RESEARCH ARTICLE

PEOPLE AND NATURE · BRITISH ECOLOGICAL SOCIETY

How stable are visions for protected area management? Stakeholder perspectives before and during a pandemic

Veronica B. P. G. Lo[1] | María D. López-Rodríguez[2] | Marc J. Metzger[3] |
Elisa Oteros-Rozas[4,5] | Miguel A. Cebrián-Piqueras[6] | Isabel Ruiz-Mallén[2] |
Hug March[2,7] | Christopher M. Raymond[1,8,9,10]

[1]Department of Landscape Architecture, Planning and Management, Swedish University of Agricultural Sciences, Alnarp, Sweden; [2]Internet Interdisciplinary Institute (IN3), Universitat Oberta de Catalunya (UOC), Barcelona, Spain; [3]School of Geosciences, University of Edinburgh, Edinburgh, UK; [4]Chair on Agroecology and Food Systems, University of Vic, University of Central Catalonia, Vic, Spain; [5]FRACTAL Collective, Spain; [6]Department of Agricultural Economics and Rural Development, University of Göttingen, Göttingen, Germany; [7]Estudis d'Economia i Empresa, Universitat Oberta de Catalunya (UOC), Barcelona, Spain; [8]Helsinki Institute of Sustainability Science, University of Helsinki, Helsinki, Finland; [9]Ecosystems and Environment Programme, Faculty of Biological and Environmental Sciences, University of Helsinki, Helsinki, Finland and [10]Department of Environmental and Resource Economics, Faculty of Agriculture and Forestry, University of Helsinki, Helsinki, Finland

Abstract

1. Envisioning processes enable protected area managers to chart a course for future management to reach desired goals, but unexpected changes that could affect future visions are not usually considered. The global COVID-19 pandemic provided an opportunity to explore changes in stakeholder visions, the values that underpin the visions, and their perceptions of landscape changes and the underlying drivers (e.g. climate change, mass tourism and demographic trends).

2. Through a mixed-methods approach in this post-evaluation study, we gathered comparative data on these issues from stakeholders in the Sierra de Guadarrama National Park, Spain, between July 2019 (pre-pandemic) and October 2020 (mid-pandemic).

3. Our qualitative analysis demonstrates that pre-pandemic, differences in visions for protected area management were largely spurred by different perceptions of drivers of change, rather than differences in values or perceived landscape changes, which were similar across different vision themes.

4. One year later, in the midst of the COVID-19 pandemic, the majority of stakeholders reported that their values, visions and perceptions of drivers did not change despite this large-scale disturbance. Of the 20%–30% of stakeholders that did report changes, visions generally shifted towards greater prioritization of biodiversity and nature conservation as a result of heightened perceptions of the impacts of drivers of change associated with an increase in the numbers of park visitors. These drivers included mass tourism, mountain recreation, lack of environmental awareness, and change in values and traditions.

5. Our findings reinforce the importance of adaptive and inclusive management of protected areas, including enhancing transparency and communications regarding factors driving change in the landscape, and integration of local and traditional knowledge and stakeholder perceptions of changes and drivers. Furthermore, management plans integrating stakeholder values have the potential to stay relevant even in the face of wildcard events such as a pandemic.

6. To enhance the relevancy of visions and scenarios in conservation and land-use planning, scenario planning methodologies should more strongly consider different potential disturbances and how drivers of change in the near and far future can be affected by wildcard events such as a pandemic.

1 | INTRODUCTION

Scenario planning is increasingly used as a bottom-up approach for managing complex social–ecological systems in response to multiple system stresses, the climate emergency and competing policy priorities (Butler et al., 2020; Flynn et al., 2018; Totin et al., 2018; Wesche & Armitage, 2014). Envisioning is one type of scenario planning process for building normative scenarios, or visions, describing what *should* happen in the future (e.g. Metzger et al., 2018; Pereira et al., 2018; Rana et al., 2020). Visions can help to chart a course, direct actions, and enable policymakers to identify opportunities for facilitating change (Hamann et al., 2020). Exploratory scenarios, on the other hand, consider a range of plausible futures, or what *could* happen in the future. In comparison with exploratory scenarios, visions have potentially greater relevance to decision-makers, as they focus on specific desired futures, particularly when combined with participatory processes where stakeholders can play a key role in shaping visions (Rounsevell & Metzger, 2010). To better understand system uncertainties, recent studies have identified relationships between visions and several drivers of change simultaneously (Garteizgogeascoa et al., 2020; Maury et al., 2017) and by drawing on complementary methods to assess visions (Accastello et al., 2019; Andreotti et al., 2020).

In recent years, participatory scenario planning (PSP) has been used to inform uncertainties and trade-offs in conservation and land-use planning, and define management strategies towards desired sustainable futures (Burton et al., 2019; Mangnus et al., 2019; Palomo et al., 2011; Vannier et al., 2019). PSP can help facilitate dialogue between experts and stakeholders, enhancing the relevancy and acceptance of scenarios (IPBES, 2016); promote social learning and incorporation of multiple forms and systems of knowledge to fill important knowledge gaps in system dynamics (Oteros-Rozas et al., 2015); build consensus, trust and cooperation among participants (Allington et al., 2018; Barnaud & Van Paassen, 2013; Kohler et al., 2017); and enable an integrated understanding of landscape and socioeconomic dynamics (IPBES, 2016; Peterson et al., 2003; Wilkinson, 2012).

However, there are multiple challenges in eliciting visions. While visions are explicitly normative, the value assumptions underlying visions are often not explicitly reported, risking that certain world-views dominate the planning process (Metzger et al., 2010; Oteros-Rozas et al., 2015; Thorn et al., 2020). Furthermore, visions may not be representative of the nuances of the real world, including scale, rate and intensity of drivers of change (Bennett et al., 2016). Despite increased attention to assessing the multiple values of nature (e.g. Arias-Arévalo et al., 2017; Chan et al., 2016; Zafra-Calvo et al., 2020), there is still a need to explicitly engage with local values for protected areas (Robinson et al., 2012) and there remains an absence of empirical evidence for connecting such values, visions and perceptions of landscape change (Cebrián-Piqueras et al., 2020).

Another challenge relates to the assumption that visions are static and do not change over time, leading to their redundancy for reflexive, adaptive decision-making once unexpected disruptions occur (Butler et al., 2020). In envisioning processes, visions are often elicited for an approximately 30-to 40-year period, revealing desired futures during the working life of stakeholders or their children (Robinson et al., 2011) while enabling reflection of possible changes to legal and social systems (Mangnus et al., 2019). However, different factors may influence the stability of visions (i.e. their resistance to change) such as the influence of disruptive events and regime shifts (Nilsson et al., 2019), or the potential for power relations to influence ecosystem values (Berbés-Blázquez et al., 2016). Temporal dynamics have been explored in some scenario analyses, such as using multiple time period horizons, for example, by March et al. (2012), but these approaches do not account for potential short-term changes or disturbances that may affect future visions. Follow-up research to explore changes in visions are rare in methodologies employed to date, particularly in the context of protected areas.

In the same vein, shifting values and how they occur are an identified research gap when planning desired futures (Raudsepp-Hearne et al., 2020). Deliberation and social learning can lead to short-term

shifts in peoples' values (Raymond & Kenter, 2016). An individual's transcendental values may be affected by changes in the composition of the group or community they belong to, by changes in their life-course over time in response to individual and societal changes, but the effect of stresses and shocks to the social–ecological system that individuals or communities inhabit on value shifts remains largely unknown (Kendal & Raymond, 2018). In addition to an aggregation of individual value shifts, societal shifts in values may also occur through intergenerational replacement or migration (Manfredo et al., 2020). However, to our knowledge, there is a lack of empirical research for understanding how values related to protected areas may shift in response to large-scale perturbations, such as pandemics.

During the current COVID-19 pandemic in particular, protected and conserved areas have been significantly impacted by decreased capacity, budgets and effectiveness, and impacts on community livelihoods (Strassburg et al., 2020) and globally varying impacts on conservation and management activities, visitor services, stakeholder engagement and threats (Waithaka et al., 2021). Managers have been faced by competing priorities given reduced staffing and budgets, resulting in interrupted or delayed research and monitoring of ecosystems, management of invasive species or restoration of degraded habitat (Miller-Rushing et al., 2021).

There have also been increases in the frequency and amount of visitation to green spaces and natural parks (Day, 2020; Lu et al., 2020) that are dependent on country- or region-specific lockdown regulations. These have resulted in management and enforcement impacts and direct ecological impacts (Hockings et al., 2020). While some scenario studies have explored the impacts of theoretical system perturbations or shocks on scenario pathways (e.g. Brown et al., 2016; Hamilton et al., 2020), the COVID-19 pandemic provided an opportunity to explore what happens to stakeholder visions when an actual and unexpected system shock affects communities in multiple waves, with a prolonged period of changes and uncertainty after each wave. In some places, such a disturbance may serve as a hypothetical substitute for considering impacts to landscapes that may normally occur over a scale of several years to decades. For example, increased visitation as a result of the pandemic may be a proxy for the overall global rise in tourism in parks and protected areas over the past 100 years, partly attributed to aging and fitter populations in some countries (Eagles, 2004).

In this study, we draw upon a mixed-method exploratory research design in a post-evaluation study to enhance understanding of how different individual visions are related to values and perceived landscape changes and drivers of change. We then examine whether and how these visions and related elements (values, landscape changes and drivers) are being shaped by the global COVID-19 pandemic. Here, values are referred to as respondents' values for nature (hereafter referred to as 'values' for simplicity), which include intrinsic, instrumental and relational values assigned by stakeholders to people, places or things related to the SGNP landscapes (building on Brown et al., 2020; Chan et al., 2016; Díaz et al., 2018; García-Martin et al., 2017; Himes & Muraca, 2018). Drivers of change include both socioeconomic and biophysical, direct and indirect drivers, based on

the conceptual framework of drivers of change in the Millennium Ecosystem Assessment (Millennium Ecosystem Assessment, 2005).

Scenario planning and management of drivers in uncertain times are particularly salient to mountain socio-ecological systems as they are ecologically and economically sensitive to rapid global change with consequences for local mountain environments and human well-being (Brunner & Grêt-Regamey, 2016). Such is the case for the Sierra de Guadarrama National Park (SGNP), Spain, which is densely populated in the surrounding area, with approximately six million people living within a 1-hr drive of the park. High visitation rates compound impacts on biodiversity and ecosystem services through increased pollution, decreased water quality and trampling/erosion, leading to interpersonal conflict reflecting a recreational goal interference among user groups who have direct or indirect contact (e.g. hikers vs. mountain bikers; Vaske et al., 2017) and social values conflict reflecting a difference in beliefs or social values between user groups even if there is no contact between them (e.g. a philosophical difference in how to use or manage a trail; Gómez-Limón & de Lucio, 1995; Rodríguez-Rodríguez et al., 2017). We track the stability and change in individual visions, values, and perceived landscape changes and drivers of change over an approximately 1-year period between July 2019 and October 2020, gathering comparative data on these issues from stakeholders. The second half of this 1-year time period coincided with the first and second waves of the global COVID-19 pandemic in Spain. Spain was one of the European countries most affected by the pandemic during that period, and the particular region around our study area was one of the most impacted within the country.

2 | MATERIALS AND METHODS

2.1 | Study area

The Sierra de Guadarrama National Park (SGNP) is a continental Mediterranean peri-urban mountainous area of 33,960 ha in central Spain, designated a national park in 2013 (BOE, 2013). It has a long history of recreational use and high visitation rates, and it is in close proximity to the Spanish capital, Madrid (Rodríguez-Rodríguez et al., 2017). The SGNP was ranked the second most-visited National Park in Spain in 2015 (INE, 2017), with approximately 2.4 million visitors in 2019 (PNSG, 2020). Aside from recreation, the SGNP also holds cultural and historical significance, and supports livestock farming. Such multiple uses and values in the SGNP lead to a range of different visions for its future management.

The park is zoned into different management areas, which include the official national park, a special protection area in the Montes de Valsaín forested mountain range that has similar legal status, a peripheral protection zone with a legal designation to protect the ecological values of the Park in the surrounding area, and an area of socioeconomic influence composed of 34 municipalities in the autonomous communities of Castilla y León and Madrid, covering 62,687 ha (excluding urban areas; Figure 1, Parque Nacional de Sierra de Guadarrama). The management plan for the park and
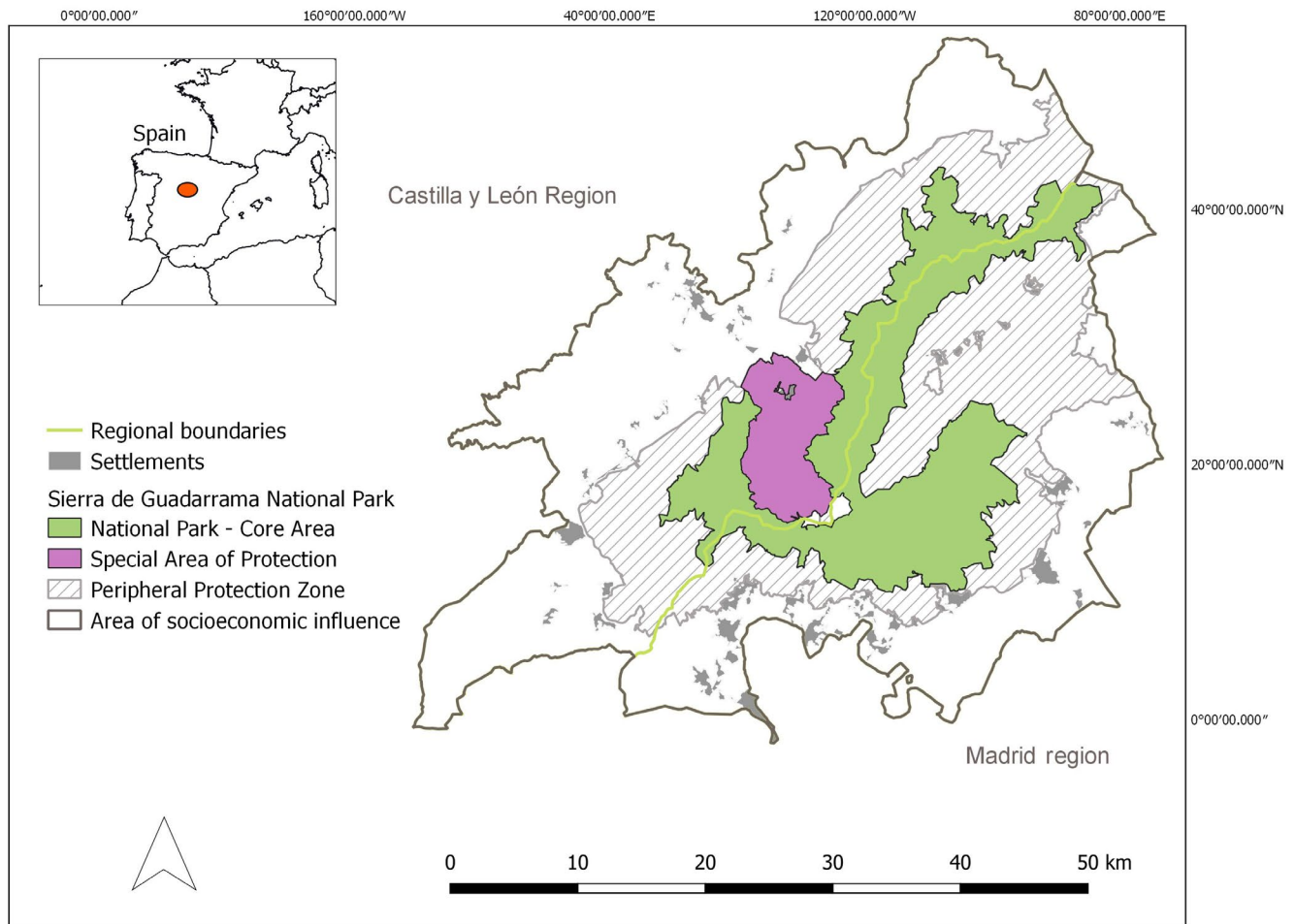
FIGURE 1 Management boundaries of the Sierra de Guadarrama National Park (SGNP), Spain, including a Special Protection Area, Peripheral Protection Zone and Area of Socioeconomic Influence including surrounding municipalities

its special protection area is outlined in the Master Plan for Use and Management (PRUG), developed and approved for each autonomous community (BOCM, 2020; BOCYL, 2019).

The Sierra de Guadarrama region is facing multiple interacting drivers of change. These include mass tourism leading to tensions for management, such as considering trade-offs between achieving the conservation objectives of the park and local socioeconomic development (López & Pardo, 2018; Nieto & Díaz, 2014). Other major direct drivers include climate change leading to drought and changes in vegetation ranges and phenology, and land-use change leading to high fuel loads which increase the risk of forest fires (Doblas-Miranda et al., 2015; Martínez-Vega et al., 2017). Socioeconomic drivers of change include urbanization (Kuemmerle et al., 2016), loss of traditional uses including pastoralism, and changes in values, traditions and knowledge (Vías, 2016).

2.2 | Research approach

The research was conducted in two phases (Figure 2), and was designed as an exploratory study drawing upon techniques to

understand the depth and breadth of the associations between visions, values, and perceived landscape changes and drivers of change. Preparatory work involved analysing past and current drivers of change in the landscapes of the SGNP based on a review of peer-reviewed and grey literature. Phase 1, carried out in July–September 2019, involved in developing a semi-structured interview script. The script integrated graphical elements from an open-source narrative synthesis tool for stakeholder engagement called STREAMLINE (Metzger & De Vries Lentsch, 2018). The graphical elements were in the form of canvasses which served as a backdrop for participants to move illustrated tiles corresponding to various preferences related to visions for park management (further described below). The aim of using canvasses and tiles was to stimulate the imagination of stakeholders, conduct the interview in a timely manner and provide the interviewer with opportunities to prompt for further context. The canvasses and tiles were selected from a larger online catalogue and customized or re-drawn professionally with a local company to fit the socioeconomic and biophysical context of the national park and the interview (see also Burton et al., 2019; Pérez-Soba et al., 2018). The selection of all tiles and canvasses were tested in pilot interviews
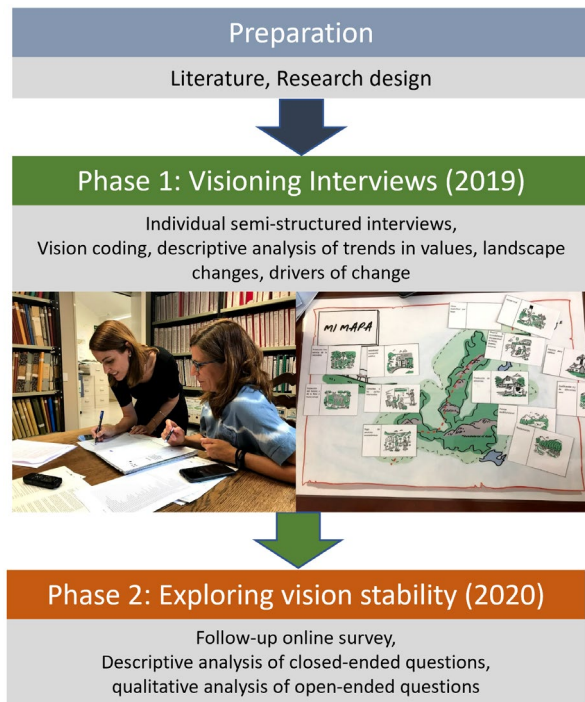
FIGURE 2 Schematic representation of the research process as it was applied to the case study of the Sierra de Guadarrama National Park. Inset photos show an example of a semi-structured interview (left) and illustrated canvasses and tiles (right). Photos by Veronica Lo, left inset photo with written permission from María D. López-Rodríguez, researcher (on the left) and Patricia Riquelme Osado, Co-Director, Sierra de Guadarrama National Park (Delegación Territorial de la Junta de Castilla y León en Segovia)

and refined (S1). Phase 2 involved designing a follow-up online survey, issued approximately 1 year after the interviews in September 2020 regarding changes to visions and reflections on the interview process and methodology (S2).

2.3 | Phase 1: Visioning interviews (2019)

2.3.1 | Sampling

Stakeholders were purposefully sampled to include individuals with professional connections to the park, and determined to be either influential in park management, or be influenced by decisions taken for park management. An initial list of key stakeholders was expanded upon using the snowball technique, including individuals mentioned at least twice by other stakeholders (as described in López-Rodríguez et al., 2020). In all, 38 stakeholders were interviewed in July and September 2019, with stakeholders representing different levels of government, technical staff of the National Park, representatives of sectoral associations and non-profit organizations, and others (Table 1). The municipal and regional/national government classifications represent state actors with public policy-making and general administration functions at different decision-making scales.

The respective directorates of the SGNP of the autonomous communities of Madrid and Castilla y León are the two regional public administrations that share the legal authority in conservation decisions and natural resources management in the SGNP (BOE, 2013). A third of the stakeholders were female (although approximately 50% of stakeholder invitations were issued to women), and 55% of stakeholders worked in the portion of the park located in the region of Madrid, whereas the rest worked in the portion of the park located in the region of Castilla y León.

2.3.2 | Semi-structured interviews

The interview script was divided into several sections: (a) participant's relationship with the park and their values; (b) visions for the park encompassing preferences for particular ecosystem services, management actions and uses; (c) perceptions of landscape changes within the past 10 years; (d) perceptions of drivers of change; and (e) actions or strategies to address changes and drivers (referred to as pathways). We began with the question on values to ease the participants into the interview as this was a relatively short and simple exercise, gradually increasing the complexity of questions while following a logical temporal flow. The interviews were 40–80 min long, and were conducted in Spanish. They were digitally recorded, transcribed and translated to English.

To elicit individual values (1), we presented a canvass illustrating different values for the SGNP landscapes, such as nature and biodiversity, clean air and water, forming social bonds, and existence value. Participants ranked each value on a Likert scale from 1 to 5, with 5 representing the highest value. For visions of management for the SGNP (2), the year 2040 was selected given the time range was within the foreseeable future for stakeholders and/or their children, while not being too close to the present so that long-term change could be possible (Mangnus et al., 2019; Robinson et al., 2011). Visions were elicited in multiple steps. First, stakeholders were presented with a stylized depiction of the national park and asked to discuss and prioritize envisaged ecosystem services, represented as illustrated tiles, for the park (S1). Relevant tiles for ecosystem services were selected to be representative of the possible range of services that stakeholders could derive from the park, including regulating services such as carbon mitigation; provisioning services such as freshwater from the Guadarrama river and tributaries, and timber extraction managed in the Montes de Valsaín; and cultural services such as spirituality and peace.

The next part of vision elicitation involved eliciting preferences for park management in further detail, where tiles were placed in three rows across the canvas, representing highest, medium and lowest preferences. Management actions and strategies that were selected were plausible within the 2040 time range, with some already being implemented to some degree in the park. The management action tiles ranged from enhancing public transport to the park, restoration measures, nature education programmes, maintaining multi-functionality and provisioning of economic rural support. Stakeholders then

Stakeholder category	Interviews		Survey	
	Number (/38)	%	Number (/21)	%
Sector				
Government: municipal	8	21	4	14
Government: regional/national	7	18	4	19
National Park technical staff	5	13	4	19
Cultural/historical association	4	11	2	10
Private sector (small and large businesses)	4	11	1	5
Environmental non-profit	3	8	2	10
Tourism and recreation (private institutions)	4	11	2	10
Education and research (public)	1	5	1	5
Livestock farming	1	3		
Rural development	1	3	1	5
Gender				
Female	12	33	6	29
Male	26	67	16	76
Autonomous community				
Madrid	21	55	15	71
Castilla y León	17	45	6	29

selected permitted and prohibited uses within the national park on a separate canvas, and repeated the exercise for uses within the peripheral zone of the park. The selection of different uses in the park reflected current activities in the park, such as hiking, mountain biking, or foraging, or activities or infrastructure that could be introduced to certain areas in the foreseeable future, such as more parking lots, bus routes or restaurants. Throughout each exercise of eliciting visions, blank tiles were offered to stakeholders to include new ideas that were not represented in the original selection.

To elicit perceived landscape changes (3) and drivers of change (4), we began with a literature review and initial discussions with three key representative stakeholders to draft an initial list of changes and drivers impacting the park over the last decade. This preliminary list of changes and drivers was further refined and adapted to the local context after piloting the list with local stakeholders. Stakeholders were first asked to rank their perceived level of importance of landscape changes (degree or intensity of changes) and drivers of change using a Likert scale of 1–5. Next, stakeholders were asked to note any missing categories of either changes or drivers and to illustrate with arrows the connections between the most important drivers of change. Finally, they were asked to briefly reflect on the changes and drivers they had ranked and discuss any management actions and strategies (5) they would take to account for the drivers of change, now or in the future.

2.3.3 | Data analysis and validation of visions

Inductive thematic analysis of interview transcripts was conducted to systematically derive and analyse concepts and themes related to visions. This approach enabled us to explore how stakeholders interpreted interview questions, thus allowing unexpected themes to emerge, and prevented the restriction of our study to predetermined concepts (Boutillier et al., 2011).

Using open-source RQDA software (Huang, 2016) on the R platform (R Core Team, 2020), we coded interview transcripts through several rounds of coding: initial open coding to identify emerging concepts through a recursive process (e.g. mushroom-picking, pinecone collection, local economies), axial coding to identify connections between concepts (e.g. local products connected to community economic benefits), and thematic coding to derive major themes associated with different visions (S2, Table 2). The linkages between the major themes and codes were explored and revised by re-examining original interview transcripts and coding for new data in an iterative process. The frequency of codes and themes occurring across the interviews was then recorded. Vision descriptions were created based on the related codes, illustrative quotes, and aspects of values, drivers, ecosystem services, economy and governance.

Rankings of individual landscape values and perceptions of importance of various drivers and changes are described in terms of percentages of stakeholder preferences. Associations between visions and values were explored by calculating the arithmetic mean scores for each category of values associated with a particular vision. This process was repeated to explore the associations between visions and perceptions of landscape changes and drivers of change.

2.4 | Phase 2: Exploring vision stability (2020)

In September and October 2020 (approximately 1 year after the interviews took place), we issued a follow-up online survey to obtain

TABLE 2 Description of major 2040 vision themes in the SGNP, with descriptive quotes from interviews (identified by stakeholder type, gender and interview number)

Vision themes

Cultural roots—Providing local economic benefits and restoring traditional uses: By 2040, the past and present role of local communities in shaping the landscapes of the SGNP are recognized. Tourists visit both the SGNP and the surrounding villages, bringing economic benefits to the locals. Municipalities are more involved in decision-making. Traditional knowledge of the land is valued and being passed on to future generations, and the cultural and historical features of the park are recognized. Incentives and subsidies attract people to find sustainable employment in the villages, such as selling local certified products from the park.

You have to talk to people to know how the territory that has become a protected area was managed…particularly the area of socioeconomic influence, which is the area that has been used. Up there, people (gabarreros) generally went up to collect firewood, and brought their sheep to graze… we have to know how the territory was managed to understand how we can face these changes. (Culture and history association; male; 088)

There are a lot of technicians, bureaucrats, politicians, specialists, a lot of people who know a lot or who say they see a lot but…what he knows is in theory and not in practice. For me, those who know about a park like the SGNP are all the local actors, the cattle ranchers, the farmers, the people. (Environmental NGO; male; 083)

Integrated landscape management—Balancing preservation with enjoyment: By 2040, the SGNP is a multifunctional space with areas managed for nature protection, agriculture, timber harvesting, and hard and soft recreation. Trails are designated for different recreational uses, bathing is permitted in certain areas; hunting is permitted to control overpopulation of certain species. Livestock farming and traditional uses are integrated into management plans to prevent fire risk and maintain hydrological regimes.

Combining conservation of the natural space with all the participants and all the people involved because if they do not get involved, they are not going to preserve it. In other words, preservation but, at the same time, some controlled activities can carry out because if you only preserve, in the end, you achieve nothing. You'll have a lovely park, but you can't even go in to see it. (park technical staff; female; 040)

Valsaín is a very good model with protection zones, exploitation zones and livestock zones. And the cattle raising is also associated. Besides, livestock farming has some beneficial differences if it is well regulated for fires, which is one of the problems we have seen in the Park. We have to take this into account. (private sector; male; 085)

Ecosystem services—Prescription for health and well-being: By 2040, the SGNP has the capacity to provide municipalities and surrounding area with clean air and water, and the forests are recognized and managed for absorbing carbon to help mitigate climate change. Local food products provide economic benefits. The landscape's natural and cultural features enhance the mental and physical health of local residents and park visitors, including providing inspiration and spirituality. Uses are limited in the boundaries of the National Park to ensure continued flow of natural services.

The population of these natural environments is healthier, perhaps even living longer or with more quality, than the population living in cities or more anthropized or industrialized environments. What it brings in health compensates for everything that can be invested because you save it in health, in hospitals, in doctors. (Tourism and recreation; male; 067b)

Water, carbon storage, mitigation of climate change: this is our daily bread, without the Sierra de Guadarrama, I think Madrid, as a city, would not be sustainable, therefore, it is important these parks remain as they are because great cities could not subsist without them. (Municipal government; male; 021)

Natural heritage—Preserving biodiversity and nature: By 2040, the unique biodiversity and natural features of the park are preserved for current and future generations. Endemic flora and fauna populations exist in delicate balance within the riverine, riparian and mountainous ecosystems. Recreations, such as foraging, hiking and mountain biking, are enjoyed in carefully managed areas in the peripheral zone, while higher nature protection is designated within park boundaries. Environmental education, conservation and restoration programmes are integral features of the park management plan.

In the SGNP….we have all the stages of the Mediterranean forest, the alpine zone, the intermediate zone of the oak forest because we have enormous biodiversity. Besides, we have areas, forests, relics of some autochthonous plants that we only have in the Guadarrama National Park. (Environmental NGO; male; 083)

We can build 5 million parks, but we must ask ourselves why we closed this with regulations. Within the world we are in, we must see it as an opportunity to compensate us for what we do not have elsewhere… In the Park, there should be super protective regulations because it is a super area, of course, and we should all learn that. (Regional government; male; 035)

insights into potential changes in visions, drivers of change and landscape management preferences during the pandemic. Individualized thank-you packages containing images of the canvasses and tiles were sent to each stakeholder, and also served as a reminder of the interview topics and an individual's responses (see S3). Reminders were sent to increase the survey response rate. Out of the initial 38 stakeholders who were previously interviewed in phase 1, approximately 55% responded (Table 1). Stakeholders were asked to reflect on whether the impacts of the COVID-19 pandemic affected their values, visions and perceptions of drivers of change using a 5-point Likert scale ranging from strong disagreement, disagreement, indifference, agreement and strong agreement, with the option to elaborate on their answers.

The results were analysed using descriptive analyses of closed-end questions and qualitative data analysis on the open-ended questions in the survey to describe patterns in changes, or stability, of individual perceived landscape values, 2040 visions for management, perceptions of drivers of change and pathways to achieve visions. Illustrative quotes were selected from the survey responses to provide context to any observations of change or stability.

This study follows guidelines for ethical research recommended by the Swedish Research Council (Vetenskapsrådet, 2017), whereby the purpose and voluntary nature of the research was clearly explained to all participants, prior and informed consent was obtained in writing, and participants were made aware that they could withdraw from the research at any time. All participants

were over 18 years of age, and agreed in writing on the data being used for research purposes and to be contacted for follow-up investigations. As this study was deemed to have a low risk of physical or psychological harm to the research subject, and without processing of sensitive personal data, the project did not require formal ethical approval in accordance with the Swedish Research Council's guidelines.

3 | RESULTS

3.1 | Visions before the pandemic

Four main themes for the visions of the SGNP emerged from the inductive thematic analysis of the interviews. In order of frequency of occurrence among interview respondents, the major themes were as follows: (a) Cultural roots—Providing local economic benefits and restoring traditional uses (34% of interview respondents); (b) Integrated management—balancing preservation with enjoyment (29%); (c) Ecosystem services—Prescription for health and well-being (24%); and (d) Natural heritage—Preserving biodiversity and nature (13%; Table 2).

Stakeholders belonging to different sectors (e.g. government, private, non-profit, etc.) showed preferences that were evenly distributed within the vision themes of cultural roots and integrated management. The themes of natural heritage and ecosystem services were preferred by stakeholders representing municipal and regional governments, with an even split between municipal and regional government stakeholders for natural heritage, and a predominance

(75%) of stakeholders representing municipal government for the ecosystem services vision.

3.2 | Perceived landscape values, changes and drivers of change before the pandemic

Overall, appreciation for nature (biodiversity, ecosystems), clean air and water, culture and history, landscape beauty and existence value were among the highest-scored values across all vision types, with mean scores from the Likert scale of 4.9, 4.9, 4.7, 4.6 and 4.5, respectively (Figure 3). 89% of stakeholders assigned the highest ranking, 5, to nature, 89% to clean air and water, 73% to culture and history, and 73% to landscape beauty (Figure 3). Other important values included landscape existence value, and local identity and spirituality, and outdoor recreation.

These perceived values were largely homogeneous across the four vision themes (Figure 4a). The lowest ranked and most divergent value was local products, with the lowest score (2.9/5) on average for the 'natural heritage' vision and highest under 'natural services' (4.4/5). Recreation was most highly valued under 'Natural services' (4.6/5).

Landscape changes in the SGNP perceived by stakeholders were mainly related to *hydrological changes* (68% of stakeholders), noting less snowmelt and rainfall and more episodes of drought in the past decade, and changes to *species populations* (53%), mainly given the overpopulation of ibex and wild boar species. *Erosion* due to high-impact recreational activities such as mountain biking and organized races was also noted as important (43%). Changes to *vegetation*
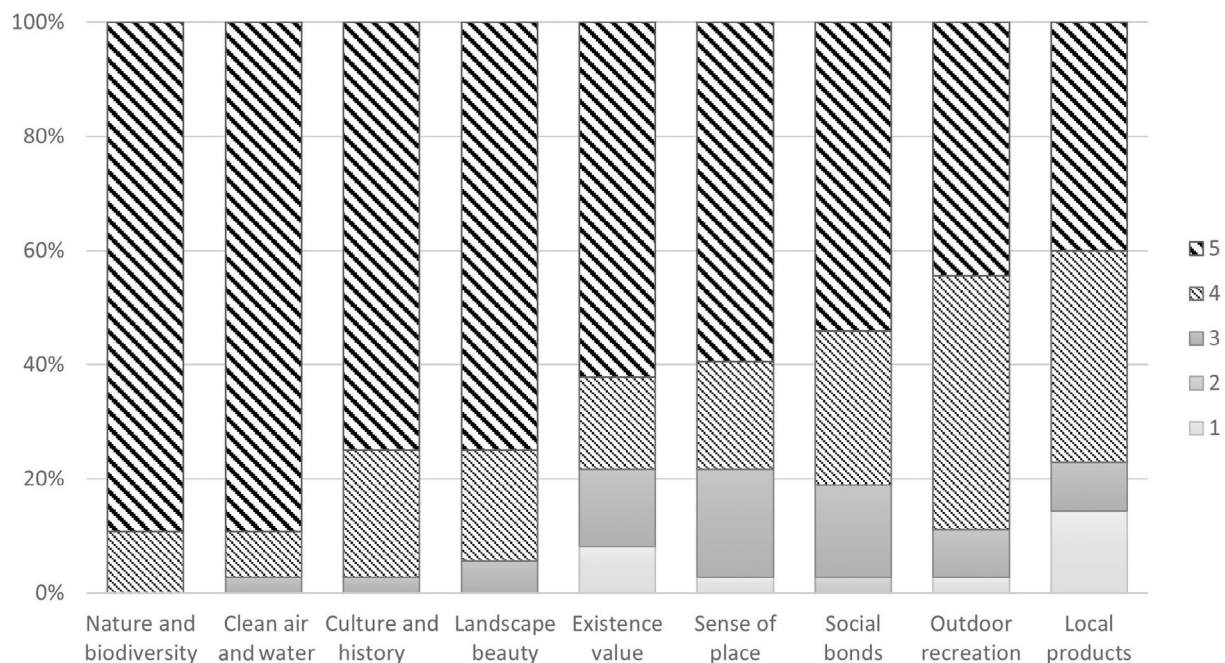

FIGURE 3 Stakeholder rankings of individual values related to the Sierra de Guadarrama National Park (across all vision themes), expressed as percentage distributions over a scale from 1 (least perceived importance of value to stakeholder, lightest colour) to 5 (highest perceived importance of value to stakeholder, dark stripes). *n* = 37
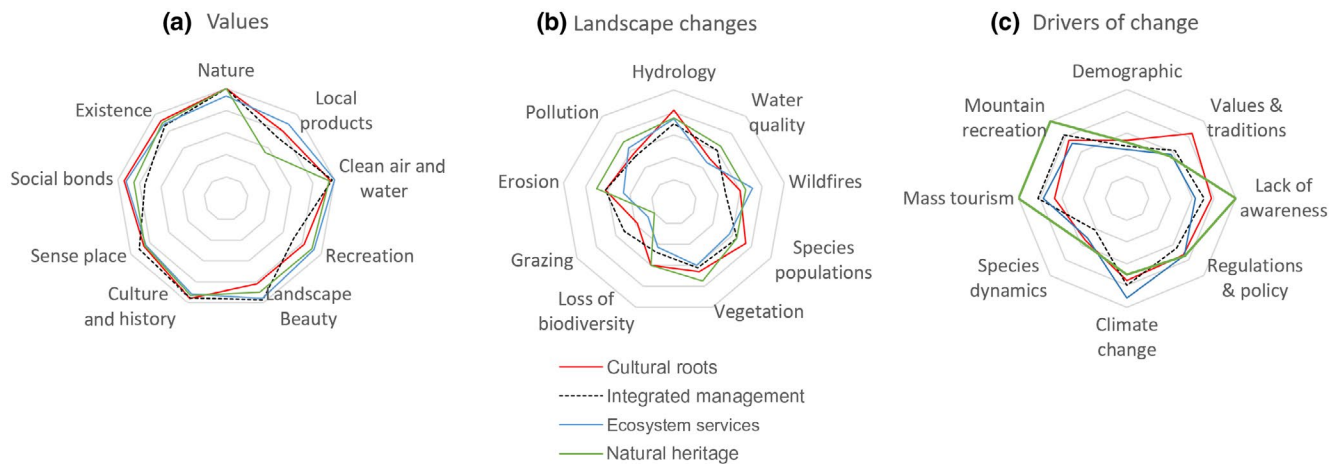
FIGURE 4 Mean values under each vision theme (Cultural roots, Integrated management, Natural services and Natural heritage) for (a) landscape value preferences (*n* = 38); (b) perceived importance of landscape changes (*n* = 30) and (c) perceived importance of drivers of change (*n* = 30), expressed as rankings on a scale from 1 to 5 corresponding to lowest importance to highest importance

included observations of the expansion of the range of oak trees and higher altitudinal range of Scots pine (*Pinus sylvestris*; 43%). The risk of *wildfires* and *pollution* were also regarded as important, with 38% and 37% of stakeholders ranking these landscape changes as high in importance, respectively. By contrast, approximately half of the stakeholders perceived changes in water quality and biodiversity to be of low importance (55% and 52%, respectively). While many of the perceived landscape changes in the SGNP were assumed to impact negatively on ecosystem status, functions or services, some stakeholders also highlighted positive changes. These included improvements to *water quality* and *biodiversity* following the implementation of restoration measures in riparian zones around Lake Peñalara, and following the enforcement of bathing restrictions within the national park boundaries. Similar to values, stakeholder perceptions of landscape changes were largely homogeneous across vision types (Figure 4b), with main differences related to grazing. Stakeholders associated with the 'Natural heritage' vision (1/5) assigned the lowest ranking to grazing, followed by 'Ecosystem Services' (1.3/5), 'Cultural roots' (1.9/5) and 'Integrated Management' (2.6/5).

As for the drivers of change, across all vision groups, stakeholders assigned high importance to *climate change* (80%), *mass tourism* (73%), *mountain recreation* (62%), *regulations and policy* (59%), and *traditions, knowledge and values* (57%). There was more variation between vision themes in the way that stakeholders perceived the importance of drivers of change (Figure 4c) relative to landscape changes. Under the 'natural heritage' vision, the importance attached to the drivers of mass tourism, mountain recreation and lack of education and awareness was higher than other vision themes (average value of 5/5 for each of tourism, recreation and education). Under the 'cultural roots' vision, the importance attached to changes in traditions, knowledge and values (average value of 4.2/5) was higher than in other vision themes. Examples include observations such as: '*People don't respect anything these days. There are prohibitions on bathing, but some days ago people got angry because their bathing was disrupted*

by firefighters coming in a helicopter to get water from the reservoir for putting out a fire. And two months ago, a 16-year-old boy drowned in the reservoir' (municipal government; male; 013), and '*Obviously, our perception on countryside and nature has nothing to do with our grand and great-grandparents*' in a rural, peasant, illiterate Spain, deeply rooted in hard work and misery and which had a lot to do with rural exodus. Now, most people live in cities, very disassociated from the countryside, and they have a very romantic vision of what nature is and what rural life is' (municipal government; male; 027a). Under the 'ecosystem services' theme, climate change had the highest mean ranking for importance compared to the other vision themes (average value of 5/5).

3.3 | Exploring vision stability

Stakeholders had divergent views about the perceived effect of the COVID-19 pandemic on individual landscape values, with 29% of stakeholders in agreement (including strong agreement) that values had changed since the outbreak of the pandemic in Spain, and 33% in disagreement (including strong disagreement), and 38% indifferent to whether or not their values had changed (Figure 5).

Perceptions of drivers of change, stakeholder visions and pathways (actions or strategies) to achieve visions were more stable than values (Figure 5), with a higher proportion of respondents disagreeing or strongly disagreeing that the pandemic had changed perceptions of the park (57%, 57% and 48% for stability of drivers, visions and pathways, respectively, compared with 33% for values). Stakeholders did not elaborate on why their values may or may not have changed when provided the opportunity to explain their answers in the survey. However, those stakeholders who felt strongly about the stability of their values noted that the pandemic only reaffirmed their values, or that they were already knowledgeable about the linkages between natural spaces and human health: '*Before COVID 19, I was already aware of the values of natural spaces to*
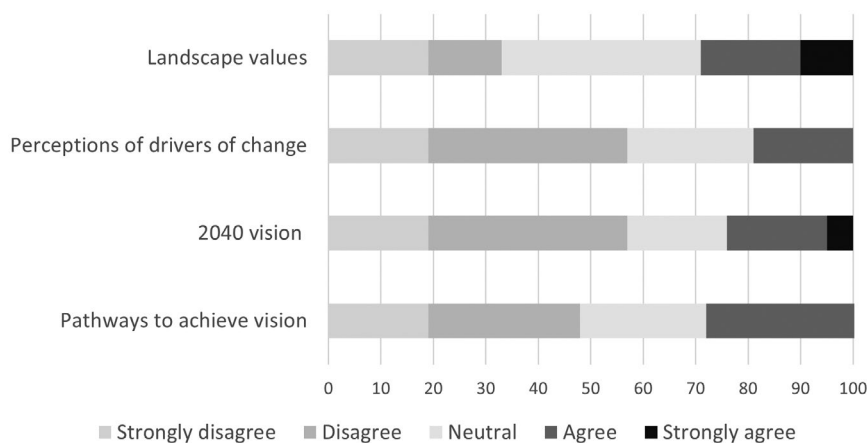
FIGURE 5 Level of agreement about the impact of COVID-19 on values, visions perceptions of drivers and pathways (actions or strategies) to achieve visions (neutral indicating neither agreeing nor disagreeing, or uncertainty)

improve human health and well-being' (Cultural and historical association; male; 072; cultural roots).

A lower proportion of respondents (~20%–30%) agreed that the pandemic had changed their perceptions of drivers of change, visions and pathways (management actions or strategies) to achieve their vision (Figure 5). Of those perceiving differences in landscape changes and drivers, stakeholders noted both increases and decreases in the recreational use of the park during different phases of lockdown. Some positive impacts on the landscape were noted in the short term, presumably during the most restrictive period of the lockdown before it was gradually lifted in mid-May 2020, resulting in a lower number of visitors to the park and hence lower recreational impacts. However, there were doubts that the pandemic would lead to any lasting positive effects on ecosystems in the long term: '*the consequences of COVID on the way people think and act will last only two or three years; little by little it will be diluted and we will return to 2019 as if everything had been a nightmare*' (Regional government; male; 003c; ecosystem services vision).

On the other end of the spectrum, other stakeholders observed increases in park visitation with corresponding negative impacts on the landscape: '*Inland tourism is saturating the host capacity of the closest natural environment*' (Tourism and recreation; male; 067b; cultural roots vision) and, '*With the pandemic, I have observed that the National Park has played a key role in the phases of deconfinement, offering even more an open space where the population has expanded, has walked, ridden by bike, has enjoyed recreational areas with even more demand*' (Park technical staff; 003e; cultural roots vision). Personal observations included a changing visitor profile more representative of urban areas, and more incidents of user conflicts: '*There have been many more incidents with cattle, bicycle accidents, seven metre falls in the Chorro de Navafría area*' (Park technical staff; 003e; cultural roots vision). These observations are supported by a 19% increase in park visits during the summer months compared to the previous summer (pre-pandemic; Aqui en la Sierra, 2020).

Across vision categories, stakeholders aligned with natural services and natural heritage visions generally reported greater stability of values, drivers, visions and pathways compared to the other vision themes. The only changes to visions and to management

pathways were reported by stakeholders in the cultural roots and integrated management vision themes. The stability of visions and management pathways was explained in terms of previously held views of management priorities: '*The conservation, protection and improvement of the natural environment was already essential before COVID-19, although now a priority axis is being demonstrated to avoid its degradation by being more used as relief and expansion to periods of confinement (lockdown) or the intensification of the closer and local activities to replace others more remote or distant*' (Tourism and recreation; male; 067b, cultural roots). Stakeholders who agreed that management pathways to achieve visions changed as a result of the pandemic noted that it provided an opportunity to observe the natural recovery of ecosystems from anthropogenic impacts, and to influence future management based on these observations: '*COVID-19 is a specific situation that can last for a few years, but the change will not be permanent. Its influence will help us to see how the park's ecosystems develop as there is less anthropic pressure and this can influence its future management, to adjust the protection zoning of the park and therefore the areas of public use*' (Cultural and historical association; male; 089; ecosystem services).

4 | DISCUSSION

4.1 | Stability of values, visions and perceived changes and drivers in a pandemic context

Our central aim was to understand how local visions for national park management are related to perceived landscape values, landscape changes and drivers of change, and how such visions and perceptions are affected by the global COVID-19 pandemic. While our study was not originally designed to explore the effects of a pandemic, our approach revealed some novel insights. Overall, there were varying degrees of change to values, with some stakeholders explaining that the pandemic reaffirmed their values. *Biodiversity, clean air and water, culture and history, beauty* and *existence* values all ranked highly across the different vision types before the pandemic (Figure 6). Those stakeholders who did perceive a change in values
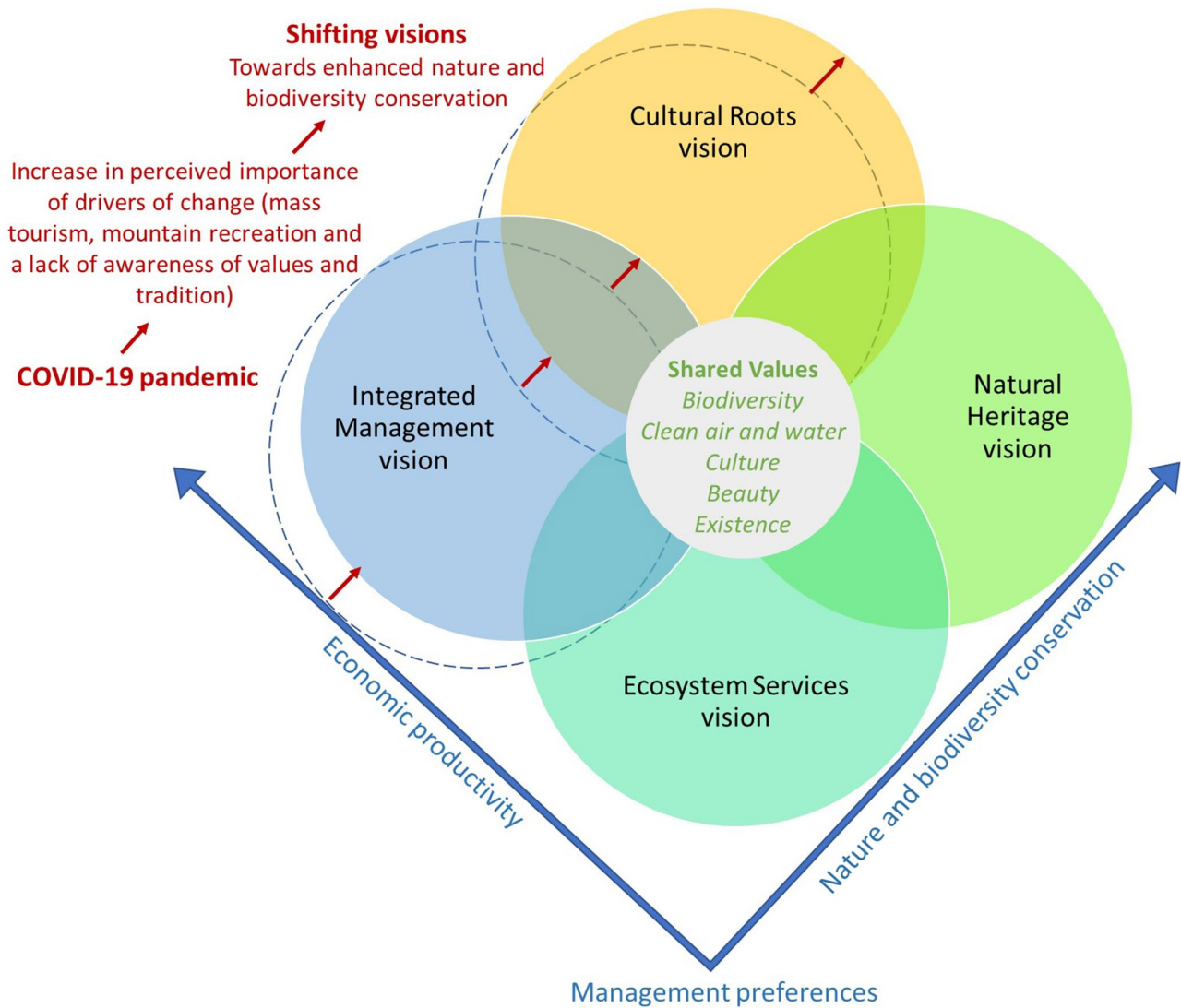
FIGURE 6 Mapping the effect of the COVID-19 pandemic, as a system shock, on visions for park management in the SGNP. The four vision themes of *Integrated management*, *Cultural roots*, *Ecosystem services* and *Natural heritage* are centred on shared values for nature (central sphere), and are plotted on two axes representing the competing management priorities of biodiversity conservation and economic productivity. The pandemic affected stakeholder perceptions of drivers of change, in particular the increased perception of the importance of certain drivers (red text), shifting the visions in the direction of increasing management for nature and biodiversity conservation, in response to the impacts of increased park visitation during the phases of deconfinement (lifting of lockdown policy)

indicated a greater appreciation of the park as a means to realize values of *outdoor recreation* and *social bonds* when alternative use of leisure time was restricted. Indeed, this is supported by Ugolini et al. (2020), who found that 'spending time outdoors' and 'meeting other people' were reportedly aspects of urban green spaces most missed by respondents of a survey issued during the various restrictive policies put in place during the pandemic across six European countries, including Spain. Other studies also note enhanced park or greenspace visitation in Europe; for example, in the UK, large-scale substitution of leisure time towards recreation in available greenspaces has been observed (Day, 2020). In Chengdu, China, while the pandemic reduced visitation to urban green spaces, they were still perceived by residents as important spaces for outdoor recreational and social interaction (Xie et al., 2020).

Similar to values, there was variation in how the COVID-19 pandemic shaped perceptions of drivers of change. Several stakeholders who indicated changes in perceived drivers emphasized in their survey responses the greater importance of *mass tourism*, *mountain recreation*, *lack of awareness* and changes *in values and traditions*, shifting visions in the direction of increasing management for nature and biodiversity conservation (Figure 6). The authors deduce that observations of increased visitation, incidents with bicycles and cattle, and a change in visitor profile likely occurred during phases of deconfinement when restrictive lockdown policies were gradually lifted beginning in May, with high visitation patterns continuing into the summer after the first State of Alarm was lifted on 21 June. These observations are supported by a clear pattern of increased visitation to the SGNP documented in the summer months, with 56% more

vehicles entering La Pedriza (a popular recreational area with access to Peñalara, the Park's highest peak) in June and 81% more vehicles in August compared to the previous summer (Sánchez, 2020). In the case of the SGNP, a contributing factor to increased visitation rates was likely the closure of urban parks in the Madrid region during strict lockdown and other phases of confinement, incentivizing visits to the SGNP or green spaces outside of cities. The closure of the Madrid autonomous community also meant that people who would have travelled to other regions remained in Madrid. Overcrowding, changing profile of visitors, problematic behaviour and conflicts between different user groups were also observed across national parks in Europe during the pandemic (McGinlay et al., 2020).

Manfredo et al. (2020) suggest that shifts over time in values for wildlife can favour biodiversity conservation. However, our results indicate certain nuances to this finding. Visions for managing protected areas in our case study were not driven mainly by differences in values, but rather differences in how one perceives drivers of landscape change over time (Figure 4). The effect of the pandemic was a shift in perceptions of drivers towards an increased awareness of certain drivers as an effect of the lockdown period and increase in mass tourism during deconfinement (Figure 6). Hence, context matters when considering value shifts for conservation, aligning with the situational approach to environmental values and evaluation (Norton, 2017). Second, stakeholders in the SGNP that identify with 'dominance' values (nature viewed as resources available to benefit humans) may hold traditional knowledge of the land, including traditional uses and management, and such knowledge could be an important factor in strengthening conservation efforts of the current landscapes in the park. Examples of traditional knowledge held by stakeholders of the SGNP include traditional practices of grazing, irrigation and land clearing including through grazing to reduce the risk of forest fires.

4.2 | Shocks, wildcards and black swans, and longer-term trends in drivers

While our work suggests that the mechanism of the vision shift, in the context of the SGNP, was the magnified or heightened awareness of drivers of change that are impacting the landscape, the mechanism of changes in visions as a result of a particular system disturbance will likely depend on sociocultural contexts and the nature of the disturbance (building on the conceptualization of value shifts offered by Kendal and Raymond (2018). Brown et al. (2016) considered outcomes of introducing shocks in a participatory scenario planning process across communities in Latin America with varying results—in the case of a theoretical massive forest fire event, stakeholders assessed that potential adaptation measures constructed in scenarios were robust enough to deal with this type of shock. However, the hypothetical introduction of a disease pandemic provoked changes in perceptions of responsive management pathways towards welcoming larger-scale government interventions rather than relying solely on community-scale actions. Hamilton et al. (2020) used an

exploratory stakeholder process to explore how shock-centred narratives including pest outbreaks, extreme weather, technological advancements and consumer preferences impact global food systems. The introduction of certain shocks such as extreme drought led to the development of scenarios with heightened socioeconomic drivers of changes, leading to potential loss of livelihoods, civil unrest and conversion of more land for agricultural production.

Whereas the consideration of shocks as low-frequency, high-magnitude events is important in scenario processes to simulate abrupt discontinuities rather than incremental change (Brown et al., 2016), the COVID-19 pandemic provided a new lens of analyses, that is, an opportunity to observe the effects of both an abrupt discontinuity (sudden restrictions in spring with the first wave) and the ensuing incremental change that occurred (gradual letting up of restrictions, followed by gradual return to lockdown in affected areas with the second wave). The pandemic may be more appropriately labelled as a wildcard event, a high impact and low probability known event (Crews, 2020), rather than a shock or black swan event, an unpredictable event with extreme repercussions (Taleb, 2007), given that global pandemics have occurred historically, and experts have in fact predicted a global pandemic of this nature for decades.

4.3 | Limitations

We draw our findings from a largely exploratory approach to better understand linkages between values, visions and drivers of change, and how they are impacted by a pandemic. At the time of writing, the pandemic has not fully subsided, and consequently our study may not fully capture the possible range of changes to visions and perceptions. However, we would expect more drastic shifts in values, visions and perceptions of drivers to occur after the first wave of the pandemic in Spain, given that it was sudden, unexpected and prompted the implementation of the most restrictive policies on a nation-wide basis, including lockdown. The second wave, on the other hand, prompted more gradual re-introduction of confinement policies and only in the most severely affected places. After the first wave, the decisions on restriction policies were delegated to the regional governments, with tighter restrictions in the Castilla y León region compared to Madrid. Further follow-up research after the pandemic has ended would be required to explore the permanence of any shifts, or stability, in visions, landscape values or perceptions of change, and to explore potential impacts of different regional policies. Access to vaccines for COVID-19 may also affect the way the pandemic shapes values and perceptions in relation to the national park and green spaces in general.

A methodological challenge to our research includes a low post-interview survey response rate of ~55%. Some degree of attrition is expected for survey responses, but may have been compounded in our case by the length of time, approximately 1 year, from conclusion of interviews to the distribution of the online survey. The online format may also have limited participation from stakeholders who were older and had limited access to Internet, and the pandemic restricted

other methods of follow-up, such as calls to workplaces which were largely closed due to confinement policy. We may have expected lower participation from women in the follow-up survey, given the increasing evidence that the majority of extra housework and child-care as a result of school closures fell to women compared to men in Spain (Farré et al., 2020) and other places (Collins et al., 2020; Czymara et al., 2020). However, the participation rate of women was only marginally lower in the midst of the pandemic compared to pre-pandemic research, perhaps reflecting personalized efforts to retain stakeholder involvement in the research activities. Future studies employing an exploratory longitudinal approach could be followed up with larger sample size to compensate for potentially low response rates. As researchers may continue to shift to online qualitative methods during the pandemic given continuing physical distancing protocols and travel restrictions, rapport could be enhanced with stakeholders by more frequent communication while respecting stakeholders' time constraints (Santana et al., 2021). Other potential limitations of our study include the use of different techniques to elicit visions pre-pandemic (individual interviews) and assess changes during the pandemic through surveys, and under-representation of some stakeholder groups in the interviews, including rural development and education. Further research can replicate the initial interviews (using online tools if the pandemic does not allow for face-to-face interaction) to examine potential changes to the pre-pandemic visions.

4.4 | Implications for protected area management and future directions

Our study demonstrated that stakeholder values underlying protected area visions can be relatively resistant to change, even in the face of wildcard events such as a pandemic. This suggests that the validity of protected area management plans in the future could be enhanced by considering stakeholder values. Rather, such large-scale disturbances may impact stakeholders' perceived importance of drivers of change, in some cases heightening awareness of drivers. Thus, we argue that post-pandemic park management plans should include enhancing transparency and communications regarding factors driving change in the landscape, in addition to the management of secondary impacts on parks from increased visitation. Management plans should also formally take into account a variety of knowledge systems, including local and traditional knowledge and stakeholder perceptions of changes and drivers, which can strengthen response to certain drivers, as in the case of controlled grazing to reduce fuel loads and manage the risk of wildfires.

In recent years, the concept of 'leverage points' for transformative change has been built upon in the research community, referring to identifying places in a social–ecological system whereby small shifts may lead to system changes (Fischer & Riechers, 2019). The benefits of considering leverage points in adaptation planning include providing guidance on where interventions should be made and targeting deep, transformative change (Rosengren et al., 2020).

However, the COVID-19 pandemic has demonstrated that the world we live in is increasingly uncertain and subject to shocks, wild cards and black swan events, which in some cases can change visions for management. Planning for the future when visions are a moving target, and identifying levers for change in dynamic, continually unfolding systems will prove a great challenge for management. To start with, scenario planning processes should incorporate a stronger consideration of different kinds of shocks combined with longer-term socioeconomic and demographic trends that can result in shifts in values, visions or landscape perceptions. Such scenario planning processes could seek to identify how levers for transformational change may differ with different visions or scenarios, enhancing the relevance, credibility and applicability of visions and scenarios for transformation in conservation and land-use planning in an era of global change and shocks.

5 | CONCLUSIONS

The overall aim of our study was to understand how local visions for national park management are related to respondent´s values for nature and perceptions of landscape changes and drivers of change. In the SNGP, visions for managing protected areas were mainly associated with different perceptions of drivers of landscape change, rather than differences in values. We found that individual stakeholder values during the COVID-19 pandemic remained stable compared to the pre-pandemic period, with values being re-affirmed in some cases. Where values changed, they shifted towards an appreciation of the park as a means to realize values of outdoor recreation and social bonds during periods of lockdown which restricted activities in enclosed spaces outside of homes. Mid-pandemic, more pronounced changes were observed regarding perceived drivers of change in the SGNP at different phases of the lockdown period. These included observations of the recovery of nature from tourism when visits to the park were restricted, and ensuing concerns about the impacts of mass tourism and mountain recreation on the natural features of the park from high visitation rates when lockdown policies were gradually lifted. Our research contributes to theory regarding how socio-ecological shocks affect value shifts and perceived drivers of change, and points to the need for stronger consideration of shocks and wildcards in scenario planning processes and for integrating stakeholder values and knowledge in protected areas management plans.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

AUTHORS' CONTRIBUTIONS

V.B.P.G.L. and C.M.R. conceived the ideas and designed the methodology; V.B.P.G.L. and M.D.L.-R. collected the data; V.B.P.G.L. analysed the data; V.B.P.G.L. and C.M.R. led the writing of the manuscript. All authors contributed critically to the drafts and gave final approval for publication.

DATA AVAILABILITY STATEMENT

The anonymized interview data that support the findings of this study are deposited in Zenodo research data storage service, https://doi.org/10.5281/zenodo.5748424 (Lo et al., 2021).

ORCID

Veronica B. P. G. Lo https://orcid.org/0000-0001-7297-2739
María D. López-Rodríguez https://orcid.org/0000-0003-2401-8929
Elisa Oteros-Rozas https://orcid.org/0000-0003-4313-3041
Miguel A. Cebrián-Piqueras https://orcid.org/0000-0002-2130-0921
Isabel Ruiz-Mallén https://orcid.org/0000-0002-9679-3329
Hug March https://orcid.org/0000-0003-2549-0803
Christopher M. Raymond https://orcid.org/0000-0002-7165-885X

REFERENCES

Accastello, C., Blanc, S., & Brun, F. (2019). A Framework for the integration of nature-based solutions into environmental risk management strategies. *Sustainability*, 11(2), 489. https://doi.org/10.3390/su11020489

Allington, G. R. H., Fernandez-Gimenez, M. E., Chen, J., & Brown, D. G. (2018). Combining participatory scenario planning and systems modeling to identify drivers of future sustainability on the Mongolian Plateau. *Ecology and Society*, 23(2). https://doi.org/10.2307/26799117

Andreotti, F., Speelman, E. N., Van den Meersche, K., & Allinne, C. (2020). Combining participatory games and backcasting to support collective scenario evaluation: An action research approach for sustainable agroforestry landscape management. *Sustainability Science*, 15(5), 1383–1399. https://doi.org/10.1007/s11625-020-00829-3

Aqui en la Sierra. (2020, September 28). Más de 287.000 personas visitaron el Parque Nacional del Guadarrama este verano, un 19% más que en 2019. Retrieved from https://aquienlasierra.es/sierra-de-guadarrama/record-visitas-parque-nacional/72224/

Arias-Arévalo, P., Martín-López, B., & Gómez-Baggethun, E. (2017). Exploring intrinsic, instrumental, and relational values for sustainable management of social-ecological systems. *Ecology and Society*, 22(4). Retrieved from https://www.jstor.org/stable/26799016

Barnaud, C., & Van Paassen, A. (2013). Equity, power games, and legitimacy: Dilemmas of participatory natural resource management. *Ecology and Society*, 18(2). Retrieved from https://www.jstor.org/stable/26269302

Bennett, E. M., Solan, M., Biggs, R., McPhearson, T., Norström, A. V., Olsson, P., Pereira, L., Peterson, G. D., Raudsepp-Hearne, C., Biermann, F., Carpenter, S. R., Ellis, E. C., Hichert, T., Galaz, V., Lahsen, M., Milkoreit, M., Martin López, B., Nicholas, K. A., Preiser, R., … Xu, J. (2016). Bright spots: Seeds of a good Anthropocene. *Frontiers in Ecology and the Environment*, 14(8), 441–448. https://doi.org/10.1002/fee.1309

Berbés-Blázquez, M., González, J. A., & Pascual, U. (2016). Towards an ecosystem services approach that addresses social power relations. *Current Opinion in Environmental Sustainability*, 19, 134–143. https://doi.org/10.1016/j.cosust.2016.02.003

BOCM - Boletín Oficial de la Comunidad de Madrid. (2020). *Decreto 18/2020, de 11 de febrero, del Consejo de Gobierno, por el que se aprueba el Plan Rector de Uso y Gestión del Parque Nacional de la Sierra de Guadarrama en el ámbito territorial de la Comunidad de Madrid*. Spain. Comunidad de Madrid.

BOCYL - Boletín Oficial de la Comunidad de Castilla y León. (2019). *Decreto 16/2019, de 23 de mayo, por el que se aprueba el Plan Rector de Uso y Gestión del Parque Nacional de la Sierra de Guadarrama en el ámbito territorial de la Comunidad de Castilla y León*. Junta de Castilla y León.

BOE. (2013). Ley 7/2013, de 25 de junio, de declaración del Parque Nacional de la Sierra de Guadarrama. *Boletín Oficial del Estado*, 152, 47795–47852 47795.

Boutillier, C. L., Leamy, M., Bird, V. J., Davidson, L., Williams, J., & Slade, M. (2011). What does recovery mean in practice? A qualitative analysis of international recovery-oriented practice guidance. *Psychiatric Services*, 62(12), 7. https://doi.org/10.1176/appi.ps.001312011

Brown, G., Reed, P., & Raymond, C. M. (2020). Mapping place values: 10 lessons from two decades of public participation GIS empirical research. *Applied Geography*, 116. https://doi.org/10.1016/j.apgeog.2020.102156

Brown, I., Martin-Ortega, J., Waylen, K., & Blackstock, K. (2016). Participatory scenario planning for developing innovation in community adaptation responses: Three contrasting examples from Latin America. *Regional Environmental Change*, 16(6), 1685–1700. https://doi.org/10.1007/s10113-015-0898-7

Brunner, S. H., & Grêt-Regamey, A. (2016). Policy strategies to foster the resilience of mountain social-ecological systems under uncertain global change. *Environmental Science & Policy*, 66, 129–139. https://doi.org/10.1016/j.envsci.2016.09.003

Burton, V., Metzger, M. J., Brown, C., & Moseley, D. (2019). Green Gold to Wild Woodlands; understanding stakeholder visions for woodland expansion in Scotland. *Landscape Ecology*, 34(7), 1693–1713. https://doi.org/10.1007/s10980-018-0674-4

Butler, J. R. A., Bergseng, A. M., Bohensky, E., Pedde, S., Aitkenhead, M., & Hamden, R. (2020). Adapting scenarios for climate adaptation: Practitioners' perspectives on a popular planning method. *Environmental Science & Policy*, 104, 13–19. https://doi.org/10.1016/j.envsci.2019.10.014

Cebrián-Piqueras, M. A., Filyushkina, A., Johnson, D. N., Lo, V. B., López-Rodríguez, M. D., March, H., Oteros-Rozas, E., Peppler-Lisbach, C., Quintas-Soriano, C., Raymond, C. M., Ruiz-Mallén, I., van Riper, C. J., Zinngrebe, Y., & Plieninger, T. (2020). Scientific and local ecological knowledge, shaping perceptions towards protected areas and related ecosystem services. *Landscape Ecology*, 35(11), 2549–2567. https://doi.org/10.1007/s10980-020-01107-4

Chan, K. M. A., Balvanera, P., Benessaiah, K., Chapman, M., Díaz, S., Gómez-Baggethun, E., Gould, R., Hannahs, N., Jax, K., Klain, S.,

Luck, G. W., Martín-López, B., Muraca, B., Norton, B., Ott, K., Pascual, U., Satterfield, T., Tadaki, M., Taggart, J., & Turner, N. (2016). Opinion: Why protect nature? Rethinking values and the environment. *Proceedings of the National Academy of Sciences of the United States of America*, 113(6), 1462–1465. https://doi.org/10.1073/pnas.1525002113

Collins, C., Landivar, L. C., Ruppanner, L., & Scarborough, W. J. (2020). COVID-19 and the gender gap in work hours. *Gender, Work & Organization.* https://doi.org/10.1111/gwao.12506

Crews, C. (2020). Foresight and the COVID-19 pandemic. *Research-Technology Management*, 63(4), 55–57. https://doi.org/10.1080/08956308.2020.1762448

Czymara, C. S., Langenkamp, A., & Cano, T. (2020). Cause for concerns: Gender inequality in experiencing the COVID-19 lockdown in Germany. *European Societies*, 1–14. https://doi.org/10.1080/14616696.2020.1808692

Day, B. H. (2020). The value of greenspace under pandemic lockdown. *Environmental and Resource Economics*, 76(4), 1161–1185. https://doi.org/10.1007/s10640-020-00489-y

Díaz, S., Pascual, U., Stenseke, M., Martín-López, B., Watson, R. T., Molnár, Z., Hill, R., Chan, K. M., Baste, I. A., Brauman, K. A., & Polasky, S. (2018). Assessing nature's contributions to people. *Science*, 359(6373), 270–272. https://doi.org/10.1126/science.aap8826

Doblas-Miranda, E., Martínez-Vilalta, J., Lloret, F., Álvarez, A., Ávila, A., Bonet, F. J., Brotons, L., Castro, J., Yuste, J. C., Díaz, M., Ferrandis, P., García-Hurtado, E., Iriondo, J. M., Keenan, T. F., Latron, J., Llusià, J., Loepfe, L., Mayol, M., Moré, G., ... Retana, J. (2015). Reassessing global change research priorities in mediterranean terrestrial ecosystems: How far have we come and where do we go from here? *Global Ecology and Biogeography*, 24(1), 25–43. https://doi.org/10.1111/geb.12224

Eagles, P. F. J. (2004). Trends affecting tourism in protected areas. In *Policies, methods and tools for visitor management* (pp. 17–25). Working Papers of the Finnish Forest Research Institute 2.

Farré, L., Fawaz, Y., González, L., & Graves, J. (2020). *How the COVID-19 lockdown affected gender inequality in paid and unpaid work in Spain.* IZA Discussion Paper No. 13434. Retrieved from SSRN: https://ssrn.com/abstract=3643198

Fischer, J., & Riechers, M. (2019). A leverage points perspective on sustainability. *People and Nature*, 1(1), 115–120. https://doi.org/10.1002/pan3.13

Flynn, M., Ford, J. D., Pearce, T., & Harper, S. L. (2018). Participatory scenario planning and climate change impacts, adaptation and vulnerability research in the Arctic. *Environmental Science & Policy*, 79, 45–53. https://doi.org/10.1016/j.envsci.2017.10.012

García-Martin, M., Fagerholm, N., Bieling, C., Gounaridis, D., Kizos, T., Printsmann, A., Müller, M., Lieskovský, J., & Plieninger, T. (2017). Participatory mapping of landscape values in a Pan-European perspective. *Landscape Ecology*, 32(11), 2133–2150. https://doi.org/10.1007/s10980-017-0531-x

Garteizgogeascoa, M., Kluger, L. C., Gonzales, I. E., Damonte, G., & Flitner, M. (2020). Contextualizing scenarios to explore social-ecological futures: A three step participatory case study for the humboldt current upwelling system. *Frontiers in Marine Science*, 7. https://doi.org/10.3389/fmars.2020.557181

Gómez-Limón, F. J., & de Lucio, J. V. (1995). Recreational activities and loss of diversity in grasslands in Alta Manzanares Natural Park, Spain. *Biological Conservation*, 74(2), 99–105. https://doi.org/10.1016/0006-3207(95)00018-Y

Hamann, M., Biggs, R., Pereira, L., Preiser, R., Hichert, T., Blanchard, R., Warrington-Coetzee, H., King, N., Merrie, A., Nilsson, W., Odendaal, P., Poskitt, S., Sanchez Betancourt, D., & Ziervogel, G. (2020). Scenarios of good anthropocenes in southern Africa. *Futures*, 118. https://doi.org/10.1016/j.futures.2020.102526

Hamilton, H., Henry, R., Rounsevell, M., Moran, D., Cossar, F., Allen, K., Boden, L., & Alexander, P. (2020). Exploring global food system shocks, scenarios and outcomes. *Futures*, 123. https://doi.org/10.1016/j.futures.2020.102601

Himes, A., & Muraca, B. (2018). Relational values: The key to pluralistic valuation of ecosystem services. *Current Opinion in Environmental Sustainability*, 35, 1–7. https://doi.org/10.1016/j.cosust.2018.09.005

Hockings, M., Dudley, N., Elliott, W., Ferreira, M. N., Mackinnon, K., Pasha, M. K. S., Phillips, A., Stolton, S., Woodley, S., Appleton, M., Chassot, O., Fitzsimons, J., Galliers, C., Kroner, R. G., Goodrich, J., Hopkins, J., Jackson, W., Jonas, H., Long, B., ... Yang, A. (2020). Editorial essay: Covid-19 and protected and conserved areas. *Parks*, 26(1). https://doi.org/10.2305/IUCN.CH.2020.PARKS-26-1MH.en

Huang, R. (2016). *RQDA: R-based qualitative data analysis [R package version 0.3-1].* http://rqda.r-forge.r-project.org/

INE. (2017). Entorno físico y medio ambiente. In *Anuario Estadístico de España* (p. 32). Instituo Nacional de Estadística, España. Retrieved from https://www.ine.es/prodyser/pubweb/anuario17/anu17_01entor.pdf

IPBES. (2016). *The methodological assessment report on scenarios and models of biodiversity and ecosystem services* (p. 348). Secretariat of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. Retrieved from https://www.ipbes.net/assessment-reports/scenarios

Kendal, D., & Raymond, C. M. (2018). Understanding pathways to shifting people's values over time in the context of social–ecological systems. *Sustainability Science.* https://doi.org/10.1007/s11625-018-0648-0

Kohler, M., Stotten, R., Steinbacher, M., Leitinger, G., Tasser, E., Schirpke, U., Tappeiner, U., & Schermer, M. (2017). Participative spatial scenario analysis for alpine ecosystems. *Environmental Management*, 60(4), 679–692. https://doi.org/10.1007/s00267-017-0903-7

Kuemmerle, T., Levers, C., Erb, K., Estel, S., Jepsen, M. R., Müller, D., Plutzar, C., Stürck, J., Verkerk, P. J., Verburg, P. H., & Reenberg, A. (2016). Hotspots of land use change in Europe. *Environmental Research Letters*, 11(6), 064020. https://doi.org/10.1088/1748-9326/11/6/064020

Lo, V. B. P. G., López-Rodríguez, M. D., Metzger, M., Oteros-Rozas, E., Cebrián-Piqueras, M. A., Ruiz-Mallén, I., March, H., & Raymond, C. M. (2021). Data from: How stable are visions for protected area management? Stakeholder perspectives before and during a pandemic. *Zenodo*, https://doi.org/10.5281/zenodo.5748424

López, I., & Pardo, M. (2018). Socioeconomic indicators for the evaluation and monitoring of climate change in national parks: An analysis of the Sierra de Guadarrama National Park (Spain). *Environments*, 5(2), 25. https://doi.org/10.3390/environments5020025

López-Rodríguez, M. D., Ruiz-Mallén, I., Oteros-Rozas, E., March, H., Keller, R., Lo, V. B., Cebrián-Piqueras, M. A., & Andrade, R. (2020). Delineating participation in conservation governance: Insights from the Sierra de Guadarrama National Park (Spain). *Environmental Science & Policy*, 114, 486–496. https://doi.org/10.1016/j.envsci.2020.09.019

Lu, Y., Zhao, J., Wu, X., & Lo, S. M. (2020). Escaping to nature in pandemic: A natural experiment of COVID-19 in Asian cities. *SocArXiv.* https://doi.org/10.31235/osf.io/rq8sn

Manfredo, M. J., Teel, T. L., Berl, R. E. W., Bruskotter, J. T., & Kitayama, S. (2020). Social value shift in favour of biodiversity conservation in the United States. *Nature Sustainability*, 1–8. https://doi.org/10.1038/s41893-020-00655-6

Mangnus, A., Vervoort, J., McGreevy, S., Ota, K., Rupprecht, C., Oga, M., & Kobayashi, M. (2019). New pathways for governing food system transformations: A pluralistic practice-based futures approach using visioning, back-casting, and serious gaming. *Ecology and Society*, 24(4). https://doi.org/10.5751/ES-11014-240402

March, H., Therond, O., & Leenhardt, D. (2012). Water futures: Reviewing water-scenario analyses through an

original interpretative framework. *Ecological Economics*, *82*, 126–137. https://doi.org/10.1016/j.ecolecon.2012.07.006

Martínez-Vega, J., Díaz, A., Nava, J. M., Gallardo, M., & Echavarría, P. (2017). Assessing land use-cover changes and modelling change scenarios in two mountain Spanish National Parks. *Environments*, *4*(4), 79. https://doi.org/10.3390/environments4040079

Maury, O., Campling, L., Arrizabalaga, H., Aumont, O., Bopp, L., Merino, G., Squires, D., Cheung, W., Goujon, M., Guivarch, C., Lefort, S., Marsac, F., Monteagudo, P., Murtugudde, R., Österblom, H., Pulvenis, J. F., Ye, Y., & van Ruijven, B. J. (2017). From shared socio-economic pathways (SSPs) to oceanic system pathways (OSPs): Building policy-relevant scenarios for global oceanic ecosystems and fisheries. *Global Environmental Change*, *45*, 203–216. https://doi.org/10.1016/j.gloenvcha.2017.06.007

McGinlay, J., Gkoumas, V., Holtvoeth, J., Fuertes, R. F. A., Bazhenova, E., Benzoni, A., Botsch, K., Martel, C. C., Sánchez, C. C., Cervera, I., Chaminade, G., Doerstel, J., García, C. J. F., Jones, A., Lammertz, M., Lotman, K., Odar, M., Pastor, T., Ritchie, C., ... Jones, N. (2020). The impact of COVID-19 on the management of European protected areas and policy implications. *Forests*, *11*(11), 1214. https://doi.org/10.3390/f11111214

Metzger, M. J., & De Vries Lentsch, A. (2018). *STREAMLINE – A visual interview methodology that makes semi-structured interviews, focus groups and stakeholder workshops more fun and accessible.* https://bitbucket.org/mo_seph/volante-crowdsourcing https://doi.org/10.7488/ds/2437

Metzger, M. J., Murray-Rust, D., Houtkamp, J., Jensen, A., La Riviere, I., Paterson, J. S., Pérez-Soba, M., & Valluri-Nitsch, C. (2018). How do Europeans want to live in 2040? Citizen visions and their consequences for European land use. *Regional Environmental Change*, *18*(3), 789–802. https://doi.org/10.1007/s10113-016-1091-3

Metzger, M. J., Rounsevell, M. D. A., Van den Heiligenberg, H. A. R. M., Pérez-Soba, M., & Hardiman, P. S. (2010). How personal judgment influences scenario development: An example for future rural development in Europe. *Ecology and Society*, *15*(2). https://doi.org/10.5751/ES-03305-150205

Millennium Ecosystem Assessment. (2005). *Ecosystems and human well-being: Synthesis.* World Resources Institute.

Miller-Rushing, A. J., Athearn, N., Blackford, T., Brigham, C., Cohen, L., Cole-Will, R., Edgar, T., Ellwood, E. R., Fisichelli, N., Pritz, C. F., Gallinat, A. S., Gibson, A., Hubbard, A., McLane, S., Nydick, K., Primack, R. B., Sachs, S., & Super, P. E. (2021). COVID-19 pandemic impacts on conservation research, management, and public engagement in US national parks. *Biological Conservation*, *257*(109038). https://doi.org/10.1016/j.biocon.2021.109038

Nieto, N., & Díez, R. (2014). Sierra de Guadarrama, un Parque Nacional liberal: Más marca turística que conservación. *El Ecologista*, *82*, 28–29.

Nilsson, A. E., Carson, M., Cost, D. S., Forbes, B. C., Haavisto, R., Karlsdottir, A., Larsen, J. N., Paasche, Ø., Sarkki, S., Larsen, S. V., & Pelyasov, A. (2019). Towards improved participatory scenario methodologies in the Arctic. *Polar Geography*, 1–15. https://doi.org/10.1080/1088937X.2019.1648583

Norton, B. G. (2017). A situational understanding of environmental values and evaluation. *Ecological Economics*, *138*, 242–248. https://doi.org/10.1016/j.ecolecon.2017.03.024

Oteros-Rozas, E., Martín-López, B., Daw, T. M., Bohensky, E. L., Butler, J. R. A., Hill, R., Martin-Ortega, J., Quinlan, A., Ravera, F., Ruiz-Mallén, I., Thyresson, M., Mistry, J., Palomo, I., Peterson, G. D., Plieninger, T., Waylen, K. A., Beach, D. M., Bohnet, I. C., Hamann, M., ... Vilardy, S. P. (2015). Participatory scenario planning in place-based social-ecological research: Insights and experiences from 23 case studies. *Ecology and Society*, *20*(4). Retrieved from https://www.jstor.org/stable/26270296

Palomo, I., Martín-López, B., López-Santiago, C., & Montes, C. (2011). Participatory scenario planning for protected areas management under the ecosystem services framework: The Doñana social-ecological system in Southwestern Spain. *Ecology and Society*, *16*(1). https://doi.org/10.5751/ES-03862-160123

Pereira, L., Hichert, T., Hamann, M., Preiser, R., & Biggs, R. (2018). Using futures methods to create transformative spaces: Visions of a good Anthropocene in southern Africa. *Ecology and Society*, *23*(1). https://doi.org/10.5751/ES-09907-230119

Pérez-Soba, M., Paterson, J., Metzger, M. J., Gramberger, M., Houtkamp, J., Jensen, A., Murray-Rust, D., & Verkerk, P. J. (2018). Sketching sustainable land use in Europe by 2040: A multi-stakeholder participatory approach to elicit cross-sectoral visions. *Regional Environmental Change*, *18*(3), 775–787. https://doi.org/10.1007/s10113-018-1297-7

Peterson, G. D., Cumming, G. S., & Carpenter, S. R. (2003). Scenario planning: A tool for conservation in an uncertain world. *Conservation Biology*, *17*(2), 358–366. https://doi.org/10.1046/j.1523-1739.2003.01491.x

PNSG. (2020). Estimación de visitantes en el Parque nacional de la Sierra de Guadarrama en 2019. Resumen de los principales resultados. Parque Nacional Sierra de Guadarrama.

R Core Team. (2020). *R: A language and environment for statistical computing.* R Foundation for Statistical Computing. Retrieved from https://www.R-project.org/

Rana, S., Ávila-García, D., Dib, V., Familia, L., Gerhardinger, L. C., Martin, E., Martins, P. I., Pompeu, J., Selomane, O., Tauli, J. I., Tran, D. H. T., Valle, M., von Below, J., & Pereira, L. M. (2020). The voices of youth in envisioning positive futures for nature and people. *Ecosystems and People*, *16*(1), 326–344. https://doi.org/10.1080/26395916.2020.1821095

Raudsepp-Hearne, C., Peterson, G. D., Bennett, E. M., Biggs, R., Norström, A. V., Pereira, L., Vervoort, J., Iwaniec, D. M., McPhearson, T., Olsson, P., Hichert, T., Falardeau, M., & Aceituno, A. J. (2020). Seeds of good anthropocenes: Developing sustainability scenarios for Northern Europe. *Sustainability Science*, *15*(2), 605–617. https://doi.org/10.1007/s11625-019-00714-8

Raymond, C. M., & Kenter, J. O. (2016). Transcendental values and the valuation and management of ecosystem services. *Ecosystem Services*, *21*, 241–257. https://doi.org/10.1016/j.ecoser.2016.07.018

Robinson, J., Burch, S., Talwar, S., O'Shea, M., & Walsh, M. (2011). Envisioning sustainability: Recent progress in the use of participatory backcasting approaches for sustainability research. *Technological Forecasting and Social Change*, *78*(5), 756–768. https://doi.org/10.1016/j.techfore.2010.12.006

Robinson, L. W., Bennett, N., King, L. A., & Murray, G. (2012). 'We want our children to grow up to see these animals': Values and protected areas governance in Canada, Ghana and Tanzania. *Human Ecology*, *40*(4), 571–581. https://doi.org/10.1007/s10745-012-9502-7

Rodríguez-Rodríguez, D., Ibarra, P., Echeverría, M., & Martínez-Vega, J. (2017). Perceptions, attitudes and values of two key stakeholders on the oldest and newest Spanish national parks. *Environment, Development and Sustainability*. https://doi.org/10.1007/s10668-017-0051-5

Rosengren, L. M., Raymond, C. M., Sell, M., & Vihinen, H. (2020). Identifying leverage points for strengthening adaptive capacity to climate change. *Ecosystems and People*, *16*(1), 427–444. https://doi.org/10.1080/26395916.2020.1857439

Rounsevell, M. D. A., & Metzger, M. J. (2010). Developing qualitative scenario storylines for environmental change assessment. *Wires Climate Change*, *1*(4), 606–619. https://doi.org/10.1002/wcc.63

Sánchez, E. (2020, September 20). *La montaña como refugio anticovid.* El País. Retrieved from https://elpais.com/sociedad/2020-09-20/la-montana-como-refugio-anticovid.html

Santana, F. N., Hammond Wagner, C., Berlin Rubin, N., Bloomfield, L. S. P., Bower, E. R., Fischer, S. L., Santos, B. S., Smith, G. E., Muraida, C. T., & Wong-Parodi, G. (2021). A path forward for qualitative

research on sustainability in the COVID-19 pandemic. *Sustainability Science*. https://doi.org/10.1007/s11625-020-00894-8

Strassburg, B. B. N., Iribarrem, A., Beyer, H. L., Cordeiro, C. L., Crouzeilles, R., Jakovac, C. C., Braga Junqueira, A., Lacerda, E., Latawiec, A. E., Balmford, A., Brooks, T. M., Butchart, S. H. M., Chazdon, R. L., Erb, K.-H., Brancalion, P., Buchanan, G., Cooper, D., Díaz, S., Donald, P. F., ... Visconti, P. (2020). Global priority areas for ecosystem restoration. *Nature*, 1–6. https://doi.org/10.1038/s41586-020-2784-9

Taleb, N. N. (2007). *The Black Swan: The impact of the highly improbable*. Random House Publishing Group.

Thorn, J. P. R., Klein, J. A., Steger, C., Hopping, K. A., Capitani, C., Tucker, C. M., Nolin, A. W., Reid, R., Seidl, R., Chitale, V., & Marchant, R. (2020). A systematic review of participatory scenario planning to envision mountain social-ecological systems futures. *Ecology and Society*. https://doi.org/10.5751/ES-11608-250306

Totin, E., Butler, J. R., Sidibé, A., Partey, S., Thornton, P. K., & Tabo, R. (2018). Can scenario planning catalyse transformational change? Evaluating a climate change policy case study in Mali. *Futures*, 96, 44–56. https://doi.org/10.1016/j.futures.2017.11.005

Ugolini, F., Massetti, L., Calaza-Martínez, P., Cariñanos, P., Dobbs, C., Ostoić, S. K., Marin, A. M., Pearlmutter, D., Saaroni, H., Šaulienė, I., Simoneti, M., Verlič, A., Vuletić, D., & Sanesi, G. (2020). Effects of the COVID-19 pandemic on the use and perceptions of urban green space: An international exploratory study. *Urban Forestry & Urban Greening*, 56. https://doi.org/10.1016/j.ufug.2020.126888

Vannier, C., Bierry, A., Longaretti, P.-Y., Nettier, B., Cordonnier, T., Chauvin, C., Bertrand, N., Quétier, F., Lasseur, R., & Lavorel, S. (2019). Co-constructing future land-use scenarios for the Grenoble region, France. *Landscape and Urban Planning*, 190. https://doi.org/10.1016/j.landurbplan.2019.103614

Vaske, J. J., Needham, M. D., & Cline, R. C. (2007). Clarifying interpersonal and social values conflict among recreationists. *Journal of Leisure Research*, 39(1), 182–195. https://doi.org/10.1080/00222216.2007.11950103

Vetenskapsrådet. (2017). *Good research practice*. Retrieved from https://www.vr.se/english/analysis/reports/our-reports/2017-08-31-good-research-practice.html

Vías, J. (2016). Sierra de Guadarrama: Viejos oficios para la memoria (gentes y paisajes). Ed. La Librería. ISBN:978-84-9873-324-2.

Waithaka, J., Dudley, N., Álvarez Malvido, M., Mora, S. A., Chapman, S., Figgis, P., Fitzsimons, J., Gallon, S., Gray, T. N. E., Kim, M., Pasha, M. K. S., Perkin, S., Roig-Boixeda, P., Sierra, C., Valverde, A., & Wong, M. (2021). Impacts of COVID-19 on protected and conserved areas: A global overview and regional perspectives. *Parks*, 27, 41–56. https://doi.org/10.2305/IUCN.CH.2021.PARKS-27-SIJW.en

Wesche, S. D., & Armitage, D. R. (2014). Using qualitative scenarios to understand regional environmental change in the Canadian North. *Regional Environmental Change*, 3(14), 1095–1108. https://doi.org/10.1007/s10113-013-0537-0

Wilkinson, C. (2012). Social-ecological resilience: Insights and issues for planning theory. *Planning Theory*, 11(2), 148–169. https://doi.org/10.1177/1473095211426274

Xie, J., Luo, S., Furuya, K., & Sun, D. (2020). Urban parks as green buffers during the COVID-19 pandemic. *Sustainability*, 12(17), 6751. https://doi.org/10.3390/su12176751

Zafra-Calvo, N., Balvanera, P., Pascual, U., Merçon, J., Martín-López, B., van Noordwijk, M., Mwampamba, T. H., Lele, S., Ifejika Speranza, C., Arias-Arévalo, P., Cabrol, D., Cáceres, D. M., O'Farrell, P., Subramanian, S. M., Devy, S., Krishnan, S., Carmenta, R., Guibrunet, L., Kraus-Elsin, Y., ... Díaz, S. (2020). Plural valuation of nature for equity and sustainability: Insights from the Global South. *Global Environmental Change*, 63. https://doi.org/10.1016/j.gloenvcha.2020.102115

SUPPORTING INFORMATION

Additional supporting information may be found in the online version of the article at the publisher's website.

How to cite this article: Lo, V. B. P. G., López-Rodríguez, M. D., Metzger, M. J., Oteros-Rozas, E., Cebrián-Piqueras, M. A., Ruiz-Mallén, I., March, H., & Raymond, C. M. (2022). How stable are visions for protected area management? Stakeholder perspectives before and during a pandemic. *People and Nature*, 4, 445–461. https://doi.org/10.1002/pan3.10292