

# Participatory management to engage society with the planning of protected areas: a mountain bike trail planning

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Participatory management is the practice of involving members of a group, such as employees of a company or citizens of a community, in organizational decision making in issues that concern these people. It is used as an alternative to traditional vertical management structures, and in outdoor recreation management it has shown to be effective in clarifying the aspirations and intentions of different stakeholders. Participatory management can result in a reduction of potential social conflicts and natural impacts and – in the context of outdoor recreation - reduce the creation of unauthorized trails (NEWSOME et al., 2016). Similar to Newsome et al. (2016), we have implemented a collaborative approach to develop a mountain bike trail at Tupi Research Station, a public natural area in São Paulo State, Brazil. Between mid-September and late November 2017, we conducted surveys during the weekends to better understand the perceptions of visitors (mountain bikers and hikers) regarding the recreational use of mountain bikes. The survey focused on perceived social conflicts and also in whether the visitors would be willing to actively and voluntarily participate in the design and future management of a mountain bike trail in the area. The main idea was to separate the hikers and bikers once the area only has walking trails and old log roads that have been used by both visitors. Besides the greater intention showed by the respondents to collaborate in the process we had low initial involvement at a first public meeting in 2018.

## Methods

Between September 16th, 2017 and November 26th, 2017, we conducted surveys of visitors (mountain bikers and hikers) at Tupi Research Station (E.E. Tupi, in Portuguese). We initially conducted only surveys as this method is often used in outdoor recreation planning (MANNING, 2009; ROSSI et al., 2013; VEAL, 2011). However, we expanded our methods by organizing a public meeting on February 24th, 2018. We did this based on Smith's (2003) research on deliberative democracy wherein the author argued that democratic processes fail when subjects are only allowed to express their opinions and needs individually, isolated from the collective in which they can deliberate, argue, confront views and change opinions.

The public meeting was advertised at the official website of the governmental institution responsible for the management of Tupi Research Station (Forest Institute) as through direct e-mail to all visitors that were interviewed in 2017 who manifested interested in the participatory management of the mountain bike trail. The meeting consisted of talks given by the conservation professionals who work at E.E. Tupi as well as by the people involved in outdoor recreation research at the area. Additionally, there were break-out sessions where participants were asked to think about the ideal bike trail they would like to have in that area.

## Preliminary Results

We conducted 112 interviews for the survey; 56 mountain bikers and 56 hikers. 60,7% of the hikers reported having met bikers along their way. However, only two hikers (5,9%) said their experience was negatively affected by these encounters. In one case the hiker

experienced a fast biker who did not slow down when approaching the hiker, and in the other case the hiker did not like sharing the same trail with a biker. Generally (82,3%), the hikers surveyed enjoyed encountering with bikers for they believed the encounters denoted safety in the area and opportunities for socialization.

The surveys also questioned whether the visitors would be willing to actively and voluntarily take part in a participatory management of mountain bike trails at *Tupi Research Station*. 48,2% of the hikers and 66,1% of the bikers surveyed manifested interest in being a part of this participatory process which meant 64 people. However, at the first public meeting in February 2018 where these people would again be listened to only two bikers previously surveyed showed up.

It is known in science that subjects will often respond positively to questions that pass a good image of themselves or of an institution they represent (AJZEN, 1991; MANNING, 2009) which means that the ones who manifested interest in being part of the participatory management of the trails may have only done so not to give a bad image of themselves.

Nonetheless 32 people participated in the public meeting among which 11 bikers (the 2 previously interviewed and 9 newcomers) which represented 34,38% of the group; 7 hikers (none who had been previously interviewed) who represented 21,88% of the group; 4 people from the academic community (12,5%); 2 employees of state environmental agencies (6,25%); 2 employees of city environmental agencies (6,25%) and 6 scouts (18,74%).

These were divided in smaller groups of five or six people – mixed groups preferably with one hiker, one biker, one graduate student, one scout and one worker either of the city hall or of E.E. Tupi so that discussions could be rich in variety of points of view.

These groups were asked to discuss again – now collectively - a question that was in the survey targeted for bikers: “rank the following features of a mountain bike trail in importance to you as a visitor”. Each group discussed this and in the end of the meeting a chosen spokesperson for each group to summarize their opinions. Their results were combined based on Likert scale evaluation and they were summarized as a group ranking (table 1).

The next steps of the participatory mountain bike trail management process will further address features that are perceived as important both individually and collectively (e.g. a narrow trail), avoid what is perceived as negative (e.g. gravel and ramps), and make an implementation plan that also takes the conservation goals of the natural area and available volunteer work force into consideration.

Table 1. Comparative results of MTB trail feature evaluation

<i>Rank the following MTB trail features in importance to you as a visitor.</i>	
<b>Survey results (individual)</b>	<b>Public meeting results (collective)</b>
1. Natural inclination (ups/downs)	1. Broad trail
2. Narrow trail	2. Narrow trail
3. Bridge	3. Bridge
4. Natural obstacles (i.e. stones, trunks)	4. Natural inclination (ups/downs)
5. Ramp	5. Natural obstacles (i.e. stones, trunks)
6. Broad trail	6. Ramp
7. Gravel	7. Gravel

After the first meeting, a new public announcement went out for participation in a field reconnaissance of the proposed mountain bike trail area. The trails already in use by cyclists were not designed for this specific purpose and processes of erosion are already intensifying. The intention is to keep the existing trails for hikers and adapt the old log tracks for bikers.

Our methodology involves four public meetings for planning and designing the mountain bike trail. The last step of the participatory management approach is the trail construction by volunteers of the different stakeholder groups.

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