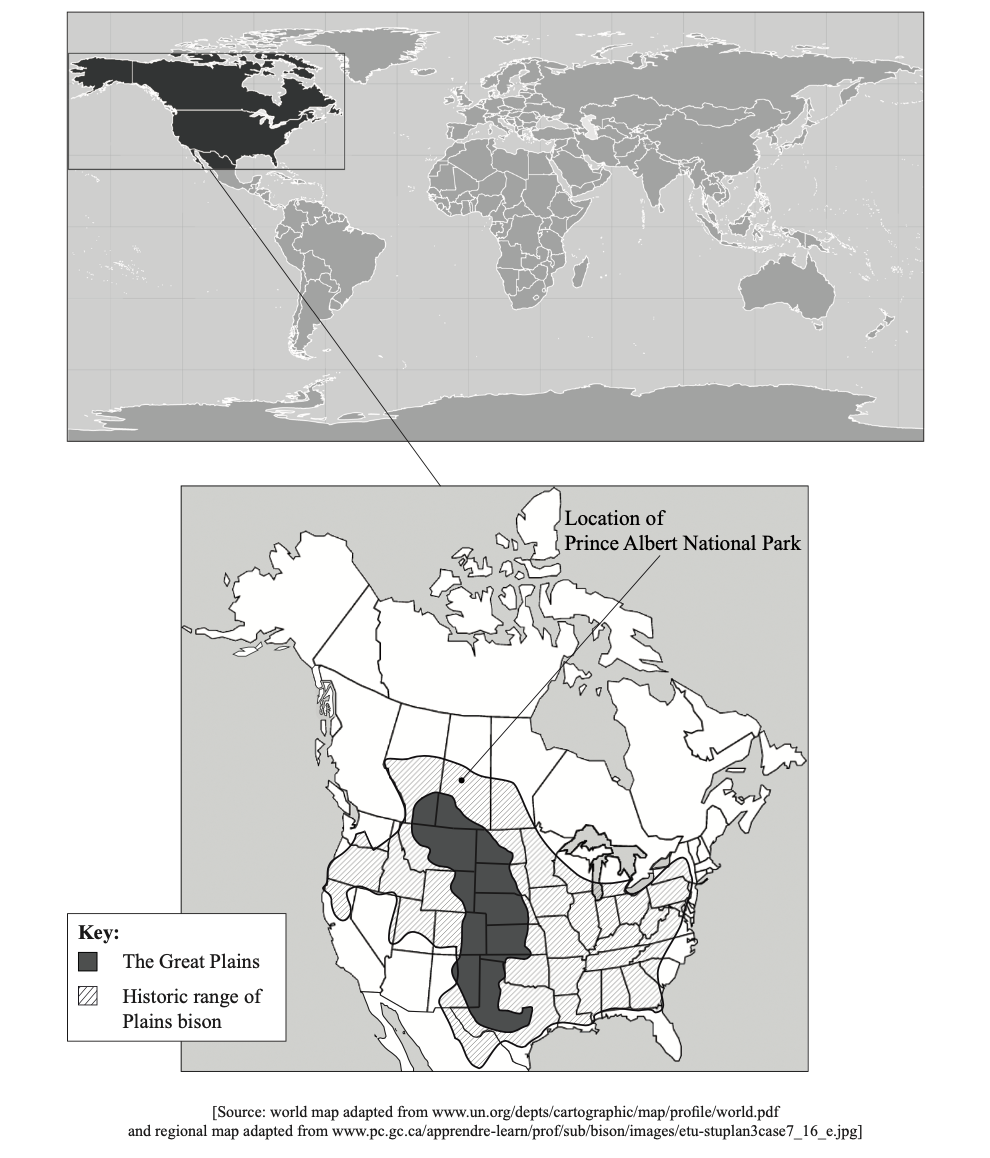
TOPIC 1.1 Environmental Value Systems

Case Study

**Figure 1. World map showing the location of Plains bison**



**Figure 2. Background information on the American bison**



[Source: adapted from http://en.wikipedia.org/wiki/American\_Bison]

**Figure 3. Photographs of Plains bison and American Indians**

1. Plains bison



[Source https://www.worldwildlife.org/species/plains-bison]

1. American Indian couple I bison hide wrap



[Source: www.primitiveways.com/images/buffalo\_comanche.jpg]

**Figure 4 This is a hide yard, Dodge City, Kansas, off to the right is a scale used for weighing hides before they were shipped to the east (US) to be tanned**

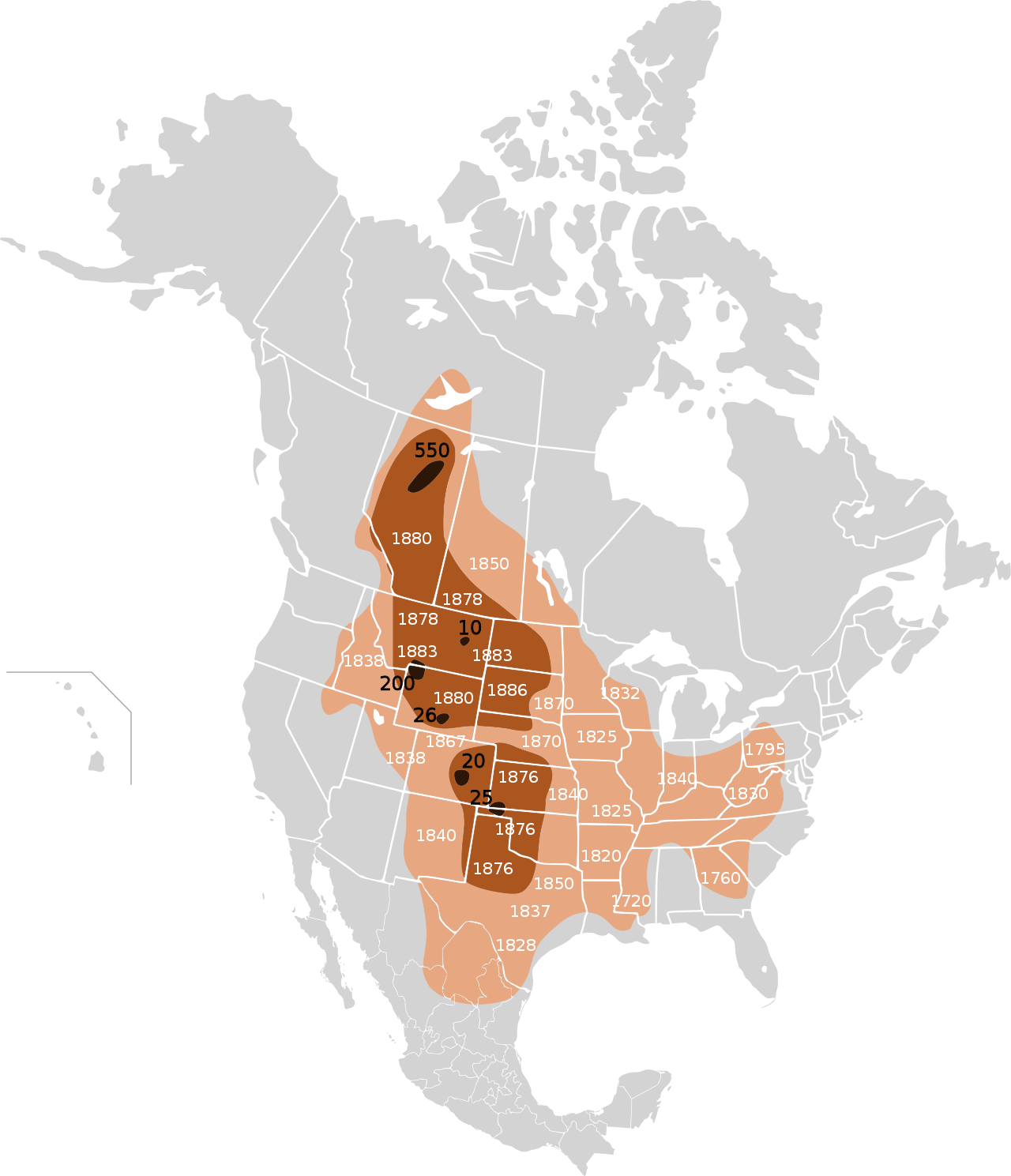


[Photo Credit; J. Peaco, Courtesy of Legends of America]



[https://en.wikipedia.org/wiki/Bison\_hunting]

**Figure 5 Map showing change in range of Plains bison over time**



[Source: http://en.wikipedia.org/wiki/Image:Extermination\_of\_bison\_to\_1889.png]

**Figure 6. 19th century bison hunts and near extinction**



[Source: http://en.wikipedia.org/wiki/Image:Extermination\_of\_bison\_to\_1889.png]

**Figure 7 Video clip from Dances with Wolves – Buffalo Hunt**



Click on the image and watch the video clip (https://www.youtube.com/watch?v=O9Sz2TGXuiM)

**Figure 8 Wildlife Conservation Society report on the restoration potential of Plains bison**



[Source: adapted from [www.sciencedaily.com/releases/2008/04/080429130927.htm](http://www.sciencedaily.com/releases/2008/04/080429130927.htm)]

**Figure 9 Plains bison and human interactions in Prince Albert National Park, Canada**

There is a herd of 400 wild Plains bison in the Prince Albert National Park in Canada. The herd is not fenced in, and so can come in and out of the park at will. The herd brings benefits to the ecosystem but causes problems for landowners near the park.

The positive impacts of bison:

* they create trails through the forest that are used by other animals and people
* they modify vegetation through grazing
* they disperse seeds caught in their fur and through their droppings
* they are a food source for predators (*e.g.* wolves) and scavengers (*e.g.* ravens)
* birds eat insects on bison, and use underfur for nests
* their wallows (mud baths) allow for establishment of new plants
* their droppings provide nutrients to soil
* visitors come to the park to see them (ecotourism).

The negative impacts of bison:

* they damage/destroy farmland crops by grazing and wallowing
* they can transmit disease to domestic livestock
* they may damage fences so that domestic animals escape
* they may wander on roads causing vehicle collisions.

[Source: adapted from www.pc.gc.ca/apprendre-learn/prof/itm3-guides/vraie-true/etu-stuplan3case7\_e.asp]

1. Two incidents were involved in the buffalo hunt. One by white buffalo skinners and one by Sioux tribesmen. Contrast these two incidents with respect to EVSs and their relationship with the environment. (4 marks)
2. Explain why early exploitation of Plains bison by American Indians could be considered sustainable. (4 marks)
3. Outline **three** ways in which the status of Plains bison as a natural resource has changed over time. (3 marks)
4. With reference to the map in Figure 5, describe how the range of Plains bison has changed over time. (2 marks)
5. Suggest why the Plains bison is sometimes described as an “iconic” (representative, very significant) species. (1 mark)
6. Outline the arguments that might be given for preserving Plains bison as a species by a deep ecologist and an environmental manager. (2 marks)
7. Describe and justify your environmental value system. Include examples of environmental issues and your attitude towards them to support your answer. (4 marks)