The Mystery of Bird Migration

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Definition of Migration

- Migration is the predictable movement of an animal from one location and climate to another location and climate.
- Typically these movements are linked to resource availability, seasonal changes and reproduction.

http://www.njaudubon.org/Education/Oases/Migration.html
Canada Goose

- Migrates in the fall & winter
- As far south as California
- Weighs 8-10lbs
- Migrates primarily through sight
- Found throughout the US
- Migrates in “V- Pattern” for energy conservation

Image courtesy of U.S. Fish and Wildlife Service.
Canada Goose

- Migrates in V-shaped formations
  - Conserves energy by reducing drag
  - Up to 70% more distance associated with updrafts created by lead bird
- Excellent eyesight for navigating and seeing other geese
  - Can see 270 degrees around head
- Migrating speeds: 30-60 mph.
Herring Gull

- Have good memories
- Navigate along coastlines
- Social birds
- State bird of Utah

Image courtesy of Adrian Pingstone.
The Red-Tailed Hawk

- Quite common
- 2-3 pounds (mg)
- Migrate from Aug to October
- Migrate “South”
- Not over water
- Fond of Mexico

Image courtesy of the U.S. Geological Survey.
Black-Capped Chickadee

- Small: 12-14 cm.
- Distributed throughout the northern states and most of Canada
- Year-round residents
- Eat insects, berries
- An active little bird

Image courtesy of Wikipedia.com
Baltimore Oriole

- Winter residence: Mexico, upper South American countries
- Summer residence: Eastern North America (up to Ontario and Nova Scotia)
- Main diet: insects (caterpillars, ants, beetles) and fruits (berries)
  - Insects during the spring and fall; more fruit before and during migration
Oriole Migration Patterns

Image courtesy of U.S. Fish and Wildlife Service.
Wood Ducks

- Winter Residence: Southern US
- Summer Residence: Southern Canada
- Migrate in Pairs or small groups
- Rely heavily on sources of water: swamps, and woodland rivers and ponds; flooded fields during migration as well
- Migrate during the day and eat aquatic plants and seeds
Connecticut Warbler Migration

Image courtesy of the U.S. Geological Survey.
North American Flyways

Methods of Navigation

- Navigate by the Sun and the Stars
  - Even nocturnal birds
- Magnetic Field of the Earth
  - Chemical processes/magnetite
  - Act as nerves giving birds a ‘sixth’ sense
- Landmarks
  - Natural (rivers) & Man-made (highways)
Factors in Migration

- **Winds**
  - Birds follow tailwinds to facilitate migration and conserve energy

- **Fuel**
  - Birds revert to a diet of fruit for more fat

- **Landmarks/Waterways**
  - Land birds (plains, shrubs) and Waterfowl (coasts, islands)
  - Cold fronts/hot fronts affecting climate
Characteristics of Migration

- Most songbirds migrate at night
  - Must catch food during the day
- Miles/night: 300-600 miles depending on factors like wind and rest.
- So in terms of time, a 3000 mile journey will last about 3-4 weeks.

http://www.ornithology.com/lectures/MigrandNavig.html
The End...

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