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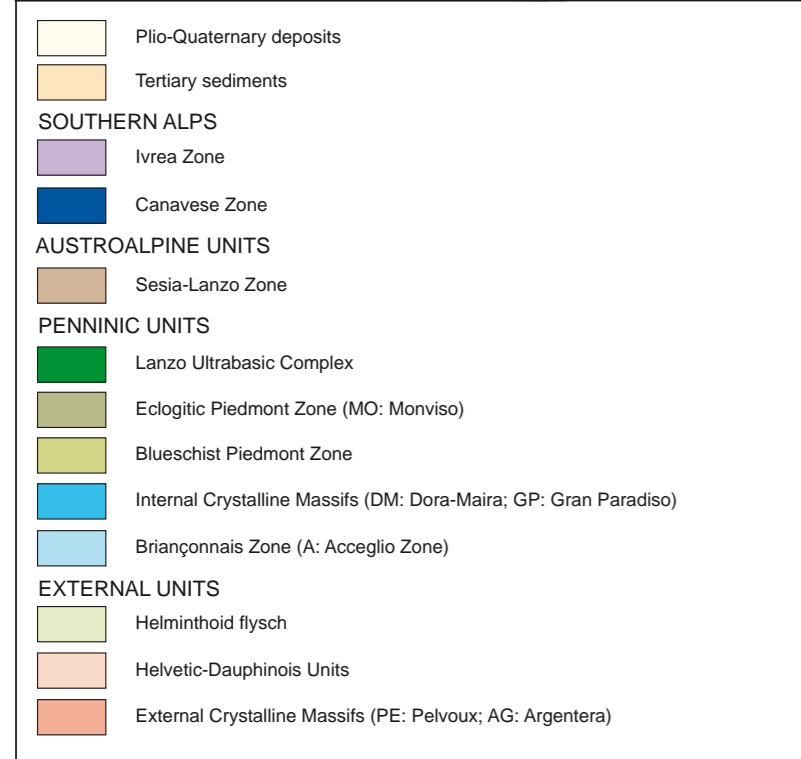
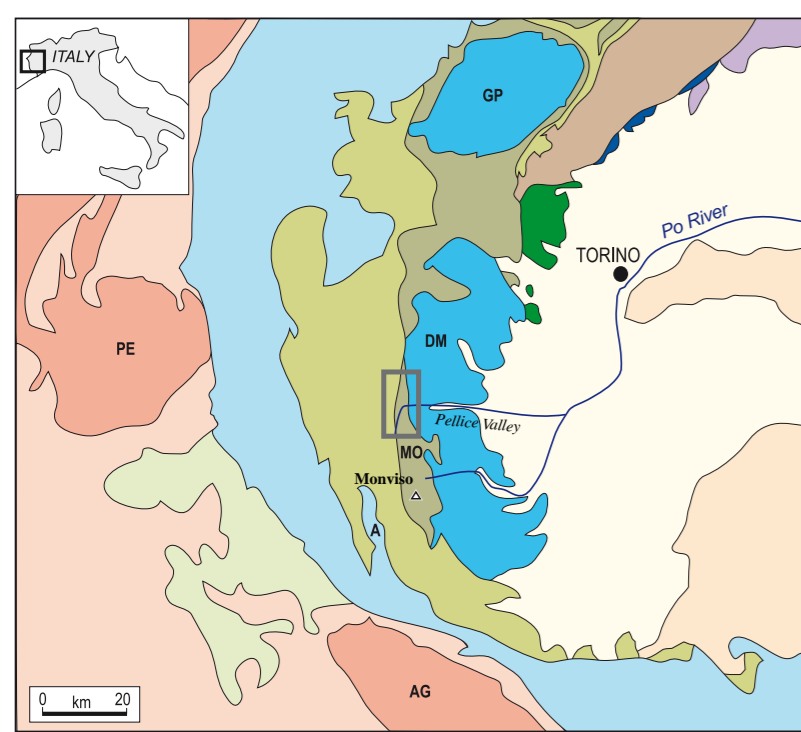
GEOLOGICAL MAP OF THE UPPER PELLICE VALLEY (ITALIAN WESTERN ALPS)

Gianni Balestro⁽¹⁾, Gianfranco Fioraso⁽²⁾ & Bruno Lombardo⁽²⁾

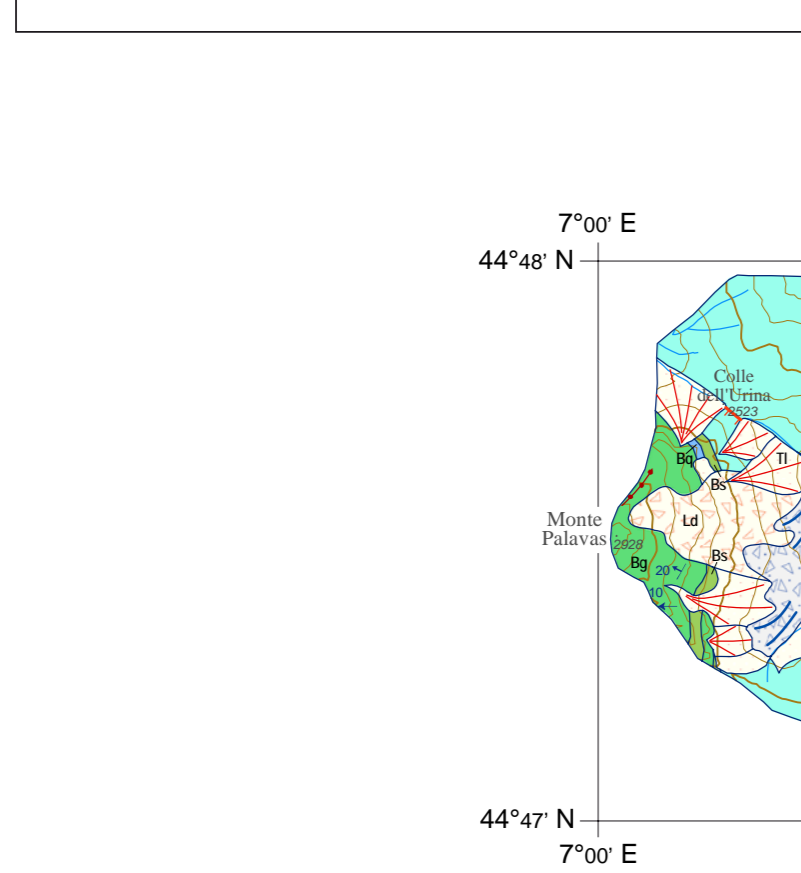
(1) Dipartimento di Scienze della Terra, Università degli Studi di Torino, Via Valperga Caluso 35, 10125 Torino, Italy
 (2) Istituto di Geoscienze e Georisorse, Consiglio Nazionale delle Ricerche, Via Valperga Caluso 35, 10125 Torino, Italy

Scale 1:25,000

m 500 0 500 1000 1500 2000 m



Tectonic sketch map of the Western Alps. The inset shows the study area.



- QUATERNARY DEPOSITS**
- F11 Alluvial and debris flow deposits, composed of gravelly cobbles and sandy gravels, clast-supported, massive to well stratified, sometimes containing decimetric-scale boulders (F11). Late Upper Pleistocene - Present
 - F12 Ancient alluvial and debris flow deposits, composed of clast-supported gravelly cobbles with sandy matrix, clast-supported, massive to crudely stratified, sometimes containing decimetric-scale boulders (F12). Late Upper Pleistocene - Holocene
 - Td Mixed talus and debris flow deposits, composed of angular clasts, cobbles and gravels with crude stratification, clast supported, sometimes with partially openwork texture (Td). Late Upper Pleistocene - Present
 - Tl Talus deposits, composed of well sorted centimetric to decimetric angular fragments and blocks, clast supported, with openwork to partially openwork texture (Tl). Late Upper Pleistocene - Present
 - Ld Landslide deposits, composed of chaotic accumulation of angular blocks with scanty matrix or large loosened portions of bedrock (Ld). Late Upper Pleistocene - Present
 - Ug Undifferentiated glacial deposits, made up of diamictum with silty-sandy matrix containing faceted, smoothed and striated clasts and boulders (lodgement till) and chaotic blocks accumulation with silty-sandy matrix (ablation till) (Ug). Upper Pleistocene
 - Rg1 Active rock glacier, composed of poorly sorted angular blocks, at surface, and blocks and fine material with interstitial ice, below the surface. Block surfaces are devoid of lichens (Rg1). Holocene - Present
 - Rg2 Inactive rock glacier, composed of poorly sorted angular blocks, at surface, and blocks and fine material below the surface. Block surfaces are lichen covered (Rg2). Holocene

- PRE-QUATERNARY TECTONIC UNITS**
- BUCIE-SELLIERE UNIT**
- Bc Fine-grained calcischie with levels of micaceous marble and micaschist, mainly phyllitic in the lower part of the sequence and more carbonatic in the upper part (Bc). Early Cretaceous? - Late Cretaceous?
 - Bm Levels of medium-grained micaschist (Colle Selliere, east of Colle della Croce, north of Alpe Crosenna) (Bm). Early Cretaceous? - Late Cretaceous?
 - Bq Undifferentiated white marbles, micaceous quartzites and layers of metabasite deriving from gabbroic and basaltic sandstones (Monte Palavas, Bric Bucie) (Bq). Late Jurassic?
 - Bb Bodies of fine-grained metabasite mostly deriving from basaltic rocks (Bb). Middle Jurassic?
 - Bg Blueschist-facies metagabbros with well-preserved magmatic fabric (Monte Palavas) (Bg). Middle Jurassic?
 - Bs Levels of serpentized cumulate peridotite (Monte Palavas) (Bs).

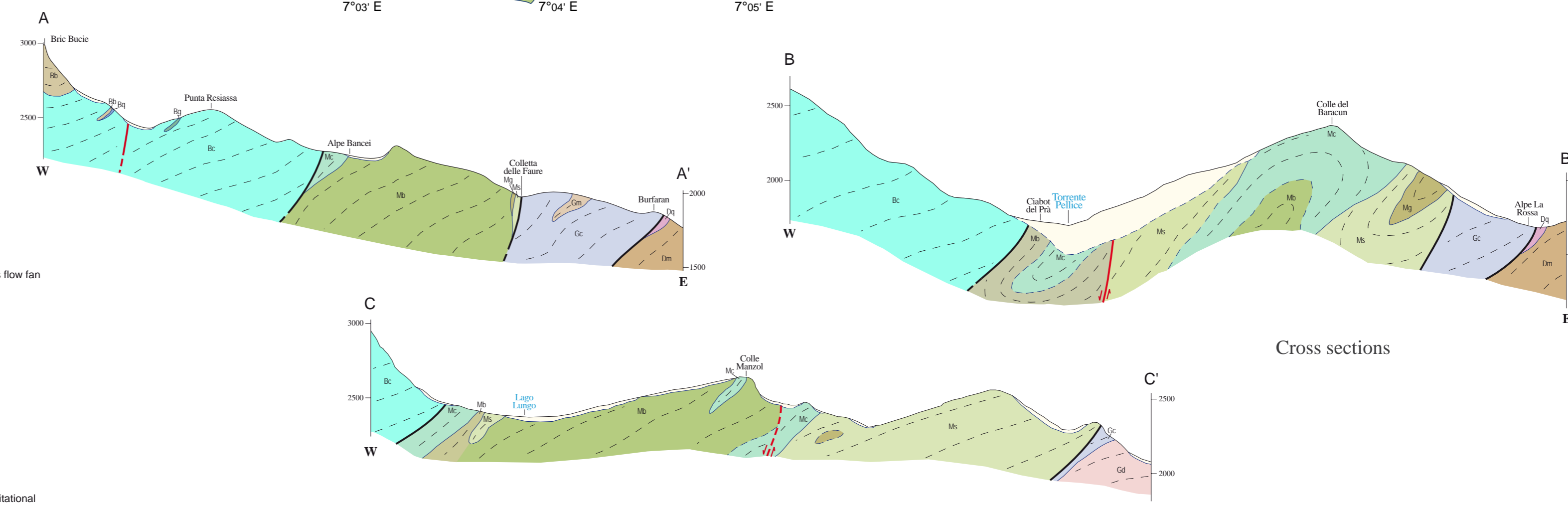
- MONVISO UNIT**
- Mc Medium-grained calcischie, micaceous marbles and quartz-rich micaschists, locally with blocks of banded metabasite, serpentinite and eclogitic metaferrogabbro, and layers of metabasite deriving from gabbroic and basaltic sandstones (Colle del Baracun, Mirabuc, Villarova) (Mc). Late Jurassic? - Cretaceous?
 - Mb Banded amphibole-epidote metabasites with relics of glaucophane and garnet, with poorly-preserved magmatic fabric (pillow lavas and breccias), locally transformed into greenschists (Col Bancet, Colletta delle Faure, Colle Manzoni, Rocca Capus) (Mb). Late Jurassic?
 - Mg Greenschist-facies Al-Mg metagabbros (Mg) and locally preserved (Colle Dar Loup, east of Monte Manzoni) "Smargadite" Al-Mg metagabbro (a). Middle Jurassic?
 - Me Eclogite-facies Fe-metagabbros and fine-grained glaucophane-bearing eclogites (Me). Middle Jurassic?
 - Ms Massive antigorite serpentinites and antigorite schists, locally with metamorphic olivine (Ms); (a) main metarodolite dykes (Colle Dar Loup, Colle del Baracun, Colle della Gianna, Rocca Nera, Villarova).

- GIULIAN-SEA BIANCA UNIT**
- Gc Medium-grained calcischie with levels of fine-grained micaceous marble; (a) meter-scale lenticular bodies of metabasite (Monte Giulian, Colletta delle Faure, NW and SW of Alpe La Rossa, north of Grange del Pis) (Gc). Jurassic? - Cretaceous?
 - Gm Level of medium-grained garnet-bearing micaschist (east of Colletta delle Faure) (Gm). Jurassic? - Cretaceous?
 - Gd Bodies and levels of white to grey fine-grained metadolomite, dolomite marble and banded mica-bearing marble (Gd). Middle Triassic - Late Triassic?

- DORA-MAIRA UNIT**
- Dq Undifferentiated metasedimentary cover of the Paleozoic basement: carbonate micaschists, yellowish marbles, quartzites and paragneisses (Colle Giulian, Burfaran, south of Eysard, Alpe La Rossa, Grange della Gianna) (Dq). Early Triassic?
 - Dg Medium- to coarse-grained K-feldspar-bearing orthogneisses, with variably preserved magmatic fabric, and fine-grained leucocratic gneisses (Dg). Early Permian?
 - Dm Medium-grained garnet-chloritoid-bearing micaschists and fine-grained paragneisses (Dm); (a) lenticular bodies of fine-grained garnet- and glaucophane-bearing metabasite (north and south of Eysard, Alpe La Rossa). Pre-Carboniferous?

- Lithological contact
- Syn-metamorphic fault
- Post-metamorphic fault (dashed where inferred)
- Normal post-metamorphic fault (dashed where inferred; ticks on downthrown side)
- Main foliation (Sp)
- Pre-Sp foliation
- Post-Sp foliation
- Syn-Sp fold axis
- Post-Sp fold axis
- Trace of cross section
- Alluvial and debris flow fan
- Mixed fan
- Talus fan
- Glacial moraine
- Protalus rampart
- Rock glacier ridge
- Trench
- Counter-slope
- Yielding surface
- Deep-seated gravitational slope deformation

A A' W E



The Geological Map of the Upper Pellice Valley was compiled from geological surveys by G. Arduino, J.G. Brasler, M. Rattalino, R. Nervo and B. Lombardo (1983-1984), and from new lithological, structural and morphological observations by the Authors (2009-2010). The topographic map derives from the Carta Tecnica Regionale of the Regione Piemonte (vector_50 series; Coordinate System WGS 1984 UTM Zone 32N; authorization n.15/2010).

