UC Santa Cruz Institutional Animal Care and Use Committee (UCSC IACUC)
Phone: (831) 459-3150 | Email: iacuc@ucsc.edu | Website: iacuc.ucsc.edu
Address: 1156 High Street, Mailstop: Office of Research, Santa Cruz, CA 95064

Proposal Code: [redacted]
Submission Date: Nov. 29, 2018
Resolution Date: ADMIN USE ONLY

Incident Notification

(All protocol and non-protocol related incidents involving animals)

Please fill out this form completely and send to iacuc@ucsc.edu. Enter N/A where not applicable. Questions and feedback regarding this form should be directed to iacuc@ucsc.edu.

Animal welfare obligation: All individuals participating in UCSC animal care and use activities are **obligated** to assure animal well-being for all animals engaged in such activities. If an incident occurs, then the individual having knowledge of the incident is **obligated** to report or assure a report of the incident has been reported to the UCSC IACUC.

Date: 11/29/2018	Reporting individual: [redacted]
Email address: [redacted]@ucsc.edu	Phone number: (831) [redacted]
Protocol title: [redacted]	
Principal investigator: [redacted]	
Department: Environmental Studies	
Protocol code: [redacted]	
Were NIH/PHS grant funds used to purchase, experiment, or pay per diem on these animals? No	If yes (NIH/PHS grant funds were used), then provide the grant number and grant title: N/A
Date and time incident was discovered: 11/17/2018	
Location of animals (bldg., rooms, rack, etc.): [redacted] management zone, [redacted] County, [redacted] California	
Incident narrative—briefly describe the incident involving animals: During Nov 14-17, 2018 we had a [redacted] capture session with hounds in [redacted] County, [redacted] management zone. After tracking a male and female [redacted] in the [redacted] area, on the morning of Nov 17 the houndsman ([redacted]) located fresh tracks of the female on a ridgeline SW of [redacted]. The hound dogs were released on the track and within approximately half hour they had the female [redacted] in the tree. The temperature at the time was ~25-28F with no snow present on the ground. I approached the tree where the [redacted] had been treed from far away to assess the safety of the tree for the [redacted] and for climbing as well as to confirm the gender and approximate age class of the animal. The [redacted] was approximately 8 m above ground and upon the houndsman's approach from beyond 30 m distance, it rapidly descended from the tree along the trunk and ran down the slope followed by the hounds. She was treed again a couple of times and hazed down because each time she had climbed high up well above our safety threshold. We attempted to haze her downslope to an area that had visibly shorter trees. She climbed up a better tree and	

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was about 6 m above the ground when I darted her with the standard dosage for adult female ([redacted]). The dart trajectory had a good direction central to her rear left quarter but the dart fell considerably lower [redacted]) than targeted and appeared to have missed her. Immediately the [redacted] jumped from the tree and hounds were released to follow her. Following the pursuit, she climbed another tree high above the ground and showed no signs of drug taking effect. I instructed a field technician to climb a tree ~6 m away and get close to her height level to have a better look, as there was a small possibility that the dart had hit her in the inside of her rear right quarter, which had been partially obstructed by a large branch in the darting tree. He confirmed that the dart was attached to the inside of her rear right leg. It was not possible to see whether the dart needle was subcutaneous or had just penetrated the skin emerging to the exterior and hence with little if any drug inoculation. While the field technician was climbing the tree (with a belayer for safety), I took the opportunity to measure a distance to another tree with a rangefinder and fired a dart filled with water to assess if something was wrong with the sighting of the gun. The dart went less than 1 inch of the intended target which, in conjunction with the fact that I had not moved the rifle during darting of the [redacted], made me suspect a problem with the powder load of the .22 cartridge that I had used for darting the [redacted].

I decided we would go ahead with hazing the [redacted] from the tree she was in, given that she did not show any visible effects from the drug, being alert, watching us on the ground and the climber, not licking her lips, not showing numbness in limbs, and given that it had been ~1h 15 mins from her being darted. She stood up coordinated on the branch and was subsequently hazed down. She ran down the tree trunk and when closer to the base of the tree she jumped/fell reaching the ground on all 4 [redacted]. Once on the ground she ran ~200 m to a different tree where I darted her for the second time, using [redacted] instead of the full standard [redacted] (under the assumption that the initial dart had injected a small quantity of drug that was taking long to absorb due to subcutaneous inoculation). Prior to darting, a plan of action was discussed with the houndsman in the event she jumped from the tree. A decision was made to keep back some of the dogs (one technician helped the houndsman with restraining them) and release some older hound dogs if she jumped from the tree because we were relatively unfamiliar with the area (extreme southern end of [redacted]) and assumed there was a stream or possibly small stagnant body of water nearby at the bottom of the slope we were on (we didn't want her to possibly drown by the time we found her); there was no good substrate for visual tracking of footprints, with snow, mud and sand absent and the forest floor being mostly conifer duff; the terrain was undulating obstructing the view of the [redacted] in case she did run. Two field technicians were designated to run after the dogs with leashes ready so that they could restrain the dogs. Another technician designated to perform tree climbing was also prepared to pursue the dogs immediately in the event the [redacted] did climb another tree.

The second dart went central in the rear left quarter and the [redacted] jumped off the tree right away. The old dogs were soon released after her and the two designated field technicians ran after the dogs. The person designated to do the tree climbing in case the [redacted] ran to another tree followed within less than a minute and I did immediately after. When I got to the [redacted] I found her on the ground whereas the two technicians who had done the running had the dogs restrained, having just been joined by the technician designated to do the climbing. In low voice I obtained details on how the two runner technicians found the [redacted] upon approach. When they got within view of the dogs and the [redacted], the [redacted] was up in a tree on a small branch ~6-7 m from the ground. They were grabbing and leashing dogs to pull them off from the base of the tree when they saw her trying to descend the tree along its trunk, but then she fell head first and front [redacted] extended, hitting the ground on the downslope part of the tree. The fall was on a ~30 degrees slope with conifer needle duff and no visible logs, sticks or boulders. She fell in close proximity to where the technicians and dogs were. The technicians pulled the dogs away by the leashes while also using their legs to push the dogs away. They confirmed that one dog was able to bite the [redacted] to the back of the neck but not with latching on. In the moment they were not focused on the back end of the [redacted], instead tried to keep the dogs away from her while also watching her head and front [redacted] as she was not fully immobilized. With the help of the climber who had reached the site also they pulled off the dogs.

Once the [redacted] took good effect we did a rapid inspection for possible injuries (which did not reveal protruding or otherwise suspect broken bones including spine upon gentle palpation), processed the [redacted] taking samples, morphological measurements and deploying a collar on her. At 12:45 pm we moved upslope to monitor her recovery from anesthesia. Within ~1.5 h she made some attempts for head up, but I only recorded head up as 15:15 as that is when she was able to hold it upright and move it around. Another ~45 mins later she still hadn't moved from the processing tarp. On a couple of occasions I snapped some sticks in the distance and she

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was alert turning her head towards the noise. Another ~30 mins passed and I decided to walk in a half circle away keeping ~10 m from her to see if she would respond to noise on the forest floor. She seemed fully alert as she stood on her front legs watching me, [redacted] then moved away 2 m using her front legs and dragging the rear 2 legs and tail. I took a short video and moved slightly away behind some trees. After some more time as it was getting close to dark and she was again standing still on her front 2 legs facing away from me, I approached her quietly and used a 4 m long pole picked from the forest floor to poke the [redacted] of her rear legs and tail to see if there was any reflex. There was no response in the rear part of her body.

At that point I moved away climbing up-slope to look for cell phone service and express my concerns that she might have experienced a fractured spine. I got hold of [redacted]; left a message for [redacted] (primary [redacted] veterinarian with the CDFW); got hold of Ben Gonzalez (veterinarian with the CDFW) whom I found out was retired and who advised that I get hold of [redacted] or [redacted] (veterinarian with the CDFW); I talked to [redacted]; then [redacted] was able to get hold of me; and I left a message with Dave Casper. The field team continued monitoring the [redacted] and I joined them after the phone calls. We departed the site at 20:15, 5 h after the [redacted] had her head up. En route out of the field I stopped along Hwy [redacted] and sent the video of the [redacted] trying to move to [redacted]. Because of the lateness, darkness, site remoteness and in the interest of human safety in relation to field crew fatigue, it was decided to revisit the site in the morning and check on the [redacted] then.

In the morning (Nov. 18), I hiked to the site accompanied by a field technician. While still up on the slope, we noticed that the [redacted] was watching us with the head up but laying on its side. I cautiously approached the [redacted] while the technician remained a bit behind. The [redacted] had dragged herself less than 15 m from where we had last seen her the previous evening. On approach she stood up on her front legs facing me and [redacted]. There was no apparent change in the rear part of her body, which was still immobile. I took a brief video then hiked up until I was able to find a location with sufficient cell service to send the video to [redacted]. I left a message with Dave. At [redacted]'s directive, I returned to the site, prepared the drugs and euthanized the [redacted] with the field technician's assistance; following the protocol we had in our capture folder and supported by [redacted]'s instructions via text message. I confirmed the death, then with the help of the field technician I carried the [redacted] in the processing tarp to the nearest forestry road where we had parked the vehicle. We placed her in the vehicle and I drove to the CDFW Wildlife Investigations Lab as per [redacted]'s instructions. I was in attendance at the necropsy that occurred the following morning at 10 am. Palpation along the spine prior to the necropsy did not reveal protruding or otherwise suspect broken spine. This was only revealed upon skin incision with a scalpel along the spine to expose the skeletal muscles and spine.

Was veterinary staff contacted? If so, when? How was the contact made (e.g. phone, email, fax)?
Veterinary stuff was contacted by cell phone and text messages the day of the incident (Saturday) and the following morning (Sunday; details in the incident narrative above). A meeting with [redacted] occurred on Monday and a conference call on Wednesday was attended among others by [redacted] and Dave Casper. I also briefed Dave by phone on Monday. I enquired whether we should be submitting an Incident Notification form and was informed that we should wait for further instructions.

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IACUC resolution: