

Swainson's Hawks: Learn About Their Migration and How CWRS Cares for Them

Swainson's Hawk Dissemination Piece

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Information about Swainson's Hawks



CWRS's Swainson's Hawk permanent resident named Lito standing on his perch. He has an intermediate colour pattern.

The Swainson's Hawk (*Buteo swainsoni*) is a migratory hawk that lives in Calgary as well as western Canada and the U.S. Breeding occurs in North America during spring and summer and they migrate down to Mexico and South America (primarily Argentina) for the winter ^{[1][2][3][4][5]}. Swainson's Hawks live for about seven to eight years in the wild, which means they will migrate several times during their life ^[6].

Swainson's Hawks exhibit three main types of colour patterns – dark, intermediate and light. In general, dark coloured hawks will have uniformly dark feathers on the underside and topside whereas light hawks will have a white underside and a dark topside. The intermediate-coloured hawks will be a combination of the others with dark feathers on the topside and a reddish-brown colour on the underside ^{[7][8]}. The dark and intermediate-coloured hawks are only found in western North America, and they make up less than ten percent of most populations ^{[7][9]}.

In the non-migratory season, Swainson's Hawks are typically carnivorous and prey on invertebrates and small mammals, such as mice and ground squirrels. But during the migratory season, they will switch to an insectivorous (insect) diet which consists of crickets, grasshoppers and locusts ^{[2][6]}. Swainson's Hawks prefer to hunt in open grassland habitats because their prey is more vulnerable to aerial attacks ^[1].

Swainson's Hawks are monogamous and will lay 1-4 eggs during the breeding season. The female will incubate the eggs for about 35 days. They build nests out of sticks in aspen trees or shrubs located near rivers and open grasslands ^{[6][9]}. They are also known to nest around farmlands and cliff edges. Following their migratory season, Swainson's Hawks are known to return home to their original nests ^[6].

Swainson's Hawk Migration

Migration can be defined as the process of animals moving from breeding to non-breeding areas on a regular, internally controlled basis ^{[10][11]}. There is a genetic component to migration. Every bird that can fly has inherit migratory genes that can be expressed through long-distance dispersal ^[11].

Migration is typically motivated by the desire to relocate to a place with abundant resources ^[11]. Birds use natural compasses such as the sun, stars, and the earth's magnetic field to navigate their migration routes ^[9].

On average, Swainson's Hawks will migrate a total of 24,000 kilometers a year ^[6]! The Swainson's Hawk migration pattern is described as bimodal, meaning that the majority of hawks will migrate at two main time points during their southward and northward migration ^[12].

MIGRATING TO NON-BREEDING GROUNDS (SOUTH AMERICA):

- They depart their breeding grounds between mid-August through October, with two points of high frequency during late September and mid-October.
- Arrive in South America between November and December.
- The southward migration usually takes about 42-98 days to complete ^[3].

MIGRATING TO BREEDING GROUPS (NORTH AMERICA):

- They depart their non-breeding grounds between mid-February through March, with two points of high frequency during mid-February and mid-March
- Arrive in North America in April and May.
- The northward migration usually takes about 51-82 days to complete ^[3].

During the autumn migration, Swainson's hawks use different migration routes based on where they originate in North America. If the hawk originates from the west, they will typically follow one of two routes to eastern Mexico and if they originate from the east, they will typically follow one main route to eastern Mexico. The eastern and the western hawks will both converge their routes when they arrive in east-central Mexico and migrate together to Argentina ^[3].

Swainson's Hawk's will soar or glide through the air during migration in order to conserve energy ^{[2][8]}. They tend to travel in large kettles - a group of migratory birds of prey ^[8]. It was once thought that Swainson's Hawks would fast during their migration, but recent studies have shown that during their migration, they will tend to stop and forage in open fields for a few days. These are known as 'stopover



Full body shot of Lito, CWRS's permanent resident

sites' and they are used to obtain sufficient fat storage for the remainder of the flight ^{[1][2][3]}. During this time, Swainson's Hawks forage in farm fields, where they eat primarily insects rather than small mammals ^[2].

Some interesting characteristics about their migration is that the timing of migration does not depend on the age, sex and, locality of the Swainson's Hawk ^{[3][12]}. They follow a completely inland migration while traveling between continents. Swainson's Hawks also tend to follow similar routes during their northward and southward migrations. During the southward migration, they tend to travel at an average speed of 188 km/day. In addition, recent studies have shown that Swainson's Hawks travel slower as they head back to North America in the Spring, with an average speed of 150 km/day ^[5]. Further research is needed to discover why this occurs.

Migration behaviour can be observed and studied in a couple of ways. The most common way is to attach a satellite transmitter (known a PPT) with a backpack harness on hawks that weigh over 900g. PPTs, or platform transmitter terminals, can determine the routes, length, duration, and speed of migration ^{[2][5][10]}. Less common ways include counting individual migrants by conducting surveys of a study area or taking photographs ^{[1][12]}.

Facts about Lito (CWRS's permanent resident)

All information below is courtesy of our senior wildlife rehabilitators Breanne and Amy



Lito gripping food with his left foot

Lito is a male Swainson's Hawk that was brought to the Calgary Wildlife Rehabilitation Society (CWRS) on August 12, 2012, from Aldersyde, Alberta. He was found as a fledgling with a fractured radius and ulna in his right-wing. This injury is commonly seen with birds that have been hit by cars.

Because of his injury, Lito was unable to maintain lift when he was flight tested, so he was deemed not releasable by the CWRS staff. However, because of Lito's docile and quiet personality, CWRS took him in as a permanent resident.

Ever since Lito joined CWRS, the staff have fallen in love with his good temperament and unique qualities. An interesting fact about Lito is that he has retained the calls he made as a baby! Since Lito was found as a

fledgling, he never learned the vocalizations of an adult hawk. So, when Lito is hungry, he will call the staff to feed him as if they were his parents.

Since Lito was taken from his parents at a very young age, he was never taught to forage or hunt on his own. When he was brought to CWRS, Lito was in a very impressionable phase and he was fed by humans to survive. Because of this, he now associates humans as his provider of food. In addition, Lito has also become very habituated to humans, meaning that he will not attack or fly away if he is approached.

Another interesting fact about Lito is that he will play catch with the staff when offered food. Once the food is thrown in his direction, he will always catch it with his left foot. This could suggest that Swainson's hawks display handedness – a preference to use one foot over the other.

How does CWRS take care of a migratory species like Lito?

All information below is courtesy of our senior wildlife rehabilitators Breanne and Amy

Lito has never taken part in a migratory event since he was brought to CWRS as a fledgling. Nevertheless, he still displays innate migratory behaviours before and during the migratory season. For example, Lito becomes increasingly more active during the first few weeks of October where he will hop between the ends of his enclosure and frequently flap his wings.

CWRS makes several adjustments for Lito before, during, and after the migratory season. Before the migratory season occurs, the staff constantly monitors both the temperature and the location of other Swainson's Hawks in Calgary to determine when to move Lito inside to his heated enclosure. They tend to move Lito indoors once the temperature falls below 0°C in Calgary, since Swainson's Hawks are not able to sustain themselves during the cold Canadian winters. The staff will also closely monitor whether other Swainson's Hawks have left the Calgary area to begin their migration. They determine this by talking to Ornithologists around Alberta in October and using a bird tracking website called eBird, which was created and developed by the Cornell Lab of Ornithology (accessible to the public, you can create a free account at <https://ebird.org/>).



Charming Lito



Lito's luxurious legs

Once Lito is moved inside for the autumn and winter months, there tends to be a few changes in his behaviour. Firstly, Lito will typically stop his food intake for about two to three days. The staff during this time will closely monitor his intake of food and will coax him to eat in order to maintain his body weight. There will typically be a two-week period with a decreased food intake, which is about the same time it takes him to settle into his new enclosure. Once he moves indoors, Lito undergoes a big change in his feeding behaviour. When Lito is outside, the staff is able to put out food for him on any of his perches, regardless of location or height. However, when Lito moves inside, he will become very picky and only eat food off of the highest perch in his enclosure. The staff attempt to feed Lito insects, such as crickets and mealworms, since Swainson's Hawks normally become insectivorous while migrating. However, he completely ignores them and prefers to eat small rodents, mainly dark-furred mice. Lito's feeding habits are a result of the fact that he has never been

taught to eat insects and has only encountered dark coloured rodents in the wild. Because of these changes, the staff tends to feed Lito a natural diet with familiar food. Lito will move back to his outside enclosure once the migratory season is over. This is determined by the Swainson's Hawks return to Calgary and when the temperature increases to about 10°C outside.

Lito will also have both monthly and annual wellness checkups performed by the wildlife rehabilitators. During these check-ups, Lito's weight, body and feather condition, and any changes in behaviour will be monitored. Over the course of the year, a tail guard will be attached to his tail feathers to protect them from barbing (acquiring damaged feather barbs). In addition, Lito's beak and talons will be coped (trimmed) when they get long. Lito is not able to wear his beak and talons down naturally because he does not have access to rough substrates such as rocky terrain.

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