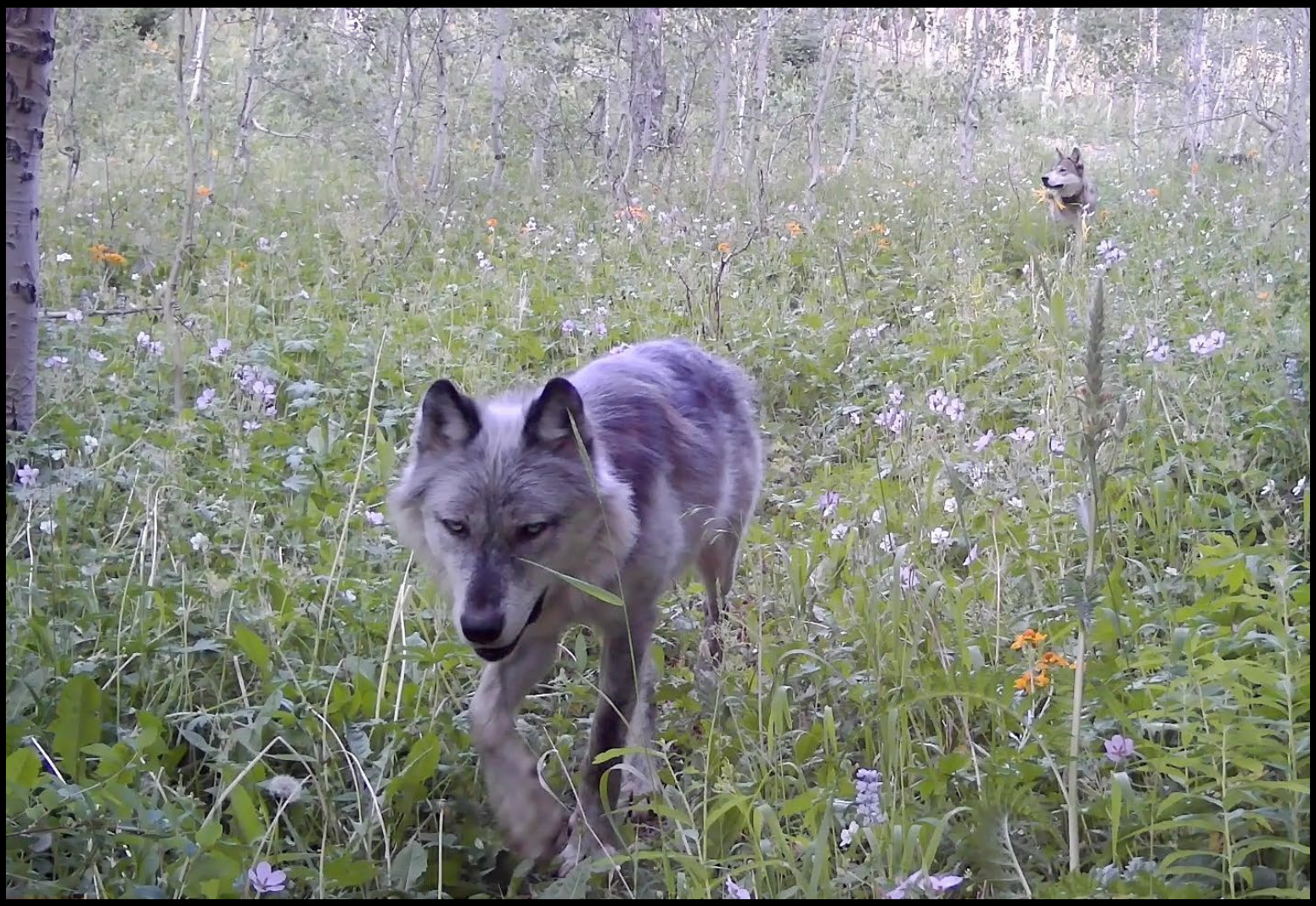
Wyoming Gray Wolf Monitoring and Management: 2024 Annual Report



Prepared by the Wyoming Game and Fish Department in cooperation with the National Park Service, U.S. Fish and Wildlife Service, USDA-APHIS-Wildlife Services, and Eastern Shoshone and Northern Arapahoe Tribal Fish and Game Department to report the status and management of the gray wolf population in Wyoming from January 1, 2024 through December 31, 2024.

EXECUTIVE SUMMARY

At the end of 2024, the gray wolf (wolf) population in Wyoming remained above minimum recovery criteria, making 2024 the 23rd consecutive year Wyoming has exceeded the numerical, distributional, and temporal recovery criteria established for wolves by the U.S. Fish and Wildlife Service. At least 330 wolves in ≥41 packs, including ≥24 breeding pairs, inhabited Wyoming statewide on December 31, 2024. Of the total, there were ≥163 wolves and ≥25 packs, including ≥13 breeding pairs, in the Wolf Trophy Game Management Area (WTGMA), ≥108 wolves and ≥9 packs, including ≥7 breeding pairs, in Yellowstone National Park, ≥12 wolves and ≥2 packs, including ≥0 breeding pairs, in the Wind River Reservation, and ≥47 wolves and ≥5 packs, including ≥4 breeding pairs, resided in areas where wolves are designated primarily as predatory animals in Wyoming. A total of 131 wolf mortalities were documented statewide in Wyoming in 2024: 84 in the WTGMA, 39 in areas where wolves are primarily designated as predatory animals, four in Yellowstone National Park, and four in the Wind River Reservation. Mortality was from human causes = 116 (89% of mortalities), natural causes = 11 (8%), and unknown causes = 4 (3%). Eighty wolves were captured and radio-collared for monitoring and research in 2024.

In 2024, the Wyoming Game and Fish Department implemented a wolf hunting season with the biological objective to stabilize the wolf population at around 160 wolves in the WTGMA. A mortality limit of 38 wolves was divided between 13 hunt areas in the WTGMA and one hunt area in the Seasonal WTGMA (Hunt Area 12). Wolf hunting seasons were open from September 15 to December 31, 2024 with the exception of Hunt Area 12 (opened on October 15, 2024) and Hunt Area 13 (closed March 31, 2025). The hunting season for each hunt area closed at the season end date or when the mortality limit was met, whichever occurred first. A total of 34 wolves were taken that applied to the mortality limit during the 2024 wolf hunting season. In addition, the 2023 wolf hunting season extended from January 1 to March 31, 2024 in Hunt Area 13, during which one wolf was taken.

Wolves were confirmed to have killed or injured 51 head of livestock (37 cattle, 13 sheep, and one conflict with chickens) statewide in Wyoming in 2024. Forty-three wolves were lethally and legally removed by agencies or the public in an effort to reduce livestock losses to wolves (32 in the WTGMA, eight in predatory animal areas, and three in the Wind River Reservation).

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COVER PHOTO: 1316M (left) and 1323F (right), both approximately 6-years-old, were the breeding male and female of the Water Dog Lakes pack in 2024. The Water Dog Lakes pack formed in 2023 when 1316M and 1430M dispersed from the Yellowjacket pack and joined with 1323F, who dispersed from the neighboring Togwotee pack. This trio also adopted four additional wolves in late 2023 and established a territory by usurping the Klondike Hill and portions of the Tosi Peak packs' territories, including killing the Klondike Hill breeding male (1345M, the mate of 1152F who was featured on the 2023 Annual Report and who was also 1316M's "aunt") and the Tosi Peak breeding female (1353F).

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BACKGROUND

Beginning in 1995, the U.S. Fish and Wildlife Service reintroduced 41 gray wolves (wolves) into Yellowstone National Park, Wyoming as a nonessential experimental population under the Endangered Species Act with the goal of reestablishing a recovered gray wolf population in the northern Rocky Mountains. The U.S. Fish and Wildlife Service was the federal agency charged with administering, monitoring, and managing the wolf population following reintroduction until wolves reached recovery levels and Endangered Species Act protections could be removed ("delisting"). The wolf population expanded quickly in number and distribution throughout northwest Wyoming. The population met the required recovery criteria by late 2002 and has exceeded the recovery criteria every year since. More information on wolves and the history of the wolf reintroduction program can be found on the U.S. Fish and Wildlife Service website and the Wyoming Game and Fish Department website at the following links:

https://www.fws.gov/species/gray-wolf-canis-lupus

https://wgfd.wyo.gov/wyoming-wildlife/large-carnivore/wolves-wyoming

Endangered Species Act protections were removed for wolves (i.e., "delisting") in Wyoming in September 2012 following the approval of the Wyoming Gray Wolf Management Plan, Wyoming Game and Fish Commission regulations, and Wyoming Statutes by the U.S. Fish and Wildlife Service (Wyoming Game and Fish Commission 2011, U.S. Fish and Wildlife Service 2012). This delisting decision was challenged in U.S. District Court in Washington, D.C., which overturned the delisting and relinquished management authority for wolves in Wyoming back to the U.S. Fish and Wildlife Service in September 2014. The District Court decision was subsequently appealed by the U.S. Fish and Wildlife Service and State of Wyoming in the U.S. Court of Appeals in Washington, D.C., which ruled in favor of the U.S. Fish and Wildlife Service and State and returned management of wolves to the State of Wyoming on April 25, 2017. Since delisting, wolves have been monitored and managed by the National Park Service in Yellowstone National Park and Grand Teton National Park, the Eastern Shoshone and Northern Arapaho Tribal Fish and Game Department in cooperation with the U.S. Fish and Wildlife Service Lander Fish and Wildlife Conservation Office on tribal lands in the Wind River Reservation, the U.S. Fish and Wildlife Service on the National Elk Refuge, and the State of Wyoming in all remaining areas of Wyoming outside these jurisdictions. Each management agency has different laws, regulations, and/or management plans governing wolf management and, accordingly, each jurisdiction has varying wolf management objectives and philosophies. The following is a summary of wolf management direction by agency.

National Park Service

The National Park Service is responsible for monitoring and managing wolves in national parks in Wyoming. The National Park Service's primary wolf management approach is to allow natural processes to occur within the boundaries of national parks with minimal human intervention. More information on National Park Service wolf programs in Wyoming can be found at the following links:

https://www.nps.gov/yell/learn/nature/wolf.htm

https://www.nps.gov/grte/index.htm

Eastern Shoshone and Northern Arapaho Tribal Fish and Game Department

The Eastern Shoshone and Northern Arapaho Tribal Fish and Game Department, in cooperation with the U.S. Fish and Wildlife Service Lander Fish and Wildlife Conservation Office, is responsible for monitoring and management of wolves on tribal lands within the boundary of the Wind River Reservation. The Wind River Reservation Wolf Management Plan designates wolves as a trophy game animal on tribal lands within the Reservation. For more information, see the Wind River Reservation Wolf Management Plan at:

https://fws.gov/media/wind-river-wolf-plan

National Elk Refuge

The National Elk Refuge, managed by the U.S. Fish and Wildlife Service, was established to provide winter habitat and supplemental winter feeding for the Jackson Elk Herd. The U.S. Fish and Wildlife Service is responsible for management of all wildlife species, including wolves, within National Elk Refuge boundaries. More information on the National Elk Refuge can be obtained at:

https://www.fws.gov/refuge/national_elk_refuge/

Wyoming Game and Fish Department

The Wyoming Game and Fish Department's wolf management framework is more complex than the National Park Service's and the Wind River Reservation's and warrants more detailed explanation. As required by State Statute [W.S. 23-1-101(a)(xii)(B)(I) and (II)] and Wyoming Game and Fish Commission Regulation Chapter 21 Gray Wolf Management (Chapter 21), wolves in areas under the State's jurisdiction are managed under the dual classifications of trophy game animal and predatory animal as outlined in the Wyoming Gray Wolf Management Plan and approved by the U.S. Fish and Wildlife Service (Wyoming Game and Fish Commission 2011, U.S. Fish and Wildlife Service 2012). According to the regulatory documents listed above, there are three wolf management zones outside Yellowstone National Park and tribal lands within the Wind River Reservation (this area is referred to as WYO throughout the report), as follows:

1. *Wolf Trophy Game Management Area (WTGMA):* Wolves are designated as trophy game animals year-round within the WTGMA and are actively monitored and managed by the Wyoming Game and Fish Department with the goal of maintaining the state's commitment of ≥100 wolves and ≥10 breeding pairs (a pack with at least one adult male and one adult female wolf that successfully raise at least two pups of the year until December 31) solely within this area. Wolves in the WTGMA are managed similar to other trophy game species (e.g., black bears and mountain lions) and may only be taken by the public when in the act of doing damage to private property, in self-defense, under the authority of a lethal take permit, or by licensed hunters during an open wolf hunting season. Livestock owners who have confirmed livestock damage caused by wolves in the WTGMA may qualify for compensation from the Wyoming Game and Fish Department.
2. *Seasonal WTGMA:* Wolves are designated as trophy game animals in the Seasonal WTGMA from October 15 through the last day of February of the subsequent year and as predatory animals from March 1 to October 14 each year. Wolves may be taken by the public similar to wolves in the WTGMA while they are designated as trophy game animals, or may be taken as predatory animals for the remainder of the year (see below). Livestock owners who have confirmed livestock damage caused by wolves in the Seasonal WTGMA

may qualify for compensation from the Wyoming Game and Fish Department on a year-round basis regardless of the date damage occurred.

3. *Areas when and where wolves are designated as predatory animals:* Wolves are designated year-round as predatory animals in areas outside the WTGMA and also within the Seasonal WTGMA from March 1 to October 14 (see above). Predatory animals are not managed under the jurisdiction of the Wyoming Game and Fish Department and may be taken anytime in any legal manner. Livestock owners who have confirmed wolf depredation on livestock outside the WTGMA/Seasonal WTGMA do not qualify for compensation from the Wyoming Game and Fish Department unless their private land is bisected by the WTMGA or Seasonal WTGMA boundary. However, beginning in 2023, livestock owners who have confirmed wolf depredation on livestock in areas where wolves are designated as predatory animals may qualify for compensation from the Wyoming Department of Agriculture.

The Wyoming Game and Fish Department wolf management objective is to maintain a recovered wolf population in the WTGMA while balancing the need to minimize wolf conflicts with livestock and maintain wild ungulate herds. Wyoming's Gray Wolf Management Plan also seeks to incorporate public hunting opportunity into its wolf population management strategy (Wyoming Game and Fish Commission 2011). Wolves are not actively monitored or managed where designated as predatory animals, including the Seasonal WTGMA. Therefore, data presented in this report will focus primarily on the WTGMA, with data presented for predatory animals if available and/or applicable.

For more information on the wolf management framework in Wyoming, including the Wyoming Gray Wolf Management Plan and wolf management and hunting regulations, please visit the following link:

https://wgfd.wyo.gov/wyoming-wildlife/large-carnivore/wolves-wyoming

Wolf Population Recovery Criteria and Post-Delisting Monitoring

The U.S. Fish and Wildlife Service set specific recovery criteria for wolves in the northern Rocky Mountains that were required to be met prior to delisting. The wolf population in the northern Rocky Mountains must also continue to meet or exceed the U.S. Fish and Wildlife Service's recovery criteria into the foreseeable future post-delisting to ensure the population remains recovered. The U.S. Fish and Wildlife Service required a minimum recovery criteria of ≥300 wolves and ≥30 breeding pairs in the northern Rocky Mountains for three consecutive years. These criteria were developed using input from many wolf experts from around the world.

Additionally, the U.S. Fish and Wildlife Service developed additional recovery criteria that required the states to maintain a 50% safeguard above minimum recovery criteria (i.e., ≥450 wolves and ≥45 breeding pairs in the northern Rocky Mountains) to qualify for delisting and further ensure the population did not drop below minimum recovery goals. The delisting criteria were then subdivided equally among the states of Montana, Idaho, and Wyoming, resulting in a minimum population requirement of ≥150 wolves and ≥15 breeding pairs in each state at the end of the calendar year. Under the terms of the delisting agreement between Wyoming and the U.S. Fish and Wildlife Service, the state of Wyoming committed to maintain wolves at or above the minimum delisting criteria of ≥100 wolves and ≥10 breeding pairs in WYO, with Yellowstone National Park and the Wind River Reservation providing the additional ≥50 wolves and ≥5 breeding pairs necessary to meet the ≥150 wolf and ≥15 breeding pair requirement for the state (U.S. Fish and Wildlife Service 2012).

Under the Endangered Species Act, states are required to manage delisted species in a sustainable manner to ensure the population will remain above the minimum delisting criteria into the foreseeable future. Once delisting occurs, the U.S. Fish and Wildlife Service is required, in cooperation with the states, to monitor the status of delisted species for a minimum of five years. The primary goal of post-delisting monitoring was to provide the U.S. Fish and Wildlife Service with a mechanism for evaluating the status of the population and ensure states are managing the delisted population at or above minimum delisting criteria. The five-year post-delisting monitoring period concluded at the publication of the 2021 annual report in April 2022. However, the agencies in Wyoming charged with wolf monitoring and management responsibility have continued to work cooperatively and have generated this report to provide a consistent and transparent annual presentation of statewide wolf population data.

Reporting Wolf Population Data by Jurisdiction

Generally, states are solely responsible for monitoring and managing delisted species. In Wyoming, however, multiple jurisdictions contain significant portions of the wolf population and/or suitable wolf habitat, primarily Yellowstone National Park and tribal lands on the Wind River Reservation, where the state does not have management authority. This sharing of large portions of the wolf population adds complexity to management in Wyoming and made it difficult to determine which jurisdiction was responsible for what proportion of minimum delisting criteria. Therefore, it was necessary to clarify how many wolves and breeding pairs each jurisdiction would contribute toward minimum delisting criteria (i.e., ≥150 wolves and ≥15 breeding pairs in Wyoming at the end of the calendar year) as follows:

1. The Wyoming Game and Fish Department committed to maintain ≥100 wolves and ≥10 breeding pairs in the WTGMA in northwest Wyoming. While the state does not have management authority over wolves in all areas in the WTGMA such as Grand Teton National Park and the National Elk Refuge, these areas are small and the wolf packs using them are not solely contained within their boundaries. Therefore, wolves in Grand Teton National Park and the National Elk Refuge are included in the WTGMA.
2. Combined, Yellowstone National Park and Wind River Reservation are expected to contribute the remaining ≥50 wolves and ≥5 breeding pairs necessary to meet the total ≥150 wolf and ≥15 breeding pair requirement. Data for these jurisdictions are reported independently in the body of this report.

For purposes of this report, data are presented on the wolf population as a whole in Wyoming and are further summarized by the three primary jurisdictions to allow for proper evaluation of the wolf population both statewide and by individual jurisdiction.

WYOMING GRAY WOLF MONITORING AND MANAGEMENT: 2024 ANNUAL REPORT

WOLF POPULATION MONITORING

SUMMARY OF WOLF POPULATION MONITORING STATEWIDE

At the end of 2024, the gray wolf (wolf) population in Wyoming remained above minimum recovery criteria, making 2024 the 23rd consecutive year Wyoming has exceeded the numerical, distributional, and temporal recovery criteria established for wolves by the U.S. Fish and Wildlife Service. At least 330 wolves in ≥41 packs, including ≥24 breeding pairs, inhabited Wyoming statewide on December 31, 2024. Of the total, there were ≥163 wolves and ≥25 packs, including ≥13 breeding pairs, in the Wolf Trophy Game Management Area (WTGMA), ≥108 wolves and ≥9 packs, including ≥7 breeding pairs, in Yellowstone National Park, ≥12 wolves and ≥2 packs, including ≥0 breeding pairs, in the Wind River Reservation, and ≥47 wolves and ≥5 packs, including ≥4 breeding pairs, resided in areas where wolves are designated primarily as predatory animals in Wyoming. A total of 131 wolf mortalities were documented statewide in Wyoming in 2024: 84 in the WTGMA, 39 in areas where wolves are primarily designated as predatory animals, four in Yellowstone National Park, and four in the Wind River Reservation. Mortality was from human causes = 116 (89% of mortalities), natural causes = 11 (8%), and unknown causes = 4 (3%). Eighty wolves were captured and radio-collared for monitoring and research in 2024.

Wolf Population Monitoring in the WTGMA

Population and Breeding Pair Status

The census of the minimum number of wolves in the Wolf Trophy Game Management Area (WTGMA; see map in Figure 1) on December 31, 2024 was determined using standard wolf monitoring methods. The number of wolves in individual packs and the number of lone, dispersing wolves were counted during telemetry flights and capture operations, observations by, or confirmed by, qualified agency personnel, or pictures of known packs taken with remote cameras. Only observations obtained by agency personnel from December 2024 through March 2025 were included to ensure they were reflective of the minimum number of wolves present on December 31, 2024. Miscellaneous, mostly solitary, wolves were included in the population census only if the animal was documented as described above and was not a known member of an identified wolf pack. Packs that formed in late 2024 and early 2025 are included in the "miscellaneous" wolf category if they had not established a stable territory. Packs with territories overlapping jurisdictional boundaries (e.g., state, national park, tribal boundaries, etc.) and packs overlapping the WTGMA boundary were assigned to the area which held the majority of their documented locations during 2024. The final minimum population census was the sum of all pack counts and miscellaneous wolves known to be present in the WTGMA on December 31, 2024 (Table 1).

Breeding pair status for packs in the WTGMA was also determined using the same methods since wolves were reintroduced to the northern Rocky Mountains. Denning behavior was confirmed for individual packs using aerial and ground telemetry and ground investigations during spring. Reproductive packs (with pups) were confirmed using observations made during aerial and ground monitoring efforts, investigations of potential den and rendezvous sites, howling surveys,

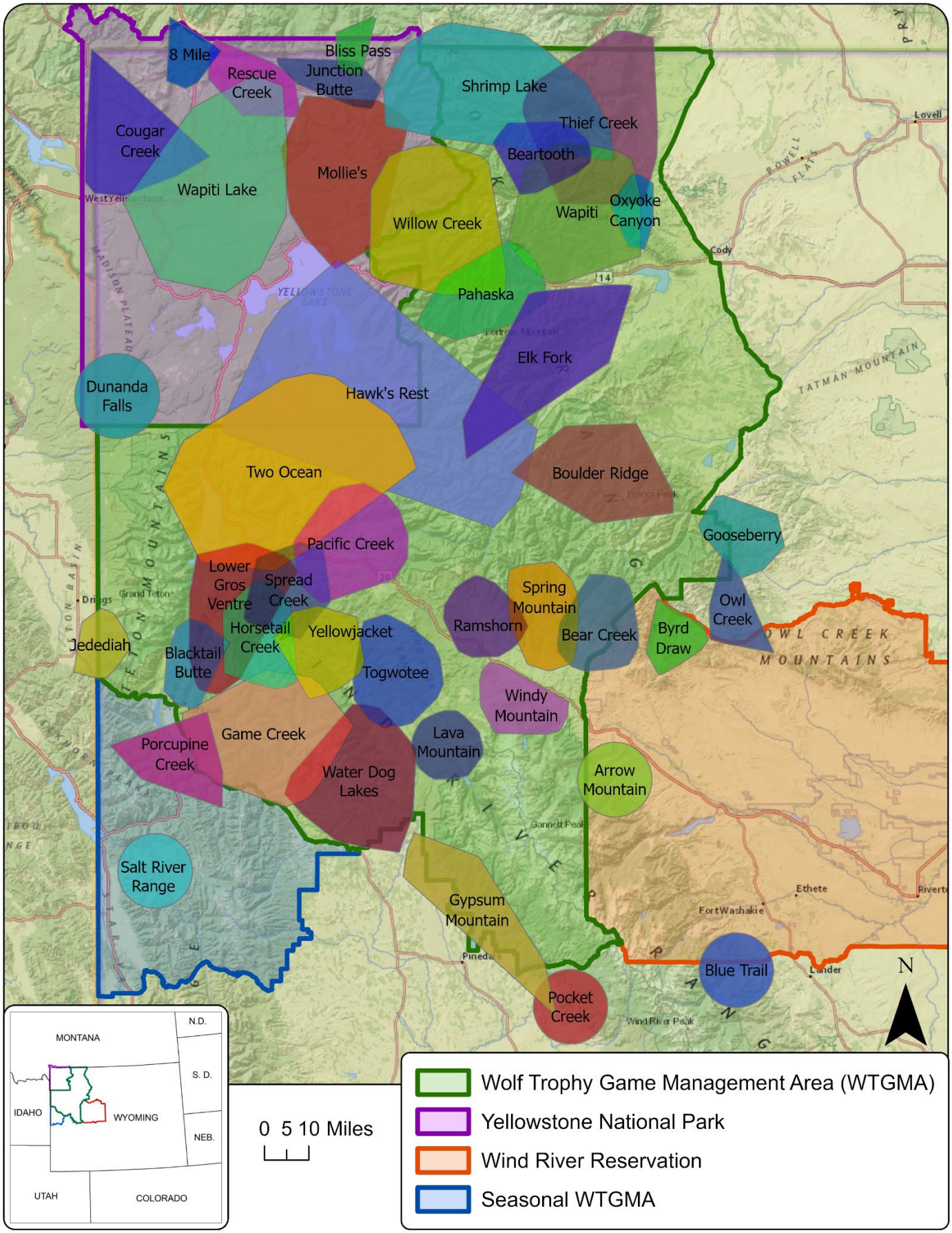


Figure 1. Wolf management areas and home ranges of wolf packs in Wyoming in 2024.

Table 1. Wolf pack size and breeding pair status as of December 31, 2024, and wolf mortality and wolf-livestock conflicts in Wyoming in 2024.

WOLF PACK[1,2]	MINIMUM PACK SIZE	DOCUMENTED MORTALITIES[10] NATURAL	HUMAN[3]	UNKN[4]	HUNTING[5]	PRED. ANIMAL[6]	CONTROL[7]	KNOWN DISPERSED	MISSING[8]	CONFIRMED CONFLICTS[9,10] CATTLE	SHEEP	DOGS	OTHER
WOLF TROPHY GAME MANAGEMENT AREA													
Bear Creek[11]	5		1		1	[1]		2		1			
Beartooth	2		1				7			3			
Blacktail Butte	5												
Boulder Ridge	3			1									
Elk Fork Creek	8	1			1		4			5			
Game Creek	2	1	1	1									
Gypsum Mountain[12]	6					[6]	[2]			[1]			
Hawk's Rest[14]													
~~Heart Lake~~							8	1		3			
Horsetail Creek	9	1	1		2		1						
Jedediah[14]	[4]												
Lava Mountain	4				1					4			
Lower Gros Ventre	12		1		1								
Oxyoke Canyon	7						7	1					
Pacific Creek	13		1		1								
Pahaska[11]	6	1											
Porcupine Creek[13]	6								1	[2]			
Ramshorn	10	1					2						
Shrimp Lake[15]	2				1		3			9			1
Spread Creek	7	1			2								
Spring Mountain	3							1		2			
Thief Creek	1	1		1	1					1			
Togwotee	12				1								
~~Tosi Peak~~		1						1					
~~Twilight Creek~~	1				1								
Two Ocean	9				3								
Wapiti	4		1					1		1			
Water Dog Lakes	8				1				1				
Willow Creek[15]	6				4								
Windy Mountain	4		1		4					1			
Yellowjacket	12		1		3								
Misc. wolves			1		3					2			
WTGMA TOTAL	**163**	8	10	3	31	-	32	7	2	32	0	0	1

PREDATORY ANIMAL AREAS													
Seasonal Wolf Trophy Game Management Area													
~~Mount McDougal~~													
Salt River Range	4												
Misc. wolves	4										2		
Year-round Predatory Animal Area													
Blue Trail[6]	14					4	1			2			
Gooseberry	5		[1]		[2]	3				[2]			
Owl Creek[11]	4					2	4				8		
Pocket Creek	6					1					2		
Misc. wolves	10	1				19	3			1			
PRED. AREAS TOTAL	**47**	1	0	0	0	29	8	0	0	3	12	0	0
WYO Total	**210**	**9**	**10**	**3**	**31**	**29**	**40**	**7**	**2**	**35**	**12**	**0**	**1**
YNP Total	108	2	0	0	0	0	0	7	0	0	0	0	0
WRR Total	12	1	0	0	0	0	3	0	0	1	0	0	0
WYOMING TOTAL	**330**	**12**	**10**	**3**	**31**	**29**	**43**	**14**	**2**	**36**	**12**	**0**	**1**

1 Underlined packs are counted as breeding pairs on December 31, 2024.
2 Strikethough packs were not documented during 2024 and/or did not exist on Dec. 31, 2024 and are not displayed in Figure 1.
3 Excludes wolves killed in control actions and legal hunting.
4 Number of wolves that died of unknown causes.
5 Number of wolves legally taken during the regulated hunting season. Excludes wolves taken illegally that applied to the mortality limit.
6 Number of wolves taken by the public as predatory animals. Wolves killed from packs assigned to the WTGMA are counted in the Predatory animal area total.
7 Number of wolves killed in lethal control actions, including agency-directed control, defense of private property and on lethal take permits.
8 Collared wolves that became missing.
9 Number of conflicts between wolves and livestock/domestic animals confirmed in WYO. "OTHER" = 1 conflict where several chickens were killed.
10 Mortalities and Conflicts that occurred in adjacent jurisdictions/management areas are presented in brackets [x] and are not included in respective column totals.
11 Border pack shared with Idaho, Yellowstone National Park or the Wind River Reservation; assigned to WYO.
12 Border pack with the predatory animal area; 4 wolves assigned to the WTGMA, 2 wolves to the predatory animal area.
13 Border pack with the Seasonal WTGMA; 4 wolves assigned to the WTGMA, 2 wolves to the Seasonal WTGMA.
14 Border pack assigned to WYO in 2023; assigned to Yellowstone or Idaho in 2024.
15 Border pack assigned to Yellowstone National Park or the Wind River Reservation in 2023; assigned to WYO in 2024.

reports confirmed by qualified agency personnel, pictures taken with remote cameras, or a combination of methods. If one adult male and one adult female and ≥2 pups were adequately documented at the end of the calendar year, they were counted as a known breeding pair. The Wyoming Game and Fish Department will continue using approved methods for monitoring the wolf population while also investigating alternative methods for future wolf monitoring.

As of December 31, 2024, ≥163 wolves in ≥25 packs, including ≥13 breeding pairs, were documented in the WTGMA (Figures 1, 2, and 3; Table 1). Pack size ranged from two to 13 and averaged 6.6 wolves per pack (Figure 4; Table 1). Similar to previous years, wolf packs were distributed in largely exclusive territories across suitable habitat in the WTGMA (Figure 1).

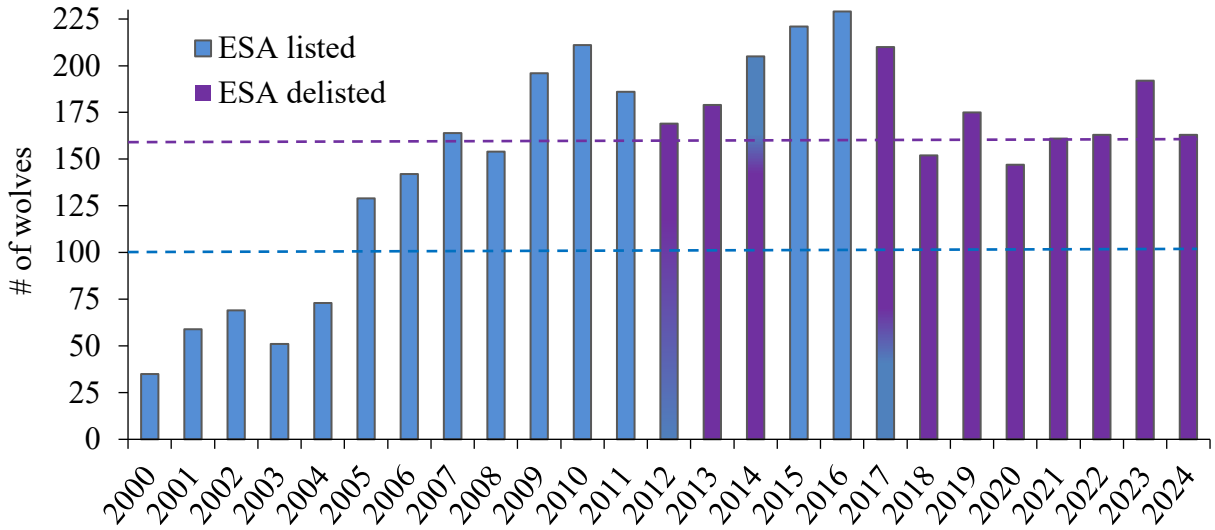


Figure 2. Minimum number of wolves in the WTGMA at the end of the calendar year (Endangered Species Act status [listed vs. delisted] is included for comparative purposes; the blue dashed line indicates the ≥100 wolf minimum population commitment; the purple dashed line indicates the 160 wolf population objective for the WTGMA).

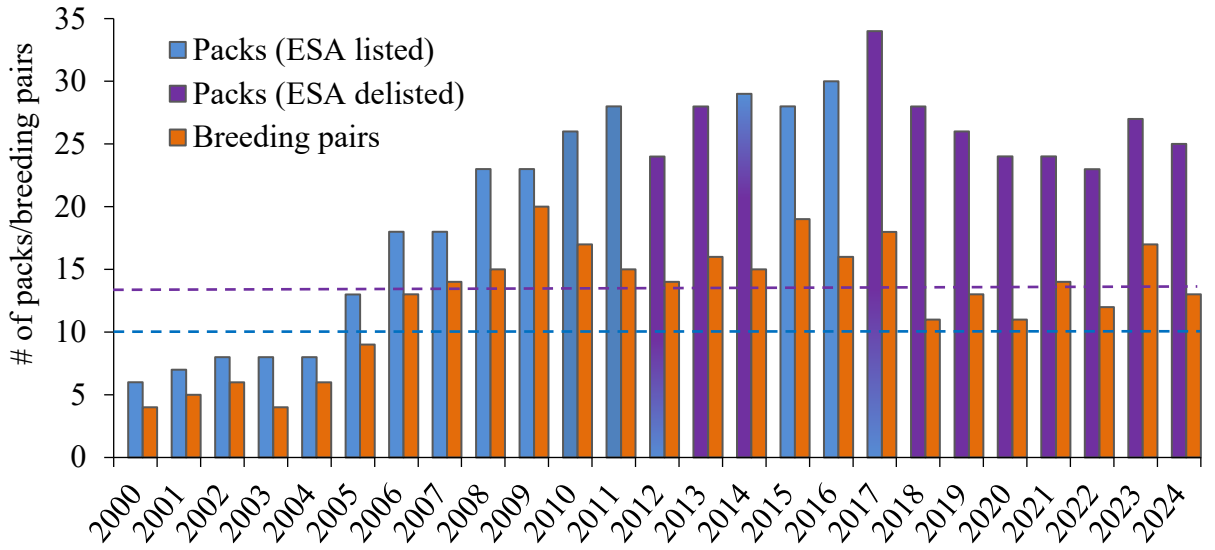


Figure 3. Minimum number of wolf packs and breeding pairs in the WTGMA at the end of the calendar year (the blue dashed line indicates the ≥10 breeding pair minimum commitment; the purple dashed line indicates the 13-14 breeding pair objective for the WTGMA).

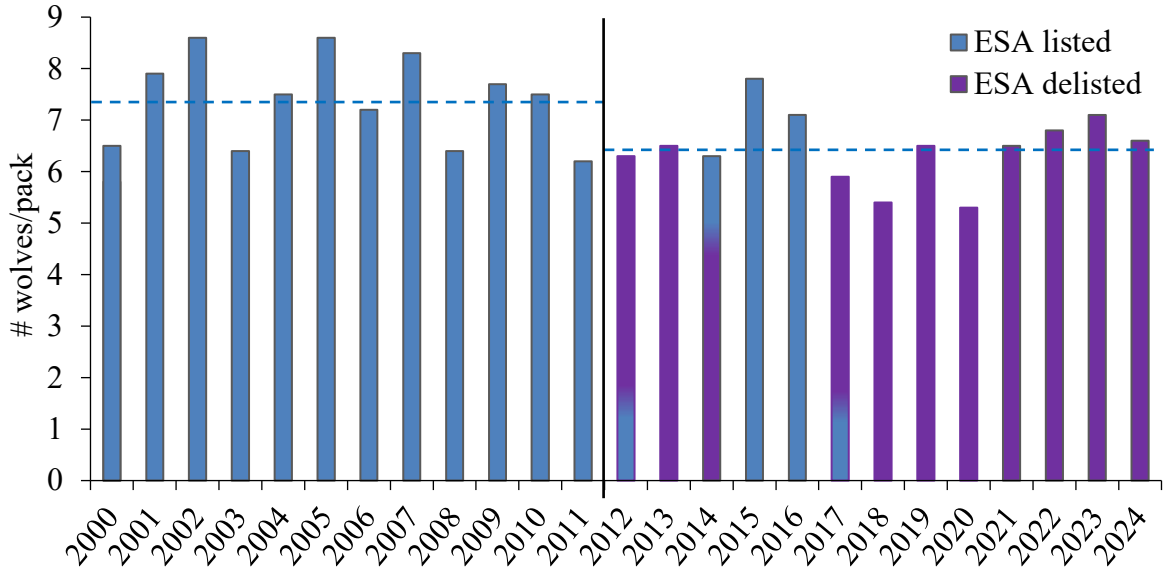


Figure 4. Average pack size for wolf packs in the WTGMA at the end of the calendar year (the dashed line indicates the average pack size before delisting [7.4 wolves per pack from 2000-2011] and post-delisting [6.4 wolves per pack from 2012-2024]).

Mortality

Wolf mortality was monitored in the WTGMA using multiple methods. The primary method used to identify wolf mortalities not associated with hunting was through the tracking of radio-collared wolves (i.e., known fate analysis). This information allows managers to monitor collared wolves for mortality status and investigate the site to evaluate cause-specific mortality and collect carcasses for further evaluation through necropsy. Wolf hunting mortality in the WTMGA was monitored via mandatory reporting and registration by successful hunters as required in the Wyoming Game and Fish Commission Chapter 47 Gray Wolf Hunting Season (Chapter 47) Regulation and Wyoming Statute 23-1-304(d). This requirement allowed Wyoming Game and Fish Department personnel to document mortality, collect information on wolves taken during the hunt, update mortality limits in the WTGMA/Seasonal WTGMA, and close wolf hunting seasons if the mortality limit was met. Cooperating agencies also provided information on wolf mortalities, including wolves killed in control actions by USDA Wildlife Services. Wolf mortalities from all causes were documented and confirmed, including those found by the public, cooperating agencies, and Wyoming Game and Fish Department personnel.

In 2024, 84 wolves were known to have died in the WTGMA (Figure 5; Tables 1 and 2). Causes of mortality included: hunting = 31; conflict control = 32; other human causes = 10; natural causes = 8; and unknown causes = 3 (Figure 5; Tables 1 and 2). Conflict control mortalities included 19 wolves from agency-directed lethal control actions, nine wolves taken under the authority of a lethal take permit and four wolves taken in defense of private property as authorized by the Wyoming Game and Fish Commission Chapter 21 Regulation. The 10 wolf deaths from other human causes included two wolves killed by vehicle strikes, two wolves wounded during hunting seasons and not recovered, five illegal kills (four shot illegally and one killed without a proper hunting license) and one wolf that died during capture from pre-existing maladies (i.e., septic infection leading to enteritis and extensive internal hemorrhaging). Natural mortalities included five wolves killed by other wolves, one predated by a mountain lion, one wolf that was killed by either a bear or a wolf, and one wolf that died of unknown natural causes. The number of wolves that died in the WTGMA in 2024 (84 wolves; Figure 5) was higher than average (average = 69.5

wolves/year from 2012-2023). Mortality was expected to be high compared to 2023 because the WTGMA wolf population had increased significantly above objective, which usually results in higher human-caused mortality (see Figure 15 in the "Wolf Management in the WTGMA" section below). As expected and predicted, human-caused mortality accounted for the majority of all wolf mortalities recorded in the WTGMA in 2024 (Table 2). The overall mortality rate was just over one-third of all wolves known to have been alive in the WTGMA in 2024, which was above the average mortality rate for 2012-2023 (27.7%: Table 2).

Table 2. Summary of wolf mortality by cause of death in the WTGMA in 2024.

Cause of death	Total	% of mortality	% of wolves
Hunting	31	36.9	12.6
Conflict control	32	38.1	13.0
Other human causes	10	11.9	4.0
All Human Causes	73	86.9	29.6
Natural	8	9.5	3.2
Unknown	3	3.6	1.2
Total Mortality	84	100.0	34.0

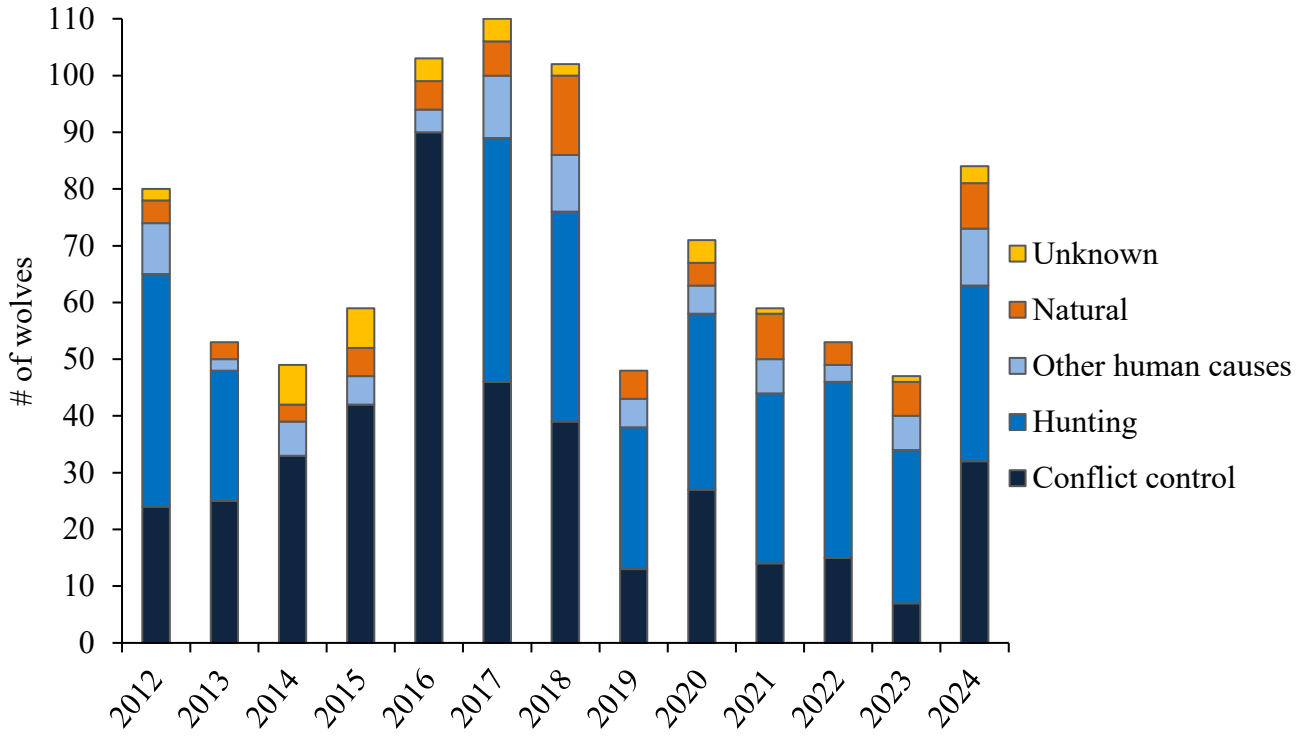


Figure 5. Number of wolf mortalities by cause of death in the WTGMA during the calendar year (wolves were listed under the Endangered Species Act in portions of 2014-2017).

Disease Monitoring

Disease presence and prevalence in wildlife populations is generally density-dependent, meaning the risk of a particular disease impacting a population increases as population density increases. Wolves are no exception, with evidence that both sarcoptic mange (*Sarcoptes scabiei*: mange) and

canine distemper virus (distemper) infections are highest in wolf populations at high population and wolf pack densities (Almberg et al. 2010, 2012). Both diseases may kill adult and juvenile wolves, but primarily manifest population declines through increased pup mortality and low pup recruitment (Almberg et al. 2009). While evidence for mange and distemper has been present in the wolf population in Wyoming, they have had little impact in most years on wolf population dynamics outside Yellowstone National Park (Jimenez et al. 2010, Almberg et al. 2012). Management actions such as hunting and conflict control in the WTGMA appear to have held the wolf population below the threshold where disease outbreaks are more probable. However, the WTGMA wolf population increased rapidly following the reinstatement of Endangered Species Act protections in 2014 and remained at relatively high density from 2015 through early 2018, which was correlated with a dramatic increase in distemper and mange infections in the WTGMA through 2018 (Figures 2, 3, and 6). Documentation of disease in the WTGMA wolf population declined and has remained low since 2018 when wolf density in the WTGMA was reduced following Endangered Species Act delisting and return to state management in 2017 (Figures 2, 3, and 6). The Wyoming Game and Fish Department will continue to monitor disease in the WTGMA wolf population and whether change in population density continues to correlate with disease prevalence.

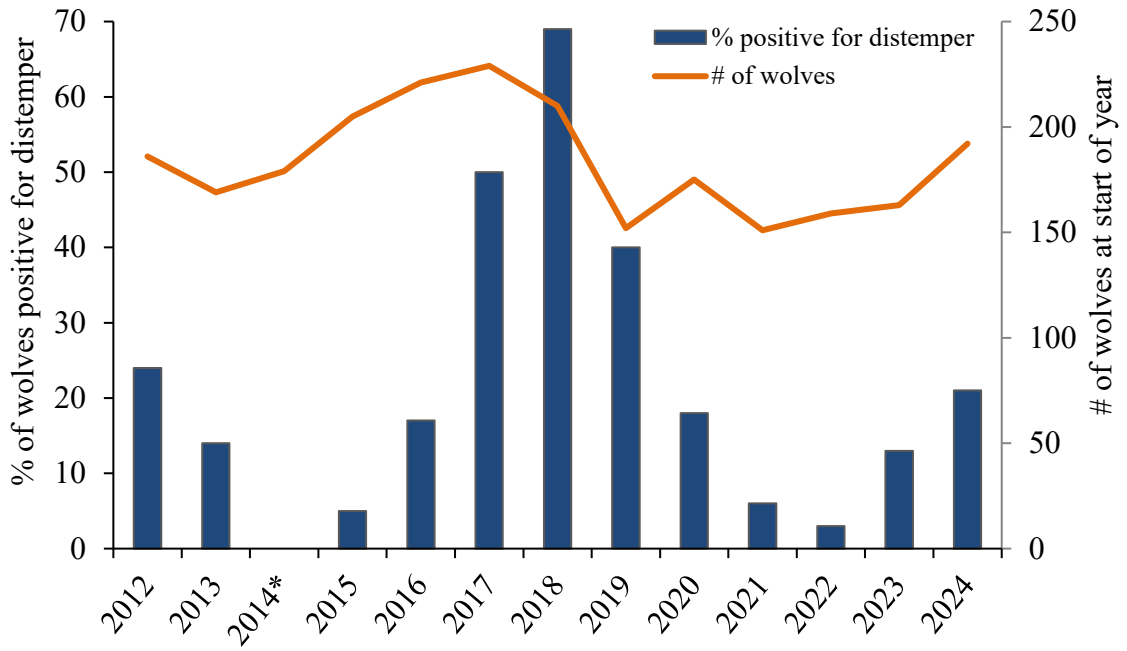


Figure 6. Proportion (%) of wolves captured in winter (November through March) that tested positive for canine distemper virus in the WTGMA and number of wolves in the WTGMA at the start of the calendar year (*too few wolves were captured following Endangered Species Act relisting of the wolf population in 2014 to allow for an adequate sample).

Mange: Mange is a contagious skin disease caused by mites and is commonly found in wolf populations throughout the world. Mange was first detected in Wyoming outside Yellowstone National Park in 2002 (Jimenez et al. 2010). Documentation of mange was slightly higher in the WTGMA in 2024, which correlates with increased wolf density from 2023-2024. During winter capture efforts, individuals from three packs showed evidence of hair loss consistent with mange infection (Lower Gros Ventre, Ramshorn, and Spread Creek), but no mortality due to mange was documented in 2024. However, members of the Lower Gros Ventre pack continued to exhibit severe mange infection through winter of 2024-2025, with one individual euthanized after seeking

shelter in a hay barn. Despite the slight increase in mange, it was not a significant factor affecting broader wolf survival or population dynamics in the WTGMA in 2024.

Distemper: Distemper is a contagious viral disease that infects species such as domestic dogs, coyotes, foxes, raccoons, skunks, and wolves. Based on other areas of the world that have experienced epizootic distemper infections, these diseases will occasionally cause mortality, particularly among juveniles. Outbreaks usually remain localized in specific areas/years and do not threaten regional wolf population viability. The proportion of wolves captured during winter that tested positive for distemper infection increased from 2015 through 2018 (Figure 6) and was correlated with increasing wolf population and wolf pack density in the WTGMA (Figures 2 and 3). Decreasing prevalence of distemper has been correlated with a reduction in wolf population and wolf pack density in the WTGMA and subsequent stability around the population objective from 2018-2022 (Figures 2, 3, and 6). Distemper prevalence increased in 2024 based on prevalence rates for wolves captured in winter 2024-2025 (Figure 6). This increase is correlated with increased wolf population density in the WTGMA in 2023 through early 2024, a trend that has been observed through time in the WTGMA (Figure 2). With the reduction in wolf density in the WTGMA in 2024, distemper infection is likely to remain stable or decline in 2025 based on past trends, which yields a diminished risk of distemper causing population-level impacts (Figure 6).

Canine Parvovirus: Canine parvovirus is a contagious disease that has caused significant population level impacts for wolf populations throughout North America, primarily in the 1980s (Kreeger 2003). The U.S. Fish and Wildlife Service and Yellowstone National Park have surveyed for evidence of canine parvovirus while managing Wyoming wolf populations and found a high rate of infection (>80% of wolves exposed) with no apparent deleterious effects to individual wolves or the population (Almberg et al. 2009, Jimenez et al. 2012). The Wyoming Game and Fish Department has not tested samples for canine parvovirus to date, but continues to retain samples from captured wolves that could be tested for canine parvovirus or other diseases if the need arises in the future.

Population Trend

The Wyoming Game and Fish Department closely monitors and manages the wolf population in the WTGMA because this is the area that corresponds to the available suitable habitat required for long-term viability of a wolf population in Wyoming outside Yellowstone National Park and would, therefore, maintain the number of wolves and breeding pairs required to meet population commitments outlined in the Wyoming Gray Wolf Management Plan (Wyoming Game and Fish Commission 2011). The wolf population in the WTGMA decreased in 2024 by 15% as a result of higher mortality (Figures 2 and 5; Table 2) and reduced recruitment (Figure 2) as predicted by population dynamic trends measured historically in the WTGMA and in accordance with management goals aimed at stabilizing wolf numbers around the population objective (Figure 7; see also Figures 14 and 15). These measured population dynamics and management actions resulted in a wolf population in the WTGMA that ended the year at the population objective set by the Wyoming Game and Fish Department for number of wolves and breeding pairs (Figures 2 and 3). Beginning the 2025 calendar year with a lower wolf population that is at the desired objective should alleviate livestock depredation, reduce the lethal control actions and other human-caused mortality, and reduce the potential for disease to impact wolves on the individual and population levels in 2025.

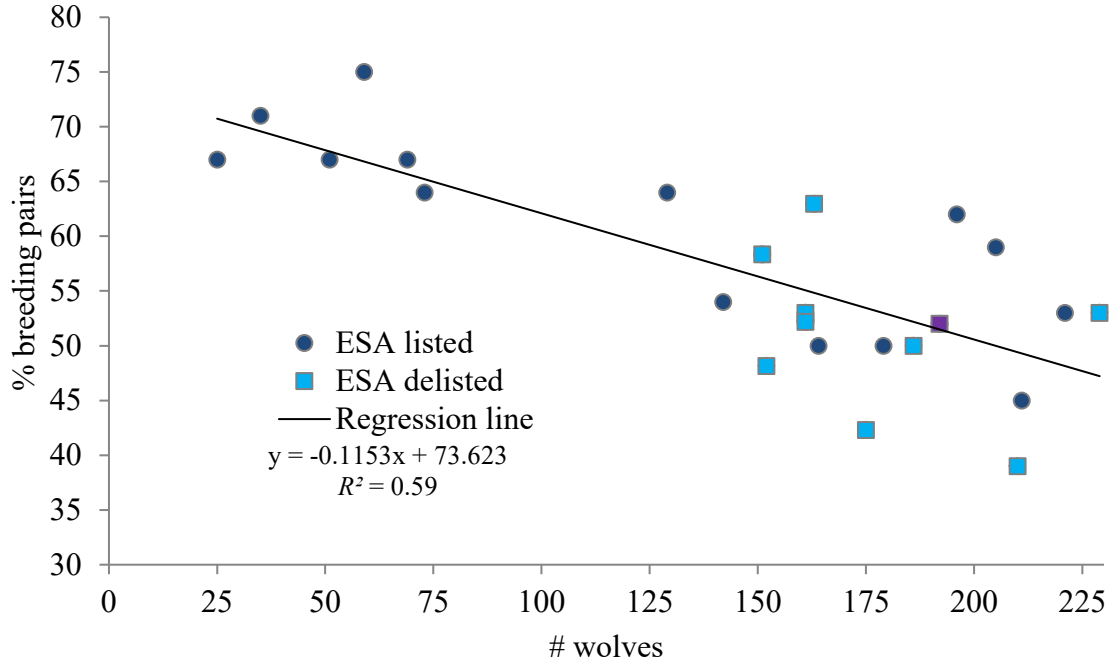


Figure 7. Minimum number of wolves present in the WTGMA at the beginning of the calendar year compared to the proportion (%) of packs that qualified as a breeding pair in the WTGMA at the end of the calendar year from 2000-2024 ("■" indicates the 2024 data point).

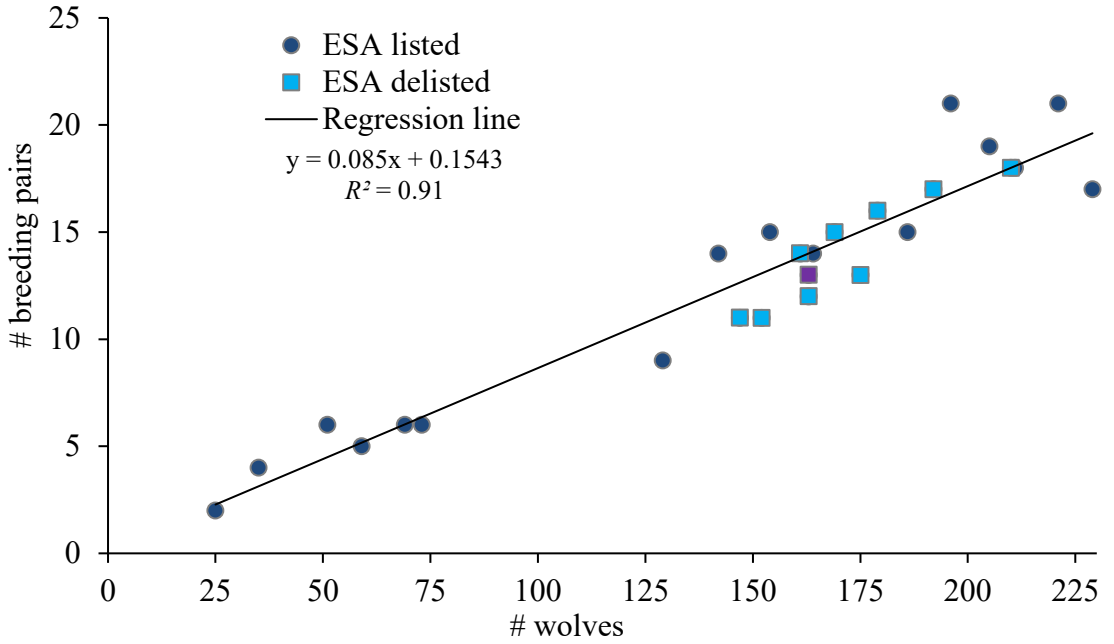


Figure 8. Minimum number of wolves and breeding pairs in the WTGMA at the end of the calendar year from 1999-2024 ("■" indicates the 2024 data point).

Breeding pairs decreased from ≥17 in 2023 to ≥13 in 2024 (24%) and remained above the minimum breeding pair commitment of ≥10 breeding pairs (Figure 3; Table 1). Recruitment as measured by the proportion of packs that qualified as a breeding pair, was at the long-term average and also met the objective of 13-14 breeding pairs at the end of the calendar year in the WTGMA (Figures 3, 7, and 8). Litter sizes (4.3 pups per pack in 2024) were slightly lower than the previous three years (4.8 pups per pack from 2021-2023) and the long-term average (4.6 pups per pack from

2012-2023). Recruitment was lower in 2024 despite more litters being born (23 litters comprising at least 100 pups in 2024 vs. 21 litters comprising at least 101 pups in 2023), likely due to lower pup survival linked to high population density (Figure 7; Table 1). One pack was suspected to have produced multiple litters (the Willow Creek pack, which shifted out of Yellowstone in 2024). Disease outbreaks primarily affect juvenile survival and recruitment in wolf populations as described above. Evidence of disease has declined and has remained low in the WTGMA following management by the Wyoming Game and Fish Department (Figure 6). However, the increase in wolf population density in the WTGMA in 2023 resulted in increasing distemper rates in 2023 and 2024 (Figure 6), as supported by detection of new infections in multiple packs in and around the WTGMA (e.g., Thief Creek, Pahaska, Gooseberry, Byrd Draw, and Bear Creek: Figure 1; Table 1).

As highly social carnivores, wolf packs constitute the primary functioning unit of any given wolf population. Thus, it is necessary to also monitor and evaluate elements of wolf pack demography in the WTGMA, in addition to the population objectives outlined above, to ensure the wolf population is robust to management actions and meets objectives identified in the Wyoming Gray Wolf Management Plan (Wyoming Game and Fish Commission 2011). The number of wolf packs in the WTGMA decreased from ≥27 packs in 2023 to ≥25 packs at the end of 2024 (Figure 3). There was no evidence suggesting the presence of wolf packs in the WTGMA that were not documented. Average pack size at the end of 2024 (6.6 wolves per pack) was lower than average pack size in 2023 (7.1 wolves per pack), and was reflective of the decline in wolf numbers and lower recruitment in the WTGMA (Figures 2, 3, 4, and 5). The Blacktail Butte pack was the only newly formed wolf pack in the WTGMA in 2024 (Figure 1; Table 1). Three wolf packs were not recorded at the end of 2024 (Heart Lake, Tosi Peak, and Twilight Creek: Figure 1; Table 1). Wolf packs that are shared between jurisdictions often shift their territories through time, meaning pack assignments can change accordingly. In 2024, the Hawk's Rest pack spent >70% of the year in Yellowstone and was transferred to the Yellowstone wolf population census (Figure 1; Table 1: see also Table 3). Likewise, the Shrimp Lake and Willow Creek packs shifted out of Yellowstone in 2024 and are reported in the respective census for the WTGMA (Figure 1; Tables 1 and 3). Finally, the Jedediah pack also shifted its territory primarily into Idaho and is no longer included in the WTGMA wolf population census (Table 1).

To further evaluate pack dynamics, we reconstructed pack tenures (i.e., the duration an individual pack persisted on the landscape) for 106 packs documented in the WTGMA from 1997-2024 using published annual wolf reports. Average tenure for wolf packs in the WTGMA is influenced by both persistence of established, long-term packs (increases average pack tenure) and the number of new packs that form in a given year (reduces average pack tenure). In the WTGMA, average wolf pack tenure increased in 2024 (Figure 9). The pack formation rate in the WTGMA in 2024 was below the long-term average (one pack formed in 2024 vs. 4.4 packs formed per year on average since 2012) and pack dissolution rate was also below the long-term average (three packs dissolved in 2024 vs. 4.4 packs dissolved per year on average since 2012). In general, average tenure of wolf packs established in the WTGMA has remained high after the implementation of wolf hunting seasons in 2017 (Figure 9). The relatively long tenures documented for wolf packs from 2017-2024 while wolves in Wyoming have been delisted demonstrate Wyoming Game and Fish Department management is resulting in a wolf population around the desired objective while allowing packs to maintain stable social structure that enables long-term persistence of packs in suitable habitat within the WTGMA (Figure 9).

Overall, the wolf population in the WTGMA has largely followed the basic precepts of population theory over the course of recolonization and transfer to state management (e.g., density-dependence as seen in Figures 6 and 7, and Figure 14 in the *"Development of 2025 Wolf Hunting Seasons"* below). Predictable population responses to natural and human-caused perturbations enable precise estimation of the impact of management decisions, allowing for responsive adaptive management as population conditions shift through time. In addition, the dual population objectives of wolf numbers and breeding pairs incorporates an added level of complexity for managing the wolf population in the WTGMA. However, throughout wolf recolonization in the WTGMA, the minimum number of breeding pairs has remained highly correlated to the minimum number of wolves in the WTGMA (Figure 8). This strong correlation allows for a high level of confidence in predicting how management actions, such as wolf hunting seasons, may impact both population and breeding pair numbers (Figure 8). The Wyoming Game and Fish Department continues rigorous monitoring and data analysis to aid in making robust management decisions for the wolf population in the WTGMA.

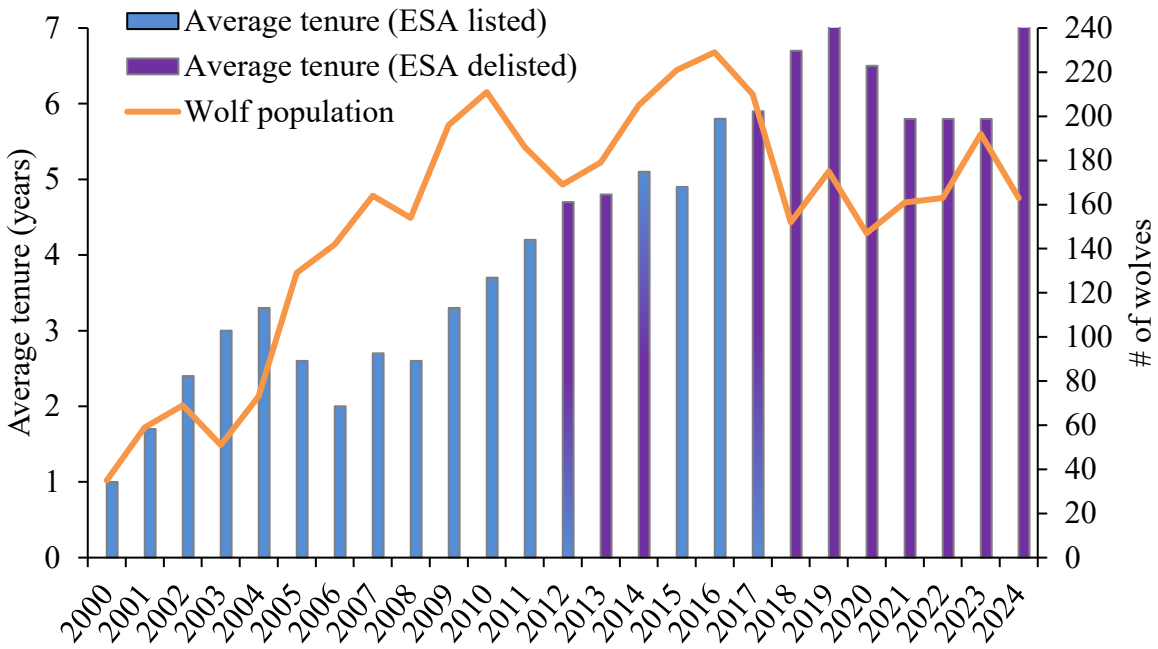


Figure 9. Wolf population trend and average pack tenure in years for wolf packs in the WTGMA from 2000-2024.

Genetic Monitoring

Genetic monitoring is an essential component of wolf management in the northern Rocky Mountain wolf metapopulation. The U.S. Fish and Wildlife Service determined that, in addition to minimum population criteria, genetic interchange must also occur between the three wolf recovery areas in the northern Rocky Mountains. To monitor whether this delisting criterion is met, the U.S. Fish and Wildlife Service requires that all states collect and analyze genetic samples from wolf populations in the northern Rocky Mountains. Analysis of genetic interchange will be conducted cooperatively between the U.S. Fish and Wildlife Service and the states of Wyoming, Montana, and Idaho on a periodic basis (possibly every 12-20 years following 3-5 wolf generations: Wyoming Game and Fish Commission 2011). Genetic samples will continue to be collected from wolves in the WTGMA to ensure enough genetic information is available to determine whether genetic interchange is occurring in the northern Rocky Mountains.

In 2024, genetic samples were collected from 128 wolves in the WTGMA that will be used in analysis of genetic interchange. Genetic samples were collected from 80 wolves that died and 48 wolves captured for monitoring purposes. The biological samples obtained from wolves in the WTGMA will be retained for future analyses regarding genetic interchange between wolf subpopulations in the northern Rocky Mountains as outlined in the Wyoming Gray Wolf Management Plan (Wyoming Game and Fish Commission 2011). Such an analysis was conducted in 2021 using samples from 2010-2018 (Wildlife Genetics International, *in preparation*); this analysis concluded a high level of genetic diversity continues to exist within each wolf recovery area in the northern Rocky Mountains. In addition, individuals with ancestry representing each recovery area were present in each wolf recovery area in the northern Rocky Mountains, indicating sufficient genetic interchange to maintain genetic diversity into the foreseeable future.

Capture and Telemetry Collaring

Very high frequency (VHF) and global position system (GPS) telemetry collars are the primary tools used for monitoring wolf populations in the WTGMA. VHF collars were used for general monitoring purposes and GPS collars provided more fine-scale data for specific monitoring or research projects. Each wolf captured was fitted with a collar and during capture processing personnel collected morphological information, genetic samples, and blood for disease testing. Collared wolves were released on site and monitored to document territories, movements (including dispersal), pack size, pack composition, breeding status and success, survival, to mitigate livestock conflicts, and to aid in law enforcement investigations.

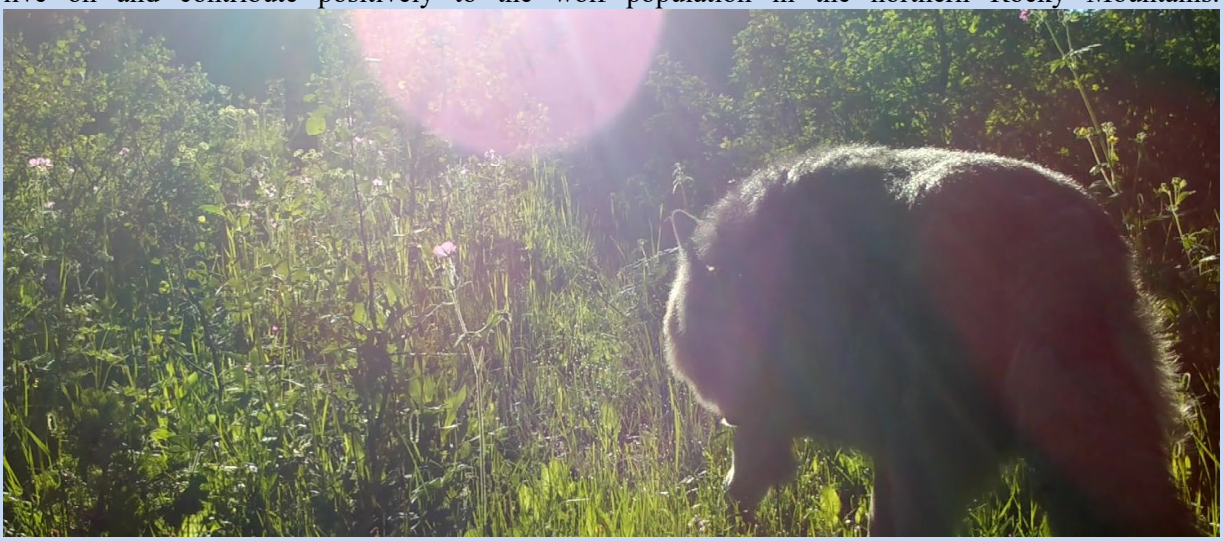
Forty-two wolves from 22 packs in the WTGMA were collared in the WTGMA in 2024, including three recaptures. A total of 96 wolves in 29 packs were monitored in the WTGMA during calendar year 2024, including individuals collared in previous years. At the end of 2024, there were 63 wolves in 26 packs and one single wolf being monitored with telemetry collars in the WTGMA (39% of the 163 wolves present in the WTGMA at the end of 2024). Winter wolf capture efforts continued through March 2025 in conjunction with the year-end population census, at which point a total of 84 wolves in 26 packs and three single wolves were being monitored via telemetry collars in the WTGMA. The proportion of collared individuals is generally highest at the end of winter following aerial capture efforts in March and decreases throughout the remainder of the year as pups are born in April and collared wolves die, disperse, or collars fail.

Predatory Animal Areas

As of December 31, 2024, there were ≥47 wolves in ≥5 packs, including ≥4 breeding pairs, in the predatory animal areas (including the Seasonal WTGMA) in Wyoming (Figure 1; Table 1). Thirty-nine wolf mortalities were documented in predatory animal areas in 2024, including: 29 taken by the public under Wyoming Statute [W.S. 23-1-101(a)(viii)] as predatory animals, eight taken by USDA Wildlife Services, one natural mortality and one from other human causes (Table 1). Wolf captures included seven wolves from three packs in the predatory animal areas. A total of nine wolves from three packs and one single wolf were monitored in 2024 in the predatory animal areas. At the end of 2024, six wolves from four packs were being monitored via telemetry collars in predatory animal areas in Wyoming. Thirty-seven genetic samples were collected from wolves that died in predatory animal areas in 2024.

Skull of wolf 840M, the oldest known-age wolf ever documented in Wyoming.

Wolf 840M was first captured and radio-collared in the South Fork of the Shoshone River near Cody, Wyoming in early April 2012 just before turning one year old. Wolves lead hard lives with typical life expectancy less than 4 years, so when 840M was collared in 2012, there were no expectations he would live an exceptional life. As young wolves often do, 840M dispersed from his natal Ishawooa pack in June of 2012 looking for a breeding opportunity and was eventually relocated via his radio-collar 90 miles away where he successfully assumed the position of breeding male in the Chagrin River pack (named after a river that runs through Cleveland, Ohio by the member of the public who first discovered them in 2008 and was given the privilege of naming them by the U.S. Fish and Wildlife Service) in October of 2012. Wolf 840M was an unprecedented survivor, holding the breeding position in the Chagrin River pack until the end of 2020, when he was left as the sole remnant of that pack. Enter wolf 1309F, an adult female disperser from the Huckleberry pack that roamed extensively across northwest Wyoming and Yellowstone National Park until she joined 840M in May of 2021 and formed the Jedediah pack. The new breeding pair produced their first litter in the middle of April 2022, likely the same week 840M was born 11 years earlier. After continuing to survive and produce litters in 2023 and 2024, at 12 and 13 years old, 840M died from natural causes in early July 2024 at 13.25 years old, making him the oldest known-age wolf documented in Wyoming and possibly in the western United States. Wolf 1309F continued providing for their pups and managed to successfully raise 3 pups on her own after 840M's death, meaning 840M's legacy, and genetic and behavioral exceptionality, will have the opportunity to live on and contribute positively to the wolf population in the northern Rocky Mountains.



The last trail camera image of 840M captured June 2023 by the WY Game and Fish

Wolf Population Monitoring in the Wind River Reservation

Population and Breeding Pair Status

The Wind River Reservation minimum wolf population and breeding pair estimates were determined using analogous methods as described for the WTGMA above. Wolves first recolonized the Wind River Reservation in 2003 and are currently distributed across the Wind River and Owl Creek Mountain ranges (Figures 1 and 10). The wolf subpopulation in the Wind River Reservation slowly increased through 2013 and has since fluctuated between 10 and 20 wolves (Figure 9). As of December 31, 2024, ≥12 wolves in ≥2 packs, including no breeding pairs, were documented on the Wind River Reservation (Figures 1 and 10; Table 3).

Capture and Telemetry Collaring

No wolves were captured in packs assigned to the Wind River Reservation in 2024.

Table 3. Wolf packs, minimum pack size at the end of the calendar year, wolf mortality, and wolf-livestock conflicts in Yellowstone National Park and the Wind River Reservation in 2024.

WOLF PACK[1,2]	MINIMUM PACK SIZE	DOCUMENTED MORTALITY[3] NATURAL	HUMAN[4]	UNKN	HUNTING	CONTROL	KNOWN DISPERSED	MISSING[5]	CONFIRMED CONFLICTS[6] CATTLE	SHEEP	DOGS	OTHER
Yellowstone National Park northern range												
8 Mile[10]	18				[5]		1					
Bliss Pass	8				[1]							
Junction Butte	10	1	[1]		[2]		1					
~~Lupine Creek~~[10]			[1]		[1]							
Rescue Creek	20						1					
Shrimp Lake[12]												
Misc. wolves	1	1										
Yellowstone National Park non-northern range												
Cougar Creek[10]	6				[2]		2					
Dunanda Falls[11]	4											
~~Firehole River~~[9]												
Hawk's Rest[11]	7											
Mollie's	8						2					
Wapiti Lake	25											
Willow Creek[12]												
~~1330F/1336M group~~				[1]	[1]							
Misc. wolves	1											
YELLOWSTONE NATIONAL PARK TOTAL[7]	**108**	**2**	**0**	**0**	**0**	**0**	**7**	**0**	**0**	**0**	**0**	**0**
Wind River Reservation												
Arrow Mountain	8	1										
Blue Trail[13]												
Byrd Draw	2											
Misc. wolves	2					3			1			
WIND RIVER RESERVATION TOTAL[8]	**12**	**1**	**0**	**0**	**0**	**3**	**0**	**0**	**1**	**0**	**0**	**0**
TOTAL in YNP and WRR	**120**	**3**	**0**	**0**	**0**	**3**	**7**	**0**	**1**	**0**	**0**	**0**

1 Underlined packs qualified as breeding pairs on December 31, 2024.
2 Strikethough packs were not documented during 2024 and/or did not exist on Dec. 31, 2024 and are not displayed in Figure 1.
3 Includes hunting and trapping mortality. Wolves taken in hunts outside Yellowstone are not included in totals but are indicated in brackets [x].
4 Excludes wolves killed in control actions and legal hunting.
5 Collared wolves that became missing in 2024.
6 Includes livestock and domestic animals confirmed as killed or injured by wolves.
7 Mortality and confirmed conflicts with livestock by wolf packs assigned to Yellowstone that occured in WYO are reported in Table 1.
8 Mortality and confirmed conflicts with livestock by wolf packs assigned to the Wind River Reservation that occured in WYO are reported in Table 1.
9 Border pack with ID; assigned to Yellowstone.
10 Border pack with MT; assigned to Yellowstone.
11 Border pack assigned to WYO in 2023; assigned to Yellowstone in 2024.
12 Border pack assigned to Yellowstone in 2023; assigned to WYO in 2024.
13 Border pack assigned to the Wind River Reservation in 2023; assigned to WYO in 2024.

Mortality

Four wolf deaths were documented on the Wind River Reservation in 2024: three were lethally removed for conflicts with livestock and one died of natural causes (Table 3).

Wolf Population Monitoring in Yellowstone National Park

Population and Breeding Pair Status

The Yellowstone National Park minimum wolf population and breeding pair estimates were determined using analogous methods as described for the WTGMA above. As of December 31, 2024, there were ≥108 wolves in ≥9 packs, including ≥7 breeding pairs, living primarily in Yellowstone National Park (Table 3). Pack size ranged from four to 25, averaging 11.8 members (Table 3). Throughout Yellowstone, a minimum of 41 pups were produced, with at least three additional litters that were born but died before they could be observed. Thirty-seven pups survived (90%) to the end of the year with 22 in the four northern packs (four breeding pairs) and 15 in the five interior packs (three breeding pairs). At the end of 2024, pups comprised 34% of the wolves living in Yellowstone.

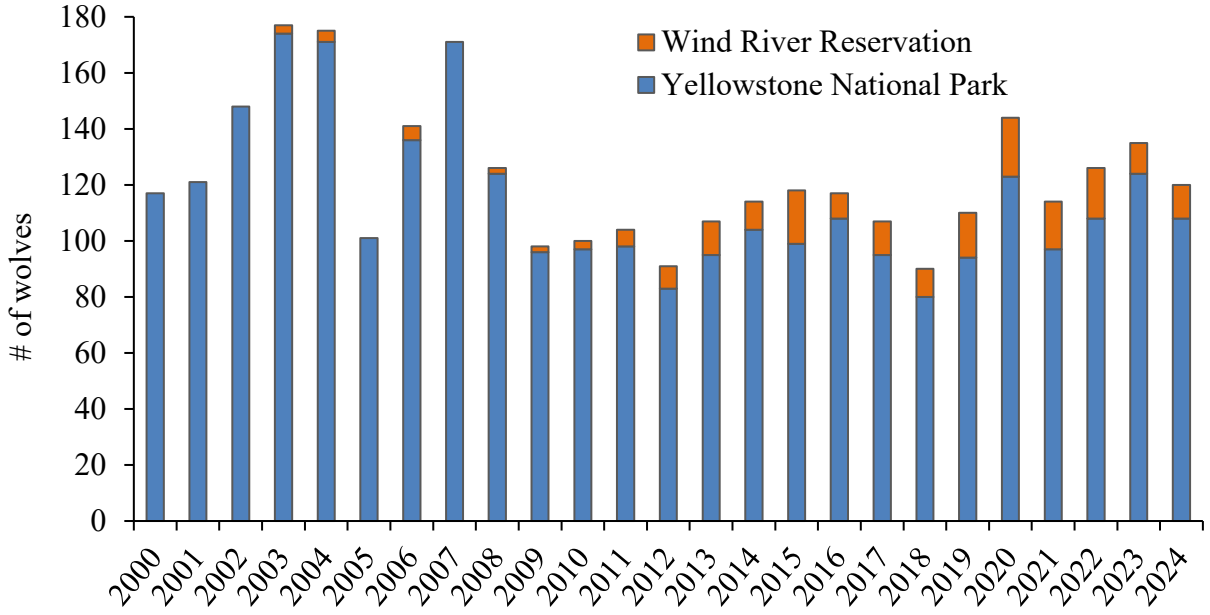


Figure 10. Minimum number of wolves in Yellowstone National Park and the Wind River Reservation at the end of the calendar year.

Several packs dissolved or shifted territories during this past year, and some new packs formed (Figure 1; Tables 1 and 3). Three packs dissolved in early 2024 (Lupine Creek, Firehole River, and the 1330F/1336M group), while three packs shifted their territories out of Yellowstone (1384F group, Shrimp Lake, and Willow Creek), and one previously Wyoming-based pack shifted to spend much of their time within Yellowstone (Hawk's Rest: Figure 1; Tables 1 and 3). Two new packs formed and then produced and successfully raised pups to the end of the year (Bliss Pass and Dunanda Falls: Figure 1; Table 3). Six long-term packs remained stable (8 Mile, Rescue Creek, Junction Butte, Mollie's, Wapiti Lake, and Cougar Creek: Figure 1; Table 3).

Prior to the birth of the 2024 litters, there were approximately 108 adult wolves in Yellowstone in April 2024. At least 41 pups were then born to nine packs. Three packs produced multiple litters: 8 Mile (five pups from one litter and an unknown number from the second litter that probably died very early), Junction Butte (two litters of three pups each), and Wapiti Lake (at least two litters with a total of 12 pups). Six packs produced one litter each (Bliss Pass, Cougar Creek, Dunanda Falls, Hawk's Rest, Mollie's, and Rescue Creek). The Firehole River, Lupine Creek, and 1330F/1336M packs all dissolved in early 2024 and were not present by the denning season, and the Shrimp Lake and Willow Creek packs both shifted their territories outside of Yellowstone before spring (Figure 1; Tables 1 and 3). The 1384F group produced pups but seemed to use areas outside of Yellowstone with enough frequency that their pups are not totaled with the Yellowstone-based packs. Of the minimum 41 pups produced in Yellowstone packs, 37 (90%) survived to the end of the year. This is considered a maximum as three litters (8 Mile, Mollie's, and Hawk's Rest) died before they could be counted.

Although we classified Mollie's pack as having one litter of pups, when the pregnant female, 1410F, localized and gave birth, the rest of her pack mates did not attend her den. She raised an unknown number of pups seemingly by herself until late June but then stopped attending the area, presumably because the pups died (unknown cause). Wolf 1410F then remained a lone wolf through 2024.

Capture and Telemetry collaring

Thirty-eight wolves from nine packs were captured and collared in 2024; 27 in February and 11 in December. New collars were deployed on 13 pups, 10 yearlings, eight adults, and two older wolves. Older or nonworking collars were replaced on four adult wolves. In addition to fitting a radio collar on each of the 38 captured wolves, staff took blood samples for disease screening and pedigree analysis, a whisker for isotopic diet analysis, body and tooth measurements, and weights. A uniquely-identifying pit-tag was inserted under the skin near the shoulder of each wolf in the event a collar is dropped or chewed off and the wolf is recaptured in the future. Twenty-three of the 38 collars have GPS capabilities to collect and send location data through satellites, can be programmed remotely, and are used to evaluate habitat selection, movement patterns, prey selection, biomass consumption, and multi-species interactions. GPS collars last for at least two years and are programmed to record locations from four to 48 times per day, depending on the season and study objectives. For the first time, staff deployed GPS collar biologgers with the ability to record auditory, acceleration, and magnetometer (i.e. orientation and movement patterns) data. These collars were programmed to record locations as frequently as every 10 minutes (144 times per day) to document detailed movements that correspond with the audio data. The remaining 15 of the total 38 collars were VHF collars, which emit a tracking beacon and have a battery life of at least five years. Each year's collaring goals are designed to maintain an adequate number of collars in each pack to gather information for monitoring and research objectives as well as for academic collaborations and interagency communications. Prior to the late 2024 collaring efforts, there were 37 collars distributed throughout the nine packs assigned to Yellowstone.

Mortality

Two wolves died in Yellowstone in 2024, both were killed by other wolves (Table 3). An additional 15 wolves assigned to the Yellowstone subpopulation died outside the Park in 2024, all of which occurred in Montana (12 taken by hunters, two poached, and one of unknown causes: Table 3).

Disease Monitoring

There was no indication of diseases in wolves in 2024. Based on localization of radio-collared wolves, several litters of pups were likely born but died before they could be counted. Early deaths of pups are sometimes attributed to disease outbreaks but overall normal pup production and high survival in other packs suggest that any early losses were more likely due to predation, drowning, limited pack member support of a denning female, or other accidents.

WOLF MANAGEMENT

SUMMARY OF WOLF MANAGEMENT STATEWIDE

In 2024, the Wyoming Game and Fish Department implemented a wolf hunting season with the biological objective to stabilize the wolf population at around 160 wolves in the WTGMA. A mortality limit of 38 wolves was divided between 13 hunt areas in the WTGMA and one hunt area in the Seasonal WTGMA (Hunt Area 12). Wolf hunting seasons were open from September 15 to December 31, 2024 with the exception of Hunt Area 12 (opened on October 15, 2024) and Hunt Area 13 (closed March 31, 2025). The hunting season for each hunt area closed at the season end date or when the mortality limit was met, whichever occurred first. A total of 34 wolves were taken that applied to the mortality limit during the 2024 wolf hunting season. In addition, the 2023 wolf hunting season extended from January 1 to March 31, 2024 in Hunt Area 13, during which one wolf was taken.

Wolves were confirmed to have killed or injured 51 head of livestock (37 cattle, 13 sheep, and one conflict with chickens) statewide in Wyoming in 2024. Forty-three wolves were lethally and legally removed by agencies or the public in an effort to reduce livestock losses to wolves (32 in the WTGMA, eight in predatory animal areas, and three in the Wind River Reservation).

Wolf Management in the WTGMA

Hunting

Wolf Hunting Season Background: Chapter 47 governs wolf hunting in the WTGMA and was part of the management framework evaluated and approved by the U.S. Fish and Wildlife Service during the delisting process. Wolf hunting regulations for 2023 and 2024 were authorized by the Wyoming Game and Fish Commission and outlined specific hunt areas, mortality limits, season dates, and other wolf hunting regulations in the WTGMA and Seasonal WTGMA. As reported in the 2023 annual wolf report, the 2023 wolf hunting season included season dates for Hunt Area 13 that extended from January 1 to March 31, 2024. Take occurring during this extended season is included in this report. For the 2024 wolf hunting season, the Wyoming Game and Fish Department delineated 14 wolf hunt areas in the WTGMA and Seasonal WTGMA (Figure 11). Some hunt areas were combined under one mortality limit to accommodate specific wolf pack movements and management objectives (Table 4). As outlined in the Wyoming Gray Wolf Management Plan, the Wyoming Game and Fish Commission-approved wolf hunting seasons were in conjunction with big game hunting seasons and ran primarily from September 15 to December 31 (Table 4; Wyoming Game and Fish Commission 2011). The wolf hunting season opening date was shifted from September 1 in 2018-2019 to September 15 in 2020-2024 to reduce the proportion of juveniles taken in the hunt. The season in Hunt Area 13 was extended to end March 31 to allow greater opportunity to harvest wolves in areas used by the wintering Whiskey

Mountain Bighorn Sheep Herd (Figure 11; Table 4). The wolf hunting season in Hunt Area 12 (the Seasonal WTGMA) differed from the other 13 hunt areas by opening on October 15 (the date wolves changed from predatory animal to trophy game animal designation as prescribed by Wyoming Statute 23-1-101(a)(xii)(B)(II)) and closed on December 31, 2024 (Figure 11; Table 4). Mortality related to wolf hunting was regulated by hunt area specific mortality limits that were defined under a general license structure. Hunters could purchase up to two wolf hunting licenses for wolf seasons in 2024. Legal and illegal wolf mortality that occurred during the open hunting season counted toward established mortality limits. The season for each hunt area closed when the mortality limit was met or at the season end date, whichever occurred first.

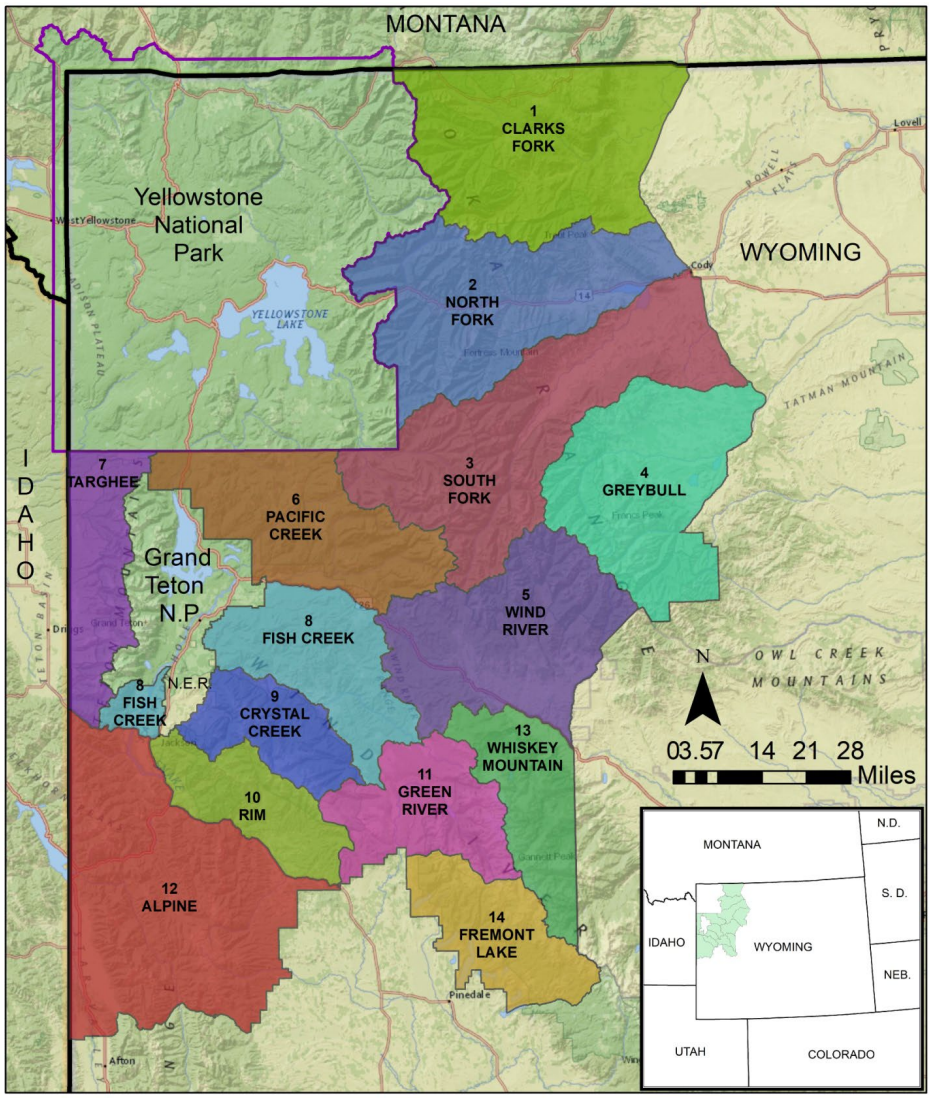


Figure 11. Wolf hunt areas for the 2024 wolf hunting season in northwest Wyoming.

Wolf mortality limits were determined using data collected annually on wolf population dynamics and human-caused mortality in the WTGMA. All forms of mortality, in addition to estimates of recruitment and wolf population demographics, were considered in the mortality limit calculation. The Wyoming Game and Fish Department predicted the population would be stabilized around 160 wolves (and 13-14 breeding pairs) at the end of 2024 in the WTGMA if 39.8% of the wolves present at the beginning of 2024 died from all human-caused mortality. The predicted, non-hunting, human-caused mortality rate (20.9%) was then subtracted from 39.8% to obtain a 18.9% wolf hunting mortality rate. This rate equaled a total mortality limit of 36 wolves when applied to

the minimum wolf population estimate of ≥191 wolves present in the WTGMA at the beginning of 2024 (i.e., the end of 2024 minimum wolf population – 1 wolf killed in the 2023 wolf hunting season in calendar year 2024). The total mortality limit of 36 wolves was then sub-divided among 13 hunt areas in the WTGMA (Table 4, Figure 11). An additional two wolves were included in the total mortality limit to be applied to Hunt Area 12 (the Seasonal WTGMA), for a total mortality limit of 38 wolves (Table 4, Figure 11).

Table 4. Summary of the 2024 wolf hunting season in the WTGMA and Seasonal WTGMA (i.e., Hunt Area 12).

WGFD WOLF HUNTER HARVEST SUMMARY 2024					1/1/2025
HUNT AREA(s)	**MORTALITY LIMIT FROM REGULATIONS**	**SEASON DATES**	**HARVEST COUNTED TOWARDS LIMIT***	**AREA STATUS**	**DATE/TIME AREA CLOSED**
		GENERAL			
1, 2	6	Sep. 15 - Dec. 31	6	**CLOSED**	**12/2 @ 9:35 AM**
3, 4	5		5	**CLOSED**	**10/9 @ 11:53 AM**
5	4		4	**CLOSED**	**10/17 @ 4:35 PM**
6, 7	5		5	**CLOSED**	**10/22 @ 2:30 PM**
8, 9, 10, 11	12		12	**CLOSED**	**11/27 @ 8:50 PM**
12	2	Oct. 15 - Dec. 31		**CLOSED**	**1/1 per Regulation**
13	2	Sep.15 - Mar. 31	2	**CLOSED**	**9/16 @ 8:17 AM**
14	2	Sep. 15 - Dec. 31		**CLOSED**	**1/1 per Regulation**
Total 2024 Mortality Limit	**38**	**Total 2024 Harvest**	**34**		
* All legal harvest or illegal human-caused gray wolf deaths that occur during an open hunting season will apply to the mortality limit.					

Wolf Hunting in the WTGMA and Seasonal WTGMA: In 2024, a total of 2,470 wolf hunting licenses were sold to 2,256 individuals (2,197 residents and 273 nonresidents), slightly above the average from 2017-2023 (2,339 licenses). A total of 214 individuals purchased the maximum allowed, two hunting licenses in 2024. A total of 34 wolves were taken in the 14 hunt areas during open wolf hunting seasons in autumn 2024 (Tables 1, 2 and 4). Among the 34 wolves attributed to the mortality limit, 30 were legally harvested and four wolves were killed illegally (three were shot and left in the field and 1 was taken without a license). Six of the eight hunt areas/hunt area combinations closed prior to the established December 31, 2024 closing date due to the mortality limit being met (Table 4).

Hunting related mortality during the wolf hunting season in 2024 was recorded in 17 of 34 packs (50%) that regularly used the WTGMA (includes Hawk's Rest assigned to Yellowstone National Park and Jedediah assigned to Idaho; Table 1). One additional wolf was taken that was a known disperser from the Spring Mountain pack (Table 1). Harvest occurred during each month of the season, with most occurring in September and October (Figure 12). Wolf harvest had been declining in September and October through 2020, but has been increasing these months in the last two years (Figure 12). Of the 30 wolves legally taken during the 2024 hunting season, an equal number of male and females (15 females:15 males) and more subadults (eight juveniles:14 subadults:eight adults) were taken. For all wolf hunting seasons combined, a higher proportion of young wolves (juveniles and subadults) have been taken in earlier months with the ratio shifting toward adults through the end of the hunting season in December (Figure 13). The Department will continue to monitor the results of wolf hunting seasons to determine the impact of hunting on wolf population dynamics and to assist in making management decisions in the future.

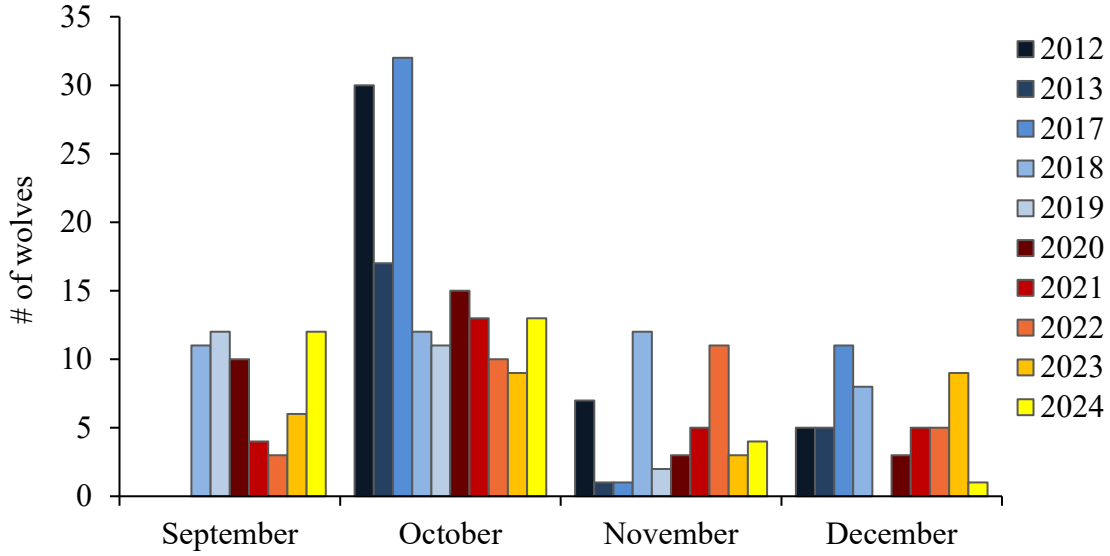


Figure 12. Number of wolves harvested during wolf hunting seasons by month and year in the WTGMA and Seasonal WTGMA in northwest Wyoming (2012, 2013 and 2017 had Oct. 1 openers; 2018-2019 had Sept. 1 openers; 2020-2024 had Sept. 15 openers).

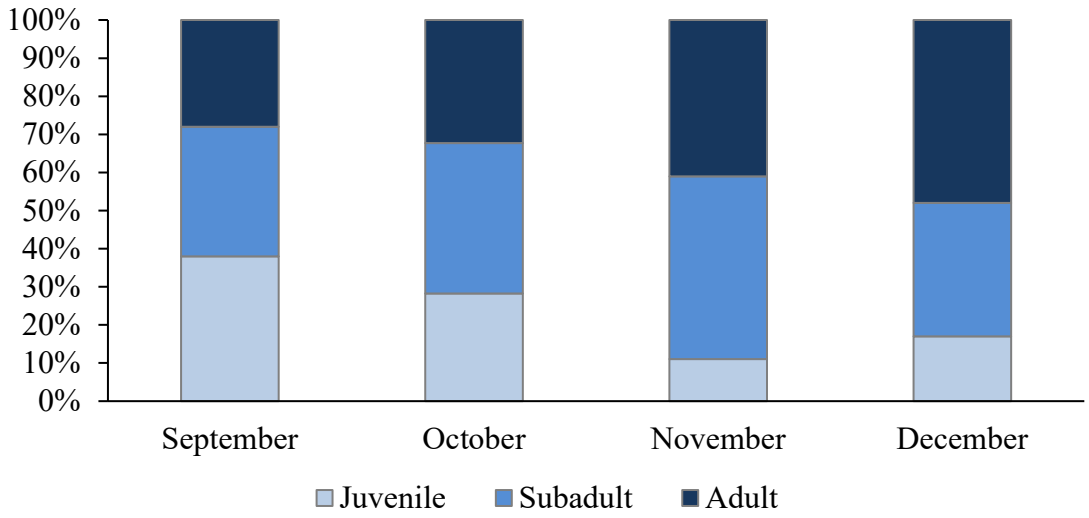


Figure 13. Proportion (%) of adult (>2 years of age), subadult (1-2 years of age), and juvenile (<1 year of age) wolves taken during wolf hunting seasons by month in the WTGMA and Seasonal WTGMA in northwest Wyoming during all wolf hunting seasons: 2012, 2013, 2017-2022 (seasons started Oct. 1 in 2012- 2017, Sept. 1 in 2018-2019, and Sept.15 in 2020-2024).

Development of the 2025 Wolf Hunting Season: In 2024, the end of year wolf population in the WTGMA was three wolves above the population objective of 160 wolves and was at the corresponding objective of 13-14 breeding pairs set during the wolf hunting season setting process (Figures 2 and 3; Table 1). From 2018-2022, the Wyoming Game and Fish Department consistently maintained an end of year wolf population within 10% of the population objective. However, the population increased above the160 wolf objective by the end of 2023 due to lower mortality and higher recruitment than expected (Figures 2, 5, and 7). Wolf mortality (Figures 14 and 15) and recruitment (Figures 7 and 8) returned to long-term trends in 2024, resulting in an end of year population that was at the population objective (Figure 2). The efficacy of the season-setting process employed by the Wyoming Game and Fish Department is dependent on analysis

of long-term wolf population trend data for the WTGMA, including recruitment (i.e., breeding pairs: Figures 7 and 8) and mortality (Figures 14 and 15). To that end, the Department will continue to take an adaptive management approach for setting wolf hunting seasons as outlined in the Wyoming Gray Wolf Management Plan (Wyoming Game and Fish Commission 2011).

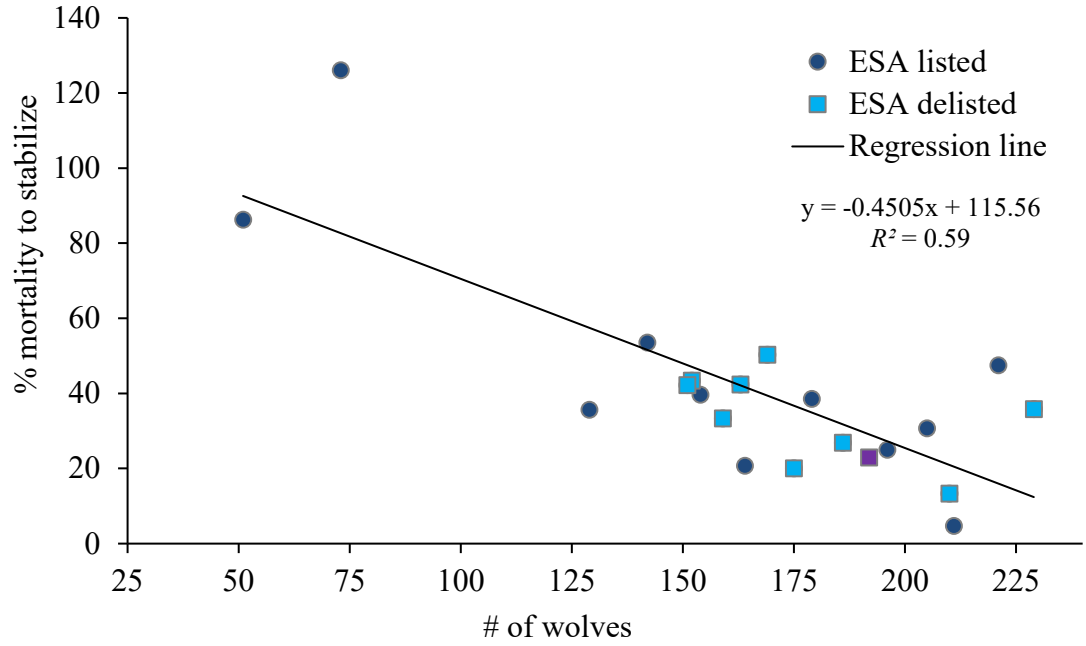


Figure 14. Minimum number of wolves at the beginning of the calendar year and the proportion (%) human-caused mortality that would have been required to stabilize wolf population growth during the calendar year in the WTGMA from 2004-2024 ("■" indicates the 2024 data point).

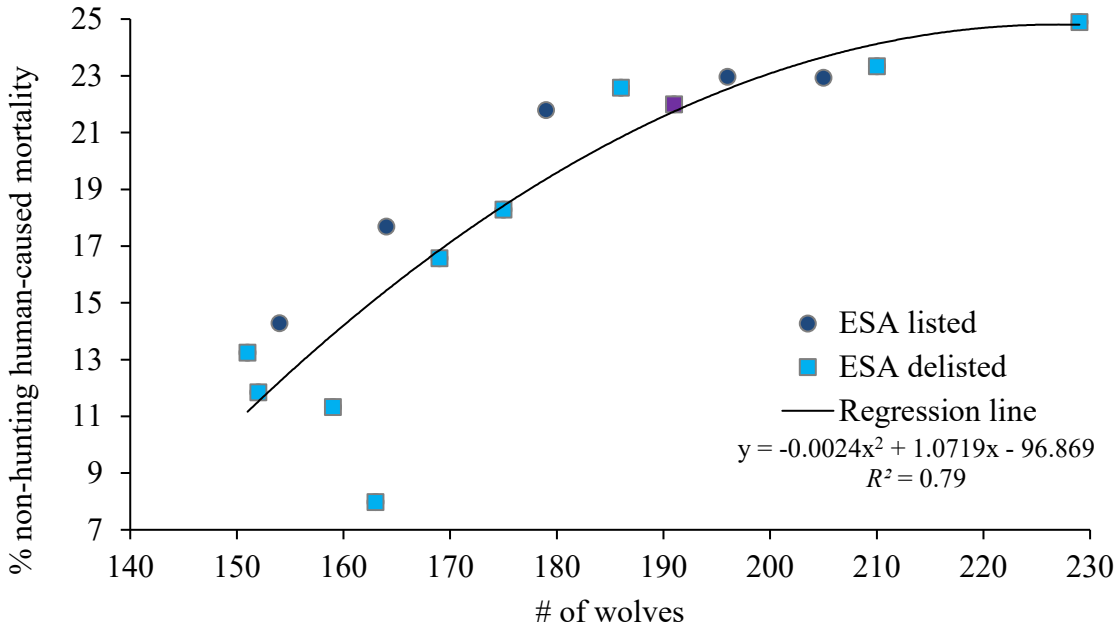


Figure 15. Minimum number of wolves at the beginning of the calendar year and proportion (%) of wolves present in the WTGMA at the beginning of the calendar year that were killed by non-hunting human-causes during the calendar year from 2008-2024 (statistical outliers from 2011 and 2016 are excluded; "■" indicates the 2024 data point).

Wolf-Livestock Conflicts

As in previous years, the Wyoming Game and Fish Department investigated all livestock that were reported as killed or injured by wolves (i.e., conflicts) in the WTGMA (Figure 1). Only confirmed livestock conflicts are documented in this report consistent with Wyoming Game and Fish Commission Chapter 28: Regulation Governing Big or Trophy Game Animal or Game Bird or Gray Wolf Damage Claims (Chapter 28), which requires confirmed evidence at the scene or on the livestock carcass indicating wolves were more likely than not responsible for the death or injury of the individual livestock. All suspected conflicts between livestock and wolves are expected to be reported in the WTGMA because verification is required to qualify for damage compensation and/or for wolf management actions to be initiated.

In 2024, wolves killed or injured 32 head of cattle in the WTGMA (Figure 16; Tables 1 and 5). Cattle confirmed as killed or injured by wolves included 13 calves and 19 cows/yearlings: Figure 16; Tables 1, 5, and 6). Several chickens were also killed in one conflict event involving the Shrimp Lake pack that resulted in the removal of a wolf in defense of private property (Tables 1 and 5). The number of wolf-livestock conflicts remained relatively similar from 2021 to 2024 (Figure 16; Tables 5 and 6). Management actions included capture and collaring wolves, intensive monitoring, lethal removal, non-lethal depredation prevention measures, and issuance of 18 lethal take permits to livestock producers (13 initial permits and five permits that were renewed due to continued conflict with livestock). Thirty-two wolves were killed in response to livestock conflicts in the WTGMA; 19 in agency-directed lethal control actions, nine under authority of lethal take permits, and four in defense of private property (Figures 5 and 16; Tables 1, 2, and 5).

Table 5. Confirmed wolf-livestock conflicts and wolves killed in conflict control actions in the WTGMA by calendar year.

Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Cattle	38	15	26	41	46	44	60	81	141	87	55	48	51	38	39	36	32
Sheep	14	37	0	0	1	19	3	19	0	0	0	0	0	0	0	0	0
Dogs	0	0	0	0	4	1	0	0	0	1	0	0	1	5	0	0	0
Horses/other	0	1	1	0	0	2	0	1	0	0	2	2	10	1	5	1	1
Total livestock killed/injured	52	53	27	41	51	66	63	118	141	110	57	50	62	44	44	37	33
Wolves killed	32	21	32	28	19	24	29	25	90	46	39	12	27	14	15	7	32

Number of Packs Involved in Confirmed Livestock Conflicts: Eleven packs (32% of 34 packs total in 2024) that use the WTGMA were involved in ≥1 livestock conflict in the WTGMA in 2024 (includes Hawk's Rest, Jedediah, and Gooseberry packs: Figure 17; Table 1). Four packs were responsible for one confirmed conflict with livestock (36% of conflict packs; 12% of all packs), two packs were responsible for two confirmed conflicts with livestock (18% of conflict packs; 6% of all packs), and five packs were responsible for ≥3 confirmed conflicts with livestock (46% of conflict packs; 15% of packs; Table 1). The number of packs responsible for depredation of livestock have been reduced and held steady at lower levels than those experienced when wolves were listed on the Endangered Species Act (September 2014 – April 2017: Figures 16 and 17).

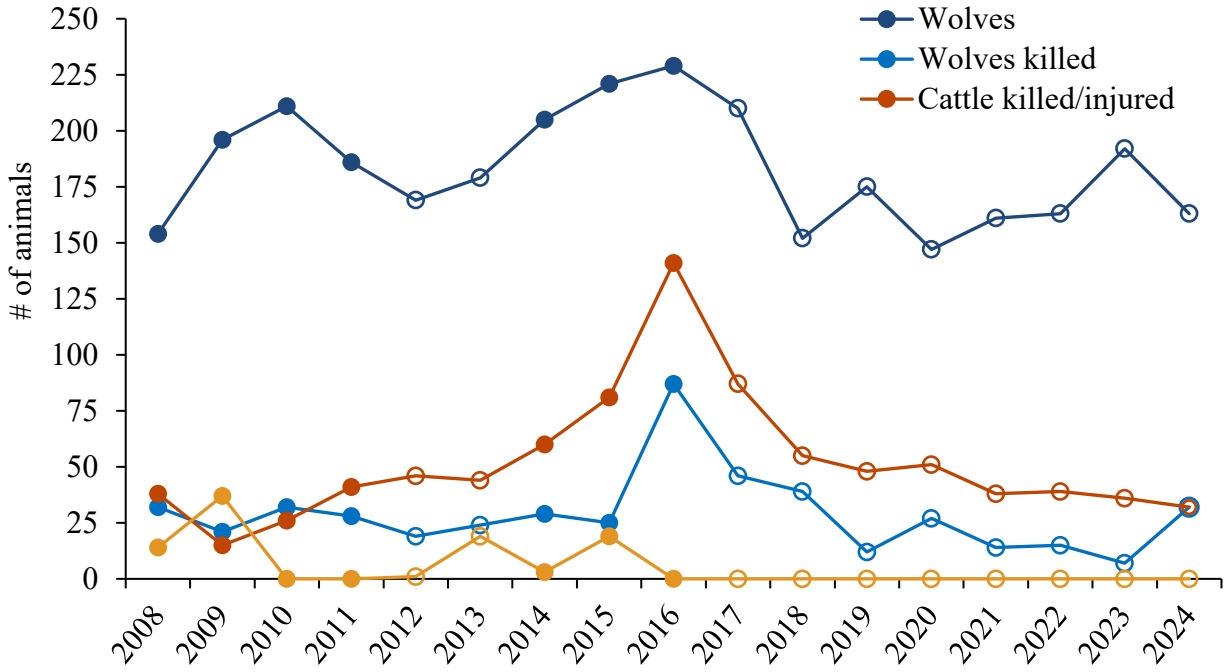


Figure 16. Number of wolves, confirmed wolf-livestock conflicts, and wolves killed in conflict control actions in the WTGMA by calendar year (filled circles indicate years where wolves were not hunted, open circles indicate years with wolf hunting seasons).

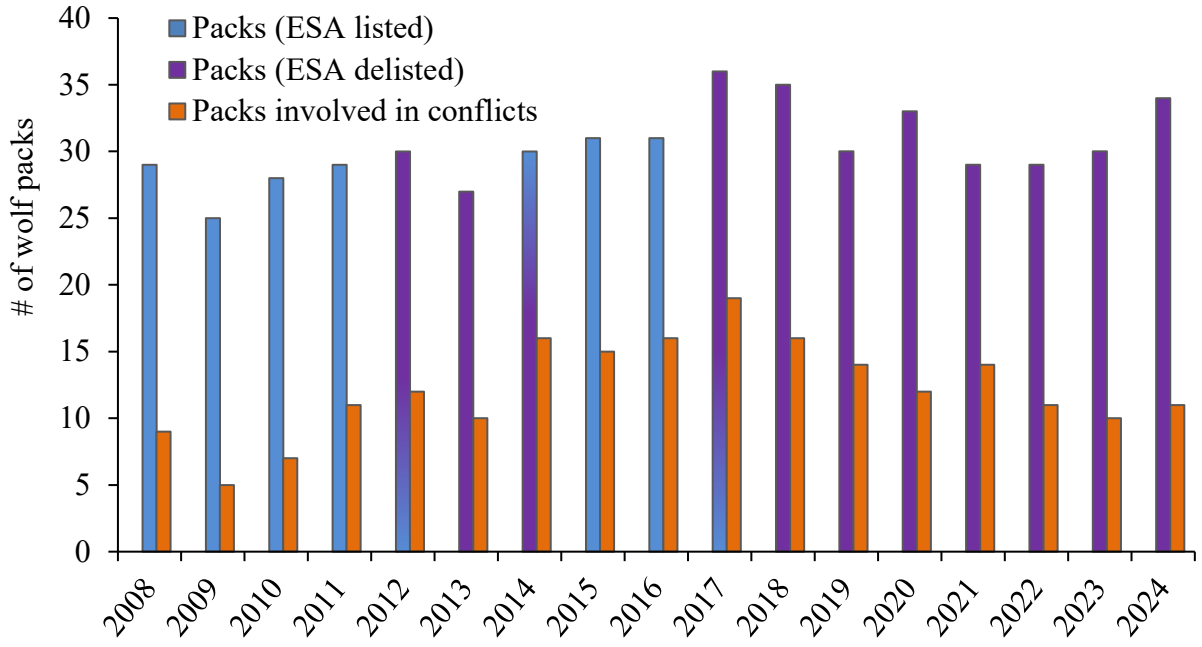


Figure 17. Minimum number of wolf packs present during the calendar year and number of wolf packs that were involved in ≥1 confirmed wolf-livestock conflict in the by calendar year.

Location of Livestock Conflicts: Land ownership is recorded for all instances of confirmed wolf-livestock conflict in the WTGMA as part of routine investigations of reported conflicts. Of 32 wolf-cattle conflicts in the WTGMA in 2024, 78% were on public land (25 cattle) and 22% were on private land (seven cattle: Table 6). Wolf Hunt Area 1 had the highest confirmed wolf-cattle conflicts, while conflicts in other hunt areas were significantly lower (Table 7).

Table 6. Proportion (%) of wolf-cattle conflicts that occurred on private or public lands in the WTGMA from 2017-2024.

Year	2017	2018	2019	2020	2021	2022	2023	2024	Average
Public	49%	45%	71%	63%	47%	56%	58%	78%	58%
Private	51%	55%	29%	37%	53%	44%	42%	22%	42%

Table 7. Confirmed wolf-livestock conflicts in the WTGMA by wolf hunt area in 2024.

Hunt area	1	2	3	4	5	6	7	8	9	10	11	13	14	Total
Cattle	13	2	5	4	4	0	0	0	0	0	4	0	0	32
Sheep	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	14	2	5	4	4	0	0	0	0	0	4	0	0	33

Seasonal Trend in Livestock Conflicts: Patterns of wolf-cattle conflict in 2024 were similar to previous years (Figure 18). Confirmed wolf-cattle conflicts began in March, peaked from July through September, and ceased by the end of November (Figure 18). Overall, the magnitude of monthly conflicts between wolves and cattle has declined since Endangered Species Act protections were removed in Wyoming in 2017 (Figure 18). Notably, Wyoming Game and Fish Department management has shortened the damage season and intensity through time (Figure 18).

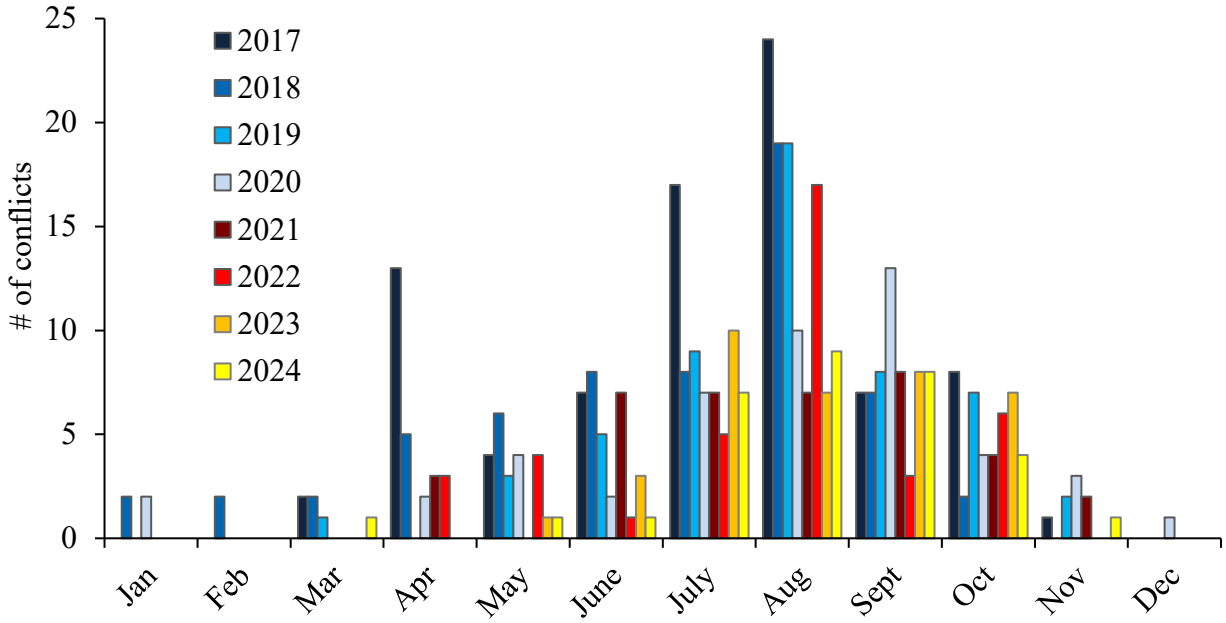


Figure 18. Number of wolf-cattle conflicts per month in the 2017-2024.

Compensation for Livestock Damage Caused by Wolves: In 2024, the Wyoming Game and Fish Department paid $287,324 to compensate 16 livestock producers for livestock killed or injured by wolves in the WTGMA and Seasonal WTGMA (Figure 19). Compensation payments declined from >$300,000 from 2014-2017 to ~$200,000 or less from 2018-2022, mirroring synchronous declines in conflict between wolves and livestock following removal of Endangered Species Act protections in Wyoming in 2017 (Figures 16 and 19). The increase in compensation payments in 2023 and 2024 were not related to increased conflict, but were related to significantly increasing market values for cattle. Confirmed sheep conflicts in the Seasonal WTGMA increased from 2019-

2022 causing overall compensation amounts to be higher during that timeframe despite stable to decreasing conflicts with cattle in the WTGMA (Figures 2, 16 and 19; Table 5). However, there were no sheep conflicts recorded in 2023 and only two sheep conflicts in 2024 in the Seasonal WTGMA. Wolf-sheep conflicts in the Seasonal WTGMA occur during the summer when sheep graze on public allotments and wolves are designated as predatory animals and are not under the management jurisdiction of the Wyoming Game and Fish Department.

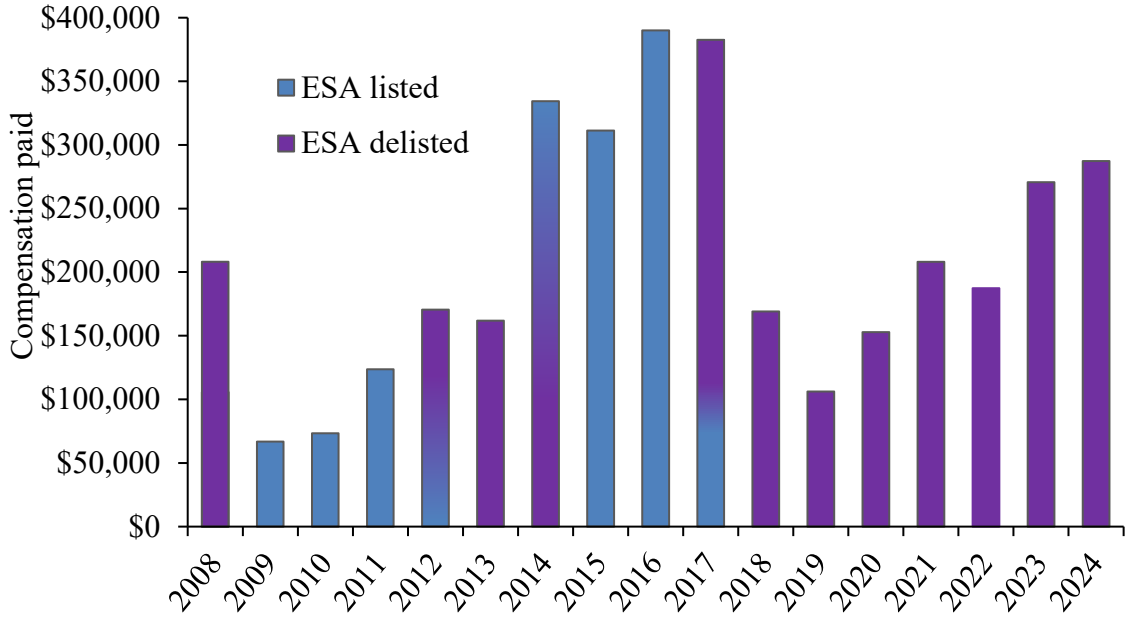


Figure 19. Compensation paid for confirmed livestock damage caused by wolves in the WTGMA (all years) and Seasonal WTGMA (2012-current year) by calendar year.

Unacceptable Impacts to Ungulates or Elk Feedgrounds

Under the Wyoming Gray Wolf Management Plan, Wyoming Statute 23-1-304(j), and Chapter 21 Regulation, the Wyoming Game and Fish Department may lethally remove wolves when it is determined that "wolf predation is causing an unacceptable impact on a wild ungulate population or herd" or when a "wolf-wild ungulate conflict has occurred at any state operated elk feedground" (Wyoming Game and Fish Commission 2011). An "unacceptable impact on a wild ungulate population or herd" is defined in Chapter 21 as:

> "Unacceptable impact on a wild ungulate population or herd" means any decline in a wild ungulate population or herd that results in the population or herd not meeting the Commission population management goals, objectives or recruitment levels established for the population or herd. The Department shall determine whether a decline in a wild ungulate population or herd constitutes an "unacceptable impact" and whether wolf predation is a significant factor causing the "unacceptable impact" based upon the best scientific data and information available."

In addition, under Chapter 21, wolves may be lethally removed for conflicts caused at state-operated elk feedgrounds only "when a gray wolf or wolves displace elk from a feedground and it results in one of the following conflicts:"

1. Damage to private stored crops by displaced elk; or,
2. Elk co-mingling with domestic livestock; or,

3. Displacement of elk from a feedground onto a highway right of way causing human safety concerns.

The Wyoming Game and Fish Department did not conduct any lethal removal actions as a result of unacceptable impacts to ungulates or elk feedgrounds caused by wolves in 2024. Monitoring and analysis of potential impacts to ungulate populations remains an integral part of ongoing management of wolves and their prey in the WTGMA.

Predatory animal areas

Wolves were verified to have killed or injured four cattle (one calf, two yearlings, and one adult) and 11 sheep (two lambs and nine adults) in 2024 (Table 1). Wolves were verified to have killed two sheep in the Seasonal WTGMA (Table 1). A total of eight wolves were taken by USDA Wildlife Services to prevent conflicts with livestock in the year-round predatory animal area in 2024 (Table 1).

Wolf Management in the Wind River Reservation

In 2024, wolves were classified as a trophy game animal on the Wind River Reservation. Legal take could occur for wolves during regulated hunting seasons and for defense of life and property. Reported livestock conflicts with wolves on the Wind River Reservation are investigated by the U.S. Fish and Wildlife Service Lander Fish and Wildlife Conservation Office or the Eastern Shoshone and Northern Arapaho Tribal Fish and Game Department.

Two wolf hunting seasons were implemented on the Wind River Reservation that were open during portions of 2024. One season was open from December 1, 2023 through February 28, 2024 and the second was open from December 1, 2024 through February 28, 2025. Season dates were chosen to correspond with the period of the year when wolf pelts are prime. A total quota of six wolves was split evenly between two hunt areas in the Owl Creek and Wind River Mountains during both seasons. Mandatory reporting was required within 48 hours to allow for seasons to be closed once the quota was met. No wolves were legally harvested in 2024. One calf was confirmed to have been depredated by wolves and another calf was determined to be a probable wolf depredation on the Wind River Reservation in 2024.

Wolf Management in Yellowstone National Park

Wolf management in Yellowstone in 2024 included temporary closures around the Junction Butte, Rescue Creek, and Wapiti Lake den areas to protect the young pups from disturbance and allow the adult wolves to travel near the den unimpeded. The closures were lifted after several months when the wolf pups were increasingly mobile.

Habituated behavior by wolves is carefully monitored through frequent observations of wolves in Yellowstone and staff attempt to correct the behavior through aversive conditioning as soon as possible. We recorded a few cases of habituated behavior in 2024 from the 8 Mile, Rescue Creek, and Wapiti Lake packs. Aversive conditioning is performed by trained staff during a teachable moment when the wolf makes the decision to be in close proximity to humans or vehicles. Yellowstone wolves that are wary and avoid humans can still live successfully in the Park largely uninfluenced by human behavior, and threats to human safety are nearly eliminated. It can be

difficult to successfully execute aversive conditioning unless staff monitor the wolf of concern daily for many hours.

OUTREACH

WYO

Personnel with the Wyoming Game and Fish Department delivered in person and virtual presentations to multiple school and community groups in 2024. Personnel continued to provide interviews for numerous magazine, newspaper, and television feature stories for local and national media outlets. As part of normal wolf monitoring and management activities, Wyoming Game and Fish Department personnel interacted with members of the public thereby increasing the public's involvement and understanding of wolf biology, monitoring, and management throughout Wyoming. The Wyoming Game and Fish Department also conducted eight public meetings during the wolf hunting season-setting process in May 2024 as well as providing information on wolf ecology and safety at multiple Living in Large Carnivore Country Workshops held throughout Wyoming.

EXPENDITURES

WYO

During the 2024 calendar year, the Wyoming Game and Fish Department conducted annual population monitoring, responsive conflict management, internal and external education and information, and other statutory and regulatory obligations in regards to damage compensation and law enforcement for wolves. The Department directed approximately $656,168 of wolf program funds toward wolf population monitoring and management in 2024. Program expenditures are reported by primary work activities conducted below, but do not represent the totality of Department expenses incurred:

- Monitoring and management program: $342,360
- Internal and external information and education: $26,484
- Compensation for verified wolf-livestock conflict: $287,324

Cooperating agencies in WYO also expended funds directed toward wolf monitoring and management in 2024 as follows:

- Grand Teton National Park: $133,000
- USDA Wildlife Services: approximately $158,398 (including funds expended for nonlethal projects and for Wyoming Animal Damage Management Board and Wyoming Department of Agriculture projects)
- Wyoming Department of Agriculture: $54,691

Wind River Reservation

A total of $5,600 was spent on wolf monitoring and management in the Wind River Reservation in 2024 ($3,600 by the U.S. Fish and Wildlife Service Lander Fish and Wildlife Conservation

Office and $2,000 by the Eastern Shoshone and Northern Arapaho Tribal Fish and Game Department).

Yellowstone National Park

About $1,178,000 was spent on monitoring and managing wolves in Yellowstone National Park in 2024; $328,000 from federal funding and $850,000 from private sources.

CONTRIBUTORS

Many personnel contributed to the content of the 2024 Wyoming Wolf Population Monitoring and Management Annual Report. Thanks go to all those who contributed.

Information presented in this report for the wolf population in WYO:

- Wyoming Game and Fish Department: Large Carnivore Section: Ken Mills (corresponding author), Clint Atkinson, Mike Boyce, Justin Clapp, Josiah Crump, Brian DeBolt, Justin Dellinger, Luke Ellsbury, Tommy Kelly, Ryan Kindermann, Phil Quick, Kesley Secrist, Scott Stingley and Dan Thompson.
- Aerial tracking and data collection: Mark Packila.
- Fiscal information: Christina Malessa.
- Wolf monitoring volunteer: Ron Blanchard.
- Grand Teton National Park: John Stephenson, Sarah Dewey and Lindsay Dreger.
- Wildlife Services: Mike Burrell, Mike Foster, Vivian Meek and Brady Smith.
- Wyoming Game and Fish Wildlife Health Laboratory: Jessica Jennings-Gaines, Alison Flynt, Kara Robbins and Sara Weller.
- Wyoming State Veterinary Laboratory: Joan Edwards and Laura James.
- Wyoming Department of Agriculture: Jerald Johnson.

Information presented in this report for the wolf population on the Wind River Reservation:

- U.S. Fish and Wildlife Service Lander Fish and Wildlife Conservation Office: Pat Hnilicka.
- Eastern Shoshone and Northern Arapaho Tribal Fish and Game Department: Art Lawson.

Information presented in this report for the wolf population in Yellowstone National Park:

- National Park Service: Kira Cassidy, Daniel Stahler, Erin Stahler, Matthew Metz, Jeremy SunderRaj, Taylor Rabe, Jack Rabe, Nikki Tatton, Mark Packila, Brenna Cassidy, Wes Binder, Claire Lacey, Gordy Scott and Cameron Ho.

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WYO

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Grand Teton National Park would like to acknowledge Troy Woydziak of Baker Aircraft for assistance with wolf captures and the Grand Teton National Park Foundation for all of the generous funding.

Wind River Reservation

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Yellowstone National Park

We thank the many people who come forward every year to study and support wildlife research in YNP. First and foremost, we thank the Wolf, Cougar, and Elk Project seasonal technicians, without whom we would not be able to complete and continue this research. We thank Yellowstone Forever for their continued support of these programs. We are especially grateful for the many generous individuals, foundations, and organizations that have provided funding for our program, either through Yellowstone Forever, the National Park Service, or through in-kind support. This support funds many of our permanent staff. We appreciate the valuable collaborations with our academic, research, and interagency partners who contribute expertise and vision to many aspects of our programs. We deeply value the safe piloting from Mark Packila of Wildlife Air, Jim Pope and team of Leading Edge, and Troy Woydziak of Baker Aviation. We thank Jeff Reed of Grizzly Systems for his generous time and knowledge surrounding bioacoustic research. We would not be able to learn and teach about YNP wildlife without all of the aforementioned people and their exceptional skills. Lastly, we also appreciate the efforts of Charissa Reid and Claire Brown for their editing and formatting of this report.

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