Module # 6 - Component # 3

Falcons and Kestrels

Introduction to Raptors

20 % of all the world’s birds of prey can be found in Southern Africa. Currently, 22 of the 79 raptors occurring in the region are listed in the South African Red Data Book as of 2015. This book holds the lists of species that are rare, threatened or in danger of becoming extinct. This figure is disproportionately high. Birds of prey only make up some 9 % of the avifauna, but constitute 17 % of the threatened species.

"Where is the thicket? Gone. Where is the eagle? Gone too. This marks the end of living and the beginning of survival."

These words are attributed to Chief Seattle, a Native American in a speech in 1854. These words have become more poignant with each passing day the world over. To allow an eagle or any other bird of prey to become extinct would be tantamount to stripping the earth of its last vestiges of dignity. Birds of prey are the embodiment of free will and untainted liberty, representative of power and fierce, almost defiant independence.

Herein lies a conservation challenge: to identify the threatened species, to unravel the causes of the problems facing them, and implement effective action before it is too late. As far as your part in this conservation challenge is concerned, you have already achieved a great deal. Just by being a WildlifeCampus student you have assisted in spreading the exposure of the type of work in conservation being undertaken in Southern Africa, and the necessity for it.
"All things share the same breath - the beast, the tree, the man, the air shares its spirit with all the life it supports."

~ Chief Seattle
Introduction to Falcons and Kestrels

In this large group of birds, some 16-individual species all fall under the same Family – Falconidae. These are all diurnal species and are small to medium in size. Two very distinctive characteristics found throughout the family motivate some experts to classify these birds into an Order of their own.

These features include:

- The fact that none are nest builders.
- All of them possess what amounts to a shearing surface in their beaks. The upper segment of the bill has a serrated projection that fits into a notch in their lower beak segment.

Falcons tend to be larger than kestrels and prey mainly on other birds, while kestrels specialise in small arthropods.
**Peregrine Falcon - *Falco peregrinus***

**Vital Statistics**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Wingspan</strong></td>
<td>100 cm [40 in]</td>
</tr>
<tr>
<td><strong>Length</strong></td>
<td>36 cm [15 in]</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>600 g [24 oz.]</td>
</tr>
<tr>
<td><strong>Preferred prey</strong></td>
<td>Bird specialist</td>
</tr>
<tr>
<td><strong>Incubation period</strong></td>
<td>30 days</td>
</tr>
<tr>
<td><strong>Clutch size</strong></td>
<td>3-4 eggs</td>
</tr>
<tr>
<td><strong>Status</strong></td>
<td>Rare resident and summer non-breeding migrant</td>
</tr>
<tr>
<td><strong>Nesting site</strong></td>
<td>On cliff ledges, no formal nest is built</td>
</tr>
<tr>
<td><strong>Nesting period</strong></td>
<td>6 weeks</td>
</tr>
<tr>
<td><strong>Hunting success</strong></td>
<td>&gt; 50% (of each attempt)</td>
</tr>
<tr>
<td><strong>Habitat</strong></td>
<td>Tall cliffs</td>
</tr>
</tbody>
</table>

**BILL**

Hooked bill is used for tearing flesh. A notch helps deliver a clean bite to the back of a victim’s neck, severing the spinal cord.

**FEMALE**

Female is 15-20% larger than the male. She’s more heavily spotted on the breast, and her flanks and tail bear heavier barring.

**WINGS**

Long, pointed wings beat deeply in level flight. In a dive, they are angled back, close to the body.

**FEET**

Talons are sharp and curved. They’re used in an aerial attack to deliver a glancing blow to prey, with the hindclaw possibly raking the flesh in passing.

**MALE PLUMAGE**

Males in North America and Europe are a dark slate-gray above with a barred back and tail. Underparts are a pale pink-buff, with black spots on the breast. In other areas, males are a paler blue-gray or almost black above and white to buff below.
Description

This small to medium sized bird is closely barred (dark brown to black) on its upperparts (white to beige). It has a black head and back and wings. Beak, eyes and talons are also black while its cere, legs and around its eyes are yellow. It has a very distinctive black stripe below the eye.

Juveniles are similarly coloured except that all black plumage in the adult is brown in the juvenile. Chicks are hatched with a dense white downy covering that is soon replaced by the juvenile plumage.
Reproduction

After a brief and not often documented courtship, the female will lay 3 – 4 (usually three) **reddish brown eggs on a steep cliff ledge**. No real nest is constructed by collected nesting material; at best the female may either select or dig out a small hollow in which to hold the eggs. The site may be used repeatedly. Reproduction only occurs in **summer**.

Incubation is **unevenly shared with the female doing most of it**. During this time the male may bring kills to the female. Eggs take one month to hatch and their offspring fledge 5 – 6 weeks later.
**Hunting and Killing**

Peregrine falcons are very successful predators specialising in killing other birds in flight, particularly doves and pigeons. Those fortunate enough to have witnessed this will have marvelled at this raptors speed, agility and dexterity while in flight.

Most kills are preceded by a magnificent chase. It is also this ability that makes these special raptors highly prised for falconry purposes.
Flight

This species is also credited as being the **fastest flier in the animal kingdom**. This fact has often led others to exaggerate the bird’s flying ability, with **anecdotal tales** of falcons keeping pace with performance aircraft. These stories are untrue. In a **dive** (its fastest flying mode) the birds can reach speeds of up to 140 kph \[88 \text{ mph}\].

The falcons, however, while using the dive technique in its hunting **cannot strike its prey at this speed**. If it did so (killing by extending its talons onto its prey) it would certainly kill its quarry, but would also tear its legs off. The bird instead **brakes sharply** out of its dive slowing to a speed of 80 kph \[50 \text{ mph}\] before making its kill. In level flight, the bird, while extremely fast cannot match the 120 kph \[75 \text{ mph}\] attained and sustained by swifts, swallows and martins.
Conservation Status

The peregrine falcon has a world-wide distribution, only being absent from Polar Regions. However, in the middle of the 20th century these raptors, as well as many others, began to show an alarming decline in number – to the point of extinction of one sub-species. Ecologists eventually worked out that the cause of the decline could be traced back to harmful agricultural insecticides.

These birds did not encounter these poisons directly, but rather via their food source of granivorous birds such as pigeons and doves. The seed eating birds accumulated these toxins - mainly DDT and Dieldrin - by eating crop treated lands. Dieldrin killed the falcon outright, while DDT was responsible for what has become known as eggshell thinning. The chemical caused a metabolic disorder that resulted in female peregrine laying thin – shelled eggs. This seriously affected their reproductive success contributing to their already declining populations.

These agricultural insecticides have been banned in most countries – specifically due to their effect on wildlife, and the wildlife has begun to re-establish itself, falcons included.

One last alarming note:
Local South African Authorities were considering re-introducing DDT as a measure of controlling malarial mosquitoes. It would not be introduced directly back into the environment, but rather sprayed carefully in and around rural dwellings. As to whether this constitutes introducing the substance back into the natural environment, remains a debated and somewhat controversial issue. This action however has been endorsed by leading conservation bodies in South Africa. From the point of view of some, it’s amazing how soon lessons learnt are forgotten.
Other resident Southern African falcons include:

- Pygmy falcon
- Taita falcon
- Sooty falcon
- Rednecked falcon
- Lanner falcon
- Hobby falcon
- Eleonora’s falcon
- African Hobby Falcon

Pygmy Falcon
Kestrels

There are **seven Southern African species** that have been allocated to the group of birds known as kestrels. These include the greater, grey, rock, lesser, eastern red-footed, western red-footed and Dickinson’s kestrel.

Kestrels are **simply small falcons** with the only real differences being their smaller size and their correspondingly smaller prey. Their close taxonomic relationship can be seen by the fact that their Generic name – *Falco* - is consistent throughout almost the entire grouping of the falcons and kestrels.

*Falco tinnunculus* is a widespread kestrel species, found throughout Europe, Asia, and Africa. Its range spans from Great Britain to China and as far south as South Africa. In Europe, *F. tinnunculus* is migratory and winters in southern Europe and sub-Saharan Africa. However, most the breeding population in Europe is non-migratory. (Source: groms.de)
Common Kestrel – *Falco tinnunculus*

**Vital Statistics**

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<table>
<thead>
<tr>
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<tbody>
<tr>
<td><strong>Wingspan</strong></td>
<td>74 cm [30 in]</td>
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<tr>
<td><strong>Length</strong></td>
<td>32 cm [13 in]</td>
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<tr>
<td><strong>Weight</strong></td>
<td>200g [8 oz.]</td>
</tr>
<tr>
<td><strong>Preferred prey</strong></td>
<td>Insects</td>
</tr>
<tr>
<td><strong>Incubation period</strong></td>
<td>30 days</td>
</tr>
<tr>
<td><strong>Clutch size</strong></td>
<td>4 eggs</td>
</tr>
<tr>
<td><strong>Status</strong></td>
<td>Very common resident</td>
</tr>
<tr>
<td><strong>Nesting site</strong></td>
<td>Cliff crevices or disused nests of other birds</td>
</tr>
<tr>
<td><strong>Nestling period</strong></td>
<td>5 weeks</td>
</tr>
<tr>
<td><strong>Hunting success</strong></td>
<td>&gt; 50 % (of each attempt)</td>
</tr>
<tr>
<td><strong>Habitat</strong></td>
<td>Savanna grassland close to cliffs</td>
</tr>
</tbody>
</table>

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Introduction

The choice of the rock kestrel for an in-depth look at a species in this group is an obvious one. The rock kestrel is considered the quintessential kestrel. In fact, it is often referred to as the common kestrel and even just the kestrel. Although it enjoys global distribution its colloquial name of rock kestrel adequately describes its chosen habitat. In sharp contrast to the peregrine, this diminutive raptor is frequently seen.
Description

These small birds of prey have a grey head with black spots on a reddish – brown body. Their beak, eyes and talons are black, contrasting with yellow legs and cere.

Sexual dimorphism is apparent in that males have a grey tail with a black tip, while the female’s tail is black with several bars. Both bird’s upper wings match their bodies.

Juveniles are uniformly rufous-coloured with black spots.
Reproduction

Sharing a further characteristic with the other members of its family, rock kestrels *do not build nests*, utilising either a hole or crevice in a rock face or the disused nests of other birds. Breeding takes place in September to October (Southern hemisphere *Spring*). Three to four brownish coloured eggs are laid and incubated solely by the female. During this period the *male remains* close by at all time unless hunting and will defend the nest site from intruders. He will also *feed the female*.

After approximately a month of incubation the eggs hatch. At this point both parents are fully occupied in hunting and feeding their offspring. Juvenile rock kestrels normally fledge after 34 days.
Flight

Unlike the larger falcon species, the common kestrel takes its prey on the ground. To facilitate this, it has mastered the art of almost motionless hovering. Those who have watched this feat never fail to marvel at how this diminutive bird seems literally to hang in mid-air as though suspended by a thread.

This stationary flight is achieved by angling its wings in relation to the prevailing winds, spreading its tail, making small wing adjustments and gently flapping when required.
Hunting and Killing

From its **hovering position**, *Falco tinnunculus* can scan the ground beneath it using its sharp vision. When it spots a potential prey item it folds its wings up and darts to the ground in a **very rapid dive**, braking (by spreading its wings again) just above the ground and striking with its razor-sharp talons. Its favoured prey items are **insects**, usually the larger locusts and grasshoppers.

However, it is also an **opportunistic hunter** and will readily take other **small arthropods** such as millipedes and arachnids as well as small **rodents**, **small birds** and reptiles notably **lizards**. The bird will also hunt from a **perching position** if the opportunity arises, diving straight from the perch to the ground.
**Conservation status**

This bird is a common resident in South Africa and is frequently encountered both in and outside formal conservation areas. Its European counterparts are also often seen in urban areas where it uses man-made structures as nesting sites. Although occasionally seen in smaller African towns it is common found by the side of country roads using telephone lines and fencing as hunting perches.