Colorado Native Plant Society

June 28, 2017

Fort Collins Natural Areas Department
Box 580
Fort Collins, CO 80522
Attn: Karen Manci

Dear Ms. Manci

Thank you for the opportunity to review and comment on your proposed Fossil Creek Natural Areas Management Plan affecting 12 separate Natural Areas (NAs). We applaud the City for its commitment to "conserve, enhance and restore the ecological characteristics and values" of these natural areas. We are especially pleased to see the attention given to rare plants, such as Bell's twinpod (*Physaria bellii*).

We have reviewed the plan and offer our comments here. The following comments pertain to the proposed bike trail in the Cathy Fromme NA. This proposed trail would be approximately 1.25 miles long and would be open to hiking as well as cycling. Although the specific on-the-ground alignment has not been assigned, several things are clear even from a generalized or conceptual view.

The proposed trail would be located:

1) Within or immediately adjacent to an occurrence of the rare Bell's twinpod
2) Within an area documented to have the third highest level of native plant diversity among all of the urban NAs managed by the City (CFP#27).

Status of Bell's Twinpod

The global distribution of Bell's twinpod is limited to "hogbacks" in the northern Front Range of Colorado. It occurs only on limestone shales of specific geologic formations. Species such as this with a small geographic range and a high level of habitat specificity are "classic" endemics which are very vulnerable.

In 2007, Bell's twinpod was reportedly known from 28 occurrences, 19 of which were in Larimer County (Anderson and Lavender, 2007). Four occurrences, or 15%, are located in City of Fort Collins NAs.

There are many threats to Bell's twinpod including but not limited to residential development, mining, prairie dogs, noxious weeds and climate change. Although there have been some scientific studies, there are still many questions about the species' basic biology and ecology that remain unanswered. Some have said that it is this dearth of information that constitutes the greatest threat to its continued viability.

Bell's twinpod was considered for federal protection under the Endangered Species Act but insufficient information was available as of 1993 (CFR, 1993). In 1996 (CFR, 1996) it was dropped from consideration without explanation.

The Natural Heritage Network (CNHP, 2017) uses a standardized ranking system to assess the rarity and vulnerability of a species to extinction. Currently, Bell's twinpod is classified as "G2G3/S2S3". In simple terms, this means the species is somewhere between globally imperiled and vulnerable to localized extirpation. A species with this ranking is in need of conservation and without which it could warrant federal listing.

Status of Native Plant Diversity

Native plant diversity along the Front Range and in the Fort Collins area is generally compromised by non-native, invasive plants. In particular, countless acres in the region are dominated by smooth brome (*Bromus inermis*) due to its past and present favor by ranchers as a pasture grass. In addition to large numbers of acres dominated exclusively by smooth brome, there is an increasing number of state-listed noxious weeds spreading throughout the county.

In 2013, City botanists conducted surveys of City NAs for the purpose of identifying and mapping areas of high native plant diversity. When areas are found to have high levels of native species with few or no introduced species, these are priceless for biodiversity conservation because they are so hard to come by. They provide us with an invaluable set of data regarding the nature of native plant communities that can be used as models for restoration. These are areas where flora and faunal values are highest.

Concerns

We are writing to express concerns about the potential for direct, indirect and cumulative impacts from the proposed trail to the Bell's twinpod and the area of high native plant diversity (CFP27). We are also providing some alternatives and potential mitigations we hope you will find appropriate and implementable.

Direct Impacts

Direct effects are those that occur at the same time and place as the project implementation.

Construction of the trail would impact a corridor approximately 6 feet wide include worker trampling, vehicle access, tool storage and other ancillary activities. This is quite possibly a conservative estimate. This is estimated to be one-acre of high quality native plant community.

It is impossible to estimate the potential loss of Bell's twinpod due to a lack of information. In order to estimate this impact, we need to overlay a map of the twinpod occurrences, the suitable habitat and the proposed alignment of the trail. We know from the 2007 CNHP report that there is an occurrence in the immediate project area which is why we express this concern.

Indirect

Indirect effects are those that may be caused by a project but occur later in time or at some distance from the direct impacts.

Potential indirect impacts include trampling by trail users and the proliferation of non-native, invasive and noxious weeds into a relatively intact floristic community. Weeds are well documented to enter areas such as this through the creation of bare and disturbed areas as well as on the tires and soles of recreational visitors.

Punjabi and Smith (2014) prepared a set of Best Management Practices (BMPs) for the Colorado Department of Transportation for managing Bell's twinpod in areas of their jurisdiction. They put forth that the zone of potential indirect impacts from noxious weeds (to this species or any) is approximately 600 feet. Crude calculations using 600 feet on both sides of the proposed trail indicate that 90% of the floristically rich diversity unit would be in the zone of potential indirect impacts from noxious weeds. Realistically, this potential impact would occur over a long period of time and would be a function of many other factors including the species of weeds, the density of native plants and the extent of bare areas present. It is nevertheless of concern.

Cumulative Impacts

Cumulative effects are those that result from past, present and future activities related to the project and the environmental elements of concern.

The fact that no other land management agency in Larimer and Boulder Counties is known (to us) to actively conserve Bell's twinpod places the species in a somewhat precarious status. If the proposed bike trail in Cathy Fromme NA impacts this species as presumed, these impacts would be added to the unknown level of losses elsewhere. Since the proposed trail is slated to continue onto county lands, we have no information about whether it would impact Bell's twinpod there. The possibility of additional impacts there would further contribute to cumulative effects.

It is our understanding that if the proposed bike trail impacts the Bell's twinpod occurrence and/or habitat in Cathy Fromme NA as presumed, it would be the first time the City of Fort Collins would allow this. This would set a precedence wherein future projects might feel free to do the same. Such a trend would potentially diminish the security of Bell's twinpod. Impacts such as this one for the benefit of a recreational trail that can be placed elsewhere seem contrary to the Department's commitment to biodiversity.

The populations of Bell's twinpod at Cathy Fromme and other NAs were monitored in 2007 and 2012 for trends (CFNAD, 2012). The fact that the life history of this species is not well understood and that 5 years lapsed between data collections have resulted in sketchy unconfirmed trends. In 2012, the monitoring found a 95% "decline" in plant numbers at Cathy Fromme from 2007, however; the reasons are unclear. It is entirely possible that this is due to phenology or due to external factors such as prairie dogs. Demographic monitoring of individual tagged plants in the future on an annual basis would probably yield more conclusive information.

The reported decline of 95% at Cathy Fromme, if real, is of high concern. The extirpation of a single occurrence that is part of a meta-population would constitute true ecological "fragmentation". The loss of an occurrence in a meta-population would affect gene flow between occurrences. It would be akin to the present-day status of the prairie dog which was formerly a widespread meta-population of colonies. The decline and potential for loss of an occurrence is of concern and cumulative effects of the proposed bike trail would theoretically contribute to its demise.

There is one other cumulative effect of concern. This site is immediately adjacent to a Larimer county landfill. We have no surveys or other data to know what ecological effects are occurring presently in the interface however; in theory, the landfill is a likely source of trash and noxious weeds. Rather than consider the Bell's twinpod and the high diversity unit to be "compromised already", we see this as a reason not to make "matters worse" by creating more impacts.

Potential direct and indirect effects to Bell's twinpod from the proposed action would be added to other threats it faces including but not limited to residential development, mining, prairie dogs, invasion of non-native plants, herbicide treatments for weeds, natural succession, substrate erosion and climate change. All of these together constitute cumulative effects.

<u>Recommendations</u>

1) Consider a "No Action" alternative for the bike trail as proposed through Cathy Fromme NA. This would entail finding some other location outside of environmentally sensitive areas to accommodate recreation enthusiasts.

2) If a "No Action" alternative is not acceptable, CoNPS respectfully requests the opportunity to

3) work with the City to find an on-the-ground alignment that would lessen the direct impacts. We note, that this mitigation would not lessen any of the indirect or cumulative impacts we are concerned about.

4) Of highest value, we urge the City to prepare a management plan for Bells Twinpod and the High Diversity Areas that includes BMPs the City would adopt. This would prevent the assumption that these types of impacts are acceptable and once done here they can be repeated elsewhere. A conservation/management plan of this type with specific BMPs would help secure the future of these important pieces of local biodiversity in City managed lands. Such a plan would identify the types and amounts of impacts that would be acceptable. As part of a management plan for both the twinpod and the high diversity areas, some areas could be "locked up" and committed to no future development proposals. Such a plan would demonstrate very clearly that Bell's twinpod has a secure future on City lands. CoNPS would be happy to spearhead the development of such a plan.

5) Although there are some individuals in cultivation, it is not recommended to use ex-situ methods of mitigation for Bell's twinpod.

6) If the "No Action" alternative is not pursued and the City proceeds with development of this bike trail as proposed, the twinpod occurrence and the HD area should be monitored. Monitoring should be done for 2 reasons and should not be perceived as a panacea. Monitoring would:

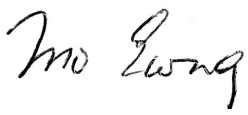
    a) allow land managers to learn firsthand whether the potential impacts manifest and to what extent. This provides the organization knowledge to consider next time a similar proposal arises.

    b) provide a framework for "Adaptive Management". Adaptive management means that monitoring will be conducted in such a way that results can alter the course of the project. For example, if monitoring shows that twinpod occurrence declines or weed invasions become greater than a pre-determined threshold, that actions will be taken. Possible actions in this case might include closing the trail. We recommend a monitoring plan that contains such management contingencies be developed if the trail is built and we stand ready to assist, if desired.

7) Independent of the Foothills Plan, we recommend that any use of trend monitoring for Bell's twinpod be done based on demographics instead of simple density. This requires permanent tags on/at each plant and should be done annually for at least 5 years. Sometimes demographic studies require more than one visit per growing season to ascertain the true biology of the species. If CoNPS can help with establishing and reading demographic monitoring plots, we would be happy to do so.

Again, thank you for the opportunity to review and comment on the Fossil Creek Natural Areas Management Plan. We believe that the potential environmental impacts we have described here would be significant. If you have questions or would like to discuss these comments please contact Renee Galeano-Popp, Northern Chapter President, CO Native Plant Society at 970-472-5423 or mtnpoppies@aol.com.

Sincerely,



Mo Ewing
Conservation Chair
Colorado Native Plant Society