

Rescue and Rehabilitation of a Juvenile Red-Tailed Hawk: A Case Study

A Senior Project

Presented to

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By  
Maya Higa

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## Introduction and Background

Many raptor species are becoming threatened and, in some cases, endangered as a result of human activity including habitat destruction and pesticide use (Morishita, Fullerton, Lowenstine, Gardner & Brooks, 1998). Because of this, raptor rehabilitation has become increasingly popular in conservation efforts. In North America, the red-tailed hawk is one of the most widespread and commonly known birds of prey (Preston & Beane, 2009). According to the National Audubon Society, the conservation status of red-tailed hawks is currently of least concern and numbers may even be increasing in some areas since the 1960s. While this species is not threatened, the conservation of red-tailed hawks is vital because they are classified as a keystone species in certain areas of North America (LSA Associates Inc., 2008). *National Geographic Magazine* defines keystone species as “an organism that helps define an entire ecosystem. Without its keystone species, the ecosystem would be dramatically different or cease to exist altogether.” Keystone species also have low functional redundancy. This means that if the species were to go extinct, there is no other species capable of occupying its ecological niche. In other words, if the numbers of a keystone species dwindle or the species goes extinct, the ecosystem would be forced into irreversible damage. Because of this, rehabilitation of red-tailed hawks is an important practice that contributes to the furtherment of a healthy ecosystem.

In the state of California, an Apprentice Falconry License may be issued to anyone over the age of 12 who submits a New Falconry License Application (DFW 360b), obtains a sponsor, and passes a written examination issued by the State of California Department of Fish and Wildlife. For years, falconry techniques have been used to ensure raptors released are capable of hunting for themselves and reproducing (International Association for Falconry & Conservation of Birds of Prey). The author holds her Apprentice Falconry License and this project will track the process of attempting to rehabilitate a juvenile red-tailed hawk.

## Methodology

On April 1, 2019, a juvenile red-tailed hawk was hand captured in Paso Robles, California. The hawk showed signs of distress and was emaciated to the point where he was incapable of flight. The hawk went under the care of an Apprentice Falconer who tube fed him for a week and restored his strength to the point where he could fly and stably stand on a glove.

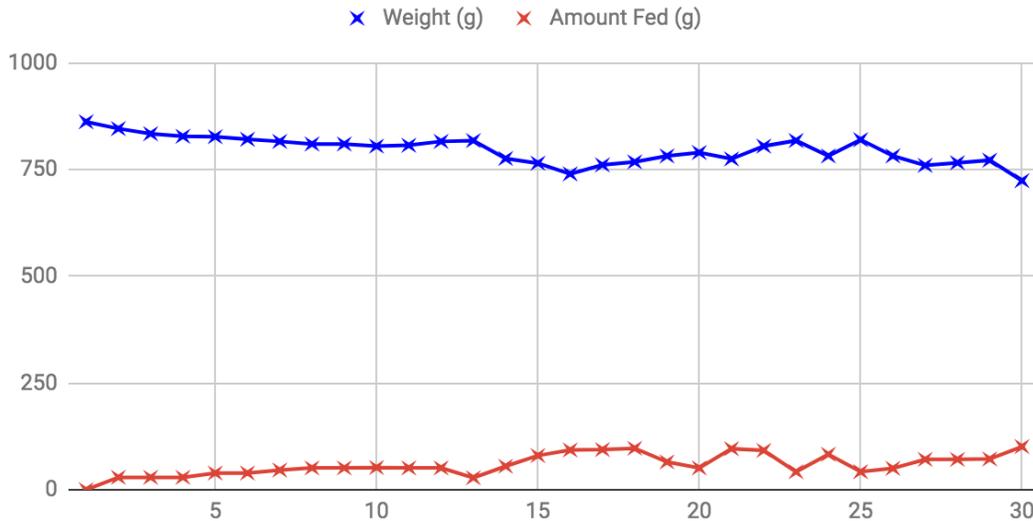
On April 8, 2019, the hawk was received in San Luis Obispo and began his journey to recovery. A goal flight weight was set at 800 grams and the hawk weighed 862 grams at intake. Every day, the hawk was weighed and fed according to the equation shown below:

$$[78 * (\text{weight (kg)})^{.79}] = \text{kcal}$$
$$(\text{kcal}) / (\text{cal/g}) = \text{minimum food amount}$$

*Note that cal/g is a constant remaining at 1.4 to represent cal/g provided by consuming only mice.*

Details about weight(g) and amount fed(g) over a 30-day course appear in the line chart below:

Changes in Weight and Amount Fed from April 8th, 2019-May 8th, 2019



The hawk was trained using traditional operant conditioning aimed at creating a positive association between the glove and bait. For the first few days, he was perched on a glove and would receive bait after hearing a whistle. After that, the distance between perch and glove was increased so that he had to jump from perch to glove after hearing a whistle. Once this association was created, he was flown on a creance at distances between 10 and 100 feet. He also was trained to do “jump-ups” every day from the ground to glove to build muscle mass. After 30 days, the creance was removed and free flight began.

After another 30 days of flying and monitoring the hawk’s aggression towards food, he was sent to the Ojai Raptor Center in Ojai, California. At the Center, he was placed in a flight cage with live prey tanks. Every day for 4 weeks, the hawk was offered live prey in the tanks. Once he was observed to be successfully killing live prey consistently, he was deemed releasable by the staff at the Ojai Raptor Center. He was then released in an Open Space Preserve in East San Luis Obispo.

## Results

The graph provided shows the fluctuations in the hawk’s weight over a 30-day period before he would be moved to the Ojai Raptor. The purpose of data collection was to provide the Raptor Center with detailed information on the hawk’s metabolism and progress with the trainer. The graph begins at the highest weight and shows decreasing weights for the first half of the 30-day period. At the 17-day mark, the hawk began building muscle mass in replacement of the fat developed. This was reflected in the behavior of the bird on the day observed. The behavior observed on day 16 reads as follows:

Longest flight distance yet. Enthusiastic in stepping out of crate onto glove. 15-20 jump ups. Less bothered by people walking around during session.

This information was important because it showed that the hawk's health was improving. Over the next 15 days, he continued to gain muscle mass and showed stronger signs of food motivation and aggression. Weight was lost on day 30 due to stress-induced refusal to eat during transportation to the Ojai Raptor Center.

### **Discussion**

The data reveals the importance of determining a proper flight weight for each bird as an individual. For this hawk, at the time of capture, weight gain was of chief importance to combat emaciation. However, it was found that this weight gain prevented the furtherment of health for the hawk because it reduced his motivation to fly. In order to gain muscle, the hawk had to drop weight first.

This study shows the potential effects of falconer-based rehabilitation for birds of prey. The hawk observed for this case study was not expected to survive at capture, nor was he expected to be releasable. While this bird was emaciated when captured and had to be tube-fed to survive for the first week under human care, he was able to recover through consistent feeding, weighing, and flying. Each bird is different and will require different care, but with due adjustments, this case study may serve as a guide for the rehabilitation of a wild-caught red-tailed hawk.

## Works Cited

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