**Standard Operating Procedure: YukonU ACC- SOP 03 January 2025**

**Purpose**

When working with wildlife, it is important to consider the effects of research and teaching activity on individual animals, even when studying animal populations.

This guideline outlines the steps for researchers and teaching faculty to follow when responding to, reporting on, and documenting animals experiencing compromised welfare or mortality during the course of research or teaching activities.

1. **Introduction**

CCAC guidelines: Animal Welfare Assessment (2021), states that when working with wildlife, it is important to consider the effects of scientific activity on each animal, where possible, even when the activity design is at the level of the population. (Note that YukonU uses the terminology “research and teaching activity” in place of “scientific activity” to be inclusive of all approaches to knowledge creation and sharing.) Animal welfare assessments in field studies involve evaluating the well-being of animals in their natural environment. These assessments must consider the animals’ physical health, psychological state, and behaviour. Researchers, faculty and students engaged in fieldwork must minimize stress and avoid distress for animals during the various stages of the activity. Mitigation should involve ways that would improve wildlife study techniques and the results for future scientific activities.

The welfare of all wild animals in research and teaching activities must be assessed based on the plan for the animal-based activity, which must be designed to optimize data collection without placing undue or additional stress on the animals studied. Any welfare concerns must be investigated, documented, and reported to the Animal Care Committee (ACC) as part of the protocol renewal process.

Animal Welfare Assessments (AWA) can be used to identify potential risks to animals and inform decisions regarding their inclusion in particular scientific activities, the level of monitoring required, and the need to implement mitigation strategies to improve animal welfare. Animal welfare assessments can also be used as a part of the establishment and monitoring of humane endpoints.

1. **Scope**
   1. All Yukon University (YukonU) employees and students carrying out animal-based research or teaching activities in the field.
   2. All collaborators from other institutions working with YukonU involved in animal-based research or teaching activities in the field.
2. **Definitions and Abbreviations**

* Animal Welfare: the physical and mental state of an individual animal and how the animal is experiencing the conditions in which it lives ([CCAC guidelines: Animal welfare assessment, 2021](https://ccac.ca/Documents/Standards/Guidelines/CCAC_guidelines-Animal_welfare_assessment.pdf)).
* Animal Welfare Assessment (AWA)– quantification of animal welfare by inferring affective states based on validated changes in physiology and behaviour. AWAs are done by gathering information with consideration for the environment, animal behaviour, animal physical health, animal psychological state, recording and reporting findings.
* Reportable Animal Welfare Incident (RAWI): An event that leads to significant mortality or serious non-compliance with CCAC standards leading to the suspension of animal-based activities. See CCAC frequently asked questions: [CCAC reportable animal welfare incidents](https://ccac.ca/Documents/Assessment/CCAC_frequently_asked_questions_CCAC_reportable_animal_welfare_incidents.pdf) for details.
* Morbidity: Compromised welfare due to any cause.
* Mortality: Death
* ACC - Animal Care Committee
* AWA – Animal Welfare Assessment
* CCAC – Canadian Council on Animal Care
* PI – Principal Investigator
* YukonU – Yukon University
* AUP – Animal Use Protocol

1. **Responsibilities**
   1. The Principal Investigator (PI) assigns a category of invasiveness and early endpoints based on previous studies or available scientific literature. The PI will adjust the endpoints and category of invasiveness based on the results of the AWA process.
   2. The ACC reviews the AWA reports and issues any recommendations.
2. **Procedures and guidelines**

A team approach is highly effective for animal welfare assessments. The team includes an ACC member, the consulting veterinarian, and the PI or YukonU lead. The team will be responsible for undertaking the assessment of field studies.

**Frequency**

Assessments should be done at least once yearly, as part of the Protocol Renewal process. Protocols with a higher category of invasiveness may require more frequent assessment. Significant events or changes in circumstance should also result in an assessment. Assessments may also be done during periods when fieldwork is happening, following the planned cycle of work. The ACC must be notified of any reportable animal welfare incident (RAWI) or unexpected instances where ‘severe’ or ‘unacceptable’ welfare states are found.

**Assessment indicators**

The assessment is suitable for all animal species and can be done for individual animals or groups by experiment or protocol.

The assessment consists of four distinct sections encompassing the overall animal welfare:

* **Observational Health Indicators:** Potential health indicators that could be noted only through observation. Some examples of these indicators are gait or flight pattern, movement patterns and rates, posture and attitude, presence of obvious health concerns (e.g., physical injuries or deformities), the general appearance of coat, feathers, scales, skin, respiration rate and effort, and appearance of feces (and urates in birds) and urine.
* **Health Indicators Assessed by Handling or Holding –** Potential health indicators that can be assessed during handling or holding of the animals, provided they do not cause additional distress. Some examples of these indicators are body weight, body temperature, pulse, heart rate, and respiration, coat, feather, scale and skin condition, appearance of the eyes and teeth, physical injuries, pathologies, diseases, parasites, wound healing and oxygen levels. See more indicators in attached form.
* **Physiological Indicators** – Measurement of physiological indicators should be obtained through non-invasive methods whenever possible. On the attached form check off only the applicable ones.
* **Behavioural Indicators** – Investigators should be aware of species-specific behaviour and should document any changes in normal behaviour.

**Health Indicators**

The health indicators which are categorized by physiological and behavioral selected must be tailored to the animals involved (i.e., species, age physiological state) and the type of scientific activity, and they should not impose stress on the animals beyond that expected from the procedures described in the protocol.

**Physiological Indicators**

Measurements of physiological indicators should be obtained through non-invasive methods whenever possible, such as observation of respiratory rate and effort, collection of shed hair and feathers, and/or excreted urine and fecal samples. More invasive physiological measurements should be used only when they are a component of an approved protocol.

**Behavioural Indicators**

Investigators should be aware of species-typical behaviours; however, assessing behavioural indicators at the individual level can be difficult when there is no known history of the animal. For example, some individuals of the same species are inherently more aggressive than others. However, an attempt should be made to define the normal behaviours of these animals (e.g., the generally observed behaviour of captured animals). Unexpected behaviours should be recorded and further investigated, such as when an animal displays changes in the frequency, duration, or intensity of their usual behaviours such as stereotypies, apathy, unexpected socialization (e.g., animals of social species that appear alone (Brakes, 2019) or lack of interest in food. The behaviour of wild animals can be influenced by the presence of an observer and by remote monitoring devices. Remote observation for welfare assessment purposes should be used to determine various behaviours of the animal. The use of remote monitoring is recommended, if possible, to allow capture of relatively unmodified behaviour.

**Welfare Status**

During an animal welfare assessment, a list of animal welfare issues may be identified, then assigned a welfare status of Acceptable, Mild to Moderate, Severe, or Unacceptable.

|  |  |
| --- | --- |
| **WELFARE STATUS** | **DESCRIPTION AND ACTIONS REQUIRED** |
| **Acceptable** | No mitigation required. |
| **Mild to Moderate** | Manageable welfare concerns have been identified.  Pre-determined humane interventions or other mitigation strategies can be employed. |
| **Severe** | Welfare concerns have been identified that require extensive mitigation measures and close monitoring.  Discussion with the ACC may be required to rectify the situation or terminate the protocol. |
| **Unacceptable** | Overwhelming welfare concerns have been identified, providing justification for immediate euthanasia.  Discussion by the ACC is required to rectify the situation or terminate the protocol. |

**Outcome**

If the welfare status is considered “**Acceptable**”, this information is logged with the ACC Coordinator and presented at the next ACC meeting. No further action is taken.

If the welfare status is considered “**Unacceptable**”, the appropriate personnel are alerted (PI/designee(s), Veterinarian, and ACC). The issue is addressed, recording the animal welfare issues present and mitigations performed. This is followed by a reassessment at an interval determined by the severity and actions taken to ensure the welfare concerns have been effectively addressed.

At a minimum, the ACC must be notified of any *unexpected* instances where ‘severe’ or ‘unacceptable’ welfare states are found.

1. **References**

Brakes P. (2019) Sociality and wild animal welfare: Future directions. Frontiers in Veterinary Science 6(62).

CCAC Guidelines on the Care and Use of Wildlife (2023). Canadian Council on Animal Care. <https://ccac.ca/Documents/Standards/Guidelines/Wildlife.pdf>

CCAC Guidelines: [Animal Welfare Assessment. (2021)](https://ccac.ca/Documents/Standards/Guidelines/CCAC_guidelines-Animal_welfare_assessment.pdf). Canadian Council on Animal Care. <https://ccac.ca/Documents/Standards/Guidelines/CCAC_guidelines-Animal_welfare_assessment.pdf>

1. **AWA Reporting Form**

## Wildlife Animal Welfare Assessment Reporting Form

|  |  |  |
| --- | --- | --- |
| **Date:** | | |
| **Welfare Assessment Performed By:** | | |
| **Principal Investigator:** | **AUP#:** | |
| **Species:** | | **Identification:** |
| **Date of Birth/Age (estimated):** | | **Sex:** |
| **Previous Assessment Date (**if applicable**):** | | |
| **Procedures:** | | |
| **Welfare History** (if applicable)**:** | | |

**Observational Health Indicators**

Potential health indicators that could be noted **only through OBSERVATION**.

|  |  |  |  |
| --- | --- | --- | --- |
| **Observational Health Indicators** | **Indicate parameters observed with X; indicate unobservable parameters with N/A** | **Animal Welfare Status Acceptable→Severe (Based on Frequency/Intensity of Abnormal Observations)** | **Additional Notes and Observations** |
| Gait, Swim or Flight Pattern |  |  |  |
| Ability to Maintain Equilibrium |  |  |  |
| Movement Patterns and Rates |  |  |  |
| Posture and Attitude |  |  |  |
| Presence of Obvious Health Concerns (i.e., physical injuries, deformation, or pathologies) |  |  |  |
| Increased Susceptibility to Disease or Severity of Disease |  |  |  |
| General Appearance of Coat, Feathers, Scales, Skin |  |  |  |
| Overall Behaviour (i.e., isolation from the herd or conspecifics) |  |  |  |
| Respiration Rate and Effort |  |  |  |
| Food and Water Intake |  |  |  |
| Body Condition Score |  |  |  |
| Appearance of Excreta (Feces/urates/urine) |  |  |  |
| Survival Compared to Control Animals |  |  |  |
| Reproduction and Appropriate Parental Care |  |  |  |
| Other Indicators |  |  |  |
| Other Indicators |  |  |  |

**Health Indicators as Assessed by Handling or Holding**

Potential health indicators that could be assessed during **HANDLING or HOLDING** of the animals, provided they do not cause additional distress.

|  |  |  |  |
| --- | --- | --- | --- |
| **Handling Health Indicators** | **Indicate parameters observed with X; indicate unobservable parameters with N/A** | **Animal Welfare Status Acceptable→Severe (Based on Frequency/Intensity of Abnormal Observations)** | **Additional Notes and Observations** |
| Body Weight |  |  |  |
| Physiological Parameters such as Body Temperature, Pulse, Heart Rate |  |  |  |
| Respiratory Rate and effort (i.e., Open-Mouth Breathing) |  |  |  |
| Coat, Feather, Scale, and/or Skin Condition |  |  |  |
| Appearance of the Eyes and Teeth |  |  |  |
| Possible Physical Injuries, Deformities, Pathologies, Disease, Parasites |  |  |  |
| Wounds and Wound Healing |  |  |  |
| Objective Score of Body Condition (I.e., Ultrasound) |  |  |  |
| Oxygen Levels (SpO2 monitoring) |  |  |  |
| Capture Myopathy (muscle damage) |  |  |  |
| Other Indicators |  |  |  |
| Other Indicators |  |  |  |

**Physiological Indicators**

Measurement of physiological indicators should be obtained through non-invasive methods whenever possible.

|  |  |  |  |
| --- | --- | --- | --- |
| **Physiological Indicators** | **Indicate parameters observed with X; indicate unobservable parameters with N/A** | **Animal Welfare Status**  **Acceptable→Severe (Based on Frequency/Intensity of Abnormal Observations)** | **Additional Notes and Observations** |
| Body Temperature |  |  |  |
| Immunological Functions (Rates of Lymphocyte Proliferation or Suppression of their Activity) |  |  |  |
| Blood Pressure |  |  |  |
| Blood Analysis (Haematology and Biochemistry) |  |  |  |
| Respiratory and Heart Rate |  |  |  |
| Energy Expenditure |  |  |  |
| Levels of Various ‘Stress Hormones’ (i.e., Cortisol, Noradrenaline) |  |  |  |
| Remote Measurement of Eye Temperature Using Infrared Thermography |  |  |  |
| Other Indicators |  |  |  |
| Other Indicators |  |  |  |

**Behavioural Indicators**

Investigators should be aware of species-specific behaviour and should document any changes in normal behaviour.

|  |  |  |  |
| --- | --- | --- | --- |
| **Behavioural Indicators** | **Indicate parameters observed with X; indicate unobservable parameters with N/A** | **Animal Welfare Status Acceptable→Severe (Based on Frequency/Intensity of Abnormal Observations)** | **Additional Notes and Observations** |
| Increase/Decrease in Aggression |  |  |  |
| Changes in Frequency, Duration and/or Intensity of Normal Behaviour |  |  |  |
| Changes in Feeding Habits |  |  |  |
| Apathy |  |  |  |
| Change in Vocalization |  |  |  |
| Change in Social Nature of Behaviour |  |  |  |
| Development of Stereotypies |  |  |  |
| Other Indicators |  |  |  |
| Other Indicators |  |  |  |

**Additional Notes and Comments:**