INTRODUCTION

A. Instructors:
Mark R. Johnson DVM
Global Wildlife Resources
E-mail: mjohnson@wildliferesources.com
PO Box 1025, Freeland, WA 98249
Website: www.wildliferesources.com
YouTube Channel: GWRferaldogs

Marc Cattet DVM, PhD
RGL Recovery Wildlife Heath and Veterinary Services
Email: rgloperations.mcattet@gmail.com
415 Mount Allison Crescent
Saskatoon, Saskatchewan S7H 4A6

B. Class members: Introductions and interests

C. Class schedule and logistics:

D. Homework - 1) Review course objectives 2) Drug dose calculations

E. Course objectives include:
   1. Discuss ethical issues relating to wildlife capture and handling within a professional context.
   2. Identify legal responsibilities associated with wildlife chemical immobilization.
   3. Develop & maintain documentation for a chemical immobilization program.
   4. Initiate a five-step preparation method for organizing field operations.
   5. Understand & discuss advantages/disadvantages of various drug delivery systems.
   6. Walk through basic steps and procedures in processing chemical immobilized or physically restrained wildlife.
   7. Utilize professional skills, equipment, and attitudes to convey clear messages to the media and public about animal care and professional handling.
   8. Follow safety measures which protect field personnel and the public.
   9. Understand basic veterinary procedures for patient care including:
      a. Monitoring temperature, pulse, and respiration.
      b. Collecting blood and other samples.
      c. Preventing and treating veterinary emergencies.
PERSPECTIVES
 Objective:
 Discuss ethical issues relating to wildlife capture & handling w/in a professional context.
 A. What is our highest goal?
 B. Ethics of wildlife capture & handling - the well-being of the animal is more important than our work.

LEGAL RESPONSIBILITIES
OVERSIGHTS, CONSTRAINTS, AND RESPONSIBILITY
Objective:
 1. Identify legal responsibilities associated with wildlife chemical immobilization.
 2. Develop & maintain documentation for a chemical immobilization program.
 A. Ethics and Welfare
    1. Definitions and considerations
    2. Who provides oversight?
    3. Your responsibilities?
 B. Drugs
    1. Definitions and considerations
    2. Who provides oversight?
    3. Your responsibilities?

PREPARATION 5 STEPS
Objective: Initiate a five step preparation method for organizing field operations.
 A. Project objectives and methods: the BIG picture
 B. Handling procedure: A Step by Step Plan
 C. Equipment list
 D. Field form
 E. Euthanasia and other issues

DELIVERY SYSTEMS
Objective:
Understand and discuss advantages and disadvantages of various drug delivery systems.
 A. Direct Drug Delivery
 B. Anatomy of remote delivery systems
 C. Delivery systems with powder internal charges
 D. Delivery systems with air-pressured internal charges
 E. Needle Types
 F. Principles of Remote Drug Delivery

LAB 1: Drug delivery systems
 Practice a variety of CO₂ powered dart guns
 Cover dart diversity, loading, and maintenance
IMMOBILIZING DRUGS

Objectives:
1. Calculate drug volumes given animal weight, drug dose, and drug concentration.
2. Identify immobilizing drugs for wildlife and identify their general effects on animals.

A. Calculating Drug Doses
B. Important Terminology

SPECIFIC IMMOBILIZING DRUGS
A. Dissociative anesthetics (Cyclohexamines)
   1. Ketamine
   2. Tiletamine

B. Alpha-adrenergic Agonists (sedatives)
   1. Xylazine
   2. Medetomidine

C. Alpha-adrenergic Antagonists
   1. Yohimbine
   2. Tolazoline
   3. Atipamezole

D. Butorphanol
   Added to ketamine/xylazine combinations for an improved version of an old drug combination.

E. BAM

F. Accessory Drugs
   1. Atropine sulfate
   2. Doxapram hydrochloride
   3. Tranquilizers - Midazolam, Azaperone, Haloperidol
   4. Oxygen

LAB 2: Needle and Syringes
   Learn safe and controlled use of needles and syringes
   Safe recapping of needles; Handling syringe poles
PRINCIPLES OF IMMOBILIZATION

Objectives:
1. Recognize effects of immobilizing drugs demonstrated by animal behavior and vital signs and correlate to specific drugs administered.
2. Recognize how actions of the biologist influence the animal’s response to immobilizing drugs.

A. Drug effects in wildlife and field signs
   1. Ketamine/xylazine effects
   2. Administering the drug
   3. Repeating first attempt
   4. Options when anesthetized animal begins to respond
   5. Principles of antagonists

LAB 3: Patient Monitoring - First lab with goats
   Preparing for the final drugging lab on Day 3
   Become confident in monitoring vital signs with awake animal
   Become familiar with the goat, field form, and team members
   Practice conducting a physical exam and find blood vessels

ANIMAL HANDLING

Objectives: Describe the principles and equipment for handling the anesthetized animal with care and human/animal safety.

A. BASIC CARE
   1. Safety First!
   2. Ground Cloth
   3. Body position
   4. Eye cover

B. PATIENT MONITORING
   1. Physical Exam
   2. TPRs
      a. Temperature
      b. Pulse
      c. Respiration
      d. Capillary Refill Time
      e. Pulse oximetry

PREVENTATIVE MEASURES

A. Sterile Technique
B. Antibiotics
C. Pain management
SPECIFIC PROCESSING PROCEDURES
Objectives: Describe the techniques and equipment used for each wildlife processing procedure.
A. Weighing

B. Marking
   1. Ear Tagging
   2. Tattooing
   3. Radio-collaring - VHF and satellite telemetry
   4. Abdominal implants
   5. PIT Tags

SAMPLE COLLECTION
Objective: Understand basic veterinary procedures for collecting blood and other samples.
A. Blood
   1. Why collect blood?
   2. Where to collect
   3. How to collect, handle, and store

B. Tooth Collection

PHYSICAL RESTRAINT
A. Ungulates
   1. Holding
   2. Hobbles

B. Canids
   1. Scruff
   2. Lateral restraint
   3. Y Pole for canids

TRANSPORT

FOLLOW-UP AFTER HANDLING

ZOONOTIC DISEASES
VETERINARY EMERGENCIES
A. Hypothermia
B. Hyperthermia
C. Shock
D. Bloat
E. Inhaling stomach contents
F. Seizures
G. Capture Myopathy
H. Injuries

EUTHANASIA

HUMAN SAFETY
Objective: Address our priority for human and animal safety.
A. Animal Handling
B. Preventing human exposure
C. Human First Aid
D. Waste Disposal

LAB 4: Chemical Immobilization with live animals (hand injection):
1. Chemical immobilization and learning the animal’s response to immobilizing drugs
2. Monitoring temperature, pulse, and respiration
3. Processing procedures (blood collection, radio-collaring, etc) appropriate for the species, animal, and hosting organization.
4. Documenting chemical immobilization on a field form
5. Professional mannerisms maximizing animal care and field success

COURSE HANDOUTS
A. “Wildlife Research in Canada” Oversight example
B. Drug Supply Log example
C. Wildlife Chemical Immobilization Record example
D. Step by Step Protocol
E. Voyageur NP Wolf Equipment List
F. Wildlife Drugging Field Form
G. Drug Calculations Help Sheet
H. Drug Dose Calculation Problems
I. Y Pole for Handling Fractious Dogs and Wild Canids
J. The Quick Muzzle for Wolves and other Canids
K. Physical Examination of the Wolf
L. Protocol for Blood Collection from Captured Wildlife
M. Capture and Handling References for Wildlife Professionals
M. Vendor materials
P. Course Evaluation Form