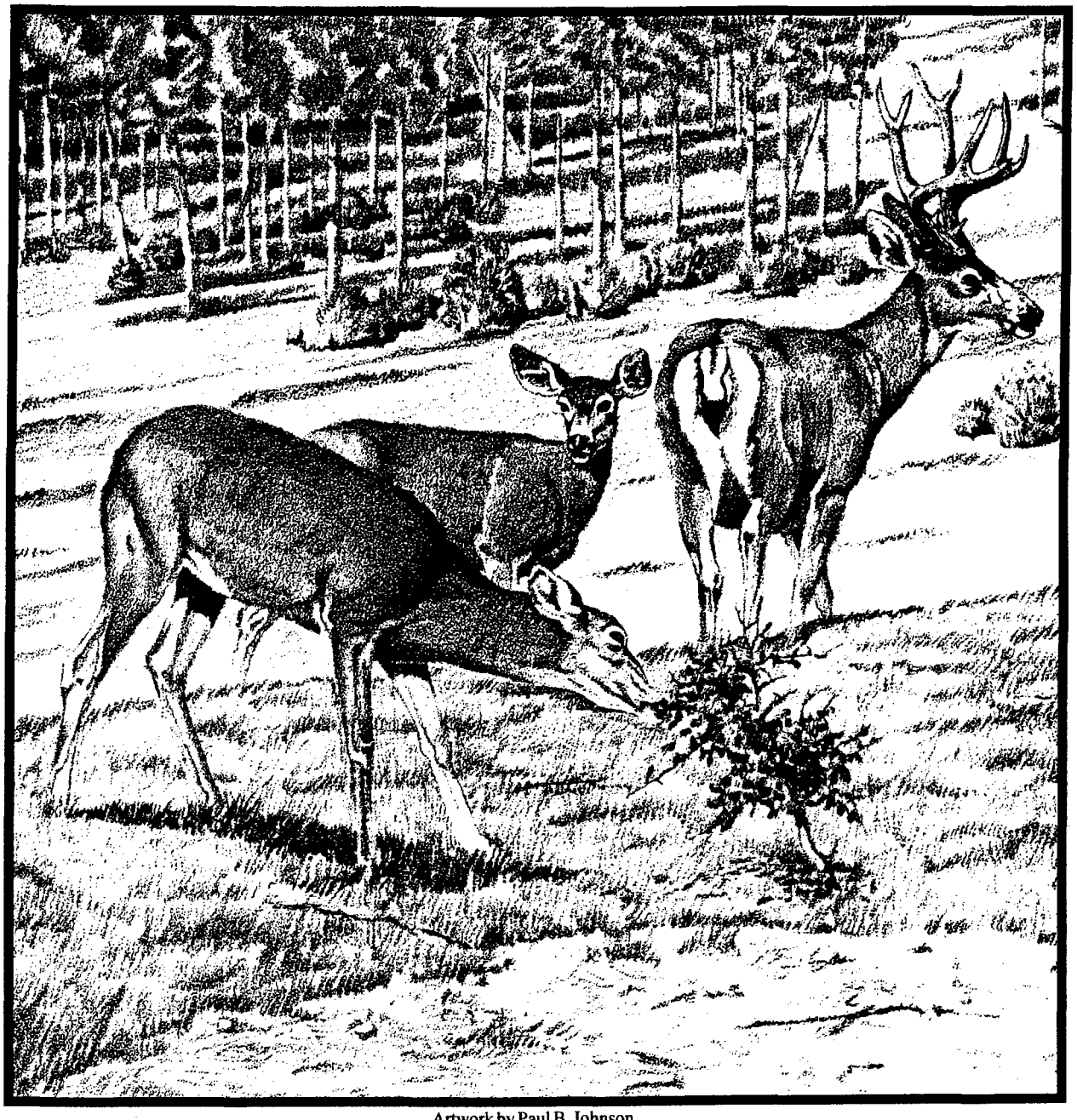
1991 WESTERN STATES AND PROVINCES DEER WORKSHOP

ASILOMAR, CALIFORNIA

August 27 - 30, 1991



Artwork by Paul B. Johnson

DEER MANAGEMENT STATUS REPORTS

RESOURCES AGENCY
CALIFORNIA
DEPARTMENT
FISH&GAME

DEER STATUS REPORT

1991 WESTERN STATES AND PROVINCES DEER WORKSHOP

This report presents the results of the DEER STATUS REPORT SURVEY sent to all participating members. The following states and provinces responded to the survey.

Alaska	Idaho	Utah
Arizona	Montana	Washington
British Columbia	Nevada	Wyoming
California	North Dakota	Yukon
Colorado	Oregon	
Hawaii	Texas	

HUNTING SEASON STATISTICS

STATE	DEER	YEAR	SEASON TYPE/ LENGTH	NUMBER HUNTERS	NUMBER DAYS	% SUCC	HARVEST ANTLERED	HARVEST ANTLERLESS	TOTAL
AK	BLTA	1989	GEN (4-6Mo)	8,248	45,453	65	11,379	3,585	14,964
AZ	MULE	1990	GEN (4-17)	54,179	217,510	26	11,408	2,809	14,217
			ARCH (21-48)	14,880	96,974	4	623		623
			MUZZ (10-17)	907	4,403	14	130		130
	WHIT		GEN (4-17)	16,722	67,133	26	4,387		4,387
			ARCH (10-17)	4,445	28,966	4	186		186
			MUZZ (10-17)	89	419	4	19		19
									19,562
BC*	MULE	1989	GEN (*)	66,083	394,498	27	13,546	4,334	**17,880**
CA	ALL	1990	GEN (16-44)	225,000	2,231,000	12	23,740	0	23,740
			ARCH (VAR)						2,090
			ADD (VAR)						910
									26,740
CO	MULE	1990	GEN (5-12)	214,176	924,871	37	54,170	24,861	79,031
			ARCH (34)	22,047	177,781	25	3,243	2,182	5,425
			MUZZ (11)	5,474	26,110	39	1,222	902	2,125
									86,581
HI	BLTA	1990	GUN	1,162	2,133	<1	34	0	34
			ARCH	126	126	0	0		0
									34
ID**	MULE	1990	GEN (26)	96,600	949,000	42	NA	NA	40,000
			ARCH (28)	13,600	100,000	10	NA	NA	1,360
			MUZZ (VAR)	9,000	43,000	19	NA	NA	1,710
			SPEC (VAR)	13,800	51,000	61	NA	NA	8,418
	WHIT		GEN (VAR)	43,400	654,000	42	NA	NA	18,228
			ARCH (28)	6,100	45,000	10	NA	NA	610
									70,326

MT	AL MULE WHIT	1990	ALL (36)	165,843	1,082,516	66	81,613 53,908 27,705	51,439 29,725 21,714	 83,633 49,419 133,052
NV	MULE	1990	GEN (11-31) ARCH (28) MUZZ (16)	30,066 1,725 665	113,119 9,424 2,918	53 23 38	11,936 399 251	4,129 0 0	16,065 399 251 16,715
ND	MULE WHIT	1990	GUN (16.5) ARCH (119) GUN (16.5) ARCH (119) MUZZ (7)	7,271 1,537 56,110 8,562 672	23,137 20,135 224,051 112,162 2,957	82 33 75 33 44	3,321 661 19,858 1,601 106	2,656 876 22,195 1,207 188	5,977 1,537 42,053 2,808 294 52,669
OR	BLTA MULE WHIT	1990	GUN ARCH MUZZ SPEC GEN ARCH MUZZ SPEC MUZZ	145,744 10,937 1,504 11,349 91,614 8,575 264 4,032 284	1,115,173 119,237 8,435 72,767 354,260 80,700 1,064 10,033 1,417	31 21 46 NA 34 23 45 82 43	37,484 1,479 491 2,152 31,135 1,723 74 0 46	6,970 814 198 4,370 0 277 45 3,319 77	44,454 2,293 689 6,522 31,135 2,000 119 3,319 123 90,654
TX	MULE WHIT	1990	GEN (16) ARCH (31) GEN (65) ARCH (31)	19,150 2,273 562,477 66,760	71,284 15,684 4,749,205 461,979	32 19 54 19	5,848 300 230,671 7,811	230 132 183,239 7,811	6.078 432 413.910 15.622 436.042
UT	MULE	1990	GEN (11) ARCH (17) MUZZ (9)	171,000 27,115 11,117	702,101 138,318 44,017	31 12 24	53,590 2,270 2,657	15,950 1,021 0	69,540 3,291 2,657 75,488
WA	ALL	1989	GUN (VAR) ARCH (VAR) MUZZ (11-19)	158,316 18,881 4,964	922,512 166,781 28,446	27 19 36	36,994 1,492 622	5,642 2,152 1,169	42,636 3,644 1,791 48,071
WY	MULE WHIT	1990	GEN (11-46) GEN (11-46)	86,145 21,128	360,925 81,048	79 45	45,247 5,261	22,852 4,274	68,099 9,535 77,634
YU	MULE	1990	NOT GAME ANIMAL						

* Does not include special/controlled hunts
** Estimated from data supplied

WHAT PERCENT OF THE BUCK AND DOE POPULATION ARE HARVESTED EACH YEAR?

STATE	DEER	BUCK	DOE
ALASKA	BLACK-TAILED	<10%	0
ARIZONA	MULE WHITE-TAILED	~40% ~16%	~2% 0
BRITISH COL.	MULE	~10-40%	~5-15%
CALIFORNIA	ALL	~70%	<1%
COLORADO	MULE	45%	10%
HAWAII	BLACK-TAILED	NA	0
IDAHO	MULE WHITE-TAILED	NA NA	NA NA
MONTANA	MULE WHITE-TAILED	~50% ~50%	<30% <30%
NEVADA	MULE	~33%	~3%
NORTH DAKOTA	MULE WHITE-TAILED	70% 60%	20% 25%
OREGON	BLACK-TAILED MULE WHITE-TAILED	19% 37% NA	5% 2% NA
TEXAS	MULE WHITE-TAILED	13% 33%	1% 10%
UTAH	MULE	NA	NA
WASHINGTON	BLACK-TAILED MULE + WHITE-T	~39% ~74%	~2% ~7%
WYOMING	MULE WHITE-TAILED	~10% ~11%	~5% ~9%
YUKON	NOT LEGAL GAME		

~ approximately

METHOD USED TO ESTIMATE HARVEST

STATE	MAIL SURVEY	PHONE SURVEY	OTHER
ALASKA	X		
ARIZONA	X		
BRITISH C.	X		Nonresident by guide declaration forms.
CALIFORNIA	X		Mandatory tag return for successful hunters only and mail hunter survey.
COLORADO	X	X	
HAWAII			Hunter check station
IDAHO		X	
MONTANA	X	X	Mail survey used on nonresidents and residents without phone number.
NEVADA			Mandatory tag return
NORTH DAK.	X		
OREGON		X	
TEXAS	X		
UTAH		X	Special tags questionnaire card
WASHINGTON	X		
WYOMING	X		
YUKON			NA

DO YOU IMPOSE ANTLER-POINT RESTRICTIONS ON HARVEST (e.g., 3pt. or better)? WHAT IS THE PURPOSE OF THESE RESTRICTIONS? HOW WELL ARE THESE RESTRICTIONS WORKING?

STATE	RESPONSE
ALASKA	No.
ARIZONA	No.
BRITISH COL.	Yes. Several. Used to provide additional hunting opportunities and to reduce kill among seasonally vulnerable herds.
CALIFORNIA	Yes. Used to increase hunter opportunity, reduce pressure and distribute it to age classes older than yearlings.

COLORADO	Yes. Used to increase post-hunting season buck ratios and to influence hunter distribution among areas and between seasons. Restrictions have worked well.
HAWAII	No.
IDAHO	No. Will implement limited forked-horn restrictions in 1991.
MONTANA	No. Antler point restrctions were experimented with on mule deer in SW Montana. Preliminary results suggested they were not effective in recruiting bucks into 4 yr. and older age classes.
NEVADA	No. Antler-point restriction increased illegal kill.
NORTH DAKOTA	No.
OREGON	Yes. Forked antler or better for black-tailed deer to avoid confusion between small, spike antlered bucks and does in an "any-buck" limit.
TEXAS	No.
UTAH	No. Antler-point restriction increased illegal kill.
WASHINGTON	Yes. Both two and three-point restrictions in about 25% of the deer areas in the state. In most of the state, the two or three point restrictions are imposed in response to hunter desires for quality hunting opportunities. The major effect of these restrictions is to reduce hunter pressure because hunters avoid areas with antler restrictions. Have not documented high illegal kill as a result of antler restrictions.
WYOMING	No.
YUKON	NA

WHAT TYPE OF RESTRICTIONS DOES YOUR STATE/PROVINCE PLACE ON METHODS OF TAKE?

ALASKA:

Firearms: Only shotguns, muzzleloading rifles, and rifles and pistols using center fire cartridges may be used.

Archery: Bow must be capable of casting a broadhead-tipped arrow at least 175 yards horizontally; the arrow must be tipped with an unbarred broadhead, and the arrow and broadhead together must weigh at least 437.5 grains.

ARIZONA:

Firearms: Centerfire rifles and handguns, and shotguns shooting slugs. Centerfire rifles can hold no more than 5 shells.

Muzzleloader: Muzzleloading rifles and pistols.

Archery: Bow must have at least a 40 lb. draw weight. Broadhead must be at least 7/8 inches

in diameter. Crossbow must have at least a 125 lb. draw weight. Bolt must be at least 16 inches in length and use a broadhead at least 7/8 inches across.

BRITISH COLUMBIA:

Firearms: No response.

Archery: Bow must have a draw weight of at least 40 lbs. Arrow must have a broadhead of at least 7/8ths of an inch at the widest point. Crossbow must have a draw weight of at least 150 lbs. Bolt must weigh at least 250 grains. Bolt must have a broadhead at least 7/8ths of an inch at the widest point.

CALIFORNIA:

Firearms: Rifles must use centerfire cartridges with softnose or expanding bullets, and must have a barrel of at least 18 inches. Shotguns capable of holding not more than three shells firing single slugs may be used. In areas where the discharge of rifles is prohibited by county ordinance, shotguns capable of holding not more than three shells firing size 0 or 00 buckshot may be used. Shotguns must have a barrel of at least 18 inches. Pistols and revolvers using centerfire cartridges with softnose or expanding bullets may be used.

Muzzleloader: Gun must be wheellock, matchlock, flintlock or percussion type using a single ball or bullet loaded from the muzzle, have at least 26 inch barrel, be at least .40 caliber, and be equipped with iron sights only.

Archery: Bow must be able to cast a legal hunting arrow a horizontal distance of at least 130 yards. Arrow and bolts must be equipped with a broadhead type blade which will not pass through a 7/8 inch in diameter hole. No explosive or chemicals which would tranquilize or poison any animal may be used. Crossbows are not archery equipment. Crossbows may only be used during the general rifle seasons.

COLORADO:

Firearms: Gun must be of at least .24 caliber, have at least a 16 inch barrel and 26 inch overall length. If semiautomatic, may hold no more than 6 rounds total. Must use expanding bullets that are at least 70 gr. in weight and have an impact energy of at least 1,000 foot pounds at 100 yards. Fully automatic rifles are prohibited. Any shotgun must be at least of 20 gauge; fire a single slug; have a minimum barrel length of 18 inches and 26 inches overall length. Handguns must have a barrel of at least 4 inches in length; be at least .24 caliber; not have a shoulder stock or attachment; only use lead slugs or jacketed soft-nosed bullets of at least 120 grains weight; and use cartridges with a 1-1/4 inch minimum case length.

Muzzleloading: Muzzleloading rifles must be of single barrel; fire a patched ball or bullet the length of which is not greater than twice the diameter; must be .40 caliber or greater; have only iron peep or open sights; and sabot rounds are not legal rounds during muzzleloader season.

Archery: Must use an arrow equipped with a broadhead. The broadhead must be at least 7/8ths inch wide, have at least two steel cutting edges and each edge must be in the same plane for its entire length.

Crossbow: Must have a minimum draw weight of 125 pounds; have a minimum draw length of 14 inches; have a positive mechanical safety device; use a bolt that is at least 16 inches in length and is equipped with a broadhead that is at least 7/8ths inch wide and has at least two

steel cutting edges that are in the same plane for their entire length.

HAWAII:

Firearms: Rifles of at least 1,200 foot pounds of muzzle energy, shotguns of 20 gauge or larger loaded with 00 buckshot or rifled slugs.

Muzzleloading: Muzzleloading rifles regardless of mode of ignition of at least .45 caliber are permitted.

Archery: Strait bows must have at least 45 lbs. of drawing tension, compound bows must have at least 30 lbs. draw weight, and laminated full recurved bows must have at least 35 lbs. draw weight.

IDAHO:

Firearms: Firearm may not weigh more than 16 lbs. Shotguns may not use shot smaller than #00 buck. Rifles and pistols must be centerfire.

Muzzleloading: Muzzleloading rifle or musket must be at least .45 caliber; equipped only with open or peep sights; not have more than one barrel, and be equipped with flint or percussion cap directly exposed to the weather.

Archery (including crossbow): Bow must have a peak draw weight of at least 40 lbs. up to or at a draw of 28 inches. Arrow must have a broadhead measuring at least 7/8 inches in width and have a primary cutting edge at least 0.015 inches thick. Arrows may not have expanding broadheads; barbed broadheads; chemical or explosive attachments; or weigh less than 400 grains (including broadhead). Bow may not have any device attached that holds a bow at partial or full draw; any electronic or tritium-powered device attached to an arrow or bow; magnifying sights; or, be capable of shooting more than one arrow at a time.

MONTANA:

Firearms: All.

Muzzleloading: Can be used during general firearm seasons only.

Archery: In process of placing restrictions on what type of equipment may be used.

NEVADA:

Firearms: Rifle must be centerfire of at least .22 caliber. Handguns must be centerfire of at least .22 caliber with an overall length of at least two inches, or be of a caliber of .357 magnum, .41 magnum, .44 magnum or .45 magnum. Hundguns must have a barrel length of at least four inches. Shotguns must be at least 20 gauge and no larger than ten gauge, and must use rifled slugs.

Muzzleloading: Must be either flintlock or percussion and have a single barrel, open or peep sights and be of at least .44 caliber. Projectile may be either a lead ball or conical bullet.

Archery: Bow, in hands of user, must be capable of throwing a 400 grain arrow 150 yards over level terrain. Arrow must have hunting tips at least 3/4 inches wide.

NORTH DAKOTA:

Firearms: Centerfire rifles of .22 caliber or larger with at least a 16 inch barrel. Rifled slugs of 20 gauge or larger are legal for shotguns, which must have at least an 18 inch barrel. Handguns .40 caliber or smaller must fire a cartridge at least 1.285 inches in length and bullets must be at least .257 in diameter. Handguns .40 caliber and larger must fire cartridges at least .992 inches in length. Semi-automatic rifles may not be used with a clip capable of holding more than eight cartridges.

Muzzleloading: Muzzleloading long guns of .45 caliber or larger with flint or percussion ignition. Telescopic sights are illegal. The lock must have an outside swinging or pivoting hammer. Muzzleloading handguns must be at least .50 caliber.

Archery: A bow must be pulled and released by hand and capable of casting a hunting arrow a distance of 130 yards. Arrows must be at least 24 inches in length, tipped with barbless hunting points at least 3/4 inches wide and 1-1/2 inches long, and have at least two cutting edges. Electronic range finding devices, electronic sight devices, and stationary lighted sight pins cannot be possessed while hunting. Optical rangefinders are legal.

OREGON:

Firearms: Centerfire rifles or handguns (special permit required) of .22 caliber or larger. Shotguns using slubs or #1 or larger buckshot. Fully automatic rifles prohibited. Semiautomatic rifles with a magazine capacity of more than five cartridges are prohibited.

Muzzleloading: Muzzleloader rifles of .40 caliber or larger. Only iron sights and open ignition allowed.

Archery: Longbow, recurve and compound bows must have at least a 40 lb. draw. Unbarbed, fixed position broadheads at least 7/8" wide are required. Maximum reduction (let-off) in holding weight of bow at full draw shall not exceed 65%. No electronic device(s) shall be attached to bow or arrow. May not use any device secured to or supported by the bow for the purpose of maintaining the bow at full draw.

TEXAS:

Firearms: Centerfire rifles and handguns, and shotguns.

Muzzleloading: Permitted.

Archery: Permitted.

UTAH:

Firearms: Centerfire, high-powered rifles using expanding type bullets are legal for taking all big game. Handguns must be either at least .24 caliber, fire a centerfire cartridge of at least 2 inches in length with an expanding bullet, have at least a 6 inch barrel, and develop at least 500 foot-pounds of energy at the muzzle; or be of at least .35 caliber, fire a centerfire cartridge with an expanding bullet, have at least a 6 inch barrel, and develop at least 500 foot-pounds of energy at the muzzle. Shotguns must be at least 20 gauge and use slug ammunition.

Muzzleloading: Muzzleloading rifles must be muzzleloading, only have iron sights, be of a single barrel, have at least a 21 inch barrel, be capable of firing only once without reloading, and must fire a projectile of at least .40 caliber. Sabot type projectiles are not allowed.

Archery: The bow must be at least 40 lbs. at archer's draw, or the peak, whichever comes first. Devices for cocking and holding the bow at any increment of draw are illegal. Release aids may be used but must be hand held with the archer supporting the draw weight. Arrowheads must have two or more sharp cutting edges that cannot pass through a 7/8 inch ring. Arrows treated with chemicals or explosives and crossbows are illegal.

WASHINGTON:

Firearms: Rifles used to hunt big game must be a minimum of .24 caliber, have a minimum 16 inch barrel and shoot a cartridge that develops at least 900 foot pounds of energy at 100 yards and contains an 85 grain or heavier mushrooming or expanding bullet designed for big game hunting. Shotguns at least of 20 gauge in size shooting slugs of #1 or larger buckshot may be used to hunt deer. Handguns must be at least .24 caliber, have a minimum barrel length of four inches, use a mushrooming or expanding-type bullet, and generate a minimum of 750 foot pounds of energy at 100 yards.

Muzzleloading: Gun must be muzzleloading and have no more than two barrels of at least 20 inches. Ignition must be of original design and be exposed to the elements. Only iron or peep sights are allowed. The muzzleloader must fire a single, non-jacketed lead bullet of at least .40 caliber. In addition, buckshot at least #1 in size may be used in a smoothbore of at least .60 caliber.

Archery: Bow must produce at least 40 pounds of pull measured at 28 inches or less of draw length and have no more than a 65% reduction (let off) in holding weight at full draw. The arrow and broadhead combined must weigh at least 400 grains. The broadhead must be sharp and have blades at least 7/8 inches wide. Barbed broadheads are not permitted. The bow may not have any device attached to it for the purpose of holding it at full draw or in firing position. No electronic devices may be attached to the bow.

WYOMING:

Firearms: Centerfire weapons must be at least .23 caliber using cartridges at least two inches long.

Muzzleloading: Must be at least .40 caliber and use a charge of at least 50 grains.

Archery: Bow must have at least 40 lbs. draw weight or shoot a 400 grain arrow at least 160 yards.

YUKON:

Not applicable.

IN WHAT WAYS DO YOU BELIEVE HUNTING IMPACTS YOUR DEER POPULATIONS (i.e., compensatory/additive mortality, total population size, genetics, behavior, etc.)? WHAT DATA DO YOU HAVE TO SUPPORT THIS?

ALASKA: Hunting functions as compensatory mortality where we have winters with deep snow and no wolves as in northern southeast Alaska. In southern southeast Alaska where winters are mild and snowfall is light, mortality from hunting is additive.

ARIZONA: Population data suggests that population size can be affected by hunting. This would indicate that hunting can produce both compensatory and additive effects, depending on hunt (pressure). Research data indicates short term changes in behavior due to hunter activity.

BRITISH COLUMBIA: Hunting is partially compensatory. The extent of compensation probably varies by DMA. Hunting has the greatest potential for compensation in DMA 6 where density dependent responses to harvest are probably greatest. The dependent responses to harvest are probably greatest. The interpretation is based upon the frequency of severe winters and their influence on density dependent growth. A potential concern with hunting, regarding its capacity to evoke "density dependent responses", relates to mule deer range-use patterns in south-central B.C. which appear to be much more rigidly tradition-bound than previously suspected. These range-use traditions, in combination with uneven harvest pressure due to access, may limit the capability of mule deer to easily redistribute themselves to utilize resources in heavy harvest areas and thus demographically "compensate."

CALIFORNIA: California's bucks-only (only a few, limited doe and antlerless hunts) hunting appears to have no affect on the size of deer populations. Hunting significantly reduces the buck segment of the population (up to 75% of the bucks killed annually). It is believed that most of the herds in California are habitat (forage) limited, as evidenced by low fawn recruitment and fair to poor body condition. It is also believed that hunting mortality is compensated by both reduced mortality and increased recruitment where habitat conditions permit.

COLORADO: We are currently conducting research on this topic in Northwest Colorado. Generally, we feel hunting is compensatory. In many areas total deer density is high and over-winter fawn survival is low. We feel fawn survival would increase with lowered deer densities. We are currently publishing a wildlife monograph on the research to support this. We have also studied the potential of harvest on mule deer genetics, primarily from a spatial distribution aspect. This work has been published in the Journal of Mammalogy.

HAWAII: Legal hunting has minimal impact (buck only). Illegal doe hunting and off-season hunting believed to be greatest limiting factor to herd growth. Deer reproduction rates are good (40% of bucks in harvest are yearlings). Deer are healthy, habitat is underutilized (Telfer, 1988, W. Sec. Wildl. Soc.).

IDAHO: Effects are structure and size of populations. Research in southeast Idaho demonstrated changes in behavior.

MONTANA: Among bucks, hunting-related mortality may replace natural mortality by its influence on age-class structure. Among does, hunting mortality is additive. Overall, hunting affects both age structures and population trend. Comparatively, liberal antlerless regulations are followed by reduced buck harvest in subsequent years. See Dusek et al. 1989 and Wood et al. 1989.

NEVADA: Nevada's deer hunting seasons are extremely conservative. There is not detectable effect, except in reducing the buck ratio. Our kill is too small to produce observable changes in production, density, etc. Our quotas are adjusted for population changes, but we have not attempted to manipulate the population density with our hunting.

NORTH DAKOTA: Compensatory mortality and better distribution of white-tailed deer are the primary beneficial impacts. We have not detected negative biological impacts. (Based on) past experience and studies.

OREGON: Most black-tail seasons have little impact on population size. Buck ratios post season generally exceed 25/100 (statewide average is 27). Believe that most herds habitat driven, hunting, at most, mitigate extreme ends of population fluctuation.

TEXAS: An estimated 4% of our mule deer population is harvested annually (population surveys and hunter harvest mail surveys).

UTAH: General season hunting drastically removes a majority of the buck population. Postseason buck:doe ratios are low at 2-8 bucks in many units.

WASHINGTON: Hunting seasons result in the death of deer. Regulated hunting seasons are designed to target specific sex or ages of animals that are determined to be surplus. In the case of buck deer, hunting seasons are the single largest mortality factor. In the case of female deer, hunting seasons result in a small loss of the population. Except for special damage control areas where liberal antlerless hunting is authorized, hunting seasons do not affect population size. In most areas population sizes are not measured with a degree of accuracy that facilitates evaluation. Since total deer numbers do not appear to be significantly influenced by liberal buck seasons, buck mortality appears to be largely compensatory. In some situations where special antlerless seasons are implemented in response to a deteriorated winter range (Dinkleman Fire) the antlerless mortality is largely additive. It appears that deer hunting can be either additive or compensatory or a combination of both depending on the situation. We have no data on which to speculate that hunting seasons influence genetics or behavior. It is apparent, however, that deer in unhunted areas are far more tolerant of humans. I do not know how this affects their survival.

WYOMING: Hunting is neither compensatory or additive. Deer populations grow (annually) until severe winter significantly reduces numbers. Supporting data - mule deer numbers have annually increased since last severe winter; 1983-84.

YUKON: Not applicable.

DO YOUR DEER SEASONS EXTEND INTO THE BREEDING SEASON? IF SO, HOW FAR?

STATE	HUNT IN THE RUT?	HOW EXTENSIVELY?
ALASKA	Yes	In most areas deer seasons cover the entire breeding season.
ARIZONA	Yes	Some do approximately 2-3 weeks.
BRITISH COLUMBIA	Varies by manag. unit	The basic mule deer harvest regime is a long general open season for antlered deer extending from early September to late November or early December, and a short general open season or limited energy season for antlerless deer.
CALIFORNIA	No	There are a few limited entry public hunts and some of the Private Lands Management areas. In these cases they overlap the rut from one to three weeks.
COLORADO	Yes	Most end by November 10 which is the beginning of breeding in Colorado. Some late November damage hunts could be during the rut.
HAWAII	Yes	One half to one month.

IDAHO	Yes	For mule deer in 1990 - yes; 1991 no general seasons in ruts for mule deer except for backcountry but will offer limited controlled buck hunts during rut in some units. For white-tailed deer yes, 11/20 to 12/1.
MONTANA	Yes	Two to three weeks.
NEVADA	Yes	Our archery seasons begin in early August and a few late rifle hunts end in early January. The rifle season for most units runs from early October to early November. By the end of the season, most bucks older than yearlings are displaying rutting behavior. Our peak of breeding falls in late November and early December.
NORTH DAKOTA	Yes	During some years breeding is evident through the entire season - most often it involves the last week or 10 days of the season.
OREGON	Yes	Latest season is a muzzleloader hunt into December - General season hits beginning of rut (1st week in November) next year.
TEXAS	Yes	Varies.
UTAH	Yes	Muzzleloader hunts occur during initial stages of rut. Two trophy units occur during peak of the rut.
WASHINGTON	Yes	We have some deer seasons that extend into the breeding season. For black-tailed deer approximately 75 percent of the breeding takes place between November 10 and 25. For mule deer nearly 80 percent of the breeding takes place between November 15 and December 10. We have a four day late buck season in western Washington that occurs near the end of the peak blacktail breeding season. We also have archery and muzzleloader deer seasons shortly after the peak blacktail breeding dates. Hunting seasons for mule deer and whitetail deer occur during part of the breeding season. Firearm seasons extend to November 24 in mule deer and whitetail deer country. While several archery and muzzleloader hunting seasons occur during the last half of the breeding season (November 27-December 15). We have no data to suggest hunting during the breeding season impacts breeding success.
WYOMING	Yes	A few hunt areas extend to the end of November.
YUKON	NA	Not applicable.

DO YOU MANAGE DEER ON A "UNIT" BASIS? DO YOU HAVE MANAGEMENT PLANS FOR THESE UNITS?

STATE	MANAGE. UNITS?	PLANS
ALASKA	Yes	Game Management Units 1-5. A strategic management plan for deer in southeast Alaska (units 1-5 is currently in draft form.
ARIZONA	Yes	Management plans on a unit basis are currently being developed.
BRITISH COLUMBIA	Yes	Hunting regulations are set on a MU basis. Harvest statistics are also collected on a MU basis. Harvest strategies generally apply to a number of adjacent MU's having similar ecological characteristics and hunting pressure. Management plans are available for regions (administrative areas of the province). A provincial mule deer statement has been written that identifies the goals and objectives for mule deer management within the province.
CALIFORNIA	Yes	There are 80 deer herd plans that form our basic management units.
COLORADO	Yes	We have data analysis unit plans for all of our major herd units. A DAU is made up from 1 to 7 game management units.
HAWAII	No	No.
IDAHO	Yes	Yes.
MONTANA	Yes	There is no current management plan for individual units, although one will be drafted in the near future.
NEVADA	Yes	Nevada manages by unit or small groups of units. We do not have unit management plans.
NORTH DAKOTA	Yes	Yes.
OREGON	Yes	No.
TEXAS	Yes	Yes.
UTAH	Yes	We have plans for each management unit.
WASHINGTON	Yes	We manage antlerless deer by Game Management Unit and have about 147 GMUs in the state. Buck deer are managed by a group of GMUs labeled Population Management Units (PMUs). We have 38 PMUs in the state. Washington does not have deer plans completed yet.
WYOMING	Yes	Yes.
YUKON	NA	Not applicable.

HOW MANY DEER IN YOUR STATE/PROVINCE? WHAT MAJOR FACTOR(S) LIMIT THEIR POPULATIONS, AND WHAT EVIDENCE IS THIS BASED ON?

STATE	ESTIMATED POPULATION SIZE	MAJOR LIMITING FACTORS
AK	250,000 - 300,000	Snow depth, forage availability, and wolf and black bear predation are limiting factors. Beach mortality transects and range condition transects provide evidence of limiting factors.
AZ	165,000 mule 96,000 whitetail	Lack of precipitation is the most limiting factor.
BC	135,000 mule	This is a "guess-estimate" based on harvest levels and population trends. Limiting factors vary by DMA. Major limiting factors include severe winters; habitat changes associated with intensive agriculture and residential development; winter ranges impacted by forestry and hydro-electric developments; forest succession; fire suppression; livestock browsing; and predation by wolves.
CA	700,000	Habitat conditions (forage quality and quantity) and the factors that affect it (decadent vegetation, drought, over-grazing, development, etc.) are believed to be the primary limiting factor for most of the deer herds. Severe winters, predation and disease are also believed to be important factors for some herds. Poor body condition and fawn survival are common consequences of poor habitat condition. Research on the North Kings Deer Herd indicate that predation by mountain lions can be substantial. Large blue tongue die-offs occur periodically.
CO	700,000	This is based on a series of helicopter quadrant count and on population models (Pop II).
HI	600	Based on observed browse use and other deer sign.
ID	Do not estimate numbers.	Weather primary factor that dictates deer population direction. Population direction is modified through harvest strategies.
MT	Unknown	Total number of white-tailed deer and mule deer is unknown and has not been addressed on a statewide basis. Hunting is the predominant source of mortality in all regions of the state. For white-tailed deer, however, inverse relationship between summer fawn mortality and adult female density has been documented in comparatively stable riverine environment in eastern Montana (see Dusek et al. 1989). For mule deer, periodic harsh environmental conditions (drought, severe winters) affect annual recruitment rates (see Hamlin and Mackie 1989, Wood et al. 1989).
NV	251,000	Weather cycles were the most significant factors affecting the deer population during this period. Long term changes in habitat may affect populations in the future, but this is not evident now.

ND	145,000	Variability of acceptable habitat. At present, CRP acres are having a positive impact. When these contracts run out, we will experience the "negative side of the coin." Past studies.
OR	480,000	Estimate based on trend counts applied to original, estimated, "benchmark" populations, by unit. There are two separate sub-species of whitetail. Columbian on west side (Federally listed) Idaho on east side - very limited amount of population information. Populations are apparently expanding. There are an estimated 257,904 mule deer. Major limiting factors include: habitat change - both long term several stage change and man-induced short term changes; predation; and control of local populations causing change.
TX	3,300,000 whitetail 161,000 mule	For whitetail: deer limiting factors include rainfall, habitat degradation, livestock overgrazing and predation. For mule deer: limiting factors include rainfall, predation, habitat degradation, livestock competition and human encroachment.
UT	400,000	We're down presently about 25-30% due to drought. Limited generally by weather extremes and local habitat loss or degradation.
WA	200,000 blacktail 133,000 mule 77,000 whitetail	Population limiting factors are different in each area of the state. In the Puget Sound trough, human population growth, development, and industrial sprawl are the major impacts. Approximately 75% of the residents of the state, or three million people reside here. Blacktail deer habitat is being converted to uses inconsistent with deer at an increasing rate because of our state's population growth. In eastern Washington, the primary impacts are orchard expansion and recreational development. Mule deer winter ranges are being converted into recreational developments. The fruit industry continues to expand into mule deer winter range. Whitetail deer are doing very well in Washington but damage problems are increasing. Orchards and agricultural developments are creating conflicts with landowners. The Department is forced to issue about 5,000 antlerless permits with a two deer bag limit to reduce damage problems. In some areas whitetail deer are out competing mule deer and mule deer numbers are declining.
WY	541,826 mule 46,530 whitetail	The limiting factor for both species is severe winter weather. Evidence is the inability to manage populations for established population objectives with hunting success.
YU	300-500 mule	They appear to be limited by predators (wolf, coyote, lynx) and the occasional severe winter. No research has been conducted to verify.

DO YOU ANNUALLY ESTIMATE DEER POPULATIONS? IF SO, WHAT METHOD(S) DO YOU USE TO DO SO? IDENTIFY ANY PROBLEMS WITH YOUR METHOD(S).

STATE	EST. POP?	METHOD	PROBLEMS
AK	Yes	We estimate population trends using pellet-group surveys, winter mortality surveys and occasional aerial surveys.	
AZ	Yes	Computer modeling of change-to-ratio type data. Some use of GIS methodology using density estimates.	Computer models are severely limited by the quality of the data used.
BC	No	Every 1-5 years wildlife staff provide guess-estimates of mule deer population levels. An aerial stratified random block census was conducted during 1990/91 within DMA 12 where mule deer sightability is high. We are currently re-evaluating our population estimates using simple population models.	
CA	Yes	Herd composition and buck harvest data are collected and used with CIR and population reconstruction (KILLVARY) models to estimate abundance and follow trends.	The most important problem for some herds is lack of sufficient data.
CO	Yes	In many major herd units. In other units we alternate years or estimate densities every 3rd year. We use helicopter quadrant counts and line transect methodology	Major problem is cost involved to work the permanent quadrants and to fly the counts. The major problem with line transect counts is the large degree of training required to obtain the data.
HI	Yes	Browse survey transects/tracks. Hunter success ratio also used to evaluate population trends.	Quite inaccurate due to variations in annual weather. Heterogeneous habitat, lack of manpower for more intensive surveys.
ID	No		
MT	Yes	Not on a unit by unit basis for either mule or white-tailed deer. Estimates have been associated with ongoing research projects. In eastern Montana this involved Lincoln-Peterson estimates based on replicated aerial surveys for white-tailed deer. In NW Montana, a maximum likelihood estimate is used for white-tailed deer. Trend units are surveyed annually in some regions.	

NV	Yes	Nevada uses two methods to estimate deer populations. We have used a change-in-ratio estimator (CIR) since the early 1970's. In recent years we have used a computer model simplified to fit the data we collect. The biologist uses both methods and selects the most realistic estimate for recommending quotas.	
ND	Yes	North Dakota conducts aerial surveys of 98 permanent study areas (located in all parts of the state) when adequate snow exists for such work.	Problems involve timing, not enough personnel and lack of snow cover during some years.
OR	Yes	For mule deer Oregon conducts herd composition and trend counts from helicopter, fixed wing, foot, vehicle, and horseback. Compared to benchmark deer/mile. Whitetail deer populations are not specifically estimated. Blacktail herds are surveyed using herd composition and trend counts, primarily by spotlight counts.	Significant problems include extreme variability, rapid habitat change, influence of weather, observer error, sightability, etc.
TX	Yes	For mule deer, spotlight and aerial (fixed-wing) surveys are conducted. For whitetail deer, spotlight, daylight mobile, Hahn walking cruise and aerial (fixed-wing) surveys are conducted.	
UT	No		
WA	No	Population numbers are rough estimates based on trends in harvest over the last few years.	
WY		Posthunt sex/age classifications from ground or air. Data in combination with harvest questionnaire. Winter severity used to model total deer numbers	Inability to classify enough deer in some units to adequately represent population sex/age structure.
YU	No	Regular surveys are conducted because of the dispersed low-density nature of the population.	

DO YOU MAKE ANY ATTEMPTS TO MODEL DEER POPULATIONS? IF SO, PLEASE DESCRIBE THE MODEL. IDENTIFY ANY PROBLEMS.

STATE	MODEL?	MODEL	PROBLEMS
AK	Yes	Deer populations have been modeled by estimating habitat capability for deer with a variation of a habitat suitability index model. This model rates habitats based on stand-level characteristics including forest type, elevation, aspect and typical winter snowfall for the watershed.	The major problem with this model is the lack of verification of the outputs.
AZ	Yes	We utilize B:D:F survey ratios, add in harvest and mortality rates to produce a change-in-ratio type model.	Computer models are limited by the quality of the data used.
BC	Yes	We use UNGULATE, a population model developed by the B.C. Wildlife Branch, and POP II (Fossil Creek Software).	Lack of reliable information on population size, age structure and age-specific rates of reproduction and mortality limits their usefulness.
CA	Yes	Herd composition and buck harvest data are collected and used with CIR and population reconstruction (KILLVARY) models to estimate abundance and follow trends.	The most important problem for some herds is lack of sufficient data.
CO	Yes	Use PopII	The most important problem for some herds is lack of sufficient data.
HI	No		
ID	No		
MT	Yes	In local instances, models are used to validate estimated population parameters. The program POSIM has been developed for this purpose. (see Mooney and Lonner 1978)	
NV	Yes	We use a simple accounting model to mimic the recent history of the population for kill, composition, and trend. The biologist uses his model to develop quota recommendations.	
ND	No		
OR	Yes	Just starting with POP II.	Variability in data will cause problems, particularly with Black-tailed deer.

TX	No		
UT	Li mited	We encourage our regions to incorporate modeling as much as possible. We anticipate greater use in the future.	
WA	No		
WY	Yes	POPII model developed by John Bartholow, Fort Collins Colorado. Model is a seven-step computation of additive and subtraction of animals throughout a biological year.	Only problems exist where unrealistic parameters (i.e. winter severity) are used to depress population growth.
YU	No		

WHAT IS YOUR ESTIMATED SUMMER AND WINTER FAWN MORTALITY?

ALASKA: No data.

ARIZONA: For mule deer annual fawn mortality ranges between 14 and 27 percent, with an average of 19.6 percent. For whitetail annual mortality ranges between 17 and 27 percent, with an average of 22.5 percent.

BRITISH COLUMBIA: UNGULATE uses 25-50% summer fawn mortality and 25% winter fawn mortality as baseline estimates. However, this is only a guess.

CALIFORNIA: Fawn mortality is variable and averages about 66% during summer and about another 10% during the winter.

COLORADO: Winter fawn mortality varies between 30 and 80 percent.

HAWAII: Unknown.

IDAHO: Not available.

MONTANA: White-tailed summer fawn mortality is between 33 and 60 percent, and winter it is less than 20 percent. For mule deer summer mortality ranges between 10 and 80 percent, and winter mortality ranges between 20 and 40 percent. On the lower Yellowstone River winter mortality for both deer runs about 10 percent.

NEVADA: For the 13 years from 1978 until 1990, the post hunt fawn ratio has averaged 64 fawns per 100 does in Nevada. Assuming a fawn ratio of 150 fawns/100 does at parturition, the summer fawn loss averaged 58 percent. For the same period, the winter fawn loss averaged 29 percent.

NORTH DAKOTA: Unknown, but probably very low.

OREGON: For mule deer summer fawn mortality is between 50 and 60 percent. Winter mortality is 26 percent.

TEXAS: For white-tailed deer summer fawn mortality is 40 percent and winter mortality is 10 percent. Mortality of mule deer is unknown.

UTAH: 48% annual.

WASHINGTON: For blacktail deer summer fawn mortality averages 49 percent (ranges 23-69%), and winter mortality averages 17 percent (ranges 8-57%). For mule deer summer fawn mortality averages 26 percent, and winter mortality averages 15 percent.

WYOMING: For mule deer both summer and winter fawn mortality is approximately 25 percent. For white-tailed deer summer mortality is about 28 percent and winter about 24 percent.

YUKON: Not available.

WHAT IS THE TREND IN YOUR STATE/PROVINCE DEER HERDS IN THE PAST 10 YEARS?

ALASKA: Trend is up significantly.

ARIZONA: For mule deer 1980-1985 up significantly, 1986-1990 down significantly. White-tailed deer are up significantly.

BRITISH COLUMBIA: Is variable by area. In general, most populations have increased substantially due to mild winters. Mule deer numbers have increased greatly in northeastern B.C.

CALIFORNIA: Stable - insignificantly declining. Variable over both time and space.

COLORADO: Up slightly.

HAWAII: Up slightly.

IDAHO: Mule deer have been generally up over the past ten years, a function of weather. White-tailed deer have been stable.

MONTANA: Slightly up for white-tailed deer, stable for mule deer.

NEVADA: From 1980 until 1988, the Nevada deer population increased significantly. Since 1988, the population declined significantly.

NORTH DAKOTA: Both mule and white-tailed deer are up.

OREGON: Blacktail deer populations generally stable, although some significant exceptions. White-tailed deer are up significantly. Mule deer are down significantly.

TEXAS: Both black-tailed and mule deer are up slightly.

UTAH: Down significantly due to the drought.

WASHINGTON: Black-tailed deer - down slightly. Mule deer - down slightly. White-tailed deer - up slightly.

WYOMING: Mule deer are up significantly. White-tailed deer are stable.

YUKON: Up.

ARE LAND MANAGEMENT AGENCIES WORKING WITH YOU TO MANIPULATE DEER HABITAT? WHAT HAVE BEEN THE MOST SUCCESSFUL EFFORTS? WHAT HAVE BEEN THE LEAST SUCCESSFUL? HOW HAS THE SUCCESS OR FAILURE OF THESE EFFORTS BEEN EVALUATED?

ALASKA: No. Land management agencies are not working with us to manipulate deer habitat. The U.S. Forest Service burns slash and thins second growth, but neither of these methods have been particularly successful. Studies utilizing radio telemetry and pellet-group counts have been conducted to evaluate these methods.

ARIZONA: Land management agencies have and are cooperating in deer habitat manipulation projects. Since little to no pre-/post- evaluation is conducted, the relative success or failure of these projects are difficult to assess. Apparently, our must successful habitat manipulations have been water developments.

BRITISH COLUMBIA: Previous attempts to enhance mule deer habitats through forest management, or protect habitats from land alienations have often been unsuccessful due to the lack of integration of mule deer habitat management with other resource management programs (e.g. agriculture, grazing, forestry, mining, hydroelectric development, urban/rural expansions). Modification of logging practices, more use of enhancement procedures (including prescribed burning), and long term planning is necessary to maintain mule deer production. A handbook for timber and mule deer management co-ordination has been produced to facilitate integrated mule deer and timber management in DMA 9. This program is still being evaluated.

CALIFORNIA: The Department works within the constraints of the land management agencies. Helitorch brush burning and water developments in water limited habitats have been successful. Vegetation manipulation involving mechanical treatments of decadent vegetation has been costly with little measurable benefit to deer. Benefit to deer is evaluated indirectly from habitat treatments (recruitment, body condition, etc.).

COLORADO: Some, but limited. We have used nitrogen fertilizer, sagebrush chopping in strips with seedings of dryland alfalfa and early green up grasses. Success of stands highly dependent on site and yearly moisture.

Success primarily measured by vegetative responses. Deer population response is not measured.

HAWAII: No.

IDAHO: CRP program is the most important habitat improvement program benefiting mule deer habitat in Idaho today. Second, natural fires (first for white-tailed deer), followed by quality timber management program in association with effective road management programs (second for white-tailed deer). Least successful are small habitat alternatives designed for wildlife that are too small to have a measurable effect.

MONTANA: Yes, for mule deer adjustments in livestock grazing most successful.

NEVADA: No cooperative habitat projects exclusively for mule deer have been attempted recently. The exception has been a pinyon-juniper chaining project in White Pine County funded by mining mitigation monies. This project is too new to evaluate for effectiveness.

NORTH DAKOTA: No.

OREGON: Habitat management for black-tailed deer is largely accidental. Some water development, forage seeding, and other activities practiced. USF&W Service is acquiring habitat for Columbian White-tailed deer. For mule deer there are some efforts, with improvement programs to draw deer away from private lands in damage situations.

TEXAS: No.

UTAH: Yes, however, funds through Federal agencies are limited and there seems to be reluctance by the federal agencies. Pinyon-juniper treatments (chaining) have been successful on winter ranges, as have prescribed burns. Our personnel stationed at the US Forest Service, Great Basin Research Center in Ephraim, Utah.

WASHINGTON: The Washington Department of Wildlife provides recommendations to the state, federal, and private land managers who manage wildlife habitat. The Department is involved in activities ranging from hydraulics permits, zoning regulations, and various forest management activities involving such issues as various timber harvest strategies and road management programs.

The Department's influence with land managers has been varied. The most successful efforts have been restoring habitats severely impacted by a natural disaster such as range fire (Dinkleman fire) or volcanic eruption (Mt. St. Helens). In the case of the Dinkleman fire where over half of a deer herd's winter range was burned, all state, federal, and private landowners pitched in to restore the range. Forest Service, Department of Natural Resources, and private timber companies worked with Department of Wildlife to reseed and replant burned areas with preferred plant species. The same positive feedback was apparent after the volcanic eruption of Mt. St. Helens and the resulting habitat destruction.

Day to day influences on timber sales etc. seem to be improving. Land managers are more willing to adjust their activities now than ten years ago. Mitigation projects over the last 30 to 50 years are very slow to be resolved. Some hydroelectric projects stemming from some of the first dams on the Columbia River have not yet been resolved but may be close. In many cases, litigation proceeds for years before mitigation progress is made. A few mitigation projects have been settled in recent years.

The Department has also had improved success with road management programs in recent years. As land managers have seen the benefits and public acceptance of road closures more companies and agencies have participated in road management.

WYOMING: For mule deer, yes. Prescribed burning and chaining of decadent sagebrush/grass communities. For white-tailed deer, some what, very limited to northeast Wyoming.

YUKON: No.

WHAT IS YOUR STATE/PROVINCE'S APPROACH TO MANIPULATING HABITAT TO BENEFIT DEER?

ALASKA: We make recommendations to land management agencies to preserve the best habitat. The best approach is no logging prescription.

ARIZONA: Our department is generating considerable revenue for habitat work. Typically we do "wildlife" enhancement projects with the hope of benefiting multiple species. Presently we spend approximately $1,000,000 annually on habitat improvement.

BRITISH COLUMBIA: Winter ranges that provide available forage and relatively shallow snow depths, and spring ranges that provide high quality and quantity of forage, are the two factors that currently receive most management effort in providing mule deer habitats. Most opportunities to maintain and enhance habitats are only possible through cooperative agreements with the forestry sector.

CALIFORNIA: We provide funds and are active cooperators in deer management. Success has been varied in these efforts.

COLORADO: We mainly try to preserve habitats in their native state. We do not manipulate much deer range.

HAWAII: Control of undesirable vegetation: mechanical clearing/planting of desirable species.

IDAHO: For mule deer the primary approach is working through federal land management agencies to ensure wildlife values are addressed in significant habitat alternative program (ie. timber harvest, grazing). For white-tailed deer prescriptions to benefit deer are through timber management programs.

MONTANA: On private agricultural lands - maintain status quo, although some grazing systems have been developed. On forested lands - establish timber harvest guidelines that are consistent with habitat requirement of deer based on the most current literature and research findings.

NEVADA: Future habitat improvement efforts will emphasize manipulating pinyon-juniper, rehabilitating burned ranges, reclamation of mined lands, and water development.

NORTH DAKOTA: To provide herbaceous and woody habitat through our private lands initiative program (PLIP).

OREGON: For black-tailed deer work is done with land management agencies to try and improve habitat where needed and possible. For mule deer manipulations are done within available resources while effective techniques available.

TEXAS: Habitat management should be a part of an overall deer management program.

UTAH: We are actively engaged in habitat development for deer. If funding were greater, our program would be expanded.

WASHINGTON: The Department of Wildlife advises landowners on habitat management activities that will benefit a variety of wildlife. A deer habitat model has been developed that may be useful in showing habitat deficiencies and pointing out where improvements can be made.

WYOMING: Prescribed fire where possible, or any method of regenerating decadent plant communities.

YUKON: Not applicable.

PLEASE LIST MAJOR DEER RESEARCH EFFORTS UNDERWAY AT THIS TIME.

ALASKA: Studying the effects of habitat fragmentation on deer, and the role of predators in influencing habitat selection by deer.

ARIZONA: We have one deer resources project presently funded. Its a whitetail study to determine mortality rates, habitat preferences and responses to hunting.

BRITISH COLUMBIA: Forage enhancement on mule deer winter ranges.

CALIFORNIA: 1) Testing habitat capability models used by federal agencies. 2) Livestock-deer interactions. 3) Population assessment methodology. 4) ORV-deer interactions. 5) Physiological response to wildfire. 6) Methodology for evaluating physiological condition in the field.

COLORADO: 1) Compensatory mortality relationships to harvest level. 2) Density estimate development - line transect methodology. 3) Movements - density relationships of mule deer and white-tailed deer along eastern Colorado river bottoms.

HAWAII: 1) Annual population estimates. 2) Blacktail range condition evaluated annually. 3) Game harvest data collected annually.

IDAHO: Currently wrapping up research in southeast Idaho that evaluated mule deer habitat used, mortality patterns, and hunting season habitat security needs.

For white-tailed deer: 1) mortality study in Clearwater drainage; 2) graduate study to evaluate habitat use and validate habitat management guidelines near Priest Lake in northern Idaho; 3) graduate study to investigate habitat use patterns in Clearwater drainage.

MONTANA: The only current effort on white-tailed deer is in the coniferous forest lands of northwestern Montana. The thrust is on population ecology and effects of timber harvesting and hunting on population trend and dynamics.

For mule deer, continuation of Bridge Mountains research project with emphasis on ecology of the male segment (i.e., mortality, recruitment, habitat ecology).

NEVADA: Nevada is not conducting any deer research at this time.

NORTH DAKOTA: None.

OREGON: For black-tailed deer population monitoring and census techniques analysis and improvement.

TEXAS: For white-tailed deer: 1) influence of exotic big game animals on deer; 2) effects of genetics on antler development; 3) breeding chronology of whit-tails; 4) effects of differential harvest rates on deer herd quality and quantity. For mule deer: 1) age determination; 2) antler development under field conditions; 3) population dynamics and habitat preferences.

UTAH: Evaluating crop losses caused by depredating deer.

WASHINGTON: We have no current deer research projects.

WYOMING: 1) Big Piney/LaBarge Winter Range analysis/improvement; 2) evaluation of mule deer classification methods; 3) Copper Mtn./South Bighorn mule deer study; 4) Nugget Canyon deer study.

YUKON: None.

PLEASE LIST THE MOST IMPORTANT RESEARCH NEEDS FOR YOUR STATE/PROVINCE.

ALASKA: The effects of logging patterns on deer.

ARIZONA: The evaluation of mortality rates to better enable accurate population modeling, and to investigate alternative methods for monitoring mule deer populations.

BRITISH COLUMBIA: 1) Investigate alternative methods for monitoring mule deer populations. 2) Investigate methods to assess mule deer density relative to habitat carrying capacity. 3) Develop and field test methods to reduce mule deer fatalities from deer-vehicle collisions. 4) Initiate at least one intensive long-term population orientated study to determine basic population parameters in relation to various harvest regimes. 5) Continue and intensify studies on logging/grazing impacts on mule deer spring and winter ranges in order to develop and improve methods for optimizing cover and forage production on these ranges (particularly with reference to second growth management). 6) Determine and implement proven methodologies to reduce conflicts arising from crop depredations by deer wintering in areas developed for agriculture.

CALIFORNIA: 1) Compensatory responses identified. 2) Role of predators in regulating deer herds. 3) Determine if habitat suitability models used by federal agencies are valid.

COLORADO: 1) Improved density methods. 2) Survived date for males - especially under antler point restrictions. 3) Reliability of sex-age counts.

HAWAII: Deer population monitoring. Identification (proof) of major limiting factors.

IDAHO: For mule deer: 1) accurate census methodology, particularly to ascertain status of post-season buck population status; 2) mortality; 3) evaluation of check station accuracy. For white-tailed deer: 1) population response to exploitation; 2) population monitoring methodology.

MONTANA: To determine the effects of hunting and land use practices on population trend and dynamics of deer. This also requires improvement or development of monitoring techniques and strategies.

NEVADA: 1) Methodologies of maintaining desirable seral stages for mule deer in the Great Basin. 2) Methods of reclamation for mined lands in the Great Basin. 3) Most economic methods of determining public opinion regarding deer management.

NORTH DAKOTA: For white-tailed deer: 1) habitat quality and quantity monitoring; 2) better delineation of deer herd ranges; 3) disease and parasite significance. For mule deer: 1) document genetic diversity of mule deer in ND; 2) better delineation of deer herd ranges; 3) habitat monitoring and evaluation.

OREGON: For black-tailed deer: development of effective population models; development of variable and more precise census techniques; and quantify habitat change and tie directly to population trends. For mule deer, effective population modeling effort.

TEXAS: For white-tailed deer, breeding chronology in all ecological areas of Texas, and influence of exotics on deer. For mule deer: 1) age determination; 2) antler development under field conditions; 3) population dynamics and habitat preferences.

UTAH: Means to lessen or eliminate crop depredation (appraising losses in alfalfa, grain and orchards has received extensive attention).

WASHINGTON: Washington's most important research needs are: develop census methodology for black-tailed deer; develop a deer model to more accurately assess population status; proceed with a sightability index for air surveys; and develop a system to evaluate damage caused by deer to agricultural or horticultural crops.

WYOMING: 1) What are the most cost effective methods to classify mule deer populations (i.e., helicopter surveys vs ground classification); 2) documenting fawn mortality over different winter conditions.

YUKON: Verify limiting factors and develop survey techniques.

WHAT SINGLE MANAGEMENT ACTIVITY WOULD YOU IMPLEMENT TO ACHIEVE THE GREATEST BENEFIT TO DEER MANAGEMENT IN YOUR STATE/PROVINCE?

ALASKA: Retain winter range (old growth) and eliminate high grading.

ARIZONA: Habitat protection from urban encroachment.

BRITISH COLUMBIA: Effective mule deer management requires more direct control of land management and the land base. Thus, developing strong habitat legislation to ensure maintenance of adequate mule deer winter and spring ranges to meet population objectives would probably have the greatest benefit to deer.

CALIFORNIA: Hunt antlerless deer - manage for OSY.

COLORADO: 1) Increased measurements of open winter survival in fawns in several areas and the state.

HAWAII: Control over illegal take.

IDAHO: For mule deer, productive winter range habitat management and acquisition. For white-tailed deer, proactive habitat management and acquisition.

MONTANA: Make animal harvest regulations consistent with opportunities and constraints offered by individual population units rather than general application of a more generic harvest strategy.

NEVADA: Improved information and education efforts for the media and the public to minimize misconceptions about present and future deer management practices.

NORTH DAKOTA: Habitat improvement.

OREGON: For black-tailed deer, develop and implement a useful, precise, and accurate population model. For mule deer, an effective population model, and gaining acceptance of antlerless hunting among the hunting public.

TEXAS: For white-tailed deer, increased harvest in some areas. For mule deer, water development.

UTAH: We have, for some time, been purchasing deer range (mostly winter range). We intend to continue this program. We very much need to expand our financial ability to maintain or manipulate the habitat on these lands.

WASHINGTON: Perhaps the management activity that would benefit deer the most in Washington is zoning laws to prevent development of critical habitats.

WYOMING: For mule deer, habitat management creating a series of habitat conditions from early seral to climax. For white-tailed deer, road closures on National Forests and reducing timbering in Northeast Wyoming.

YUKON: None at this time, except for providing full protection.

HOW MUCH OF HUNTER CONTRIBUTED DOLLARS DERIVED FROM DEER TAGS/FEES GOES TO DEER MANAGEMENT?

ALASKA: All the money from deer tags goes into the State Fish and Game Fund. None of it is dedicated funds so there is no way of knowing how much is applied to deer management.

ARIZONA: $200,000 (10%)

BRITISH COLUMBIA: Not known. Revenues collected through hunting license sales and royalties represent 80% of the main Wildlife Program budget.

CALIFORNIA: About 2 million (50% of tag revenues).

COLORADO: $1,800,000 (13%)

HAWAII: No tag fees at the present time, however, a tag application fee is being considered.

IDAHO: For mule deer, $111,000 (3%). For white-tailed deer, $15,000 (0.4%).

MONTANA: In 1989 1.3 million (25%) of budget. PR dollars made the remainder, 3.9 million.

NEVADA: Considering only the state dollar contribution, about 8 to 12% of the receipts from deer hunters are spent on the mule deer management program. If the federal aid monies involved are included, about 25 to 30% of our receipts involving deer are spent on the deer management program.

NORTH DAKOTA: Less than 10%.

OREGON: Our budget is not divided by species. Deer tag sales generate approximately $2.5 million annually. Management efforts, research projects, and habitat improvement work throughout the state easily meets or exceeds this figure on an annual basis.

TEXAS: Unknown.

UTAH: We don't break out our budget that way. Our funding is centered on big game overall, that amounts to about 15% of our agencies total budget.

WASHINGTON: Washington does not have an accounting system that enables us to track deer management expenditures. We take in about three million dollars in deer tag fees and spend only a fraction of that for deer management. Perhaps the single greatest expenditure is for enforcement programs. The habitat protection and mitigation programs also contribute to deer management.

WYOMING: For mule deer, unknown, except hunters generated $27,409,768 in 1990. For white-tailed deer, also unknown, but hunters generated $6,168,088 in 1990.

YUKON: Not applicable.

HOW MANY PERSONNEL ARE EMPLOYED BY YOUR STATE/PROVINCE TO WORK EXCLUSIVELY ON DEER?

ALASKA: None.

ARIZONA: 0

BRITISH COLUMBIA: None! In fact, there is only one individual in the province that works exclusively on ungulates.

CALIFORNIA: Ten (five field and five staff).

COLORADO: Only 2 - both in research - one of these spends about 15% of time on moose research.

HAWAII: None.

IDAHO: One.

MONTANA: Two. One on each species.

NEVADA: Nevada does not have any personnel working exclusively on mule deer.

NORTH DAKOTA: Three.

OREGON: None.

TEXAS: Two.

UTAH: 0

WASHINGTON: Nobody in Washington State works exclusively on deer.

WYOMING: Most (all) biologist and wardens work with deer.

YUKON: Not applicable.

DOES YOUR STATE/PROVINCE HAVE AN ENVIRONMENTAL POLICY OR LAW THAT REQUIRES THE DISCLOSURE OF POTENTIAL ADVERSE IMPACTS OF VARIOUS PROJECTS ON THE ENVIRONMENT? IF SO, HOW DOES THAT AFFECT HUNTING PROPOSALS? IF NOT, IS THERE ANY ACTIVITY IN THE GOVERNING BODY TO INITIATE SUCH A LAW?

ALASKA: Yes, Anadromous Fish Act 16.05.870 and Alaska Coastal Management Statutes pertaining to habitats - 6AAC 80.130.

ARIZONA: No - though they have been proposed during the last two legislative sessions. Current Federal law applies to construction projects, but as yet have not been applied to hunting seasons.

BRITISH COLUMBIA: No. Not at this time.

CALIFORNIA: Yes, significantly. Has required approximately three full time PY's annually to prepare environmental documents for the hunting of deer.

COLORADO: No. Some discussion, no active proposals.

HAWAII: Yes. Conservation District Law-Endangered Species Act (State and Federal) may impact management of hunting in future. Non-native deer conflict with native vegetation.

IDAHO: No.

MONTANA: Yes! To comply with the Montana Environmental Policy Act, the agency will draft a programmatic EIS on the effect of Management on populations.

NEVADA: Nevada does not have an environmental law that requires the disclosure of adverse impacts from planned projects.

NORTH DAKOTA: State - no, Federal - yes.

OREGON: No.

TEXAS: No.

UTAH: We have a state policy administered by a Resource Development committee which reviews proposed wildlife management projects. However, usually no intensive environmental studies are required. No.

WASHINGTON: Washington State does nave SEPA regulations that trigger SEPA review for actual on the ground projects. We are fortunate, however, that another SEPA rule provides specific exemptions for the Department of Wildlife. As it relates to deer management, the specific exemptions include -- establishment of hunting seasons, bag limits, and geographical areas where such activities are permitted, and the issuance of hunting licenses or tags, artificial feeding, and collection of wildlife for research. The Washington Department of Wildlife by policy requires a SEPA review for all species management plans. We have not yet gone through that SEPA process for plans.

WYOMING: No.

YUKON Not applicable.

HAVE ANIMAL RIGHTS ORGANIZATIONS ACTIVITY OPPOSED OR PROTESTED HUNTING IN YOUR STATE/PROVINCE? WHAT WAS THE NATURE OF THIS PROTEST? WHAT GAME SPECIES HAVE BEEN INVOLVED?

ALASKA: Animal rights organizations have opposed the hunting of wolves in Alaska. They submitted proposals to the Alaska Board of Game to change regulations.

ARIZONA: The first two sandhill crane hunts were opposed by activists who protested at the check station. Some deer and bighorn sheep hunts have seen anti-hunter activities in the past. These have been largely unorganized and ineffective to date. The last regulation process was protested, and the last two were attended by activists. Arizona's hunter harassment law precludes most activists.

BRITISH COLUMBIA: Not within the last two or three years. We have a section in the Wildlife Act (Section 82) that states that "a person who interferes with or obstructs a person licensed or permitted to capture wildlife or to hunt, fish, guide or trap while that person is lawfully so engaged, commits an offense."

CALIFORNIA: Yes! Tule elk, mountain lion and bear seasons have been stopped through both legal challenges and public referendum. Deer, elk and BH sheep hunting has been protested and sabotaged (by both activists and lawyers).

COLORADO: Yes, they have protested our annual hunts at the Air Force Academy for deer. Also, some protests of our spring bear hunts. The Air Force protest was by a group on site and in district court. The bear protests to date have been at the regulatory level.

HAWAII: Yes (to a minor degree). Celebrity voiced anti-hunting opinion against feral pig hunting with dogs (Concern was for health and safety of dogs injured in activity).

IDAHO: One incidence involving harassment of chukar hunters.

MONTANA: Yes! Both through harassment and lawsuits. The bison hunt near Yellowstone National Park was curtailed by legislative action as a result. Litigation is also pending regarding hunting grizzly bears and some furbearers.

NEVADA: Animal rights organizations have been active in Nevada for more than ten years. Most of their concern has centered on trapping and the bobcat. This has involved law suits, petitioning the Commission for closure, lobbying at the legislature, and picketing various meetings and activities. They have expressed similar but less vociferous concern about mountain lion and bighorn sheep.

Deer hunting has not been targeted by these groups yet, except for some concern voiced at public hearings about the welfare of fawns with antlerless hunting. Hunter harassment is not known to have occurred to date.

NORTH DAKOTA: Yes. These organizations successfully halted our season on bobcats. They did this through court injunction at the Federal level. Since then, we have been successful in getting the injunction lifted.

OREGON: Yes. Protests at local ODFW offices against cougar hunting. Demonstration along highway last seasons at start of Cascade elk season.

TEXAS: Yes. Hunter harassment on public lands. White-tailed deer only.

UTAH: An organized group protested sandhill crane hunting recently. They are presently opposing baiting bears by archers. They have also proposed three wildlife preserves where hunting would be eliminated. This would involve mule deer, elk, moose, and potentially RM goat and BH sheep. No significant legal actions yet. Little or no harassment.

WASHINGTON: Animal rights organizations have protested deer hunting in Washington. The Progressive Animal Welfare Society (PAWS) has protested the deer hunting on the Manchester Fuel Base. The U.S. Navy owns the facility and allows limited access for archery hunters during the state established seasons. PAWS brought suit against the Navy for allowing these animals to be killed. Two years ago their lawsuit failed but they threatened to bring suit again last year. We heard of some protests and received some calls but PAWS did not bring suit against the Navy or Department of Wildlife. The Manchester suit was based on their objection to shooting tame deer.

We also have had PAWS protests at hunting areas. In December 1990, 18 PAWS activists were arrested for interfering with a scheduled pheasant hunt and arrested for "failing to obey the directions of a Wildlife Agent." Organizers of the protest included Heidy Prescott, a Fund for Animals activist from Maryland, who came to Washington to test Washington's "hunter harassment" law. The state elected to arrest the protesters on the "failure to obey law" rather than hunter harassment statutes.

This year's annual Washington State PAWS meeting included representatives from California who claimed responsibility for stopping cougar and archery bear seasons in California. They explained to local PAWS members how to stop hunting in Washington through the regulatory process. We anticipate a PAWS challenge to hunting seasons.

WYOMING: Yes, baiting black bears and bison population reduction in Jackson Area.

YUKON Not applicable.