

Boulder Mountainbike Alliance (BMA)

Grasslands Ecosystem Management Plan (GEMP) Study Session Comments

Executive summary: BMA believes the following changes to the GEMP will: a) improve the scientific validity of wetlands management, b) make the GEMP a management tool that can guide TSA decisions beyond a simple yes/no to trails or access, and c) maintain the primacy of the VMP in recreational management decisions on open space:

- 1) Management recommendations that involve tradeoffs between Charter purposes should be removed from the GEMP.
- 2) The primacy of the VMP and TSA processes in determining OSMP recreational management direction should be explicit recognized.
- 3) Wetlands should be protected, but the size and degree of protection required should be set case by case, based on available science, not with one size fits all global restrictions.
- 4) The 200m buffer is arbitrary and overly restrictive. It has no scientific justification. It should be removed from the GEMP. If a buffer width guideline must be set it should be no more than 50m.

"Bad process leads to bad policy." The GEMP is the wrong place to make trail decisions.

The GEMP is not the proper document to make trail decisions or to set trail restrictions. That's what the Visitor Master Plan (VMP) Trail Study Areas (TSAs) are about.

The TSAs were established to consider the specifics of trail alternatives and to allow case by case evaluations to be made. The VMP sets global and area standards and priorities for this process. The GEMP trail restriction proposals appear to be an effort to impose new global constraints that bypass the VMP and TSA processes.

BMA previously submitted our comments on this subject in response to the draft GEMP. Please find those comments attached as Appendix A. We do **NOT** feel that the staff memo sufficiently addresses our concerns. BMA's two major recommendations on the draft GEMP still merit consideration:

- 1) All management recommendations that involve tradeoffs between Charter purposes should be scrubbed from the GEMP. Management of open space recreation should occur through the VMP and TSA processes. The GEMP can still provide important management recommendations for invasive weed control, grassland restoration, and other ecosystem objectives – as long as those recommendations do not involve trading off charter purposes.
- 2) An explicit statement should be included within the GEMP indicating its purpose with respect to the VMP and recognizing the primacy of the VMP and TSA processes in determining OSMP recreational management direction. In this context we suggest the GEMP be defined as a resource inventory and management plan that will inform the VMP.

Rather than belabor this previous input, we'll limit our additional comments for the study session to our concerns about the GEMP's definition and treatment of wetlands and riparian areas, and to the proposed global 200m wetland buffer restriction (GEMP Study Session memo, Attachment E, Wetland and Riparian Buffers and Trail Density).

Wetlands should be protected!

We are **not** asking for trails in wetlands. We want to make it clear we support wetland protection efforts such as the Lindsay Pond closure. However,

The size and degree of protection required for wetlands and riparian areas should be set case by case, based on available science, in a manner similar to that followed by BCPOS and other land management agencies.

During 1999 Boulder County Parks and Open Space (BCPOS) inventoried wetlands riparian areas on BCPOS prairie properties (see Attachment B). In inventorying a similar prairie area (21,000 vs. 24,000 acres) the county found fewer and smaller wetlands (45 sites totaling 265 acres), than OSMP identified (414 sites totaling 1,500 acres).

City open space grasslands do not contain 6 times the wetlands of other Boulder prairies. Different definitions of "wetland" apparently were used. The county followed the standard definitions established by the Federal government and the rating practices followed in previous Boulder wetland surveys. OSMP should also. The GEMP does not.

The county classified half the wetlands as having low or no significant wildlife habitat and only 20% as having high or very high wildlife habitat (see Attachment B, Table 1). OSMP proposes to treat them all the same.

Not all wetlands are equal. Applying one metric, based on preservation of the most endangered and most valuable, to anything that might possibly be defined as a wetland is inappropriate and bad policy. Treating all wetlands equally ignores the fact that some are much more ecologically important – information that could help guide VMP implementation. BCPOS looks at the significance of wetlands on a case by case basis. OSMP should also.

The BCPOS wetland inventory notes that essentially all county wetlands and ponds east of the mountains are man made. They did not exist 150 years ago. 96% of wetlands had human sources, two thirds were primarily human sourced, 31% combined natural & human sources, only two were primarily natural (see Attachment B, Table 2). There are only two natural ponds in the Boulder county prairie (Little Gaynor Lake and Sombrero Marsh). The present wetlands are byproducts of our ditches, ponds, agricultural practices, and road and urban drainages. They are dependent upon present irrigation and water management practices to survive.

Focusing on trails as the primary threat to habitat is shortsighted and counterproductive. It will fail to protect the wetlands from the greatest future threat, changes in water management practices. Minimizing human contact with wetlands areas will lead to a general devaluing of the wetlands in the public view, which will in turn endanger continuing the watering practices necessary for their survival.

Global warming is real. The Front Range population is growing. Water restrictions and increased efficiency in water applications are coming. The wetlands will dry up if we can not motivate the public and, by extension, policy makers to spend water resources preserving them. We need to showcase the wetland areas in a careful, non-destructive manner to build and maintain the public support we need.

The need for a global 200m wetland buffer restriction is questionable, if a buffer width guideline must be set it should be no more than 50m based on the available science.

The 200m buffers have a huge effect upon OSMP trails and property (see Attachment C for details of the following discussion). The average 3.6-acre OSMP "wetland" creates a 56-acre buffered area. If the buffer areas did not overlap, 23,000 of the 24,000 GEMP acres would be within a buffer area. Because the buffers do overlap, only about 16,000 acres are within the

buffers (2/3 of all the GEMP acreage and more than 50% of all OSMP properties). Similarly, 64 miles of the 80 miles of designated trails in the GEMP are within buffers (almost 80% of the designated GEMP trails and almost half of all the designated trails in OSMP).

With the majority of the GEMP trails and acreage within the 200m buffers, the buffer has no utility as a management tool. Since almost everything of significance is already within a buffer area, the limit cannot be used constructively to inform management decisions or evaluated alternatives. It can only be used to support closures and reroutes and to prevent new trail alignments.

Before we adopt the GEMP 200m buffer restriction we had better be really, really sure it is necessary and justifiable. Public support and acceptance of access restrictions is dependent upon those restrictions having some appearance of reasonableness. The 200m buffer fails this test. There is no science to justify the 200m buffer.

Since the mid-90s OSMP sponsored independent research activities have investigated the effects of Boulder trails upon birds, mule deer, rabbits, small mammals (including Preble's meadow jumping mice), and prairie dog burrows (see Attachment D). None of the studies found significant trail effects from hikers, bikers, or equestrians at distances greater than 50m.

Results for most bird species, rabbits, small mammals (including Preble's jumping mice), and prairie dog burrows showed little or no negative effects at all. Dog effects were not significant at distances beyond 50m except for mule deer abundance which was reduced at distances up to 100m along trails open to off-leash dogs.

The GEMP asserts the 200m trail buffer is necessary to protect leopard frogs, Preble's jumping mice, and nesting birds. OSMP's independent research reports do not support this claim.

The 2006 OSMP leopard frog inventory found that "leopard frogs are still distributed widely across Boulder", with frogs being found in more than 50% of the ponds, streams, and ditches. Primary risks to the frog population are considered to be habitat alteration/loss and non-native vertebrates (fish and frogs), and fungal infections. Trails were not implicated. 22 of the 32 sites surveyed are man made features that require human attention – and thus human presence and disturbance to survive.

Several of the OSMP independent research reports dealt with the effects of trails upon small mammals and found little or none (see Attachment D, reports by Lenth, Johnson, and Meaney). In addition to other small mammals, a three-year study (Attachment D, Meaney, et al) focused on effects on Preble's jumping mice. They found "weak and only suggestive" evidence for negative effects even along the Bobolink and South Boulder trails which parallel the stream often at distances of a few meters.

Meaney suggests that "it might be beneficial to jumping mice and other wildlife to weave trails out of the riparian corridor as much as possible." We support this recommendation, but note that "out of the riparian corridor" is different from 200m from its edge.

Finally, the OSMP independent research reports dealing with nesting birds (Attachment D, Miller & Knight and Merkle) did find a noticeable trail effect upon nesting birds. Areas with trails had greater occurrences of nests and greater nesting success or survival rates (Miller & Knight found lower survival rates within 50m of the trails, but greater overall survival rates along trails than in the control areas).

The 200m buffer is both bad policy and bad science. We can protect our significant wetland resources without imposing a global, arbitrary buffer distance that prevents public appreciation of the resources and will ultimately endanger their existence.

Attachment A – BMA Comments on the Draft GEMP

To: City of Boulder Open Space & Mountain Parks

From: Board of Directors, Boulder Mountainbike Alliance

Subject: Comments on Grasslands Management Plan

The Boulder Mountainbike Alliance (BMA) is extremely disappointed by the Grasslands Ecosystem Management Plan (GEMP). While the GEMP provides an excellent resource inventory of our grasslands, it takes the unfortunate step of recommending management actions based solely on maximizing environmental preservation. The GEMP authors seem to have forgotten about the VMP key policy to "Use the least restrictive means possible to reduce visitor conflict and minimize impacts on the environment."

This is untenable on two counts:

- 1) Section 176 of the Charter and the Visitor Master Plan (VMP) clearly indicate that Boulder's open space lands serve multiple community values, including both environmental preservation and passive recreation, and
- 2) The GEMP did not survey, discuss, or explore the recreational values of our grasslands, so it has no basis upon which to assess possible synergies between recreation and environmental preservation or to make even-handed trade-offs when necessary.

You can imagine what a "Grasslands *Recreation* Management Plan" would look like if it tried to maximize recreation values without appropriate surveys or consideration of the local ecosystems – there might be recommendations to drastically increase the density of trails, cut through habitat blocks, build trails through ground-nesting bird habitat, put more trails close to riparian areas, and so forth. BMA does not suggest that such an approach is appropriate, but uses it to illustrate the one-sided and deeply flawed attempt to turn the GEMP into a management plan. **Bottom line – the GEMP should be considered a resource inventory to inform management discussions that will occur in the relevant VMP Trail Study Area processes.**

The management recommendations contained in the GEMP would eliminate some of the most sustainable and high-use trails in the Open Space and Mountain Parks (OSMP) system, such as South Boulder Creek and Dry Creek. These trails are not causing any observable environmental problems and, in fact, provide high value to the citizens of Boulder. Furthermore, the GEMP recommendations would eliminate the possibility of creating critical regional connector trails such as the proposed UPRR rail trail from Erie to Boulder, a trail following the old RR grade through the Beech Open Space to create a connector from the City of Boulder to Heil Valley Ranch, and trail segments to connect the East Boulder Trail with the rest of the OSMP system. These opportunities, and any potential tradeoffs between environmental and recreational values, merits a full discussion with the community. This is what the VMP Trail Study Area (TSA) processes were designed to do.

Consequently, the Boulder Mountainbike Alliance suggests the following:

- 1) All management recommendations that involve tradeoffs between Charter purposes should be scrubbed from the GEMP. Management of our open spaces should occur through the VMP TSA processes. The GEMP can still provide important management recommendations for invasive weed control, grassland restoration, and other ecosystem objectives – as long as those recommendations do not involve trading off charter purposes.
- 2) An explicit description should be included within the GEMP that indicates what its purpose is with respect to the VMP. To avoid the appearance of bias, we suggest the GEMP should be defined as a resource inventory and management plan that will inform the TSA processes. It seems appropriate to us given the attempt to restrict recreation in this document, that an explicit statement be included that indicates the primacy of the VMP and TSA processes in determining OSMP management direction.

As always, BMA appreciates the opportunity to comment and participate in these processes that engage the community. We remain an active supporter of OSMP's efforts to make our public lands all they can be. Together, we will create a plan in the meeting rooms and an environment on the land that we all can be proud of.

Attachment B - 1999 Boulder County Wetland Survey Notes

During 1999 Boulder County Parks and Open Space (BCPOS) initiated an inventory of wetlands and wetlands associated with riparian areas on BCPOS prairie properties (One mountain property, the 860 acre Reynolds Ranch, containing 3 wetlands, was included in the survey. The acreage and wetland results for that property have been omitted from the following discussion).

The objectives of the study were to map the occurrence of wetlands, collect baseline information about the wetlands, and select significant or high-priority wetlands best suited for restoration or monitoring.

107 BCPOS properties covering about 21,000 acres were visited. A total of 45 prairie wetlands covering 230 acres were identified. Of these 15 were designated as significant.

The wetlands were mapped using a GPS unit, soil pits were dug to determine the soil types and conditions, and functional assessments of the wetlands were made based on those employed by earlier city and county wetland surveys (Cooper in 1988 and Wright Water engineers in 1993).

The wetlands were categorized as to type (alkali flat, ephemeral, intermittent, or perennial stream, ditch, marsh, wet meadow, pond, riparian shrub). Functional ratings were made of various characteristics (ground water recharge and discharge, flood retention, sediment trapping, fish and wildlife habitat, flood chain support, shoreline anchoring, nutrient retention, passive recreation/heritage value). Wetland origins/water sources were determined and noxious weed and vegetation species were recorded.

As a one-page summary of a fifty-five-page summary of several hundred pages of research results this document can not possibly cover all the details of the survey. In addition to the overall results (45 identified wetlands covering 230 acres, 15 of which were judged to be significant), the detail results for the wildlife habitat functional rating and wetland origins seem germane to the present discussion. These results are summarized below.

Half the wetlands received a low or none rating as wildlife habitat, one quarter got a medium habitat rating, one fifth got a high rating, and only one got a very high rating (see Table 1).

96% of wetlands had human sources, two thirds were primarily human sourced, 31% combined natural & human sources, only two were primarily natural (see Table 2).

Table 1. Wildlife Habitat. (from survey Table 8, p. 12)

Functional Rating	# of wetlands	% of total
1 (none)	3	6.7%
2 (low)	20	44.4%
3 (medium)	12	26.7%
4 (high)	9	20.0%
5 very high	1	2.2%
Total	45	100.0%

Table 2. Origin of wetlands in study area. (from survey Table 15, p. 16)

Origin	# of wetlands	% of total
Agricultural	22	48.9%
Agricultural & urban/industrial	3	6.7%
Natural	2	4.4%
Natural & agricultural	11	24.4%
Natural & urban/industrial	3	6.7%
Mining	1	2.2%
Urban/industrial	3	6.7%
Total	45	100.0%

1999 BCPOS Wetland Survey vs 2009 OSMP GEMP

	BCPOS	GEMP
acres involved	21,125	24,000
total wetland acres	230	1,500
average wetland size	5	4
wetland acres/total acres	0.01	0.06
# of wetlands	45	414
# of significant wetlands	15	?

Attachment C - OSMP GEMP Statistics

GEMP Wetland Buffers & Trails

# wetlands	414
total wetland acres	1,500
avg acres/wetland	3.6
acres/equivalent buffer circle	56
total buffered acres (w/o overlap)	23,138
total acres in GEMP	24,000
total acres in GEMP buffers	16,345
% of GEMP in buffers	68%
total acres in OSMP	45,000
% of OSMP in GEMP	53%
% of OSMP acres in buffers	36%
miles of designated trails in GEMP	80
miles of designated trails in buffers	64
% designated GEMP trails inside buffers	79%
miles of designated trails in OSMP	130
% designated OSMP trails inside buffers	49%

Note: These figures are as accurate as could be developed given a one week response period and lacking access to the OSMP GIS tools and databases. All the information was taken from the available OSMP documentation. Whenever possible the exact figures provided are quoted. Some trail mileage and acreage was estimated from OSMP maps and is subject to error. We believe the results are reasonably accurate under the conditions and that they provide a fair assessment of the GEMP characteristics.

Attachment D - OSMP Trail Effect Research

The following research activities investigated the effects of Boulder trails upon birds, mule deer, rabbits, small mammals (including Preble's meadow jumping mice), and prairie dog burrows.

None of the studies found significant trail effects for hikers, bikers, or equestrians at distances greater than 50m. Results for most bird species, rabbits, small mammals, and prairie dog burrows showed little or no negative effects at all. Dog effects were not significant at distances beyond 50m except for mule deer abundance which was reduced at distances up to 100m along trails open to off-leash dogs.

The first two were included in the GEMP references. The others were not. Although two of the projects focused upon dog-related issues, the studies contain results for other trail users as well. When applicable, the observations and results noted below are limited to the grassland observations.

(All the studies are available on-line at the OSMP website at

http://www.bouldercolorado.gov/index.php?option=com_content&task=view&id=9429&Itemid=3103).

Miller S.G., R.L. Knight, and C.K. Miller. 2001. Wildlife responses to pedestrians and dogs. Wildlife Society Bulletin 29: 124-132.

Observed: Vesper sparrow & western meadowlarks flushing distances to pedestrian alone, pedestrian w/dog, dog alone in Boulder grasslands

On-trail results: Probability of flushing 0.00 at 50 meters & 60 meters respectively-

Miller, S.G., R.L. Knight and C.K. Miller. 1998. Influence of recreational trails on breeding bird communities. Ecological Applications 8:162-169.

Observed: Bird species diversity, evenness, and abundance along grassland trails

Results: Diversity & evenness differed little; 10 of 13 species showed no change in abundance (2 species showed slight increases in abundance), 1 species showed no effect beyond 50m, 1 species showed no effect beyond 100m, 1 species showed some continuing effect at 100m (0.8 vs. 1.2 observations/100m of transect)

Observed: Nest survival & abundance along grassland trail transects

Results: At 50m trail survival probability was 0.94 and control survival was 0.965, at 100m survival probabilities were the same (0.96), beyond 100m trail survival probabilities exceed control survival probabilities; The probability of a nest occurring along the trail transects always exceed the control probabilities (0.5 vs. 0.4 at 50m).

Lenth, B.A., M. Brennan, and R.L. Knight. 2006. The Effects of Dogs on Wildlife Communities. Final research report submitted to Boulder County Open Space and Mountain Parks.

Observed: Deer, rabbit, and small mammal abundance, and prairie dog burrow densities along multi-use trails w/o dogs & w/ off-leash dogs.

Results: In areas w/o dogs no significant effects on abundance were found at any distance for rabbits, small mammals, and for prairie dog burrow density. No significant effects were found for deer beyond 50m (this was suggested as an effective separation distance for mule deer from hikers, equestrians, and mountain bikers) and trails were not found to act as a barrier to deer movement. In areas w/ off-leash dogs mule deer activity was lower up to 100m off-trail, rabbits and small mammal activity was reduced up to 50m from the trail, and prairie dog burrow density was reduced within 25m of the trails.

Related Studies

The following studies deal with overall trail effects without addressing distances from trail alignments.

Johnson, Whitney. 2000. Effects of recreational trails on small mammals. Independent research report submitted to Boulder City Open Space and Mountain Parks.

Observed: Compared small mammal home range sizes and measured movements of small mammals between a site with recreational trails and a site without trails (control).

Results: Found neither home range size nor net displacement of travels paths differed between the trail and the control site.

Meaney, Carron, et al. 2000. The impact of recreational trails and grazing on small mammals in the Colorado Piedmont. Final research report of a three year (1997-1999) study

Observed: Conducted a three-year study of the impact of recreational trails and grazing on species richness, relative abundance, and species diversity of small mammals on sites with and without trails along South Boulder Creek (either side of the Bobolink trail).

Results: "Evidence for a possible negative impact of trails on small mammal richness, relative abundance, and species diversity was weak and only suggestive." Suggests that "it might be beneficial to jumping mice and other wildlife to weave trails out of the riparian corridor as much as possible."

Merkle, William. 1999. The effects of recreational trail use on the behavior and nesting success of American robins and yellow warblers. Independent research report submitted to Boulder City Open Space and Mountain Parks.

Observed: Examined the effects of recreational trail-use on the behavior and nesting success of American robins and yellow warblers in willow/cottonwood riparian habitats in Boulder County, Colorado.

Results: Found differences in behaviors, particularly as a function of intensity of trail use (incubation time increased and food delivery rate decreased with increasing recreational trail-use). Nest frequency and nesting success increased for sites with trails, especially for the yellow warblers. For the yellow warblers there were 27 nests, 11 of which were successful at sites with a trail vs. 13 nests, 1 of which was successful, at sites without trails. Results for American robins were 67 nests, of which 34 were successful, at sites with a trail vs. 34 nests, of which 20 were successful, at sites without trails.

Germaine, Steve. 2006. Northern Leopard Frog Inventory Survey. Boulder City Open Space and Mountain Parks.

Observed: Surveyed 32 locations (18 ponds, five perennial (permanent) streams, five intermittent streams, and four irrigation ditches) during the summer of 2006 for the presence of Leopard Frogs and bullfrogs.

Results: Found leopard frogs occupied 53% of all surveyed sites, including 50% of all ponds, 60% of perennial streams, 60% of intermittent streams, and 75% of irrigation ditches. Bullfrogs were found at more than 50% of the sites and were more abundant than leopard frogs in three of four wetland types.