DEER MANAGEMENT

STATUS REPORTS

COMPILED

FOR THE

1985 WESTERN DEER WORKSHOP

BOZEMAN, MT

MARCH 4 - 6, 1985

ANNOUNCING THE 1985 WESTERN STATES DEER WORKSHOP

DATES: March 4, 5, and 6, 1985

LOCATION: Bozeman, Montana
            The City Center Motel
            507 West Main
            Ph. (406) 587-3158
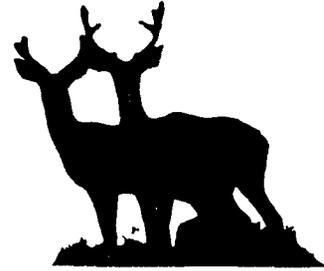
FACILITIES:

Two adjacent meeting rooms have been reserved – one for general sessions, the other for general usage, posters, demonstration of equipment, techniques, etc.. In addition, a block of rooms has been set aside for reservation by participants writing or calling at least two weeks before the meeting. A reservation card is enclosed. The City Center Motel, located in downtown Bozeman, offers rooms at state (Montana) and federal rates for government employees ($24.00 for single). For others, rates are $27.00 single, and $36.00 for 2 persons, 2 Beds. Requests for room reservations should mention the Workshop. The motel includes a Supper Club & Lounge (Black Angus) that offers excellent salad bar and steak, etc., dinners at very reasonable prices. The 4B's Restaurant is located next door for breakfast and lunch.

AGENDA: (See attached Tentative Agenda)

State representatives should come prepared to present or discusses their states programs/views with respect to each of the session topics. Representatives or others who can or might wish to participate in panels or present papers on each of the topics should contact session chairpersons or coordinators as soon as possible. These include:

Winter Feeding – Robert Hernbrode, Colorado Department of Natural Resources,
        6060 Broadway, Denver, CO 80216 (Ph. 303, 297-1192)

Computer Modeling – Katerine Green Hammond, 13500 Sunset Canyon Dr. NE,
        Albuquerque, NM 87111 (Ph. 505, 292-6269)

Population Estimation – Kenneth Hamlin, MDFWP, Research Bureau, Box 5, MSU,
        Bozeman, MT 59717 (Ph. 406, 994-3285)

Harvest Strategies – Charles Winkler, 4200 Smith School Rd., Austin, TX 78744
        (Ph. 512, 479-4978)

One open, general technical session is available for presentation of research/management papers not included in structured panel/discussion sessions. Titles and abstracts should be sent to: Shawn Stewart, P.O. Box 581, Red Lodge, MT 59068 (Ph. 406, 446-2201)

State deer management/research status reports are being requested from state agency representatives for compilation in advance of the workshop. Heidi Youmans, P.O. Box 1043, Forsyth, MT 59327 (Ph. 406, 356-2612) will coordinate that effort and chair the discussion.

For further information concerning the workshop, arrangements, etc., contact Dick Mackie, Dept. of Biology, Montana State University, Bozeman, MT 59717 (Ph. 406, 994-2270).

(TENTATIVE AGENDA)

1985 WESTERN STATES DEER WORKSHOP
Bozeman, Montana
March 4-6, 1985
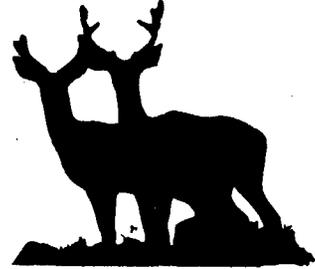
SUNDAY, MARCH 3:
    1600-1800 - Registration
    1930-   - Welcoming Social Hour(s)

MONDAY, MARCH 4:

    0800-0830 - Registration
    0830-0900 - Welcome, Introductions, Announcements
    0900-1000 - Panel/Discussion on Winter Feeding
    1000-1030 - Break
    1030-1200 - Panel/Discussion on Winter Feeding (Cont.)
    1200-1300 - Lunch
    1300-1500 - Computer Population Modeling - New Mexico
    1500-1530 - Break
    1530-1700 - Computer Modeling - General/Discussion

TUESDAY, MARCH 5:

    0830-1000 - Panel/Discussion on Population Estimation
    1000-1030 - Break
    1030-1200 - Panel/Discussion--Harvest Strategies
                and Providing Quality Recreational Hunting
    1200-1300 - Lunch
    1300-1400 - Discussion of State Deer Status Reports
    1400-1500 - Open Technical Session
    1500-1530 - Break
    1530-1600 - Open Technical Session (cont.)
    1600-1700 - Business Meeting

WEDNESDAY, MARCH 6:

    0800-1700 - Field Trip to the Bridger Mountain Range north
                of Bozeman, the site of intensive mule deer
                research by the Montana Department of Fish,
                Wildlife and Parks and Montana State University
                since 1970. An "on site" review of principal
                findings and their research and management
                implications.

Kurt Alt, Montana Dept. of Fish, Wildlife and Parks, PO Box 2605, Missoula, MT, 59801

John Andrews, Washington Dept. of Game, 8702 N. Division, Spokane, WA, 99207

Tim Belton, USFS, Box 572, Harlowton, MT 59036

Dwight Bonnell, Utah Division of Wildlife Resources, 1596 W. N. 10TH, Salt Lake City, UT 84116

Cecil Brown, Idaho Fish and Game, Pocatello, ID 83201

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Dick Bucsis, Montana Dept. of Fish, Wildlife and Parks, Box 385, White Sulphur Sp., MT 59645

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Bernie Hildebrand, Montana Dept. of Fish, Wildlife and Parks, Box 42, Jordan, MT 59337

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Dan Hook, Montana Dept. of Fish, Wildlife and Parks, Box 101, Augusta, MT 59410

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Susan Kraft, University of Montana, 1104 Toole Avenue, Missoula, MT 59802

Raymond Lee, Arizona Game and Fish, 2222 W. Greenway, Phoenix, AZ 85023

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Lee Metzgar, University of Montana, Wildlife Biol., Missoula, MT 59812

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Bob Nancy, USFS, Box 363 A, Winthrop, WA 98862

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Helga Ihsle Pac, Montana Dept. of Fish, Wildlife and Parks, 414 S. Grand, Bozeman, MT 59715

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John Pierce, Washington Dept. of Game, 414 N. Percival, Chewelah, WA 99109

Daniel Pond, Mont. Cooperative Wildlife Research Unit, 1133 Three Mile Cr. Rd., Stevensville, MT 59870

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Tracy Trent, Idaho Fish and Game, 1515 Lincoln Rd., Idaho Falls, ID 93401

Doug Updike, California Fish and Game, 1416 North St., Sacramento CA 95814

William Vogel, #9 22nd St. So., Great Falls, MT 59405

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Heidi Youmans, Montana Dept. of Fish, Wildlife and Parks, PO Box 1043, Forsyth, MT 59327

Steve Zender, Washington Dept. of Game, Box 342, Chewelah, WA 99109

1985

WESTERN STATES
DEER
WORKSHOP

MARCH 4,5&6
BOZEMAN, MONTANA

DEER STATUS REPORTS:
ALASKA
ALBERTA
BRITISH COLUMBIA
ARIZONA
CALIFORNIA
COLORADO
IDAHO
MONTANA
NEVADA
NEW MEXICO
OREGON
TEXAS
UTAH
WASHINGTON
WYOMING

ALASKA
DEER STATUS REPORT

1. Current population trend: **Increasing. Deer numbers very low in southern S.E. Alaska, but recovering, following severe winters of the late 1960's. Wolves are present. In northern S.E. Alaska, Kodiak Island, and islands in the Gulf of Alaska, where wolves are absent, deer numbers are very high. Populations in northern areas did not reach the extreme lows that occurred in areas where wolves are present.**

2. Year(s) of latest population "peak" or "low", whichever was most recent: **1970-very low. Mild winters have resulted in steady increases since then.**

3. Factors attributed to that "peak" or "low": **Winter severity.**

4. Methodologies used to assess deer population trends: **Hunter harvest survey trends (~10% sample for questionnaire) which include; days/deer, deer/hunter, and buck/doe ratios.**

5. Methodologies used to determine deer population size: **None.**

6. Your agency's deer management objectives: **To provide the greatest opportunity for the public to participate in deer hunting.**

7. Your agency's deer harvest objectives and criteria used to formulate those objectives:
   1) Maintain either-sex hunting seasons
   2) Encourage recreational utilization of deer
   3) Promote forestry management practices that enhance deer habitat

8. Harvest strategies used to attain harvest objectives:
   -A 5-month, either-sex hunting season
   -Bag limit of 4+
   -Minimal methods and means in regulations

9. 1983 hunting season statistics:

				HARVEST	
type/length of season	#hunters afield	#hunter-days	%success	antlered	antlered
5-Month, either-sex	8,190	52,300	58	8,870	2,450

10. Problems facing welfare of state's deer populations:
    -Extensive habitat loss; large-scale, clear-cut logging takes 20,000 acres/year, which could have devastating long-term impacts.
    -Under-utilization of deer by hunters.

11. Problems in attaining deer management objectives:
    -Adverse weather
    -Limited access
    -Archaic attitude toward doe harvests

12. Primary deer research efforts underway at this time:
    -Basic reproductive potential
    -Wolf/deer, predator/prey relationships

ALBERTA   Mule Deer
DEER STATUS REPORT

1. Current population trend: **80,000 and increasing**

2. Year(s) of latest population "peak" or "low", whichever was most recent: **Peak of 175,000 in 1950's, declining to about 70,000 by 1980.**

3. Factors attributing to that "peak" or "low": **Harsh winters and change in land use from moderate to high intensity cultivation.**

4. Methodologies used to assess deer population trends:

5. Methodologies used to determine deer population size: **Classified aerial inventories pre-and post-season in prime mule deer habitat.**

6. Your agency's deer management objectives:
   -Provincial mule deer population of 100,000
   -Re-establish mule deer on some historical ranges
   -Increase population in areas of high demand
   -Provide large antlered bucks in some areas

7. Your agency's deer harvest objectives and criteria used to formulate those objectives.
   -Harvest sufficient deer in agricultural areas to ease crop depredation
   -Provide maximum hunting opportunity for mule deer.

8. Harvest strategies used to attain harvest objectives:
   -Closed female seasons where historical populations have declined
   -3-pt restriction on males in accessible areas
   -All females on limited entry draw in accessible areas
   -Southernmost units unted on limited entry basis for both sexes

9. 1983 hunting season statistics:

					HARVEST	
type/length of season	#hunters afield	#hunter-days	%success	antlered	antlerless
Buck-North					
Doe-North (closed)					
Buck-South (draw)	827	3,386	46	382	
Doe-South (draw)	4,652	9,514	66	8	3,080

10. Problems facing welfare of province's deer populations:
    -Intensive agriculture
    -Mule deer being replaced by whitetails in parts of the province

11. Problems in attaining deer management objectives:
    -Best mule deer range is on private land: we can't manipulate habitat or get good access for hunting.
    -Agricultural interests are not always compatible with wildlife management interests (ie. cattle grazing on mule deer winter ranges.

12. Primary deer research efforts underway at this time (list): **None**

ALBERTA   W-T DEER
DEER STATUS REPORT

1. Current population trend: **120,000 and increasing**

2. Year(s) of latest population "peak" or "low", whichever was most recent:
   Current population is the largest on record.

3. Factors attributing to that "peak" or "low":   **Expansion of agriculture into boreal**
   and mixed wood ecoregions of Alberta.

4. Methodologies used to assess deer population trends: **Classified aerial inventories of**
   selectected plots within primary wintering areas (ie. major watersheds,
   forested reserves within agricultural holdings)

5. Methodologies used to determine deer population size:

6. Your agency's deer management objectives:
   -Maintain an average provincial WT population of 125,000
   -Increase numbers in high demand areas
   -Maintain current range of 575,000 square Km of habitat

7. Your agency's deer harvest objectives and criteria used to formulate those objectives.
   Maximum sustained yield- tempered by access, vulnerability, and potential
   for winter kill.

8. Harvest strategies used to attain harvest objectives:
   -Hunted by big game zone
   -Common opening dates to distribute hunters
   -Males available during 2-month open season
   -Females under shorter general season in remote areas and under limited
   entry draw in accessible areas.

9. 1983 hunting season statistics:

| | | | | HARVEST | |
type/length of season	#hunters afield	#hunter-days	%success	antlered	antlerless
Buck-North					
Buck-South			**20**		
Doe-North					
Doe- South (draw)	**4,664**	**8,284**	**34**		**1,173**

10. Problems facing welfare of province's deer populations:
    -Extreme winter climate
    -Loss of habitat to intensive farming
    -Suburban sprawl and resulting hunting closures

11. Problems in attaining deer management objectives:
    -Strong agricultural influence against crop depredation
    -Much of good whitetail range is privately owned
    -Variable and often extreme winter climate precludes intensive management
    of whitetails in the north.

12. Primary deer research efforts underway at this time (list):   **None**

ARIZONA
DEER STATUS REPORT

1984
29% habitat success

had some areas of 2 tags/hunter

1. Current population trend: **Increasing**

2. Year(s) of latest population "peak" or "low", whichever was most recent: **Peak 1984. Populations have consistently increased over the last 6 years.**

3. Factors attributing to that "peak" or "low": **Arizona's deer populations are significantly correlated with weather. Recent years of above-average precipitation have resulted in above-average recruitment.**

4. Methodologies used to assess deer population trends: **Foot, horseback and aerial surveys are conducted over established routes.**

5. Methodologies used to determine deer population size: **Confidence intervals are established for survey data. Then, a modified Barne's minimum population estimate is made. The Department has also developed a computer model designed to use survey data and hopes to use it in combination with New Mexico's population model.**

6. Your agency's deer management objectives:
   - **Manage deer herds near habitat potential and to improve habitat to its potential through cooperation with land managers and private landowners.**
   - **Provide recreational opportunities to consumptive and non-consumptive users, offer a variety of hunting experiences and give each hunter a reasonable chance of going hunting every year.**

7. Your agency's deer harvest objectives and criteria used to formulate those objectives: **The following criteria are used to formulate hunt recommendations consistent with the welfare, supply, and demand for deer in Arizona:**
   - **Hunt units in which recruitment exceeds 50 fawns:100 does and the estimated buck hunt success is greater than 20% are candidates for increased permit numbers.**
   - **For herds with buck/100 doe ratios greater than 25 for mule deer or 33 for whitetails, hunting pressure on the buck segment should be increased.**
   - **If either of the above conditions prevail and deer numbers are high enough to damage perennial browse plants, antlerless or any-deer permits may be authorized.**
   - **Hunt units which experience occasional high winter mortality, have chronic low hunt success, or are managed for research or trophy purposes, may be subject to particular management prescriptions.**

8. Harvest strategies used to attain harvest objectives: **The Department's objective is to provide maximum recreational opportunity commensurate with optimum deer numbers. The permit system has the necessary flexibility to provide a desired harvest while maintaining a control on hunter congestion. There is also a need to provide "quality hunting" on a limited basis; permit numbers in such areas would provide for high hunt success and narrow buck:doe ratios.**

9. 1983 hunting season statistics:

type/length of season	#hunters afield	#hunter-days	%success	HARVEST antlered	antlerless
Archery	9,674	47,602	4	366	
General	77,114	309,744	22	16,941	51

10. Problems facing welfare of state's deer populations: Loss of habitat due to human population increases and habitat degredation due to forestry practices, water developments, etc.

11. Problems in attaining deer management objectives:
    -Difficulties with the various land management agencies' interpretations of the multiple use concept.
    -Political pressure from special interest groups (i.e., special weapons users, preservationists, trappers, etc.)

12. Primary deer research efforts underway at this time:
    -Determine relationships between certain desert mule deer population parameters (e.g. fawn:doe ratios) and indices to rabbit/rodent populations, forage/cover conditions, drouth, rainfall, and other climatic variables.

    -Determine the effects of climatic, forage, and cover conditions and hunter pressure on seasonal habitat use and movements of mule deer.

    -Determine the effects of varying hunt strategies on mule deer herd characteristics.

    -Determine sample sizes, measures of variability, and strategies for the conduct of deer sex and age classification surveys in forested and non-forested vegetation types.

    -Determine the relationship between buck:doe ratios and fawn productivity at different population densities.

BRITISH COLUMBIA
DEER STATUS REPORT

1. Current population trend: **Stable**

2. Year(s) of latest population "peak" or "low", whichever was most recent: **Low-1976, increasing to 1980; stable between 1980 and 1984.**

3. Factors attributing to that "peak" or "low": **severe winter**

4. Methodologies used to assess deer population trends:
   Primarily harvest data, in conjunction with some population surveys.

5. Methodologies used to estimate population size:
   -harvest data
   -pellet group counts in some areas
   -aerial census on winter range

6. Your agency's deer management objectives:
   1) Increase deer population to 475,000
   2) Provide 900,000 hunter days of recreation and a sustained annual harvest of 60,000 deer
   3) Provide opportunities to view deer in their natural habitat

7. Your agency's deer harvest objectives and criteria used to formulate those objectives:
   Provide 900,000 hunter days of recreation and an annual sustained hunter harvest of 60,000 deer.

8. Harvest stategies used to attain harvest objectives:
   A long buck season and either a limited entry or short antlerless season.

9. 1983 hunting season statistics:

type/length of season	#hunters afield	#hunter-days	%success	HARVEST antlered	antlerless
long buck	79,600	746,900	27	25,580	4,548

10. Problems facing welfare of province's deer populations:
    Habitat loss or deterioration due to logging, agricultural uses, fire protection, overgrazing, poaching mortality, rail and auto losses, and predators.

11. Problems in attaining deer management objectives:
    Heavy wolf predation on Vancouver Island. Difficulty of hunting large areas of dense old growth forest. Poaching may be a problem in some areas.

12. Primary deer research efforts underway at this time:
    -Mule deer/habitat relationships
    -Deer/forestry integration
    -Deer/wolf study

1. Current population trend:
    Annual fluctuations, but generally upward since 1974.

2. Year(s) of latest population "peak" or "low", whichever was
    most recent:
    Low 1974, Peaks in 1965, 1960 and 1954

3. Factors attributed to that "peak" or "low":
    Changes in habitat quality, in general
    Local habitat losses and increased predator densities affect
    deer at the herd level.

4. Methodologies used to assess deer population trends:
    Harvest and herd composition (sex and age class ratios) used
    in change-in-ratio mathematical models, eg. Tsukamoto &
    Millazzo, 1977 and Selleck & Hart, 1957.
    Without comp. counts, we inflate harvest according to our
    best judgment for the area and herd.

5. Methodologies used to determine deer population size:
    Same as #4.

6. Your agency's deer management objectives:
    General goals: 1) Maintain and restore deer herds in a
                      healthy, wild state.
                   2) Provide quality and diversified use of the
                      deer.
    Specific objectives are stated on a herd-by-herd basis (~80
    herd plans) and usually include levels for population size,
    buck ratio, spring fawn ratios, harvest and hunter success.

7. Your agency's deer harvest objectives and criteria used to
    formulate those objectives:
    Buck harvest objectives are determined on a herd by herd
    basis and are driven by the difference between the post
    season buck ratio and the plan objective.
    Antlerless harvest objectives are determined by population
    size and level of fawn recruitment into the population during
    the spring (ie. yearlings).

8. Harvest strategies used to attain harvest objectives:
    Hunter quotas, changing season length and lateness where they
    correlate with harvest, archery hunting, and muzzle loading
    hunts.

9. 1984 hunting season statistics:

| | | | harvest | |
length of season	# hunters afield	% success	antler	antlerless
Variable	~300,000	~10%	~30,000	~800

    July 14-Jan 20
    4-51 days long

10. Problems facing welfare of state's deer populations:
    Subdivisions on winter and summer range reduce habitat
    quantity
    Land use conflicts on public lands and over mature/decadent
    chaparral reduce habitat quality

11. Problems in attaining deer management objectives:
    Funding is short for habitat improvement projects (may change
    in the near future)
    Manpower is becoming overburdened and dwindling because of
    funding problems
    Counties have veto power over Departmental proposals to
    harvest antlerless deer.
    Mountain lions are under a moratorium and are a specially
    designated species.

12. Primary deer research efforts unerway at this time:
    . Continued monitoring of radio-tagged deer to determine
      extent of herd ranges.
    . Cattle/deer interactions on summer and winter ranges
    . Lion/fawn mortality
    . Selenium/deer mortality and natality
    . Use of LANDSAT for identifying seasonal deer ranges
    . Statistics for determining precision of herd comp counts

IDAHO
DEER STATUS REPORT

No. Idaho — wTD pops. up

1. Current population trend: **Stable**   *Trend in So. Idaho up* — *harvest was down due to restrictions*

2. Year(s) of latest population "peak" or "low", whichever was most recent:
   Stable, 1980-83.   *Some areas will try to increase harvest*

3. Factors attributing to that "peak" or "low":   **Unknown**

4. Methodologies used to determine deer population size:
   -Herd composition/trend surveys
   -Age structure
   -Hunter success

5. Methodologies used to determine deer population size: **Estimates**

6. Your agency's deer management objectives: **To increase the deer population: must develop strategy for buck/doe ratios and how to attain.**

7. Your agency's deer harvest objectives and criteria used to formulate those objectives:
   We use all survey data and follow a 5-year species plan, which is currently being updated for 1986-1990.

8. Harvest strategies used to attain harvest objectives:
   Current program is buck-only in most mule deer areas in response to 1983-84 winter losses. We apparently lost adult bucks and fawns in some areas.

9. 1983 hunting season statistics:

				HARVEST	
type/length of season	#hunters afield	#hunter-days	%success	antlered	antlerless
Vary from 5-day, buck- only to 72-day, either-sex					
	138,550	**731,200**	**33**	**78%**	**22%**

10. Problems facing welfare of state's deer populations:
    -Encroachment by development
    -"Range improvement"

11. Problems in attaining deer management objectives: **The apparent lack of bucks in many areas.....we can't harvest more when we don't have them.**

12. Primary deer research efforts underway at this time: **None**

MONTANA
DEER STATUS REPORT

1. Current population trend: Mule deer: Stable to decreasing. Whitetails: Stable to increasing. Whitetail distribution has been expanding.

2. Year(s) of latest population "peak" or "low", whichever was most recent: Mule Deer: mountain/foothills pops have been relatively stable since a 1982-83 peak; Prairie pops peaked in 1984 and have begun to decline in some areas.

3. Factors attributing to that "peak" or "low": Consecutive mild winters since 1978, favoring high reproduction and recruitment.

4. Methodologies used to assess deer population trends:
   -fall and spring classification surveys
   -classification surveys on winter ranges
   -Aerial surveys of trend areas
   -Sex, age, and condition data from check stations
   -Data obtained by the hunter harvest telephone survey

5. Methodologies used to estimate deer population size: Not done on a state-wide basis. Population estimates are derived in some areas where marked deer provide a survey index. Manual population modeling is used in portions of the state having adequate deer density data.

6. Your agency's deer management objectives: According to Strategic Plan:
   -Improve hunter access (primarily to private lands)
   -Protect habitat (develop incentive programs for private landowners and cooperate with public land management agencies)
   -Properly utilize harvestable supplies of deer in order to maximize recreational opportunities
   -Improve public awareness of deer management needs
   -Reduce illegal activities

7. Your agency's deer harvest objectives and criteria used to formulate those objectives: Provide by 1990:
   -An annual sustained harvest of 154,000 deer (109,000 MD & 45,000 WT)
   -1,153,700 hunting recreation days annually, for approx 235,600 hunters
   -A Hunter success rate of 65% (7 days/deer harvested)

8. Harvest strategies used to attain harvest objectives: Long hunting seasons, use of a management "B" tag quota to target the antlerless population segment ("A" Tag is a recreational tag), Multiple "B" Tag areas, efforts to better distribute hunters in relation to available deer supplies with P-R programs, development of a "landowner incentives" program to improve landowner/ hunter relations.

9. 1983 hunting season statistics:

type/length of season	#hunters afield	#hunter-days	%success	HARVEST antlered antlerless
general, 34 days*	206,680	1,010,480	69	98,370 MD
				41,070 WT
				139,440 TOTAL
				(66% M, 31%F, 3% FF)

*B-Tags for E MT valid an additional 2 weeks prior to general season

10. Problems facing welfare of state's deer populations: Demands on habitat by expanding human populations, resulting in more intensive land use and potentially drastic changes in land use.

11. Problems in attaining deer management objectives:
    -Availability of harvestable supplies of deer on private lands (landowner tolerance)
    -Deer supply outweighs hunter demand in "peak" years

12. Primary deer research efforts underway at this time: Montana initiated a 10-year intensive research effort in 1975 with the following objectives:

1) Provide a more detailed understanding of the population biology and habitat relationships of deer in diverse environments of Montana;
2) Develop new or improved methods for measuring deer populations and habitat parameters, and new guidelines for applying existing information and technology more effectively for management needs;
3) Establish new guidelines for consideration of the habitat requirements and relationships of deer in wildlife and land management programs in Montana.

This research effort is concentrated on 5 major study areas (3 for mule deer; 2 for whitetails).

A number of other deer studies are underway in various regions of Montana, designed to provide specific management needs, including; allowable rates of antlerless harvest, mortality/survivability rates, survey efficiency in various habitats, and delineation of herd ranges.

NEVADA   MULE DEER
DEER STATUS REPORT

1. Current population trend: The statewide mule deer population has decreased the past 2 years. Trends for individual management areas vary from statewide situations.

2. Year(s) of latest population "peak" or "low", whichever was most recent:
   Peak - 1981-82.

3. Factors attributing to that "peak" or "low": Mild winters for several years preceding the 1981-82 peak allowed the successive recruitment of several strong cohort groups. Heavy winters since 1982 have increased mortality and reduced recruitment.

4. Methodologies used to assess deer population trends:
   -Mandatory hunter reporting
   -Intensive helicopter census for herd structure
   -Change-in-ratio estimations

5. Methodologies used to determine deer population size:
   -Modified change-in-ratio estimates

6. Your agency's deer management objectives: **By Policy Plan:**
   1) To maintain and enhance...mule deer populations
   2) To maintain and improve annual assessment of population status and trend
   3) Provide for safe utilization of the resource

7. Your agency's deer harvest objectives and criteria used to formulate those objectives:
   In the recent past, Nevada's harvest quotas have been designed to meet or exceed the following minimums:

   1) A post season buck:doe ratio of 20:100
   2) Buck harvest levels not to exceed 75% of yearling buck recruitment

8. Harvest strategies used to attain harvest objectives:
   Full quota hunting by management area or unit

9. 1983 hunting season statistics:

				HARVEST	
type/length of season	#hunters afield	#hunter-days	%success	antlered	antlerless
BO Full Quota/30 days	21,545	102,415	53	10,939	790

10. Problems facing welfare of state's deer populations:
    1) Pinyon-juniper encroachment and canopy maturation
    2) Rangeland changes favoring grasses rather than shrubs

11. Problems in attaining deer management objectives: The major long-term problem facing Nevada's mule deer resource is the eventual reduction in habitat due to successional changes presently occurring.

12. Primary deer research efforts underway at this time: **None**

NEW MEXICO   Mule Deer

DEER STATUS REPORT

1. Current population trend: **increasing**

2. Year(s) of latest population "peak" or "low", whichever was most recent. **1976-low**

3. Factors attributed to that "peak" or "low".
   -environmental factors, primarily weather
   -harvest strategy (either-sex hunting during the late 60's and early 70's)

4. Methodologies used to assess deer population trends:
   -observation data from field officers
   -aerial surveys
   -trend routes (deer/hr)
   -hunter harvest data

5. Methodologies used to estimate deer population size: **New Mexico doesn't make population size determinations.**

6. Your agency's deer management objectives:
   Provide maximum hunter opportunity.

7. Your agency's deer harvest objectives and criteria used to formulate those objectives: .
   New Mexico is implementing stratified hunting seasons which will distribute hunting pressure and reduce the total harvest, in order to provide maximum hunter opportunity.

8. Harvest strategies used to attain harvest objectives: **In 1985, 3 stratified seasons (3,5,and 7-days long) will be implemented state-wide.**

9. 1983 hunting season statistics:

				HARVEST	
type/length of season	#hunters afield	#hunter-days	%success	antlered	antlerless
stratified:					
South: 2-day and 7-day					
North: 3,5,and 7-day					
	84,734	**262,675**	**25**	**20,687**	**0**

14 day bow hunt 1 Sept
muzzle loader season
a late bow season

10. Problems facing welfare of state's deer populalations: **Deer mortality factors are determined by weather fluctuations, which ultimately control deer populations in the arid southwest.**

11. Problems in attaining deer management objectives: **Providing maximum hunter opportunity without knowing at what point (hunter harvest, hunter density) deer populations may be damaged.**

12. Primary deer research efforts underway at this time: **N.M. is in the 9th year of a mule deer research effort aimed at developing a population/environmental computer model. Investigations emphasize: 1) hunter harvest , 2) nutrition, 3) mortality/survival parameters, 4) testing and development of a model.**

OREGON   Mule Deer

DEER STATUS REPORT

1. Current population trend: Current population is approximately 20% below management objective of 315,500 mule deer.

2. Year(s) of latest population "peak" or "low", whichever was most recent: Peak, 1977-80, current low extending from 1981 to the present.

3. Factors attributing to that "peak" or "low":   Poor fawn survival (summer and winter), and severe winters, particularly the last 2 years.

4. Methodologies used to assess deer population trends.
    -Fall herd composition census
    -Spring fawn survival data
    -Established spring trend routes

5. Methodologies used to determine deer population size: Oregon is using a modeling process which utilizes trend data, fawn survival data, and harvest information.   Plans call for the use of a computer model in the near future.

6. Your agency's deer management objectives: Management objective goal is 315,500 mule deer with a minimum buck escapement ratio of 13 bucks:100 does.

7. Your agency's deer harvest objectives and criteria used to formulate those objectives: Harvest objectives have not been adopted.

8. Harvest strategies used to attain harvest objectives:
    -Varying season length to improve buck escapement ratios
    -Limited entry units
    -Unit antlerless permits
    -Antlerless seasons in agricultural damage areas

9. 1983 hunting season statistics:

				HARVEST	
type/length of season	#hunters afield	#hunter-days	%success	antlered	antlerless
General 6-12 days	110,051	566,235	28	32,387	-
Ant'less 14 days	234	795	43	67	33
Lim Entry 12 days	1,554	6,811	30	469	-
Archery 50 days	10,566	93,029	11	1,128	-

10. Problems facing welfare of province's deer populations: Poor fawn survival due to 3 severe winters in a row; poor fawn surviva on summer range due in part to predation; excessive hunter numbers in some areas, making it difficult to maintain post season buck ratios; and growing public support of winter feeding programs. As the Department is entirely dependent upon license and tag revenues, the mule deer situation is creating shortfalls in the wildlife program.

11. Problems in attaining deer management objectives:
    -Poor fawn survival (particularly the last 2 winters)
    -Unlimited hunter participation in more open units has made it difficult to maintain post season buck ratios.

12 Primary deer research efforts underway at this time (list):   None

1. Current population trend: Current blacktail population is approximately 450,000, which is above the management objective.

2. Year(s) of latest population "peak" or "low", whichever was most recent: Current population is slightly below a 1978 "peak".

3. Factors attributing to that "peak" or "low":   Effects of timber practices which open up forest stands, creating forage areas. Winter losses are seldom severe.

4. Methodologies used to assess deer population trends:
   -Fall herd composition census
   -Established spring trend routes (sampled by spotlight)
   -Spring fawn survival data (limited by difficulty of id of fawns by spotlight)

5. Methodologies used to determine deer population size: Not as refined as for mule deer: Trend and harvest data is used but continuity of census routes is difficult to maintain because of rapidly changing succession in foraging areas.

6. Your agency's deer management objectives: Official objectives have not been adopted. Preliminary goal is 370,000 blacktails.

7. Your agency's deer harvest objectives and criteria used to formulate those objectives: Harvest objectives have not been adopted.

8. Harvest strategies used to attain harvest objectives:
   -General buck season of 35-40 days
   -Unit antlerless permits
   -Hunter choice seasons
   -Permit entry hunts

9. 1983 hunting season statistics:

type/length of season		#hunters afield	#hunter-days	%success	HARVEST antlered	antlerless
General	39 days	159,021	1,350,049	19	27,913	14,118
Ant'less	32 days	6,596	35,526	65	1,468	2,835
Lim Entry	varies	1,049	3,864	45	246	221
Archery		10,519	97,608	17	1,010	782

10. Problems facing welfare of province's deer populations: As blacktail populations fluctuate with timber practices, size and design of clear-cuts can benefit deer. A major problem is convincing timber owners to utilize these designs when they are more concerned about potential damage to plantations.

11. Problems in attaining deer management objectives: Setting unofficial management levels has not been a problem, but developing a data base to adopt management objectives has been a problem due to discontinuity of census routes.

12. Primary deer research efforts underway at this time (list):   None

TEXAS

DEER STATUS REPORT

February 1985

1. Current Population Trend:

   White-tailed Deer: Population has been relatively static since 1969.
       Estimated at ~~3.8~~ 4.0 million in 1984.

   Mule Deer: Population considerably more variable than whitetails.
       Estimated at 200,000 in 1984.

2. Years of latest population "peak" or "low," whichever is most recent.

   White-tailed Deer: Peak - ~~3,814,121~~ 3,986,000 (1984); Low - 2,795,204 (1980).

   Mule Deer: Peak - 235,596 (1980); Low - 149,110 (1983).

3. Factors attributed to "peak" or "low."

   White-tailed Deer: 1984 "peak" may not be an actual increase in deer
       numbers but simply an increase in deer observed on surveys. Dry
       habitat conditions in major deer range may have resulted in increased
       feeding activity which increased the observability of deer on surveys.
       Also, survey effort in the eastern part of the state was increased
       significantly over previous efforts, resulting in systematic estimates
       rather than "guesstimates." 1980 "low" attributed to drouth in central
       and southern parts of state.

   Mule Deer: 1980 "peak" attributed to above average rainfall in western
       part of state. 1983 "low" attributed to extreme drouth in western
       part of state.

4. Methodologies used to assess deer population trends:

   Population estimates are derived from fixed wing aerial counts, nighttime
   and daylight roadside counts, and walking cruise lines. Approximately
   16,000 miles of transects are surveyed annually. Trends are determined
   by comparisons of annual estimates.

5. Methodologies used to determine deer population size:

   See Item 4.

6. Your agency's deer management objectives:

    To increase public awareness of the need to preserve deer habitat by
    defining quality habitat and the recreational, aesthetic, and economic
    value of such habitat and the deer therein.

    To establish deer nutritional profiles in each ecological area in Texas.

    To stock deer in areas of suitable habitat where broodstock is deficient.

    To develop a system of ecological (vs. political) deer management units.

    To determine the magnitude of deer mortality from causes other than legal
    hunting.

7. Your agency's deer harvest objectives and criteria used to formulate those
    objectives:

    White-tailed Deer: To provide 5.3 million sport hunting days annually at
    a rate of one white-tailed deer harvested per 11 days of effort. This
    is based on projected demand for deer hunting opportunity in 1990.

    To increase the annual harvest of antlerless white-tailed deer to
    approximately 160,000 animals by 1991. Currently, antlerless deer
    are drastically underharvested. Increasing the harvest to 160,000
    would still be only 50% of desired harvest.

    To provide an additional 300,000 white-tailed deer hunters with access
    to hunting lands by 1991. Additional hunters would be required to
    meet harvest objectives.

    Mule Deer: To provide 93,000 sport hunting days annually at a rate of
    one mule deer harvested per 14 days of hunting effort. This is based
    on projected demand for mule deer hunting opportunity in 1990.

    To increase the length of the hunting season from 9 to 16 days. An
    extension of the season would be needed to meet increased demand.

    To provide an additional 14,000 hunters with access to mule deer
    hunting. Additional hunters would be needed to meet above objectives.

8. Harvest strategies used to attain harvest objectives:

    White-tailed Deer:

    a. Long hunting season - approximately 7 weeks.

    b. Multiple bag limits.

    c. Either sex harvests.

    d. Special archery season.

    e. Special antlerless only season.

Mule Deer: Mule deer harvest strategies have traditionally been very conservative, i.e. short firearms season (9 days), one buck bag limit, limited harvest of antlerless deer. If above harvest objectives are to be met, conservative attitudes will have to be modified. Lengthening the hunting season is the first step.

9. 1983 hunting season statistics:

Species	Type/Length of Season	#Hunters Afield	#Hunter Days	%Success	Harvest Antlered	Antlerless
White-tailed Deer	Archery/30 days Firearms/51 days	514,242	3,501,835	52	232,411	85,933
Mule Deer	Archery/30 days Firearms/9 days	12,989	42,915	24	2,998	101

10. Problems facing welfare of state's deer population:

Habitat degradation from excessive grazing by domestic livestock, exotics, and deer.

Habitat destruction by conversion of rangelands to agricultural crops and monocultural forestry practices, water developments, urban sprawl, and rural residential development.

11. Problems in attaining deer management objectives:

Limited access to deer resource.

Escalating cost of hunting on private lands.

Conservative harvest philosophies of Texas landowners and hunters.

12. Primary deer research efforts underway at this time:

White-tailed Deer: Factors affecting antler formation in white-tailed deer.

Influence of exotic artiodactyls on white-tailed deer production and survival.

Effects of genetics on antler development and body size of white-tailed deer under field conditions.

Effects of early weaning on white-tailed deer growth and development.

Effects of prescribed burning on deer forage production, quality, and composition.

Interrelationships of white-tailed deer and sika deer.

Effect of geographic relocation on white-tailed deer breeding cycles.

Evaluation of the accuracy of helicopter, fixed wing, and spotlight census methods.

Mortality and dispersal of adult white-tailed deer.

Determination of deer physical condition by fecal DAPA.

Effects of hunting with dogs on deer production and survival.

Mule Deer: Determination of mule deer reproduction cycles and reproduction cycles and reproductive performance.

Effects of predator control on desert mule deer numbers.

Determination of factors influencing the development and decline of desert mule deer numbers.

Prepared by: Charles K. Winkler
              Big Game Program Director

Date: January 28, 1985

[handwritten margin notes, top right:] model data to get pop. figures — mgmt obj. for no. of ♂♂ harvested for each mgmt unit

human pop. pressures — vast fluctuation in weather — mostly ♂ only hunting since 1975 but ♂♂ are getting younger — people are getting unsatisfied

1. Current Population trend.

   The current population trend is upward over most of the state. However, the winter of 1983-84 caused a substantial decline over most of northern Utah.

2. Year(s) of latest population "peak" or "low", whichever was most recent.

   Latest population peak - 1983. Latest population low - 1984.

[handwritten margin notes, right:] 50% of people said they hunted for meat — over 50% said they would rather kill a small ♂ every year rather than sit out a season

3. Factors attributed to that "peak" or "low."

   The severe winter of 1983-84 was the cause of substantial deer losses over much of the northern 40 percent of the State of Utah.

4. Methodologies used to assess deer population trends.

   A. Pellet group transect data.
   B. Harvest Statistics: Both total harvest and age class of harvest.
   C. Age and sex classification data taken during the fall, winter and spring periods.
   D. Subjective evaluation of herds by field personnel based on observations, number of depredation problems and amount of highway mortality.

5. Methodologies used to determine deer population size.

   A limited amount of computer modeling is done to estimate populations, but generally, population trend data are used for management purposes.

6. Your agency's deer management objectives.

   A. To maintain deer herds in balance with available habitat.
      1. Secure approximately 650,000 acres of privately-owned critical deer winter range. To date, about one half of this objective has been acquired.
      2. Increase productivity of ranges through cooperative range restoration projects.
      3. Design deer seasons to balance deer numbers with available forage.

   B. To provide for an annual sport harvest of the surplus animals.
      1. Annual harvest of approximately 100,000 deer.
      2. A hunter success of 40 to 50 percent.
      3. Provide approximately one million hunter days of recreational opportunity.

   C. Provide for valid nonconsumptive uses.

7. Your agency's deer harvest objectives and criteria used to formulate those objectives.

   Utah's objective is to sustain an annual harvest of about 100,000 mule deer comprised of approximately 70,000 bucks and 30,000 antlerless animals. This goal is based on the aggregate past performance of each of our deer herds when the herds were near optimum numbers.

8. Harvest strategies used to attain harvest objectives.

   The general season license entitles a hunter the opportunity to bag a buck deer. Archers and muzzleloaders are also limited to harvesting bucks only. Control permits are use to regulate the antlerless removal. Control permit numbers and seasons vary and give our managers a great deal of flexibility in designing hunts to solve various problems.

9. 1983 hunting season statistics

type/length of season	#hunters afield	#hunter-days	%success	HARVEST antlered	antlerless
A. General season - October 2-November 1					
11 days	199,375	776,331	39%	77,295 bucks	
B. Archery - August 20-September 5					
17 days	24,252	127,211	15.8%	3,825 bucks	
C. Muzzleloader - November 5-13					
9 days	5,280	22,456	27%	1,432 bucks	
D. Control permits					
	16,711	47,358	79%		13,164 Antlerless
TOTAL	245,678	973,356	39%	95,716	

10. Problems facing welfare of state's/province's deer populations.

    Loss of habitat due to development and urbanization is the single most important problem. Much of the critical winter range along the Wasatch Front has already been lost which has resulted in a substantial amount of depredation to agricultural crops and ornamentals, and an increase of costs of operating the damage program.

11. Problems in attaining deer management objectives.

    Lack of adequate funding for obtaining and rehabilitating deer winter range has been a factor that has inhibited us from reaching our management goal. Reoccuring severe winters in combination with droughts and other adverse weather patterns during the past 12 years has made deer management in Utah a real challenge.

12. Primary deer research efforts underway at this time (list).

    A. Pine Valley Mountains Deer Productivity and Survival Study.
    B. Interstate Highway Deer Crossing Structures Study.
    C. Evaluating Deer Damage to Alfalfa and Fruit Orchards.

WASHINGTON
DEER STATUS REPORT

1. Current population trend: **Most populations stable; some populations in Eastern Washinton have increased during the last 3 years.**

2. Year(s) of latest population "peak" or "low", whichever was most recent: **1963 Peak: 260,000**

3. Factors attributing to that "peak" or "low": **Current increases due to mild winters and wet springs.**

4. Methodologies used to assess deer population trends: **Hunter harvest estimates and limited field surveys.**

5. Methodologies used to determine deer population size: **The Lockhart formula; other methodologies are currently being evaluated to replace this method.**

6. Your agency's deer management objectives: **Maintain deer population levels at the 1970-79 mean (144,000, as determined by trend index).**

7. Your agency's deer harvest objectives and criteria used to formulate those objectives:
   By Commission mandate:
   -Maintain 1970-79 mean annual harvest of 17,000 mule deer
   -Provide 23% hunter success

8. Harvest strategies used to attain harvest objectives:
   -Regulations designed to distribute hunting pressure, including a hunter-choice weapon season
   -Trophy unit mgmt, on a very limited basis

9. 1983 hunting season statistics:

| | | | | HARVEST | |
type/length of season	#hunters afield	#hunter-days	%success	antlered	antlerless
Varied	**210,000**	**--**	**20**	**38,117**	**4,033 ***

   * includes WT, BT, and mule deer

10. Problems facing welfare of state's deer populations:
    -Declining habitat
    -Increasing human population
    -Increasing demand on resource

11. Problems in attaining deer management objectives:
    -Funding
    -Political pressures

12. Primary deer research efforts underway at this time : **A mule deer ecology study in Okanogan County.**
    radio marking to identify habitat, migration corridors etc
    the area is scheduled to have a large ski development
    — like to try quadrat technique +/or Lincoln/Peterson

WYOMING　　Mule Deer

DEER STATUS REPORT

(handwritten margin note top right:) fewer MD in Mtns + more in lowlands-agr.

1. Current population trend:　**Declining-We have been above population objectives in recent years and are currently trying to reduce deer numbers.**

2. Year(s) of latest population "peak" or "low", whichever was most recent:　**Current decline may be partially masked by the increased accuracy of population estimates made in recent years.**

3. Factors attributing to that "peak" or "low":

4. Methodologies used to assess deer population trends.　**POP 50 big game population simulation model for individually identified populations or herd units, of which there are currently 59 delineated.**

(handwritten margin note:) people are reluctant to buy an antlerless license forcing them to a time + place

5. Methodologies used to determine deer population size:　**See Above**

6. Your agency's deer management objectives:　**Provide on a state-wide annual basis:**
   -A harvest of 89,425
   -486,355 recreation days
   -A success rate of 51%　(5.4 days/animal)

(handwritten margin note:) proposing to go limited quota antlered 1st part of season, + open doe hunting toward the end - force them to shoot a ♀

7. Your agency's deer harvest objectives and criteria used to formulate those objectives:
   -Population estimate/Public input
   -Land status (ie. cooperate w/ BLM or USFS, landowner tolerance, etc.)
   -Damage

8. Harvest strategies used to attain harvest objectives:　**See Regulations**

(handwritten margin note:) Manage by herd unit

9. 1983 hunting season statistics:

type/length of season	#hunters afield	#hunter-days	%success	HARVEST antlered	antlerless
See Regs	**128,641**	**385,107**	**50**	**48,671 bucks** 14,232 does 1,213 fawns	

10. Problems facing welfare of state's deer populations:　**Environmental-competition with other resources on existing deer habitat (ie. livestock, minerals)**

11. Problems in attaining deer management objectives:
    -Achieving adequate harvest in certain private land areas because of limited access and trespass fees.
    -Gathering statistically adequate classification data in remote areas

12. Primary deer research efforts underway at this time:　**A deer winter range habitat manipulation project will begin this summer. Treatment involves cutting (or roto-beating) old-growth species to stimulate new growth that will exceed the amount of old-growth range presently available to deer.**

DEER STATUS REPORT

1. Current population trend: Increasing; whitetails are expanding their distribution.

2. Year(s) of latest population "peak" or "low", whichever was most recent: **Unknown**

3. Factors attributing to that "peak" or "low": **Reasons for expansion unknown.**

4. Methodologies used to assess deer population trends: **POP 50 big game population simulation model for individually identified populations or herd units, of which there are currently 59 delineated.**

5. Methodologies used to determine deer population size: **See Above**

6. Your agency's deer management objectives: **Provide on a state-wide annual basis:**
   -A harvest of 8,825
   -56,075 recreation days
   -A success rate of 56% (6.4 days/animal)

7. Your agency's deer harvest objectives and criteria used to formulate those objectives:
   -Population estimate/Public input
   -Land status (ie. cooperate w/ BLM or USFS, landowner tolerance, etc.)
   -Damage

8. Harvest strategies used to attain harvest objectives: **See Regulations**

9. 1983 hunting season statistics:

				HARVEST	
type/length of season	#hunters afield	#hunter-days	%success	antlered	antlerless
See Regs	18,546	60,262	46	5,611 bucks	
				2,439 does	
				488 fawns	

10. Problems facing welfare of state's deer populations: **Environmental-competition with other resources on existing deer habitat (ie. livestock, minerals)**

11. Problems in attaining deer management objectives:
    -Achieving adequate harvest in certain private land areas because of limited access and trespass fees.
    -Gathering statistically adequate classification data in remote areas

12. Primary deer research efforts underway at this time: **Mule deer research may provide information that could be applied to whitetails.**

Colorado

Sets seasons on 3 year cycles