1. How has the wolverine been described?
2. Why did they get this reputation?
3. How does the scientist prove that we do not know much about the wolverine?
4. Why is the wolverine the perfect study species to assess the impact of the animal crossing structures (wildlife overpasses, underpasses and highway fencing)?

## **Performance Task**

1. Create a prezzi ([www.prezi.com](http://www.prezi.com)) presentation centering on the wolverine, include: habitat, food, physical characteristics, behaviour etc.

## **The 'A-HA' Moment (4:35 – 5:52)**

1. What does Karsten Heuer feel is the problem that scientists and biologists have had?
2. What was the scientist's 'a-ha' moment?
3. What was the name of the white wolf?
4. Where did she travel?
5. How were the scientists able to track her?

## **Performance Task**

1. The wolf has been the centre of many fairy tales. Using the travels of the white wolf as a centre point, create an original fairytale in a picture book format of the wolf's travels.

## **Trapping the Hair (5:52 – 7:53)**

1. Describe a 'hair trap' site.
2. What two things do the scientists put up the tree to attract the wolverine?
3. What is on the scent cloth?
4. What does the barbed wire collect?
5. What do the scientists do with the collected samples?

## **Performance Tasks**

1. Using the description of the scented cloth, create a type of poem highlighting the powerful smells of the cloth.

## **The Salamander (7:53 – 10:47)**

1. What species lives in Linnet Lake in Waterton National Park?
2. What yearly challenge does this species face?
3. What did the population assessment tell the scientists?
4. What issue exists at Rock Creek?
5. How many deer does the highway maintenance worker collect each year over his 16 years?
6. Explain the adaptations necessary for wildlife to survive climate change.
7. Explain the advantages of the crossing structures.

## **Performance Task**

1. Create a map of the migration route from the neighboring forest to Linnet Lake that the salamander has to travel.

## **Vail Pass (10:47 – 12:36)**

1. Explain the factors that affect the wildlife sensory perception at Vail Pass.
2. How much do animal/vehicle collisions cost each year in the USA?
3. What are the average costs of: a deer/vehicle collision; an elk/vehicle collision; and a moose/vehicle collision?
4. Explain why wildlife overpasses (bridges) and underpasses (tunnels) save people money.

### **Performance Task**

1. Using the link provided, create and manage a faux Facebook page. The page must focus on the overpasses and underpasses for the animals. The purpose is to bring awareness to this important project.

[https://docs.google.com/drawings/d/1QUPmCPlC44PS61vK7gnjqHZane8SVDH55N9XEXEA7D8/edit?pli=1&hl=en\\_US](https://docs.google.com/drawings/d/1QUPmCPlC44PS61vK7gnjqHZane8SVDH55N9XEXEA7D8/edit?pli=1&hl=en_US)

## **The Grizzly Bear (12:36 – 21:10)**

1. When was the first structure put into place?
2. How many grizzly bears were using them?
3. Has the number of crossings increased? If so, why?
4. What techniques did the scientists employ to prove that the grizzly bear increased their usage?
5. How far did Grizzly 122 go?
6. How many times did he cross the bridges?
7. Which types of animals prefer to use the underpass rather than the overpass?
8. Where do the salamanders hibernate?
9. Have the hair trap sites been successful in Banff National Park?
10. Describe the story of the lynx.
11. Why is the use of the land bridge by the wolverine considered a success?
12. Explain the use of the heartbeat at the end of the documentary.

### **Performance Tasks**

- a. Choose one of the animals highlighted in this part of the film and create a food web or chain.
- b. Below are the lyrics to the song (at the 15:15 minute mark). What is your interpretation of the song? Create your own song about one of the animals highlighted in the film. Present it to your class or your school.

## **Salamandre**

Salamandre, Salamandre, il faut m'aider comprendre  
tous les mystères de la forêt, la carte secrète, l'arbre d'oree.  
Patiemment je vous attends, Salamandre.

Salamandre, Salamandre, tout les deux ensemble  
Ma solitude et mon ennui ont disparu pendant la nuit.  
Ca fait si longue ma vit soit lente, Salamandre.

C'est vrai, un jour je serais roi  
Toute la France attend a moi.  
Toutes mes paroles deviendront loi  
Mais maintenant mon seul ami,  
Venez vite je vous en prie,  
Salamandre

Ma Salamandre, Salamandre, la nuit s'approche, je pense  
La lune sera notre chandelle, bienvenue ma vie nouvelle,  
Nos aventures nous attends, ma Salamandre,  
Salamandre.

### **ENGLISH TRANSLATION:**

Salamander, you have to help me understand all the mysteries of the forest,  
the secret map, the golden tree. I'm waiting for you patiently.

Salamander, the two of us together. My solitude and boredom disappeared  
overnight – I've led a lonely (slow) life for so long.

It's true, one day I'll be king. All of France awaits me. Every word I say will  
be made law. But for now, my only friend, please come quickly, I beg you.

Salamander, the night is approaching, I think. The moon will be our candle.  
Welcome to my new life – our adventures await us, my Salamandre.

**Written by:** Kate Fennet

**Performed by:** Sarah Harmer

# **Build Them and They Will Live Unit Plan**

## **1. Relevant Courses**

This lesson is appropriate for any course/subject area that looks at ecosystems, patterns, and relationships. These are skills that would be applicable to most courses, but especially the following:

- Language Arts
- Math
- Career and Technology Studies
- Science
- Social Studies (History, Economics, Geography, Sociology)
- Informational Technologies

## **2. Specific Learning Outcomes**

- consult a variety of sources that reflect viewpoints on a particular topic
- draw pertinent conclusions based on evidence derived from research
- analyze similarities and difference among narratives
- use appropriate presentation software to demonstrate personal understandings
- generate ideas for possible venture opportunities in environmental issues
- apply knowledge of innovation to a possible business venture
- take ownership of text creation, by selecting or crafting a topic, concept or idea that is personally meaningful and engaging
- develop and deliver a performing presentation considering factors such as purpose, audience and situation
- select and use, independently, multimedia capabilities for presentations in various subject areas
- select information from appropriate sources, including primary and secondary sources
- use technology outside formal classroom settings

## **3. Skills Targeted for Development**

- Creative Thinking
- Historical Thinking
- Communicating
- Critical Thinking

## **4. Estimated Time For Implementation (depends of choice of performance task)**

- each learning plan will take approximately 3 - 6 classes

## 5. General Overview of the Study Guide

This study guide will provide students the opportunity to utilize a variety of necessary life skills, but also to understand the dangers that animals face from a variety of perspectives.

## 6. Resources Required

Internet  
Computers  
Video Equipment

## 7. Implementation Strategy

The students should brainstorm and discuss the ‘importance of our environment’ to our society. Once this has been established, expose the students to the documentary. Afterwards, they will need to answer the content questions and then peruse and decide on which topics they would like to explore. Then, they need to complete one of the performance tasks listed. The students should be given the opportunity to work: by themselves, in partners, or in a group depending on the path they have chosen. The students should be given ample time to complete the tasks given, but the teacher will have to devise a deadline. To wrap up the projects, the students would either present or hand in their finished product.

## 8. Suggested Follow-up Activities

- a. The students could compile all of their tasks and host a ‘Build It and They Will Live’ Fair for the school.
- b. The students could have a discussion via Skype with one of the documentary personalities or have them come to their school and share their story.
- c. The students could travel to their closest park and explore how roads have affected wildlife and the environment in their own community.
- d. Write a persuasive essay. ‘To what extent are wildlife overpasses and underpasses successful in protecting the wildlife highlighted in the film?’ Please use the infographic ([http://www.rockies.ca/files/HW\\_InfographicScreenVersion.pdf](http://www.rockies.ca/files/HW_InfographicScreenVersion.pdf)) to support your cause.
- e. Research an area that does not have these types of wildlife bridges or underpasses. Design and create you own structure. Build a diorama.
- f. Research an area that does not have these types of wildlife bridges or underpasses. Write a letter to your government representative and ask them to do something about this. Provide examples from the documentary to support your cause.
- g. Create your own public awareness campaign to draw attention to these projects.
- h. Explain what the slogan “Build Them and They Will Live” means.

## 9. Suggested Evaluation Activities

The teacher should develop an appropriate summative rubric to evaluate each performance task.

## **10. Primary Resources**

Highway Wilding – [www.highwaywilding.org](http://www.highwaywilding.org)

## **11. Supplementary Resources Required**

[www.google.com](http://www.google.com)

[www.yahoo.ca](http://www.yahoo.ca)

[www.prezi.com](http://www.prezi.com)

[www.wordle.com](http://www.wordle.com)

# ANSWER SHEET

## Prologue (0 -1:47)

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

## The Trans-Canada Highway (1:47 - 3:42)

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

5. \_\_\_\_\_

6. \_\_\_\_\_

7. \_\_\_\_\_

8. \_\_\_\_\_

**The Wolf and Wolverine (3:42 - 4:35)**

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

**The 'A-HA' Moment (4:35 - 5:52)**

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

5. \_\_\_\_\_

**Trapping the Hair (5:52 - 7:53)**

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_
- 4. \_\_\_\_\_
- 5. \_\_\_\_\_

**The Salamander (7:53 - 10:47)**

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_
- 4. \_\_\_\_\_
- 5. \_\_\_\_\_
- 6. \_\_\_\_\_

7. \_\_\_\_\_

**Vail Pass (10:47 - 12:36)**

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

5. \_\_\_\_\_

**The Grizzly Bear (12:36 - 21:10)**

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

5. \_\_\_\_\_

6. \_\_\_\_\_

7. \_\_\_\_\_

8. \_\_\_\_\_

9. \_\_\_\_\_

10. \_\_\_\_\_

11. \_\_\_\_\_

## **Suggested Answer Key**

### **Prologue (0 -1:47)**

1. Animal (Moose) and Human (driver of the car)
2. Moose
3. Answers will vary
4. Answers will vary. Setting a somber mood. Set the tone of the film

### **The Trans-Canada Highway (1:47 - 3:42)**

1. 4 million
2. Trans-Canada Highway Route #1
3. 17000 a day, 1 every three seconds
4. Average of 100/year
5. Study of the impact that roads have had on wildlife and ecosystems
6. Drive along the road and you can't see the impact
7. Division of populations, traffic noise effect on sensitive species

### **The Wolf and Wolverine (3:42 - 4:35)**

1. 1000 lbs of attitude in a 30 lb body
2. Take on animals 10 times their size, born in avalanche chute
3. Little about areas where they are seen, how many there are, how highways impact their movements, their connectivity, and how it impacts the wolverine
4. Did not
5. Due to the wolf's long winding travels where she passed over highways numerous times, they realized that many wildlife are doing the same thing.

## **The 'A-HA' Moment (4:35 - 5:52)**

1. Have not been looking at the landscape like animals do
2. 15 years ago, the white wolf
3. Pluie
4. Alberta, Montana, Idaho, BC and then to Fernie
5. satellite collar

## **Trapping the Hair (5:52 - 7:53)**

1. A location where a tree is wrapped with barbed wire with a frozen beaver nailed to the tree. A camera is attached to a tree nearby so it takes pictures of an animal that visits the site.
2. Scent cloth and frozen beaver
3. A cloth with smelly rotted putrid meat smell
4. Hair samples
5. Sent to a lab for DNA sampling to identify an individual to see if they are using the bridges

## **The Salamander (7:53 - 10:47)**

1. Long toed salamanders (black with a yellow stripe down their back)
2. Migrating from their hibernation to mating grounds
3. Under 2000 salamanders and also found that 10 - 30% were being run over
4. Approach the valley, come around a bend and the wildlife has to come around the guard rails so the drivers do not have much time to respond
5. 200/year
6. expand their distribution and be able to move incrementally
7. building measures to adapt to climate change

## **Vail Pass (10:47 - 12:36)**

1. Exhaust smell, rumble strip, horns blaring
2. 8 billion dollars a year

3. Deer – 6,000 Elk – 17,000 Moose – 30,000
4. Saves us a great deal of money because we are hitting less animals so less cost to us and the insurance companies

### **The Grizzly Bear (12:36 – 21:10)**

1. Handful
2. Yes, bear mom teaches their cubs to use it, so it passes from one generation to the next
3. Barbed wire at the crossings and hair traps around the park
4. 1600 km
5. 66 times
6. Cougars and black bears
7. Out in the aspen forest under logs and rocks
8. Yes
9. Released in Colorado to help with the population and came back to Canada to its origins.
10. Answers will vary
11. Answers will vary