



# ANIMAL DISTRIBUTION

Lecture 8

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&

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# MEANS OF DISPERSAL

- In spite of effective physical, climatic and biological barriers, animals follow a large number of long distance migratory routes for their dispersal.
- Land bridges, natural rafts, large ice masses, gales and oceanic currents are common means of dispersal.

# 1. LAND BRIDGES

- Geological evidences indicate that land bridges have existed in the past for varying periods of time.
- These terrestrial connections between continental landmasses provide a suitable migratory route for large land mammals.
- North America and South America had a land connection between them, which was detached sometime in Jurassic period.

- This land bridge re-appeared in late Cretaceous period and opened the path for interchange of animal forms between the two continents.
- This land bridge is known today as **Isthmus of Panama**.
- The bridge allowed the migration of animals like mastodons, horses, deers, wolves and cats from North America to South America.
- While animals like sloth and armadillos got an opportunity to enter North America from South America.



**NORTH  
AMERICA**

**ATLANTIC  
OCEAN**

**Isthmus of Panama  
& Panama Canal**

**PACIFIC  
OCEAN**

**SOUTH  
AMERICA**



## 2. NATURAL RAFTS

- Natural rafts composed of a big chunk of soil, associated vegetation, trees and other debris, all entangled together with vines and root system of trees into a big mass have been found drifting down the rivers and open sea.
- These small floating islands carry terrestrial animals with them.
- Similarly, large blocks of ice with animals on them are also observed floating in the oceans.

- Terrestrial animals either accidentally or with intent, occasionally take passage upon such drifting material which enables them to accomplish long journey over water.
- Natural rafts have been observed carrying an assemblage of life like wingless insects, snails, squirrels, snakes and other arboreal animals.
- Arctic mammals such as reindeers, polar bears, wolves have been found to travel long journeys on floating ice or the so called **icebergs**.



Polar bears travel long journeys on floating ice





Pelicans on natural raft

### 3. DRIFTWOOD

- Accidentally terrestrial forms (such as insects, millipedes, amphibians, snakes) may be carried away from one place to another by drifting wood or heavy logs in the streams or rivers.



# FAVORING GALES OR WINDS

- Strong winds are responsible for transporting the eggs, cysts, spores, small snails, spiders, etc. from one place to another.
- Severe storms and tornadoes are responsible for the dispersal of small sea birds.
- Some animals that reach the suitable habitat, persist there and become established to that area.
- Others that enter the unfavorable locations are destroyed.
- This type of dispersal is referred as **Broadcasting**.



Dispersal of spiders by strong winds

# DISPERSAL BY HUMANS

- Man has probably been the most effective agent of animal dispersal in the past a few centuries.
- Man has accidentally or deliberately introduced many animal and plant species to far flung areas. Some important examples are:
  - a) Rabbits in Australia
  - b) Grey squirrel in England
  - c) Mongoose in West Indies
  - d) Deers and trout in New Zealand
  - e) European starling in North America