

**MTNHP SITE AND COMMUNITY
SURVEY MANUAL**
version 91B

Montana Natural Heritage Program
1515 East 6th Ave., Helena, MT 59620

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MTNHP SITE AND COMMUNITY FORM MANUAL

Montana Natural Heritage Program
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This manual is for use in completing the 5/27/91 versions of the Site Survey and Community Survey forms. Only those fields potentially needing greater clarification are included. Definitions for many of the fields on the Community Survey Form are taken directly from the USDA Forest Service's ECODATA General Field and Plant Composition data forms (developed at the Forest Service Regional Office, Missoula, MT). See last two pages of manual for copies of survey forms.

SITE SURVEY FORM INSTRUCTIONS**IDENTIFICATION AND LOCATION****MANUAL**

Enter the version number of the MTNHP survey manual used in completing this form (i.e., "91B" for this manual).

SITENAME

Each site should be assigned a unique name. A few standards in naming follow:

1. do not use element names in the site name
2. use local place names when available
3. use names of features on topographic maps when local names do not exist

DIRECTIONS

Directions to Site - enter precise directions to the site using a readily locatable landmark (e.g., a city, a major highway, etc.) as the starting point on a state or local road map. Use clear complete sentences that will be understandable to someone who is unfamiliar with the area, needs to get to the site, and has only your directions to follow. Cite distances as closely as possible to the 1/10 of a mile, use compass directions (N, S, E, and W), and be sure to specify the best access to the site, such as where to park or which trail to use.

ELEMENT OCCURRENCES

Under "Element Name" list all elements sought, reported, or confirmed from the site. If known, record the "Occurrence Numbers" for each. Use the "Plot Number" codes from the community survey form or generate simple letter or number codes which identify each element occurrence on the base map; these codes help keep the base map uncluttered. Indicate whether the element was found (Y, N) on the date of the site visit, and whether a return visit is needed.

SITE DESCRIPTION/DESIGN

SITE DESCRIPTION

Enter a short general visual description of the site. The description should present a simple, easily understood, word picture of the site's principle physical and natural features.

Example: "The site is a granitic exfoliation dome of the Boulder batholith. It is primarily covered by crustose lichens. Vascular plants are rooted in rock fissures."

Comments about the biodiversity significance of the site will be generated later following review of the Site Survey and Community Survey forms and should not be part of this site description.

BOUNDARY JUSTIFICATION

Explain the biological rationale used to determine the location of the site's primary and secondary ecological boundaries. Your explanation should clearly justify why the site boundaries were drawn where they were rather than simply describing the boundaries or any coincidental property lines. Include reference to the source of information (e.g., field work, maps, etc.) on which boundary decisions were based.

PROTECTION URGENCY

A protection action may include activities such as educational or public relations campaigns or collaborative planning efforts with public or private entities to minimize adverse impacts to element occurrences at the site. It does not include management actions (i.e., any action requiring stewardship intervention).

Threats that may require a protection action include:

1. anthropogenic forces that threaten the existence of one or more element occurrences at the site
2. the inability to undertake a management action in the absence of a protection action

MANAGEMENT URGENCY

A management action may include biological management (e.g., prescribed burning, removal of exotics) or people and site management (e.g., building barriers to prevent ORV use, rerouting trails, patrolling for collectors, hunters, or trespassers). Management action does not include legal, political, or administrative measures taken to protect the site.

STEWARDSHIP

LAND USE COMMENTS

Describe current and past land use, improvements and structures. Discuss the stewardship implications of this use.

Uses to consider: recreation, dumping, agriculture, mining, grazing, etc. Discuss the possibility of hazardous or toxic waste disposal on site including reasons as to why it may or may not be a problem.

POTENTIAL HAZARDS

Describe potential natural hazards (e.g., cliffs, caves, waterfalls, etc.) on the site and indicate any precautions stewardship should take.

EXOTIC FLORA/FAUNA COMMENTS

Describe potentially damaging exotic (i.e., alien) flora and fauna (e.g., cheatgrass, leafy spurge, knapweed, feral cats, horses, etc.) on the site. Indicate their location and abundance, as well as their effect on the viability of endangered elements. Indicate also how stewardship will manage or control the exotic species and whether local ordinances require such control.

OFF-SITE CONSIDERATIONS

Describe off-site land uses (e.g., farming, logging, grazing, dumping, watershed diversion, etc.) and how those uses might affect the site, elements on the site, and management of the site.

SITE AND ELEMENT MANAGEMENT NEEDS

Summarize the expected management needs for the site and the elements on it. Include routine items such as need for fencing, restricting use, grazing, control of exotics, burning, etc.

COMMUNITY SURVEY FORM INSTRUCTIONS

IDENTIFICATION AND LOCATION

MANUAL

Enter the version number of the MTNHP survey manual used in completing this form (i.e., "91B" for this manual).

UNITS (one-character code)

Units of Length - enter "X" in the appropriate space to describe if the units of length or height being entered are feet or meters.

PLOT NUMBER (seven-character alphanumeric code)

Record in order the year (2-digits), the first and second initial of the principal examiner (2-characters), and the plot ascension number (3-digits).

Example: The 33rd plot sampled in 1991 by Hank Gleason would be entered as 91HG033.

EOCODE (14-character alphanumeric code)

Element Occurrence Code - enter this code in the field only if it's known. Record in order the MTNHP element code (10-characters), a period, and occurrence ascension number (3-digits).

Example: The 23rd occurrence of the Douglas-fir/little bluestem plant association would be entered as C2ABBABF0.023.

PNC

Potential Natural Community - if the PNC is questionable, make notes concerning the problem either in this field or in the "Comments" field.

CT

Community Type - in many cases, the CT and PNC will be equivalent. If the CT is questionable, make notes concerning the problem either in this field or in the "Comments" field.

SITE

Surveysite - name assigned to the plot site at the time it is sampled. In many cases, this name will be equivalent to the "Sitename" given on the Site Survey Form, except will include modifiers to differentiate this specific plot from the general site.

Example: A plot in the eastern portion of the Block Mountain Standard Site might have the Surveysite name "Block Mountain East".

A few standards in naming follow:

1. do not use element names in the site name
2. use local place names when available
3. use names of features on topographic maps when local names do not exist

PURP (one-character code)

Purpose - enter one of the following codes explaining why the data was collected. If more than one code applies, enter "I":

- F - evaluation of fire effect, fire history, or fuels
- C - TES plant species habitat analysis
- G - TES animal species habitat analysis
- W - general wildlife habitat analysis
- B - big game habitat analysis
- M - range monitoring (e.g., readiness, trend, utilization)
- V - correlation of vegetation with soil survey
- D - evaluation of watershed erosion, rehabilitation, or cover
- Z - research plot
- L - correlation or classification for spectral or LANDSAT data
- J - RNA and SIA analysis
- E - new classification or succession study
- I - integrated multi-resource inventory and monitoring
- H - data to strengthen existing classification
- X - other purpose not listed here

PREC (one-character code)

Precision to which the plot can be located on a topographic map is defined as follows:

- S second - mappable within a three-second radius
- M minute - mappable within a one-minute radius

(approximately 2 km or 1.5 miles)

G general - mappable to quad or place name precision only
(precision within about 8 km or 5 miles)

COMMUNITY SIZE (acres)

Total size of the continuous community occurrence (not plot size).

PLOT TYPES (up to five-character code)

Up to five of the following 1-digit codes listing the types of forms completed for this plot:

S - Site Survey Form
C - Community Survey Form
M - Microplot Vegetation Data Form
T - Tree Measurement Form
E - Soil Characterization Form
R - Reconnaissance Soil Characterization Form

PLTRL (up to three-digit number)

Plot Radius or Length - enter plot radius (for circular plots) or length (for rectangular plots). Indicate units of measurement.

Note: a 375 m² plot has a radius of 10.9 m (35.8 ft)
a 50 m² plot has a radius of 4.0 m (13.1 ft)

PLOT W (up to three-digit number)

Plot Width - enter width if a rectangular plot shape is used. Enter 0 (numeric) if a circular plot shape is used. Indicate units of measurement.

SURVEY (five-character alphanumeric code)

Character 1 - method of locating plot. Enter one of the following:

- A - plot subjectively located to represent vegetation in occurrence (typically used in inventory)
- B - plot subjectively located to represent stand, and will be used to monitor vegetation change through

time with or without treatment

- C - plot is part of series of replicated plots systematically or randomly located within occurrence to describe the occurrence
- E - plot is part of series of replicated plots systematically or randomly located in treatment or control area to measure vegetation change with treatment over time
- F - plot is part of predetermined stratified sampling design (e.g., gradsect)

Character 2 - photo taken of plot? Enter Y or N.

Character 3 - permanency and location of plot. Enter one of the following:

- N - plot not permanent, the exact location unknown
- P - permanent plot marked with stakes or measurements to permanent features, and location and layout are marked on map
- L - plot not permanent, but location accurately marked on 1:24,000 or larger scale map or aerial photo to about 100 feet
- G - plot not permanent, and location known only within general geographic area

Characters 4 and 5 - for use with re-measurement plots. Enter re-measurement ascension number (e.g., 01 for initial measurement; 06 for sixth measurement). Leave blank otherwise.

PHOTOS

Indicate how many photos were taken of the plot and any details regarding the photo(s), e.g., "One photo taken looking N across entire plot".

DIRECTIONS

Directions to Plot - enter precise directions to the plot using a readily locatable landmark (e.g., a city, a major highway, etc.) as the starting point on a state or local road map. Use clear complete sentences that will be understandable to someone who is unfamiliar with the area, needs to get to the plot, and has only your directions to follow. Cite dis-

tances as closely as possible to the 1/10 of a mile, use compass directions (N, S, E, and W), and be sure to specify the best access to the plot, such as where to park or which trail to use.

CONSERVATION RANKING

Grade the community occurrences condition, viability, and defensibility according to the following scale:

- A - excellent
- B - good
- C - marginal
- D - poor
- F - terrible

COND (one-character code)

Condition - base grade on how much of the site and the community occurrence itself has been damaged or altered from its optimal condition and character. Provide comments on condition grade.

VIAB (one-character code)

Viability - base grade on the long-term prospects for continued existence of the occurrence. Provide comments on viability grade.

DEFN (one-character code)

Defensibility - base grade on the extent to which the occurrence can be protected from extrinsic human factors that might otherwise degrade or destroy it. Provide comments on defensibility grade.

RANK (one-character code)

Summary grade of the condition, viability, and defensibility grades listed. Provide comments on this overall grade, i.e., EORANKCOM.

MGMT

Management Comments - comment on any management (new or additional) needed to ensure continued existence of the

community occurrence, and chances (and means) of bringing it about. Any other pertinent comments go here as well, e.g., "... clearing of competing vegetation has been tried in the past but without success".

PROT

Protection Comments - comment on any legal protection (new or additional) needed to ensure continued existence of the community occurrence, and chances (and means) of bringing it about. Any other pertinent comments go here as well, e.g., "... landowner shows interest in taking action to legally protect community occurrence".

ENVIRONMENTAL FEATURES

DL (one-character code)

Dominant Life Form - enter one of the following codes to describe the dominant live life form currently present on the plot (Note: dominate life form = life form with the greatest foliar volume):

- A - aquatic species dominate
- B - broadleaf trees dominate
- C - coniferous trees dominate
- F - forbs dominate
- G - graminoids dominate
- H - herbs (graminoid/forb mixture) dominate
- M - moss or lichens dominate
- N - non-vegetated soil
- P - agricultural cropland
- R - rock or scree
- S - shrubs dominate

SOIL RPT

Soil Survey Report - cite the soil survey report used to identify the "Soil Unit" and "Soil Taxon". If none, enter "-".

Example: "Soil Survey of Madison County (SCS 1989)"

SOIL UNIT

Enter the appropriate map unit symbol from the soil survey map of the area. If none, enter "-".

SOIL TAXON

Enter the appropriate soil subgroup name from the soil survey report for the area. If not known, enter "-".

PM (four-character code)

Parent Material - enter the appropriate parent material code from the list below:

Sedimentary

SETU - type unknown
LIME - limestone
DOLO - dolomite
SAND - sandstone
CASA - calcareous sandstone
SILT - siltstone
CASI - calcareous siltstone
SHAL - shale
RESH - red shale
CASH - calcareous shale
CONG - conglomerate
CACO - calcareous conglomerate

Metamorphic

METU - type unknown
ARGI - argillite
CAAR - calcareous argillite
SILI - siltite
QUAR - quartzite
SLAT - slate
PHYL - phyllite
SCHI - schist
BISC - biotite schist
MISC - mica schist
GNBG - gneiss and biotite gneiss

Igneous

IGTU - type unknown
BASA - basalt (including obsidian)
ANDE - andesite
DIGA - diorite to gabbro
LATI - latite
QUMO - quartz monzonite
TRSY - trachyte and syenite
RHYO - rhyolite
GRBG - granite and biotite granite
WETU - welded tuff (tufa)
SCOR - scoria (porcelanite), clinker

Miscellaneous

- GRAL - gravelly alluvium
- SAAL - sandy alluvium
- SIAL - silty alluvium
- CLAL - clayey alluvium
- MIAL - mixed alluvium
- GLTI - glacial till, mixed origin
- ASHT - ash (of any origin)
- MISE - mixed sedimentary
- MIME - mixed metamorphic
- MIIG - mixed igneous
- LOES - loess
- MIRT - mix of two or more rock types
- DUNE - sand dunes

LANDFORM (four-character code)

Enter the appropriate geomorphic landform code from the list below:

<u>General Landform Type</u>	<u>Code</u>	<u>Refined Landform Type</u>
residual mountain slopes and ridges	RMTU	type unknown
	RMDS	dissected straight slopes
	RMDC	dissected convex slopes
	RMUS	undissected slopes
	RMRI	ridges
	RMDE	depressions
glaciated mountain slopes and ridges	GMTU	type unknown
	GMUS	undissected slopes
	GMDS	dissected slopes
	GMRI	ridges
alpine glacial valleys	AVTU	type unknown
	AVTB	trough bottoms
	AVUT	undissected troughwalls
	AVDT	dissected troughwalls
	AVAP	avalanche paths and debris fans
alpine glacial ridges	ARTU	type unknown
	ARCB	cirque basins
	ARCH	cirque headwalls and alpine ridges
	ARUU	undulating uplands

<u>General Landform Type</u>	<u>Code</u>	<u>Refined Landform Type</u>
rolling uplands	RUTU	type unknown
	RULR	low relief rolling uplands
	RULD	low relief uplands, dense drainage
	RUMR	moderate relief rolling uplands
	RUDR	dissected rolling uplands
breaklands	BLTU	type unknown
	BLDR	dissected river breaks
	BLUR	undissected river breaks
	BLSB BLSH	structural breaks stream headlands
structurally controlled mountain slopes	SCTU	type unknown
	SCDS	dip slopes
	SCDR SCPL	dipping layered rocks plateaus
glacial till forms	GTTU	type unknown
	GTMO	moraines
	GTDL	drumlins
	GTKK	kames and kettles
alluvial-colluvial-lacustrine forms	ACTU	type unknown
	ACFP	flood plains
	ACTE	terraces
	ACAF	alluvial fans
	ACCF	colluvial fans
	ACBT	colluvial basins and toeslopes
mass wasted slopes	ACAB	alluvial basins
	MWTU	type unknown
	MWLS	landslides

PLOT POS (four-character code)

Plot Position - enter the appropriate code from the list below to describe the topographic position of the plot:

<u>General Plot Position</u>	<u>Code</u>	<u>Refined Plot Position</u>
narrow valley bottom (<100 feet wide)	NVTU	type unknown
	NVSC	stream channel
	NVSB	stream bar
	NVLE	levee (narrow flood plain overbank deposits)
	NVCD	colluvial deposit (colluvial fan)
moderate valley bottom (100-300 feet wide)	MVTU	type unknown
	MVSC	stream channel
	MVSB	stream bar
	MVFP	flood plain (incl. levees if appropriate)
	MVAM	abandoned meander
	MVOX	oxbow
	MVBS	backwater slough
	MVTE	terrace
	MVAF	alluvial fan (toeslope)
wide valley bottom (>300 feet wide)	WVTU	type unknown
	WVSC	stream channel
	WVSB	stream bar
	WVFP	flood plain (incl. levees if appropriate)
	WVAM	abandoned meander
	WVOX	oxbow
	WVBS	backwater slough
	WVTE	terrace
	WVAF	alluvial fan (toeslope)
slope features	SLTU	type unknown
short slope	SLSS	short slope, neither upper nor lower (<100 ft)
lower slope	SLLS AFLS	lower slope lower slope of alluvial fan (fan skirt)
mid slope	SLMS AFMS	mid slope mid slope of alluvial fan
upper slope	SLUS AFUS	upper slope upper slope of alluvial fan

<u>General Plot Position</u>	<u>Code</u>	<u>Refined Plot Position</u>
shoulder	SHDR	shoulder
ridge	RINR	narrow ridge (<100 ft wide)
	RIWR	wide ridge summit (>100 ft wide)
bench	BNCH	bench in mountainous terrain

SLP SHAPE (one-character code)

Slope Shape - enter one of the following codes to indicate the vertical shape of the slope on which the plot lies:

- S - straight or even
- R - rounded or convex
- D - depression or concave
- P - patterned (micro-relief of hummocks and swales)
- U - undulating pattern of low ridges or knolls and draws
- X - other

ASP (up to three-digit number)

Aspect - enter the direction of the slope on which the plot occurs (in degrees; corrected for declination).

SLOPE % (up to three-digit number)

Enter the steepness of the slope on which the plot occurs (in percent).

EROS POTENT (two-character code)

Erosion Potential - enter one of the following codes to indicate the potential for erosion on the plot:

- SA - soil surface is stable with no evidence of accelerated erosion
- UC - soil surface is unstable because of compaction
- UD - soil surface is unstable because of displacement and/or churning of the soil

UP - soil surface is unstable because of lack of protective vegetation cover

UA - unable to assess

EROS TYPE (two-character code)

Enter one of the following codes to indicate the dominant type of erosion occurring on the plot:

NO - none
SE - sheet erosion
RE - rill erosion
GE - gully erosion
DE - deposition
WE - wind erosion
SC - soil creep
SL - slump (earth flow)
TD - terrace development
SL - slide

HORIZON ANGLE (%) (up to three-digit numbers)

Record the angles to the four horizons (in percent).

IFSLP (up to three-digit number)

If "General Plot Position" is sloping (i.e., > 3% slope), estimate distance from top of slope to upper edge of plot. Indicate units of measurement.

IFVAL (up to three-digit number)

If "General Plot Position" is level (i.e., 0 - 3% slope), estimate distance across valley or flat (passing through plot). Indicate units of measurement.

SPFE

List any special features of the site on which the plot is located (if desirable, describe these features under "General Site Description"). If none described, enter "NA".

Examples: avalanche chute, talus, seep, etc.

GROUND COVER (two-digit codes)

Enter cover class code for each of the following types of ground cover:

- S - bare soil (particles < 1/16 in. dia.)
- G - gravel (particles 1/16 to 3 in. dia.)
- R - rock (particles > 3 in. dia.)
- L - litter and duff. Litter includes freshly-fallen leaves, needles, twigs, bark, fruits; duff is fermentation layer and humus layer.
- W - wood (downed fragments > 1/4 in. dia.)
- M - moss. Also includes Lycopodium and Selaginella.
- BV - basal vegetation. This is the area occupied by root crowns and stems, not canopy cover. Values rarely exceed 30% and are usually lower.
- O - other. Use when an additional category is needed. Identify the "other" item (e.g., lichen; water).

Use the following cover classes and codes:

<u>Code</u>	<u>Class</u>	<u>Midpoint</u>
0	0%	0%
1	< 1%	0.5%
3	1% to 4.9%	3%
10	5% to 14.9%	10%
20	15% to 24.9%	20%
30	25% to 34.9%	30%
40	35% to 44.9%	40%
50	45% to 54.9%	50%
60	55% to 64.9%	60%
70	65% to 74.9%	70%
80	75% to 84.9%	80%
90	85% to 94.9%	90%
98	95% to 100%	97.5%

RIPARIAN FEATURES

If the plot is within the riparian zone record the following information (indicate units of measurement as appropriate):

Channel Width (up to three-digit number) - if valley contains multiple channels, give width of channel nearest to the plot.

Channel Entrenchment (up to three-digit number) - depth to which channel has cut into valley floor.

Surface Water (two-digit code) - estimate of maximum ground cover of surface water on plot during the year (use cover classes listed above under "Ground Cover").

Height Above Water (up to three-digit number) - height of plot above stream or pond surface when water is at bank-full stage (water at bank-full stage reaches lower limit of terrestrial vegetation).

Distance from Water (up to three-digit number) - distance from water at bank-full stage to nearest plot edge.

GENERAL SITE DESCRIPTION

Description (a "word picture") of the place where the sampled community occurs. (Any specific information about the plot itself should be written into the "Comments" field following the "Ocular Plant Species Data"). Consider the setting of the community occurrence in the surrounding landscape (including landscape features and adjacent community types).

OCULAR PLANT SPECIES DATA

This portion of the form is used for recording plant species data by lifeform class, i.e., "Trees", "Shrubs", "Graminoids", and "Forbs".

For all cover estimates, use the codes from the following cover class table:

<u>Code</u>	<u>Class</u>	<u>Midpoint</u>
1	< 1%	0.5%
3	1% to 4.9%	3%
10	5% to 14.9%	10%
20	15% to 24.9%	20%
30	25% to 34.9%	30%
40	35% to 44.9%	40%
50	45% to 54.9%	50%
60	55% to 64.9%	60%
70	65% to 74.9%	70%
80	75% to 84.9%	80%
90	85% to 94.9%	90%
98	95% to 100%	97.5%

PltIDL (two-digit code)

Plant Identification Level - enter the two-digit number that represents the percent of canopy cover equal to or greater than which all plants are to be identified. For example, "5" indicates that all plant species having 5% canopy cover or greater would be recorded; "0" indicates all plant species have been recorded.

Tot Cv (two-digit code)

Total Cover - estimate the percent canopy cover for the respective lifeform. This estimate is not the sum of all species in the lifeform and does not count overlap. It is the horizontal percent cover of the vertical projection of the lifeform.

Tal Cv (two-digit code)

Tall Height Cover - estimate "Total Cover" (as described above) by life form for individuals taller than 5 m (16.4 ft).

Med Cv (two-digit code)

Medium Height Cover - estimate "Total Cover" (as described above) by life form for individuals between 0.5 and 5 m tall (1.6 - 16.4 ft).

Low Cv (two-digit code)

Low Height Cover - estimate "Total Cover" (as described above) by life form for individuals between 0.05 and 0.5 m tall (0.2 - 1.6 ft).

Grd Cv (two-digit code)

Ground Height Cover - estimate "Total Cover" (as described above) by life form for individuals shorter than 0.05 m (0.2 ft).

MHt (three-digit code)

Mean Height - estimate the mean height of the dominant size class within the respective lifeform. Indicate units of measurement.

CC (two-digit code)

Canopy Cover - enter the appropriate canopy cover code listed above for each species in each lifeform.

T1, T2, S1, etc.

List each species within a lifeform using the following convention: full scientific binomial, code name (first three letters of genus and first three letters of the specific epithet), and canopy cover code (see "CC" above).

Example: T1 Pinus ponderosa / PINPON | 40

COMMENTS (EODATA)

Specific information regarding the community occurrence at the site, e.g., numbers, size, condition, peculiar characteristics, viability.

COMMUNITY SURVEY FORM

MTNHP
5/27/91

GENERAL PLOT DATA

IDENTIFICATION AND LOCATION

PLOT NO. _____ MO _____ DAY _____ MANUAL _____ UNITS ___ft ___m
EXAMINER(s) _____ YEAR _____ EOCODE _____ * _____
PNC _____ CT _____
SITE _____ STATE _____ COUNTY _____
PURP _____ PREC _____ QUADNAME _____ QUADCODE _____
____T/____R/____S/____4S/____4/4 COMMUNITY SIZE (acres) _____
PLOT TYPES _____ PLTRL _____ PLOT W _____ SURVEY _____
PHOTOS _____
DIRECTIONS --> _____

CONSERVATION RANKING

COND _____ Com: _____
VIAB _____ Com: _____
DEFN _____ Com: _____
RANK _____ Com: _____
MGMT: _____
PROT: _____

ENVIRONMENTAL FEATURES

DL _____ SOIL RPT _____
SOIL UNIT _____ SOIL TAXON _____
PM _____ LANDFORM _____ PLOT POS _____ SLP SHAPE _____ ASP _____
SLOPE % _____ ELEVATION _____ EROS POTENT _____ EROS TYPE _____
HORIZON ANGLE (%): N _____ E _____ S _____ W _____ IFSLP _____ IFVAL _____
SPFE _____
GROUND COVER: ___S+___G+___R+___L+___W+___M+___BV+___O ~ = 100%
DISTURBANCE HISTORY (type, intensity, frequency, season)--> _____

RIPARIAN FEATURES: Channel Width _____ Channel Entrench _____
Surface Water _____ Ht.Abv.H2O _____ Dist. from H2O _____

GENERAL SITE DESCRIPTION (landscape features and adjacent ct's)

OCULAR PLANT SPECIES DATA

PltIDL_____

PLOT NO. _____ NO. SPECIES _____ PNC _____

TREES Tot Cv _____ Mht _____
 Tal Cv _____ Med Cv _____
 Low Cv _____ Grd Cv _____

FRBS Tot Cv _____ Mht _____
 Med Cv _____ Low Cv _____
 Grd Cv _____

T 1 _____
 T 2 _____
 T 3 _____
 T 4 _____
 T 5 _____

F 1 _____
 F 2 _____
 F 3 _____
 F 4 _____
 F 5 _____
 F 6 _____

SHRBS Tot Cv _____ Mht _____
 Tal Cv _____ Med Cv _____
 Low Cv _____ Grd Cv _____

F 7 _____
 F 8 _____
 F 9 _____
 F10 _____
 F11 _____
 F12 _____
 F13 _____
 F14 _____
 F15 _____

S 1 _____
 S 2 _____
 S 3 _____
 S 4 _____
 S 5 _____
 S 6 _____
 S 7 _____
 S 8 _____
 S 9 _____
 S10 _____
 S11 _____
 S12 _____

GRAM Tot Cv _____ Mht _____
 Med Cv _____ Low Cv _____
 Grd Cv _____

G 1 _____
 G 2 _____
 G 3 _____
 G 4 _____
 G 5 _____
 G 6 _____
 G 7 _____
 G 8 _____
 G 9 _____
 G10 _____
 G11 _____
 G12 _____

FERN Tot Cv _____ Mht _____ Med Cv _____
 Low Cv _____ Grd Cv _____
BRYO/LICH Tot Cv _____

COMMENTS (EODATA) --> _____

PLOT NO. _____

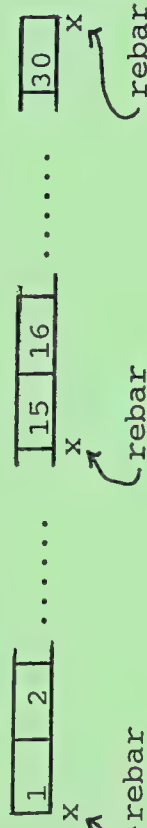
Additional Species Within Quadrats*

	CC									
	1	2	3	4	5	6	7	8	9	0
26	1	1	1	1	1	1	1	1	1	1
27	0	1	2	3	4	5	6	7	8	9
28	0	1	1	1	1	1	1	1	1	1
29	0	1	2	3	4	5	6	7	8	9
30	0	1	1	1	1	1	1	1	1	1
31	0	1	1	1	1	1	1	1	1	1
32	0	1	1	1	1	1	1	1	1	1
33	0	1	1	1	1	1	1	1	1	1
34	0	1	1	1	1	1	1	1	1	1
35	0	1	1	1	1	1	1	1	1	1
36	0	1	1	1	1	1	1	1	1	1
37	0	1	1	1	1	1	1	1	1	1
38	0	1	1	1	1	1	1	1	1	1
39	0	1	1	1	1	1	1	1	1	1
40	0	1	1	1	1	1	1	1	1	1

* for a complete listing of the species present in the macroplot, and their cover values, see the Ocular Plant Species Data form

Drawing showing location of transect (e.g., in relation to enclosure boundaries):

Standard arrangement of quadrats along transect:



Transect Direction (1 ----> 30) = _____°

Quadrat size = _____ x _____ cm

RECONNAISSANCE SOIL CHARACTERIZATION FORM

MTNHP 5/27/91

IDENTIFICATION

(texture codes revised 5/15/92)

PLOT NO. _____ MO _____ DAY _____ YEAR _____ EST SOIL DEPTH _____
EXAMINER(S) _____
SOIL SUBGROUP _____

SOIL DESCRIPTION

HORZ 1 _____ DEPTH (cm) _____ to _____ TEXTURE _____
STRUC _____ COLOR _____ FRAGS _____ EFFER _____
NOTES _____

HORZ 2 _____ DEPTH (cm) _____ to _____ TEXTURE _____
STRUC _____ COLOR _____ FRAGS _____ EFFER _____
NOTES _____

HORZ 3 _____ DEPTH (cm) _____ to _____ TEXTURE _____
STRUC _____ COLOR _____ FRAGS _____ EFFER _____
NOTES _____

HORZ 4 _____ DEPTH (cm) _____ to _____ TEXTURE _____
STRUC _____ COLOR _____ FRAGS _____ EFFER _____
NOTES _____

HORZ 5 _____ DEPTH (cm) _____ to _____ TEXTURE _____
STRUC _____ COLOR _____ FRAGS _____ EFFER _____
NOTES _____

INSTRUCTIONS

- The purpose of this form is to provide rapid, general characterization of the top 50 cm of the soil profile that can be used to identify the soil subgroup and provide information on a few biologically significant soil properties.
- PLOT NO. - same as on Community Survey Form.
- EST SOIL DEPTH - enter the appropriate estimated depth class to bedrock from the list below:

vshall	= very shallow;	< 10 inches deep (< .25 m)
shall	= shallow;	10 - 20 inches deep (.25-.5 m)
moddeep	= moderately deep;	20 - 30 inches deep (.5- .75 m)
deep	= deep	30 - 60 inches deep (.75-1.5 m)
vdeep	= very deep	> 60 inches deep (> 1.5 m)
- HORZ - enter the appropriate horizon symbol (e.g., A1, B2t, C1ca). If unknown, enter a "-".

- TEXTURE - enter the appropriate textural code from the list below (identification of broad class is required, i.e., first two characters of code; identification of basic class is optional):

<u>General</u>	<u>Broad Class</u>	<u>Code</u>	<u>Basic Class</u>
sandy	coarse	COS	sand
		COLS	loamy sand
loamy	moderately coarse	MCSL	sandy loam
	medium	MEVfSL	very f. sandy loam
		MEL	loam
		MESiL	silt loam
		MESi	silt
	moderately fine	MFCL	clay loam
		MFSCl	sandy clay loam
		MFSiCL	silty clay loam
	clayey	fine	FISC
FISiC			silty clay
FIC			clay

- STRUC - enter the appropriate structural grade code from the list below:

none = structureless (single grain or massive)
 weak = indistinct peds
 mod = moderate structure
 str = strong (horizon entirely of distinct peds)

- COLOR - enter the hue, value, and chroma of the moist soil sample used to identify texture, e.g., 10YR 3/2.

- FRAGS - enter the appropriate coarse fragment content code from the list below:

none = none to few (<20% volume in >2 mm diameter fragments)
 grav = gravelly (20-50% volume in 2 mm-3 inch dia. frags.)
 vgrav = very gravelly (50-90% volume in 2 mm-3 inch frags.)
 cob = cobbly (20-50% volume in 3-10 inch dia. frags.)
 vcob = very cobbly (50-90% volume in 3-10 inch dia. frags.)
 ston = stony (20-50% volume in >10 inch dia. frags.)
 vston = very stony (50-90% volume in >10 inch dia. frags.)

- EFFER - enter one of the following classes to denote the degree of soil effervescence in response to 10% HCl:

- = no information
 NO = none
 SL = slight
 ST = strong
 VI = violent

SITE SURVEY FORM

MTNHP
5/27/91

IDENTIFICATION AND LOCATION

SITENAME _____ MANUAL _____
STATE _____

MO DAY YEAR EXAMINERS

_____-_____-_____
_____-_____-_____
_____-_____-_____

COUNTY: _____ QUADNAME: _____ QUADCODE: _____

T/ R/ SECTION(s)
T/ R/ SECTION(s)

DIRECTIONS --> _____

ELEMENT OCCURRENCES

Date: _____

Element Name	Occ. No.	Plot No.	Found?	Found?	Found?

REVISIT NEEDS--> _____

SITE DESCRIPTION/DESIGN

SITE DESCRIPTION--> _____

TOPOGRAPHIC BASE MAP:

yes no 1. element locations and/or boundaries?
yes no 2. both primary and secondary boundaries?

BOUNDARY JUSTIFICATION--> _____

PROTECTION URGENCY

- U1 immediate threat
- U2 threat w/i 5 yrs
- U3 threat but not w/i 5 yrs
- U4 no threats
- U5 land protected

PU COMMENTS:

MANAGEMENT URGENCY

- M1 needed this year
- M2 needed w/i 5 yrs (or loss)
- M3 needed w/i 5 yrs (or degrade)
- M4 may be needed in future
- M5 none needed

MU COMMENTS:

STEWARDSHIP

LAND USE COMMENTS --> _____

POTENTIAL HAZARDS --> _____

EXOTIC FLORA/FAUNA COMMENTS--> _____

OFF-SITE CONSIDERATIONS--> _____

SITE AND ELEMENT MANAGEMENT NEEDS --> _____

SKETCH MAP (e.g., show: (1) EO locations, (2) study plots, (3) natural landmarks, (4) disturbance features, such as structures, trails, logging areas, etc... Include cross section if possible. Include scale and indicate north.)

FASTPLOT DATA (* * D R A F T * *)

prepared by R. DeVelice, MTNHP
(file = FASTPLOT.TXT) 12/19/90

Identification and Location

PLOTID _____ MO _____ DAY _____ YEAR _____ STATE _____ COUNTY _____
EXAMINER(S) _____
T/R/S _____ 4S _____ 4/4 _____ COMMUNITY SIZE _____
PLTRL _____ PLOTW _____ QUADNAME _____ QUADCODE _____
SITE NAME _____ PHOTO(S) _____

Environmental Features

PNC _____ CT _____
SOIL UNIT _____ PM _____ PLOT POSITION _____
SLOPE SHAPE _____ ASPECT _____ SLOPE % _____ ELEVATION _____
GROUND COVER: S _____ G _____ R _____ L _____ W _____ M _____ BV _____ O _____

Conservation Ranking

QUALITY _____ COMMENTS: _____
CONDITION _____ COMMENTS: _____
VIABILITY _____ COMMENTS: _____
DEFENSE _____ COMMENTS: _____
RANK _____ COMMENTS: _____

Plant Species Data

	<u>species</u>	<u>CC</u>	<u>SC</u>	<u>MHT</u>	<u>notes</u>		<u>species</u>	<u>CC</u>	<u>SC</u>	<u>MHT</u>	<u>notes</u>
1	_____	_____	_____	_____	_____	6	_____	_____	_____	_____	_____
2	_____	_____	_____	_____	_____	7	_____	_____	_____	_____	_____
3	_____	_____	_____	_____	_____	8	_____	_____	_____	_____	_____
4	_____	_____	_____	_____	_____	9	_____	_____	_____	_____	_____
5	_____	_____	_____	_____	_____	10	_____	_____	_____	_____	_____

General Comments --->

PLANT SPECIES OF SPECIAL CONCERN SURVEY FORM
MONTANA NATURAL HERITAGE PROGRAM

1515 E. 6TH AVE., HELENA, MT 59620

DATE OF SURVEY: ___/___/___

OBSERVER(S): _____

WORK LOCATION/POSITION TITLE (Forest/District, District/Resource Area of observer(s)): _____

TAXONOMY:

FAMILY: _____

SCIENTIFIC NAME: _____

LOCATION: (Attach a copy of pertinent 7.5' or 15' topographic map section with locations of populations/subpopulations outlined, one map for each sensitive species described)

COUNTY: _____ USGS QUADRANGLE: _____

TOWNSHIP: _____ RANGE: _____ SECTION: _____ 1/4 SEC.: _____

ADDITIONAL T/R/S, SECTIONS or 1/4 SECs.: _____

ELEVATION (at population center (and range of population if known)): _____

NATIONAL FOREST/BLM DISTRICT: _____ F.S. DISTRICT/ BLM RESOURCE AREA: _____

LAND OWNERSHIP/MANAGEMENT (if not USFS/BLM): _____

FOREST STAND OR ALLOTMENT NUMBER: _____

DIRECTIONS TO SITE (refer to roads, trails, geographic features, etc.): _____

HABITAT:

VEGETATION STRUCTURE WITHIN POPULATION AREA:

TOTAL TREE COVER (%) _____ TOTAL SHRUB COVER (%) _____

TOTAL FORB COVER (%) _____ TOTAL GRAMINOID COVER (%) _____

TOTAL MOSS/LICHEN COVER (%) _____ TOTAL BARE GROUND COVER (%) _____

ASSOCIATED PLANT COMMUNITY:(list dominant species currently present, include age structure if known): _____

HABITAT TYPE: _____

ADDITIONAL ASSOCIATED PLANT SPECIES: _____