

CHAPTER 19		Thought Lab 19.1: The Spirit Bear	BLM 19.2.2
HANDOUT			
Purpose: Assessing the role of the Hardy-Weinberg principle in explaining natural phenomena.			



The Kermode bear (*Ursus americanus kermodei*) is a white variety of black bear that is found only in small island populations and in populations on the coastal mainland of British Columbia. Known to local Aboriginal peoples as the spirit bear, the Kermode is rare and people are unclear about how best to ensure its survival. Scientists know that its white coat colour is due to a recessive allele. They rely on bear counts and DNA testing of hair samples to estimate the frequency and distribution of this allele.

Estimated Frequency of White Kermode Bears on Two British Columbia Islands

Location	Gribbell Island	Princess Royal Island
Frequency of white bears	0.3	0.1

Procedure

Use the information and table above to answer the following Analysis questions.

Analysis

1. Predict the frequency of the white coat allele in the Kermode bear population of

a) Gribbell Island

b) Princess Royal Island

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5. Scientists are unsure if Kermode bears select mates based on coat colour. Suggest how this form of non-random mating might affect coastal black bear populations.