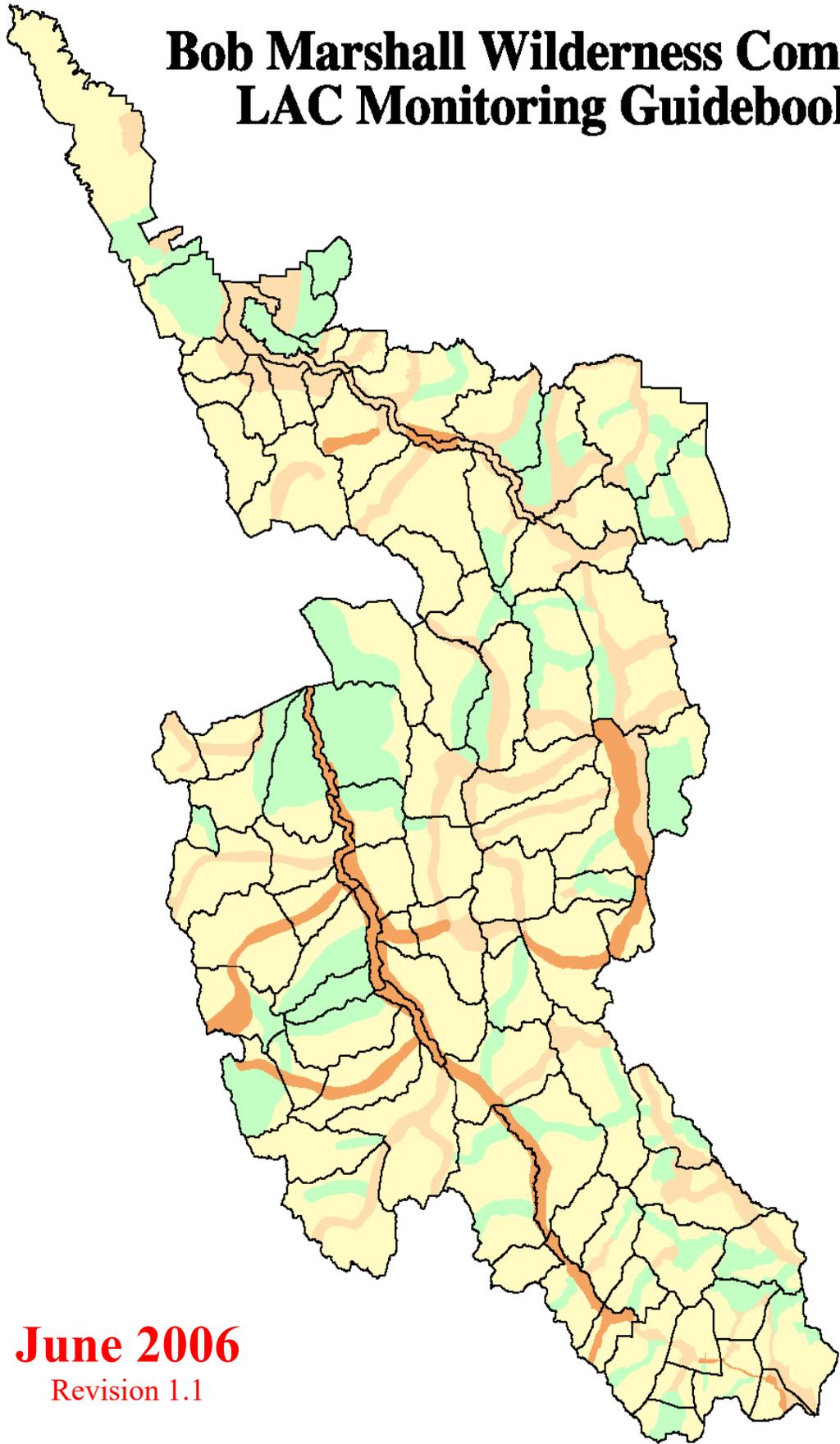


Bob Marshall Wilderness Complex LAC Monitoring Guidebook



June 2006

Revision 1.1

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INTRODUCTION

Recreation management direction for the Bob Marshall Wilderness Complex (BMWC) directs managers to maintain certain recreation opportunities over time. In order to ascertain whether or not these objectives are being met managers, researchers and wilderness users agreed on several key items or indicators of change that could be measured to assess the overall condition of the wilderness. The limited list of indicators is not intended to provide a comprehensive inventory of wilderness conditions, but rather to alert the manager that change is taking place. The indicators include both biophysical and social components. Each indicator has associated with it a standard that dictates at what point change becomes unacceptable. When the standard is violated, the desired recreation opportunity may no longer be available, at a high quality level, for the wilderness visitor to enjoy.

The BMWC has been divided into four Opportunity Classes (OC) to provide a range of recreational experiences for wilderness visitors. The Opportunity Classes vary along a spectrum ranging from pristine; little used areas (OCI) to heavily used travel routes (OCIV). It is important to remember that all Opportunity Classes meet or exceed standards for wilderness set in the Wilderness Act and in Forest Service policy. Indicators of change remain constant across all Opportunity Classes. Standards on the other hand, vary from one Class to the next. They are designed to reflect the range of recreation opportunities we will manage for over time.

It is important that you clearly understand what happens when standards are violated. The question is certain to arise in your conversations with wilderness visitors. The key to remember is that no violation, in and of itself, necessarily triggers a restrictive management action. There are several steps to decide what actions are appropriate. First, indicators, standards and the monitoring process must be evaluated to determine if they are still valid. If they are not, they must be adjusted and monitoring continued. If they are valid, the manager must identify the source of the problem and develop alternative actions to resolve it. In general, the manager must select the least restrictive action necessary to reasonably resolve the problem. There is a strong commitment on the part of all BMWC managers to use least restrictive actions such as information and education first. Finally, after the selected action is implemented, monitoring must continue to evaluate its effectiveness.

Monitoring changing conditions is a vital part of wilderness management. Future management actions must be based on accurate information concerning changing wilderness conditions. This information will be provided by your fieldwork. It is imperative that your inventories be of the highest quality. This Guidebook is designed to give a basic understanding of methods developed to inventory conditions relative to each indicator. To insure consistency across the Complex, the guidelines must be carefully followed. Proficiency can only come with practice and close communication with your supervisor. Remember to use common sense in your evaluations. The data you collect in monitoring should always replicate what a "visitor" would have seen, heard, or noticed. Keep this in mind and it will help you in accurate and consistent monitoring.

An important part of the monitoring process, after the data has been collected, is the summarization and input into a database. It is critical that the instructions are followed and **complete** data has been entered on all forms. It is not always possible for you, the data collector, to be the person entering the data, but that would be the ideal situation. Enclosed in this guidebook are instructions on how to enter data into the databases. Be sure you understand the key elements of this process and what your collected data should look like for input. Your actions will influence the efficiency of the program and will also have an affect on final management decisions.

It will be up to you, in a large part to develop your skills. Take time to read the Recreation Management Direction for the BMWC, April 1987. It will provide a broader understanding of the need for monitoring. When in doubt, ask questions. If your supervisor is not available, document rationale for your decisions and ask him or her later. Don't be afraid to admit mistakes and make changes. Our only objective is to get high quality information. Your work will shape the future of the wilderness. Make it right. Make it count.

RESOURCE INDICATORS

Campsite (or Human Impacted Site) Inventory

The inventory of campsites or human impacted sites serves to collect the data necessary for monitoring the three **Resource Indicators** outlined in the Recreation Management Direction. These indicators are: Area of Barren Core (sq ft), Number of human impacted sites per 640 acre area, and Number of human impacted site above a particular condition class index per 640 acres.

Standards for the Resource Indicators:

- **Area of Barren Core measured in square feet:**
 - OC I - 100 sq ft permitted per site
 - OC II - 500 sq ft permitted per site.
 - OC III – 1000 sq ft permitted per site.
 - OC IV – 2000 sq ft permitted per site.

- **Number of human impacted sites per 640 acre area:**
 - OC I – 1 site permitted per 640-acre area.
 - OC II – 2 sites permitted per 640-acre area.
 - OC III – 3 sites permitted per 640-acre area.
 - OC IV – 6 sites permitted per 640-acre area.

- **Number of human impacted sites above a particular condition class index per 640 acre area:**
 - OC I – No moderately or highly impacted sites per 640 acre area.
 - OC II – No more than 1 moderately impacted site and no (0) highly impacted sites per 640-acre area.
 - OC III – No more than 2 moderately impacted site and no (0) highly impacted sites per 640-acre area.
 - OC IV – No more than 3 moderately impacted sites and 1 highly impacted site per 640-acre area.

Field Measurement – for all Resource Indicators:

1. Identify all human impacted sites in a given geographic area.
2. Physically locate and map sites using 1:24000 scale map and/or utilize Global Positioning System (GPS) to map sites and process GPS data in GIS.
3. The trail encounters data should be recorded on the form entitled: Bob Marshall Wilderness Complex – Campsite Inventory Form. See Appendix **B** for example of this form.
4. **Human Impacted Site:** any area with evidence of human impact normally centered around a fire ring, regardless of its prior use for camping. Impacts may include vegetation trampling/loss, soil disturbance, fire scars, damaged trees and “improvements” such as corrals, meat poles, seats, tables, toilets, etc. A site includes a main camp area and may have additional associated stockholding, tent sites or other impacted areas. Most often these areas are separated by undisturbed vegetation that may be considered part of the overall site.

5. ***Determining individual sites:*** When trying to distinguish one site from another, ask the question; “Is use of the other impacted area associated with this site?” Or conversely, “Would two groups use these areas simultaneously as separate sites?” When inventorying a large camp area with multiple use sites in close proximity, inventory as one single human impacted site on one inventory form. Average measurements and evaluations as appropriate. Actual measures and counts such as sq ft of camp area, sq ft of barren core area, number of trees, roots, scars, etc should represent a total of the entire area. Use comment #16, “Single camp area with multiple use sites” in the comment section. Where sites are determined to be distinct or not associated with a large camp area, record as separate sites on separate forms.

6. ***One time sites and non-discernable sites:*** If a site has never been inventoried, is very lightly impacted and it is possible to naturalize it completely, do not complete a campsite inventory. This could be an area that receives little or no use yearly, is not a likely campsite that would attract use or use is incidental. Check with your Supervisor to see if you should make note of these site locations on a map so they can possibly be revisited in the future.

If the site has been inventoried and numbered in the past and is now non-discernable, it is not necessary to completely fill out the campsite inventory form, fill out the site number, surveyed by, survey date and OC. Circle **NON-DISCERNABLE** at the top of the form and note any written comments on the back

7. Inventory the site including the complete measurement of barren core using the campsite inventory form before doing any cleanup or naturalization work (see exception under “One time sites and non-discernable sites above).
8. When possible inventory sites early in the season in order to assess annual recovery rate. Generally, campsite inventories should not be conducted after September 1st. If excessive conditions warrant, such as drought, the inventory period may be shortened further. For Barren Core, since the intent is to measure the permanently devegetated area it is important to measure heavily used sites like outfitter camps early in the season, prior to the higher use.
9. Newly created or problem campsites may be re-inventoried later in the year to assess seasonal changes.
10. Measure the permanently devegetated area; areas where vegetation does not recover on an annual basis as described in General Instructions-Barren Core Camp Area. Do not include approved stock holding areas (See General Instructions).

It is important for those persons conducting monitoring to read and understand the following instructions prior to completing the inventory.

General Instructions

Stock holding areas:

All approved stock holding areas are excluded from consideration under this standard under the assumption that they are necessary for resource protection. Approved stock holding areas are:

1. Outfitters corral and hitch racks approved in the camp management plan.
2. Corrals and hitch racks at FS administrative sites.
3. Public corrals and hitch racks provided by the FS as a resource protection measure.
4. Areas within 10 feet of the structures named above.

These approved holding areas should not be included when measuring vegetative cover (item 19), mineral soil exposure (item 20), vegetation loss (item 21), mineral soil increase (item 22), tree damage (item 23), root exposure (item 24), development (item 25), cleanliness (item 26 - stock manure only is excluded), barren core cap area (item 29).

All other stock related impacts will be included when completing the inventory form.

Although approved stock holding areas are exempt from consideration under this standard, managers have a continuing interest in their impact on the wilderness. Therefore, impacts relating to these areas must be recorded separately in the margin of the campsite inventory form or on another paper. Information to be recorded includes:

- Number and size of facilities.
- Vegetation cover (prior to season of use).
- Tree damage.
- Root exposure.
- Barren core area.

General Instructions

Campsite Inventory Form:

Front or first page of form

Location/Drainage:

A word description of the area or drainage where the campsite is located. Example: South Fork of Flathead River, Dry Fork Creek, Nanny Basin, Bradley Mountain, Heart Lake, etc. When appropriate, list first and secondary drainages. Example: South Fork of Flathead River/Black Bear Creek.

O.C. - OPPORTUNITY CLASS:

Opportunity class number. Opportunity classes range from I or 1 -the most pristine, to IV or 4 - the most heavily used travel routes. Your Opportunity Class Map should be consulted for this information.

Year:

The calendar year in which you are filling out this inventory form.

General Instructions (continued)

Campsite Inventory Form:

Rating:

This represents the rating and index total the site achieved as a result of the process on the backside of the Inventory form, see item 30. Record min, mod, or high with the actual number after completing the inventory.

Status:

Circle one: Current, Non-discernable or Historic Location. Current sites are those that the inventory is performed on. See page 7 for discussion on non-discernable sites. Historic Locations are sites where an inventory has been taken in the past and 1) some change has occurred on the landscape causing that site to no longer exist or 2) where a site has been inventoried as non-discernable for 2 consecutive 5-year periods. Examples of landscape change would be; large wildfires closing off entire areas, downfall from wind events making the campsite location no longer apparent or useable or flooding and change in river channel. Example of twice non-discernable would be; where a site was inventoried as current during the first 5- year period, on the survey during the second 5-year period the site was non-discernable and on the survey in the third 5-year period the site was again not apparent, this would constitute the status of historic location on the third survey. Rangers should note that once a site has been assigned a number, regardless of the status, the site will remain in the database as that number. Be careful when designating a site “Historic Location”. Do not designate a site a historic location if it appears that people are still using it. Please understand “Historic Location” is not meant to imply cultural significance in any way.

Excess Barren Core:

Circle one: Yes or No, dependent upon the Barren Core measurement in square feet and the Opportunity Class. See chart on back of form.

1) Site Number: Use the geographic unit code numbers established for the BMWC for the first 3 numbers. The site number is made up a group of numbers designed to give a unique and readily identifiable location to each campsite in the BMWC. Usually the numbers are written with a dash separating them, the database, however, stores the numbers with 0 fill (for example, 1-4-3-67 is 010403067 in the database.) For example: Consider site number 1-4-3-67; 1-4-3 where 1 represents the resource area 1, South Fork Flathead, on Spotted Bear, 4 represents the geounit in the river corridor and 3 represents a subdivision of the river corridor. The 67 represents the unique site number within this geographic unit. Once a number has been assigned it should never be reused, it stays with this site regardless of status (current, non-discernable, historic, etc.) If a site is new, assign the first available number within that geounit, to get this number you will have to check in the database. In the field, the ranger may assign a temporary new number both on the form, map and gps; such as, (1-4-3) NEW-2001-1, and then later when the LAC database can be checked, a previously unused number for that geounit will be assigned.

2) Survey Date: Date which survey is recorded in field: Month, Day and Year, (6/14/2003).

3) Surveyed By: The first and last name of the individual who recorded the campsite inventory. If there are multiple individuals, record only the lead wilderness ranger’s first and last name.

4) Location: All sites should be located on 1:24000 USGS Quads; this field is just to give a little more information about the location. Filling in this field is at the discretion of your

General Instructions (continued)

Campsite Inventory Form:

supervisor. Check with your supervisor, and either fill in per that direction or leave blank. Universal Transverse Mercator (UTM) Coordinates and Lat/Long can be roughly estimated from quad maps or taken from GPS unit. It is not necessary to record these if you are using a GPS unit and downloading waypoints as they can be easily taken from the GIS layer. Legal Description should note Township, Range and Section at a minimum.

5) USGS Quadrangle: Name and/or number of the United States Geological Survey quadrangle maps used to locate and record locations of campsites.

6) Elevation (to the nearest 100 feet): Elevation of the individual site to the nearest 100 feet (for elevations of 4800' or 6200' record 4800 or 6200 not 48 or 62). The elevation can be found on the USGS quad maps used to locate and record sites. Topographical line intervals are usually 40 feet. (If you can or wish to record elevation down to the nearest 10 feet, the database will accept this.)

7) Approximate Distance to Closest Trailhead: Refers to the distance in miles by trail to the nearest trailhead that could be used to access the site. If there are two trailheads of similar distance to the site, write down the approximate mileage to one and include the name of that trailhead. (*Not recorded in Database*)

8) Distance to Constructed Trail: This measurement should be taken from the campfire scar/ring to the constructed or system trail. Measurement should be taken with a measuring tape or paced and recorded to the nearest foot. Eyeball measurements are NOT reliable and should only be used if distance is greater than 300-500 feet or the terrain is treacherous or inhibiting.

Check with maps and supervisors who know the area to find out if a trail is 'constructed or system'. It may be beneficial to take a measurement to the user trails and include it as a side note, along with a sketch map, to aid the next person inventorying the site. Measurement should be taken along the most direct route that can be traveled upon reasonably safely on foot or with stock.

Screening: Refers to how much of the site can be seen from the constructed/system trail if a party were camped in the site.

9) Distance to Water: This measurement should be taken with a measuring tape or paced unless the distance is greater than 300-500 feet or the terrain is hazardous or inhibiting. Measurement should follow the most direct route that can be traveled reasonably safely on foot or by stock. Water to which the measurement is taken is the closest body of water that stock would drink from or a person could filter from.

Type: Type of water source measured to. If source is not obvious directions to or sketch a map may aid the next ranger in locating the water source for the site.

10) Distance to Closest Campsite: This measurement also should be taken with a measuring tape, paced or estimated where reasonable using the most direct route. This is also something that may need to be delayed until the rest of the immediate area has been inventoried to be able to determine which site is closest to which. Remember, sometimes the closest campsite is across a river or a quarter of a mile away or more.

Screening: Refers to the amount of a site that can be seen from the closest site if a camp were set up in the site being inventoried.

General Instructions (continued)
Campsite Inventory Form:

11) Number of Other Sites Within 1/4 Mile: This is determined in the office once all sites in an area have been plotted on the map. (*Not Recorded in Database*)

12) Photo Record: If photos were taken indicate roll and picture number.

13) Vegetation (circle one): This category refers to the type of area the site is located in, what it was like prior to impact or what it would look like if the impact had not occurred. Site should be compared to a similar unused area.

1. **Closed Forest** = Refers to a forested area with tall, dense undergrowth or trees that are extremely close together forming a closed canopy with little penetration of sunlight. (i.e. dog hair lodgepole).
2. **Open Forest** = Refers to an area that is forested with undergrowth that is sparse or very close to the ground (example: lodgepole pine trees with bear grass/grouse whortleberry ground cover) or trees that are very far apart (i.e. ponderosa park stand).
3. **Non-forested - densely vegetated** = Refers to an area devoid of trees (neither saplings nor mature trees) and is densely vegetated with shrubs, forbs or grasses. (i.e. rocky meadows, sand and gravel bars).
4. **Non-forested - sparsely vegetated** = Refers to an area devoid of trees (saplings and/or mature trees) and sparsely vegetated with shrubs, forbs or grasses. (i.e. rocky meadows, sand and gravel bars, etc).

Dominant Species: List 1-5 species in order of decreasing population. The first species is the most prevalent or dominates in terms of biomass, such as trees or shrubs where trees are absent. Species should be listed by common name since few people know the scientific names.

Habitat Type (if known): Habitat type in the four letter scientific abbreviation: i.e. PIPO/AGSP, PSME/CARU, etc.) This should only be included if you have training in habitat typing.

14) Landform (circle one): Description of the landform type that the individual site is located on, see list below.

1. **Floodplain** = Refers to the immediate area of level land that would be submerged by high water or floodwaters in a normal high water or flood season. In some areas the flood plain may be the first and lowest bench above the river or creek. This does not, however, include high benches or most secondary benches above streams.
2. **Other Valley Bottom** = Refers to any land areas between the floodplain and mid-slope in a valley. If this category is chosen, it may be helpful to the next person inventorying the site to give an additional description of the land type (i.e. high bench overlooking the river and a washout, etc.)
3. **Cirque Basin** = Refers to a high country glacial feature, a Cirque being a circular, bowl-like formation, usually near a mountain peak or ridge at the head of a drainage, where an alpine glacier once originated or may still exist. Often, the cirque basin contains a lake. A good example of this is Lick Lake and Tranquil Lakes.
4. **Side slope** = Refers to hillside, knoll or other sloped terrain that is not in the valley bottom. Frequently, this is in an upper elevation classification

General Instructions (continued)

Campsite Inventory Form:

5. **Ridge top** = Refers to the highest elevation point of the formations that connect peaks and separate drainages. Saddles and passes are in this category.
6. **Other** = Refers to other formations not listed above, i.e. some lakeshores.

15) Predominate Type of Use (circle as many as apply): Refers to the type of use the site could reasonably experience. The 'outfitter' category is used only for outfitter base and drop camps that receive use primarily by an outfitter. (*Not recorded in database*)

16) Facilities: Upon arrival to the site, record the number of the following features that are present in the site under the "BEFORE" column. After the site is cleaned and/or naturalized, record the features that remain in the site under the "AFTER" column.

1. **Fire ring:** This is an actual rock fire ring and not a fire scar.
2. **Primitive Seat:** Rock or fallen tree that was not moved onto the site, cut or otherwise constructed that is near the fire ring/scar and could be used as a seat.
3. **Constructed Seat:** Rock, tree, log, bench or other constructed seat that has been built or moved onto a site (usually near the fire ring/scar).
4. **Table/Shelf/Counter:** Constructed feature, self-explanatory.
5. **Meat Rack:** Usually a pole or rail tied, nailed or wired up high between two or more trees.
6. **Hitch rail:** Constructed feature, self-explanatory.
7. **Corral:** Constructed feature, self-explanatory.
8. **Toilet:** This can be anything from an outhouse to a pole tied up low between two trees to a pile of human waste and toilet paper on top of the ground.
9. **Other:** Features such as woodpiles, tent poles, tent frames, beds, etc.

17) Closest Firewood Sources (circle one): Refers to anything that a visitor could use for firewood. This may include anything from sticks to logs that could be moved into the fire pit (do not overlook log seats). Firewood does not have to be a pile of firewood stacked next to the fire pit.

18) Closest Forage Supply (circle one): Refers to any patch of vegetation that stock would graze on, not necessarily for an extended period of time or as the sole feed source for an animal.

Back or second page of campsite inventory form

Definitions for items 19-31 were taken directly from '*Bob Marshall Wilderness Complex-Limits of Acceptable Change, Monitoring Guidebook, 1990 Revision*'. Updates were made for the 2003 revision. **Please note – this information makes up the bulk of the actual LAC monitoring data for calculating impacts and barren core, as such it is very important to fill out completely.**

19) Vegetation Cover: Using the five coverage classes on the form, estimate the percent coverage of the live understory vegetation. Do not include dead vegetation, duff, or trees and shrubs taller than a person. Estimate cover for the entire campsite, excluding approved stock holding areas.

General Instructions (continued)

Campsite Inventory Form:

With a large site it may help to divide the site into equal quarters, estimate the percent cover of each quarter, and take the average. It may also help to visually cluster all vegetation into one part of the site and estimate what percent of the site would be covered. Try to select one coverage class decisively. If you cannot, circle your best estimate and note the other coverage class it might have been.

Make the same estimate of vegetation cover on a nearby-unused similar site - except for the impact - to the campsite. The idea here is to select a site that is relatively similar to what the campsite probably looked like before it was used. Choose a site that is similar to the campsite in terms of rockiness, slope, aspect, overstory composition and cover, and understory species composition. Protected plants around the base of trees can provide helpful clues about species composition.

Estimating vegetation cover requires practice and calibration between independent evaluators, so periodically check your estimates with those of others. Do remember, this is just an estimate.

20) *Mineral Soil Exposure:* Using the same five coverage classes, estimate the percent of the campsite without either live vegetation or duff - the percent on which mineral soil is exposed. Do not include a thin layer of needles/leaves as duff. Define duff as a natural accumulation that has not been disturbed and shows decomposition in lower levels. Do not include approved stock holding areas (see previous). In many cases, a thin layer of disturbed needles or wood chips is scattered about with mineral soil showing through. Consider these areas to be exposed mineral soil.

Hint: Make the same estimate on the comparative areas. In practice it will be easiest to estimate both vegetation cover and mineral soil exposure on the campsite and then select the comparative area and make the same estimates there.

21) *Vegetation Loss:* Utilizing the information in item 19, record the difference in vegetation cover class between campsite and comparative areas. Do not include approved stock holding areas (see previous). If there is no difference (e.g., both campsite and comparative area are class 4, 51-75%), circle 1. If coverage on the campsite is one class less than on the comparative area (e.g., the campsite is class 3, 26-50% and the comparative area is class 4, 51-75%), circle 2. If the difference is greater, circle 3.

22) *Mineral Soil Increase:* Utilizing the information in item 20, record the difference in mineral soil cover class between campsite and comparative area. Do not include approved stock holding areas (see previous). In this case ratings of 2 and 3 are given when mineral soil cover is one, or more than one class, higher on the campsite, respectively.

23) *Tree Damage:* Count the total number of damaged trees on the campsite and the area visible from the campsite, excluding any approved stock holding areas (see previous). Never count the same tree on more than one site. Damaged trees include stumps that show cut marks, scarred trees, and trees with nails in them. Trees with lower branches broken off for firewood are not included in tree damage counts. After recording the number, estimate very roughly what percentage of all trees in the area examined are damaged. If no trees are damaged, rate the site 1. If one to eight trees are scarred *or* if one to three trees were felled or had bad scars (scars

General Instructions (continued)

Campsite Inventory Form:

larger than 1 sq. ft. by 1 sq. ft.), rate the site 2. If more than eight trees are damaged, rate the site 3. **Additionally**, record the total number of scarred or felled trees in the ALL block in column to the left. Try to determine if the damage is new (since last inventory) and record the total in the NEW block. Estimate total number of trees in area, divide by number of damaged and multiply by 100, record this in % of trees scarred or felled block.

24) Root Exposure: Count the number of trees with human or stock caused exposed roots on the campsite and the area visible from the campsite. Root exposure should be pronounced - extending at least 1 foot from the tree trunk. It should also be the result of trampling - not the result of a root running over a rock. On campsites, roots are seldom exposed under natural conditions, but if you have any doubts about its cause, don't count it. Estimate the percent of all trees that you have counted for exposed roots and assign a rating of 1 (no trees with exposed roots), 2 (1-6 trees), or 3 (more than 6 trees). **Additionally**, record the total number of trees with roots exposed from your tally in the ALL column to the left. Try to determine if the damage is new and record the total in the NEW column. Estimate total number of trees in area, divide by number of with root exposure and multiply by 100, record this in % of tree with roots exposed block.

25) Development: Assign the site a rating of 1 if there are no facilities - not even a fire ring. A fire site is considered a ring only if the ring of rocks is present, if the rocks have been scattered, it is a fire scar but not a fire ring. If there is only one fire ring, primitive log seats (without sawed-off ends), or both, assign the site a 2. If there is more than one fire ring or if there are any more elaborate facilities, such as constructed seats, shelves, meat racks, hitch rails, corrals, toilets, stacks of firewood, or tent frames, assign the site a 3. Do not include facilities associated with approved stock holding areas (see previous). If the ranger removes facilities or cleans up the site, rate the site as it was found and note number of facilities before and after (see item 16).

26) Cleanliness: Count the number of fire scars on the site, including any fire rings as fire scars. Assign the site a 1 if there is only one fire scar and essentially no evidence of litter, stock manure, or human waste. Assign the site a 2 if there is more than one fire scar or if litter or stock manure is evident. If litter or stock manure is 'all over the place, or if there is any evidence of human waste, assign the site a 3. Do not count stock manure if it is only found in an approved stock holding area (see above). **Additionally**, record the total number of fire scars in the ALL column to the left. Try to determine how many fire scars are new and record this in the NEW column.

27) Social Trails: Social trails are the informal trails that lead from the site to water, the main trail, other campsites, or satellite sites. Discernible trails are trails you can see but that are still mostly vegetated. Well-worn trails are mostly devegetated. Count the total number of social trails, regardless of whether they are discernible or well worn. If a trail branches within the general camp area (100-150 foot radius) count each branch as a separate trail. Count braided trails (multiple paths in a single corridor) as single trails. Note the extent of braided trails in the margin of the form. Assign the site a 1 if there is only one discernible trail and no well-worn trails. Assign a 2 if there are two to three discernible trails or one well-worn trail. Assign a 3 if

General Instructions (continued)

Campsite Inventory Form:

there are more than three discernible trails or more than one well worn trail. **Additionally**, record the total number of social trails in the ALL column to the left.

28) Camp Area: Estimate the square footage of the combined area of the disturbed campsite and any stock holding areas. The disturbed area can usually be identified as an area with either trampled, shorter or no vegetation in comparison to the periphery of the site. Where there is no vegetation naturally and no other evidence of disturbance, such as trees with exposed roots, to identify the disturbed area, place a N/A in the estimated area space and assign a rating of 1. This may also be necessary on lightly used sites where little vegetation loss is evident.

Visualize the site as either a circle or a rectangle, or some combination of these geometric figures. Pace off the appropriate dimensions. Then utilize the following formulas for figuring out the area of a circle (3.14 times the radius squared) or a rectangle (length times width). Assign a rating of 1 (less than 500 sq. ft.), 2 (500-2000 sq. ft.), or 3 (more than 2000 sq. ft.). **Additionally**, record the total square footage estimate for the camp area in the column to the left.

29) Barren Core Camp Area: Utilizing geometric areas and pacing, estimate the area without any vegetation. Do not include approved stock holding facilities (see previous). Bare area may or may not be covered with duff. Do not include a thin layer of needles/leaves as duff. Define duff as a natural accumulation that has not been disturbed and shows decomposition in lower levels. Areas with scattered vegetation are not counted as barren area. Scattered vegetation may be defined as more than one patch/sprig of healthy vegetation in a square yard area. Barren core can be defined as:

- Area obviously denuded of vegetation from use.
- Soils compacted.
- Vegetation sprouts may be found, but not significant.
- Vegetation is not obviously reclaiming the barren core.

When determining barren core, ask yourself “Is this site barren from use pressure - is it recovering or deteriorating?” Remember to compare it to adjacent vegetation. How much change is there? If there is a small patch of vegetation within an obvious barren core area, measure the small patch and subtract it from the area measured for the barren core.

Lump together in one measure all bare areas on the campsite, including the area around the fire as well as any bare tent areas and stock holding areas, if applicable. If the bare area extends off the campsite into neighboring undisturbed areas - in other words, if the area was entirely devoid of vegetation naturally (vegetation cover, item 19, of 0-5% on the comparative area) - write N/A in the estimated area space and assign a rating of 1. If the combined camp and stock holding bare area is less than 50 sq. ft., 50-500 sq. ft., or more than 500 sq. ft., assign ratings of 1, 2, or 3, respectively. **Additionally**, record the total square footage estimate for the barren core area in the column to the left.

30) Impact Index: For each of the measurements in items 21-29, multiply the rating (1,2 or 3) by the weight indicated in calculation column. Total all and enter number. Compare total to Impact Rating Chart below and fill in **Rating** line on front of form (see previous).

General Instructions (continued)

Campsite Inventory Form:

31) Noxious Weed Species: Estimate % of total noxious weed species that make up the vegetative cover on site and in a comparative area. Note name(s) of predominate noxious species.

32) Introduced Plant Species: Estimate % of total introduced plant species that make up the vegetative cover on site and in a comparative area. Note name(s) of predominate introduced species.

33) Comments: *Though the database is set up to only allow recording the canned numbered comments, additional written comments on the lines provided on the form can be very valuable, but will not be entered into the database.*

The canned numbered comments are:

- | | |
|---|-------------------------------|
| 1. New Campsite | 8. Litter removed |
| 2. Not Discernable | 9. Litter not removed |
| 3. Campsite Occupied | 10. Heavy stock use |
| 4. Closure Recommended | 11. Camp not where mapped |
| 5. Rehabilitation sign hung | 12. Camp numbered incorrectly |
| 6. Ranger Naturalized | 13. Noxious weeds present |
| 7. Camp shows little use | 14. No recent use |
| 15. Other comments, noted on survey sheet | |

You may want to include other written details about the site such as:

- Was past naturalization work effective?
- Is the site a consistent problem?
- Approximate size and location of the weed population.
- History or changing use patterns.
- Social crowding.
- Condition and trend.
- Facilities or constructed features left and why?
- Detailed campsite location and/or description information.

NOTE: When appropriate, include word and mapped descriptions on how to locate site in the comments section or on the front of the form. Be sure to include an arrow pointing north. When using GPS to map or navigate to site this becomes less critical. **All campsites should be located on a 1:24000 USGS Quad**, unless a GPS unit is being used to map locations. If GPS is used, points should be downloaded and a GIS Quad scale map produced for future field inventories and records. Remember, the point of this is to aid in accurately locating sites for future monitoring and management.

SOCIAL INDICATORS

Trail Encounters Inventory

The inventory of trail encounters serves to collect the data necessary for monitoring one of the two **Social Indicators** outlined in the Recreation Management Direction. This indicator is: Number of Trail Encounters with other parties. (*The other social indicator is the number of parties camped within sight or continuous sound. See Occupied Campsites.*)

Standards for the Social Indicator #1:

- **Number of Trail Encounters with Other Parties:**
 - OC I - 80% probability of no (0) encounters per day.
 - OC II - 80% probability of 1 or fewer encounters per day.
 - OC III - 80% probability of 3 or fewer encounters per day.
 - OC IV - 80% probability of 5 or fewer encounters per day.

Field Measurement:

1. The trail encounters data should be recorded on the form entitled: Bob Marshall Wilderness Complex – Social Encounters Form. The block related to Trail Encounters is located directly below the header. See Appendix **B** for example of this form.
2. Fill out the header information completely. This includes, Geographic Unit (GeoUnit), Opportunity Class (OC), Date, Page, Trail Number (Trail #), and Ranger Name. Record only one Ranger, First and Last name.
3. Tally trail encounters each day you are on the trail, regardless of whether you have encounters. **It is essential that days with no encounters are documented; otherwise, probabilities cannot be calculated.** If there are no encounters for that trail segment that day, enter a “0” in the Type Party field of Trail Encounters block on the field form. Note: Party type codes A, C, F and S are not valid for Trail Encounters, these codes should be used in the Other Parties Observed block only.
4. The intent of the measurement of the trail encounters is to provide a picture of the “sense of solitude” that visitors traveling on a trail are experiencing. Keep this factor in mind when deciding how to record encounters or groups of encounters that may not fit a clear definition. Parties observed along rivers, at lakes or on an adjacent trail should be tallied in the Other Parties Observed block on the social encounters form. Parties observed in campsites should be recorded in the Occupied Campsites block on the social encounters form.
5. If more than one trail segment or trail within an opportunity class and geographic unit is traversed in a day, tally encounters on separate trail encounter field form pages; fill out new header completely for each page. In other words, anytime a geounit or opportunity class line is crossed while traversing a trail, the ranger must fill out a separate trail encounter field form.
6. A party is a **group of people readily recognized as traveling together**. There should be no more than 1/8 mile and/or 15 minutes between the first and last members of the party. If in doubt as to whether parties are associated and traveling together, tally as

separate encounters. Pack strings traveling separate from the main party (more than 1/8 mile and/or 15 minutes between) should be counted as a separate party.

7. Count all parties met or passed on the trail (including FS crews) while you are traveling only. The exception to this would be: taking a break or performing a work related task for a short period of time (5 minutes or less), then it may be appropriate to count parties passing. Keep in mind; the intent is to replicate the public's experience, so you may have to use your own judgment.
8. Stationary crew's like trail construction crews should be recorded as an encounter by the ranger filling out the field form. Stationary crews **should not** be used as a source for gathering trail encounter data by counting parties passing their location.
9. Visitors to Forest Service administrative sites **are not counted** under this standard.
10. In the instance of repeat encounters of the same party on the same day (leapfrogging), count as a separate encounter when the repeat is over 20 minutes and/or 1 mile from the initial contact. Mark an "R" in the notes section of the field form to indicate that it is a repeat encounter. If the encounter is less than 20 minutes and/or less than 1 mile, do not count as a separate encounter.
11. If other forms or equivalents are used to tally trail encounters it is the rangers responsibility to record all information needed to complete the Social Encounters field form at a later time. Trail encounter data **must be recorded on the Social Encounter form** prior to data entry. Data that is not recorded on the form or is not complete will not be used for LAC monitoring.
12. Secondary sources may be used to gather encounter data. Every effort should be made to insure that the secondary information meets the criteria listed above. If you have any doubts about the quality of the information, discard it. To record secondary source encounter data; fill out a separate field form and record "SECONDARY" as the Ranger Name.

Occupied Campsites Inventory

The inventory of occupied campsites serves to collect the data necessary for monitoring one of the two **Social Indicators** outlined in the Recreation Management Direction. This indicator is: Number of Other Parties camped within sight or continuous sound. *(The other social indicator is the number of trail encounters with other parties. See Trail Encounters.)*

Standards for the Social Indicator #2:

- **Number of Other Parties camped within sight or continuous sound:**
 - OC I - 80% probability of no (0) other camps within sight or continuous sound.
 - OC II - 80% probability of no (0) other camps within sight or continuous sound.
 - OC III – 80% probability of no more than 1 other camp within sight or continuous sound.
 - OC IV – 80% probability of no more than 3 other camps within sight or continuous sound.

Field Measurement:

Important! The term “occupied camps” relating to the LAC monitoring has a different meaning than the definition of “occupied camps” relating to the Food Storage Order. Rangers should familiarize themselves thoroughly with both definitions. In the context of LAC monitoring “**occupied camp**” means simply people **may or may not** be present but there is evidence that the site has people camping in it currently. The Food Storage Order definition states that people **must** be present.

1. The other parties camped within sight or continuous sound data should be recorded in the block of the Social Encounters Form entitled: Occupied Campsites located in the lower left side of the form. See Appendix **B** for example of this form.
2. The intent of the measurement of parties camped within sight or continuous sound is to provide a picture of the “campsite solitude” that visitors are experiencing. Keep this factor in mind when deciding how to record situations that may not fit a clear definition.
3. **Continuous sound:** sounds like conversation, routine camp activities, etc can be regularly heard from one campsite to the next.
4. This indicator is measured only in an area where at least one campsite in an area meets the definition of occupied camp under the context of LAC monitoring. Remember, the people do not have to actually be present in the camp at the time, but evidence that someone is currently using the camp must be, i.e. tent, gear, hanging food, etc.
5. Ranger should perform a cursory review, walking around and getting a feel for the area before determining which campsite to tally from. This should be the occupied site from which you can see or hear the greatest number of other occupied sites in the area. From the center of the selected camp, count the number of other occupied campsites within sight or continuous sound. Record this number in the Other OCC Sites field of the form. Once an occupied campsite is counted for one area, do not count it again on that form on that day.

6. Complete the Parties camped within sight or continuous sound information for each day the campsite is observed. If you are working in the same area for several days, complete the survey each day the camp and/or additional camps are still occupied.
7. **It is essential that occupied campsites with no other camps within sight or continuous sound be tallied so that probabilities can be calculated.**
Remember there must be at least one occupied campsite present to conduct the survey and record the data. If no additional occupied camps are within sight or continuous sound, enter a “0” in the Other OCC Sites field. **Note:** zeros entered in the Trail encounter block above, will not be used for computing probabilities for Occupied Campsites, the “0” must be entered as stated above in the Other OCC Sites field of the Occupied Campsites block.
8. Assigned or reserved outfitter camps, administrative sites and long-term Forest Service camps such as a trail construction camp will not be considered occupied camps and will not be tallied as such during monitoring.
9. If other forms or equivalents are used to tally campsites within sight or continuous sound it is the rangers responsibility to record all information needed to complete the Social Encounters field form at a later time. This data must be recorded on the Social Encounter form prior to data entry. Data that is not recorded on the form or is not complete will not be used for LAC monitoring.
10. Secondary sources may be used to gather encounter data. Every effort should be made to insure that the secondary information meets the criteria listed above. If you have any doubts about the quality of the information, discard it. To record secondary source encounter data; fill out a separate field form and record “SECONDARY” as the Ranger Name.
11. The majority of the time Occupied Campsites data is recorded on the same page as trail encounter data taken that day. Occasionally, you may have Occupied Campsite data filled out on a form where trail encounter data has not been taken. An example of when this could occur would be: getting occupied campsite data from a secondary source where no trail encounter data was taken. Be sure to fill out the header of the Social Encounters form completely with the exception of the trail number and trail name (You can supply the trail adjacent to the campsite and it will be recorded in the database). Write “not surveyed” across the trail encounters block to alleviate questions or confusion during data entry.

OTHER MONITORING DATA

Other Parties Observed Inventory

Encounters with “other parties observed” is not one of the Indicators identified in the LAC Recreation Management Direction and there are no established standards for these encounters. These observations are recorded for the purpose of documenting those encounters a Wilderness Ranger experiences that do not fit into the definitions of a trail or occupied camp encounter. This information will be used collectively with other formal monitoring data to give an overall snapshot of the types and frequency of interactions wilderness visitors have with each other and with low flying “intrusive” aircraft.

Field Measurement:

1. The “encounters with other parties observed” should be recorded in the Other Parties Observed block located in the lower right hand corner of the Social Encounters Form. These encounters should be documented any time a Wilderness Ranger observes another party or group that does **NOT** fit into the specific criteria for “Trail Encounters” and “Other Occupied Campsites within site or continuous sound”. Examples of these types of observations are; parties traveling on a different trail than the one currently being traversed by the ranger, float parties on the river or on shore when observed from the trail, observations of intrusive low flying aircraft.
2. Intrusive Low Flying aircraft: Record all observations of low flying aircraft using the (A) code listed in the back of the LAC monitoring form book. Only record those observations of “Intrusive - low flying” aircraft. In determining whether a aircraft is “Intrusive - low flying” or not, consider such factors as: Can color and markings (numbers) be readily observed? Is the aircraft flying **BELOW** the surrounding terrain features and peaks? Is the engine noise clearly disruptive?

These observations will be summarized annually with totals by opportunity class and resource area in the annual monitoring report.

Schafer Wilderness Airstrip

The monitoring of the wilderness airstrip located at Schafer Meadows includes the following 2 indicators: the number of aircraft landings per day and the total number of aircraft landings per year.

Standards for the Schafer Wilderness Airstrip Indicators:

- **Number of aircraft landings per day:**
90% probability of no more than 5 landings per day
- **Total number of aircraft landings per year:**
No more than 550 total landings per year of which no more than 6% are administrative landings.

Field Measurement:

1. Personnel at Schafer Meadows will record aircraft landings on a daily basis while station is occupied; these will be totaled at year-end. See Appendix B for an example data entry form.
2. A landing includes touch-and-go approaches for training or practice as well as landings where the plane remains on the ground for any length of time.
3. Emergency landings i.e. fire, search and rescue, law enforcement should be tallied separately and do not count in the daily and total landings. Exceeding standards due to these will not lead to restrictions on private flights. It is still important to know these numbers when viewing the situation as a whole.
4. Emergency landings are not counted as administrative.

*Note: data collected for monitoring of Schafer Airstrip is not stored in the WILD_LAC database at this time.

RANGELAND VEGETATION INDICATORS

DRAFT-pending review and revision

The inventory and analysis of rangelands, both forested and non-forested, serves to collect the data necessary for monitoring grazing use by saddle and pack stock (horse and mule) among the various users: the recreating public, commercial outfitters and guides, and administrative personnel. The five indicators developed for the limits of acceptable change as outlined in the Recreation Management Direction are: forage utilization, vegetative trend, ecological status, visual appearance, and vegetative succession.

Standards for Range Indicators:

- **Forage utilization:** Utilization is the proportion of the current year's forage production that is consumed or destroyed by animals. Although light to moderate use is often beneficial in maintaining healthy plant communities, prolonged heavy use lowers ecological status. The relationship to grazing intensity (utilization rate) and ecological status depend on timing and frequency of grazing on individual plants.

- OC I – No more than 20% of forage utilized.
- OC II – No more than 20% of forage utilized.
- OC III – *No more than 40% of forage utilized.
- OC IV – *No more than 40% of forage utilized.

Note: The utilization levels identified above would be adhered to for areas dominated by introduced species, such as Kentucky bluegrass and common timothy.

*Forage utilization standards may be established below these levels to meet other resource management objectives or needs, such as, big game winter range, critical grizzly bear habitat or other important wildlife habitats.

- **Vegetative trend:** Trend is the direction of change in ecological status or in resource value ratings observed over time. Trend in ecological status is described as moving vegetative communities "toward" (upward) or "away from" (downward) the potential natural community (PNC). Vegetation data are collected at different points in time on the same sites utilizing the same methodology and the results are then compared to detect change.

- OC I – Upward or Static
- OC II – Upward or Static
- OC III – Upward or Static
- OC IV – Improving

- **Ecological Status:** Ecological status is the present state of vegetation of an ecological site in relation to the potential natural community for the site. Ecological status is independent of use, but may be affected by use over time. It is an expression of the relative degree to which the kinds, proportions, and amounts of plants in a community resemble that of the potential natural community.

- OC I – Potential Natural Community
- OC II – Potential Natural Community
- OC III – Late Seral or Potential Natural Community
- OC IV – Late Seral

- **Visual appearance (Maximum Impact):** Standards for defining the visual appearance of grazing impacts are found in the Appendices of the Forest Plans for the Flathead, Helena, Lolo, and Lewis and Clark National Forests.

OC I – Lightly Grazed (≤ 20 percent of the forage utilized)

OC II – Lightly Grazed (≤ 20 percent of the forage utilized)

OC III – Moderately Grazed (≤ 40 percent of the forage utilized)

OC IV – Moderately Grazed (≤ 40 percent of the forage utilized)

- **Vegetation succession:** Succession is the natural replacement, in time, of one plant community with another. Conditions of the prior plant community (or successional stage) create conditions that are favorable for the establishment of the next stage. The successional stage of a plant community is the stages of development as it moves from bare ground to the potential natural community. For example, the grass-forb stage of succession precedes the woody-shrub stage.

All OC – Maintain natural ecological processes and conditions, as they existed prior to fire suppression.

Field Measurements:

Forage utilization - Method: Forage utilization should be measured using the “*Grazed Plant Method*”, which is based on the relationship of plants grazed and the percent of forage weight used. This method is from the Region One Range Analysis Handbook (Chapter 400). In converting the plants or loops grazed to percent of forage utilized, use the All Bunchgrass Chart for bunchgrasses and the Bluegrass Bottom Chart for bluegrass and other non-bunchgrass species. Refer to Appendix D for brief description of the grazed plant methodology and a copy of the Grazed Plant Utilization Conversation Table.

Vegetative trend - Method: Vegetation trend is determined by measuring changes in vegetation from permanent plots or transects. Vegetation sampling techniques and standards need to be based on resource management objectives. There are multiple techniques described for establishing and sampling vegetation attributes. For example, if permanent plots or transects were established by a certain sampling method, such as Eco-data, then it should be repeated to establish consistency and comparison of any change over time. More details on appropriate sampling techniques are identified in the Interagency Technical Reference “*Sampling Vegetation Attributes*” (1996). This publication can be found at the following website:

<http://fsweb.ftcol.wo.fs.fed.us/frs/rangelands/inventory/indes.shtml>.

Establish permanent photo points. Comparing pictures of the same site taken over a period of years furnishes visual evidence of vegetative changes. In some situations, photo points could be the primary monitoring tool. Details on establishing photographs as a method to sample vegetation attributes are contained in Interagency Technical Reference, “*Sampling Vegetation Attributes*” (1996).

Ecological Status - Method: Vegetation data would need to be collected to determine the existing vegetative composition and habitat types. Vegetation sampling techniques and standards need to be based on management objectives. For example, if plot or transect data has been collected then it could be utilized to determine existing condition. Potential natural community for the habitat types would then be described from classifications or references,

such as, “*Grassland and Shrubland Habitat Types of Western Montana* (Muggler and Steward, 1980), *Forest Habitat Types of Montana* (Pfister, et.al., 1977), or *Classification and Management of Montana’s Riparian and Wetland Sites* (Hansen, et.al., 1995).

The Lewis and Clark National Forest developed the *Range Vegetation Classification (1996)* to describe vegetative characteristics and distribution of vegetative communities. This could be a valid reference for data collection and analysis with a more direct correlation to vegetative communities and their seral stages.

The difference, if any, in vegetative composition between the existing condition and described potential natural community would then fall into four ecological status classes. These classes correspond to 0-25, 26-50, 51-75, or 76-100 percent similarity to the potential natural community and are called *early-seral (low)*, *mid-seral (mid)*, *late-seral (high)*, and *potential natural community (PNC)*, respectively.

Visual appearance (Maximum Impact) - Method: Utilize the “Grazed Plant Method” described above and in Appendix D to calibrate observations.

Vegetation succession - Method: Establish permanent photo points. Comparing pictures of the same site taken over a period of years furnishes visual evidence of forest successional changes over time. Details on establishing photographs as a method to sample vegetation attributes are contained in Interagency Technical Reference, “*Sampling Vegetation Attributes*” (1996).

The Wild LAC database does not store Range data. Range allotment data is stored in the Range module of the INFRA application and vegetation data is stored in the Terra module of the NRIS application.

ACCESS TO WILD LAC DATABASE

PC Setup

PC setup for remote connectivity – Lolo, Helena and Lewis & Clark National Forests
This setup is also for seasonal employees of the Flathead NF without profiles on the FNF server

Retrieve PC Icons

Wild_LAC remote was designed run on the pc desktop. In order to run Wild_LAC Remote, you must retrieve and install the following files:

Wild_remote1.ICO
wild_lac_remote.ses
wild_lac_remote.xls
Wild_lac_remote.lnk

These files can be retrieved from:

http://fsweb.flathead.r1.fs.fed.us/ftp/pub/distribution/lac_icon_files

Right click on each of these remote files and select 'Save Target As' and save to C:\fsapps\exceed.95\user

Additionally there is a Microsoft Word document titled editing_xstart_files.doc, which provides information on customizing the xstart file to default to a specific server and username. This information is provided below.

Install Icon on Desktop

- Start Windows Explorer. Navigate to C:\fsapps \exceed.95\user. Right click on the shortcut file named Wild_lac_remote and select Send to->Desktop(create shortcut). You should now have the Wild_lac_remote icon on your desktop.

Editing Exceed Xstart Files

Installing Wild_LAC remote results in the following files being placed in c:\fsapps\exceed.95\user on your PC:

Wild_lac_remote.ses
Wild_lac_remote.xls
Wild_remote1.ICO
Wild_lac_remote.lnk

You can avoid having to enter your server and user id each time you start an application by performing the following steps to the .xls file listed above.

- Start the Exceed xstart editor by choosing Start-> Programs ->Hummingbird Connectivity V7.1->Exceed ->Xstart from the start menu.
- Choose File ->Open and select the Wild_lac_remote.xls file->OK.
- Type your IBM logon id in the User id field.
- Type the name of the server your PC boots from in the host field (sv###).
- Leave the other settings as they are.
- Choose File->Save.
- Choose File->Exit.

PC setup for Flathead National Forest connectivity for users with a FNF profile

Retrieve PC Icons

Wild_LAC remote was designed run on the pc desktop. In order to run Wild_LAC, you must retrieve and install the following files:

wild_LAC.ICO
wild_lac.ses
wild_lac.xls
Wild_lac.lnk

These files can be retrieved from:

http://fsweb.flathead.r1.fs.fed.us/ftp/pub/distribution/lac_icon_files

Right click on each of these files and select 'Save Target As' and save to C:\fsapps\exceed.95\user

Additionally there is a Microsoft Word document titled editing_xstart_files.doc, which provides information on customizing the xstart file to default to a specific server and username. This information is provided below.

Install Icon on Desktop

Start Windows Explorer. Navigate to C:\fsapps \exceed.95\user. Right click on the shortcut file named Wild_lac and select Send to->Desktop(create shortcut). You should now have the Wild_lac icon on your desktop.

Editing Exceed Xstart Files

Installing Wild_LAC results in the following files being placed in c:\fsapps\exceed.95\user on your PC:

Wild_lac.ses
Wild_lac.xls
Wild_LAC.ICO
Wild_lac.lnk

You can avoid having to enter your server and user id each time you start an application by performing the following steps to the .xls file listed above.

- Start the Exceed xstart editor by choosing Start-> Programs ->Hummingbird Connectivity V7.1->Exceed ->Xstart from the start menu.
- Choose File ->Open and select the Wild_lac.xls file->OK.
- Type your IBM logon id in the User id field.
- Type the name of the server your PC boots from in the host field (sv??).
- Leave the other settings as they are.
- Choose File->Save.
- Choose File->Exit

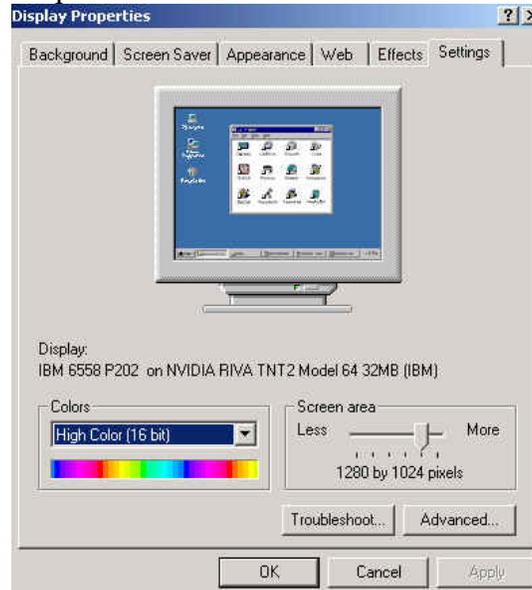
Adjust the Size of Your Screen

If the Data Entry screen appears too large to fit completely on monitor, adjust the size of your screen:

Right Click on your desktop,

Select Properties

Then from the Display Properties Window:



Select the Settings Tab

Change the Screen area to 1280 by 1024 pixels

Click OK.

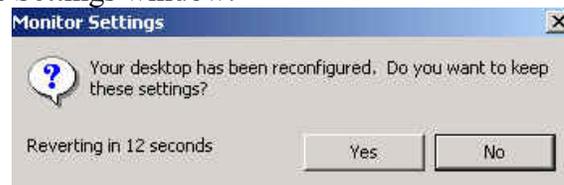
You will get the following window:



Click OK.

Your screen will turn black and when it comes back on the new settings will be in effect and it will ask:

From the Monitor Settings window:



Click Yes within 15 seconds or it will revert back to the original setting.

Now you should be able to see the whole LAC screen.

When you are done with the LAC database, go back and set your screen size to 1024 by 768 pixels.

Roles

In order to edit the data contained in the ORACLE tables of the WILD LAC database, the Flathead DBA must grant proper roles. Currently two roles have been created that allow two levels of edit access; lac_user and lac_mgr. Lac_user role provides Insert, Select, Update and Delete (ISUD) access to all tables except the fl0_wild_lac_codes table (lookup table). Lac_mgr role provides ISUD to all tables including the lookup table.

Lac_user has been granted to the following ORACLE profiles:

1. lac_lolo
2. lac_lewisclark
3. lac_helena
4. lac_flathead

Note: The lac_flathead profile is specifically for seasonal employees of the Flathead National Forest that do not have an OPS\$ profile. The PC that these employees use with the lac_flathead ORACLE profile must be setup using the remote access icon and directions.

Lac_mgr has been granted to the following ORACLE profiles:

1. bmwc_ds (BMWC data steward)
2. ops\$stanley

Deleting Records

Please note, there is no cascading delete in this database, all dependent records must be removed before parent records can be deleted.

Accessing the Database

Logon to the PC with your forest IBM username/password combination. Oracle usernames and passwords for access Wild_LAC have been assigned and are administered by the Flathead National Forest Database Administrator. Please contact the Flathead NF DBA to be granted access if you currently have an ORACLE username on the Flathead system. Please contact the Data Steward for the Bob Marshall Complex for current passwords for each of the remote forests; usernames are listed below for the remote forests.



Double click on the wild_lac icon , which should be on your desktop.

This will bring up the wild_lac shell window-Xstart Client Startup Info window:

A dialog box titled "--wild_lac shell window - Xstart Client Startup Info". It has a standard Windows-style title bar with a close button. The dialog contains several input fields and buttons. On the left, there are three stacked input fields: "Host:" with a dropdown menu showing "sv1", "User ID:", and "Password:". To the right of these fields are three buttons: "OK", "Cancel", and "Help". Below the input fields is a "Remember Password:" section with a dropdown menu currently set to "Until X Server Exits".

Enter User ID: [xxxxxxx](#)

Password: [xxxxxxx](#)

Enter your IBM username/password combination for your server. Please note, if you are a seasonal on the Flathead NF and do not have a username/password, a guest one has been set up for you. User ID: guestlac (contact the data steward or the FNF DBA for the password).

WILD_LAC.XS-Host Reply window appears. You can either ignore this window or click **OK**; be patient the Database will open soon.

Remote Access

Once you Logon with your forest IBM username/password combination, a Blue Logon Box will appear. This box is the remote access to the Flathead National Forest Wild LAC database.

Lewis & Clark NF – Username: [LAC_LEWISCLARK](#)

Password: [xxxxxxx](#) (contact data steward for password)

Database: [idb.flathead.rl](#)

Helena NF - Username: [LAC_HELENA](#)

Password: [xxxxxxx](#) (contact data steward for password)

Database: [idb.flathead.rl](#)

Lolo NF - Username: [LAC_LOLO](#)

Password: [xxxxxxx](#) (contact data steward for password)

Database: [idb.flathead.rl](#)

Flathead NF - Username: [LAC_FLATHEAD](#)

Password: [xxxxxxx](#) (contact data steward for password)

Database: [idb.flathead.rl](#)

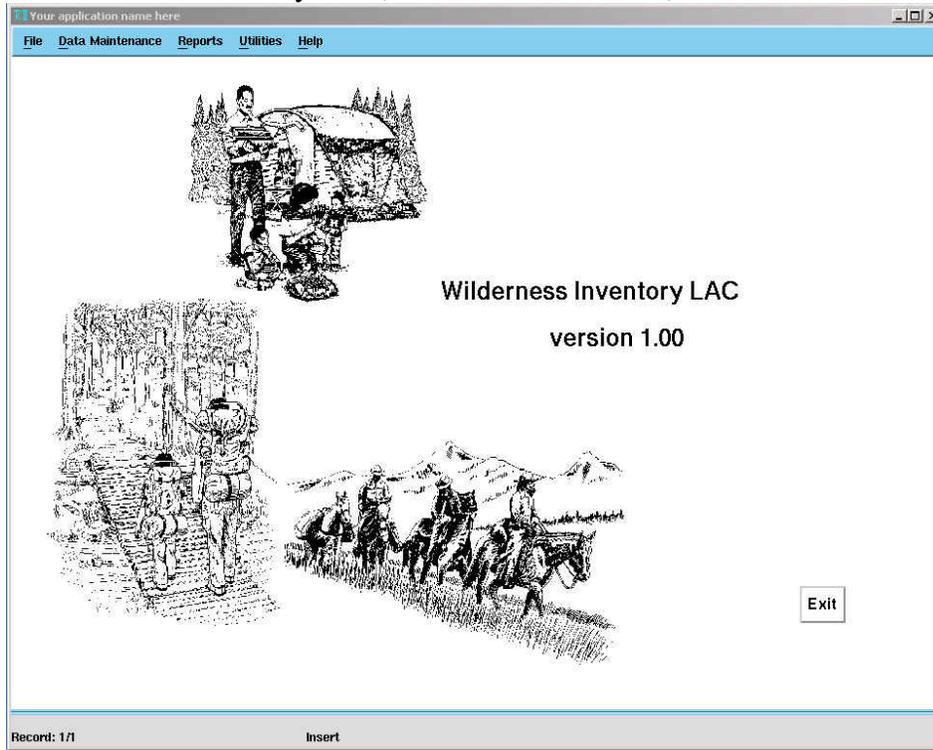
The [LAC_FLATHEAD](#) profile is for seasonal employees of the Flathead NF that do not have a profile they must use this in combination with the server guest profile: [guestlac](#).

Click the Connect Button; this will open the LAC database. If you cannot see the whole screen for the database, you may need to adjust the size of your screen. See page 27.

DATA ENTRY

Campsite Inventory

From the Wilderness Inventory LAC, version 1.00 window,



Click on [Data Maintenance](#)->[Data entry – Campsites](#)

Query the Database

From the Campsite Inventory window:

CAMPSITE DATA

Forest Distr Geo Unit Site No.

Link Id

Site Name

Oppty Class Elevation Ft to Water Photo?

Utm N Water Type Veg Class

Utm E Ft to Trail Ft to Cmp Dom Spec

Quad Trail Scrn Camp Scrn Landform

FACILITY DATA

Facility Type	Qty
<input type="button" value="List"/>	<input type="text"/>

Forest where the data originated (list of values)
Record: 1/1 List of Values Insert

- Click on the **Entry Query** button at the bottom of the screen. NEVER click on INSERT RECORD, except if it is a brand new campsite, which is VERY RARE.
- While in the query mode (it will say this on the bottom of the window). Go to the **Distr** block and click on the **List**, from this window, select the appropriate **District** and click on **OK**.
- Since the Geounits across the complex are unique, you really don't need to query on them, but it does not hurt. Go to the **Geo Unit** blocks and click on the **List**, from this window, select the Geo Unit and click on **OK**. Or you can just enter the Geo Unit, i.e. **01-04-04**.
- Go to the **Site No** and enter the site number i.e. 4, NEVER use a leading zero (04).
- Click on the **Execute Query** button on the bottom of the screen. This will bring up the record you want to update. BUT there is a BUG and occasionally you may get the following message, *Frm-40735 POST-QUERY trigger raised unhandled exception NO_DATA_FOUND*. Just ignore it and continue, you will see data was actually returned by the query:

NOTE: If the query causes no records to be retrieved, question this. Make sure you do not have a leading 0 (zero) in the site no; make sure the geounit is valid. If everything appears okay, then chances are this is a brand new campsite and you will need to enter the base or parent data. Since you are still in query mode at this point you must cancel your query. There are several ways to do this, the least confusing is to click **Query** on the pulldown menu at the top of the form, hold and scroll to **Cancel**. This allows you to insert a new record, no need to click insert record, though it does not hurt anything if you do. Another way to cancel a query while in query mode is to click the **EXIT** button once, but this seems to confuse many people.

The first block on the screen is the parent record; values must be entered then committed before the program will allow entry of child records, like facilities data.

Data Entry

Check all the CAMPSITE DATA & update as needed.

Site Name, use this field to enter RIVER SITE for those sites that are part of the Wild and Scenic River monitoring or for Outfitter Site name, use the actual site name, not the permittee name. If you wish you can also use this field to capture Local site names

Quad, this field only accepts a number value. You can click on the List button to get a list of the quads or look in the Appendix for an Alphabetical list of the quads in the BMWC.

Then click on the Commit button. Another BUG, when you click on the COMMIT button you will get this message: **NO RECORDS to apply**. Click on OK, but look at the message that prints on the bottom of the window, it should say 1 record applied and saved.

Check all the FACILITY DATA (constructed features at the site), enter or update as needed, then Click the Commit button. (The facility data should only reflect what is listed on the latest campsite inventory. Due to the way the data was migrated over from the original database, you may see multiple entries of the same feature, in this case, you will need to remove or change those records.) You will probably get the **BUG –NO RECORDS to apply**, just click on OK.

Click on the CONDITION DATA button. This will move you to the following screen that shows all the actual LAC campsite inventories recorded for that Parent record.

You may have to click on the INSERT RECORD button at the bottom of the form to open a blank line for the new record you are entering. Don't worry if it is entered in chronological order, the database will reorder the records after you commit.

Important-when entering the date you must type out the 4-digit year or the form will convert the year incorrectly. For example, if you enter 6-6-01 the form will convert the date to 06/06/0001. To avoid this, enter 6-6-2001 or 6/6/2001. Input condition information from the inventory form and Commit. You will probably get the **BUG –NO RECORDS to apply**, just click on OK.

GLICH – When entering condition data and you push the enter key after entering a value for the Soil Exposure Increase field the form will scroll over to allow you to see the remainder of the fields, however, you will have to manually click in the Tree Damage field to continue entering values.

When you try to enter Comment data before you have committed the condition data the following error will occur: **WHEN-VALIDATE-ITEM trigger failed on field** –In order to get past this you must remove the record in the Comment data you were attempting to enter, then click back up to the condition data block and click Commit.

To get to the next record, Click on Return to Campsite Data.

From the Campsite Inventory window, click on Entry Query twice (This will bring up the last record you queried), change the site number and geo unit for the new record and click on Execute Query.

<<TIP>>

Because of validity checks in place on the Condition Data form, you are not allowed to change the ranger name or date fields on existing records. If you have an error on either of these fields in a record that has been saved, you can do one of two things. Delete the condition data record for that ranger/year and re-enter all with the correct data or duplicate the record in error and before you commit the duplicated record, change the field in error, commit, then delete the original record.

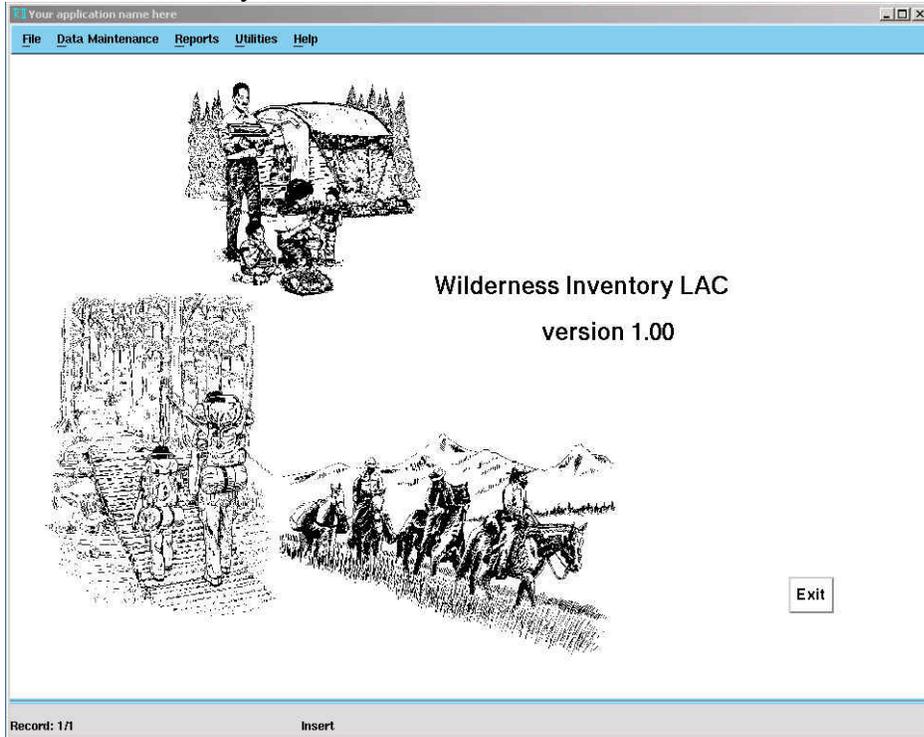
How To: Click in the field below the record you wish to duplicate, the cursor should be blinking. Click and hold the **record pull down** at the top of the entry screen and scroll down and select duplicate. You should see the record where your cursor is blinking automatically filled in with the duplicate value of the record directly above it on the screen. You now must be sure to change the appropriate fields in this record to reflect the corrections. Be sure to delete the original record that had the errors!

Exit Database

To exit, click on the EXIT button on the bottom of the screen, this will take you to the main screen. Here you can exit the entire program by: Clicking on the EXIT button at the bottom of this screen. Or if needed you can continue with entering data for other LAC monitoring.

Trail Encounters

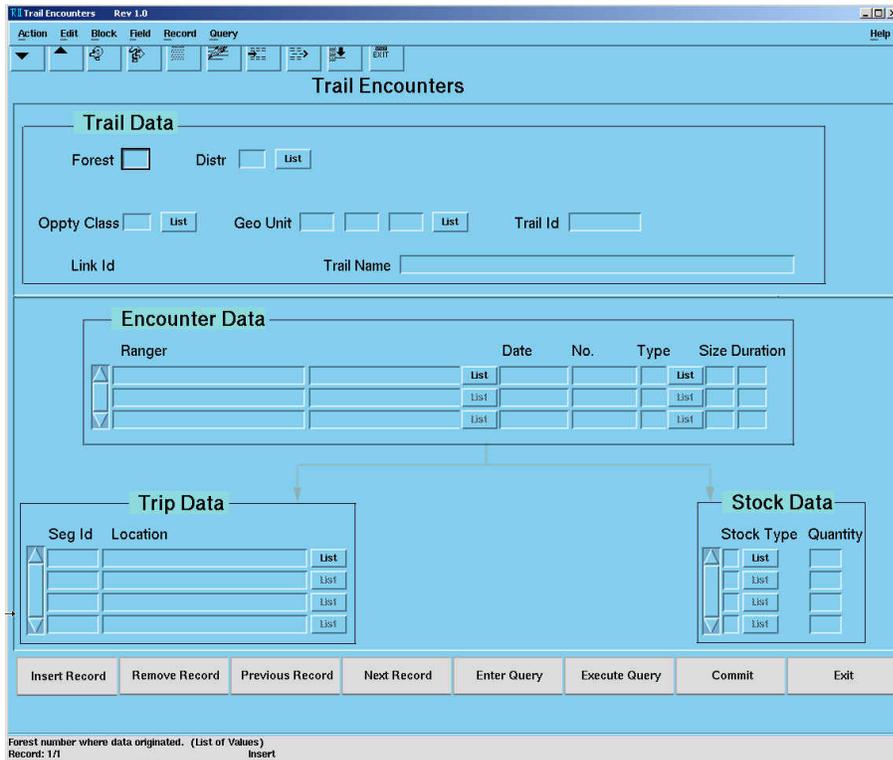
From the Wilderness Inventory LAC, version 1.00 window,



Click on ->Data Maintenance->Data entry – Trail Encounters

Query the Database

From the Trail Encounters window:



Make sure your cursor is located in the top block: Trail Data
Click on ->Entry Query button at the bottom of the screen.

NEVER click on INSERT RECORD, except if it is a brand new trail encounter segment, which is VERY RARE. Please contact data steward if you have difficulties in entering a new trail segment, the program is set to not allow it.

While in the query mode (it will tell this on the bottom of the window), enter the value for geounit, oppty class and trail id. Click on the Execute Query button on the bottom of the screen. This will bring up that trail record and the associated trail encounters by year under Encounter Data. There is a **BUG; Frm-40735 POST-QUERY trigger raised unhandled exception NO_DATA_FOUND**, which shows up occasionally. If you get this message, just ignore it and continue, you will see data was actually returned by the query. NOTE: Occasionally you may want to query encounter records within that geounit, oppty class, trail segment parent record. Position the cursor within a field in the second block; Encounter Data. Click on ->Entry Query, enter a where condition, for example click in the date field and enter a valid date like **06/06/2001**. This would return all records that were entered for this date, regardless of ranger name. If the query does not return any values you will need to cancel the query before inserting a record. There are several ways to do this, the least confusing is to click Query on the pull down menu at the top of the form, hold and scroll to Cancel. Another way is to click the EXIT button once, but this seems to confuse many people.

Data Entry

To enter a new encounter record you must click INSERT RECORD while the cursor is positioned on a record within the encounter block. This will open up a blank line, don't worry if it is not in chronological order, the form will re-order the records after you commit.

Enter the encounter data from the field book. Note the Encounter Data block contains fields for Ranger, Date (Be sure to enter the 4 digit year), No, Type, Size and Duration. The data entry form does not follow the field book, so note that the number of Pack and Saddle stock is entered in the Stock Data block below and to the right, while the itinerary notes or trip data is entered in the Trip Data below and to the left.

IMPORTANT: You must commit the encounter data before moving to the subsequent Stock Data or Trip Data blocks.

The NO field relates to the sequential number (how many encounters occurred on that segment of trail, on that day, recorded by that ranger). This value is not recorded in the field book, however, it should be entered as "1" for the first encounter listed on the field sheet, "2" for the second encounter listed and so on. If no one was encountered it is very **IMPORTANT** to enter a zero 0 in the NO field and a zero 0 in the Type field.

There are severe validity checks in place in the encounter data block. The form requires you to enter the Ranger, Date, No, Type in that order before clicking back to correct a previous field. In other words, if you try to skip one of these fields, the form will pull you back to that field. If you enter a value in error in one of these fields and continue to the next field the form will not let you return to the field in error until you have entered values up to and including the Type field. Before committing, and after entering values in all fields up to and including Type, the form will allow you to return to the field in error and correct it. Once you commit that record in the encounter data you cannot change the Ranger, Date or No. You are allowed to change the other fields in that record: Type, Size, and Duration. So, if you make a mistake in entering the Ranger, Date or No, your only recourse after a commit is to remove the entire record and re-

enter or duplicate the record, correct the field, commit the new record then delete the original record. This process is similar to TIP described on page 34.

In the Trip Data Block, the Lookup tables do not seem to allow an add, if you need to add a location that is not present in the Location tables, contact Ruth Roberson or Gail Stanley. It is necessary to always use the list feature here, since the lookup tables do not include abbreviations and typing the value that matches the one in the lookup table would be difficult. I suggest if you feel you must enter data here, only enter the ENTRY point and the EXIT point. You may see invalid data locations in older records. These were grandfathered in from the original database; do not attempt to correct these.

Occasionally you may get the following error message:

**WHEN VALIDATE-ITEM trigger failed on field
STOCK_DATA_ENCOUNTER_ICN**

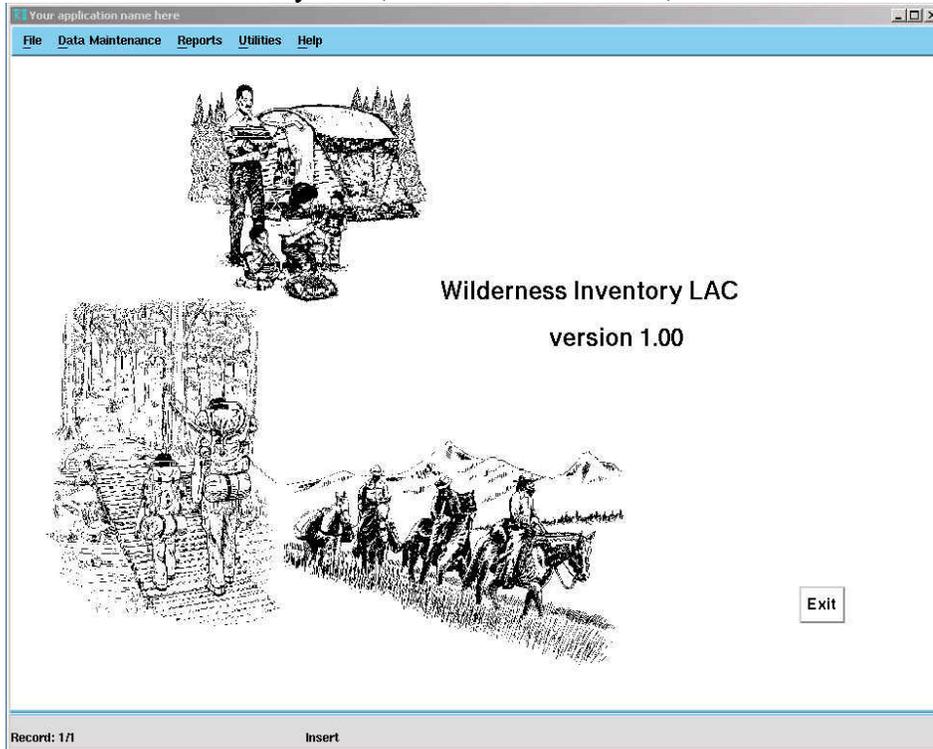
This will occur when you attempt to enter data in a subsequent block without having committed the prior block. For example: You enter data in the encounter data block then click down to the stock data block and attempt to enter a "P" in stock type. The form will give you the above error, down at the bottom and will not allow you to commit or continue. To free yourself from this nasty trap, you must remove the record you were attempting to enter then click back up in the encounter data block on the record you entered there and click Commit.

Exit Database

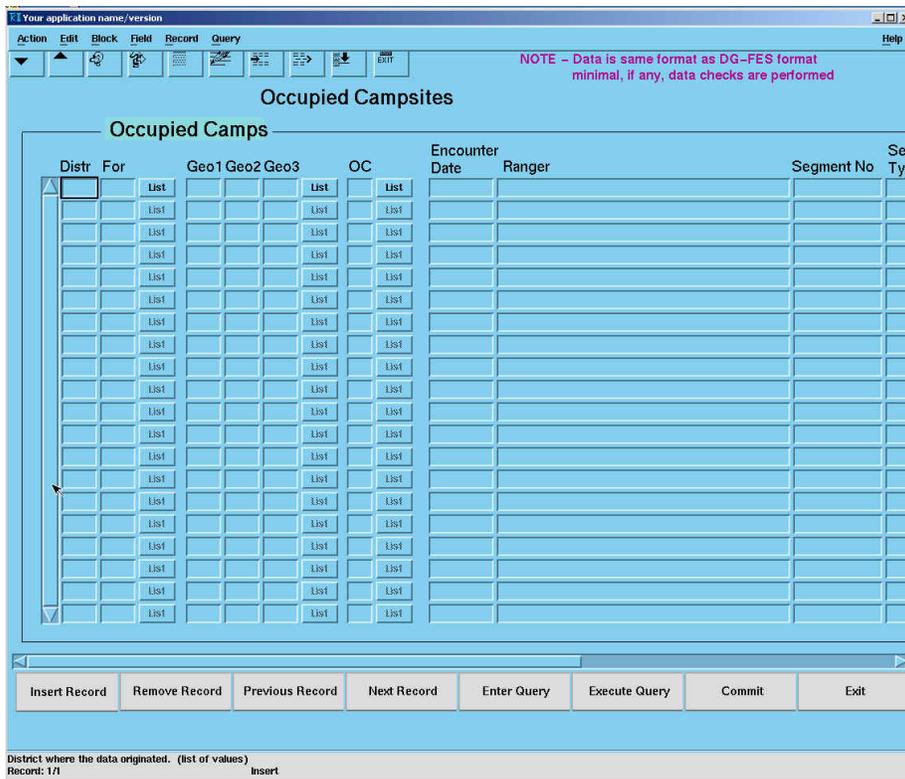
To exit, click on the EXIT button on the bottom of the screen, this will take you to the main screen. Here you can exit the entire program by: Clicking on the EXIT button at the bottom of this screen. Or if needed you can continue with entering data for other LAC monitoring.

Occupied Camps

From the Wilderness Inventory LAC, version 1.00 window,



Click on Data Maintenance->Data entry – Occupied Camps



Notice the note at the top of the window:

Note – Data is same format as DG-FES format. Minimal, if any, data checks are performed. This message is warning the data entry person that like the old database,

you can put just about anything in some of the fields because there are not validity checks, this has caused many problems in the LAC data in the past. Use care when entering data and check your work.

The Occupied Campsites and Other Party Encounters screens differ from the Campsite Inventory and Trail Encounter data entry in that every record is a new record, so it is not necessary to enter and execute queries unless you wish to look at records or change records from previous years.

As in the example, the window will come up with a blank screen, no records. You may enter on the first record and continue down through the form entering new records. No need to push insert record, unless you execute a query.

Data for Occupied Camps and Other Parties Observed is recorded at the bottom of the Social Encounters form. Though Occupied Camps and Other Parties Observed do not coincide with trail encounters, the social data is collected while the ranger is monitoring for trail encounters.

Entering fields:

Distr For – enter valid District 2 letter code and Forest 2 digit numeric code or push the list button for valid entries. (These two fields contain validity checks.)

Geo1Geo2Geo3 – enter valid Geounit number recorded on the top of the social encounters form. The entry screen will allow entry of invalid codes, so use care when entering or pick from the list.

OC – enter valid Opportunity Class value recorded at the top of the social encounters form. (This field contains validity checks.)

Encounter Date – enter date of survey. Important-when entering the date you must type out the 4-digit year or the form will convert the year incorrectly. For example, if you enter 6-6-01 the form will convert the date to 06/06/0001. To avoid this, enter 6-6-2001 or 6/6/2001.

Ranger – enter value from the name field at the top of the social encounters form. Enter the name as Last Name, First Name. Use care to enter each ranger name exactly the same on subsequent entries, using the duplicate field record is handy here to avoid typos. See directions below for doing this. Only enter one ranger name, even if two are listed on the form. (There are no validity checks performed on this field.)

Segment No – enter the trail number recorded at the top of the social encounters form.

Segment Type – enter a “T” to denote the segment type is a trail.

Location – enter a short descriptive name, usually this would be what is recorded in the campsite location field in the Occupied campsite block of the social encounters form.

No of Sites – enter the value recorded in the ‘other occ sites’ field in the Occupied campsite block of the social encounters form.

No of Days – enter the value recorded in the ‘days this site’ field in the Occupied campsite block of the social encounters form.

Party Type – enter the value recorded in the ‘type PTY’ field in the Occupied campsite block of the social encounters form.

Commit. You will probably get the **BUG –NO RECORDS to apply**, just click on OK, bottom of screen will tell you 1 transaction completed.

<<TIP>>

If you have multiple records to enter from the same ranger or date, it makes data entry much easier to duplicate the field or the last record. If you duplicate the entire previous record, you will need to change the duplicated record to reflect your current record. Suggest using the duplicate field, then filling in the blank fields to reflect your current record until you get used to this method.

How To: Click in the field below the record or field you wish to duplicate, the cursor should be blinking. Click and hold the **field pull down** at the top of the entry screen and scroll down and select duplicate. You should see the field where your cursor is blinking automatically filled in with the duplicate value of the field directly above it on the screen. This method duplicates one field at a time, if you want to duplicate the entire previous record use the same process only click and hold the **record pull down** and select duplicate. You now must be sure to change the appropriate fields in this record to reflect your current data record. Unfortunately, the entry screen will allow you to commit 2 records that are exactly the same, which would be in error.

Exit Database

To exit, click on the EXIT button on the bottom of the screen, this will take you to the main screen. Here you can exit the entire program by: Clicking on the EXIT button at the bottom of this screen. Or if needed you can continue with entering data for other LAC monitoring.

Note – Data is same format as DG-FES format. Minimal, if any, data checks are performed.

This message is warning the data entry person that like the old database, you can put just about anything in some of the fields because there are not validity checks, this has caused many problems in the LAC data in the past. Use care when entering data and check your work.

The Occupied Campsites and Other Party Encounters screens differ from the Campsite Inventory and Trail Encounter data entry in that every record is a new record, so it is not necessary to enter and execute queries unless you wish to look at records or change records from previous years.

As in the example, the window will come up with a blank screen, no records. You may enter on the first record and continue down through the form entering new records. No need to push insert record, unless you execute a query.

Data for Occupied Camps and Other Parties Observed is recorded at the bottom of the Social Encounters form. Though Occupied Camps and Other Parties Observed do not coincide with trail encounters, the social data is collected while the ranger is monitoring for trail encounters.

Entering fields:

Distr For – enter valid District 2 letter code and Forest 2 digit numeric code or push the list button for valid entries. (These two fields contain validity checks.)

Geo1Geo2Geo3 – enter valid Geounit number recorded on the top of the social encounters form. The entry screen will allow entry of invalid codes, so use care when entering or pick from the list.

OC – enter valid Opportunity Class value recorded at the top of the social encounters form. (This field contains validity checks.)

Encounter Date – enter date of survey. Important-when entering the date you must type out the 4-digit year or the form will convert the year incorrectly. For example, if you enter 6-6-01 the form will convert the date to 06/06/0001. To avoid this, enter 6-6-2001 or 6/6/2001.

Ranger – enter value from the name field at the top of the social encounters form. Enter the name as Last Name, First Name. Use care to enter each ranger name exactly the same on subsequent entries, using the duplicate field record is handy here to avoid typos. See directions below for doing this. Only enter one ranger name, even if two are listed on the form. (There are no validity checks performed on this field.)

Segment No – enter the trail number recorded at the top of the social encounters form.

Segment Type – enter a “T” to denote the segment type is a trail.

Party Type – enter the value recorded in the ‘Type’ field in the Other PTYs observed block of the social encounters form.

No in Party – enter the value recorded in the ‘Number’ field in the Other PTYs observed block of the social encounters form.

Commit. You will probably get the **BUG –NO RECORDS to apply**, just click on OK, bottom of screen will tell you 1 transaction completed.

<<TIP>>

If you have multiple records to enter from the same ranger or date, it makes data entry much easier to duplicate the field or the last record. If you duplicate the entire previous record, you will need to change the duplicated record to reflect your current record. Suggest using the duplicate field, then filling in the blank fields to reflect your current record until you get used to this method.

How To: Click in the field below the record or field you wish to duplicate, the cursor should be blinking. Click and hold the field pull down at the top of the entry screen and scroll down and select duplicate. You should see the field where your cursor is blinking automatically filled in with the duplicate value of the field directly above it on the screen. This method duplicates one field at a time, if you want to duplicate the entire previous record use the same process only click and hold the record pull down and select duplicate. You now must be sure to change the appropriate fields in this record to reflect your current data record. Unfortunately, the entry screen will allow you to commit 2 records that are exactly the same, which would be in error.

Exit Database

To exit, click on the EXIT button on the bottom of the screen, this will take you to the main screen. Here you can exit the entire program by: Clicking on the EXIT button at the bottom of this screen. Or if needed you can continue with entering data for other LAC monitoring.

OFFICE COMPILATION AND REPORTING

Trail encounters

1. Enter trail encounter data per data entry directions into the Wild LAC database.
2. Summarize all encounter data for each opportunity class and trail segment (trails are segmented by geounit and OC) sampled during the season.
3. Tally the total number of days the maximum encounter level was not exceeded (Days monitored within standard) and divide by the total number of days sampled (Days monitored) to determine if the 80% probability level was met.
4. Annual Report should demonstrate and report by Resource Area the attempt to meet the annual monitoring frequencies outlined on page 42 of the Recreation Management Direction.

5. How this might look:

Resource Area #

$$\text{OC Trail \# } \frac{\text{Days monitored} - \text{Days Standard is exceeded}}{\text{Days Monitored}} \times 100 = \% \text{ probability}$$

Occupied Campsites

1. Enter occupied campsites data per data entry directions into the Wild LAC database.
2. Summarize occupied campsite data for each Resource Area by Opportunity Class.
3. Tally the number of days the occupied campsite level was not exceeded and divide by the total number of days sampled to determine if probability levels were met.

4. How this might look:

Resource Area #

$$\text{OC } \frac{\text{Days monitored} - \text{Days Standard is exceeded}}{\text{Days Monitored}} \times 100 = \% \text{ probability}$$

Other Parties Observed

1. Enter other parties observed data per data entry directions into the Wild LAC database.
2. Summarize other parties observed data for each Resource Area by Opportunity Class.

3. How this might look:

Resource Area #

OC	Total Number of Other Parties Observed	Days Sampled
----	--	--------------

All Resource Indicators – Campsite Inventories

1. Spatial location (map or GIS) as well as tabular data (report or query output) is required for monitoring the resource indicators. Data pertaining to the inventoried sites captured on the field forms must be entered into the LAC database then queried out as summary data and the site locations from the inventories must be physically located on maps. The LAC number provides the link between the spatial data in GIS and the tabular data in the database.
2. Locate campsites or human impacted sites on 1:24000 scale maps, may use USGS Topographic Quadrangle maps or computer generated GIS maps with features similar to 7 1/2 minute quad maps. It is recommended that the district retain at least 2 sets of the maps. One to be used for fieldwork and one that remains in the office as the master copy. These should be updated yearly, during the office compilation process.
3. New campsites should be assigned a unique number in the office, check the Wild LAC database for the next available number in that geounit or ask the BMWC data steward for assistance. After you have determined the new number write it on both the campsite inventory form and the quad maps where the location of the site is delineated.
4. On the campsite inventory field form calculate the impact index and assign the impact rating. Use weight factors on back of form and also found in the Recreation Management Direction on page 23-24. Record the impact rating on the back of the form below number 30) IMPACT INDEX and again on the front of the form in the upper right hand corner to provide a quick reference. (This step can also be completed in the field.)
5. Note if site has excess barren core according to the Opportunity Class in which it is located. Circle the appropriate response: YES or No in the upper right hand corner on the front of the form to provide a quick reference. (This step can also be completed in the field.)
6. Enter campsite inventory data per data entry directions into the Wild LAC database. Note: The database automatically calculates the impact index and impact rating, so these numbers do not need to be entered manually on the data entry screens.
7. Update the GIS coverage with corrected or new campsite locations. This data can be GPS or delineated on 1:24000 quad. Check with your local GIS person or the BMWC data steward for help with this. Once the GIS coverage is updated, if you are using GIS maps as your campsite location base, replace maps reflecting the updates.
8. Using a 1:24000 map base plot all campsite locations with appropriate impact rating and those sites that have excess barren core, make sure it is easy to differentiate between Nondiscernable, Minimum Impacted, Moderate Impacted and Highly Impacted sites. You should also show the Opportunity Class delineations on these base quads. There is a set of suggested symbols in the Appendix of this guidebook, however, if you are producing your quads through automated means by using GIS and linking to the Wild LAC database, you do not have to use this exact symbol set. The key is to easily be able to tell the difference between the symbols.

9. Make a circular template with a radius of 1.49” (this represents a circular plot equal to 640 acres at a scale of 1:24000). If using a 1:63360 (1” = 1 mile) scale, use a circular template of 1 1/8” in diameter.
10. The quad maps produced in the last step will be used to spatially identify where standards have been exceeded for the number of human impacted sites per 640-acre area above a particular condition class (impact rating) indicator and the human impacted sites per 640-acre area indicator.

Human Impacted sites per 640-acre area

1. Move the template over the map, making an effort to maximize the number of sites inside the circle. Try to account for areas significantly divided by ridgelines or other major topographic features. **Do not double count.**
2. Though nondiscernable sites may be plotted on the base map, do not count them in this exercise. Once a site has been inventoried and given a number, that number will always remain associated with that site, both in the database and on the maps. Only current sites that show evidence of use are counted in the calculations, no nondiscernable or historic.
3. Each time the number of current sites inside the template exceeds the maximum number permitted the standard has been violated.
4. Following the OC standards for Human Impacted sites per 640-acre area, delineate areas where standards were exceeded on map using suggested map symbols located in appendix. Again, if you chose to use GIS or an automated technique for mapping, try to use a similar symbol that is easily distinguishable.
5. Once the standard has been exceeded all sites within the circle at the time will be eliminated from further consideration. This will eliminate double counting of areas of concern.

Number of Moderately and Highly Impacted sites per 640-acre area

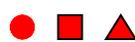
1. Move the template over the map, making an effort to maximize the number of moderately impacted sites (OC I, II, III) or moderately and highly impacted sites (OC IV) inside the circle. **Do not double count.**
2. Each time the number of sites with a particular impact rating inside the template exceeds the maximum number permitted the standard has been exceeded.
3. Following the OC standards for Number of Moderately and Highly Impacted sites per 640-acre area, delineate areas where standards were exceeded on map using suggested map symbols located in appendix. Again, if you chose to use GIS or an automated technique for mapping, try to use a similar symbol that is easily distinguishable.
4. Once the standard has been exceeded all sites within the circle at the time will be eliminated from further consideration. This will eliminate double counting of areas of concern.
5. Note: **Any** highly impacted sites in OC I, II, III exceed the standard.

Mapping for presentation of trends

After each 5 year period the Complex managers may chose to display findings to the LAC task force in a formal presentation. The presentation may include maps, reports and discussions that provide a general overall sense of the trends and areas of concern. No specific direction is being provided on the presentation to allow the managers the flexibility to chose or create a means in which to highlight the relevant issues using whatever technology is appropriate and effective.

Optional work map legend

This map legend is a guide only and may be used to locate and identify human impacted sites and to show places where the standards have been exceeded. It should be understood that managers have the option to use whatever tools and means they deem appropriate to display and identify human impacted sites and areas where standards are exceeded.

-  RED CIRCLE – Highly Impacted Site
-  BLACK SQUARE – Moderately Impacted Site
-  BLACK TRIANGLE – Lightly Impacted Site
-  RED CENTER – Standard for Barren Core exceeded
-  BLACK CIRCLE/YELLOW SHADING – Standard for the number of moderately or highly impacted sites per 640-acre area exceeded.
-  BLACK CIRCLE/HORIZONTAL HASH MARKS – Standard for the number of human impacted sites per 640-acre area exceeded.
-  BLACK CIRCLE/HORIZONTAL HASH MARKS/YELLOW SHADING – A situation where the standard for site density as well as the standard for the number of moderately or highly impacted sites per 640-acre area have both been exceeded.

Non-discernable sites should be identified on work and field maps, though they are not counted as human impacted sites during the office compilation process. Because a non-discernable site must be visited for 2 subsequent monitoring periods before it is placed in the “historic status” it is important to show these sites on the field maps used by the wilderness rangers.

APPENDICES

Appendix A – Lookup Tables Quad Numbers

Quad Name	Quad#
Amphitheater Mountain	102
Arrastra Mountain	312
Arsenic Mountain	292
Benchmark	119A
Big Hawk Lake	65
Big Salmon Lake East	109
Big Salmon Lake West	108
Blacktail	041
Bungalow Mountain	094
Capitol Mountain	069
Caribou Peak	302
Cathedral Peak	093
Cave Mountain	288A
Circus Peak	067
Condon	106
Conner Creek	81
Coopers Lake	311
Crater Lake	64
Crescent Cliff	056
Crimson Peak	125
Danaher Mountain	127
Essex	040
Felix Peak	052
Fish Lake	259
Flint Mountain	127A
Gable Peaks	070
Gates Park	289
Gateway Pass	072
Glenn Creek	291
Gooseberry Park	071
Hahn Creek Pass	126
Haystack Mountain	110
Heart Lake	301
Holland Lake	115
Holland Peak	107
Horseshoe Peak	068
Jakie Creek	299
Lake Inez	123
Lake Mountain	136
Marmot Mountain	100
Meadow Creek	092
Morningstar Mountain	057
Morrell Lake	124
Morrell Mountain	133

Quad Name	Quad#
Mount Bradley	054
Mount Grant	038
Mount Wright	288
Nimrod	053
Nyack	028
Olson Peak	137
Our Lake	290
Pagoda Mountain	101
Patricks Basin	294
Pentagon Mountain	086
Pilot Peak	118
Pinnacle	039
Porphyry Reef	087
Prairie Reef	111
Pretty Prairie	293
Quintonkon	066
Red Plume Mountain	055
Scapegoat Mountain	298
Shaw Creek	116
Silverking Mountain	314
Slate Goat Mountain	103
Spotted Bear Mountain	083
Spread Mountain	135
Stanton Lake	029
Steamboat	300
Stonewall Mountain	313
String Creek	091
Summit	42
Sunburst Lake	099
Swan Lake	80
Swan Peak	098
Swift Reservoir West	258
Three Sisters	095
Thunderbolt Mountain	90
Tin Creek	082
Trap Mountain	119
Triobite Peak	085
Una Mountain	117
Volcano Reef	274
Walling Reef	273
West Glacier	027
Whitcomb Peak	084
Wood Lake	295

Party Types

<u>CODE</u>	<u>DESCRIPTION</u>
0	No encounter
A	Low flying aircraft: general code
AD	Administrative
B	Hiking party not in camp
C	Any party in campsite/occupied camp where no one is present
F	Float party on river
H	Horse party not in camp
H/B	Hiking party w/horse or mule not in camp
H/L	Hiking party w/llama(s) not in camp
H/G	Hiking party w/goat(s) not in camp
OG	Outfitter Guide
S	Float party on shore

(Note: A, C, F and S should only be used for Other Parties Observed, not valid codes for Trail encounters or Occupied Camps)

Comment Codes

1. NEW CAMPSITE
2. NOT DISCERNABLE
3. CAMPSITE OCCUPIED
4. CLOSURE RECOMMENDED
5. REHABILITATION SIGN HUNG
6. RANGER NATURALIZED
7. CAMP SHOWS USE
8. LITTER REMOVED
9. LITTER NOT REMOVED
10. HEAVY STOCK USE
11. CAMP NOT WHERE MAPPED
12. CAMP MISNUMBERED
13. NOXIOUS WEEDS
14. NO RECENT USE
15. OTHER COMMENTS (NOTED ON SURVEY SHEET)
16. SINGLE CAMP AREA WITH MULTIPLE USE SITES
17. SITE AFFECTED BY FIRE
18. SITE AFFECTED BY AVALANCHE

Visitor contact/Leave No Trace form (first page only)

VISITOR USE INFORMATION PAGE

From: _____

To: _____

License _____ Address _____ Date & Hour _____

Note: _____

SPECIFIC LOCATION Trail Number _____ Name _____

Mile point or float location _____ Campsite _____

Type	PTY	PTY size	Stock S P	# of Craft	Lgnt of Trip	Registered at Trailhead	Location of exit

With an Outfitter: Y ___ N ___ Name: _____

Organization: Y ___ N ___ Name: _____

Activity: Fishing _____ Nature Study _____ Camping _____
 Hunting _____ Hiking _____ Floating _____
 Photography _____ Horseback riding _____ Other _____

Food Storage: Compliance: Full _____ Partial _____ None _____
 PVT _____ Commercial _____
 Stock _____ Back Pack _____ Float _____

Method: Hanging _____ Approved container _____ Occupancy _____
 Other _____

This is the first page of a multi-purpose form that was cooperatively developed by Forest Service and FW&P game wardens. The form is made up of 3 pages front and back with the page 4 in the group left blank to take additional notes. The form includes visitor contact, licensing, activity or use, food storage, fishing, hunting and bear observation information as well as ticklers for additional comments. The first and third pages were meant to serve as visitor information handouts, while the second page contains the data recorded for agency use. No occupied campsite or other parties observed entry blocks are included on this form.

While the form is a very useful tool for gathering and sharing important wilderness information it is **not complete** for LAC trail encounter monitoring. It is missing entry fields for GEO UNIT and OC (opportunity class). Encounter data that does not include these fields cannot be used for LAC monitoring, nor can it be entered into the LAC database. Certainly, the geounit and oppty classes can be noted independently on the form. If a ranger district chooses to use this form for trail encounter monitoring, it is their responsibility to include all data required for LAC monitoring and transfer the data to the Social Encounter form before data entry.

Location/Drainage _____

Year _____

Status: (circle one) **CURRENT** **NON-DISCERNABLE** **HISTORIC LOCATION** (no cultural significance)

O.C. _____

Rating _____

Excess Barren Core: **YES** **NO**

BOB MARSHALL WILDERNESS COMPLEX CAMPSITE INVENTORY FORM

(Revision 3 - April 2003)

GENERAL SITE DESCRIPTION

1) SITE NUMBER _____

*Site number = geounit & campsite number

2) SURVEYED BY _____

3) SURVEY DATE _____ (Month) _____ (Day) _____ (Year)

4) LOCATION: LAT/LONG _____

UTM COORDINATE: N _____ E _____

LEGAL DESCRIPTION _____

5) USGS QUADRANGLE _____

6) ELEVATION (to nearest 100 ft.) _____

7) DISTANCE TO CLOSEST TRAILHEAD: _____ (miles)

8) DISTANCE TO CONSTRUCTED TRAIL: _____ (feet)

Screening: (Circle one)

1) Complete 2) Partial 3) None

9) DISTANCE TO WATER: _____ (feet)

Type of water source (circle one)

1) River/Creek 3) Spring

2) Lake 4) Other _____

10) DISTANCE TO CLOSEST CAMPSITE: _____ (feet)

Screening: (Circle one)

1) Complete 2) Partial 3) None

11) NUMBER OF OTHER CAMPSITES WITHIN ¼ MILE: _____

12) PHOTO RECORD: _____

13) VEGETATION: (Circle One)

1) Closed Forest 3) Non-forested, Densely Vegetated

2) Open Forest 4) Non-forested, Sparsely Vegetated

Dominant Species: _____

Habitat Type, if known: _____

14) LANDFORM: (Circle One)

1) Floodplain 2) Other Valley Bottom 3) Cirque Basin

4) Slide Slope 5) Ridge Top 6) Other _____

15) Predominate TYPE OF USE: (Circle as many as apply)

1) Foot 3) River

2) Stock 4) Outfitter

16) FACILITIES: (note # of each upon arrival and after cleaning)

- _____ # of features **BEFORE** / # of features **AFTER** -

1) Fire Ring _____ / _____

2) Primitive Seat _____ / _____

3) Constructed Seat _____ / _____

4) Table/Shelf/Counter _____ / _____

5) Meat Rack _____ / _____

6) Hitch Rail _____ / _____

7) Corral _____ / _____

8) Toilet _____ / _____

9) Other _____ / _____

17) CLOSEST FIREWOOD SOURCE: (Circle one)

1) On site 3) 100-300 feet 5) >¼ mile

2) <100 feet 4) 300 feet to ¼ mile

18) CLOSEST FORAGE SUPPLY: (Circle one)

1) On site 3) 100-300 feet 5) >1/4 mile

2) <100 feet 4) 300 feet to ¼ mile

IMPACT EVALUATION

19) VEGETATION COVER: (Be sure to compare similar areas, same species, slope, rockiness, and canopy cover.)	On Campsite			On Unused Comparative Area		
	1) 0-5%	3) 26-50%	5) 76-100%	1) 0-5%	3) 26-50%	5) 76-100%
	2) 6-25%	4) 51-75%		2) 6-25%	4) 51-75%	
20) MINERAL SOIL EXPOSURE: (Percent of area that is bare mineral soil.)	1) 0-5%	3) 26-50%	5) 76-100%	1) 0-5%	3) 26-50%	5) 76-100%
	2) 6-25%	4) 51-75%		2) 6-25%	4) 51-75%	

Rating (Circle one category)				Calculation of Impact index (weight) (total)
	1	2	3	
21) VEGETATION LOSS:	No difference in coverage class	Difference of one coverage class	Difference of two or more coverage classes	X 2 =
22) MINERAL SOIL INCREASE:	No difference in coverage class	Difference of one coverage class	Difference of two or more coverage classes	X 3 =
23) TREE DAMAGE: No. of trees scarred or felled ALL ___ NEW ___ % of trees scarred or felled _____	No more than broken lower branches	1-8 scarred trees, or 1-3 badly scarred or felled.	>8 scarred trees, badly scarred or felled	X 2 =
24) ROOT EXPOSURE: No. of trees with roots exposed ALL ___ NEW ___ % of trees with roots exposed _____	None	1-6 trees with roots exposed	>6 trees with roots exposed	X 3 =
25) DEVELOPMENT:	No more than 1 scattered fire ring	1 fire ring with or without primitive log seat	>1 fire ring or major development	X 1 =
26) CLEANLINESS: No. of fire scars ALL ___ NEW ___	No more than scattered charcoal from 1 fire ring	Remnants of >1 firering, some litter or manure	Human waste, much litter or manure	X 1 =
27) SOCIAL TRAILS: No. of trails ALL _____	No more than 1 discernible trail	2-3 discernible trails Max. of 1 well-worn trail	>3 discernible or more than 1 well-worn trail	X 2 =
28) CAMP AREA: Estimated area _____ (sq. ft.)	<500 sq. ft.	500-2000 sq. ft.	>2000 sq. ft.	X 4 =
29) BARREN CORE CAMP AREA: Estimated area _____ (sq. ft.)	<50 sq. ft.	50-500 sq. ft.	>500 sq. ft.	X 2 =
30) IMPACT INDEX: _____				

Excess Barren Core: OC I – equal to or greater than 100 sq ft
 OCII – equal to or greater than 500 sq ft
 OCIII – equal to or greater than 1000 sq ft
 OCIV –equal to or greater than 2000 sq ft

Impact Rating:
MINIMUM IMPACT: 20-30
MODERATE IMPACT: 31-49
HIGH IMPACT: 50+

31) NOXIOUS WEED SPECIES (% Noxious weeds within vegetative cover)	On Campsite			On Unused Comparative Area		
	1) 0-5%	3) 26-50%	5) 76-100%	1) 0-5%	3) 26-50%	5) 76-100%
	2) 6-25%	4) 51-75%		2) 6-25%	4) 51-75%	
32) INTRODUCED PLANT SPECIES (% Within vegetative cover)	1) 0-5%	3) 26-50%	5) 76-100%	1) 0-5%	3) 26-50%	5) 76-100%
	2) 6-25%	4) 51-75%		2) 6-25%	4) 51-75%	

33) COMMENTS: (Details about location of site, impacts, management suggestions, etc.) _____

Appendix C – Quick Guides and Cheat Sheets

Social Monitoring Form Instructions

1. +Encounters, Occupied Campsites and Other Parties Observed.
2. As a minimum, fill out one sheet for each day in the wilderness.
3. If you travel in more than one GEOGRAPHIC UNIT or OPPORTUNITY CLASS or on more than ONE TRAIL in a single day, fill out a separate sheet for each one.
4. As a minimum, fill out any portions marked with an asterisk; (Heading Block and Party Size for Trail Encounter monitoring)

Heading Block:

- ***GeoUnit** – Enter the Geographic Unit Code (three fields) for the area in which you are working, for example: 1-4-1.
- ***OC** – Enter the Opportunity Class number (original source: the BMWC Recreation Management Direction Map).
- ***Date** – enter month/day/year.
- ***Trail #** - Enter the number of the trail on which you are traveling.
- **Trail Name** – Enter trail name if known.
- ***Ranger Name** – Enter one ranger name, first and last name.

Trail Encounters Block: Fill out one line for each party encountered on trails. Use codes shown in the back of this field book.

- a) If no parties are encountered on trails enter “0” under **Party Size**.
- b) **# Stock** – Enter the number of saddle animals (S) and pack animals (P) in the party.
- c) **Length of Trip** – Enter the number of days this party will be in the wilderness.

Occupied Campsites Block:

- a) **Campsite Location** – Enter the common name of the area where the camp was observed.
- b) **Other OCC Sites** – *Enter the number occupied campsites within sight or continuous sound of the site in which you are standing. If none enter zero.*
- c) **Days at this Site** – Enter the number of days this party will use this site.
- d) Do not combine trail encounter monitoring frequency with occupied campsites. *Only record days when campsite monitoring is emphasized and other occupied campsites have been identified.*

Other Parties Observed Block: Enter the type and number of parties you observed that *were not traveling on the same trail or are not located in campsites*. Examples include; parties traveling on a different trail than the one currently being traversed by the ranger, float parties on the river or on shore when observed from the trail, observations of intrusive low flying aircraft.

Use PARTY TYPE codes in the back of the field book. Use the first block to record low flying aircraft. In deciding whether an aircraft is low flying consider factors such as: can color and type be readily observed, is it below surrounding terrain features, how obtrusive is the noise?

Appendix D – Range Field Measurements

Grazed Plant or Loop Method

The grazed plant or loop method of measuring utilization is based on the relationship of plants grazed and the percent of forage weight used. The Lewis and Clark National Forest has adopted this method from the Region One Range Analysis Handbook (Chapter 400) for the inventory and monitoring process, but other methods are appropriate and produce similar results. In converting the plants or loops grazed to percent of forage used, the Lewis and Clark Analysis Team uses the All Bunchgrass Chart for bunchgrasses and the Bluegrass Bottoms Chart for bluegrass and other non-bunchgrass species. These charts have been converted to table format for ease of use. The method used consists of these steps (used for whole pastures or key areas):

- 1) Count the number of grazed plants (bunchgrasses), or 3-inch loops of grass (non-bunchgrasses) in a 50 pace transect. Unpalatable species are not included. The plant or loop at the end of the toe at each pace is the one selected for measurement. Plants or loops that are more than 50% grazed are counted (those near 50% grazed are alternately counted as grazed).
- 2) Convert number of plants or loops grazed to a percent of plants or loops grazed (e.g., 35 plants or loops grazed divided by 50 plants measured equals 70% of plants grazed).
- 3) Convert percent of plants or loops grazed to a percent of forage used from the Grazed Plant Utilization Table. The chart or table column used is the one that applies to the dominant forage species within the polygon vegetation type. (e.g., a bunchgrass type with 70% of plants grazed equals forage utilization of 42% (bunchgrass column of table).
- 4) Write the forage utilization percent on a photo or map at the location measured (e.g., 42%).
- 5) Continue the above four steps measuring one transect every 15 to 20 acres or a minimum of two transects for smaller polygons. Transects should be located in representative areas within the 15 to 20 acre sample area or polygon and traverse up or down slopes rather than horizontal. Areas of highly variable amounts of grazing will require more transects than areas evenly grazed.
- 6) After all transects are completed, the utilization measurements are grouped into utilization zones and delineated as utilization polygons or sub-polygons of the vegetation types. Utilization zones are 0-10%, 11-30%, 31-50%, 51-70%, 71-90%.
- 7) Average the forage utilization percent within the utilization zone polygons and write that number in red for the average utilization of that utilization polygon (some polygons will have only one measurement).
- 8) Except for large key areas, key areas normally will consist of a single utilization zone polygon.
- 9) Add the date the measurements were done to the map.

A photograph should be taken at the starting point of each transect in the general direction of which the pace transect would occur. In addition a GPS waypoint should be taken or transect point mapped on a USGS Quad of the starting point. The attached field form has a blank for transect numbers, photo, and latitude and longitude for each transect completed.

Table B-10: Grazed Plant Utilization Conversion Table

Percent of Plants Grazed	Bunchgrass Percent by Weight	Bluegrass Percent by Weight		Percent of Plants Grazed	Bunchgrass Percent by Weight	Bluegrass Percent by Weight
1	0	0		51	27	28
2	1	0		52	27	29
3	1	0		53	28	30
4	2	0		54	29	31
5	2	1		55	29	32
6	3	1		56	30	33
7	3	1		57	31	34
8	3	1		58	32	35
9	4	2		59	33	36
10	4	2		60	33	37
11	5	2		61	34	38
12	5	3		62	35	39
13	6	3		63	36	40
14	6	4		64	37	41
15	7	4		65	37	42
16	7	4		66	38	43
17	8	5		67	39	44
18	8	5		68	40	45
19	8	6		69	41	46
20	9	6		70	42	47
21	9	7		71	43	48
22	10	7		72	44	49
23	10	8		73	45	50
24	11	8		74	46	51
25	11	9		75	47	52
26	12	10		76	48	53
27	12	10		77	49	55
28	13	11		78	50	56
29	13	11		79	51	57
30	14	12		80	52	58
31	14	13		81	53	59
32	15	13		82	54	60
33	16	14		83	55	62
34	16	15		84	57	63
35	17	15		85	58	64
36	17	16		86	59	65
37	18	17		87	60	66
38	18	18		88	61	68
39	19	18		89	63	69
40	19	19		90	64	70
41	20	20		91	65	71
42	21	21		92	66	73
43	21	21		93	68	74
44	22	22		94	69	75
45	23	23		95	70	76
46	23	24		96	72	78
47	24	25		97	73	79
48	25	26		98	74	80
49	25	26		99	76	82
50	26	27		100	77	83
				Extreme	85	90

Bunchgrass Formula: $Y = 0.433 X + 0.000034 X^3$

Bluegrass (Introduced Species) Formula: $Y = 2.7182818285^{(1.6 \text{LN}(X) - 2.95)}$

RANGE UTILIZATION TRANSECTS –Field Form

FOREST:	PASTURE:
DISTRICT:	KEY AREA:
ALLOTMENT:	LOCATION:

Stop Number	Date:				Date:				Date:				Date:			
	By:				By:				By:				By:			
	Chart Used:				Chart Used:				Chart Used:				Chart Used:			
	Transect				Transect				Transect				Transect			
	ID:				ID:				ID:				ID:			
	Polygon:				Polygon:				Polygon:				Polygon:			
	Photo:				Photo:				Photo:				Photo:			
	Lat:				Lat:				Lat:				Lat:			
	Long:				Long:				Long:				Long:			
	G	U	G	U	G	U	G	U	G	U	G	U	G	U		
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
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14																
15																
16																
17																
18																
19																
20																
21																
22																
23																
24																
25																
Total																
Sum of 50 Stops																
Percent Plants Grazed																
Percent Weight Use																

Appendix E – Noxious Weed Inventory Form

BMWC

Noxious Weed Inventory Form

Date _____

GPS file _____

Acres _____

Aspect _____

Common Name _____

County Code _____

Distribution _____

Elevation _____

Examiner _____

Infested Area _____

Location _____

Monumentation _____

Cover Class _____

Quad Name/number _____

Site ID _____

Species _____

Distance to water _____

Water Table depth _____

Date of form: 4/8/04