KING RANGE NCA PROPOSED MONITORING PROGRAM

**My comments added in red*

Goal: Develop a useful monitoring system to assess resource and social impacts from recreational use of the King Range NCA, focusing primarily on backcountry use on the Lost Coast Trail. Conditions and trends identified in this monitoring program will help determine future management actions needed to provide quality wilderness experiences and ensure adequate resource protection.

Objectives:

1) Provide more accurate visitor use numbers and type of uses **(Since this proposal, traffic counters proved to be extremely erratic and ineffective. Trail registers were filled out very infrequently. So, in May of 2006 we implemented a mandatory self-registration permit system. The permits are free, and the estimated compliance rate is above 90%. We're now gathering much more reliable data for backpackers. Not only do we now have accurate numbers, but we have a much better idea of how many people use certain trails and trailheads, visitation on peak weekends, etc…)**
2) Assess the quality of our backcountry user experiences and determine which factors are responsible for lowering user satisfaction **(Two Visitor Perception Surveys have been completed – in 1997 and 2003 – and another is scheduled for 2009. These have been completed by Humboldt State graduate students working with the BLM.)**
3) Determine conditions and trends in resource impacts **(The following proposal is outdated with regards to the dispersed campsite monitoring. The entire campsite monitoring program is now done with GIS/GPS. The "forms" that are detailed in the campsite monitoring section have been converted to a GIS database, and the field collection is done with GPS. The data is now spatially accurate and replicable year after year. The first couple of years of the monitoring were done with pencil and paper, which proved to be very ineffective for data collection, display, and analytical purposes. However, at the time this proposal was created, the knowledge and ability to implement the monitoring using GIS/GPS did not exist at the King Range. I am currently creating a small manual to document and explain this revised process.)**

***The King Range RMP – 2005, specifies that we devise a visitor use allocation plan in the future, depending on the results of this monitoring program.**

Identified Possible Problem Areas Needing Monitoring:

1) Social Impacts
    a. Perceived overcrowding – Numbers of other people/groups encountered diminishes sense of solitude and overall wilderness experience;
    b. Inability to get a desirable campsite due to numbers of people or crowding at campsites (particularly specific campsites such as Buck Cr. And Cooskie Creek) ;
    c. Conflicts with other public land users (recreationists and non-recreationists) due to behavior of others;
    d. Perception that group sizes may be too big.

2) Visual/Aesthetic Impacts
    a. Trash
    b. Proliferation of fire rings
    c. Shelters
    d. Human feces/toilet paper
    e. Blackened areas from wildfires

3) Resource Impacts
    a. Wildfires started from campfires
    b. Water quality (bacteria, giardia, etc.)
    c. Human waste – potential health problems
    d. Live vegetation cutting (firewood, clearing campsite, vandalism)
    e. Tidepool life
    f. Ground vegetation destruction from campsite proliferation and social trails.
    g. Impacts on wildlife (health of bears and raccoons adjusting to human use in areas, sea lions on beach, etc.)

Monitoring Information Needs

1) Visitor Use Numbers
    a. From trailheads
    b. Where camping
    c. Peak times
    d. Total use
    e. Type of use
    f. Organized/permitted groups
    g. Locations of concentrated use

2) Monitoring Visitor Numbers
    a. Backcountry registers
    b. Visitor numbers at BLM visitor center

c. Employee/Intern observations
    i. Vehicles at trailheads
    ii. # people encountered on trails
    iii. Times of observations need to be consistent
    iv. Sampling strategy
d. # bear cans rented
e. Docent report from S.C. lighthouse
f. Traffic counters
    i. Mattole
    ii. BSB
g. Visitor perceptions – modified version of 1997 study

3) Campsite monitoring
    a. Measure camping area boundaries
    b. Measure number and size of sites
    c. Note recent disturbances
        i. Cut trees
        ii. Vandalism
        iii. Man made features
        iv. Ground vegetation disturbance
    d. Photo monitoring
    e. Trash
        i. Levels of trash (0-4?)
        ii. # of sites trash found
    f. Sanitation – counting piles of feces and toilet paper
    g. Number and condition of fire rings
    h. Number, size, and condition of driftwood shelters

SPECIFIC MONITORING PLAN

1) Visitor Use Numbers –
    a. Install traffic Counters at following locations (by priority):
        i. Mattole access road between Windy Point road and Mattole Camp
        ii. Black Sands Beach Parking lot
        iii. King Range road just past turnoff of King Peak Road
        iv. Smith Etter Road
        v. Saddle Mountain road (2 locations)
        vi. Entrance to parking area – Mal Coombs Park?

    Check traffic counters and record data at least monthly to replace batteries, make sure system is operating properly, minimize lost data, etc.

    b. Maintain and compile trailhead registers at all trailheads. Add trailhead registers at Nadelos and Wailaki campgrounds;
    c. Maintain complete visitor contact log at BLM office;

d. Promote extensive use of Observation Sheets to record numbers of visitors seen in field (include vehicle counts, tent counts, and visitor counts);
e. Maintain accurate special recreation permit group use information;
f. Acquire shuttle information from permitted shuttle operator
g. Work with HSU recreation professors/interns to develop more comprehensive visitor monitoring program to include visitor numbers with visitor profiles, impressions, and opinions.
    i. Determine funding ability
    ii. Determine timing for visitor studies
        1. Big study (like 1997 one) every 10 years? 5 years? Big one every 10 years with modified one every 5 years?
        2. Something we can do every year? Every 3 years?
    iii. Determine content of visitor survey – Similarities to 1997 study - Focus on visitor perceptions – Particularly the importance of maintaining a sense of solitude vs. maintaining the freedom to visit the Lost Coast on a moment's notice. Find out what is bugging people the most.

Resource Monitoring Program

1) Campsite monitoring – I would recommend that we develop a modified version of the Bob Marshall Rapid Estimation Procedure (Appendix H, "Campsite Monitoring Methods: A Sourcebook") Through this method, we could record the location of each campsite, map the major sites, and develop a form to record change over time. The form would assign a condition rating (1-5), for different criteria (trash, fire rings, damaged vegetation, etc.), and would also provide for measuring campsite expansion/proliferation. Specifically, it should provide the following:
    a. <u>General Site Description</u>
        i. Site number
        ii. Site location
        iii. Date inventoried/monitored
        iv. Person conducting inventory/monitoring
        v. Photos taken
        vi. Landform
            1. Beach – below winter storm high water mark
            2. Beach – above winter storm high water mark
            3. Bench above winter storm high water mark –
            4. Within stream floodplain
            5. Above stream floodplain – greater than ¼ mile from beach
            6. Ridgetop
        vii. Vegetation
            1. Sparse beach vegetation
            2. Moderate to dense beach vegetation
            3. Grassland
            4. Sparse brush
            5. Moderate to dense brush

6. Forested
7. Mix of trees and brush
8. Other

viii. Distance to closest trailhead
ix. Distance to constructed trail
x. Distance to ocean
xi. Distance to fresh water
xii. Distance to closest campsite
xiii. Number of other campsites within ¼ mile
xiv. Maximum party size accommodated
1. 1-2
2. 3-6
3. 7-10
4. 11-15
5. more than 15 people

xv. Type of Use
backpacking
stock

xvi. Closest firewood source
1. on site
2. less than 100 feet
3. 100-300 feet
4. 300 ft. – ¼ mile
5. greater than ¼ mile

iv. Facilities present ___ absent ___
1. Shelters ____
2. Fire rings ____
3. Primitive seats ___
4. Table/shelf/counter ___
5. Hitch rail/corral ____
6. Other

h. <u>Impact Evaluation</u>
i. Vegetation Cover – on campsite
1. 0-5%
2. 6-25%
3. 26-50%
4. 51-75%
5. 76 – 100%

ii. Vegetation Cover – on unused comparative area
1. 0-5 %
2. 6-25%
3. 26-50%
4. 51-75%
5. 76-100%

iii. Vegetation Loss
1. No difference in coverage (onsite vs. offsite)

2. Difference one coverage class
3. Difference two coverage classes
4. Difference three or four coverage classes

iv. Soil Disturbance (compaction/loosening/erosion)
1. None present
2. <30% of soil in site shows compaction (fine soils) or loosening (coarse soils)
3. 30-60% of soil in site shows compaction or loosening. Signs of gullying or erosion in 1-2 places.
4. > 60% of soil in site shows compaction or loosening. Gullying or erosion evident in more than 2 places, or severe gullying/erosion in 1-2 places.

v. Tree damage
1. Number of trees scarred or felled
    a. Within campsite ____
    b. Within 100 feet of campsite ___
2. Broken limbs, gashes, damage
    a. No damage or no trees present
    b. < 10% of trees have broken limbs, gashes, or other damage.
    c. 10-35% of trees have broken limbs, gashes, or other damage.
    d. >35% of trees have broken limbs, gashes, or other damage. Or one large tree or several smaller trees cut down.
3. Root exposure
    a. No roots exposed or no trees present;
    b. 1 root exposed in site;
    c. 2-3 roots exposed in site;
    d. >3 roots exposed in site.

vi. Shrub damage
1. % damaged – reduced vigor
    a. None show any damage
    b. <10% of shrubs show damage (such as broken limbs, crushed appearance)
    c. 10-30% of shrubs show damage; 1 or 2 show reduced vigor as a result of damage;
    d. >30% of shrubs show damage; 2 show reduced vigor; dead or dying shrubs present.
2. Root Exposure
    a. No roots exposed
    b. 1 root exposed in site
    c. 2-3 roots exposed in site
    d. >3 roots exposed in site

vii. Trash
1. None present

2. Small amount (<5 pieces) in fire pit or largely unnoticeable around camp
3. Moderate amount of trash (>5 pieces) in fire pit and/or scattered noticeably around camp
4. Heavily trashed – numerous items, large pieces, immediate major negative impact to visitors

viii. Human Waste – within 100 feet of campsite
   1. Toilet Paper
      a. None present
      b. 1-2 pieces of toilet paper present
      c. 3-4 pieces of toilet paper present
      d. >4 pieces of toilet paper present
   2. Fecal Matter
      a. None present
      b. 1 pile of feces encountered
      c. 2 piles of feces encountered
      d. >2 piles of feces encountered

ix. Side Trails
   1. Number
      a. No more than one present – not very obvious from main trail to or through site: no spur trails, and only a few isolated footprints present;
      b. 2 distinct trails from main trail to site or between attraction site (stream, ocean, etc.). No spurs. Few isolated footprints.
      c. 3 distinct trails from main trail to site or between attraction site; 3 side trails or spurs developing. Footprints apparent.
      d. Obvious network of trails (>3). 3 or more side or spur trails developing. Numerous footprints in and around trails and site.
   2. Condition
      a. Average width < 12". Trail at same level as adjacent area.
      b. Average width of one trail >12". One trail wearing below level of adjacent area.
      c. 2 trails wider than 12". At least 2 trails deeper than adjacent ground level.
      d. >2 trails wider than 12" wide. Trails merging. All trails deeper than adjacent ground level.

x. Firepits
   1. Number
      a. None present
      b. Sign of 1 small firering (<2 ft. diam.)
      c. Active firering >2 ft. diam.

d. 2-3 firerings present, one active, the others covered with rocks and sand
e. More than 3 firerings present, both active and abandoned, or 3 large firerings (>2 ft. diam.)

2. Condition
   a. No evidence of fires
   b. <25 % of rocks show fire scars. Small trace of charcoal and ash concentrated in 1 pile; site can be easily returned to natural or undisturbed condition.
   c. 26-50% of rocks show fire scars. Concentrated pile of charcoal and ash in obvious pile.
   d. >50% of rocks show fire scars. Charcoal and ash scattered throughout site, mixing into soil.

xi. Shelters (driftwood)
   1. No shelter associated with site
   2. Modest shelter present – clean, does not dominate site
   3. Large shelter present – dominates site but clean and rustic looking – May contain firering and homemade table.
   4. Large multi-room shelter present – Deteriorating condition, signs of trash in walls, rodents, etc. Ceiling and/or walls in danger of collapsing.

Need to talk about point value system for above items – Each component can be weighted as deemed appropriate and multiplied by condition class number. Results can be tallied according to point value and put in overall condition class (poor to excellent).

Monitoring should be conducted roughly same time each year (would recommend twice annually, once in spring – March/April – to assess sites before heavy use season – and in the fall (October) to assess sites after heavy use season. Time permitting, perhaps a mid-season assessment would also be helpful. *(Accurate records need to be maintained as management actions are taken throughout the season i.e picking up trash, disposing of feces, breaking up fire rings, etc., in order for the fall monitoring to accurately reflect the cumulative impacts observed.)*

We may want to expand on the current King Range Observation Sheet to record camping use in the following zones:

1) Mouth of Mattole to within ¼ mile north of Lighthouse
2) ¼ mile north or south of Lighthouse
3) ¼ mile south of Lighthouse to Cooskie Creek
4) Mouth of Cooskie Creek
5) Cooskie Creek to Randall Creek
6) Mouth of Randall Creek
7) Spanish Flat – Randall Creek to Smith Cabin
8) Spanish Flat – Smith Cabin to Hadley Creek

9) Mouth of Hadley Creek
10) Hadley Creek to ¼ mile north of Big Flat Creek
11) Big Flat/Miller Flat
12) Up Big Flat Creek
13) ¼ mile south of Big Flat Creek to Gitchell Creek on beach
14) Mouth of Shipman Creek
15) Mouth of Buck Creek
16) Mouth of Gitchell Creek
17) Gitchell Creek to Horse Mt. Creek
18) Mouth of Horse Mt. Creek
19) Horse Mt. Creek to Black Sands Beach
20) Other

We could make this the back page of the observation sheet, purely for camping. For each site/segment the observer would put information such as number of parties, number of people (or tents if people can't be counted), and whether any are organized/permitted groups.

King Range NCA Observation Sheet **page 1**

Name _____
Date_____
Weather Conditions_____

Lost Coast Trail Segments	**Day hikers**	**Backpackers**	**Camps**	**Groups**
Mattole to ¼ mi. N. of Lighthouse				
¼ mi. N. or S. of Lighthouse				
¼ mi. S. of Lighthouse to Cooskie Cr.				
Mouth of Cooskie Cr.				
Cooskie Cr. To Randall Cr.				
Mouth of Randall Cr.				
S. Flat – Randall Cr. To Smith Cabin				
S. Flat – Smith Cabin to Hadley Cr.				
Mouth of Hadley Cr.				
Hadley Cr. To ¼ mi. N. of Big Flat Cr.				
Big Flat/Miller Flat				
¼ mi. S. of Big Flat Creek to Gitchell Cr. On beach				
Mouth of Shipman Cr.				
Mouth of Buck Cr.				
Mouth of Gitchell Cr.				
Gitchell Cr. To Horse Mt. Cr.				
Mouth of Horse Mt. Cr.				
Horse Mt. Cr. To BSB				
Other				

Observation Sheet (cont.)

Name_____
Date_____
Weather Conditions_____

Non Lost Coast Trails **Hikers** **Backpackers** **Camps** **Groups**

Trail:_____

Trail:_____

Trail:_____

Trail:_____

 # Cars at Trailhead (specify trailhead)_____

Visitor Comments/Concerns:_____

General Comments:_____

KING RANGE CAMPSITE CONDITION MONITORING SYSTEM

General Site Description

xii. Site name _____

xv. Site number _____

xvi. Site location

_____

_____

xvii. Date inventoried/monitored _____

xviii. Person conducting inventory/monitoring _____

xix. Photos taken: _____

xx. Landform (circle one)

1. Beach – below winter storm high water mark
2. Beach – above winter storm high water mark
3. Bench above winter storm high water mark –
4. Within stream floodplain
5. Above stream floodplain – greater than ¼ mile from beach
6. Ridgetop

xxi. Vegetation (circle one)

1. Sparse beach vegetation
2. Moderate to dense beach vegetation
3. Grassland
4. Sparse brush
5. Moderate to dense brush
6. Forested
7. Mix of trees and brush
8. Other

xxii. Distance to closest trailhead _____

xxiii. Distance to constructed trail _____

xxiv. Distance to ocean _____

xxv. Distance to fresh water _____

xxvi. Distance to closest campsite _____

xxvii. Number of other campsites within ¼ mi._____

xxviii. Maximum party size accommodated (circle one)

1. 1-2
2. 3-6
3. 7-10
4. 11-15

xv. Type of Use (circle one or both)

backpacking

stock

xvi. Closest firewood source (circle one)

1. on site
2. less than 100 feet
3. 100-300 feet

4. 300 ft. – ¼ mile
5. greater than ¼ mile

xiii. # Facilities present ___ absent ___ (check applicable entries)
1. Shelters _____
2. Fire rings _____
3. Primitive seats _____
4. Table/shelf/counter _____
5. Hitch rail/corral _____
6. Other _____

<u>Impact Evaluation</u>

xiv. Vegetation Cover – on campsite (circle one)
1. 0-5%
2. 6-25%
3. 26-50%
4. 51-75%
5. 76 – 100%

xv. Vegetation Cover – on unused comparative area (circle one)
1. 0-5 %
2. 6-25%
3. 26-50%
4. 51-75%
5. 76-100%

xvi. Vegetation Loss (circle one)
1. No difference in coverage (onsite vs. offsite)
2. Difference one coverage class
3. Difference two coverage classes
4. Difference three coverage classes
5. Difference four coverage classes

xvii. Soil Disturbance (compaction/loosening/erosion) – (circle one)
1. None present
2. <20% of soil in site shows compaction (fine soils) or loosening (coarse soils)
3. 20-40% of soil in site shows compaction or loosening. Signs of minor gullying or erosion in 1-2 places.
4. 40-60% of soil in site shows compaction or loosening. Signs of moderate gullying or erosion in 2-3 places.
5. > 60% of soil in site shows compaction or loosening. Gullying or erosion evident in more than 3 places, or severe gullying/erosion in 1-2 places.

xviii. Tree damage (within 100 ft. of campsite) – (circle one)
1. No damage or no trees present
2. < 10% of trees w/ broken limbs/gashes/other damage.
3. 10-35% of trees w/broken limbs/gashes/other damage.
4. >35% of trees w/broken limbs/gashes/other damage.
5. One large tree or several smaller trees cut down.

ii. Shrub damage - % damaged – reduced vigor (circle one)

a. No damage or none present
b. <10% of shrubs show damage (such as broken limbs, crushed appearance)
c. 10-25% of shrubs show damage; 1 or 2 show reduced vigor as a result of damage;
d. 25-50% of shrubs show damage; 2 or 3 show reduced vigor; dead or dying shrubs present.
e. >50% of shrubs show damage; 4 or more show reduced vigor; dead and dying shrubs obvious.

iii. Trash (circle one)
2. None present
3. Small amount (<5 small pieces) in fire pit.
4. Small to moderate amount (5-10) pieces in fire pit and/or scattered somewhat noticeably around camp.
5. Moderate amount of trash (>10 pieces) in fire pit and/or scattered noticeably around camp
6. Heavily trashed – numerous items, large pieces, immediate major negative impact to visitors

iv. Human Waste – within 100 feet of campsite
2. Toilet Paper (circle one)
a. None present
b. 1 piece of toilet paper present
c. 2 pieces of toilet paper present
d. 3-4 pieces of toilet paper present
e. >4 pieces of toilet paper present
3. Fecal Matter (circle one)
a. None present
b. Sign of 1 pile improperly buried feces
c. 1 pile of feces encountered
d. 2 piles of feces encountered
e. >2 piles of feces encountered

v. Side Trails
2. Number (circle one)
a. None present
b. No more than one present – not very obvious from main trail to or through site: no spur trails, and only a few isolated footprints present;
c. 2 distinct trails from main trail to site or between attraction site (stream, ocean, etc.). No spurs. Few isolated footprints.
d. 3 distinct trails from main trail to site or between attraction site; 3 side trails or spurs developing. Footprints apparent.
e. Obvious network of trails (>3). 3 or more side or spur trails developing. Numerous footprints in and around trails and site.

3. Condition (circle one)
    a. None present
    b. Average width < 12". Trail at same level as adjacent area.
    c. Average width of one trail >12". One trail wearing below level of adjacent area.
    d. 2 trails wider than 12". At least 2 trails deeper than adjacent ground level.
    e. >2 trails wider than 12" wide. Trails merging. All trails deeper than adjacent ground level.

vi. Firepits
2. Number (circle one)
    a. None present
    b. Sign of 1 small firering (<2 ft. diam.)
    c. Active firering >2 ft. diam.
    d. 2-3 firerings present, one active, the others covered with rocks and sand
    e. More than 3 firerings present, both active and abandoned, or 3 large firerings (>2 ft. diam.)
3. Condition (circle one)
    a. No evidence of fires
    b. <20 % of rocks show fire scars. Small trace of charcoal and ash concentrated in 1 pile; site can be easily returned to natural or undisturbed condition.
    c. 21-40% of rocks show fire scars. Concentrated pile of charcoal and ash in obvious pile.
    d. 41-60% of rocks show fire scars. Rocks mixing with charcoal and ash
    e. >50% of rocks show fire scars. Charcoal and ash scattered throughout site, mixing into soil.

vii. Shelters (driftwood) – (circle one)
2. No shelter associated with site
3. Small shelter present – clean, does not dominate site – no firering, or tables present;
4. Moderately sized shelter present – Obvious but clean and rustic looking – May contain firering and homemade table.
5. Large, shelter present – Dominates site – contains firering and possibly seats and tables, etc.
6. Large multi-room shelter present – Deteriorating condition, signs of trash in walls, rodents, etc. Ceiling and/or walls in danger of collapsing.

Make sure we leave space for general and specific comments. Another sheet should include site map and space for digital photograph to identify site.