

ERASMUS+ PECUS

**CASE STUDY SHEET**

<b>CS code</b>	UK-01	<b>CS Title</b>	Alpine Landscapes: Pastoralism and Environment in Val di Sole (ALPES)
<b>GENERAL INFORMATION</b>			
<b>Type of case study</b>	<input type="checkbox"/> National or regional level policy/plan/strategy <input type="checkbox"/> Local level policy/plan/strategy <input type="checkbox"/> Study/research <input checked="" type="checkbox"/> Project <input type="checkbox"/> Other		
<b>Responsible body/Promoter</b>	University of Trento (Italy), Newcastle University (UK)		
<b>Location (region, locality)</b>	Val di Sole, Trentino, Italy		
<b>Geographical area covered</b>	The main study area corresponds to an upland sector of approximately 2500 hectares		
<b>Year</b>	2010 - ongoing		
<b>Summary description</b>	<p>The ALPES project uses the methods of landscape and environmental archaeology to study human-environment interaction in an upland sector of the Italian Alps. The study area corresponds to a high-mountain environment (1900-2700 m asl) in the Municipality of Mezzana (Val di Sole, Autonomous Province of Trento). The project, started in 2010, has focused on two upland valleys: Val Molinac and Val Poré. Here the research group, coordinated by Dr Francesco Carrer (Newcastle University) and Prof Diego E. Angelucci (University of Trento), has carried out archaeological surveys, to identify archaeological evidence of human presence. More than 100 dry-stone structures have been identified, and divided into 3 categories: rock-shelters, fairly ephemeral and used by shepherds or hunters as temporary refuge; isolated huts, small dwelling structures, primarily associated with hay-making; enclosures, large animal corrals, often associated with a small dwelling structure. The enclosures turned out to be the most interesting features. Following archaeological excavation, a large and compound enclosure has been dated to the late-medieval period, although evidence of early-medieval and even late-prehistoric occupation of the area has also been recorded. A smaller and less preserved enclosure has recently provided evidence of a very early occupation (1800-1600 BC), although the functional and chronological correlation between this prehistoric context and the enclosure needs to be further assessed.</p>		
<b>Link with laws/regulations and with other policies/plans/strategies (if any)</b>	There is no regulatory and policy framework for this case study. The objectives are primarily related to archaeological and palaeoecological research, and the promotion of local small-scale tourism through dissemination events and open days.		
<b>PROBLEMS AND NEEDS TARGETED</b>			
<b>Problems</b>	<p>The general perception of high altitudes is of pristine natural landscapes, weakly affected by the impact of human agency. But this perception is inaccurate. Indeed, the impact of farming and other land-management strategies is more evident in other "less marginal" contexts. But this does not mean that anthropogenic influence was less significant in these high mountain landscapes. Pastoral activities have exploited mountain resources for thousands of years, and by doing that they have transformed these resources. The treeline has been artificially lowered, and constantly managed for millennia. Plant composition and soil development have been influenced by livestock manure. And animal grazing and mobility have often triggered soil erosion. Therefore, to understand and protect high mountain landscapes today, we need to understand the complex history of human interaction with alpine/subalpine ecosystems.</p>		
<b>Needs</b>	<p>A more accurate knowledge of human occupation of the uplands is necessary. This requires archaeological surveys, to record any the possible evidence of past human presence at high altitude. Another important proxy comes from the study of soil. By studying soil dynamics, and correlating them with archaeological evidence, we can understand whether the waxing</p>		



	and waning of human occupation had a consequence on the development or erosion of soil. In order to have a detailed perception of these phenomena, archaeological investigation and soil analysis must move from the landscape to the site scale. Representative sites need to be stratigraphically investigated, in order to understand how their development correlated with the local environmental change and the aforementioned soil dynamics. Informatics (in particular the use of GIS) provides a significant support, as all the relevant information can be stored and analysed within a single digital platform.	
Quantitative data	Quantitative data are not available yet, but one of the purposes of the project is to provide a quantification of landscape change over time.	
FOCUS, OBJECTIVES AND OUTPUTS		
Themes	Does the case study address this theme? (YES/NO)	If yes, how? (max 750 characters for each theme)
Spatial planning	NO	
Protection of environment (e.g. biodiversity, water, geomorphology, soil, climate...)	YES	By studying past human-environment interaction we will be able to assess how pastoral strategies have transformed the upland landscapes during the Holocene. This will provide the ideal baseline to discuss with decision makers how the knowledge of the past can inform future policies. In particular, whether current land-use and land-management strategies seem ecologically sustainable compared to archaeologically inferred strategies.
Protection/enhancement of tangible cultural heritage (e.g. historical paths, archaeological sites, architecture, terraces and field systems...)	YES	Most of the investigated structures in the area (rock-shelters, huts, enclosures) are still visible, and represent key features in the local landscape. One of the purposes of this project is to promote the upland landscape of Val di Sole for their cultural and historical value, beyond their obvious ecological importance. We aim to promote the archaeological heritage of the study area by suggesting a series of touristic itineraries, for hikers and local amateurs.
Protection/enhancement of intangible cultural heritage (e.g. historical route networks, scenic views, folklore, food, music...)	YES	The basecamp of the project is the small hamlet of Ortisé, at 1500 m asl, close to the upland pastures of the study area. Most of the villagers used to be farmers, and some of them are still practicing farming activities. By interacting with the local communities, discussing the results of our research and trying to understand their seasonal farming practices, we would like to protect and promote their traditional ecological knowledge, and to strengthen their connection with their history and landscape, which feed their strong local identity.
Slow mobility (cycling routes, trekking paths, etc.)	YES	By promoting touristic itineraries, this project might foster the development of new trekking paths and hiking routes. Mountain hiking is increasingly popular on this side of Val di Sole (less suitable for ski resorts), and it is likely that this initiative will contribute to accelerate the interest of specific groups of hikers for this area.
Economic development of mountain & rural areas (e.g. tourism, agro-food production, agriculture, livestock breeding...)	YES	By promoting touristic itineraries, cultural landscapes and the preservation of traditional knowledge, this project will be beneficial for the economy of the small hamlet of Ortisé. New initiatives, organised by the village to promote the upland archaeological landscapes among new visitors, seem to confirm that this is considered by the local entrepreneurs as an initiative worth investing on.
INVOLVEMENT OF STAKEHOLDERS		
Actors involved	During the whole project there was a strong collaboration with local communities in the hamlets of Ortisé and Menas, and with the Council of Mezzana, who provide in-kind support	

	to the project. Villagers, instead, not only provided useful information and support for the project, but contributed to informing the early stages of the survey and complementing the analysis of the historic landscape.
<b>Involvement procedures</b>	Stakeholders were engaged during informal meeting in public spaces (the local pub) or during their work in the field or in the forest. Ethnographic information about traditional ecological knowledge was collected during individual meetings in the houses of some relevant stakeholders or during fieldwork. No formal focus groups or feedback meetings have been organised, although this is a plan for future research campaigns more focused on the community involvement.
<b>Problems and challenges</b>	No specific problems or difficulties were experienced during the collection of ethnographic information and other types of engagement of members of local communities.
<b>EXPECTED OR ACHIEVED EFFECTS</b>	
<b>Type of effect</b>	<b>Description</b> <i>(max 750 characters for each type)</i>
<b>Effects on the environment (e.g. restoration of habitats, increased biodiversity, climate change mitigation or adaptation...)</b>	Promotion of farming and non-farming activities that guarantee a sustainable management of the area, based on the identification of past sustainable and unsustainable strategies. Identification of the areas more affected by intensive pastoral exploitation, and the consequences of long-term grazing on vegetation cover and soil
<b>Effects on immaterial, cultural assets (e.g. cultural landscape, scenic views, folklore...)</b>	Preservation of traditional ecological knowledge, particularly that connected with the exploitation of high-altitude environments. Promotion of upland landscape, as critical asset for local communities, from their identity as much as their economy
<b>Effects on material, cultural assets (e.g. restoration of historic artefacts or buildings, restoration of traditional terraces or cultivation systems...)</b>	Promotion of the archaeological sites (dry stone structures) identified at high altitude in the study area Monitoring the degradation of abandoned pre-modern structures. Producing a visual record of these structure (3D photogrammetry) before they collapse.
<b>Effects on social and economic aspects (e.g. new jobs, new enterprises...)</b>	Promotion of cultural tourism in this area of Val di Sole
<b>IMPLEMENTATION ISSUES</b>	
<b>Financial resources</b>	The ALPES project is carried out with internal funding of the University of Trento and Newcastle University, complemented by a small contribution of the Italian Alpine Club (CAI). In 2015, the team got awarded a substantial LEADER project grant by the Local Action Group (GAL) of Val di Sole. This grant was used to fund the fieldwork project, archive research, and to publish two volumes: a scientific edited volume, with the results of the first 5 years of the project, and a booklet for public dissemination.
<b>Implementation procedures</b>	Not applicable
<b>SUPPORTING INFORMATION</b>	
<b>Images (pictures, graphics, maps, charts, etc.)</b>	<i>All the following pictures and maps are reproduced from the volume Angelucci &amp; Carrer 2015 (see publications below)</i>

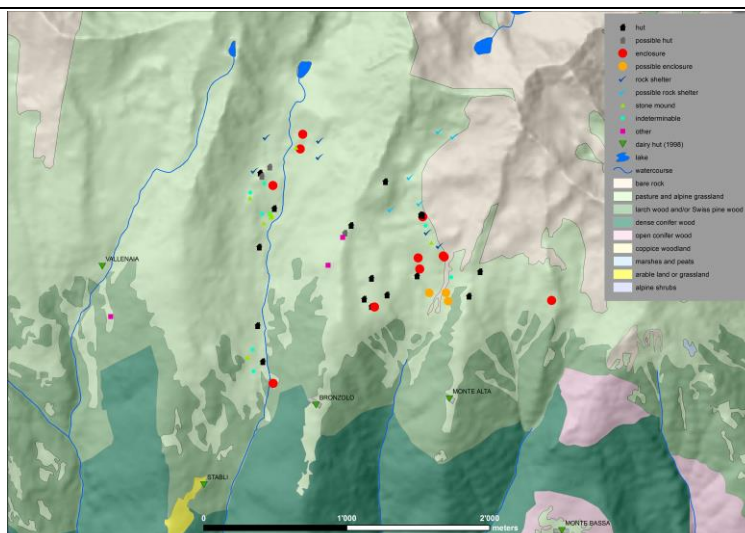


Fig. 1: Map of the study area



Fig. 2: Val Molinac, from south (Photo D.E. Angelucci)



Fig. 3: An example of historic hut, abandoned towards the end of the 20<sup>th</sup> century (Photo M. Rapanà)



Fig. 4: A rock-shelter in Val Molinac (Photo M. Rapanà)



Fig. 5: Archaeological excavation within the medieval livestock enclosure.



Fig. 6: Archaeological excavation of a possibly early-medieval hut (Photo F. Cavulli)

**References (including web links)**

**Web site**

<https://r1.unitn.it/alpes/>

**Book**

Angelucci D.E. & Carrer F. (eds.), 2015. Paesaggi pastorali d'alta quota in Val di Sole (Trento). Le ricerche del progetto ALPES - 2010-2014. Dipartimento di Lettere e Filosofia, Università di Trento, Trento, 184 p. (ISBN 978-88-8443-622-1).

**Scientific papers**

- Carrer F., Sarson G., Baggaley A., Shukurov A. & Angelucci D.E., 2019. Ethnoarchaeology-based modelling to investigate economic transformations and land-use change in the Alpine uplands, in: M. Vander Linden & M. Saqalli (eds.), Integrating qualitative and social science factors in archaeological modelling, Springer [ISBN 978-3-030-12722-0]

	<ul style="list-style-type: none"> <li>• Carrer F. &amp; Angelucci D.E. 2018. Continuity and discontinuity in the history of upland pastoral landscapes: the case study of Val Molinac and Val Poré (Val di Sole, Trentino, Eastern Italian Alps). <i>Landscape Research</i>, 43 (6): 862-877 [on-line 21 nov 2017].</li> <li>• Angelucci D.E., Carrer F. &amp; Pedrotti A. 2017. Due nuove datazioni dell'età del Bronzo da un sito d'alta quota in Val Poré (Val di Sole). <i>Archeologia delle Alpi</i> 2016, 168-169.</li> <li>• Lutterotti L., Dell'Amore F., Angelucci D.E., Carrer F., Gialanella S. 2016. Combined X-Ray diffraction and fluorescence analysis in the cultural heritage field. <i>Microchemical Journal</i>, 126: 423-430.</li> <li>• Angelucci D.E., Carrer F. &amp; Cavulli F. 2014. Shaping a periglacial land into a pastoral landscape: a case study from Val di Sole (Trento, Italy). <i>Post-classical archaeologies</i>, 4: 125-148.</li> <li>• Carrer F. &amp; Angelucci D.E. 2013. First archaeological data from an alpine pastoral enclosure at Val Poré (Val di Sole, Trentino, Italy). <i>Debates de Arqueología Medieval</i>, 3: 149-165.</li> <li>• Angelucci D.E., Carrer F., Cavulli F., Delpero A., Foradori G., Medici T., Pedrotti A., Pisoni D. &amp; Rottoli M. 2013. Primi dati archeologici da una struttura pastorale d'alta quota in Val di Sole: il sito MZ0055 (Mezzana, Trento). In: D.E. Angelucci, L. Casagrande, A. Colecchia &amp; M. Rottoli (Eds.), <i>APSAT 2. Paesaggi d'altura del Trentino. Evoluzione naturale e aspetti culturali</i>. SAP, Mantova: 141-162.</li> <li>• Carrer F., Angelucci D.E. &amp; Pedrotti A. 2013. Montagna e pastorizia: stato dell'arte e prospettive di ricerca. In: D.E. Angelucci, L. Casagrande, A. Colecchia &amp; M. Rottoli (Eds.), <i>APSAT 2. Paesaggi d'altura del Trentino. Evoluzione naturale e aspetti culturali</i>. SAP, Mantova: 125-139.</li> <li>• Carrer F. 2012. Upland sites and pastoral landscapes. New perspectives into the archaeology of pastoralism in the Alps. In: G.P. Brogiolo, D.E. Angelucci, A. Colecchia &amp; F. Remondino (Eds.) 2012. <i>APSAT 1. Teoria e metodi della ricerca sui paesaggi d'altura</i>. SAP, Mantova: 101-116.</li> </ul> <p><b>Proceedings</b></p> <ul style="list-style-type: none"> <li>• Dell'Amore F., Carrer F. &amp; Angelucci D.E. 2017. Reperti archeologici dalla Val Molinac e dalla Val Poré (Val di Sole, Trento, Italia). In: L. Guerri &amp; N. Pederghana (a cura), <i>Atti del Convegno Archeologia e Cultura in Val di Sole: Ricerche, Contesti, Prospettive</i>, Molino Ruatti, Rabbi, 10-11 settembre 2016 (ISBN 978-88-87439-47-2): 131-143.</li> <li>• Angelucci D.E., Carrer F., Cavulli F. &amp; Pedrotti A. 2014. Antichi pastori in Val di Sole (Trento, Italia): Primo bilancio del progetto ALPES, 2010-2013. In: M. Avanzini &amp; I. Salvador (a cura), <i>Atti della tavola rotonda "Antichi Pastori. Sopravvivenze, tradizione orale, storia, tracce nel paesaggio e archeologia"</i> (Bosco Chiesanuova, 26-27 ottobre 2013), MUSE - Museo delle Scienze di Trento, Trento, 2014 (ISBN: 978-88-531-0027-6): 53-66.</li> <li>• Medici T., Foradori G., Carrer F., Dal Maschio R., Gialanella S., Montagna M., Pedrotti A. &amp; Angelucci D.E. 2014. Una perlina in vetro da un contesto pastorale d'altura della Val di Sole (Trento). In: S. Ciappi, A. Larese &amp; M. Uboldi (a cura), <i>Il vetro in età protostorica in Italia, Atti delle XVI Giornate Nazionali di Studio sul Vetro</i> (Adria, 12-13 maggio 2012), Comitato Nazionale Italiano AIHV (Association Internationale pour l'Histoire du Verre), Venezia, 2014: 115-123.</li> </ul> <p><b>Dissemination</b></p> <p>Angelucci D.E. &amp; Carrer F., 2015. Sulle tracce degli antichi pastori. <i>Archeologia del territorio nei pascoli di Ortisé e Menas</i> (Val di Sole, Trento). <i>Nitida Immagine</i>, Cles, 36 p. (ISBN 978-88-87439-41-0).</p> <p><b>Dissertations</b></p>
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	<ul style="list-style-type: none"> <li>• "Studio di reperti archeologici provenienti da alcune strutture pastorali d'alta quota in Val di Sole, TN (progetto ALPES)", di Federica Dell'Amore, tesi di laurea magistrale in Conservazione e Gestione dei Beni Culturali (rel. D.E. Angelucci, correl. Elisa Possenti), A.A. 2014/15.</li> <li>• "Indagine archeologica sulle strutture in pietra a secco della Val Molinac e della Val Porè (Val di Sole, TN - Progetto ALPES)", di Giovanni Barozzi, tesi di laurea magistrale in Conservazione e Gestione dei Beni Culturali (rel. D.E. Angelucci, correl. F. Cavulli e F. Carrer), A.A. 2015/16.</li> <li>• "Studio dendrocronologico di campioni di legno provenienti da alcune strutture pastorali d'alta quota in Val di Sole – Trento (Progetto ALPES)", di Maria Chiara Chistè (rel. D.E. Angelucci, correl. i Fabio Cavulli e Mauro Bernabei, CNR-IVALSA), A.A. 2017/18.</li> <li>• "L'industria litica del sito MZ051S (Val Porè, TN): materie prime, tipologia e tecnologia", di Anna Ferrazzi (rel. D.E. Angelucci, correl. Stefano Grimaldi), A.A. 2017/18.</li> <li>• "Archeopedologia della Val Porè (Mezzana, TN – progetto ALPES): primi contributi", di Laura Vezzoni (rel. D.E. Angelucci, correl. Fabio Cavulli), A.A. 2016/17.</li> <li>• "Modellazione tridimensionale applicata all'analisi archeologica: il caso di studio dei "bait" in Val di Sole", di Marco Padovan, prova finale triennale in Beni Culturali (rel. D.E. Angelucci, esperto M. Rapanà), A.A. 2014/15.</li> <li>• "Elaborazione in ambiente GIS dei dati di scavo del sito MZ005S (Val Porè, Mezzana, TN)", di Simone Ravanelli, prova finale triennale in Beni Culturali (rel. D.E. Angelucci, esperto F. Cavulli), A.A. 2012/13.</li> <li>• "I carboni nei suoli d'alta quota come indicatori dell'impatto antropico nel passato: il caso della Val di Sole (TN)", di Federica Dell'Amore, prova finale triennale in Beni Culturali (rel. D.E. Angelucci), A.A. 2012/13.</li> <li>• "Studio esemplificativo di una struttura pastorale d'alta quota: il sito MZ005S (Val del Porè, Mezzana, TN)", di Denis Pisoni, tesi di laurea in Scienze dei Beni Culturali (rel. D.E. Angelucci, correl. A. Pedrotti e F. Cavulli), A.A. 2010/11.</li> <li>• "L'utilizzo delle alte quote a scopo pastorale. Primi dati archeologici dai pascoli di Ortisé e Menàs (Val di Sole, TN)", di Giulia Foradori, tesi di laurea in Scienze dei Beni Culturali (rel. D.E. Angelucci, correl. A. Pedrotti e F. Carrer), A.A. 2009/10.</li> </ul>
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