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(Article begins on next page)

Geoheritage in the Fallère Lake area, Aosta Valley

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The Fallère Lake area is located in the upper Clusellaz Valley, an about E-W trending valley in the middle Aosta Valley. It is shaped in micaschist and gneiss referred to Fallère and Métailler units (Middle Penninic) near the tectonic contact with calcschist and marble of the Aouilletta Unit (Upper Piedmont Zone). This area was largely shaped by Pleistocene glaciers, that formed a wide cover of glacial sediments and significant moutonnée rocks (Forno et al., 2012). In addition, it was affected by deep-seated gravitational slope deformation (DSGSD), characterized by extremely fractured rocks and evident morpho-structures involving both bedrock and Quaternary succession (Forno et al., 2013; 2016).

The DSGSD evolution in a glacial environment produced, as observed in other areas (Forno et al., 2020), significant effects both on the facies of Quaternary sediments, that appears particularly rich in rock fragments, and the formation of numerous and wide moraines, that result more extensive than in areas with normal-fractured bedrock. In detail, the glacial phenomena in this geological setting promoted strong erosion and consequent deposition of large amount of glacial sediments, essentially formed by angular small rock fragments, even by small glaciers. Moreover, this area shows peculiar features connected to DSGSD, comprising a lot of trenches and minor scarps. In detail, the NE-SW elongated Fallère Lake is located along trenches that isolates, from the main Mont Fallère summit, a high morphological sector that forms an evident bulging relief (Forno et al., 2021). Consequently, the investigated area is a significant example of geoheritage both of glacial and DSGSD landforms.

Forno M.G., Comina C., Gattiglio M., Gianotti F., Lo Russo S., Sambuelli L., Raiteri L. & Taddia G. (2016) - Preservation of Quaternary sediments in DSGSD environment: the Mont Fallère case study (Aosta Valley, NW Italy). *Alp. Mediterr. Quat.*, 29(2), 181-191.

Forno M.G., Gattiglio M., Ghignone S. & Taddia G. (2021) - Deep-seated gravitational slope deformation involving glacial evidence in the Rodoretto Valley (NW Alps). *J. Maps*, 17(2), 846-858.

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Forno M.G., Gattiglio M., Gianotti F., Guerreschi A. & Raiteri L. (2013) - Deep-seated gravitational slope deformations as possible suitable locations for prehistoric human settlements: an example from the Italian Western Alps. *Quat. Int.*, 303, 180-190.

Forno M.G., Gattiglio M., Gianotti F., Rossato S. & Taddia G. (2020) - Deep-seated gravitational slope deformation effects on Quaternary deposits in the western Alps (NW Italy). *Alp. Mediterr. Quat.*, 33(1), 43-60.