

Supporting Information S5.—United States Geological Survey National Wildlife Health Center review of a selected sample of gray wolf, *Canis lupus*, necropsies

Source for columns A and B: N.J .Thomas, DVM	USGS NWHC Case #	WDNR assigned mortality cause	Cause of death (this study)
case-accession # = 1744-18015. Collected 10/24/1979. Collared wolf #1185 submitted by David Mech. Found dead in a trap in Douglas Co. Gunshot wounds in head and neck from both bullet and shotgun pellets.	1744	WDNR: shot	poached
Case-accession # = 1817-18549. Collected 11/17/1979 in Lincoln Co. Age=yearling. No collar or ID numbers. Submitted by Frank Iwen, curator at UW Zoology Museum.	1817	missing from WDNR records	poached
DNR COD OK. NWHC Dx=complications of anesthesia suspected=capture-related.	10386	WDNR: capture related	legal
NWHC Dx=aggression. Particles in radiograph were near/over the GI tract and were probably bone chips or gravel particles in the GI tract, not gunshot origin.	12567	WDNR: ?	nonhuman
NWHC Dx=gunshot. Animal was found along Hwy 25, 1 mi S of Durand (Pepin Co. according to our records). No evidence of trauma other than head injury where gunshot wound occurred so it appears to be only a gunshot case.	13520	WDNR: vehicle + euthanasia	poached
No discrepancy. Dystocia=medical terminology for birth complication. No explanation for discrepancy (missing from DNR). Case was submitted by Adrian Wydeven. Also had ref. # N22956.	14777	WDNR: birth complication	nonhuman
NWHC Dx=unknown COD. Mange was only mild and patchy-insufficient to explain death. Poisoning (by pesticides, cyanide, strychnine) was investigated but ruled out.	16037	missing from WDNR records	collision
No explanation for discrepancy (missing from DNR). Case was submitted by Adrian Wydeven. Also had ref. # N35620.	16698	WDNR: mange	unknown
	16798	missing from WDNR records	poached

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DNR COD OK. Primary NWHC finding was interstitial pneumonia of unknown cause; not determined whether it was related to death, but may have been (hence WDNR: disease). Radiograph only of healing fracture in left front leg (fracture had occurred at capture previously), so radiographs could be considered "Not done" in this case.	17003	WDNR: disease	nonhuman
NWHC case 17080 consisted of 4 wolves, so DNR COD may be combination of the 4. 17080-004=290M (listed in this row), dx=mange. Case also included 17080-001=280M, dx=mange. 17080-002=no ref #, dx=vehicle collision. 17080-003=334, dx=mange.	17080	WDNR: mange/vehicle collision	nonhuman, nonhuman, collision, nonhuman respectively
NWHC Dx=severe mange, severely worn and broken teeth. No evidence of gunshot was found at necropsy despite history of being found on deer hunters bait pile.	18019	WDNR: mange/shot	nonhuman
NWHC Dx=same as DNR: disease (pneumonia) plus bite wounds in the hind limbs (bites not sufficient to have caused death).	18018	WDNR: disease/ intraspecific	nonhuman
NWHC Dx=blunt trauma (fractured leg) plus coincidental mange. No evidence of gunshot. Particles in radiograph were over the stomach and intestine and presumed to be ingesta. Also had ref # 316F.	18015	WDNR: injury/mange/ emaciation	unknown
NWHC found only mange and a partially scavenged carcass. Bite wounds could not be confirmed.	18468	WDNR: mange/ intraspecific	nonhuman
DNR COD is OK. NWHC Dx=decomposed and scavenged plus generalized hair loss. The role of hair loss in this wolf's death was uncertain. Also Ref # 178709pup.	18182	WDNR: mange?	nonhuman
DNR COD is OK. NWHC Dx=decomposed and scavenged, but bite wounds and hemorrhage in intact tissue suggested aggression. Ref #s are the same in our records.	18189	WDNR: ?/intraspecific	nonhuman

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DNR COD is OK. NWHC Dx=no significant abnormalities found at necropsy so probably captured related. Heartworms present, incidental (coded by DNR as disease?). Also Ref # WI2002-029.	18467	WDNR: trap-related/disease	legal
DNR Dx OK. NWHC found 2 primary diagnoses: blastomycosis (fungal infection) and plastic bag stuck at entry to the stomach resulting in esophageal ulcers and rupture (accident). The infection may have led to garbage scavenging and plastic ingestion, but it's speculation. Ref #s are the same in our records.	18855	WDNR: starvation/ accident	nonhuman
NWHC Dx=Indeterminate due to heavy scavenging. Bite wounds around ears, but the role of aggression in this wolf's death couldn't be determined (fatal wounds could've been scavenged). Alopecia was present on the legs.	18582	WDNR: intraspecific/ mange	unknown
DNR Dx OK. NWHC Dx=vehicle collision with incidental mild sarcoptic mange.	18533	WDNR: vehicle collision	collision
DNR Dx OK. NWHC Dx=severe sarcoptic mange. Bite wounds and hemorrhage were also present in the abdomen, but mange was considered more significant in death.	18581	WDNR: mange/ intraspecific	nonhuman
DNR Dx OK. NWHC Dx=vehicle collision. Radiograph had small shot pellets, and they were found as old embedded pellets in the subcutis with no recent hemorrhage or injury.	18901	WDNR: vehicle collision	collision
NWHC Dx=indeterminate due to decomposition and scavenging; could not confirm field assessment of suspected aggression.	18727	WDNR: ?/intraspecific	unknown
NWHC Dx=severe emaciation with moderately severe mange. Could not conclude that mange did/did not cause the emaciation.	18752	WDNR: disease	nonhuman
DNR Dx OK, same as NWHC=vehicle collision. Old embedded metal (possible pellet gun pellet) found in hind leg, no recent wound or hemorrhage associated with it.	19009	WDNR: vehicle collision	collision

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DNR Dx OK, same as NWHC=vehicle collision. Old embedded shot pellets seen in radiograph, not related to fatal injury.	19226	WDNR: vehicle collision	collision
NWHC Dx=gunshot with no evidence of vehicle collision.	19363	WDNR: shot/vehicle collision?	poached
Per history, found dead at road intersection. It had fractures in its hindquarters compatible with vehicle trauma. It also had a fatal gunshot wound in the head, which might have reasonably been done to "put it out of its misery", but there was no confirmation that this was done-just the two significant injuries that both occurred at/about the time of death.	19537	WDNR: Shot	poached
NWHC Dx=Impact trauma. Metal fragments seen in radiograph were found in the GI tract along with abundant ingesta and deer hair; no evidence of gunshot.	20110	WDNR: vehicle collision	collision