APPENDIX L

DATA ON INDIVIDUAL ALLOTMENTS: ECOLOGICAL CONDITION, FORAGE POTENTIAL, AND CURRENT MANAGEMENT PRACTICES

METHODOLOGY

The initial vegetative inventories within the Garnet Resource Area were conducted during the mid-1960s. These surveys used the ocular reconnaissance method. Subsequent vegetative surveys were conducted between 1976 and 1982. These later surveys employed the soil-vegetation method, the *Montana Grazing Guides* (USDA, SCS 1977), and the *Montana Grazing Guides,* Amended 1983. The data collected have been used in this document to classify sites, determine vegetative condition of the existing vegetation, and determine suitability of the public lands for livestock grazing.

Classification

Several classification systems have been used in site identification. Sites dominated by a grass or shrub community were classified according to the *Montana Grazing Guides* (USDA, SCS 1977). Sites having the ability to produce 10 percent or greater canopy coverage of trees in a climax vegetation condition were classified using *Forest Habitat Types of Montana* (USDA 1977) and *Montana Grazing Guides,* Amended 1983. These systems interpret the site based upon the potential climax tree species and indicator plants in the understory.

Vegetative Condition

Inventory crews first identified and delineated the boundaries for the sites to be inspected. Estimates of plant species composition, based on weight, were then made for the plant community found on each site. Using tables in the *Montana Grazing Guides,* (USDA, SCS 1977) and more detailed data in the SCS's unpublished Technical Range Site Descriptions for Montana, the present species composition was compared to the potential climax composition for the site. A condition rating was computed for the vegetation on each site. This rating represents the extent to which the site differs from potential climax. While this condition rating is often referred to as range condition, this document refers to the rating as vegetative condition.

Four condition classes are set forth by the SCS. A plant community in excellent condition exhibits little change in species composition when compared to the potential climax plant community for the site. Between 100 percent and 75 percent of the kinds and amounts of vegetation produced would be found in climax. Good condition communities produce between 75 percent and 51 percent of the kinds and amounts of vegetation found in climax. Fair condition communities produce between 50 percent and 26 percent of the kinds and amounts of vegetation found in climax. Poor condition communities produce between 25 percent and 0 percent of the kinds and amounts of vegetation found in climax. A fifth condition class of unclassified was used in the inventory to designate vegetative communities that could not be legitimately compared to a climax community. The unclassified rating was applied to areas that had been plowed and seeded, areas where native vegetation has been manipulated by mechanical or chemical means, areas of undergrowth communities having dense forest canopies or heavy duff accumulation, etc.

Determination of Vegetative Condition for Ocular Surveys

Approximately 50 percent of the public lands in the Garnet Resource Area are covered by the mid-1960 ocular survey. This type of survey method does not provide a direct method to determine vegetative condition class but rather provides percent canopy cover data. In order to extract vegetative range condition from canopy coverage data, the assumption was made that there is a direct correlation between percent composition by weight and percent canopy coverage of those vegetative species identified in the ocular surveys. The estimated vegetative composition of each range site mapped was compared with the climax plant community of the same range site in the same precipitation zone as defined by the *Montana Grazing Guides* (USDA, SCS 1977) to determine the vegetative condition.

Climax plant communities for each range site were determined from protected or undisturbed areas. These areas were considered to be the climax vegetative community for that particular site. The degree to which the present plant community varied from the undisturbed area is described by four condition classes: excellent, good, fair, and poor.

Suitability

The suitability of each site for livestock grazing was recorded. One of four ratings was assigned to each site. The suitable rating applies to sites with no environmental factors restricting livestock access and use of the site. The potentially suitable rating applies to sites where environmental factors now limit livestock access or use but changes could be made that would make the site suitable. The unsuitable rating applies to sites where environmental factors that cannot be changed now limit livestock access or use. The limited suitability rating applies to sites that are most commonly used for areas produ-

cing ephemeral vegetation. The major criteria used to rate rangeland suitability are distance from water, slope or other physical barriers, forage production, and the erosion rating for the soil.

Logged Sites

Logged sites, for purposes of this document are generally described as areas where the climax vegetative stage is dominated by trees; and the trees have been removed, at least partially, through logging. These logged sites do not fit any known classification scheme yet developed and, therefore, cannot be classified as to vegetative condition.

Waste Areas

Waste areas are generally characterized as areas dominated by slopes over 50 percent, tree canopy coverage over 70 percent, and rock outcrops, all of which are unavailable for livestock grazing.

FORAGE PRODUCTION

Estimated forage production figures were generated from ocular surveys, *Montana Grazing Guides* (USDA, SCS 1977) and *Montana Grazing Guides,* Amended 1983. Ocular reconnaissance method is a method of inventorying vegetation by estimating total forage density and percent composition. Density consists of general ocular estimates of overhead (vertical) ground cover for the current year's growth of all usable vegetation on each range type. Density is recorded as the decimal proportion of the ground that is covered as viewed from directly above. Composition values for each species are obtained through estimates of the percentage of the total density attributable to each.

Lists of proper use factors are prepared for each plant species. Proper use for a particular plant is the degree to which its current annual growth will be utilized by a grazing animal when the range is properly used. Proper use tables from a number of nearby areas were compared, adapted to local plant species, and adjusted for grazing patterns observed in this local area.

The proper use pastures were selected to be representative of the survey area done by that particular survey crew. The same persons that did the range survey did the proper use pasture survey. The proper use pasture must have a good actual use record, be representative of the area being surveyed (similar soil, vegetation, climatic influences), and be interpreted as properly used. Proper use was determined by some utilization studies and professional judgment.

A forage inventory survey is a best estimate at a point in time and space as to what a particular piece of rangeland can support. The actual grazing capacity on a piece of ground depends on a variety of ecological circumstances and on the grazing program, and is evidenced by adequate trend, accurate actual use information, and livestock performance. When trend and actual use information was available it was used in lieu of survey information.

Proper use factors for each species are multiplied by the percentage of that species in the range type and added together to arrive at the average proper use factor. This figure is then multiplied by the average density for the type, to obtain a Forage Acre Factor (FAF). The FAF is multiplied by the percentage of usable forage to obtain a net FAF.

The Forage Acre Requirement (FAR) is determined by study of a proper use pasture in which actual use is known. The acres of each type are multiplied by the FAF for that type to determine forage acres for each type. These are added, then the sum is divided by AUMs of actual (proper) use to determine the FAR. The FAR is divided by the net FAF to determine the grazing capacity in acres per Animal Unit Month (AUM).

The *Montana Grazing Guides,* Amended 1983, provide a means by which grazable forest lands can be evaluated as to their potential to provide livestock forage. Grazing guides incorporate soils, climate, canopy density, ecological condition, forage value, and livestock distribution factors.

The new guides combine an ecological condition concept and a forage value rating concept to overcome, for the most part, the limitations of each concept used alone. By determining both ecological condition and a modified forage value rating, one can use them as the axis of a matrix to refine stocking estimates and retain an ecological condition concept. Understanding ecological condition of forest understory plant communities is more difficult than on rangeland because understory composition changes with canopy density. To develop information useful in building forest land grazing guides, composition must be determined in relation to canopy density as well as other environmental factors.

CURRENT PERMITTED USE AND TARGET STOCKING RATES

Current stocking levels in the Garnet Resource Area were arrived at from the ocular surveys made during the mid-1960s. Updated range surveys using SCS grazing guides were used to establish AUM target stocking rates anticipated to occur in the long term. Table L-1 gives information for I allotments, Table L-2 gives information for M allotments, and Table L-3 gives information for C allotments.

TABLE L-1
I CATEGORY ALLOTMENTS

Allot. No.	Allotment Name	Biome	Acres (BLM only)	Current Permitted Use (BLM) AUMs	Vegetative Condition (Acres of BLM only) Excel-lent	Good	Fair	Poor	Waste	Unclas-sified	Logged
7101	Bonita-Clinton-Potomac Assoc.	C.F.	12,143	215	4,807	2,799	739	160	739	—	2,899
7102	Weaver	C.F.	4,410	121	5	197	672	51	2,554	149	782
7104	Lund #1	C.F.	8,942	145	—	653	399	—	6,146	—	1,744
7105	McMahon	C.F.	1,460	37	—	74	177	—	680	—	29
7106	Iverson	C.F.	3,937	44	—	25	410	26	1,976	—	1,500
7108	Lund #2	C.F.	3,518	140	—	557	538	45	1,516	—	862
7109	Semenza #1	C.F.	5,908	124	—	585	1,123	11	4,189	—	—
7219	C. Mannix	C.F.	2,000	55	62	11	7	—	1,520	—	400
7221	Murphy	C.F.	1,103	58	—	436	32	—	635	—	—
7312	H. Luthje	C.F.	2,866	324	764	1,589	151	—	341	21	—
7324	Collins #2	C.F.	1,362	110	61	270	104	—	720	—	207

C.F. = Coniferous Forest
G. = Grassland
c/c = Cow-calf
y = Yearling
h = Horse

TABLE L-2
M CATEGORY ALLOTMENTS

Allot. No.	Allotment Name	Biome	Acres (BLM only)	Current Permitted Use (BLM) AUMs	Vegetative Condition (Acres of BLM only) Excel-lent	Good	Fair	Poor	Waste	Unclas-sified	Logged
7115	Nelson	C.F.	1,481	113	—	—	791	—	602	—	160
7118	* Five Mile	C.F.	480	60	—	—	162	—	77	—	241
7119/ 7120	* McElwain Cr./ Common Allot.	C.F.	6,358	140	—	1,871	628	—	2,642	—	1,217
7121	* Wales	C.F.	856	120	—	146	237	—	160	—	313
7122	Koessler	C.F.	1,114	8	—	862	96	—	—	—	156
7123	Lindberg Cattle Co.	C.F.	6,056	101	130	1,024	—	883	4,019	—	—
7207	* Braziel Cr.	C.F.	8,105	362	2,709	625	1,389	16	2,866	—	500
7212	C. Graveley	C.F.	1,999	110	72	423	266	—	1,238	—	—
7213	* Marcum Mtn.	C.F.	3,443	113	1,345	735	119	—	682	—	562
7216	Keiley	C.F.	362	78	89	31	242	—	—	—	—
7224	* Warm Sp.	C.F.	7,361	466	722	825	2,114	87	3,582	—	31
7228	Henault	G.	80	15	—	—	—	—	—	80	—
7229	Cochran	C.F.	320	41	73	104	—	—	143	—	—
7303	Strand	C.F.	395	65	—	132	111	—	152	—	—
7309	Johnson	C.F.	1,061	164	64	771	20	5	176	—	25
7311	Lane	C.F.	1,836	210	1,371	60	345	13	1,086	195	—
7313	J. Luthje	C.F.	1,003	192	32	603	20	—	348	—	—
7314	Neal #1	G.	601	216	—	303	173	—	125	—	—
7316	* Ram Mtn.	C.F.	4,151	398	—	2,336	677	—	818	—	320
7319	* West Fork Buttes	G.	640	140	—	611	29	—	—	—	—
7320	* Stewart Lake	G.	2,251	318	176	787	—	—	920	—	368
7323	Jensen Ranch #2	G.	1,342	123	—	15	414	—	25	888	—

CURRENT MANAGEMENT INFO.

Livestock (BLM only)		Season of Use		Est. Forage Production (BLM only)
No.	Class	From	To	AUMs
664	c/c	6/1	9/30	2,242
27	c/c	6/1	10/15	293
7	c/c	6/10	10/10	582
9	c/c	6/10	10/9	177
11	c/c	6/15	10/15	81
35	c/c	6/10	10/10	216
31	y	6/10	10/10	247
28	c/c	7/20	9/20	79
15	c/c	6/15	10/15	255
81	c/c	6/1	9/30	641
31	c/c	6/10	9/30	146

CURRENT MANAGEMENT INFO.

Livestock (BLM only)		Season of Use		Est. Forage Production (BLM only)
No.	Class	From	To	AUMs
28	c/c	6/16	10/15	162
30	c/c	7/1	8/31	87
46	c/c	6/20	9/20	769
40	c/c	6/1	8/31	150
2	c/c	6/15	10/14	156
25	c/c	6/15	10/15	309
121	c/c	7/1	9/30	1,190
32	c/c	6/15	9/30	172
32	c/c	6/1	9/15	898
26	c/c	6/1	8/31	91
117	c/c	6/16	10/15	898
5	c/c	6/15	9/30	15
9	c/c	6/1	10/15	63
13	c/c	6/1	10/31	71
55	c/c	6/25	9/30	213
53	c/c	6/15	10/14	235
53	c/c	7/1	12/31	287
48	c/c	5/15	9/30	216
72	c/c	5/15	10/31	737
35	c/c	6/1	9/30	207
71	c/c	6/1	10/15	381
27	c/c	6/1	10/15	199

TABLE L-3
C CATEGORY ALLOTMENTS

Allot. No.	Allotment Name	Biome	Acres (BLM only)	Current Permitted Use (BLM) AUMs	Vegetative Condition (Acres of BLM only) Excellent	Good	Fair	Poor	Waste	Unclassified	Logged
7110	Shelley	C.F.	200	4	—	—	—	—	—	100	100
7111	Joseph	G.	80	11	—	—	—	—	—	80	—
7112	Bearmouth	G.	132	27	—	—	—	—	—	132	—
7113	Henderson	G.	100	15	—	—	—	—	—	100	—
7114	Enman	C.F.	240	26	—	—	—	—	—	240	—
7116	Lindbergh	C.F.	40	2	—	40	—	—	—	—	—
7124	Snead	C.F.	40	4	—	—	—	—	33	—	7
7201	* Pilgeram	C.F.	2,018	64	—	48	1,165	10	755	40	—
7202	A. Beck	C.F.	640	30	—	—	264	29	347	—	—
7203	D. Beck	G.	925	84	—	297	43	—	415	47	123
7204	L. Beck	C.F.	200	49	—	—	—	—	—	200	—
7205	Benson	C.F.	360	27	—	260	27	—	33	—	40
7206	Gimlet Creek	C.F.	322	5	—	—	—	—	—	322	—
7208	Coughlin, A.	C.F.	54	1	—	—	—	—	—	54	—
7209	Dingwall	C.F.	40	3	—	—	—	—	—	40	—
7210	Dutton	C.F.	440	23	—	400	40	—	—	—	—
7211	Gravely, D.	C.F.	80	6	—	80	—	—	—	—	—
7214	Hogan	G.	158	15	—	—	—	—	—	158	—
7215	Hollenback	C.F.	40	10	—	—	—	—	—	40	—
7217	Lingenfelter	C.F.	40	8	13	16	—	—	11	—	—
7218	McCormick	G.	25	7	—	—	—	—	—	25	—
7220	Mannix, F.	C.F.	40	8	—	—	—	—	—	40	—
7222	Semenza #2	G.	205	35	—	—	—	—	—	205	—
7223	Radtke #1	C.F.	106	7	—	—	160	—	—	—	—
7225	Wohlers	G.	40	6	—	—	—	—	—	40	—
7226	Weaver, J.	C.F.	197	35	—	—	—	—	—	197	—
7227	Hughes	C.F.	40	22	—	—	—	—	—	40	—
7230	Geary	G.	22	5	—	—	—	—	—	22	—
7231	Sunny Slope	C.F.	280	10	—	—	—	—	—	280	—
7232	Gilman	G.	160	10	—	—	—	—	—	160	—
7301	Bauer	C.F.	279	13	—	—	279	—	—	—	—
7302	Bissonette	C.F.	175	20	65	—	—	—	110	—	—
7304	Collins #1	C.F.	237	42	—	157	48	—	32	—	—
7305	Gillies	C.F.	80	8	—	—	—	—	—	80	—
7306	Vick	C.F.	120	3	—	—	120	—	—	—	—
7307	Jensen, W.	C.F.	565	15	86	—	—	—	479	—	—
7308	Jensen Ranch #1	G.	160	56	160	—	—	—	—	—	—
7310	Morrison	G.	80	25	—	—	—	—	—	80	—
7315	Mungas	C.F.	231	22	—	177	—	—	54	—	—
7317	X Diamond Bar	C.F.	255	25	45	—	—	—	170	40	—
7318	Radtke #2	C.F.	280	33	—	38	—	—	49	—	193
7321	Sanders	C.F.	573	56	322	50	—	—	201	—	—
7322	Flint Creek	C.F.	300	34	—	90	—	—	210	—	—
7325	Kolbeck	C.F.	40	6	—	—	—	—	—	40	—
7326	Spieker	G.	16	16	—	—	—	—	—	16	—
7501	McGillvray	G.	44	5	—	—	—	—	—	44	—
7504	McIntosh	C.F.	150	20	—	—	—	—	—	150	—
7505	DeLeo	G.	40	8	—	—	—	—	—	40	—
7506	Rierson	C.F.	122	38	—	—	—	—	—	122	—
7507	Mattice	C.F.	320	38	—	—	—	—	—	320	—

CURRENT MANAGEMENT INFO.

Livestock (BLM only)		Season of Use		Est. Forage Production (BLM only)
No.	Class	From	To	AUMs
2	c/c	7/1	8/31	4
6	c/c	10/1	10/31	11
5	c/c	5/15	10/15	27
4	c/c	6/21	10/20	15
5	c/c	5/15	9/30	26
1	c/c	6/1	10/15	7
2	c/c	6/16	9/30	4
16	c/c	6/16	10/15	224
7	c/c	6/1	10/15	38
21	c/c	6/1	9/30	127
11	c/c	6/1	10/15	49
6	c/c	6/1	10/15	56
5	c/c	7/1	8/1	5
1	c/c	6/1	10/1	1
1	c/c	3/1	2/28	3
29	c/c	7/1	10/1	75
2	c/c	6/15	9/30	10
6	c/c	6/1	10/15	15
3	c/c	6/1	10/15	10
2	c/c	6/1	9/30	11
2	c/c	6/1	9/30	7
2	c/c	6/15	9/30	8
12	c/c	6/15	9/15	35
1	c/c	3/1	2/28	21
1	c/c	3/1	2/28	6
14	c/c	6/15	8/31	35
5	c/c	6/1	10/15	22
1	c/c	3/1	2/28	5
7	c/c	8/15	9/30	10
4	c/c	6/15	9/30	10
4	c/c	6/15	10/1	50
5	c/c	5/15	9/15	29
12	c/c	6/15	10/1	42
1	c/c	3/1	2/28	8
1	c/c	6/15	10/1	22
5	c/c	7/15	10/15	26
28	c/c	6/1	10/15	56
25	c/c	8/15	9/14	25
6	c/c	6/15	10/15	42
7	c/c	6/1	9/15	25
3	c/c	7/1	9/30	42
12	c/c	6/1	10/15	109
8	c/c	6/15	10/15	34
2	c/c	7/1	9/30	6
3	h	6/1	11/30	16
1	c/c	3/1	2/28	5
5	c/c	6/1	9/30	20
1	c/c	6/15	10/1	8
3	c/c	6/1	9/30	38
10	c/c	6/1	9/30	38

C.F. = Coniferous Forest
G. = Grassland
c/c = Cow-calf
y = Yearling
h = Horse
* = Existing AMP Allotments