



This Standard Operating Procedure (SOP) is applicable to all UniSQ Research Workers who care for and use Animals for Scientific Purposes. The procedure must only be performed by those persons who have been deemed competent, and who believe they remain competent to do so. Access to supervision by suitably qualified staff whilst undertaking this procedure is encouraged, where required.

Species

Example species that may be targeted for nest observations are:

- Wedge-tailed Eagle (*Aquila audax*)
- White-bellied Sea Eagle (*Haliaeetus leucogaster*)
- Little Eagle (*Hieraaetus morphnoides*)
- Spotted Harrier (*Circus assimilis*)
- Whistling Kite (*Haliastur sphenurus*)
- Brahminy Kite (*Haliastur indus*)
- Brown Goshawk (*Accipiter fasciatus*)
- Australian Hobby (*Falco longipennis*)
- Peregrine Falcon (*Falco peregrinus*)
- Black kite (*Milvus migrans*)

Purpose

This procedure was written as part of a suite of SOPs for the assessment of various raptor monitoring techniques. Population surveys and monitoring play a key component to many ecological research projects and are an important conservation tool. However, raptor monitoring is time consuming and expensive, resulting in a decline of monitoring raptor species in Australia. The project looks to optimise raptor monitoring by determining the efficacy of various monitoring technologies and techniques available to wildlife conservation. It is important to use traditional methods in concurrence with these novel methods to provide a baseline to compare against.

The purpose of this procedure is to monitor the breeding activities and diet of nesting raptors. It is important to monitor this data to determine:

- Breeding and fledgling success rate of various species. This provides conservation information to determine if the population in an area is likely to grow or shrink.
- Health status of individual eagles – adult, nestling, and immature raptors.
- Identify the diet of different raptor species in different areas. By identifying diet composition and preference, it is possible to identify the carrying capacity of a given area if the population of the prey items can be estimated.
- To compare this traditional, well-established method with other methods of recording breeding and diet information.

Definitions

Nil.	
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Linked SOPs

SOP ID number	SOP title
Nil.	

Potential hazard to Research Workers

UniSQ Risk Management Plan ID number	UniSQ Management Plan title
RMP_2021_6165	Raptor monitoring techniques research – fieldwork – nest activities

Personal Protective equipment required

- Climbing equipment (anchors, harness, ropes, helmet, gloves, throw weights, foot ascender)
- Suitable footwear, clothing (forest coloured browns, greens or greys) and sun protection

Animal wellbeing considerations

Perceived stressors	Management strategy
Nest abandonment from disturbance of an active nest	In-person observations must be completed from no closer than 50 metres from the nest. Cameras must be installed no closer than 50 metres from an active nest. When possible, inactive nests should be used for camera installations. Observers and equipment should be camouflaged and/or strategically placed to minimise disturbance to nesting raptors. Should the raptor parents abandon the nest in response to the presence of the observers, the nest should be observed from distance in a hidden location (no closer than 200 m) until the parents return. Should the parents not return and there are young present in the nest, a local raptor rehabilitation expert (i.e. has Queensland Government permit to rehabilitate raptors) should be called to come and assess the situation. Further steps may be taken according to the rehabilitator's own procedures.
Territorial response from nesting raptor	Should a nesting raptor display a territorial response towards the observers (e.g. swooping, screaming), nest observations should be halted and the area must be vacated. An alternative nest site and nesting pair of raptors must be selected as a replacement.

The overall perceived level of risk to an animal undergoing this procedure is:

High

Medium

Low

Substances to be administered

Substance	Dose	Route	Purpose
Not applicable			

Equipment/ materials required

- Camouflage equipment (e.g. nets, portable bird hide)
- Nikon P1000 digital camera and carry harness (or similar camera)
- Gorilla camera tripod
- Spare batteries and memory cards for camera
- Digital rangefinder
- Water containers (3 L per person)
- Portable first aid kit including snake bandage
- Smart phone with project recording app installed

Site specification or location requirements

Southeast Queensland on properties where permission has been granted by the landowner and the activity falls within current Queensland Department of Environment and Science (DES) Research permit. Only species listed on a current Queensland DES permit should be monitored using this method.

Waste disposal

Not applicable.

Duration of the procedure

1. 30 minutes to 2 hours

Procedure

The following details the procedure from the point a nest has been located using previous procedures, through the observation of biological information and to the cessation of nest observations.

Prior to all observations being conducted

1. The observer must be fully trained and assessed on tree climbing by an appropriate trainer if a tree-based vantage point is to be used. The observation assistant must be briefed by the observer as to what is required and what to do in the event of any accident or issue.
2. A site-specific risk assessment must be made by the observer to cover risks in that specific location and the type of vantage point to be used.
3. The observer should be well practiced in both climbing trees using the climbing equipment and setting up any fixed installations (anchor points, bird hides) prior to observation activities being conducted. This should include a variety of different tree types and heights.
4. All climbing equipment must be checked and ticketed by an appropriate organisation in the recommended time intervals defined in the risk assessment. Further to this, climbing equipment should be fully checked on the day of observations prior to travelling to the vantage point site. Any damaged or worn equipment must be replaced prior to activities commencing.
5. Any other equipment to be used should also be checked prior to travelling to the vantage point site.

Vantage point selection

1. The ideal vantage point allows for observation into the target nest from the furthest possible distance at which the digital camera can still zoom and record high quality content (~100 metres). Vantage points are typically horizontal to or slightly higher than the nest to effectively observe the contents (Bird and Bildstein 2007). The further from the nest, the lower the chance of disturbing the adults on the nest and causing abandonment. Abandonment of an active nest is a small possibility, however minimal instances of this occurring have been observed in a variety of species when accessing nests (Bird and Bildstein 2007). We will not access active nests but observe from a distance in a camouflaged hide. Nests will only be selected for vantage point observations if a minimum distance of 50 metres can be maintained. This will minimise disturbance of the nest and the risk of abandonment. Should the breeding raptors show signs of distress or territoriality towards the observer at this distance, a vantage point further away
2. Where possible existing structures will be used as vantage points such as overlooking cliffs, mounds or manmade installations. However, these structures will often be unavailable and a neighbouring tree will need to be used. Where possible this should be ideally between 50 and 100 metres from the nest, and must have clear line of sight and be structurally sound for climbing (i.e. alive with suitably large branches). A branch at a suitable height should be selected for observations.
3. When possible, vantage points should be selected to minimise glare from the sun for the observer during early morning or late afternoon observations.
4. The site specific risk assessment must be updated by the observer to cover the specific risks of the vantage point selected. This must happen before any vantage point set up activities or observations.

Vantage point set up

1. On the first visit to the vantage point site, certain activities can be conducted to make future observations easier.
2. In the case of overlooking mounds, cliffs and manmade structures, a portable hide can be erected and fixed to the ground. This will camouflage the observer to minimise bird disturbance, but also provide shade and weather protection. The view to the nest should be checked using the digital camera before fixing the hide in place.
3. For tree-based vantage points, a weighted guideline should be thrown over the branch selected as a vantage point. This can be used to pass a climbing rope over the branch to be anchored to the ground or base of the tree on the opposite side to climbing. With supervision of an assistant, the observer can then use climbing equipment (harness, helmet, gloves and foot ascender) to climb the rope. Once on the branch, an anchor point will be setup up around the branch to secure the observer using locking carabiners and weatherproof steel cabling. This anchor point will remain in the tree for future observations. The digital camera and gorilla tripod will be raised to the vantage point using a rope to test the view to the nest. A camouflaged net hide will then be lifted to the vantage point using a rope and fixed to the tree. This should be fixed above the branch on the tree trunk and further along the branch, creating a triangular hide for the observer. The third corner of the triangle

should be clipped in place around the trunk of the tree, just below the branch. This hide will also remain in the tree for future observations.

4. If, during this initial vantage point set up, the raptors being observed become territorial or distressed, an alternative vantage point should be selected further away from the nest. If this is not possible, the nest should be deselected for biological data observations.

Observations

1. Observations should be conducted from the vantage point using the digital camera for a variety of durations. Difference in information gained for the time periods used will be obtained, providing the efficiency and completeness of the different observation times.
2. Observations should be conducted at varying intervals, as outlined within an approved application using this SOP, to establish the frequency requirement for the raptor species studied.
3. Both video recordings and notes should be recorded for the duration of observations.
4. Notes and video recordings will be stored on the project hard drive and cloud storage as backups.

Training, qualifications or competencies required

Researchers with relevant experience or qualifications may undertake this SOP to complete the required procedures. Student researchers must receive appropriate training and supervision prior to undertaking procedures.

Tree climbing training must be completed an approved training provided before installation of cameras at height in trees.

References

Nil.

Licences and permits

Ensure any required (if required) licences and permits are obtained prior to undertaking the activities covered within the Standard Operating Procedure.

SOP approval and review history

Date	Version	Review Pathway	Notes
10 February 2022	0.0	02/12/2021 UniSQ AEC "Subject to Modifications." 10/02/2022 Reviewed and approved by the UniSQ AEC Executive.	