

Preface

Protected natural areas deserve the combination of nature uniqueness and conservation willing. The foundation stone for National Parks is the awareness of that unique character—actual or presumed, most times based on non-tangible properties or singularities—grown in some social sectors, followed by the aim of preserving particular biota, singular ecosystems or entire landscapes. This was the case for the Aigüestortes i Estany de Sant Maurici National Park. Like other protected areas in alpine mountains, its apparent wilderness was a key factor in declaring it National Park, in 1955. The rough relief carved in the Maladeta granodiorite batholith, including rocky crests and summits, steep slopes and glacial valley bottoms, had for long grabbed attention. The abundance of alpine lakes and other water-related systems must have been particularly attractive, in comparison with other Iberian mountains, and even with other Pyrenean areas.

The interest of these mountains has not been evenly valued by people during the last centuries. Indeed, an old recurrent feeling of the local inhabitants has been to consider them as ‘damned mountains’, a kind of God’s punishment, given the poor use and strong limitations inherent to most of their extension. Contrarily, those Pyrenean mountains evoked in some cultivated people myths and legends or at least fantastic wilderness. This is best exemplified by the much acclaimed Romantic Catalan poet Jacint Verdaguer, who struck by the powerful landscape of the Pyrenean high mountains, wrote in the poem *Canigó* (1886):

*Quins crits més horrorosos degué llançar la terra
infantant en ses joves anyades eixa serra!
que jorns de permatre!, que nits de gemegar!
per traure a la llum pura del sol eixes muntanyes,
del centre de sos cràters, del fons de ses entranyes,
com ones de la mar!*

...

*Passaren anys, passaren centúries de centúries
abans que s'abrigassen de terra i de bosquíries
aqueixes ossamentes dels primitius gegants,
abans que tingués molsa la penya, flors les prades,
abans que les arbredes tinguessen aucellades,
les aucellades cants*

What terrible wails the Earth must have issued
Giving birth to these mountains in her youth!
What restless days! What groaning nights!
To eject such mountains into the pure light of the Sun
From the heart of her craters, from the depths of her entrails,
Like waves sweeping across the sea!

...

Years passed; centuries of centuries passed
Before soil and wood began to cloak
These bones of the ancient giants,
Before the outcrops bore moss; the meadows, flowers,
Before the woodlands were filled with birds;
The birds with song.

The 60th birthday of the Aigüestortes i Estany de Sant Maurici National Park has been a suitable occasion to discuss the conservation of high mountain areas; to review the knowledge acquired on their natural and cultural inheritance, to evaluate their protecting role, and even to preview their fate under changing scenarios. These issues define the scope of this book, launched at the workshop “The High Mountain in a Changing World: Challenges for Conservation” held in Espot, Central Pyrenees, in November 2015. Like in other National Parks, its scientific knowledge has notably grown during the last decades, running through long, diversified ways. This progress may be tracked by browsing across the ten volumes produced in the proceedings *Jornades sobre Recerca al Parc Nacional d'Aigüestortes i Estany de Sant Maurici*, based on the Park's research workshops held once every 3 years. These volumes lead from the description or cataloguing of the most apparent nature components to the understanding of the functioning of ecosystems in a changing world, and to the realisation of the extent of the anthropic envelope—including cultural inheritance, protecting policies and changing environment. In fact, the weight of social matters on nature conservation has become more and more apparent. Thus, nature conservation remains science-based, but it is definitely a social affair.

Deepening and widening of local knowledge have progressively put it into a much broader frame, both spatial (i.e. other European high mountains, Boreal biomes) and temporary—from the far to the near geologic times, and to future. Apart from enabling the comparative analysis between high mountain reserves, this has also evidenced how very ancient anthropic activities are still compromising their presumed wilderness; and also how distinct elements of global change (i.e. long-distance pollution, biological invasion, climate warming) compromise their conservation purpose. The strength of high mountain reserves remains therefore in the study and monitoring of nature responses to ancient impacts and global change while keeping the anthropic influence at the lowest level possible. These new insights have to be the substrate on which to build a new paradigm on high mountain conservation. The previously mentioned workshop and this book gather recognised authorities in particular and emerging scientific fields, although also able to cross-discuss and evaluate the present opportunity of consistently studying, evaluating and foreseeing high mountain conservation. Most of the book core information is from the Pyrenees, but there are other chapters focussing in the Alps and Sierra Nevada. Overall, the discussion that emerges extends worldwide where the high mountain is a valuable concept.

The two first chapters (Part I) set the conceptual scope of the book, review historic and current conservation issues, and try to connect with the following thematic chapters. Part II focus on the historical perspective of high mountain systems, centred in the most influential facts and processes occurred through the last millennia. This standpoint involves the awareness of the role played by major climatic changes and, particularly, humans on biota, soils and landscapes. This anthropic heritage poses particular challenges to the wilderness in protected areas, mostly concerning the introduction and re-introduction of vertebrates related to fishing or hunting, but also affecting soil and water biochemistry and processes (Part III). Acknowledging how natural areas are subjected to global change has led to value the interest in monitoring at long-term horizons. Chapters in Part IV review distinct biotic and abiotic components

from the recent past to future. Examples of response, shift or adaptation, illustrate possible scenarios for entire high mountain areas.

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