State of California
Natural Resources Agency
Department of Fish and Wildlife
Wildlife Branch

Bobcat Capture Plan

for the Statewide Bobcat Population Assessment

By

The CDFW Wildlife Health Laboratory

Project lead: Rachel Roberts

Nongame Wildlife Program, 2026-06

State of California
Department of Fish and Wildlife
Central Region & Wildlife Investigation Lab

STATEWIDE BOBCAT CAPTURE PLAN APPROVAL FORM
VERSION 1.2

Project:	Statewide Bobcat Population Assessment
Capture Plan Date:	December 2020
Location:	Statewide
Funding:	CA Department of Fish and Wildlife (CDFW)
Project Leader:	Rachel Roberts, CDFW
Senior Capture Leads:	Dr. Justin Dellinger, Michael Brown, CDFW
Capture Leads:	All branch and regional bobcat biologists, CDFW
Veterinary Lead:	Dr. Deana Clifford, CDFW
Project Coordinator:	Rachel Roberts, CDFW
Other Participants:	Pete Figura (CDFW), Dr. Mario Klip (CDFW), Greg Martinelli (CDFW), Dave Hacker (CDFW), Christine Thompson (CDFW), Daniel Gammons (CDFW), Dr. Jaime Rudd (CDFW). Jeff Davis and Shorty Gorham (USDA Wildlife Services houndsmen available statewide) depending on approval.
Safety Meeting:	Prior to first capture event in a local area and when new personnel are present.
Capture Methods:	Cage traps and chemical immobilization; opportunistic captures; and the use of hounds; all staff and contractors must have on approved face coverings and follow all applicable CDFW COVID-19 guidance and policies while handling or within 6 feet of the animal (see Personnel and Animal Safety section below).
Objective:	Deploy and maintain up to 10 GPS or satellite radio collars on bobcats in each of 13 study areas across California between December 2020 and June 2024 to obtain data for estimating home range size, habitat use, and movement patterns to refine non-invasive population estimation methods. Capture plan dates may be extended pending approval.

SIGNATURES OF APPROVAL

DocuSigned by:
Scott Gardner
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1/13/2022

Branch Chief (WLB) Date

DocuSigned by:
Garry Kelley
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1/12/2022

Acting Deputy Director (WFD) Date

All data shall be shared internally consistent with the Department's Scientific Data Governance Policy in consultation with WLB and BDB. Future years of capture are conditionally approved and contingent upon review of status reports and data demonstrating completion of prior year project objectives, performance, and deployment of collars consistent with the required sample size.

CAPTURE PLAN

Statewide Bobcat Study

Revised January 2022

Introduction

Little information is known about bobcat population size and trend throughout California. Preliminary evidence suggests bobcats are widely distributed and occur at relatively high densities. However, regional and statewide data are largely lacking. Further, recent disease outbreaks in rabbits, a primary prey species, across California emphasizes the need to better understand bobcats across California. This information is useful for both bobcat conservation and potential recreational harvest of bobcats (e.g., hunting). The data collected will benefit multiple agencies in managing native wildlife populations. This project is primarily supported by CDFW General Funds via the 2020/21 bobcat legislative BCP.

CDFW will study bobcat spatial ecology using a combination of lightweight Iridium-GPS collars, GIS spatial modeling, and remote game camera work. The location data collected will be used to inform spatial capture recapture analyses for deriving regional abundance/density estimates. This work, paired with fecal DNA and camera data, will help elucidate population abundance/density of bobcats regionally and statewide in California. Capture efforts will primarily take place from December 2020 through June 2022, but the capture plan is extended beyond this timeframe in the instance radio-collars fail to fall off study animals and thus study animals need to be recaptured and have their collar manually removed. This plan is subject to change, as conditions warrant, during program implementation. All proposed changes will be reviewed and approved by the Bobcat Management Oversight Group (BOMOG) before being adopted into the plan

Animal Safety and Wellbeing

As with any human interaction with wildlife in a natural setting, the methods described in this document may have effects on the behavior and wellbeing of animals that are encountered during this study. Three capture methods (explained in the Capture Methods section below) may be used to place radio-collars on bobcats for this study: 1) remote field camera detection coupled with CDFW approved cage traps, 2) free-range darting in Potential Human-Wildlife Conflict situations; and 3) specially trained hounds. Specially trained hounds will be used in accordance with Fish and Game Code (FGC) Section 3960.4(b) (outlined below), as deemed necessary and approved by the BOMOG.

Each of these methods comes with a unique set of inherent risks that could result in injury or death to an animal. As such, it is the responsibility of all CDFW personnel, each capture lead, and all individuals involved in the capture effort to be aware of these risks, make the utmost effort to prevent injury or harm, and to use the most humane methods that will respect the wellbeing of each animal captured, regardless of species.

The capture lead shall consult and seek agreement with all participating Department staff regarding the wellbeing of the captured animal prior to release. All participating staff have equal voice in raising concerns and the capture lead is responsible for addressing them. The Project Lead and appropriate supervisor should be contacted, as necessary. For all captures, the capture lead is responsible for ensuring the capture kits (including supplies needed to address a minor injury) are complete and that a transport crate is readily available, if needed to respond to an injury.

If a captured animal has an injury, **immediate** consultation with the Veterinary Lead or on-call Wildlife Health Laboratory (WHL) veterinarian must be sought as soon as possible. If a veterinarian cannot be reached, consult with the Project Lead, a Senior Capture Lead (Dellinger or Brown), the nongame health biologist (Rudd), or the appropriate regional supervisor should be attempted.

For significant, potentially life-threatening injuries, after receiving and administering initial direction(s) from the veterinarian, the capture lead shall work with the veterinarian to report and seek consultation with the Project Lead and the appropriate regional supervisor. Immediately following that, the Project Lead shall notify the Project Coordinator and BOMOG and the regional supervisor shall notify their regional Environmental Program Manager or Regional Manager. If an injury warrants euthanasia, staff will follow protocols outlined in Appendix 6. A complete necropsy will be performed at the WHL on any animal euthanized during a capture effort. For these significant injuries or in the event of a euthanasia, all other captures either in process or planned utilizing that methodology will be temporarily halted while procedures for future capture efforts are reevaluated by the Veterinary Lead and the project team. Once the evaluation is complete, the Project Lead will provide a full report to the BOMOG outlining what occurred, the Veterinary Lead's recommendations, and any procedural changes. In the event of a significant injury, BOMOG approval is required before any captures using that methodology resumes.

Fish and Game Code (FGC) Section 3960.4(b) states:
"[Notwithstanding Section 3960] The department may authorize qualified individuals, educational institutions, governmental agencies, or nongovernmental organizations to use dogs to pursue [bears or] bobcats for the purpose of scientific research, provided that the research project is designated to do all of the following:

(1) Contribute to knowledge of natural wildlife ecosystems.
(2) Follow best practices and minimize disruptions in the lives and movements of [bears], bobcats, and other wildlife, as well as impacts to the habitat while maintaining the applicant's objectives.
(3) Directly or indirectly support the sustainability and survival of [bear or] bobcat populations

and healthy ecosystems.
(4) Not include the intentional injury or killing of any [bear or] bobcat.
(5) Not include the intentional relocation of any [bear or] bobcat other than to areas suitable to them in the state. [Any relocation shall comply with the requirements of Section 4190]."

Capture Location

The California Department of Fish and Wildlife (CDFW) proposes to capture, obtain biological samples from, radio collar, and maintain up to 10 radio collars on bobcats in each of thirteen separate study areas statewide (Figure 1). We plan to capture and radio-collar bobcats in: 1) Modoc Plateau in Modoc County (Region 1); 2) Klamath Mountains in Siskiyou County (Region 1); 3) Sacramento Valley in Tehama County (Region 1); 4) western Sierra-Nevada Mountains in Plumas County (Region 2); 5) San Joaquin Valley in Sacramento County (Region 2); 6) North Bay Foothills in Sonoma County (Region 3); 7) Marin Headlands in Marin County (Region 3); 8) Santa Lucia Mountains in Monterey County (Region 4); 9) Tehachapi Mountains in Kern County (Region 4); 10) San Gabriel Mountains in Los Angeles County (Region 5); 11) Peninsular Range in San Diego county (Region 5); 12) eastern Sierra-Nevada Mountains in Mono County (Region 6); and 13) Mojave Desert in San Bernardino County (Region 6). These study areas and sample sizes are being proposed based on: 1) location of existing GPS data (Figure 1); 2) an attempt to cover as many ecoregions as possible; 3) cover a gradient of human development; 4) address any additional concerns such as connectivity (i.e., areas in similar ecoregions but likely disconnected from one another); and 5) balance geographic coverage with capture/data collection efficiency (i.e., efficiency would be less if less animals were captured in more study areas due to logistical considerations when conducting capture work in new/multiple areas). Additional areas may be added if the Bobcat Management Oversight Group and the Technical Advisory Group determine they are needed.

To support unique opportunities for valuable collaboration between the CDFW, and various agencies and stakeholders (e.g. United States Forest Service), capture efforts will occur simultaneously across the state and be led collaboratively by Regional and Wildlife Branch staff. Other agencies, including the Bureau of Land Management, National Park Service, and California Department of Parks and Recreation have also indicated their willingness to grant land access to help facilitate the capture work if needed.

Additional Opportunistic Captures:

Collaborations and partnerships in various study areas could help to achieve sample size goals for the duration of the study. Formal agreements (e.g. MOA) will be developed, as necessary, to take advantage of additional capture opportunities. Additionally, opportunistic collaring opportunities may be used to maximize our ability to maintain radio-collars on up to 10 bobcats within each study area.

Capture Objective

The objective of this effort is to successfully capture, collar, and maintain radio-collars on up to 10 healthy adult bobcats ≥1 year old in good body condition and ≥7 kg (15.4lbs), as resources allow,

in each of 13 study areas across California. Minimum body weight is calculated based on the average collar weight (~350g) and should be increased if collar weight is > 350g. Each collar will be weighed and marked accordingly before deployment, so that the sound judgement can be used at the time of capture to determine if the captured bobcat is a good candidate for collaring. Each collar will be programmed to record a location every 3 hours and collect 12 months of data. Location information will automatically be transmitted to a secure website once a day. Radio-collars will be outfitted with timer and radio-controlled drop offs to ensure that the radio-collars do not remain permanently attached to the animal. Captured bobcats that are younger/smaller (<1 year old and/or <7 kg) and/or bobcats with mild to moderate mange (score of 1-2; Hellman et al. 2013) that are in good body condition will be processed following the standard protocol but only fitted with ear tags and released without a radio-collar. Bobcats in poor health and body condition and/or severe mange (score of 3; Hellman et al. 2013) will not be immobilized; instead, decisions regarding disposition options (e.g., immediate release, hospitalization/rehabilitation, and/or humane euthanasia) will incorporate welfare considerations and be done in consultation with the WHL veterinarian and/or veterinary health staff. All equipment will be cleaned after each immobilization and traps will be cleaned with 10% bleach (or other appropriate disinfectant) and the soil/earth below the trap along with any biological waste will be removed and tossed to minimize fomite transmission of mange mites or other pathogens (Appendix 1).

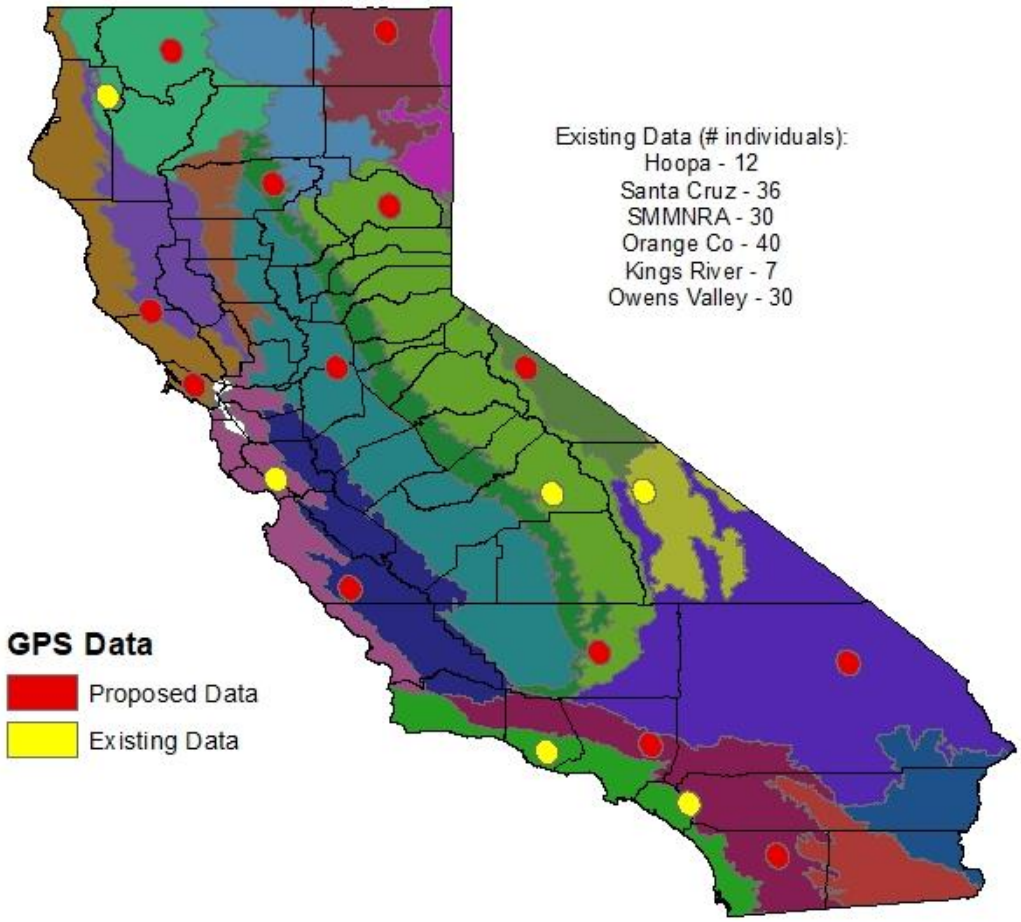

Figure 1. USDA ecoregions overlaid with datasets from existing and proposed radio-collar study areas. This capture plan is to conduct capture efforts in the proposed study areas displayed. County boundaries are also displayed.

Capture Methods

Three capture methods may be used to place and maintain up to 10 radio-collars on bobcats in each of 13 study areas across California: 1) remote field camera detection coupled with CDFW approved cage traps, 2) free-range darting in Potential Human-Wildlife Conflict situations; and 3) specially trained hounds. Deciding which method(s) for capturing and collaring bobcats would be employed in each study area will be achieved through close collaboration between the Project Lead, capture leads (i.e., branch and regional staff), and Project Coordinator.

Cage Traps

A primary method of capturing bobcats will be cage traps (Mercer Lawing, Camtrip, and TruCatch traps measuring roughly 40" [L] x17" [W] x24" [H]) with a flat swing or guillotine style door. Traps will be set in areas where bobcat presence has been verified by trail cameras, tracks, scats, and recent observations. Cage traps will be covered on the top and sides with vegetation, or canvas tarp, to shield animals from inclement weather. A chew rope or bar or plexiglass/smaller gauge wire barrier may be placed in each cage trap to reduce the likelihood of tooth damage resulting from trapped animals chewing on cage wires. A combination of baits, lures, and visual attractants will be used to lure bobcats into the traps. Items that may be used as bait in traps include, but are not limited to, roadkill deer and rabbit meat (only with substantial precautions against disease) and carcasses (i.e., feathers, bones, residual meat) from legally harvested game birds and small mammals provided by licensed hunters. We will limit use of rabbit meat for baiting purposes in areas adjacent to or known to have rabbit hemorrhagic disease. Commercial scent lure such as Cage Magic Lead in Scent (Mercer Lawing); O'Gorman's Cat Passion, O'Gorman's Powder River Paste Bait, and Grawe's Snow Cat (Minnesota Trapline Products); Halseth's Entrapment Bobcat Lure and Locklears Booty Call Bobcat Gland Lure (Coon Cannon) will be applied to trees, logs, or rocks in the traps as well as the vicinity of each trap. Commercially available bobcat urine (Mercer Lawing) may also be placed near traps. Visual (pie pans, tinsel, CDs, and feathers) and auditory attractants (predator calls) may also be used.

Traps will be physically checked a minimum of twice per 24 hours (approximately every 12 hours). In no case will the interval between physical trap checks exceed 16 hours. Whenever possible traps will be deployed with trap transmitters, which are radio transmitters that emit a GPS and/or VHF signal when a trap door has been closed. These transmitters permit more frequent trap checks without significant human activity at the actual trap site. If the trap transmitter/satellite indicates that a trap has closed, the trap will be prioritized for checking and physically checked as soon as possible (ideally within 4 hours). Transmitters may be checked more frequently for traps in areas in closer proximity to human activity, or traps that are likely to capture non-target species. If for some reason a trap is deployed without a trap transmitter, a radio-collar could be used as a transmitter and the trap monitored via the VHF signal on the collar. Further, a cellular game camera could be used to monitor traps in more real time. If a trap regularly captures non-target species, we may either move the trap and/or open the trap each day in the late afternoon or early evening and check the trap as soon as is practical the following morning. All non-target species will be released immediately at the capture location. All staff must be wearing approved face coverings, consistent with CDFW COVID-19 guidelines and policies, when approaching and/or opening a trap containing a mammal (see Personnel and Animal Safety section below).

Although bobcats occasionally produce kittens throughout the year, they exhibit strong seasonality, with most litters born in the spring. Data from tracked females in the Santa Monica mountains indicates most litters are born between March 10 and April 5th (J. Moriarty, NPS, email 10/21/20) while data from Department's bobcat study in the Eastern Sierra indicates most litters of monitored cats were born in late April (M. Brown, CDFW, email 10/16/20). Accordingly, cage trapping shall be avoided during the critical reproductive period (*i.e.*, the last trimester of pregnancy and ensuing ten weeks), so that heavily pregnant or lactating females will not be confined overnight in a cage, and potentially separated from neonatal dependent young. Unless otherwise authorized in writing by the Department Veterinary Lead and Project Lead on an as-needed basis, bobcats shall not be cage-trapped between March 10 and May 15. Slight variations in these dates for specific study sites may be approved as peak reproduction varies by latitude and elevation. If an exemption to trapping during this time is granted, traps will be required to be monitored via trap transmitter every 30 minutes and the animal worked up immediately after the time of capture.

Trapping locations will be in areas with minimal public presence, and as far away from urban areas, trail heads, and campgrounds as is feasible without hindering trapping efficiency and success rates. Traps will be clearly marked with a caution sign, alerting the public of potential danger (Appendix 2). Whenever possible, traps will be placed in a shaded location. If we cannot ensure a trap is in a shaded location, then that trap will be closed during the day. The GPS location of each trap, the status of the trap (e.g. set, locked open, locked closed, removed), and the time checked will be recorded. Before a trap is reactivated after a capture, all fecal material will be removed, and the trap cleaned.

Free-Range Darting

Occasionally, situations may arise (e.g. removal of a bobcat from a hazardous area or conflict situation) where free range darting is a safe and viable capture method. Extreme caution will be used in exercising this capture method. Immobilization drugs will be delivered by a dart rifle, pistol, or blow pipe and appropriately sized needles and darts will be used (3/8" or ½" needle length, 0.5 or 1cc dart volume). We will not dart bobcats in areas near open bodies of water, such as streams and lakes. A net and/or climbing gear will be used to catch any bobcats that may have treed after being darted. A carry litter will be on hand to transport anesthetized bobcats to suitable processing areas.

Specially Trained Hounds

Another method of capturing bobcats is using specially trained hounds to tree or bay bobcats that can then be immobilized (McBride et al., 2016). Experienced staff can employ this method in study areas where cage trapping and free-range darting are less efficient. Fish and Game Code 3960.4 permits the use of hounds to capture bobcats for scientific research.

Due to the concerns prompting Fish and Game Code Section 3960.4, the use of hounds for this project was closely evaluated considering bobcat health and safety, capture logistics, and project objectives timeline. With qualified personnel, bobcat capture using specially trained hounds is safe and effective and meets standards for ethical live capture (McBride et al. 2016). In addition, the use of specially trained hounds has fewer logistical constraints compared to cage trapping. Finally, in December 2020, Department staff reviewed existing literature on capture rates and

conducted several field trials to assess the feasibility of completing project objectives within the timeline using only cage trapping. Based on the low capture rates both in the literature and those observed during the trials, the use of both cage traps and specially trained houses was proposed and approved to allow for greater flexibility and likelihood of success.

Careful coordination will occur with the Wildlife Health Lab and the Project Leader when using hounds for the purpose of: 1) coordinating houndsmen schedules; 2) ensuring all necessary equipment is on hand (e.g., climbing gear, appropriately sized darts and needles (3/8" or ½"needle length, 0.5 or 1cc dart volume), appropriate dart projector (air fired only); and 3) ensuring the capture lead has experience carrying out hound captures (e.g., darting an animal in a tree and retrieving that animal if necessary). Given the complexity (e.g., equipment needed, ensuring safety of dogs and wildlife, and diversity of situations that could arise) and difficulty (e.g., traversing cross country over several miles of terrain, tree/rock climbing, and small target) of capturing wildlife using hounds, approval to conduct hound captures will be very selective, with Senior Capture Leads or the Project Leader being the only ones allowed to conduct such captures initially.

Capture using specially trained dogs will be conducted only during times when average outdoor Wet Bulb Globe Temperature is less than 25.0° Celsius (77° Fahrenheit) and pursuit durations are expected to be less than thirty minutes. Dogs will not be set loose on a bobcat trail in areas lacking trees or rocky outcroppings of sufficient size and stature to accommodate a safe zone for the target animal to escape from the pursuing dogs. Every effort will be made to prevent trespass on private property in the pursuit of bobcats while using dogs. Within twenty-four (24) hours prior to attempting a bobcat capture using dogs, we will contact appropriate CDFW Law Enforcement personnel indicating the date, time, and location of the anticipated pursuit. To minimize stress to any treed or bayed bobcat, all dogs will be removed from the immediate area as soon as possible, as hounds should not be in close proximity to an immobilized bobcat. At no time will an immobilized bobcat be left unattended with hounds present in close proximity.

We will not dart bobcats in areas near open bodies of water, such as streams and lakes. Additional precautions to avoid catching or harming pregnant or lactating females will be taken from March 10-May 15th. These include limiting pursuit duration to 15 min; not immobilizing any females that appear heavily pregnant (pursuit called off) and limiting activities to roads/tracks that are less likely to be utilized by female bobcats with neonatal young. Further, given that the hounds are always started on a fresh track identified by the houndsman or capture lead out looking for tracks, a female with young kittens is unlikely to be caught using hounds in this way since the females can spend several weeks localized at a den and not out traveling trails/roads.

A net and/or climbing gear will be used to catch any bobcats that may have treed after being darted. All staff and contractors must have on approved face coverings and follow all applicable CDFW COVID-19 guidance and policies once the bobcat is safely lowered to the ground, while handling or within 6 feet of the animal (see Personnel and Animal Safety section below). A carry litter will be on hand to transport anesthetized bobcats to suitable processing areas.

Immobilization Protocol

Bobcats will be chemically immobilized via intramuscular injection using the drugs and doses listed in Table 1. Trap dividers or a 'cage fork' may be used to physically restrain a bobcat within a trap to ensure safe and effective drug delivery. All doses are guidelines only and may be altered by the Veterinary Lead or Capture Lead if indicated by professional judgment or the animal's condition. Further, anyone darting bobcats will be trained and certified by CDFW staff that teach the Wildlife Restraint class training and controlled drug usage will be tracked through the CDFW drug reporting system. The capture crew will closely monitor the animal for signs that the drugs are taking effect after the anesthesia drug(s) have been administered to the bobcat. The depth of anesthesia will be evaluated through the trap via the bobcat's response to stimuli (e.g., touching the inside of the ear with a stick). Additional detail for how to handle, immobilize and monitor bobcats is presented in Appendix 3.

Once a bobcat is captured, it shall be chemically immobilized with Tiletamine/Zolazepam at a dose of 10 mg/kg estimated bodyweight, or a combination of Ketamine (5-7 mg/kg) and Medetomidine (0.08-0.10 mg/kg) using a pole syringe, blow gun, dart gun, blowpipe or hand syringe. Atipamezole (0.1 – 0.3 mg/kg; 5:1 dose ratio atipamezole: medetomidine) may be used after 30-45 minutes to reverse the effects of medetomidine to speed anesthetic recovery. Diazepam (0.1 – 1 mg/kg), and/or midazolam (0.15 – 0.25 mg/kg) may be used as a supplemental drug to induce greater effect, slightly prolong duration of immobilization and increase muscle relaxation in bobcats already immobilized with primary drugs. Drug dosages noted above are guidelines only and may be altered by the Veterinary Lead or Senior Capture Lead if indicated by professional judgment or the animal's condition. Other drugs, dosages or drug combinations not listed above (with exception of epinephrine, doxapram, diazepam, midazolam or dexamethasone sodium phosphate at standard emergency dosages and antibiotics listed in Appendix 4) may not be used unless otherwise authorized by the Veterinary Lead. All bobcats that have been anesthetized shall be monitored visually until they become ambulatory. Capture personnel will remain at the release site until the bobcat has moved off under its own power. The day following each successful capture, authorized personnel shall return to the general capture/release area to confirm, visually or via VHF, that the bobcat has moved off under its own power.

Table 1. Drugs and dosages for chemical immobilization of bobcats statewide across California. All drugs are administered using a dart, pole-syringe (jab-stick), blowpipe or hand syringe via the intramuscular route unless specified otherwise. Dosage and administration information for emergency and additional drugs to treat specific conditions are detailed in Appendix 3.

Drug(s)	Dosage	Purpose	Comments
Tiletamine/Zolazepam (Trade names: Telazol®, Zoletil™, Tilzolan®)	10 mg/kg (Range: 6-11 mg/kg)	Primary immobilization drug combination	• Quick induction, easy to use • Long recovery (not reversible) • High safety margin • Can supplement with Midazolam (0.1-0.25 mg/kg) IM/IV for better muscle relaxation
Ketamine + Medetomidine	5-7 mg/kg Ket + 0.08-0.10 mg/kg Med	Alternate primary immobilization drugs (preferred in hound captures)	• Longer induction period, minimize noise and disturbance during induction • After 30-45 min use Atipamezole IM @ 5mg/1 mg Medetomidine (5:1 dose ratio) to reverse
Ketamine + Dexmedetomidine	4-6 mg/kg Ket + 0.03-0.04 mg/kg Dexmed	Alternate immobilization drugs (if medetomidine not available)	• Longer induction period, minimize noise and disturbance during induction • After 30-45 min use Atipamezole IM @ 5mg/1 mg Dexmedetomidine (5:1 dose ratio) to reverse
Ketamine + Xylazine	10 mg/kg Ket + 1.5 mg/kg Xyl	Alternate immobilization drugs (if medetomidine or dexmedetomidine not available)	• After 30-45 min use 0.10 mg/kg Atipamezole IM 30-45 min later to reverse Xylazine • Older combination, newer sedative drugs preferred
Midazolam	0.1-0.25 mg/kg	Supplemental drug	• Improve muscle relaxation, deepen sedation, slightly extend duration of immobilization

References for drugs and dosages: Kreeger & Arnemo (2011); Rockhill et al. (2011); pers comm (Dr. D. Tom, UC Davis); review of CDFW SCPs for bobcats (D. Clifford)

In the case of captures aided by use of hounds and a bobcat's retreat to trees, a bobcat will be administered Tiletamine/Zolazepam or a combination of Ketamine and Medetomidine via dart at a dose necessary to partially sedate the animal. The bobcat will then be lowered safely to the ground with ropes or a net. Additional drug will be administered by hand syringe immediately after the cat is safely lowered to the ground to fully immobilize the animal. This will reduce the risk of the bobcat falling from the tree before it can be secured with ropes or a net.

Once the bobcat is fully immobilized (by any method), the animal will be placed on a litter or a tarp. Eye ointment will be applied to each eye and then an eye cover will be put on the animal. One person on the capture crew will be assigned the responsibility of monitoring depth of anesthesia and recording vital signs to ensure regular monitoring and assessment of the animal.

Monitoring of pulse rate, rectal temperature, respiration rate, and capillary refill time (CRT) will commence at the start of processing and be repeated approximately every 10 minutes until the end of processing. A physical examination will be conducted to identify any injuries. Shallow wounds (from any capture method) will be washed with a povidine-iodine (e.g. Betadine®), dilute chlorhexidine (e.g. Nolvasan®) scrub solution or soap and water. Deeper penetrating wounds will be flushed with a dilute 10% Betadine with sterile saline solution, a 1:40 dilution of 2% chlorhexidine to a 0.05% solution, or sterile saline. If necessary, a scalpel may be used to cut away heavily diseased, damaged, or contaminated tissue, but in general, a deeper wound will be left open to allow drainage of potential infection. Bobcats suffering wounds significant enough to warrant antibiotics, will be administered 6 mg/kg long acting Ceftiofur (Excede®) or 20,000 units/kg of CombiPen-48® (long acting mixed penicillins) or other suitable antibiotic if directed by the Veterinary Lead. Following this, the GPS collar will be attached to the animal, then biological samples and measurements will be collected. All anesthetized bobcats will be released at the capture site and shall be monitored visually until they are ambulatory.

Drug Needs

A detailed drug dosage and guidance chart covering immobilization, supplemental, antibiotic, emergency, and euthanasia drugs is appended to this plan and will be included in the capture supplies during each capture (Appendix 4). Depending on capture method and capture lead experience, the following drugs will be present at each capture: Tiletamine/Zolazepam (minimum 2 vials), Ketamine (optional: minimum 1 vial), Medetomidine (optional: minimum 1 vial), Atipamezole (optional: minimum 1 vial), Midazolam or Diazepam (minimum 1 vial), Doxapram (1 vial), Epinephrine (1 vial), a long acting antibiotic (Ceftiofur slow release-Excede® or similar drug; 1 vial), sodium pentobarbital or potassium chloride (KCl; aliquoted vial). Due to simplicity of delivery, dosing and high safety margin, Tiletamine/Zolazepam will be used when cage trap immobilizations are conducted by staff with less total immobilization experience. More experienced staff may utilize the Ketamine/Medetomidine combination after written approval from the Veterinary Lead. Hound captures will be led by experienced staff only; in general, the Ketamine/Medetomidine combination is preferred for hound captures. Drug use will be supervised by the project Veterinary Lead Dr. Deana Clifford and/or her designee. Consistent with the CDFW Drug Policy (Wildlife Restraint Handbook, Chapter 9), drug used at the time of capture must have been signed out to the designated capture lead. Under no circumstance are controlled drugs to be transferred to another person without previous written permission of the WHL Veterinarians. Controlled drugs will be stored in compliance with state and federal requirements and usage tracked as part of the Departments controlled substance tracking program. All staff responsible for immobilizing bobcats will receive training prior to commencing captures and continued mentorship during project implementation.

Data and Biological Sample Collection

The following data sheets will be used to record capture related data as applicable for both the hounds and the trapping methods for this GPS collaring study and can be found in the Appendices:

1. Trap Setup Data Sheet (TSDS; Appendix 5)

2. Trap Revisit Data Sheet (TRDS; Appendix 6)
3. Bobcat Capture Sheet (BOCS; Appendix 7)

The TSDS will be used to document the pertinent information related to where and when a trap was set for bobcats. Additional information on the TSDS will include the trap transmitter frequency and if a remote camera is setup to monitor the trap. The TRDS will track trap visit schedules, record trapping results (e.g., empty trap, bobcat captured, and non-target species released), and the actions taken with the trap (e.g., reset, removed, cleaned, or deactivated). If hounds are used to capture bobcats, only the BOCS will be used. Data and biological samples collected from each captured bobcat will be recorded in the field on the BOCS. These data include crew names, trap number, date of capture, bobcat permanent identification, bobcat weight, capture method, immobilization and reversal drugs used, drug effects, vital signs, and physical condition. See Table 2 regarding additional data and biological sample collection. The TSDS, TRDS, and BOCS data sheets may be modified to record additional data and/or reorganized to improve data recording efficiency. Biological samples collected from each bobcat will be stored appropriately and then transferred to the Wildlife Health Lab as soon as practical for disease testing, genetic analysis, and archiving (Table 2).

Table 2. Data and biological samples to be collected for each bobcat capture statewide. Ship biological samples and a copy of the capture datasheet to the WHL, attention Dr. Jaime Rudd (1701 Nimbus Road, Suite D, Rancho Cordova, CA 9670). Call or email before shipping samples. Samples should be shipped within one week of capture; only ship samples Fed ex standard overnight Mon-Wed.

Procedure	Sample Collection/ Measurements	Sample Storage/ Handling	Purpose
Blood Collection	Up to 10 cc from cephalic or lateral saphenous vein to fill 1 lavender-topped tube (LTT) and 1 serum separator (SST; red/gray top). Hair clippers and/or rubbing alcohol may be used to aid in visualization of the vein.	• LTT– fill 1st and gently invert a few times; keep in cooler with ice packs then freeze. • SST - fill 2nd, allow to clot and store in cooler with ice packs. Centrifuge at 3000 rpm for 15 min within 24 hours of collection. Decant serum into cryovial and freeze.	• LTT - Whole blood analyses, FeLV/ FIV testing, archiving. • SST - Serum analyses, anticoagulant rodenticide testing, archiving
Tissue Collection	1 ear biopsy removed with 4mm biopsy punch	Place biopsy sample into labeled cryovial with desiccant	Genetic analysis
Body Measurements	• Body Weight (kg) – use hanging scale • Girths and Lengths – use measuring tape to record measurements • Body condition – use scoring system specified in capture sheet	Record on data sheet	Body condition, collar fitting, health assessment
Ectoparasite Collection	A sample of ectoparasite (tick, flea, lice) species present	Place specimens into labeled cryovial with 70% molecular grade ethanol	Ectoparasite ID and disease monitoring
Mange Assessment	Use mange scoring system to document any mange signs: (0 = no mange, 1 = mild skin lesions (minimal hair loss, pustules, scaling), 2 = moderate skin lesions/crusting (25-50% of body skin affected), 3 = severe skin lesions (>50% body skin affected)	Record score on datasheet	Documentation of mange prevalence and distribution
Dental Measurements & Photos	• Use calipers to record canine length, width and distance • Photograph teeth	Record on data sheet	Morphometric data, Age determination
Reproductive Status	• Females: assess for evidence of lactation, previous lactation, presence of kittens nearby, pregnancy • Males: record presence of 2 testes and condition (small, distended)	Record on data sheet	Reproductive status, Pregnancy rates
Hair Collection	Collect 10 guard hairs from the back of the animal and 3 whiskers – use gloves	Place samples in labeled coin envelope	Diet studies (stable isotopes)
Swabs	Individually swab 1) soft palate, 2) nasal passages inside eye lids, and 3) rectum	Store in labeled cryovials with 96% molecular grade EtOH and freeze	Disease monitoring
Individual Animal ID Information	Photos of unique markings, color patterns, and coat condition. Animal ID will be three letter county code* where animal was caught, followed by M or F for sex, and then a # (starting at 1 for the number of each sex caught in a county) The third male caught in Monterey County would be MON-M3	Record in database	Unique identification via remote cameras and mange presentation

* County codes listed in Appendix 8

Marking and Radio-collar Attachment

The Statewide Bobcat Study plans to use a series of techniques to mark bobcats. Passive Integrated Transponder (PIT) tags will be used to permanently mark each bobcat. PIT tags will be inserted into the subcutaneous tissues of the mid-scapular region or on the midline along the sagittal crest. In addition, an ear tag will be affixed to each bobcat using the hole created by the 4mm biopsy punch. The ear tag number will be unique to each bobcat. We will use Q-flex 1.2 ear tags (https://www.premier1supplies.com/p/q-flex-1-2-ear-tags?cat_id=103). These can be applied with Allflex ear tag applicators. The ear tag is a semi-permanent way of marking the bobcat, may be identifiable from a distance, and can be reported easily to CDFW staff by the public when bobcats are found dead or alive.

Each captured bobcat weighing greater than 7 kg and > 1 year old will be fitted with a GPS collar (Vectronic Aerospace, Berlin, Germany) weighing approximately 350 g (< 5% of the animal's weight). The final collar fit will be checked and agreed on by CDFW lead staff present. GPS collars will have an average lifespan of 1 year with up to 8 GPS fixes per day. The collars will also be equipped with very high frequency (VHF) beacon transmitters in the range of 158-162 MHz that can be used to locate the animal in the field. Young bobcats (<1 year) or those anticipated to grow substantially, will be given ear tags only. Adult bobcats that are not in good health will not receive a collar. No frequency range conflicts with other telemetry collars already deployed in the study areas are anticipated. The collar frequencies have been selected from known available frequencies in coordination with the statewide radio frequency coordinator in the Wildlife Branch (Melanie Weaver; Melanie.Weaver@wildlife.ca.gov). Collar belt material will be black in color and feature a round shape specifically designed for carnivores. In addition, GPS collar belt material may be marked with contrasting markers such as tape to facilitate photographic identification of individuals. A release mechanism will be incorporated into each collar. The release mechanism will help ensure the collar falls off the animal prior to the collar running out of battery life (Chris Kochanny, Vectronic Aerospace, personal communication). Once the timer-controlled release mechanism activates, the collar will fall off the animal and allow for non-invasive retrieval of the collar. Retrieval of the collar is essential to obtain all of the location data since, for battery life purposes, only 2 of the 8 locations per day (with 3-hour fix rate) will be transmitted via satellite. The rest of the locations will be stored on the collar. The GPS collars use Iridium satellite communication, which is a two-way communication. The collar will download one batch of locations (a batch is four locations) every other day via satellite and the data will be accessible via the Vectronics website. The collars will also be equipped with a mortality sensor. Once a collar goes into mortality mode, an email containing the location of the animal will be sent to the crew leaders.

Funding

Primary funding for this capture is provided by CDFW general fund and is available from July 2020-June 2024. Travel funding for Regional and Wildlife Branch project participants will be provided from this same general fund project code, and travel support for personnel from WHL and medical supplies for capture kits will be purchased by WHL using funding from the bobcat

project. CDFW general funds may also be used for some temporary personnel to assist with capture efforts.

Media Coverage

The Project Lead or Project Coordinator will coordinate media coverage with the CDFW Office of Communications, Education and Outreach (OCEO). Media coverage will be minimal for planned capture efforts. Media situations regarding Potential Human-Wildlife Conflict capture efforts will mostly be out of CDFW's direct control, but they will still be managed mostly by OCEO personnel. Select media may be allowed to attend planned capture efforts at the Project Lead's discretion and when: 1) media attention is advantageous to the project and the CDFW's mission; 2) OCEO staff are present to provide direct supervision to media personnel; and 3) when local conditions are amenable to ensure the subject animal, staff and media will be free from harm.

Key Personnel and Personnel Needs

Personnel will handle their own arrangements for state vehicles, lodging, food, and drinking water. If necessary, the Project Lead, Project Coordinator, and Senior Capture Leads will assist with arrangements. Staff assignments are listed at the beginning of the document and in the emergency contact numbers.

Project Lead: coordinates staffing and budget requirements, personnel assignments, coordinates with outside agency collaborators to ensure scientific integrity and management goals are met. Responsible for ensuring the capture plan is completed, reviewed, signed, and adhered to. In coordination with other Leads or supervisory staff, shall have final say regarding issues relative to project and capture objectives. Responsible for coordination with all project contractors and ensuring MOU conditions are adhered to and ensuring regular communication is occurring between Senior Capture Leads, Capture Leads, Regional Supervisors, and WHL Veterinarians for all planned capture activities. Responsible for training and mentoring capture leads.

Senior Capture Leads: Responsible for training and vetting capture leads and, at least initially, the only staff, aside from the Project Lead, that can carry out hound and cage captures until capture leads are trained and vetted. Responsible for training and mentoring capture leads, developing capture plans, field protocols, making recommendations to capture leads to improve capture efficiency/success rates, data collection, and communicating regularly with the Project Lead.

Capture Lead: pending satisfactory vetting of Regional staff by Senior Capture Leads, serve as an on-the-ground lead for captures responsible for coordinating CDFW staff, collaborators, and volunteers to ensure safe a successful capture. In addition to capture and other field roles, capture leads may be responsible for data collection and management, etc. in coordination with the Senior Capture Leads and Project Lead

Veterinary Lead: determines safe and appropriate immobilization or supplemental drug protocols

and biological sampling for animal health assessment. In coordination with the Project and Capture lead(s) develops safe animal handling/welfare capture methodologies, reviews capture outcomes, investigates any capture-related morbidity or mortality, and has final say on issues regarding animal health and welfare concerns.

Personnel and Animal Safety

A planning and safety meeting will be held prior to capture efforts in each local area. Initial assignments, animal handling protocols, and other pertinent aspects of the operation will be discussed. All crew members will read the capture plan, understand the information related to personnel and animal safety, and complete the Crew/Participant Safety Meeting Participation and Waiver of Understanding form (Appendix 9). Emergency contact information will be on-site and readily available during operations. In addition, the Project Coordinator and capture lead shall notify Veterinary Lead several days prior to initiation of capture activities and upon completion.

Safety Meeting Objectives:

1. The objective will be to safely capture bobcats while minimizing potential hazards to animals and capture personnel. Safety and medical considerations listed in chapters 3, 8, 9, 11, and 15 of the CDFW WHL's Wildlife Restraint Handbook (2014).
2. Determine whether appropriate execution of live-capture methods are being implemented to prevent injury and to help preclude capture of non-target species. Reasonable measures will be taken to protect bobcats from exposure to weather extremes and human contact. Trap monitoring transmitters and wireless mobile communication cameras will be used to minimize the capture time for bobcats and other non-target species. Traps will be monitored regularly so that personnel can respond quickly when the trap is sprung and the transmitter and/or remote camera is activated.
3. Standard precautions will be taken when trapping and handling captured target and nontarget species to avoid injury or mortality. All handling activities will be conducted using acceptable restraint procedures in accordance with the CDFW's Wildlife Capture and Restraint Handbook (2014). Captured non-target species will be immediately released unharmed at or near the capture site. All bobcats will be processed expediently and released as soon as reasonably possible at the site of capture. No live bobcats will be transported from the immediate vicinity of the capture location, unless necessary for the safety or well-being of the captured animal.
4. All employees and contractors who will be capturing and handling bobcats and non-target species will have received appropriate pre-exposure rabies vaccinations and boosters and/or have maintained a rabies antibody titer of greater than 1:5 IU during the past two years, as recommended by the U.S. Department of Health and Human Service's Centers for Disease Control and the California Department of Health Services.
5. Vital rates of captured animals will be monitored to ensure that investigators are aware of the physical status of those animals as processing occurs. Normal vitals for a bobcat are approximately 100-102 F, 120 pulse/minute and 20-30 respirations. If the animal's body

temperature is below < 98 F, the animal will be warmed immediately with hand warmers, hot water bottles, heat packs, additional blankets, or an electric heating pad. Individuals experiencing hyperthermia (body temperature >104 F) will be cooled by placing cold water or snow in the groin and head and wetting the pelage with cool water or snow. If using reversible anesthetic drugs then the drug may be reversed to help improve the animal's condition.

6. We do not anticipate capture related wounds will be common based on prior experience and from the scientific literature. However, if they do occur we will vigorously flush wounds with diluted povidone-iodine (Betadine; approximately 10% solution with sterile saline), dilute chlorhexidine (Nolvasan; approximately 0.05% solution), or sterile saline using a 60 cc syringe and an 18 g needle. Lesions consistent with mange will be photographed. The capture crew will defer to the Veterinarian Lead to address severe wounds.
7. Although we do not expect severe injuries, bobcats may be injured as a result of capture efforts. If an injury is assessed in the field to be significant, the field lead will consult with the Veterinary Lead or WHL Veterinarian on-call to plan potential therapies or determine if an injury is severe enough to warrant euthanasia. If an injury is severe, euthanasia may be recommended. Any euthanasia will follow the American Veterinary Medical Association's Guidelines for the Euthanasia of Animals: 2013 Edition.
8. COVID-19 precautions:
    a. For as long as deemed necessary by the CDFW COVID-19 Taskforce, additional modifications of field work (e.g. appropriate physical distancing, use of face coverings, increased disinfection) will be conducted to ensure compliance with CDFW's Critical Field Work Best Practices and the approved *Statewide Bobcat Population Monitoring Project COVID-19 Prevention Plan* (Appendix 13). Minor deviations from this guidance will need to be approved through the appropriate chain of command (e.g. Regional Manager or Branch Chief). Substantial deviations will need approval from the CDFW COVID-19 Taskforce.
    b. Research has shown that felids in close contact with infected people are susceptible to infection with the SARS-CoV-2 virus that causes COVID-19. All staff handling bobcats as part of this project will adhere to current Guidance for CDFW staff required to handle bats and/or carnivores, issued April 10, 2020 (Appendix 10) or any subsequent COVID-19 guidance for the handling of carnivores issued by the Department.

Accidental Exposure of Personnel to Chemical Immobilization Drugs:

The Project Lead will ensure that all capture personnel are aware of the chemical immobilization drugs being used, the potential risk if accidentally exposed, and emergency treatment considerations if an accidental exposure occurs in the field. The Medetomidine, as dosed for the chemical immobilization of bobcat, could be lethal to a person if accidentally exposed. A recent publication in the American Journal of Emergency Medicine provides specific recommendations for emergency treatment of accidental exposure to potent alpha-2 agonistics, such as medetomidine, commonly used in veterinary medicine and wildlife immobilization (Greenberg et al. 2018). Capture personnel will be

familiar with this publication, understand how to interpret whether an exposure is significant, and willing to provide emergency treatment or support as described in the publication. Appendix 11 should be on hand at any capture where medetomidine will be used and if an accidental exposure occurs should be brought with the victim to the nearest emergency room.

Capture and Immobilization Training for Bobcat Project Staff

Project Leader, Rachel Roberts, Senior Capture Leads Justin Dellinger and Michael Brown, Veterinary Lead Deana Clifford and Nongame Health Biologist Jaime Rudd all have bobcat immobilization experience and have been trained to conduct captures through the Wildlife Handling and Restraint – Chemical Immobilization course taught by WHL. Further, Dellinger, Rudd and Clifford are also trainers for this course. These staff will train bobcat project staff members and CDFW Environmental Scientists in the proper procedures to conduct captures using the above methods and collect biological samples and data during the captures. In addition, they will provide safety training and provide the capture plan to staff that will participate in the captures. Those participating in captures will acknowledge that they understand the capture objective and safety concerns and must demonstrate proficiency prior to being allowed to conduct immobilizations independently. Lastly, Dr. Clifford will be the lead for immobilization and animal welfare and provide continued oversight during the project through regular review of all immobilization and capture records.

Drug and Mortality Reporting

The capture leads will follow protocols detailed in chapter nine of the Wildlife Restraint Handbook (2014) for reporting, handling, and storing drugs. The required information to complete the WHL Immobilization Data Sheet (IDS) will be transposed from the BOCS immediately after the capture is complete and sent to the WHL within 24 hours of the capture. In addition, project biologists authorized to possess immobilization drugs will conduct a physical inventory of all drugs and complete a drug inventory report on a quarterly basis. Drug concentrations and the date will be written directly on all drug vials. When drugs expire, they will be discarded according to the protocol described in the Wildlife Restraint Handbook (2014). Consistent with the CDFW Drug Policy (Wildlife Restraint Handbook, Chapter 9), expired immobilization drugs cannot be used for immobilizing bobcats. It is the Capture Lead’s responsibility to alert WHL drug program staff when drugs allocated to the lead are due to expire. Notification should be done far enough ahead of time (recommend minimum 3 months in advance) so that in-date replacement drugs can be procured prior to expiry of drugs in possession.

When mortalities of collared animals are detected, all reasonable attempts will be made to collect the carcass as soon as possible for cause of death determination. The WHL shall be notified of the mortality immediately after detection, and the carcass frozen in the nearest Regional facility until it can be transported to the WHL, unless otherwise directed by the lab (Appendix 12).

Emergency Contact Numbers

Rachel Roberts **(Project Lead)**
Justin Dellinger **(Senior Capture Lead)**
Michael Brown **(Senior Capture Lead)**
R1 - ES Lindsey Engelbert (**Capture Lead**)
R2 - ES Alexia Hemphill (**Capture Lead**)
R3 - ES (vacant) (**Capture Lead**)
R4 - ES Jessica Copeland (**Capture Lead**)
R5 - ES Mackenzie Rich (**Capture Lead**)
R6 - ES Shannon Forshee (**Capture Lead**)
Deana Clifford **(Veterinary Lead)**
Jaime Rudd (WHL Nongame Health / Pesticide Coordinator)
Pete Figura (R1 Supervisor)
Mario Klip (R2 Supervisor)
Greg Martinelli (R3 EPM)
Dave Hacker (R4 Supervisor)
Christine Thompson (R5 Supervisor)
Danny Gammons (R6 Supervisor)
Tina Bartlett (R1 Regional Manager)
Kevin Thomas (R2 Regional Manager)
Erin Chappell (R3 Regional Manager)
Julie Vance (R4 Regional Manager)
Ed Pert (R5 Regional Manager)
Leslie MacNair (R6 Regional Manager)
Scott Gardner (WLB Branch Chief)
CalStar Helicopter Rescue
24 HR: DFW Dispatch: Surcom

Local Emergency Services

COUNTY	HOSPITALS	FIRE DEPARTMENTS	CHP	SHERIFF
Modoc	Modoc Medical Center 228 W McDowell Ave Alturas, CA 96101 530-233-5131	Alturas Station 702 E 8th St. Alturas, CA 96101 530-233-2723	530-233-2919	530-233-4416
Siskiyou	Fairchild Medical Center 444 Bruce St. Yreka, CA 96097 530-842-4121	Siskiyou Station 1809 Fairlane Rd. Yreka, CA 96097 530-842-3516	530-842-0530	530-841-2900
Tehama	St. Elizabeth Comm. Hospital 2550 Sister Mary Columba Dr. Red Bluff, CA 96080 530-529-8000	Red Bluff Station 604 Antelope Blvd Red Bluff, CA 96080 530-528-5199	530-527-2034	530-529-7900
Plumas	Plumas District Hospital 1065 Bucks Lake Road Quincy, CA 95971 (530) 283–2121	Fire Protection Department 171 Lawrence Street Quincy, CA 95971 (530) 283-1792	530-283-1100	530-283-6300
Sacramento	Methodist Hospital 7500 Hospital Dr. Sacramento, CA 95823 916-423-3000	Cosumnes Fire Dept. 10573 E Stockton Blvd Elk Grove, CA 95624 916-405-7100	916-681-2300	916-684-2000
Marin	Marin General Hospital 250 Bon Air Rd., Greenbrae, CA 415-925-7000	Marin Co. Fire Dept. 816 Panoramic HWY Mill Valley, CA 94941 415-473-6717	415-924-1100	415-663-1151
Sonoma	Santa Rosa Memorial Hospital 1165 Montgomery Dr. Santa Rosa, CA 95045 707-525-5300	Santa Rosa Station 955 Sonoma Ave. Santa Rosa, CA 95404 707-534-3500	707-588-1400	707-565-2511
Monterey	Mee Memorial Hospital 300 Canal St., King City, CA 93930 (831) 385-6000	Chualar Station 24281 Washington St., Chualar, CA 93925 (831) 679-2323	831-385-3216	831-385-8311
Kern	Tehachapi Hospital 115 W E St., Tehachapi, CA 93561 661-823-3000	Tehachapi Station 800 S. Curry St., Tehachapi, CA 93561 661-822-5533	661-864-4444	661-861-3110
Mono	Mammoth Hospital 85 Sierra Park Rd. Mammoth Lakes, CA 93546 760-934-3311	Mammoth Station 3150 Main St., Mammoth Lakes, CA 93546 760-934-2300	760-932-7995	760-932-7549
San Bernardino	Barstow Community Hospital 820 E Mountain View St Barstow, CA 92311 760-256-1761	Barstow Fire Dept. 861 Barstow Rd Barstow, CA 92311 760-256-2254	760-255-5900	760-256-4838
San Diego	Palomar Medical Center West 2185 Citracado Pkwy., Escondido, CA 92029 442-281-5000	Cuyamaca Station 51 34520 Engineer Rd., Julian, CA 92036 760-765-0085	619-401-2000	760-765-4780
Los Angeles	Emanate Health Foothill Hospital 250 S Grand Ave., Glendora, CA 91741	LA Co Fire Dept Stn 151 231 W Mountain View Ave., Glendora, CA 91741	661-948-8541	661-272-2400

	626-963-8411	626-963-2733		

Literature Cited

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Greenberg, M, A Rama, and JR Zuba. 2018. Atipamezole as an emergency treatment for overdose from highly concentrated alpha-2 agonists used in zoo and wildlife anesthesia. American Journal of Emergency Medicine 36:136-138.

Kreeger TJ, and JM Arnemo. 2012. Handbook of Wildlife Chemical Immobilization, International edition. Wildlife Pharmaceuticals Inc. Fort Collins, Colorado USA. Pp. 171-172.

McBride R, C McBride and C McBride. 2016. Safe and Selective Capture of Bobcats (Lynx rufus) UsingTrained Hounds in the Absence of Snow. Southeastern Naturalist 15(2):291–298.

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Wildlife Field Necropsy. 2007. California Department of Fish & Wildlife, Wildlife Health Laboratory. Rancho Cordova, CA, USA.

Wildlife Restraint Handbook. 2014. California Department of Fish & Wildlife, Wildlife Health Laboratory. Rancho Cordova, CA, USA

CAPTURE PLAN APPENDICES:

1. Disinfection Protocol: Prevention of Disease Spread during Bobcat Capture Activities
2. Trapping Signage example
3. Additional Guidance for Handling, Immobilizing and Monitoring Captured Bobcats
4. Drug Tables: Quick Reference Bobcat Immobilization Table & Detailed Dosages and Indications for use of Supplemental, Emergency and Euthanasia Drugs
5. Trap Setup Data Sheet (TSDS)
6. Trap Revisit Data Sheet (TRDS)
7. Bobcat Capture Sheet (BOCS)
8. County Code Abbreviations to use for Bobcat ID#
9. Crew/Participant Safety Meeting Participation and Waiver of Understanding
10. Guidance for CDFW staff required to handle bats and/or carnivores during the COVID-19 pandemic, Issue date April 10, 2020

11. Accidental Exposure of Personnel to Chemical Immobilization Drugs (Medetomidine/Xylazine)
12. Procedure for submitting carcasses to the WHL
13. COVID-19 Prevention Plan: Statewide Bobcat Population Monitoring Project

Appendix 1.

Disinfection Protocol
Prevention of Disease Spread During Bobcat Capture Activities

Author: Dr. Jaime Rudd; Revised 11/18/2020

Disinfectant Types: 10% solution of Sodium Hypochlorite (Bleach), Clorox Bleach Disinfectant Wipes, Hype-Wipes

Contact Time (before rinsing with water)**:** 10 – 30 minutes

Proper Dilution for 10% Bleach solution: Mix 1-part household bleach with 9 parts of water (i.e. 1 quart of bleach with 9 quarts of water). Use caution as this solution is corrosive and irritating in contact with eyes or skin. If solution gets into your eyes, immediately flush eyes with copious amounts of water or saline solution for contact lenses. If skin exposure, rinse with copious amounts of water. Follow manufacturer recommendations for skin or other bodily exposure.

Directions for Bleach Use as a Disinfectant: All equipment will be cleaned after each immobilization. Traps that held a live animal will be cleaned with 10% bleach before re-use and/or moving to another location. The soil/earth below the trap, along with any biological waste, will be removed and tossed/spread aside to minimize fomite transmission of mange mites or other pathogens. These recommendations are simple and can be done quickly, requiring only a spray bottle with bleach solution, bleach wipes, a spray bottle with water, and a small plastic bag to place used bleach wipes into.

Bleach should be rinsed or wiped down with water after a minimum of 10 minutes to prevent corrosion of equipment.

- **Equipment** (digging equipment): Wipe equipment with bleach wipes or spray with 10% bleach, allowing 10 minutes to pass before rinsing with water.

- **Ground** (under trap): disturb the topsoil/earth under the trap before resetting/replacing. This includes removing any biological waste left behind and raking or removing the topsoil to prevent disease transmission (especially mange mites which can live in the environment for up to two weeks in the absence of a host).

- **Be mindful of clothing**. If you have pets at home, we suggest changing clothes in between work and home to reduce any risk of infecting your pets or vice versa.

- **PPE:** Disposable gloves must be used when handling bobcats and their tissues. Gloves must be changed between bobcat workups. Face coverings must be worn when handling bobcats to reduce risk of SARS-CoV-2 virus transmission from people to bobcats (Appendix 9)

Appendix 2.

Caution Sign

Note contact info is a placeholder and should be amended as necessary.

CAUTION
PELIGRO

DO NOT APPROACH
ESTANCIA LEJOS

CAGE TRAP(S) SET TO CAPTURE BOBCATS AHEAD

FOR ASSISTANCE CONTACT

California Department of Fish and Wildlife
[PROVIDE 1 OR 2 LOCAL PHONE NUMBER)
PROVIDE LOCAL ADDRESS

Appendix 3.

Additional Guidance for Handling, Immobilizing and Monitoring Captured Bobcats

Initial assessment/induction:

- Quietly and quickly visually assess the cat then back away to reduce stress:
    - estimate weight, assess attitude (stressed, striking out etc; calm, in back of trap); quick visual assessment health – are the eyes bright and focused on you? Thin or normal weight? Obvious injuries?
- Find quiet, flat area with minimal rocks, maximal shade if warm etc to set up for the workup on the ground. If the truck is within a 1-2 min walk and in area without a lot of human presence can consider truck bed work up.
- Set up for work up.
    - Set up time should be 15 min or less once you have done it a few times
    - Wire the cage door closed so it cannot slide or fall into the unlocked position when manipulating the trap to remove the bobcat.
    - Have all equipment out, grouped thematically and ready to use
    - All roles for people should be clearly assigned (especially the capture lead), designated notetaker chosen and ready; observers briefed on their role; all briefed on order of events and need to be quiet
        - Designated jobs: capture lead, anesthetic monitoring, note taker, sample collector, measurements, collar placement
        - Work up is most efficient with 2-3 people; if more people things can get confusing and people get distracted; so strongly suggest max group size of 3-4 (including note taker); others observers – can get called in if needed.
- Prepare immobilization drug – capture lead or designate
- Induction tips:
    - MAX of 3 people present at trap to assist (one of which is the note taker as keeping record of events essential)
    - Have extra drug, needles, syringes with you
    - Have dark blanket or piece of canvas to cover trap after initial injection
    - Have a spare stick to distract head of cat in opposite direction of pole-syringe/blowpipe person
- TILETAMINE/ZOLAZEPAM INDUCTION
    - Use dividing fork to limit cat's ability to move-sometimes flipping the trap on its end (vertical) helps to place the dividing fork into the right position (cat on bottom of trap-dividing fork above. ** Ensure cage door is wired shut before moving trap.**

  - Target hind quarters of cat – approach with distractor and deliver drug with blow pipe using a tri-port dart or pole syringe to the bobcat's hind quarter. **Make sure to look for charge/flash of the dart to ensure drug was delivered.
  - Use 16-18g needle to get drug into cat fast and single pushing motion for pole syringe
  - Look for drug on fur, still in syringe etc after injection
  - RECORD TIME OF INITIAL INJECTION
  - Partially cover trap and back away to safe distance to observe quietly
  - Minimizing disturbance will help facilitate rapid induction
  - Cat should show some level of signs within 5-10 min.
  - INDUCTION PROCEEDS TAIL TO HEAD – signs show in rear first. * Note first signs and ensure bobcat's head is not going down in a way that will obstruct the airway.
  - By 10 min post injection cat should be showing partial or full immobilization
  - If appears fully immobilized, wait 2-3 more min then approach quietly
  - If partial at 10 min, wait another 5 min – if no change plan for 2nd injection at partial dose (usually ½ dose); If NO signs at 15 min – plan to repeat full dose at 2nd injection.
- Approach cat quietly and slowly. If cat appears immobilized, test responsiveness using pole syringe or stick while cat is in the trap BEFORE opening the trap – test the head (remember it's the last part to be fully immobilized; look for movement, look at eyes, can it lift its head still? etc). If still some slight response – back off wait 3-5 more min – try again.
- Once confirmed that cat is immobilized, open door slightly and check again from the front of trap before grabbing the cat.
- Gently extract bobcat from trap, lay on side on carry litter with head extended and take to work up site.

Work up

- Quickly weigh while in carry litter if that's easy. (Then place on other litter and can tare out the transport litter). Hobbling feet with hobbles or a length of tactical cord is a very quick and efficient way of weighing the cat with a small scale in the field.
- Place cat in left lateral recumbency (left side down), ensure neck is in natural extended position. (can place on either side, but I find placing the cat on the same side down every time will make you faster at performing workups)
- 1st get initial vital sign assessment before doing ANYTHING else - this should be manual assessment of heart rate (HR), temperature, respiratory rate (RR), mucous membrane (gum) color and capillary refill time (CRT).

- Quickly take rectal swab, then insert thermometer (end coated with medical lubricating jelly – ex. K.Y.)
- Quickly take conjunctival swab on inside of eyelids, then examine eye, apply eye ointment and eye cover.
- Assess depth of anesthesia – if still a little light (eyes central position, panting slightly, a bit stiff) take a few non-invasive (non-painful) samples/measures and start collar fitting, but keep NOISE to a minimum so animal can continue to deepen anesthesia.
- DO SAMPLING IN ORDER OF PRIORITY – decide ahead of time what's a 2nd priority data point, and note that painful stimuli (ear tag, blood sampling) should be done when the animal is in the deepest plane of anesthesia.
    - Collect most important data first in case the animal starts to wake up early
    - Usually that's collar placement, genetics, general exam, sex, repro condition, weight, blood, PIT tag, then measurements, little extras like swabs etc in descending priority order
    - Remember to flip the cat and examine the other side (the down side); repositioning the cat may also stimulate breathing in a cat that has a low RR.
- Notetaker responsible for helping to guide team through sheet, and ensuring vital signs are being monitored frequently
- If a team member notes any abnormality or change in anesthesia – must alert capture lead immediately
- Put all samples back in the kit bag to minimize chance of losing track; can stick a PIT tag sticker on inside of bag (not outside), if it falls off it will just fall into bag.
- TWO people should check and AGREE on fit of radio collar
- Keep an eye on anesthestic depth, breath quality, temp etc
- COLLAR TIPS
    - must carefully watch positioning once collar is on, cat can choke on collar; suggest after collar is fitted and placed, spin so battery pack is on dorsal side of neck (not under it where it could compress trachea during recovery). It will spin back to normal position from gravity after cat wakes up.
    - Check collar throughout processing and final collar check when muscles are starting to become activated. When neck muscles are flaccid, the collar may feel much looser. Good to check when animal coming out of the drug before putting bobcat into kennel or cage for recovery.

Recovery

- One advantage of Tiletamine/Zolazepam is animals are very unlikely to recover suddenly, recovery is usually slow with warning.

- IN CONTRAST TO INDUCTION, RECOVERY FROM ANESTHESIA OCCURS HEAD TO TAIL
    - Movement starts with ears, lips, tongue, eye blinking, more swallowing, increase RR, maybe some foot paddling.
    - If movements mild, can still safely work with cat if someone's designated to be on the head (rabies-vaccinated person only), noise is minimized and ensure eye cover is securely in place.
    - While finishing up, if there are extra people, they can get trap ready for recovery
    - Trap should be in flat area, protected from elements, partially covered with dark canvas or blanket; and observable at a distance.
    - Place cat in trap (with head towards door if possible) and on its side.
    - THINGS TO RECORD: TIME HEAD IS LIFTED, TIME STERNAL, TIME STANDING, TIME IT SEEMS FULLY AWARE-READY FOR RELEASE.
- When opening trap door for release – 1 PERSON, APPROACH QUIETLY, WEAR HANDLING GLOVES, AVOID STICKING FINGERS INTO TRAP, STAND TO SIDE/BEHIND TRAP AS MUCH AS POSSIBLE; OPEN DOOR – LOCK OPEN AND LEAVE QUICKLY.
    - Observe cat for as long as possible after release from safe distance.

Appendix 4.

ADDITIONAL DRUG DOSAGE TABLES

Table A4.1 Tiletamine/Zolazepam dosages and drug delivery volumes for bobcats by body weight based on standard dose of 10 mg/kg.

Weight		Total Dose	Volume to be delivered (ml) at typical Tiletamine/ Zolazepam concentrations	
lb.	kg	mg	100 mg/ml	200 mg/ml
6.6	3	30	0.3	n/a
8.8	4	40	0.4	n/a
11	5	50	0.5	n/a
13.2	6	60	0.6	0.3
14	7	70	0.7	0.35
17.6	8	80	0.8	0.4
19.8	9	90	0.9	0.45
22	10	100	1.0	0.5
24.2	11	110	1.1	0.55
26.4	12	120	1.2	0.6
28.6	13	130	1.3	0.65
30.8	14	140	1.4	0.7
33	15	150	1.5	0.75
35.2	16	160	1.6	0.8

For 100 mg/ml tiletamine/zolazepam reconstitute powder in 500 mg vial with 5 cc sterile water.

For 200 mg/ml tiletamine/zolazepam reconstitute powder in 500 mg vial with 2.5 cc sterile water.

Table A4.2 Detailed Dosages and Indications for use of Supplemental, Emergency and Euthanasia Drugs

Volumes calculated (ml) are for the specified drug concentration noted under the name of each drug. The dosage (mg/kg) is also shown so that exact dosage can be calculated if needed or if the drugs available are not in the standard concentrations shown below.

DRUG (concentration)	INDICATION	ROUTE*	DOSAGE	5 KG (11 LB)	10 KG (22 LB)	15 KG (33 LB)
SUPPLEMENTAL DRUGS – increase relaxation, extend duration of anesthesia						
MIDAZOLAM (5 mg/ml)	LOW Dose: Increase sedation and muscle relaxation	**IM**	**0.25 mg/kg**	**0.25 ml** (1.25 mg)	**0.5 ml** (2.5 mg)	**0.75 ml** (3.75 mg)
KETAMINE (100 mg/ml)	Extend duration of anesthesia (recommend use with Midazolam)	**IM**	**5 mg/kg**	**0.25 ml** (25 mg)	**0.5 ml** (50 mg)	**0.75 ml** (75 mg)
EMERGENCY DRUGS – use in rare event of complications during immobilization, lifesaving; WHL veterinarian should be notified						
MIDAZOLAM (5 mg/ml)	HIGH dose: Seizures (may be repeated 5-10 min later if seizures not controlled; short duration)	**IM/IN**	**0.5-1 mg/kg**	**0.5-1 ml** (2.5-5 mg)	**1-2 ml** (5-10 mg)	**1.5-3 ml** (7.5-15 mg)
DIAZEPAM (5 mg/ml)	Seizures – short duration, can repeat similar to above	**IV/IN/IR**	**1-2 mg/kg**	**1-2 ml** (5-10 mg)	**2-4 ml** (10-20 mg)	**3.5-6 ml** (15-30 mg)
DOXAPRAM (20 mg/ml)	Very low or irregular/poor respiration or respiratory arrest (make sure to correct position and clear airway 1st)	**IV**	**2-4 mg/kg**	**0.5--1 ml** (10-20 mg)	**1-2 ml** (20-40 mg)	**1.5-3 ml** (30-60 mg)
EPI (1:1000; 1 mg/ml)**	Cardiac arrest (give along with doing chest compressions)	**IV/IC/ IM**	**0.1 mg/kg**	**0.5 ml** (0.5 mg)	**1.0 ml** (1 mg)	**1.5 ml** (1.5 mg)
ATROPINE (0.54 mg/ml)	Very Low heart rate; Hypersalivation	**SC/IM**	**0.02 mg/kg**	**0.2 ml** (0.1 mg)	**0.4 ml** (0.2 mg)	**0.55 ml** (0.3 mg)
ANTIBIOTIC -give under veterinary advisement if wound appears dirty or abscess noted						
CEFTIOFUR (Excede®; 200 mg/ml)	Contaminated wounds or abscesses; clean all 1st with soap/water	**SC**	**6 mg/kg**	**0.15 ml** (30 mg)	**0.3 ml** (60 mg)	**0.45 ml** (90 mg)
EUTHANASIA – attempts to contact WHL veterinarian and/or supervisor/project lead must be made prior to euthanasia						
POTASSIUM CHLORIDE (KCL) (300 mg/ml)	GIVE RAPIDLY TO DEEPLY ANESTHETIZED ANIMAL ONLY; give additional 10-20 mg/kg tiletamine/ zolazepam & confirm deep surgical anesthesia prior to administration	**IV/IC**	**150 mg/kg**	**2.5 ml** (750 mg)	**5.0 ml** (1,500 mg)	**7.5 ml** (2,250 mg)

* Routes: IV-intravenous; IM – intramuscular; SC-subcutaneous; IN-intranasal (without needle); IR-intrarectal (without needle); IC-intracardiac. **Dilute 1:1000 with sterile water if IC or intra trachea, can go up to 0.2 mg/kg for anaphylaxis or IT; note 1:1000 EPI is 1mg/ml, 1:10,000 EPI is 0.1m/ml.

Appendix 5.

Trap Setup Data Sheet (TSDS)

Date	Site	Trap #	Directions	Location Description/Habitat	UTMs	Transmitter ID	Transmitter Frequency	Camera ID

Appendix 6.

Trap Revisit Data Sheet

Project:_____ **Study Area**:_____ **Sub-site (general area)**:_____

Person(s) setting and checking traps:_____

Date	**Time**	**Trap #**	**Checked** (In person or Remote)	**Status** (Open or Closed)	**Disturbed** (Yes or No)	**Re-lure** (Yes or No)	**Result** (empty, bob-cat, non-target)	**Action** (set, reset, pull, close)	**Camera** (check SD card & batteries)	**Comments** (lure type, sign, non-target species, etc.)

Appendix 7.

Bobcat Capture Data Sheet
January 2022

CAPTURE **LEAD:**_____ **DATA RECORDER:** _____ **OTHER RESEARCHERS PRESENT:**	**CAPTURE DATE:** MM/DD/YYYY

ANIMAL IDENTIFICATION

Bobcat ID County Code-Sex-#	**Bobcat Body Weight (note the units!)** Weight of Bobcat with Gear_____ Weight of Gear_____ **Weight of Bobcat** _____ □ kg □ lb	**Sex** □ Male □ Female	**Age (estimated)**

Previously Captured □ Yes □ No	**Ear Tag Placement** □ Right □ Left (Female = R, Male = L)	**Ear Tag Color**	**Ear Tag No.**	**Body Condition Score** □ 1 (emaciated) □ 2 (thin) □ 3 (average) □ 4 (heavy) □ 5 (overweight)

Capture Method ☐ Hounds ☐ Box Trap ☐ Other: _____	**Capture Location**	**Capture Lat/Lon** (Decimal Degrees) N_____ W_____

COLLAR INFORMATION (Bobcats weighing under 7kg should not be collared)

Collar Placement □ Yes □ No	**Collar Type** □ VHF □ GPS	**Collar** □ Tested □ Magnets Removed	**New Collar Frequency**

Serial Number	**Collar Manufacture-Model**	**Collar Weight**	**Previous Collar Frequency**

DRUG INFORMATION

Drug	Delivery Method[1]	Vial ID	Dose (mg)	Volume (ml)	Place of Injection (IM, IV SQ)	Time	Fate[2]

[1] pole syringe, hand injection, rifle, CO_2 pistol

[2] immobilized, partial, missed, wasted, no effect

Behavior at First Injection:		
Time first effects	**Time arousal**	**Time released**
Time immobilized	**Time ambulatory**	**Time crew left area**

ANESTHESIA MONITORING (Goal – monitor vitals every 5 min, possibly more often if abnormalities noted)							
Time	PULSE (beats per min)	RESPIRATION (breaths per min)	RECTAL TEMP (°F)	CRT (# secs)	PULSE OX (%)	MM (color)	Other

Anesthesia quality:
☐ Smooth ☐ Light ☐ Paddling ☐ Rough ☐Too Light ☐ Too Heavy

Vitals	Pulse	Respiration	Temp	CRT	Pulse Ox	MM
NORMAL RANGE	50 - 150 / min *Note with Telazol, can be up to 180*	18 - 30 /min	100 to 103°F	1-2 secs	90 - 100%	Pink = Good
WARNING SIGNS!	< 40 / min > 200 / min	< 15 / min	If ≤ 99 add HEAT If ≥104 COOL off	> 2 secs	< 85 % needs oxygen *If high 70s, check & adjust sensor*	Blue = O2 Deficient Pale Pink to White = Shock Grey = Severe Shock

PHYSICAL EXAMINATION NOTES

☐ **Mentation**

□ BAR □ QAR □ Depressed

☐ **Coat/Skin**

□ NSF □ Injury □ Hair loss □ Crusted skin

□ Thickened Skin □ Trap Injury □ Previous Injury

☐ **Ectoparasites**

□ Ticks □ Fleas □ Lice □ Mange Mites □ Ear Mites

☐ **Ears/Eyes/Nose** (note discharge, injuries, etc)

□ NSF □ Abnormal

☐ **Reproductive Actvity** (circle all that apply)

Female: lactating, pregnant, teats small/pink, teats elongated/discolored, dark staining of fur around teats, hair loss around teats, teats wet, no signs of activity

Male: testes descended, cryptorchid (only one present), firm, enlarged/distended, hair loss, no signs of activity

☐ **Condition of Gums**

□ Moist □ Tacky □ Recession

MANGE SCORING

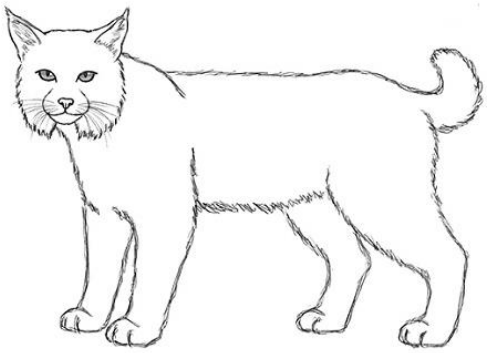
□ **Class 0** (None) □ **Class I**: Mange covers <25% of body, skin scaly w/minimal hair loss and some red bumps around face.

□ **Class II**: Mange covers >25% & ≤50% of body, lesions and hair loss advanced on face and maybe neck and shoulders.

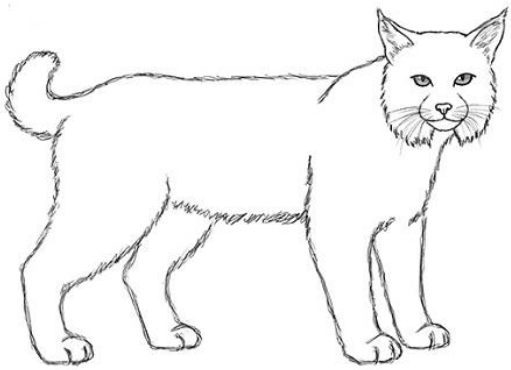
□ **Class III**: Mange covers >50% of body from face, shoulders, and legs to rest of body; affected skin is gray, thickened, crusty.

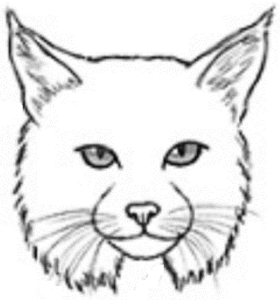
INDICATE ON DIAGRAM ANY WOUNDS, INJURIES, ETC.

Left



Right



Right Left 	**ADDITIONAL CAPTURE & IMMOBILIZATION COMMENTS**
MORPHOMETRICS	

Head & Body Measurements (cm)

Body Length (nose tip to tail base): _____ cm

Head Length (tip snout to rear of sagittal crest): _____ cm

Head Circumference (behind the eyes): _____ cm

Neck Circumference (mid-cervical area): _____ cm

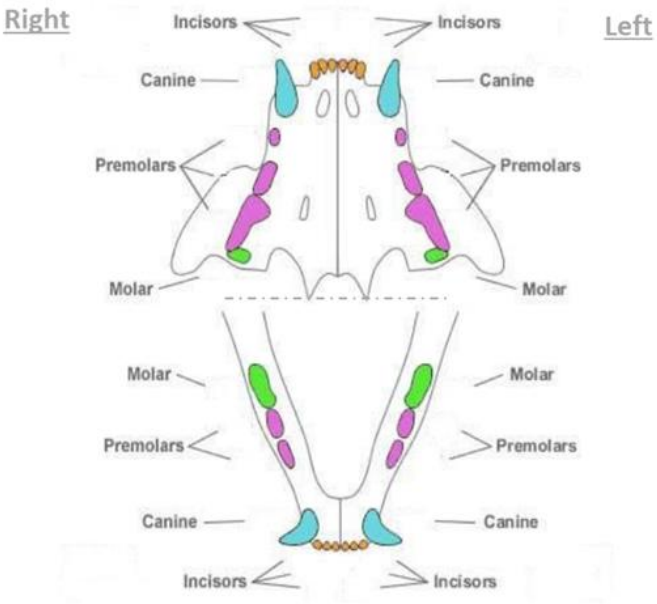
Chest Circumference (just behind forelegs): _____ cm

Paw Measurements (mm)

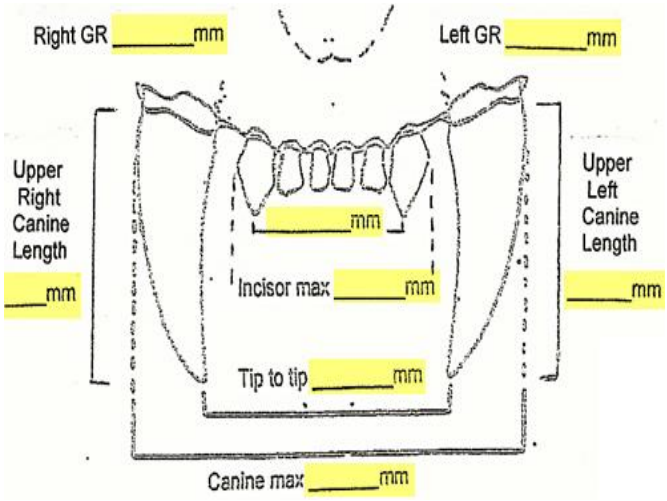
	Length	*Width*
Right Forepad:	_____ mm	_____ mm
Left Forepad:	_____ mm	_____ mm
Right Hindpad:	_____ mm	_____ mm
Left Hindpad:	_____ mm	_____ mm

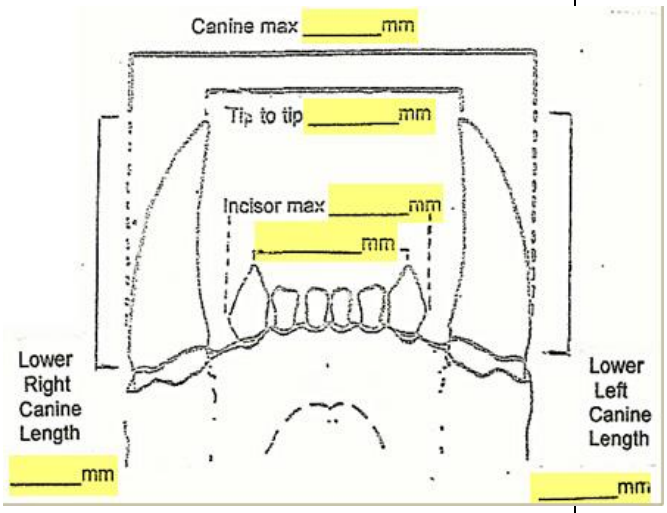
Dentition

Indicate if teeth are missing (M), broken (B), worn (W), discolored (D), chipped (C), supernumary (S)



Dental Measurements (mm)





SAMPLE COLLECTION CHECKLIST

Photographs (also refer to diagram on page 3)

- □ Capture injuries (with ruler)
- □ Teeth: Front view (with gums) and both sides
- □ Head & neck (with collar):
- □ Body & tail
- □ Reproductive Condition
  - □ Teats (female)
  - □ Testes (male)
- □ Paw pads
  - □ Front (with ruler)
  - □ Back (with ruler)
- □ Previous (old) injuries & scars
- □ Other unique markings (please specify): _____
- □ Photo of the COMPLETED capture sheet

Biological Samples for the WHL

- □ Nasal Swab (RNAlater)
- □ Soft Pallet Swab (RNAlater)
- □ Ear Tissue (100%EtOH)
- □ Whiskers
- □ Hair
- □ 5 drops of whole blood in viral transport media (VTM)
- □ SST: Total ml ____ Total # tubes ____
- □ LTT: Total ml ____ Total # tubes ____
- □ Feces
- □ Parasites (70% EtOH, please specify): _____
- □ Other (please specify): _____

Email a copy of the completed IDS Form and Capture Form within 48 hours to:
Rachel Roberts (Project and Drug Coordinator): Rachel.Roberts@wildlife.ca.gov
Dr. Deana Clifford (Project Veterinary Lead): Deana.Clifford@wildlife.ca.gov
IDS Coordinator: drug@wildlife.ca.gov

Appendix 8.

County Code Abbreviations to use for Bobcat ID

COUNTY	ABBREVIATION	COUNTY	ABBREVIATION
Alameda	ALA	Orange	ORA
Alpine	ALP	Placer	PLA
Amador	AMA	Plumas	PLU
Butte	BUT	Riverside	RIV
Calaveras	CAL	Sacramento	SAC
Colusa	COL	San Benito	SBT
Contra Costa	COC	San Bernardino	SBD
Del Norte	DEN	San Diego	SDG
El Dorado	ELD	San Francisco	SNF
Fresno	FRE	San Joaquin	SJQ
Glenn	GLE	San Luis Obispo	SLO
Humboldt	HUM	San Mateo	SAM
Imperial	IMP	Santa Barbara	SAB
Inyo	INY	Santa Clara	SCL
Kern	KER	Santa Cruz	SCR
Kings	KIN	Shasta	SHA
Lake	LAK	Sierra	SIE
Lassen	LAS	Siskiyou	SIS
Los Angeles	LAN	Solano	SOL
Madera	MAD	Sonoma	SON
Marin	MRN	Stanislaus	STA
Mariposa	MPA	Sutter	SUT
Mendocino	MEN	Tehama	TEH
Merced	MER	Trinity	TRI
Modoc	MOD	Tulare	TUL
Mono	MNO	Tuolumne	TUO
Monterey	MON	Ventura	VEN
Napa	NAP	Yolo	YOL
Nevada	NEV	Yuba	YUB

Appendix 9.

Crew/Participant Safety Meeting Participation and Waiver of Understanding

I have received, read, and understand the capture plan for the Statewide Bobcat Project. Furthermore, I have attended a safety meeting and received, understand, and will comply with safety instructions within this plan and provided by the Capture or Project Lead(s) regarding the safe handling of project animals, specific safety procedures, and other pertinent considerations for this capture.

Participant's Name	Signature

Appendix 10.

Guidance for CDFW staff required to handle bats and/or carnivores during the COVID-19 pandemic

Issue Date: April 10, 2020 (in effect immediately and until further notice)

The emergence of COVID-19, the disease caused by the SARS-CoV-2 virus, is a human health crisis of unusual proportions with the potential to directly impact California's wildlife. Experts agree that this novel coronavirus likely originated in bats and preliminary research into this virus raises concern that other mammals could be susceptible. However, additional work is needed and the potential risks SARS-CoV-2 may pose to wildlife remains largely unknown. A multi-agency, State and Federal task force has recently convened to assess these risks. Until more is known, the Department is taking a precautionary approach to working with and handling native wildlife that could be at risk of human-to-animal viral transmission (termed reverse zoonosis).

The following precautionary guidance should be implemented immediately until further notice:

1) Department staff should adhere to state, county, and local stay home orders to the maximum extent possible, consistent with guidance from the Directors Office.
2) For all work, employ the same precautions recommended to reduce person-to-person transmission to reduce the risk of human-to-animal transmission. Stay 6 feet apart from co-workers (or susceptible animals), wash hands, avoid touching your face, cover your nose and mouth.
3) Fieldwork that involves the direct handling of bats and carnivores should be postponed until further guidance is received.
    a. Public safety, animal welfare, wildlife incident responses are exempt, but responders should implement the additional precautions outlined in #4.
    b. Additional fieldwork requiring handling of bats and carnivores may be considered on a case by case basis as determined by your supervisory chain but must demonstrate need in relation to public and wildlife health considerations and implement the additional precautions outlined in #4.
4) Where handling of bats (Order Chiroptera) or carnivores (Order Carnivora) cannot be avoided, CDFW staff should:
    a. Wear gloves and an appropriate face covering (woven cotton or surgical mask, plastic face shield, cotton bandana or neck gaiter). N95 masks should be reserved for healthcare providers and first responders.
    b. Thoroughly clean any reusable supplies that contact animals with soap and water followed by disinfection whenever possible with 70% isopropyl alcohol, 10% solution of chlorine bleach or Lysol.

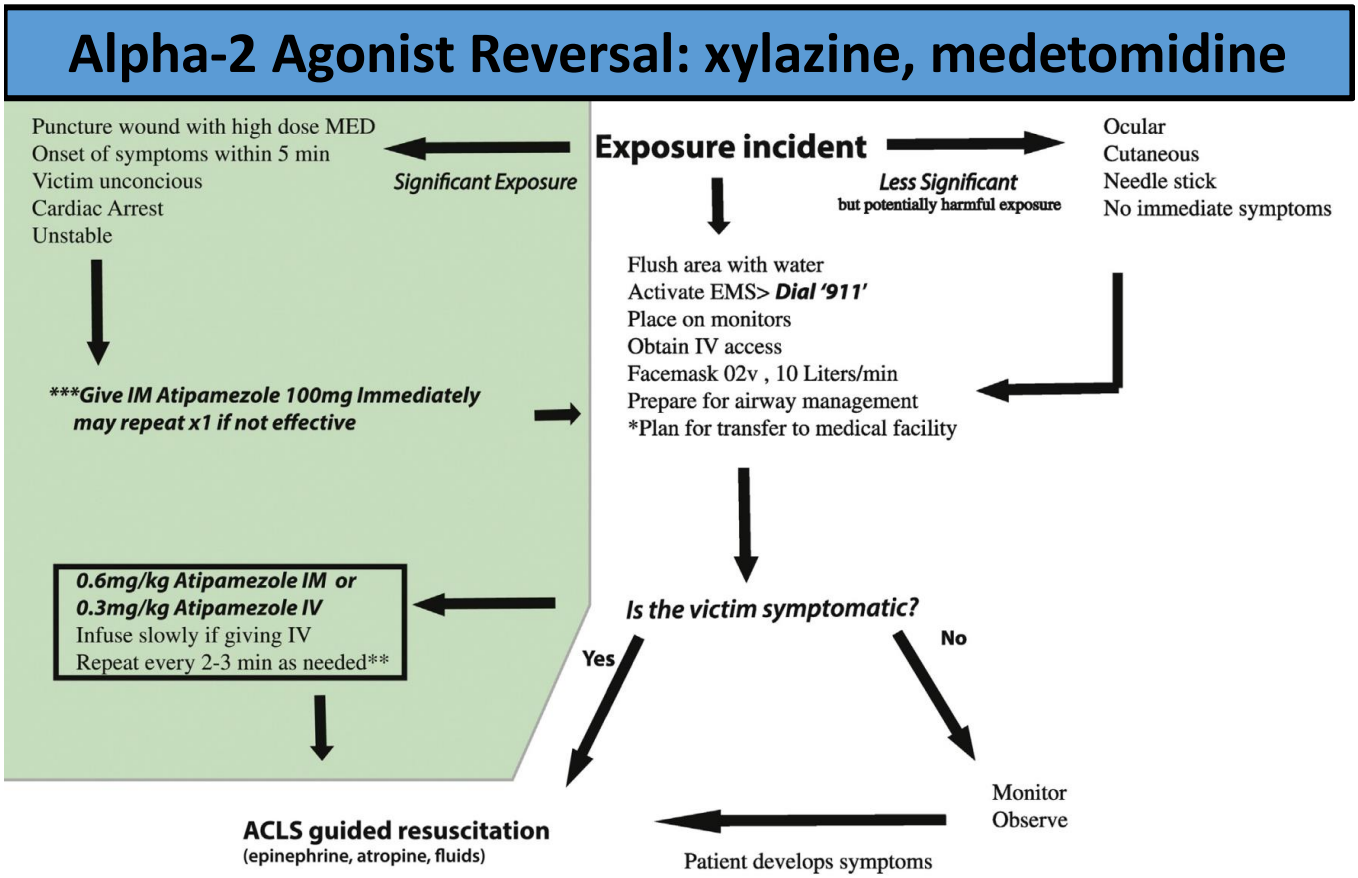
5) CDFW staff that have been in contact with a COVID-19 positive person are not permitted to handle wildlife. Staff exhibiting symptoms of COVID-19 (fever, cough, shortness of breath) should stay home and seek medical advice.

Appendix 11.

Accidental Exposure of Personnel to Chemical Immobilization Drugs (Medetomidine/Xylazine)

The Project or Capture Lead will ensure that all capture personnel are aware of the chemical immobilization drugs being used, potential risks if accidentally exposed, and emergency treatment considerations. For example, the medetomidine or xylazine dose in this plan could be lethal to a person if receiving a significant exposure. The following pages should on hand at any capture where medetomidine will be used and if an accidental exposure occurs should be brought with the victim to the nearest emergency room.

The following decision chart and subsequent recommendations are adapted from Greenberg et. al. 2018 (attached) and intended as emergency guidance for accidental exposure to alpha-2 agonists in remote field situations where rapid access to medical personnel is impossible. These recommendations should never be in lieu of professional medical care and advice, they are meant only to provide an emergency, potentially life-saving option in remote field situations (Greenberg et al. 2018).



***ACLS protocols should guide treatment**
****Bring Atipamezole and a copy of this protocol with the victim to ER. Do not exceed 100 mg/dose**
*****Atipamezole is supplied as 25 mg/ml in 10 ml vial**

***ACLS = Advanced Cardiac Life Support**

Adapted from: Greenberg et al (2018) Atipamezole as an emergency treatment for overdose from highly concentrated alpha-2 agonists used in zoo and wildlife anesthesia. *Am. J. Emer. Med.*

Outline of steps to assess exposure and determine course of action, adapted from Greenberg et al. 2018

1. **Determine whether the exposure may be significant and warrant immediate treatment:**
    a. Examples of a significant exposure:
        i. Injection of dart or syringe containing xylazine, medetomidine, or BAM into a muscle or subcutaneous space. And/Or
        ii. EXPOSURE LEADING TO SYMPTOMS WITHIN 5 MINUTES. Symptoms include:
            1. Victim unconsciousness
            2. Cardiac arrest
            3. Unstable: Shortness of breath, signs of shock (pallor, rapid weak pulse, low blood pressure)
    b. Examples of potentially less significant exposures:
        i. Exposure of xylazine, medetomidine, BAM, or NalMed-A to the eyes, nose, or mouth.
        ii. Cutaneous exposure to xylazine, medetomidine, BAM, or NalMed-A
        iii. Needle stick without injection into a muscle or subcutaneous space.
        iv. No symptoms within 5 minutes.
        v. NOTE – depending on the route of administration (intramuscular, subcutaneous, mucosal), absorption of drug and thus onset of symptoms could be delayed.
        ***Any person believed to be exposed should be monitored closely for symptoms and taken immediately to an emergency room.**
2. **For exposures leading to severe symptoms within 5 minutes:**
    a. Give 100 mg Atipamezole intramuscular (IM) immediately
    b. Flush affected area with water
    c. Call 911
    d. Place pulse oximetry monitor (over finger or ear), oxygen saturation should be 98 – 100%
    e. Give blow-by, facemask, or intranasal supplemental oxygen
    f. Prepare for airway management
    g. Plan and begin transport to emergency medical facility.
    h. IF patient remains in critical condition consider a second 100 mg Atipamezole does IM.
3. **For exposures without symptoms:**
    a. Flush affected area with water.
    b. Call 911.
    c. Place pulse oximetry monitor (over finger or ear), oxygen saturation should be 98-100%.
    d. Prepare to give blow-by, facemask, or intranasal supplemental oxygen.
    e. Prepare for airway management.
    f. Plan and begin transport to emergency medical facility.
4. **If the victim remains symptomatic or develops symptoms after 5 minutes:**
    a. Consider 0.6 mg/kg Atipamezole IM, repeat every 2-3 minutes if symptoms remain (do not exceed 100 mg/dose).
    b. Advanced Cardiac Life Support (ACLS) should guide treatment.
    c. Get victim to an Emergency Room.

Bring Atipamezole with you to the Emergency Room along with the Greenberg et al. 2018 publication and this capture plan.

Contents lists available at ScienceDirect

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Atipamezole as an emergency treatment for overdose from highly concentrated alpha-2 agonists used in zoo and wildlife anesthesia

Keywords:
Atipamezole
Dexmedetomidine
Overdose
Alpha-2 agonist
Medetomidine
Human

The availability of highly concentrated forms of common anesthetic agents has revolutionized zoo and wildlife medicine [1-3]. As an example, using highly concentrated alpha-2 agonists (α2a) such as medetomidine (MED), veterinarians are able to provide safe and effective anesthesia of a 6000 kg elephant with a single 3-ml dart delivered from distances up to 50 m from the ground or by helicopter. Using these potent agents in the field, the potential for fatal accidents in humans is concerning because there is no antidote [1-4]. With highly concentrated medetomidine (HCMED), (40 mg/ml) an accidental dose of one milliliter is potentially 200 times an intravenous dose known to cause cardiac arrest in humans [5-8]. Life-threatening accidents with veterinary α2a's have been described in the literature [2,4].

The current management of accidental overdose (OD) of α2a is primarily supportive care [9]. While not FDA approved for use in humans, atipamezole (AT) is a selective alpha-2 antagonist, which competitively inhibits alpha-2 adrenergic receptors [10]. AT is routinely used in animals anesthetized with α2a for the rapid reversal of sedation and analgesia [3]. AT has been studied in both unanesthetized and dexmedetomidine (DEX) sedated humans, and has been shown to be both safe and effective [10-11]. If a dart accident occurred with HcMED in a setting where there is no available intensive care, the results would be life-threatening. For veterinarians and institutions using these dangerous drugs, an emergency protocol using AT for resuscitation of an overdose of α2a is badly needed [2].

We performed a PubMed search from 1970 to 2017 for all information related to AT use in humans [10-15]. We then compared the experimental AT dosing information obtained in human subjects with its use in primates and other animals to construct an algorithm for emergent management of α2a OD with AT.

Determination of a potential human AT reversal dose for use in emergencies requires an estimate of how much AT would be both safe and effective using the known data from the human studies. Karhuvaara et al. studied the effect of AT in unanesthetized male volunteers at doses of up to 100 mg [10]. There were minimal side effects. Scheinin et al. studied human volunteers exposed to 2.5 mcg/kg intramuscular DEX and then given 3 different doses of IV AT, one hour later. Only the 150 mcg/kg AT (AT/DEX ratio 60:1) fully reversed the sedative and cardiovascular effects [13].

AT is routinely used at the end of a veterinary anesthetic on animals including primates, gorillas and chimpanzees, to reverse the α2a for rapid recovery [3]. In veterinary anesthesia AT is dosed on a milligram-to-milligram ratio relative to the amount of the α2a used for anesthesia. This reversal ratio is consistent in the veterinary literature, at approximately 5 times the MED dose [16-21].

The human trial data reveal that compared to animals including primates, humans require approximately 10 times *less* α2a such as DEX for deep sedation, and 10 times *more* AT for adequate reversal. It is also known that 100 mg AT is safe even in unanesthetized humans [10]. Using this information we have a devised a simple and practical algorithm for using AT in a human α2a OD emergency when other treatments are not available or are ineffective (Fig. 1).

For a significant α2a exposure where medical aid is not available, the rescuers should consider ***immediately giving 100 mg AT intramuscularly***. AT is supplied by one manufacturer in 25 mg/ml 10 ml vials, so a dose of 100 mg would be 4 ml. (Wildlife Pharmaceuticals, Inc., Windsor, CO 80550 USA) If the patient remains in critical condition after the first AT dose, the rescue team should consider a second dose. Individual doses of AT should not exceed 100 mg, due to lack of human data. If the victim is initially asymptomatic, we have devised a per-kilogram dose of AT to be used after the initial resuscitation. At this point AT can be given when the patient develops symptoms, or for continued resuscitation of the initially 100 mg IM treated victim when standard therapy fails. The rescuers should consider administering 0.3 mg/kg IV or 0.6 mg/kg IM q 3–5 min, in repeated doses, (not to exceed 100 mg/dose), if needed, titrated to clinical effect. When the patient is brought to a medical facility, a member of the veterinary team should accompany the patient, to provide essential information about the incident, and bring enough AT for potential use in the ED or ICU. A copy of the protocol in Fig. 1 would be helpful for the physicians caring for such a patient. It would also be helpful for veterinary teams working with HcMED to proactively meet with the local emergency medicine physicians or poison control center and review this protocol. We urge considering using AT a non FDA approved drug, for life threatening α2a OD in remote locations where no other treatment is available.

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Appendix 12.

California Department of Fish and Wildlife
Wildlife Investigations Laboratory (WIL)
1701 Nimbus Road, Suite D
Rancho Cordova, CA 95670
(916) 358-2790

PROCEDURE FOR SUBMITTING CARCASSES TO THE WIL

Updated May 21, 2020

1. Use adequate safety precautions when handling dead or diseased animals. Always wear gloves when handling a dead or diseased animal.

2. Record all pertinent data on the Carcass Submission Form. Record anything that may be of importance in making a diagnosis, i.e., species, sex, and age of animal(s); where the animal was found – location and county; the habitat type; date and time it was found. If the animal is dead, note when it died; if there were other animals of the same or different species sick in the same area, how they were behaving; if a flock of birds is involved, note how many birds are at risk; name, address, and phone number of the person who reported it; and if rabies is suspected, whether or not there was human exposure.

3. When submitting carcasses or tissue samples, place samples into appropriate containers, plastic whirl-pak bags, or vials. Submit whole carcasses individually wrapped inside two plastic bags and labeled the outside bag. In the event of a die-off involving birds, try to submit two or more fresh carcasses to confirm cause of die-off.

   Note: If shipping a carcass and it cannot be shipped or necropsied within 32-hours of death or discovery, please freeze the remains.

4. Place the carcass or sample container into a Styrofoam ice chest with enough ice packs, or water frozen in plastic bottles (not glass) to keep chilled during transport (it is difficult for WIL to return ice packs and ice chests). **Do not use dry ice.**

5. Seal ice chest in a sturdy cardboard box. Be sure to include the completed Wildlife Disease Incident and Specimen Submission Form.

6. Ship container to:

   Attn: Jaime Rudd
   California Department of Fish and Wildlife
   Wildlife Investigations Lab
   1701 Nimbus Road, Suite D
   Rancho Cordova CA 95670

7. Email Jaime Rudd (Jaime. Rudd@wildlife.ca.gov) prior to sending samples, to notify her of the estimated time of arrival.

Wildlife Investigations Laboratory
California Department of Fish and Wildlife
1701 Nimbus Road, Suite D
Rancho Cordova, CA 95670
Phone: 916-358-2790
Fax: 916-358-2814
E-mail: WILab@wildlife.ca.gov

Lab contact:
Jaime Rudd
Pesticide & Disease Investigations
Phone: 916-358-2790
E-mail: Jaime. Rudd@wildlife.ca.gov

Carcass Recovery Form

Observation Date (mm/dd/yyyy):

Reporter:	☐ Observer is same as reporter.
Affiliation:	**Observer:**
Address:	**Address:**
E-mail:	**E-mail:**
Phone:	**Phone:**

Location Description (please be as detailed as possible; coordinates preferred)

Specific mortality location (address, refuge unit, intersection, park, etc.):

County: **Nearest City:**

Datum: NAD 27 ☐ **NAD 83** ☐ **WGS 84*** ☐

Coordinate system: UTM Zone 10 ☐ **or Zone 11** ☐ ***OR* Geographic (Latitude & Longitude)** ☐

Coordinates:

Coordinate source:

*Google Maps/Earth use WGS 84

Carcass Information (include photos of carcass as found & surrounding area, if possible)

Species	Age (juvenile/adult)	Number

Clinical signs (any unusual behaviors or physical appearance):

Problem area description (urban, rural, agriculture, habitat type, waterbody type):

Hazards (artificial food/water, roads, power lines, power poles, wind turbines, pesticides):

Environmental factors (weather, food/water shortages, fire):

Appendix 13.

COVID-19 Prevention Plan
Statewide Bobcat Population Monitoring Project

Version 4.00
(January 2022)

Revision History Log

Previous Version #	Revision date	Author	Changes made	Reason for change	New Version #
1	12/23/20	R. Roberts	Edits throughout – information concerning vaccinations added	Senior review	2
2	02/01/21	R. Roberts	The suggested edits made throughout	Senior review	3
3	12/27/21	E. Chappell	Edits throughout	Reflect new CDFW guidelines	4

The purpose of this Standard Operating Plan (SOP) is to outline procedures and tasks to be followed during, before, and after field operations to minimize risk of COVID-19 spread by and between personnel and to describe the contingency plan should an employee become symptomatic in the field.

These guidelines apply to all Statewide Bobcat Population Monitoring Project staff, both permanent and temporary, participating in field operations. The Senior Environmental Scientist Specialist (hereafter Senior ES), as defined in Section 3, will be responsible for implementing this plan. During field operations it will be the responsibility of the Senior ES to monitor changes in State, Federal, and CDC guidelines.

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Background on Virus

Coronavirus disease (COVID-19) is an infectious disease caused by a new virus (SARS-CoV-2). The disease causes a flu-like respiratory illness with symptoms such as a cough, fever, and in more severe cases, difficulty breathing. Symptoms range from mild to severe, with some cases resulting in death. COVID-19 is thought to spread primarily through close proximity to infected individuals through respiratory droplets that contain the virus. It is believed that some people can be contagious while being asymptomatic. Symptoms may appear over a period of 2-14 days from exposure. Common symptoms of COVID-19 as defined by the CDC include fever, cough, shortness of breath, chills, repeated shaking with chills, muscle pain, headache, sore throat, and new loss of taste or smell.

As of December 2021, multiple different vaccinations for COVID-19 have been approved by the CDC for use (Pfizer-BioNTech, Moderna, and Jassen/J&J). Booster shots are recommended for all persons aged 18 or older at least 6 months after receiving the Pfizer-BioNTech or Moderna primary series or two months after receiving the primary Jassen/J&J dose (https://www.cdc.gov/vaccines/covid-19/info-by-product/index.html). At this time, the vaccines and booster shots are widely available to CDFW staff and up to two hours of Administrative Time Off can be used to receive a vaccination or booster (see HRB Memo 21-024; issued December 17, 2021). The State of California has established the My Turn website for finding and scheduling an appointment.

General Guidelines

This section outlines the basic CDC recommendations everyone should follow for protecting yourself and others. The CDC is updating their guidance regularly at https://www.cdc.gov/coronavirus/2019-ncov/index.html.

Current recommendations from CDC include:

- Get vaccinated and boosted
- Frequent handwashing or regular use of hand sanitizer that contains at least 60% alcohol
    - Proper handwashing technique is as follows:
        - Wet your hands with clean, running water (warm or cold), turn off the tap, and apply soap.
        - Lather your hands by rubbing them together with the soap. Lather the backs of your hands, between your fingers, and under your nails.
        - Scrub your hands for at least 20 seconds. Need a timer? Hum the “Happy Birthday” song from beginning to end twice.
        - Rinse your hands well under clean, running water.
        - Dry your hands using a clean towel or air dry them.
    - Proper use of hand sanitizer is as follows:
        - Apply the gel product to the palm of one hand (read the label to learn the correct amount).
        - Rub your hands together.
        - Rub the gel over all the surfaces of your hands and fingers until your hands are dry. This should take around 20 seconds.
- Avoid touching eyes, nose, and mouth with hands that have not been washed or sanitized

- Maintain a 6ft distance between yourself and others (12ft during physical activities when respiratory rate and intensity are elevated.)
- The use of cloth face coverings (See CDPH's Guidance for the Use of Face Coverings) must be worn by staff in accordance with CDPH guidance (referenced above) and the CDFW guidance while engaged in work, whether at the workplace or performing work off-site. Current face covering requirements are described in HRB Memo 21-012 and vary depending on your vaccination status or circumstance. Masks are not required for employees who self-attest that they are fully vaccinated, except in specified settings (e.g., when using public transit). For employees who are not vaccinated or decline to state their vaccination status, masks are required when:
    - In all indoor settings, except when alone in a room or while eating or drinking (must maintain at least 6ft of physical distancing from others).
    - When in or on vehicles, boats, or heavy equipment simultaneously occupied by other people, regardless of their vaccination status.
    - In outdoor work settings when a minimum of 6ft of physical distancing from the public or other employees cannot be maintained at all times.
    - Unless specifically exempted by other CDPH guidance.
    - **Between December 15, 2021 and January 15, 2022, CDPH is requiring that masks must be worn in all indoor public settings, irrespective of vaccine status.**

  Face coverings should be changed mid-day or when they become moist or soiled and all used face coverings washed at the end of each day. This is consistent with the state of California's Resilience Roadmap Stage 2 COVID-19 Industry Guidance: Life Sciences. Cloth face coverings should:
    - Fit snugly but comfortably against the side of the face
    - Be secured with ties or ear loops
    - Include multiple layers of fabric
    - Allow for breathing without restriction
    - Be able to be laundered and machine dried without damage or change to shape
    - Please note that wearing a mask may not be used as a substitute for physical distancing and is only an additional precaution.
- Cover coughs and sneezes with the bend of your elbow or a tissue, immediately dispose of tissue, and clean hands.
- Routine disinfection of high-touch and shared surfaces (Disinfection Guidelines can be found in Appendix B and C).

The California Department of Fish and Wildlife (CDFW) also has recommendations that all staff will follow if conducting field work (https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=178424&inline). Defensive measures for infection control and protection include:

- Implement physical distancing.
- Use handwashing with soap and water, or hand sanitizer where available.
- At the employee's discretion, and consistent with State and local laws and regulations, use Personal Protective Equipment (PPE) such as gloves and masks.
- Minimize long distance travel and stops outside your home community.

- Fuel up only in your home community where possible. Use gloves or wash hands when touching gas pumps and other shared surfaces.
- Travel with your own food/drinks to avoid additional personal and community contact at restaurants/convenience stores.
- Minimize stops/contact with the community/people in general.
- Avoid touching shared objects (clipboards, pens, etc.)
- Disinfect any shared surfaces before and after your field visit (phones, touch screens, etc.) as resources allow.
- Wipe down pooled vehicle and high touch surfaces before and after use as resources allow (see Appendix C).
- Allow only one staff per vehicle, unless otherwise approved.
- Avoid sharing vehicles between different field crews to the greatest extent possible.

In July 2021, the California Department of Human Resources (CalHR) mandated vaccine verification of all State employees and regular COVID-19 testing for all unvaccinated employees working on site, which includes a work site or facility, working in the field, or having contact with the public. All employees who are unvaccinated or decline to disclose or attest their vaccination status are required to test during the week unless they are on fulltime telework.

The ways in which our project will abide by these recommendations are described in the following Sections.

Project Description and Personnel Roles

Recent legislation (AB 1254, effective January 1, 2020), Fish and Game Code (FGC) Section 4158, and an associated funding appropriation has tasked CDFW with increasing understanding of bobcats (*Lynx rufus*) for improved management and conservation. The primary deliverables are deriving a statewide population estimate for bobcats and developing a statewide management plan for bobcat by 2025. More specifically, the legislation specifies that the plan shall use credible science and utilize an ecosystem-based approach to achieve the following goals (FGC 4158):

1) A current statewide bobcat population estimate based on the best available science.
2) An assessment of the overall health of the statewide bobcat population (e.g., population trend, disease, toxicant exposure, and genetics).
3) A comprehensive strategy to manage bobcat populations and their habitat throughout the state, including, but not limited to, an assessment of the effects of climate change, such as from drought and wildfires; toxicants; and human development on the state's bobcats, the bobcats' prey, and the bobcats' habitats. The comprehensive strategy shall utilize the principles of adaptive management and incorporate recommendations for monitoring.
4) An investigation of efficacious nonlethal solutions to prevent bobcat predation on livestock, primarily chickens or other domestic animals that the Department of Food and Agriculture deems needing widespread protections from bobcats.
5) Recommendations for regulatory or statutory changes necessary to implement the bobcat management plan.

The goals laid out in FGC 4158 can be achieved based on three core sources of survey data; 1) fecal DNA surveys; 2) remote camera stations; and 3) GPS-collar telemetry. We will use the data gathered through

these three field methods to estimate total population size (Goal 1), better understand population health (Goal 2), to investigate how bobcat density is associated with habitat conditions and stressors (Goal 3) and how to mitigate for or prevent human wildlife conflict (Goal 4). This information can then guide development of the bobcat management plan (Goal 5).

The Senior ES, Rachel Roberts, is responsible for field work planning and holds authority to make final decisions about the crew's work throughout the project. Regional supervisors are responsible for the direct supervision and daily oversight of the crew members completing the field work to implement the Program. The Senior ES will coordinate with the regional supervisors during Program implementation to ensure COVID-19 safety measures are being followed. The Senior ES will notify the Bobcat Project Manager (Wildlife Diversity Program Environmental Program Manager [EPM]) about any problematic work issues or safety concerns and together they will decide how to move forward. The Senior ES will then share this decision with the regional supervisors and crews. The Senior ES will be responsible for implementing this plan, communicating with all others involved in the project, making updates to this plan, and implementing updates.

Before Beginning Fieldwork: Symptom Screening

Prior to beginning the project and each day of field work, staff must evaluate their health and screen themselves for symptoms of COVID-19 using this CDC-provided Symptom Screener. This is consistent with California's Resilience Roadmap Stage 2 COVID-19 Industry Guidance: Life Sciences.
In addition, employees are encouraged to utilize the following self-screening steps taken from the NPS's *Self-Screening Guidance to Minimize COVID-19 Infection for Employees Entering the Workplace* (Appendix A):

- **Have I had any recent known potential exposure (household contact or close contact within 6 feet) to anyone with COVID-19 infection?** If your answer is yes you should stay home until 14 days after the last exposure, consistently maintain social distance (at least 6 feet) from others, and self-monitor for symptoms (fever, cough, or difficulty breathing), including taking your temperature twice daily. Discuss telework and/or leave options with your supervisor while in quarantine.

- **Have I had fever, cough, or shortness of breath within the last 72 hours including today?** [Note: Check for fever before entering the workplace. A fever is a temperature greater than 100.4˚F]. If you answer, "yes", do not report to the workplace. Contact your supervisor for work and leave instruction. Follow up with your healthcare provider as needed.

- **Did I develop symptoms during the day while working?** If you develop symptoms during the workday, go home immediately. Notify your supervisor, isolate yourself, and follow up with your healthcare provider as needed.

Additionally, individuals may want to consider:

- Am I member of a population that is at higher risk for the illness to become severe? (CDC 4)

- Do I live with or care for someone who is at high risk for severe illness?

Based on the answers to these questions, individuals should follow the appropriates guidelines as laid out

by the CDC and local health departments. After complying with the appropriate CDC guidelines, staff may reassess their fitness to return to work.

Individuals should be aware that any supervisors they notify of their status will take great care to protect their privacy and that they will not face any repercussions for their decision to continue teleworking regardless of their answers to the questions above. This section represents the most important precaution we can take. **The best way to limit exposure to the virus is to isolate when you are feeling sick.**

Planning Field Work

Before beginning field work, the Senior ES and EPM must agree to conduct field work based on considerations from COVID-19, in coordination with the regional supervisors. They should consider the benefits of completing field work against risks to field crew members and community members they must come into contact with. The following guidelines will be used when deciding whether to begin field operations:

Field Work Checklist:

- The field work is necessary and critical to support the project's mission and goals
- The field work cannot be delayed, and protocols cannot be altered to avoid field work
    - Field work tasks are time-sensitive
    - Data cannot be collected remotely
- Field sites are accessible and safe, and will remain so for the duration of the planned field work
    - Existing closures do not impede access to field sites or emergency/contingency resources, and further closures are not planned or likely
    - Current federal, state, and local regulations allow field operations to take place, and regulations are unlikely to change during planned field work
- Sufficient planning and preparation have been done to ensure adequate safety of all field staff, their households, and local communities
    - Field protocol has been revised to reflect risks from COVID-19, and crew members have been trained in new protocols
    - Field itinerary and overnight arrangements minimize field staff exposure to each other, landowners, and local communities
    - Appropriate COVID-19-specific communication measures and emergency evacuation plans have been put in place
    - Appropriate additional safety equipment, including handwashing supplies, hand sanitizers, gloves, masks, etc. have been supplied in appropriate quantities to field staff
- There are an adequate number of field staff, vehicles, and equipment to safely and effectively carry out field protocols in accordance with COVID-19 safety and testing protocols.
- Prior to the start of field work, all employees (Senior ES and crew members) will complete a temperature and/or symptom screening. Employees who are sick or exhibiting symptoms of COVID-19 will be encouraged to stay home.

- The Senior ES, in consultation with the regional supervisor, will check in with the crew daily to ensure compliance with this plan and to document and correct deficiencies. This is consistent with the state of California's Resilience Roadmap Stage 2 COVID-19 Industry Guidance: Life Sciences.

Working at the CDFW Office

In addition to following the CPP and the adopted COVID-19 Worksite Prevention Plan for the specific worksite being accessed, follow these additional guidelines when entering the CDFW office to retrieve/store equipment:

- Where applicable, staff must secure advance approval from their supervisor before physically visiting a CDFW facility to help minimize overlap with staff from other programs and to minimize numbers of CDFW staff present at the same location at any time.

- All staff must sign in at the front desk of the CDFW office. If you have a badge entry point that is not at the front desk you still need to go to the front desk and sign in so that your presence is documented.

- Limit the number of staff members entering the CDFW office to retrieve equipment and schedule visits early in the morning when few employees are present.

- Minimize the length of time present at a CDFW facility and touch only what is necessary and access the equipment storage area from a direct entrance, if possible, to avoid walking through the entire building.

- Keep items isolated. When packing for the trip and then unpacking following the trip, retrieve/store the equipment from a single area- the storage room.

- Follow the disinfection guidelines in Appendix B and C.

COVID-19 Illness Reporting

- Use the existing Department process and flowchart for managing positive COVID-19 cases reported by staff.
    - Guidance Steps and Flow Chart for CDFW Supervisors and Managers when an Employee Tests Positive for COVID-19
- Employees who had potential COVID-19 exposure in our workplace will be offered COVID-19 testing at no cost during working hours. If staff are interested in testing for COVID-19 as a result of a Close Contact Letter, staff can receive COVID-19 testing through state run testing sites such as Verily or Optum Serve or via their personal health care provider. To obtain testing through Verily or Optum, staff must locate a testing site and follow the location specific directions for setting up an appointment. If staff test with their personal health care provider, CDFW will reimburse any cost incurred by them through the TEC Process. During the TEC Process, staff must submit their receipt to their supervisor in order to receive reimbursement.

Testing is completed during work time and staff will code their timesheet using AT-COV19. Indicate "test" in the comments.

Travel

Vehicle Travel

Vehicle travel is likely the area with the fewest options to maintain an appropriate distance from coworkers. Consequently, crew members will follow masking requirements and maximize ventilation. Supervisors should minimize the number of staff and time spent within the vehicle, including having staff drive separate vehicles to field site, to the maximum extent feasible. To the extent feasible, attempt to work in smaller groups and maintain those same grouping whenever possible. Each vehicle will be equipped with PPE (face masks and gloves), hand sanitizer, multi-surface disinfectant spray, hand soap, paper towels, and a microfiber cloth.

Precautions will be taken to minimize the risk of transmission by following CDFW's recommendations for vehicle cleaning (Appendix C) and the general CDC guidelines in section 2 of this SOP.

Do not use bleach products while cleaning vehicles as they will discolor the upholstery and may damage plastic components. Instead use multi-surface disinfectant spray. Do not spray cleaning products directly onto electronic components (radio), first spray a rag, then wipe down the surface. For vehicles with touchscreens, additional steps are required to avoid damaging the screen. First, turn off the vehicle so that the screen is powered off. With a microfiber cloth, gently clean the screen with a cleaning solution designed for this purpose.

Traveling in a Vehicle

- While travelling, crew members will each have a personal container of hand sanitizer, follow standard sanitation guidelines, and regularly disinfect the vehicle using the cleaning checklist (Appendix C).
- Fuel up within community from which originating and re-fuel upon return to that location. This measure is necessary to help prevent encounters with those in communities with higher incidents of COVID-19 or to prevent you from spreading the virus to rural areas that have fewer cases.
- Use gloves when touching gas pumps and other shared surfaces.
- Set ventilation on the non-recirculated mode, allowing for fresh air to circulate through the vehicle.
- If a stop is required during vehicle travel, crew members should refrain from touching any unnecessary objects outside of the vehicle and sanitize their hands and footwear prior to reentering the vehicle. This is in addition to washing your hands after using the restroom.

Post Vehicle Travel

Once vehicle travel has been completed for the day, frequently touched surfaces (Appendix C) should be sanitized. For multi-day trips, this sanitation process should be repeated upon return to the office.

What To Do if a Laboratory-Confirmed COVID-19 Case Has Been in a Vehicle.

If a person with a laboratory confirmed case of COVID-19 has been in a work vehicle, a set of guidelines must be followed before that vehicle is safe for travel. These guidelines are as follows:

- Inform the EPM and/or regional supervisor that the vehicle is not safe for use to ensure it is not used by another staff member.
- Wait 24 hours since the person with the confirmed case was present in the car before proceeding with cleaning and disinfection.
- Wear disposable gloves when cleaning and disinfecting surfaces. Gloves should be discarded after each cleaning. Consult the manufacturer's instructions for cleaning and disinfection products used. Clean hands immediately after gloves are removed.
- If surfaces are dirty, they should be cleaned using a detergent or soap and water prior to disinfection.
- Follow normal CDC cleaning recommendations as described in Appendix B

Foot Travel

While travelling on foot to and from field sites, a number of precautions should be taken to minimize the chance of virus transmission. As with vehicle travel, attempt to work in smaller groups and maintain those same groupings whenever possible. As the frequency and intensity of respiration accelerates with increased physical activity, respiratory droplets are likely to spread farther. As such, it is vital to maintain an appropriate distance from other crew members. During strenuous physical activity, crew members should maintain a distance of 12 feet between one another and avoid hiking directly behind anyone.

Conducting Field Method Testing

Field crew members should take appropriate precautions to minimize potential contacts with the virus while maintaining crew and personal safety, as well as fulfilling operational objectives. Along with following the general CDC recommendations outlined in Section 2 of this SOP other strategies may include:

- If required, staff must complete weekly COVID-19 testing during the week field work is scheduled.
- As required, staff will wear face masks and gloves, and to change face masks when they become moist or soiled.
- If gloves are removed at any point throughout the day, staff will periodically use hand sanitizer or wash hands with soap and water, which will be provided to them at the start of the project.
- Avoid operations that require staff to be in close proximity to each other or to share gear.
- When possible, maintain a consistent crew to minimize new exposures. Minimize the risk of transmission to landowners and local communities by avoiding inclusion of volunteers or other rotating staffing sources.
- Establish standard distancing cues, verbal reminders, or periodic check-ins within the crew to promote consistent distancing.
- For protocols that involve "partnered" tasks (i.e., observer and data recorder), assign permanent partners to decrease multi-person exposures.
- Sort all tasks and equipment prior to going to the field.

- If an assisting crew member's presence is required at a specific site, the requesting crew member should remove themselves and all contaminated gear to a 6ft distance before the helper arrives.
- To minimize the risk of cross-contaminating gear, whenever possible assign gear to specific crew members for the duration of the project.
- Isolate crew gear when not in use to avoid contamination of communal surfaces (truck tailgates, tables and chairs, etc.). Crew gear should remain in the designated crew member's pack when not in use.
- When gear sharing is necessary, gear should be sanitized between users (See Disinfection Guidelines in Appendix B). Additionally, crew members will wear clean gloves while handing shared gear.
- At the end of each day, staff will wash their hands following CDC guidelines (See Section 1 General Guidelines)

Handling Carnivores

Research has shown that felids in close contact with infected people are susceptible to infection with the SARS-CoV-2 virus that causes COVID-19. All staff handling bobcats as part of this project will adhere to current Guidance for CDFW staff required to handle bats and/or carnivores, issued April 10, 2020 or any subsequent COVID-19 guidance for the handling of carnivores/mammals issued by the Department. Consistent with this guidance, all staff must wear gloves and appropriate face coverings when assisting with and/or handling bobcats and thoroughly clean any reusable supplies that contact animals in between each capture event. CDFW staff that have been in close contact with a COVID-19 positive person are not permitted to handle wildlife within the 10-day self-quarantine period, from the day of exposure, consistent with current CDFW COVID-19 guidance.

Interaction with Landowners and Local Communities

Interaction with landowners and local communities will be minimized to the extent feasible. If needed, the crew will:

- Maintain physical distance of 6 feet or greater between crew members and the public
- Wear face coverings when interacting with the public
- Exhibit respectful behavior towards the public

Managing Risk in the Field

The Senior ES and applicable regional supervisor will provide clear logistics and communication to ensure safe working conditions for the crew, but the crew will be responsible for managing real-time risk and making decisions in the field regarding novel and unexpected situations. We anticipate that these situations will be limited given that all field work will be done in areas with limited contact with the public.

Field Work Training

As noted above, specific survey protocols are being used for this project. Training at the start of the project is needed to ensure that all regional bobcat teams can successfully and consistently implement these protocols, given the specific project needs, timeline, and variable site conditions statewide. The Senior ES and WLB ES will provide on-site training on establishing and conducting the scat transects and installing and testing the camera arrays as each regional bobcat team sets-up their first survey site. Training may be

delayed until the second survey site, if needed to ensure it can be done safely consistent with any regional/county COVID-19 restrictions.
The Senior ES and regional EPM must agree to conduct the training based on considerations from COVID-19, in coordination with the regional supervisors. Prior to conducting the training, the Senior ES will coordinate closely with the regional supervisor and regional bobcat ES on logistics to minimize COVID-19 risks associated with travel to the site, overnight stays, and conducting field methods. All work will be conducted consistent with this plan. Participation in the training event will be limited to the respective region's bobcat staff (1 ES and 2 sci aides), the Senior ES and/or WLB ES, and any regional staff, as determined by the regional supervisor, needed for site support. No more than 8 staff will participate in each training event. Training will occur over a 2 to 5-day period depending on COVID-19 considerations, site logistics, and regional bobcat team experience. To the greatest extent feasible, WLB staff will minimize all non-field work related, in-person interactions with regional staff while on site. Additional site visits for training purposes may be necessary over the course of the project and will be coordinated in advance with the EPM and regional supervisor.

Communication

Communication is and will always be an important component of field safety. During a pandemic and in the absence of such an event, communication between field crews and office contacts is vital. During the COVID-19 pandemic and any others that may occur in the future, the crew lead (regional bobcat ES) will text their regional supervisor and the Senior ES at end of each day to let them know that everyone is safe. Additionally, on a daily basis, crew members should check in with one another about their physical and mental well-being. If crew members identify any potential symptoms of COVID-19 or other illness, the guidelines covered in Section 12 (If someone becomes symptomatic) should be followed. In addition, the regional supervisor should immediately be notified of the situation. The Senior ES will be informing the crew of any important updates regarding COVID-19, whether it be new CDC guidelines or updates on current hot spots.

With the increase in discussion about crew member health, it is important to protect privacy whenever possible. As outlined in the safeguarding privacy during COVID-19 response (Appendix D):

> "It is important that we remember to protect the privacy of our employees, contractors, and other affiliated personnel during our COVID-19 response. Supervisors and employees are reminded to maintain the confidentiality and privacy of employee information while discussing, documenting, and sharing information for COVID-19 preparation, coordination and response activities."

Whenever practical, attempt to follow the guidelines in Appendix D. As crews are small and working in close contact in remote settings, it may not be feasible or safe to abide by all guidelines. At a minimum, avoid discussing details about anyone's medical condition with people outside of supervisors, necessary crew members, and medical personnel. In order to remain safe, we need to be able to discuss our current physical health; however, only those outlined above need to be a part of those discussions.

Overnight Stays

Due to the nature of the project work, overnight stays are integral to meeting field-based sampling objectives. The crew members may need to stay in various locations depending on the study area. The bobcat

project has been designed to achieve the goals set forth by the legislature, including a statewide bobcat population estimate. In order to attain the necessary data, project study areas have been established across the state, some of which are in remote locations with and without housing facilities. The need to collect this data to achieve the legislatively mandated goals dictate the need to stay overnight in some cases. Overnight stays will facilitate the need for continuous field work methods for the project such as establishing camera arrays across the 40 km^2, trapping and collaring bobcats, and collecting bobcat scat samples.

Each person will be equipped with all essentials needed for their trip or camping, which minimizes the necessity of interacting directly with the local community. Staff will bring their own food to each field trip or camping trip so that they will not need to visit any local grocery stores or restaurants and so that they can prepare meals in their respective cook wear.

While occupying hotels or provided on-site housing, staff should continue to observe CDC guidelines and perform regular disinfection of high traffic surfaces (Appendix B). When utilizing on-site housing, staff will be assigned and use separate kitchen and bathroom facilities, when feasible. For shared kitchens, staff will create schedules to avoid overlap and disinfect all surfaces touched when done. When establishing camp sites, staff must use separate tents at least 6 feet, but preferably 12 or more feet away from each other. If separate cooking sites are not feasible, staff will create a schedule for use of the shared site and disinfect surfaces between use. During overnight stays, staff shall follow the COVID-19 safety guidelines at all times, including off-hours.

If Someone Becomes Symptomatic

If a crew member becomes symptomatic, the crew's first priority should be to get the sick person to safety and protect other individuals from infection. Following evacuation/isolation, the Regional Manager or Branch Chief of the COVID positive staff person shall be notified by the crew lead and they will follow CDFW protocols for reporting internally and to the appropriate health departments.

- A symptomatic individual should be immediately isolated from the rest of the crew. CDC guidelines should be followed to prevent the spread of germs (https://www.cdc.gov/coronavirus/2019-ncov/if-you-are-sick/care-for-someone.html).
    - Maintain 6-ft distance as much as possible.
    - All crew should be vigilant in wearing face masks.
    - All crew should be vigilant in hand-washing procedures when near the infected individual.
    - Evacuation procedure should begin as soon as symptoms are detected.

Emergency Evacuation

- Emergency protocol should be considered for:
    - Trouble breathing or difficulty catching breath when talking
    - Persistent pain or pressure in the chest
    - Altered mental status
    - Bluish lips or face
    - Any other concerning signs of decreasing health. This list is not all inclusive and medical providers should be consulted if there is any concern with a sick individual.

Non-Emergency Evacuation

- If safe and possible, have the infected individual self-evacuate.
    - Crews should avoid contact with the symptomatic individual as much as possible.
    - Symptoms can be self-treated using fluids or over-the-counter medications.
    - Crew lead should continuously check-in to verify that the individual is capable to self-evacuate and the condition is not worsening.
- If symptoms are moderate or other circumstances cause a need for increased assistance, the crew lead should assist the infected individual with evacuation.
    - The crew lead should continuously check-in to verify that the individual is capable, and the condition is not worsening.
- If a staff member becomes injured in the field and requires physical assistance, a fellow staff member will help them. Both staff members will be wearing gloves and face masks.

Returning from the Field After Crew Exposure to Symptomatic Crew Member

When returning from the field after a crew member becomes symptomatic, all crew members should practice self-isolation and self-monitoring for 14 days to reduce the spread of the virus.

Current guidance is the employee who tests positive for COVID-19 should stay away from the worksite until at least 1 day (24 hours) has passed since recovery, defined as resolution of fever without the use of fever-reducing medications and improvement in symptoms (e.g., cough, shortness of breath); and at least 10 days have passed since symptoms first appeared. This means an employee cannot return to work at a worksite, in the field, or have in-person contact with others in the course of Department business until after the criteria have been met.

Return from Field

Returning to the CDFW office

Interaction with office staff should be kept to a minimum and consistent with worksite's Covid-19 Worksite Prevention Plan.

- Return from the field early in the morning (M – F 6:00 – 8:00)
- Access equipment storage area from a direct entrance, if possible, to avoid walking through the entire building.
- Make sure to inform your supervisor so they know when you will be in the workplace.

Gear

Field gear should be kept in the vehicle until CDC-recommended decontamination can occur. Wear gloves and treat all gear as contaminated until decontaminated. Perform decontamination outside of the office to minimize contact surfaces. If there is a suspected COVID-19 case, leave gear in vehicle for 24 hours before proceeding with decontamination procedures (Appendix B).

Appendices

Appendix A: Self-Screening Guidance to Minimize COVID-19 Infection for Employees Entering the Workplace

Self-Screening Guidance to Minimize COVID-19 Infection for Employees Entering the Workplace

Protecting ourselves and our colleagues throughout this pandemic of COVID-19 infection is of utmost importance. Each day, all employees reporting to work should follow the Daily Self-Screening Steps.

Daily Self-Screening Steps:

1. **Have I had any recent known potential exposure (household contact or close contact within 6 feet) to anyone with COVID-19 infection?**

If your answer is "yes" **and** you are a critical infrastructure worker or mission essential employee reporting to work, wear a cloth face covering or surgical mask at all times while in the workplace for 14 days after your last known potential exposure, and self-monitor for symptoms (fever, cough, or difficulty breathing), including taking your temperature twice daily.

If your answer is yes and you are *not* mission critical or essential, you should stay home until 14 days after the last exposure, maintain social distance (at least 6 feet) from others at all times, and self-monitor for symptoms (fever, cough, or difficulty breathing), including taking your temperature twice daily.. Discuss telework and/or leave options with your supervisor while in quarantine.

2. **Have I had fever, cough, or shortness of breath within the last 72 hours including today? [Note: Check for fever before entering the workplace. A fever is a temperature greater than 100.4˚F].**

If you answer, "yes", do not report to the workplace. Contact your supervisor for work and leave instruction. Follow up with your healthcare provider as needed.

3. **Did I develop symptoms during the day while working?**

If you develop symptoms during the workday, go home immediately. Notify your supervisor, isolate yourself, and follow up with your healthcare provider as needed.

Remember: Employees and supervisors must practice social distancing and sneeze/cough etiquette, maintain hand hygiene, and increase cleaning and disinfection of work areas to prevent COVID-19 transmission. Where possible, increase air exchanges in rooms.

All employees who cannot maintain consistent social distancing (greater than 6 feet) within the workplace, should wear a face covering.

If you develop symptoms consistent with COVID-19 infection, please see and follow the appropriate CDC guidance for caring for yourself or family member and the Guidance for safely returning to work.

May 20, 2020

Appendix B: CDC's How to Clean and Disinfect

Taken from https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/cleaning-disinfection.html

Hard (Non-porous) Surfaces

Wear disposable gloves when cleaning and disinfecting surfaces. Gloves should be discarded after each cleaning. If reusable gloves are used, those gloves should be dedicated for cleaning and disinfection of surfaces for COVID-19 and should not be used for other purposes. Consult the manufacturer's instructions for cleaning and disinfection products used. Clean hands immediately after gloves are removed.

If surfaces are dirty, they should be cleaned using a detergent or soap and water prior to disinfection.

For disinfection, most common EPA-registered household disinfectants should be effective.

A list of products that are EPA-approved for use against the virus that causes COVID-19 is available at https://www.epa.gov/sites/production/files/2020-03/documents/sars-cov-2-list_03-03-2020.pdf. Follow manufacturer's instructions for all cleaning and disinfection products for (concentration, application method and contact time, etc.).

Additionally, diluted household bleach solutions (at least 1000ppm sodium hypochlorite) can be used if appropriate for the surface. Follow manufacturer's instructions for application, ensuring a contact time of at least 1 minute, and allowing proper ventilation during and after application. Check to ensure the product is not past its expiration date. Never mix household bleach with ammonia or any other cleanser. Unexpired household bleach will be effective against coronaviruses when properly diluted.

Prepare a bleach solution by mixing:

5 tablespoons (1/3rd cup) bleach per gallon of water or

4 teaspoons bleach per quart of water

Soft (Porous) Surfaces

For soft (porous) surfaces such as carpeted floor, rugs, and drapes, remove visible contamination if present and clean with appropriate cleaners indicated for use on these surfaces. After cleaning:

Launder items as appropriate in accordance with the manufacturer's instructions. If possible, launder items using the warmest appropriate water setting for the items and dry items completely.

Otherwise, use products that are EPA-approved for use against the virus that causes COVID-19 and that are suitable for porous surfaces.

Electronics

For electronics such as cell phones, tablets, touch screens, remote controls, and keyboards, remove visible contamination if present.

Follow the manufacturer's instructions for all cleaning and disinfection products.

Consider use of wipeable covers for electronics.

If no manufacturer guidance is available, consider the use of alcohol-based wipes or sprays containing at least 70% alcohol to disinfect touch screens. Dry surfaces thoroughly to avoid pooling of liquids.

Linens, clothing, and other items that go in the laundry

Wear disposable gloves when handling dirty laundry from an ill person and then discard after each use. If using reusable gloves, those gloves should be dedicated for cleaning and disinfection of surfaces for COVID-19 and should not be used for other household purposes. Clean hands immediately after gloves are removed.

If no gloves are used when handling dirty laundry, be sure to wash hands afterwards.

If possible, do not shake dirty laundry. This will minimize the possibility of dispersing virus through the air.

Launder items as appropriate in accordance with the manufacturer's instructions. If possible, launder items using the warmest appropriate water setting for the items and dry items completely. Dirty laundry from an ill person can be washed with other people's items.

Clean and disinfect clothes hampers according to guidance above for surfaces. If possible, consider placing a bag liner that is either disposable (can be thrown away) or can be laundered.

Appendix C: CDFW's Pooled Vehicle Cleaning Checklist for Common Touch Point Surfaces

Pooled Vehicle Cleaning Checklist for Common Touch Point Surfaces

Wipe down the following surfaces with disinfectant wipes or a cloth and spray:

- ☐ Key Set
- ☐ Inside and Outside of Door Handles
- ☐ Steering Wheel and Horn Pad
- ☐ Engine Start/Stop Button
- ☐ Transmission Shift Lever
- ☐ Parking Brake Release Handle or Switch
- ☐ Heating/Ventilation/Air Conditioning Controls
- ☐ Power Door Lock Switches/Controls
- ☐ Power Mirror Switches/Controls
- ☐ Power Window Switches/Controls
- ☐ Manual Window Crank Handles
- ☐ Turn Signal Lever and Wiper Blade Switch/Controls
- ☐ Headlight Switch/Push Button
- ☐ Seat Belts and Buckles
- ☐ Seat Adjustment Levers/Handles/Controls
- ☐ Overhead Passenger Grab Handles
- ☐ Rearview Mirror
- ☐ Sun Visors
- ☐ Trunk Release Lever/Handle/Push Button Controls
- ☐ Fuel Door Release Lever/Handle/Push Button
- ☐ Electric Vehicle Charging Station Plug-In Cord Hand Grip
- ☐ Other Contact Surfaces – Depending on Make and Model

Appendix D: Safeguarding Privacy

SAFEGUARDING PRIVACY DURING COVID-19 RESPONSE

It is important that we remember to protect the privacy of our employees, contractors, and other affiliated personnel during our COVID-19 response. Supervisors and employees are reminded to maintain the confidentiality and privacy of employee information while discussing, documenting and sharing information for COVID-19 preparation, coordination and response activities.

- An infected employee's privacy should be protected to the greatest extent possible; therefore, his or her identity should not be disclosed.
- Share only that information determined to be necessary to protect the health of the employees in the workplace but maintain confidentiality as required by the Americans with Disabilities Act, Privacy Act, and other Federal laws. Consult with the Office of Solicitor to determine releasable information.
- Managers should treat this as they would any other illness in the workplace and continue to protect employee privacy interests while providing sufficient information to all employees related to protecting themselves against the spread of illness.
- If social distancing, information sharing, or other precautions to assist employees in recognizing symptoms or reducing the spread of the illness can be taken without disclosing information related to a specific employee, that is the preferred approach.
- Managers should address privacy concerns with employees and refer employees who may be exposed to COVID-19 to CDC guidance for how to conduct a risk assessment of their potential exposure at https://www.cdc.gov/coronavirus/2019-ncov/hcp/assess-manage-risk.html.

Communications

- Protect sensitive information in audible or email communications. Information about individuals' health condition should only be shared with authorized officials to protect the health and safety of employees or with explicit consent of the individual.
- Use caution when widely disseminating communications or using Reply All or Forwarding functions. Identifying specific individuals should be limited to authorized officials to perform duties or to protect those who may have had direct contact or have a higher risk of exposure.
- Do not use the Microsoft Teams chat feature to identify individuals with confirmed or presumptive cases of COVID-19 or include sensitive PII.
- Communications and documentation that identify individuals or contain sensitive information must be encrypted and secured with access restrictions when stored electronically or in paper format, whether at a duty station or during telework.
- Use Controlled Unclassified Information (CUI) markings on sensitive communications and documents.

Emergency Contact Lists

- Supervisors and emergency response personnel may collect personal contact information for their teams when necessary for official purposes but must protect and limit access to sensitive information.
- Use official contact information to the extent practicable to limit the collection of personal information.