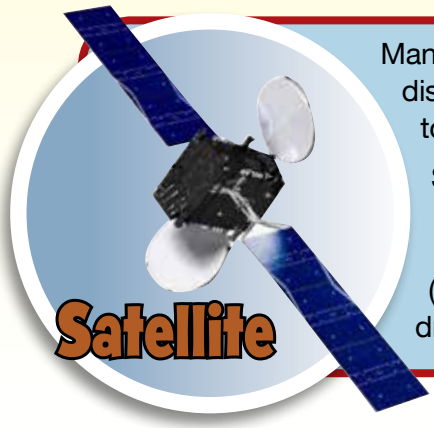
Where Do

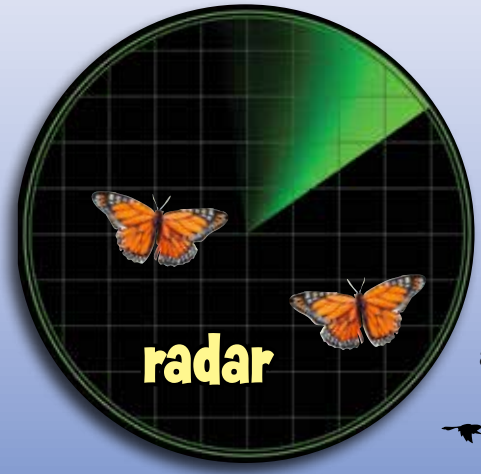
How do scientists use technology to study where animals go when they move around?



Many new technologies allow scientists to study animals from a distance. Advances in technology have also allowed scientists to answer questions not easily answered in the past.

Scientists use many kinds of technology to monitor animals as they move, either locally or seasonally (such as during migration). Some of the technologies they use include: GPS (Global Positioning System)/satellite tracking, radar, gliders/drones and acoustic (sound) tagging.

When studying migratory animals, scientists often use technology to track animals' movements as they travel between their breeding habitats and their wintering (or non-breeding) habitats. By monitoring how and when these animals move, scientists can better understand how animals use different habitats, so we can better protect the areas the animals depend on. In addition to habitats for breeding and wintering, animals often make stops along the way to eat and rest. Knowing where they stop is also an important part of managing their habitats and helping to protect animals like this golden eagle.



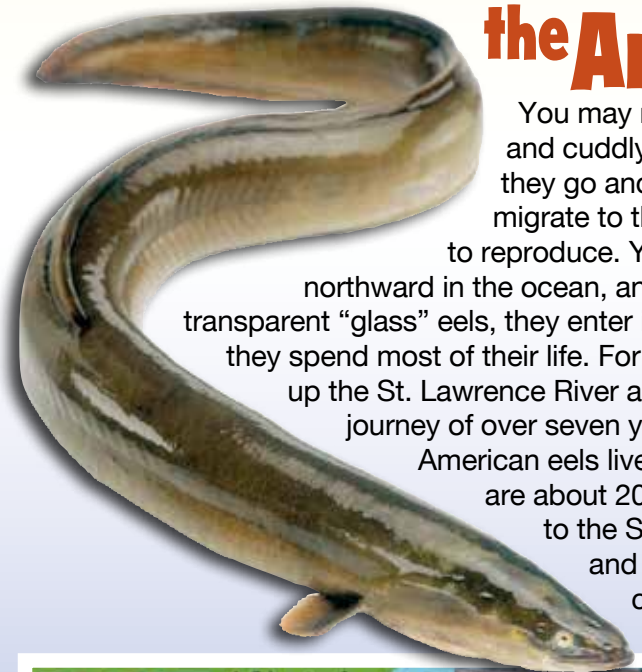
Birds & butterflies can both be tracked locally using radar

Radar is the same technology used for monitoring weather. Flocks of birds and swarms of butterflies appear on radar screens in much the same way that storms do, allowing scientists to monitor when and where animals are moving and track their daily behavior.

Things Go?

DRONES and gliders can be used in several ways to help scientists study where animals go. Some gliders are used underwater to track signals emitted by special transmitters worn by the animals being studied. The gliders can collect information about where the animals move, how deep or shallow they swim, and even information about the water through which they are moving, such as temperature and chemical properties. Drones can be used to monitor animals visually as they move, often taking photos or videos of groups of animals from the air. They also can be used to take photographs of changes in habitat vegetation, allowing scientists to study these changes over time and better manage habitat for wildlife. Gliders and drones can get to places people can't and can cover more ground more quickly.

the American Eel



You may not find American eels very cute and cuddly, but you'll be amazed at where they go and how they live! American eels all migrate to the Sargasso Sea near Bermuda to reproduce. Young American eels (larvae) drift northward in the ocean, and when they become small, transparent "glass" eels, they enter into freshwater habitats where they spend most of their life. For American eels that migrate up the St. Lawrence River and into Lake Ontario, that's a journey of over seven years and 3,800 miles! Only female American eels live in Lake Ontario, and when they are about 20 years old, they migrate back to the Sargasso Sea where they spawn and then die. Their long and very complex life cycle is filled will many dangers, and scientists need to learn more about those perils to help reverse declines in the American eel population. To follow American eels on their journey back to the Sargasso Sea, scientists attach tags to the eels that collect important information, such as their location and the water temperature, and then relay that information to satellites orbiting Earth. While reviewing tag information collected by satellites, scientists noticed some eels migrating in cold water appeared to suddenly enter much warmer water. It turned out that the migrating eels didn't abruptly swim into very warm water; they were eaten by sharks that have warm stomachs!