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Devonian and Carboniferous of the Carnic Alps

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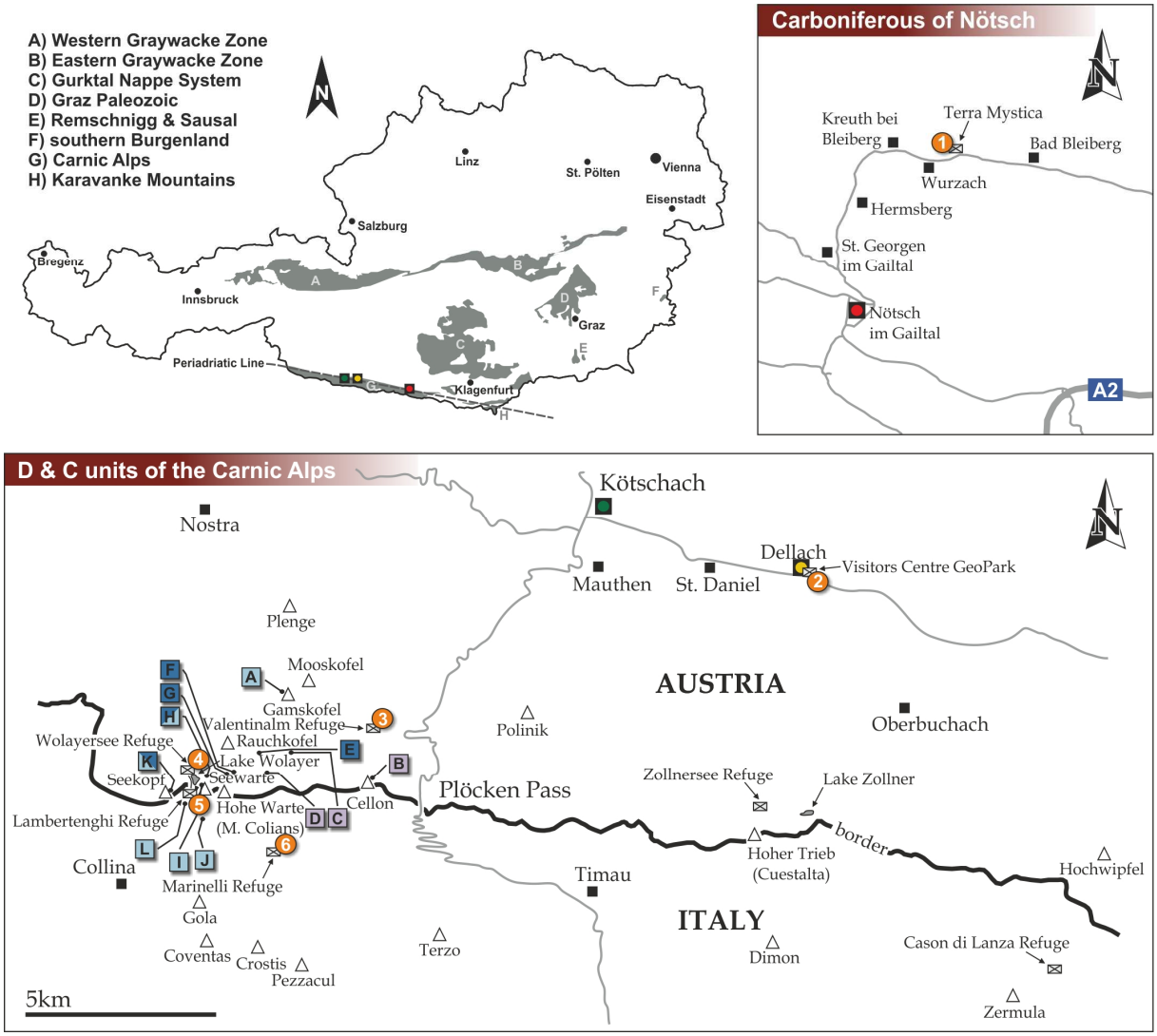
Within the frame of the IGCP 596 field-workshop, Devonian and Carboniferous outcrops mainly of the southalpine sequence of the Carnic Alps will be discussed in field. The following figures and shortcuts of lithostratigraphic units shall provide an overview for a better understanding of the regional geological settings. Apart from this the most important key sections of the central Carnic Alps are compiled under *Geological Highlights*.



Locality maps of Devonian & Carboniferous units of the Carnic Alps north (Carboniferous of Nötsch, upper right map) and south (central Carnic Alps, lower map) of the Periadriatic Line.

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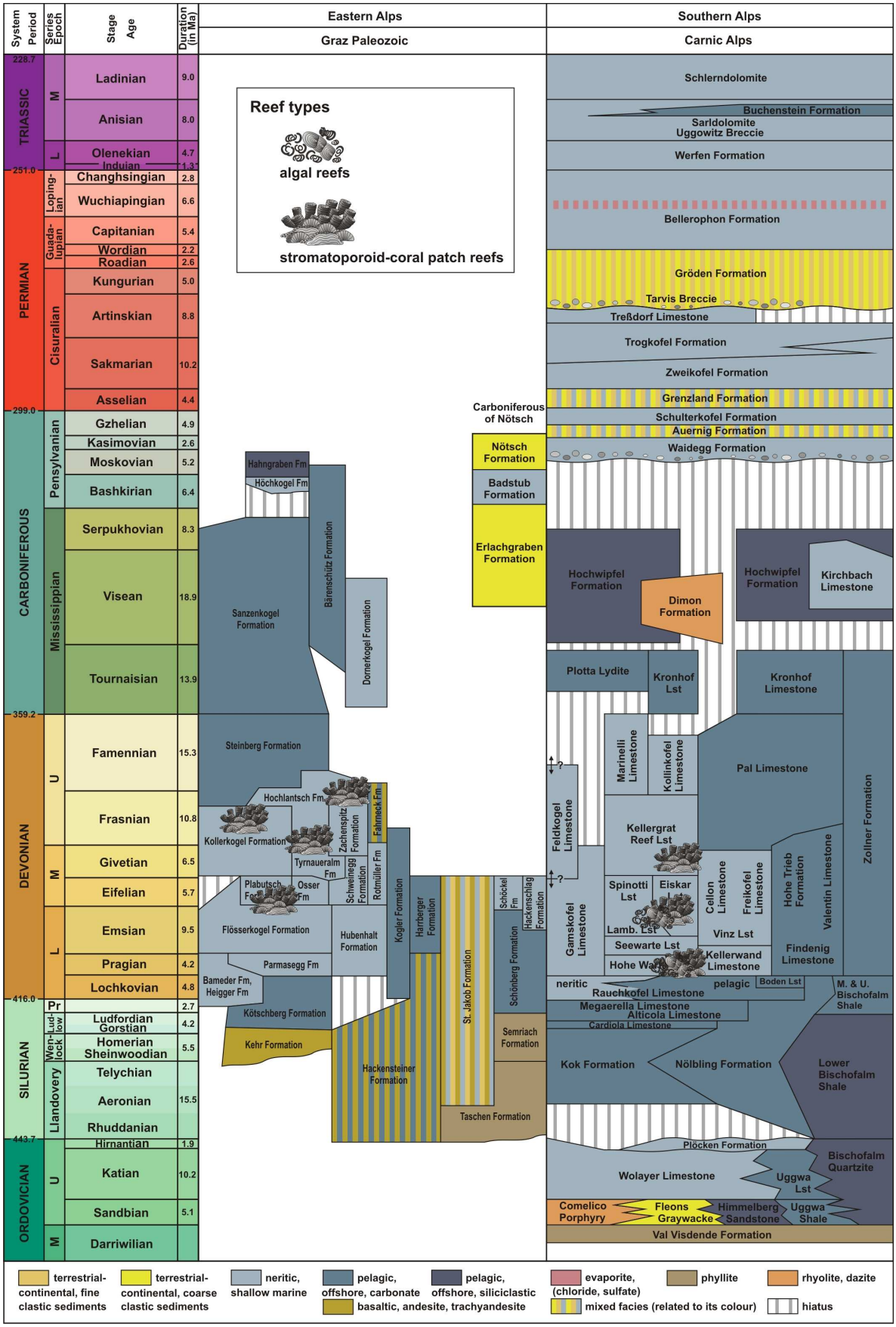

Lithostratigraphic units of the Graz Paleozoic & the Carnic Alps (Austrian Stratigraphic Chart, 2004).

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Devonian & Carboniferous units of the Carnic Alps

Short characterisation of Devonian and Carboniferous units of the Carnic Alps deposited south of the Periadriatic Line. This summary mainly follows PÖLSLER (1969a, b), KRAINER (1992), SCHÖNLAUB *et al.* (1980), SCHÖNLAUB (1985a), KREUTZER (1992a, b), HUBMANN *et al.* (2003), SCHÖNLAUB *et al.* (2004) and FORKE *et al*. (2006), where further details on the single units are provided.

DEVONIAN SEQUENCE

NORTHERN SHALLOW WATER FACIES (FELDKOGEL NAPPE)

Feldkogel Limestone
Lithology: algal laminite with dolomite layers
Fossils: conodonts, foraminiferans, ostracods, stromatolites
Chronostratigraphic age: Eifelian - Upper Devonian
Biostratigraphy: Upper Devonian is based of the occurrence of *Palmatolepis* sp. from sediments of the Mooskofel
Thickness: >330 m

SOUTHERN SHALLOW WATER FACIES (KELLERWAND NAPPE)

Gamskofel Limestone
Lithology: algal laminite with *Amphipora* limestone and loferite layers
Fossils: algae, brachiopods, corals, foraminiferans, ostracods
Chronostratigraphic age: Pragian - Givetian(?)
Biostratigraphy: -
Thickness: approx. 800 m

Rauchkofel Limestone (neritic)
Lithology: lithoclastic limestone, dark nodular limestone, mega-conglomerate horizon, well bedded dark grey crinoidal limestone
Fossils: brachiopods, conodonts, crinoids, gastropods
Chronostratigraphic age: Lochkovian - Pragian
Biostratigraphy: ?*woschmidti*, *delta*, *pesavis*, and *steinachensis* conodont zones
Thickness: about 180 m

Hohe Warte Limestone
Lithology: massive, light grey limestone
Fossils: brachiopods, algae, conodonts, corals, crinoids, cyanobacteria, gastropods, stromatoporoids
Chronostratigraphic age: Pragian
Biostratigraphy: ?*serratus* - *celtibericus* conodont zones
Thickness: 350 m

Seewarte Limestone
Lithology: black bituminous limestone
Fossils: algae, bivalves, corals, crinoids, gastropods, ostracods
Chronostratigraphic age: Lower Emsian
Biostratigraphy: -
Thickness: 40 m

Lambertenghi Limestone
Lithology: well bedded laminated limestone, birdseye limestone, crinoidal debris limestone
Fossils: algae, bivalves, brachiopods (e.g. *Karpinskia consuelo*), corals, echinoderms, foraminiferans, gastropods, ostracods, stromatoporoids
Chronostratigraphic age: Emsian
Biostratigraphy: -
Thickness: 130 m

Spinotti Limestone
Lithology: massive limestone, layers of crinoidal debris and *Amphipora* limestone, birdseye limestone
Fossils: algae, bivalves, brachiopods, corals (rugose and tabulate corals), echinoderms, gastropods, stromatoporoids
Chronostratigraphic age: Eifelian - Lower Givetian
Biostratigraphy: -
Thickness: 220 m

Eiskar Limestone
Lithology: bioclastic limestone, birdseye limestone
Fossils: algae, bivalves, corals, echinoderms, gastropods
Chronostratigraphic age: Emsian - Lower Givetian
Biostratigraphy: -
Thickness: 330 m

Kellergrat Reefal Limestone
Lithology: massive reef limestone
Fossils: brachiopods, calcareous algae, calcispheres, conodonts, corals, ecinoderms, gastropods, stromatoporoids

Chronostratigraphic age: Lower Givetian - Frasnian
Biostratigraphy: *gigas* conodont zone
Thickness: >180 m

Marinelli Limestone
Lithology: loferites and crinoidal debris limestone
Fossils: calcareous algae, conodonts, echinoderms, gastropods
Chronostratigraphic age: uppermost Frasnian - Famennian
Biostratigraphy: -
Thickness: 10 - 20 m

Kollinkofel Limestone
Lithology: dark brachiopod-rich limestone (rhynchonellids) with sparry lithoclastic layers
Fossils: brachiopods, conodonts, echinoderms
Chronostratigraphic age: uppermost Frasnian - Famennian
Biostratigraphy: *gigas* to *postera* conodont zones
Thickness: >40 m

TRANSITIONAL FACIES (CELLON NAPPE)

Rauchkofel Limestone (pelagic)
Lithology: dark, platy limestone
Fossils: acritarchs, brachiopods, chitinozoans, conodonts, crinoids, gastropods
Chronostratigraphic age: Lochkovian - Pragian
Biostratigraphy: *woschmidti* zone
Thickness: 80 – 120 m

Kellerwand Limestone
Lithology: yellow tentaculite limestone with bioclastic layers
Fossils: bivalves, brachiopods, conodonts, corals, echinoderms, ostracods, nautiloids, tentaculites, trilobites
Chronostratigraphic age: Pragian - Lower Emsian
Biostratigraphy: *serotinus* and *patulus* conodont zones
Thickness: max. 145 m

Vinz Limestone
Lithology: dark grey platy limestone with debris layers
Fossils: bivalves, cephalopods, corals, conodonts, ecinoderms, foraminiferans, ostracods, tentaculites
Chronostratigraphic age: Emsian
Biostratigraphy: -
Thickness: 120 m

Cellon Limestone
Lithology: massive grey limestone with pelagic biogenes with debris layers
Fossils: bivalves, cephalopods, corals, conodonts, echinoderms, foraminiferans, gastropods, stromatoporoids, trilobites
Chronostratigraphic age: Eifelian - Givetian
Biostratigraphy: *partitus*, *costatus*, and *varcus* conodont zones
Thickness: 210 m

Freikofel Limestone
Lithology: light red to greyish pelagic limestone
Fossils: cephalopods, conodonts, corals, crinoids, trilobites
Chronostratigraphic age: Eifelian - Givetian
Biostratigraphy: *costatus* conodont zone
Thickness: >100 m

PELAGIC CARBONATE FACIES (RAUCHKOFEL NAPPE)

Boden Limestone
Lithology: light flaser limestone
Fossils: cephalopods (orthoconic and coiled nautiloids), conodonts, tentaculites (dacryoconarids)
Chronostratigraphic age: Lochkovian
Biostratigraphy: *delta* and *pesavis* conodont zones
Thickness: about 20 m

Findenig Limestone
Lithology: red flaser and nodular limestone
Fossils: cephalopods, conodonts, foraminiferans, ostracods, tentaculites
Chronostratigraphic age: Pragian - Emsian
Biostratigraphy: *serratus* and *kitabicus* conodont zones
Thickness: 40 - 60 m

Hohe Trieb Formation
Lithology: flaser and platy limestone with clay and chert layers
Fossils: cephalopods, conodonts, corals, crinoids, trilobites
Chronostratigraphic age: Eifelian - Givetian
Biostratigraphy: -
Thickness: 30 - 40 m

Valentin Limestone
Lithology: well bedded limestones (wackestone), nodular phosphorite horizon (at Givetian/Frasnian boundary)
Fossils: brachiopods, conodonts, echinoderms, gastropods, ostracods, styliolinids, trilobites
Chronostratigraphic age: Eifelian – Givetian

Biostratigraphy: *costatus* to early *hassi* conodont zones
Thickness: 15 m

Pal Limestone
Lithology: limestone beds (mudstone and wackestone), thin biosparitic and quartz-rich layers, black shale
Fossils: bivalves, clymeniids, conodonts, corals (rare), echinoderms, goniatites, ostracods, styliolinids, trilobites
Chronostratigraphic age: Frasnian - Famennian
Biostratigraphy: ammonoid zones (*acuticostata* and *piriformis Clymenia* zones; upper *paradoxa* and *prorsum Wocklumeria* zones); late *hassi* to *praesulcata* conodont zones
Thickness: >100 m

DISTAL SILICICLASTIC FACIES (BISCHOFALM NAPPE)

Middle and Upper Bischofalm Shales
Lithology: black alaun shale and lydites, greyish green shale
Fossils: conodonts, graptolites
Chronostratigraphic age: Ludlow to Pridoli (M. B. Shale); Pridoli to Lochkovian (U. B. Shale)
Biostratigraphy: M. B. Shale: *vulgaris*, *nilssoni*, *chimaera*, and *transgrediens* graptolite zones; U. B. Shale: *transgrediens*, *uniformis*, *praehercynicus*, and *hercynicus* graptolite zones
Thickness: 4 - 5 m (Middle Bischofalm Shale) and 10 m (Upper Bischofalm Shale)

Zollner Formation
Lithology: greyish green lydites and siliceous shales
Fossils: conodonts, radiolarians
Chronostratigraphic age: Lochkovian - Tournaisian
Biostratigraphy: -
Thickness: >100 m

CARBONIFEROUS SEQUENCE

Kronhof Limestone
Lithology: grey to reddish flaser limestone, black shale at the base ("Kronhof Shale")
Fossils: cephalopods, conodonts, trilobites
Chronostratigraphic age: Tournaisian
Biostratigraphy: *Gattendorfia* and *Merocanites* ammonoid zones; *sulcata* to *isosticha* conodont zone and *anchoralis* conodont zone
Thickness: 10 m (+ 0.2 m Kronhof Shale at the base of the unit)

Plotta Lydite
Lithology: discontinuous silcrete layers consisting of weakly bedded breccias or massiv and laminated cherts
Fossils: radiolarians?
Chronostratigraphic age: Tournaisian
Biostratigraphy: The above mentioned age is based on a mixed conodont fauna (*anchoralis* - *latus* zone) from the uppermost limestone bed disconformably overlain by the Plotta Lydite.
Thickness: approx. 3 m

Hochwipfel Formation
Lithology: turbidite sequence consisting of graded sandstones alternating with siltstone and shale, siliceous shale, lydites (breccias and conglomerates), tuffs
Fossils: plants, spores
Chronostratigraphic age: Tournaisian - Visean
Biostratigraphy: *anchoralis* to *texanus* conodont zones
Thickness: approx. >1000 m

Dimon Formation
Lithology: pillow lavas and breccias, vulcano-clastic sediments, green and red argilites
Fossils: -
Chronostratigraphic age: Visean
Biostratigraphy: -
Thickness: approx. 300 m

Kirchbach Limestone
Lithology: micritic, light grey nodular limestone; it occurs only in lenticular bodies which laterally grade into silty shale.
Fossils: conodonts, crinoids
Chronostratigraphic age: Visean
Biostratigraphy: according to SCHÖNLAUB (1985a), the conodont assemblage points to Visean age
Thickness: 8 - 10 m

Waidegg Formation
Lithology: breccia and conglomerate horizons, in upper part coarse clastic layers are intercalated by silty and sandy shale
Fossils: plants
Chronostratigraphic age: uppermost Moscovian - lowermost Kasimovian (age is

inferred on the above deposited and well constrained Auernig Formation)
Biostratigraphy: -
Thickness: 40 m

Auernig Formation
Lithology: quartz conglomerates, cross-bedded sandstones, bioturbated siltstones, and bedded, massive or nodular limestones
Fossils: calcareous algae, brachiopods, bryozoans, conodonts, echinoderms, foraminiferans (e.g. fusulinids), gastropods, ostracods, plants
Chronostratigraphic age: Kasimovian - Gzhelian
Biostratigraphy: *permirus* to *communis* fusulinid zones; *expansus* to *elegantulus* conodont zones
Thickness: 600 - 800 m

Schulterkofel Formation
Lithology: bedded and massive limestones (represented by up to 20 m thick *Anthracoporella* mounds), with subordinate silt- and fine-grained sandstones
Fossils: algae, brachiopods, bryozoans, echinoderms, foraminiferans (e.g. fusulinids), gastropods, ostracods
Chronostratigraphic age: Gzhelian
Biostratigraphy: *communis* to *versabilis* fusulinid zones
Thickness: 140 m

Carboniferous of Nötsch

The Carboniferous of Nötsch is located north of the Periadriatic Line and is subdivided into three units by SCHÖNLAUB (1985b). The sequence has become famous due to the occurrence of certain fossils like the well-known brachiopod species *Gigantoproductus giganteus*, abundant trilobites and ostracodes (SCHRAUT 1996, HUBMANN *et al.* 2003).

Erlachgraben Formation
Lithology: quartz conglomerates and sandy shales in the lower part of the unit; grey to dark grey siltstone, shale and limy marls in the upper part of the unit
Fossils: algae, bivalves, brachiopods (e.g. *Gigantoproductus*), cephalopods, corals, crinoids, foraminiferans, gastropods, plants
Chronostratigraphic age: Visean - Bashkirian
Biostratigraphy: *granosus* goniatite zone
Thickness: approx. 80 m

Badstub Formation
Lithology: breccia consisting of amphibolite, gneiss, granite, muscovite-rich shale, quartzite, marble, limestone clasts, intercalated by a few meters thick black graphite horizon in the lower part, and a 10 - 17 m thick fossiliferous shale horizon
Fossils: bivalves, brachiopods (e.g. *Gigantoproductus*), bryozoans, corals, echinoderms, gastropods, trilobites
Chronostratigraphic age: Bashkirian - Moscovian
Biostratigraphy: *nodosus* conodont zone
Thickness: 350 - 400 m

Nötsch Formation
Lithology: brown to dark grey sandy shale, sandstone, fine-grained to coarse conglomerates
Fossils: bivalves, brachiopods, bryozoans, corals, echinoderms, gastropods, ostracods, scaphopods, trace fossils, trilobites, plants
Chronostratigraphic age: Moscovian - Kasimovian
Biostratigraphy: -
Thickness: 400 - 600 m

References

HUBMANN, B., POHLER, S., SCHÖNLAUB, H.P. & MESSNER, F. (2003): Paleozoic Coral-Sponge Bearing Successions in Austria. - Berichte der Geologischen Bundesanstalt, 61: 1-91.

FORKE, H., SCHÖNLAUB, H.P. & SAMANKASSOU, E. (2006): The Late Paleozoic of the Carnic Alps (Austria/Italy): Guidebook; Field-trip of the SCCS Task Group to establish GSSP's close to the Moscovian/Kasimovian and Kasimovian/Gzhelian boundaries 31. July - 1. August. - Berichte der Geologischen Bundesanstalt, 70: 1-57.

KRAINER, K. (1992): Fazies, Sedimentationsprozesse und Paläogeographie im Karbon der Ost- und Südalpen. - Jahrbuch der Geologischen Bundesanstalt, 135 (1): 99-193.

KREUTZER, L.H. (1992a): Palinspastische Entzerrung und Neugliederung des Devons in den Zentralkarnischen Alpen aufgrund von neuen Untersuchungen. - Jahrbuch der Geologischen Bundesanstalt, 135 (1): 261-272.

KREUTZER, L.H. (1992b): Photoatlas zu den varizischen Karbonat-Gesteinen der Karnischen Alpen (Österreich/Italien). - Abhandlungen der Geologischen Bundesanstalt, 47: 1-129.

PÖLSLER, P. (1969a): Stratigraphie und Tektonik im Nordabfall des Findenigkofels (Silur bis Karbon; Karnische Alpen, Österreich). - Jahrbuch der Geologischen Bundesanstalt, 112: 355-398.

PÖLSLER, P. (1969b): Conodonten aus dem Devon der Karnischen Alpen (Findenigkofel, Österreich). - Jahrbuch der Geologischen Bundesanstalt, 112 (2): 399-440.

SCHÖNLAUB, H.P. (1985a): Das Paläozoikum der Karnischen Alpen. - *In*: DAURER, A. & SCHÖNLAUB, H.P. (eds.): Arbeitstagung der Geologischen Bundesanstalt 1985 in Kötschach-Mauthen. 1-87.

SCHÖNLAUB, H.P. (1985b): Das Karbon von Nötsch und sein Rahmen. - Jahrbuch der Geologischen Bundesanstalt, 127 (4): 673-692.

SCHÖNLAUB, H.P., HISTON, K. & POHLER, S. (2004): The Palaeozoic of the Carnic Alps. - *In*: SCHÖNLAUB, H.P. (ed.): Field Trip Carnic Alps Guidebook. June 23-24, 2004, Carinthia Austria. - Geologische Bundesanstalt, 40: 2-32.

SCHÖNLAUB, H.P. with contributions from JAEGER, H., HOUSE, M.R., PRICE, J.D., GÖDDERTZ, B., PRIEWALDER, H., WALLISER, O.H., KŘÍŽ, J., HAAS, W. & VAI, G.B. (1980): Carnic Alps. Field Trip A. - *In*: SCHÖNLAUB, H.P. (ed.): Second European Conodont Symposium, ECOS II, Guidebook, Abstracts. - Abhandlungen der Geologischen Bundesanstalt, 35: 5-57.

SCHRAUT, G. (1996): Die Arthropoden aus dem Unterkarbon von Nötsch (Kärnten/Österreich). - Abhandlungen der Geologischen Bundesanstalt, 51: 1-193.

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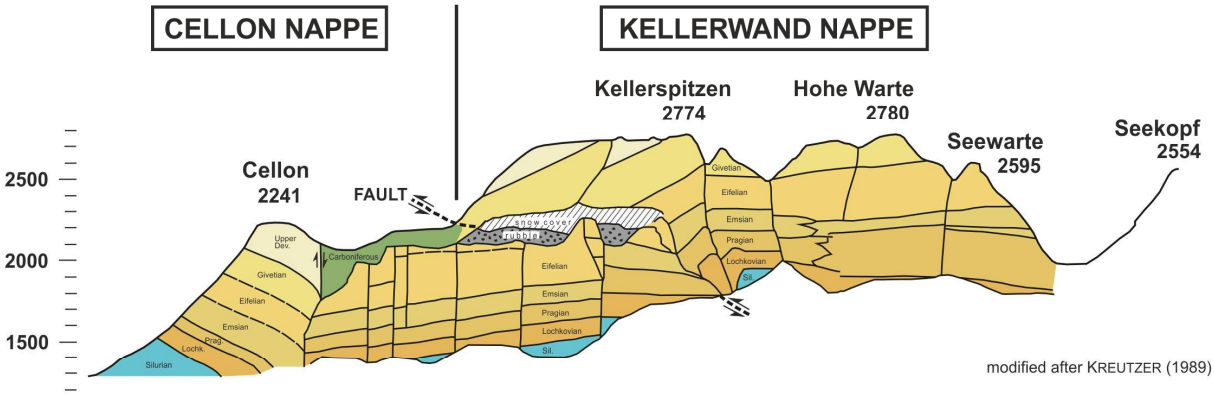
Field-Workshop: Regional Geology



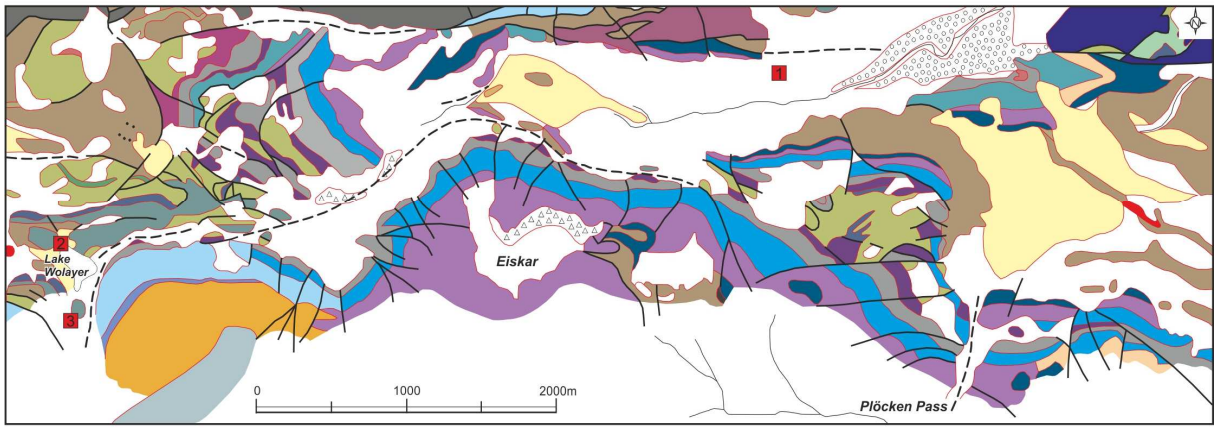
modified after KREUTZER (1989)

Cellon Nappe

- Kok Formation (Llandovery-Ludlow)
- Cardiola Formation (Ludlow)
- Alticola Limestone (Ludlow-Pridoli)
- Megaerella Limestone (Pridoli)
- Rauchkofel Limestone (Lochkovian) and Kellerwand Limestone (Pragian-Lower Emsian)
- Vinz Limestone (Emsian)
- Cellon Limestone (Eifelian-Givetian)
- Pal Limestone (Upper Devonian)
- Kronhof Limestone (Carboniferous)

Kellerwand Nappe

- Kok Formation (Llandovery-Ludlow)
- Cardiola Formation (Ludlow)
- Alticola Limestone (Ludlow-Pridoli)
- Megaerella Limestone (Pridoli)
- Rauchkofel Limestone (Lochkovian)
- Hohe Warte Limestone (Pragian)
- Seewarte Limestone (Lower Emsian)
- Lambertenghi Limestone (Emsian)
- Eiskar Limestone (Emsian-Lower Givetian), Spinotti Limestone (Eifelian-Lower Givetian) and Kellergrat Reef Limestone (Lower Givetian-Frasnian)
- Marinelli Limestone (uppermost Frasnian-Famennian)
- Kollinkofel Limestone (uppermost Frasnian-Famennian)



- Zollner Formation
- Bischofalm Shale
- Nölbling Formation
- Kok and Cardiola formations Alticola and Megaerella limestones
- Uggwa and Wolayer limestones
- Himmelberg Sandstone
- Uggwa Shale
- Kellerwand Limestone
- Spinotti Limestone
- Lambertenghi Limestone
- Seewarte Limestone
- Hohe Warte Limestone
- Rauchkofel Limestone
- Mooskofel Dolomite
- Feldkogel Limestone
- Gamskofel Limestone
- Hochwipfel Formation
- Kronhof Limestone
- Pal Limestone
- Findenig, Valentin and Pal limestones (Wolayer area)
- Freikofel Limestone
- Cellon Limestone
- Pleistocene deposits
- rubble
- facies boundary
- fault
- 1 Valentinalm Hut
- 2 Wolayersee Hut
- 3 Refugio Lambertenghi

modified after Geological Map 1:50.000, **197 Kötschach** (Geologische Bundesanstalt, 1985)

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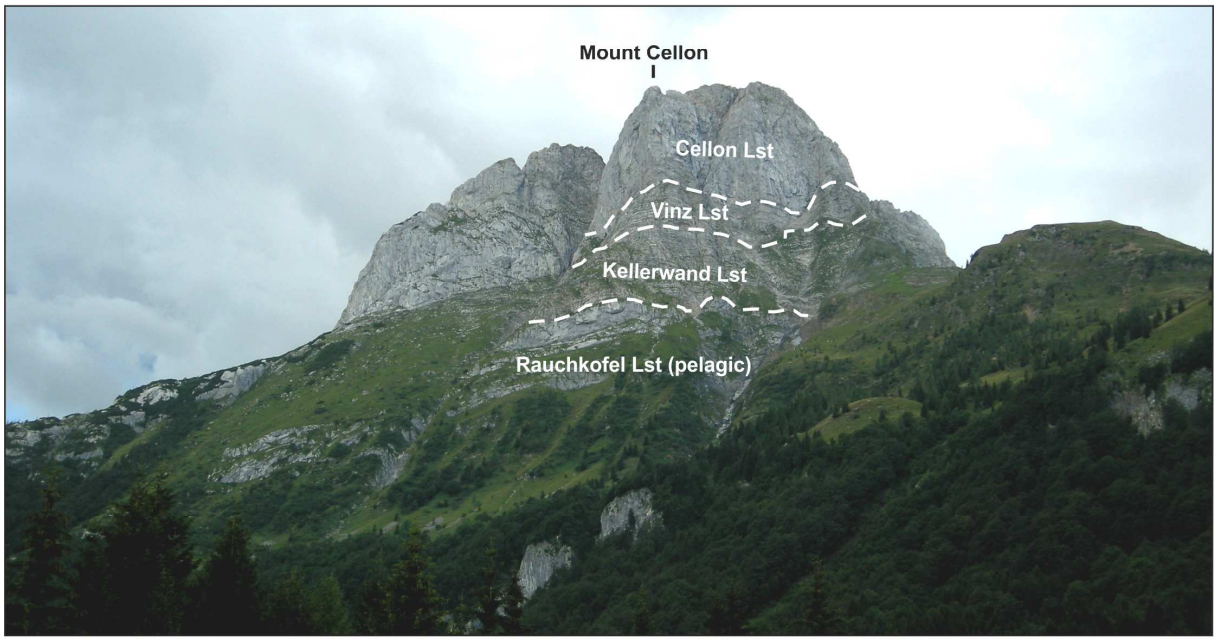
Field-Workshop: Geological Highlights

SOUTHERN SHALLOW WATER FACIES

A **KELLERWAND NAPPE**
Locality: Mount Gamskofel



TRANSITONAL FACIES

B **CELLON NAPPE**
Locality: Mount Cellon

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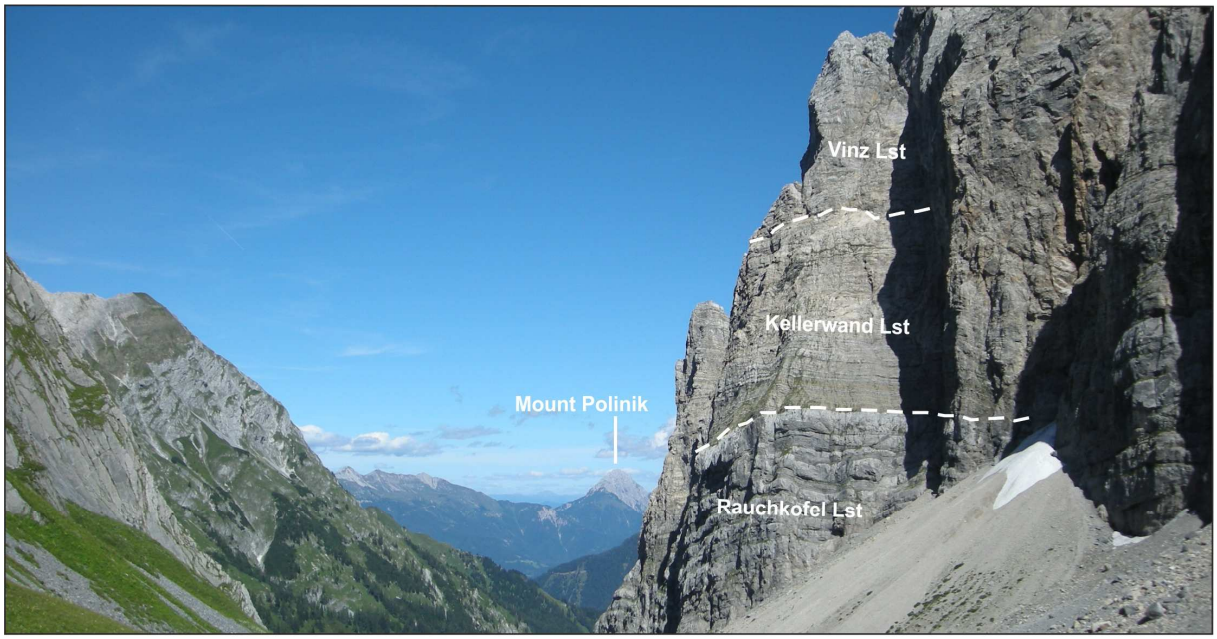
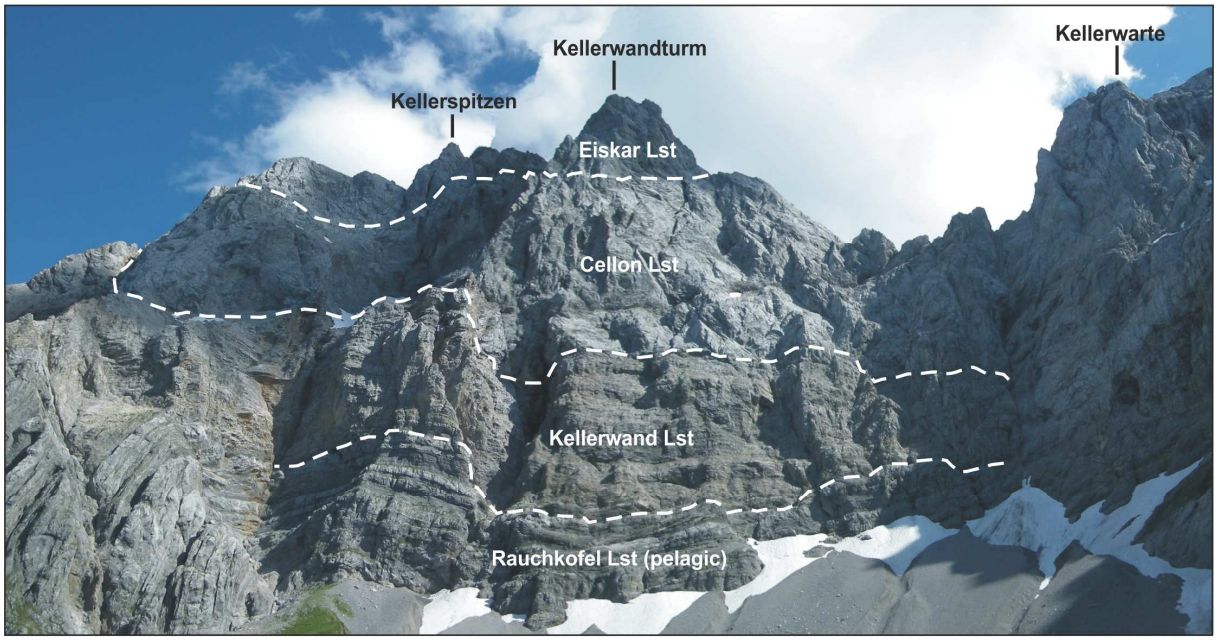


TRANSITONAL FACIES

C CELLON NAPPE
Locality: Kellerwand



TRANSITONAL FACIES

D CELLON NAPPE
Locality: Kellerwand

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PELAGIC CARBONATE FACIES

E RAUCHKOFEL NAPPE
Locality: Mount Rauchkofel

PELAGIC CARBONATE FACIES

F RAUCHKOFEL NAPPE
Locality: Valentintörl

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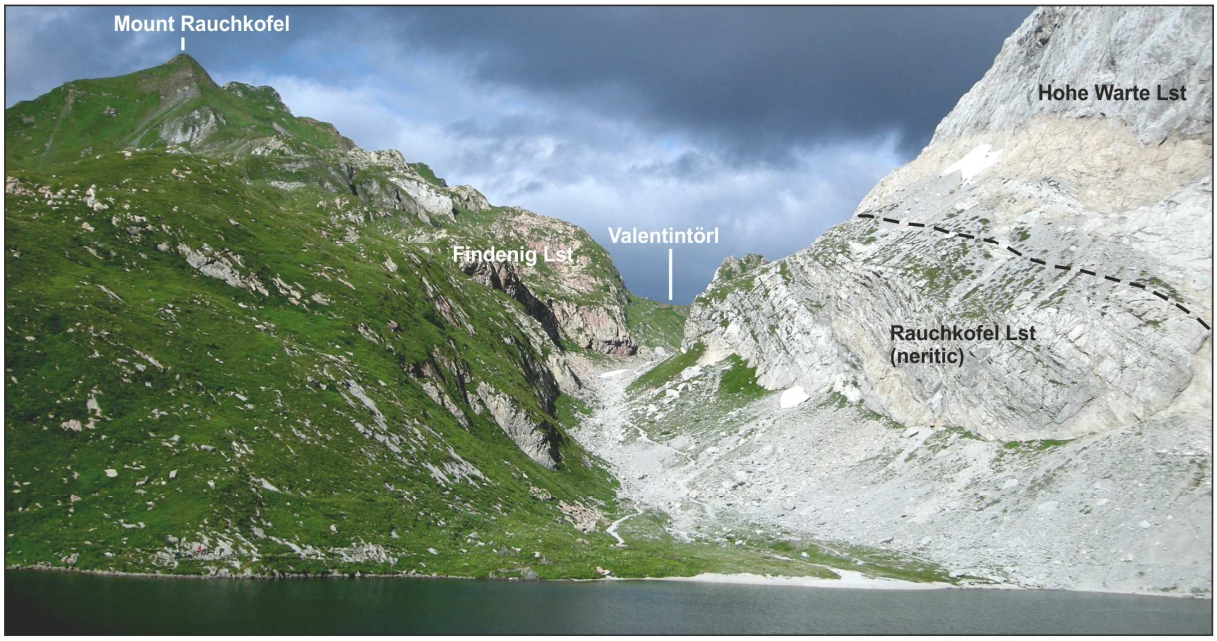
PELAGIC CARBONATE FACIES

G RAUCHKOFEL NAPPE
Locality: Wolayer Glacier section



SOUTHERN SHALLOW WATER FACIES
PELAGIC CARBONATE FACIES

H RAUCHKOFEL NAPPE / KELLERWAND NAPPE
Locality: Mount Rauchkofel & Mount Seewarte

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SOUTHERN SHALLOW WATER FACIES

I KELLERWAND NAPPE
Locality: Mount Seewarte

SOUTHERN SHALLOW WATER FACIES

J KELLERWAND NAPPE
Locality: Spinotti Trail

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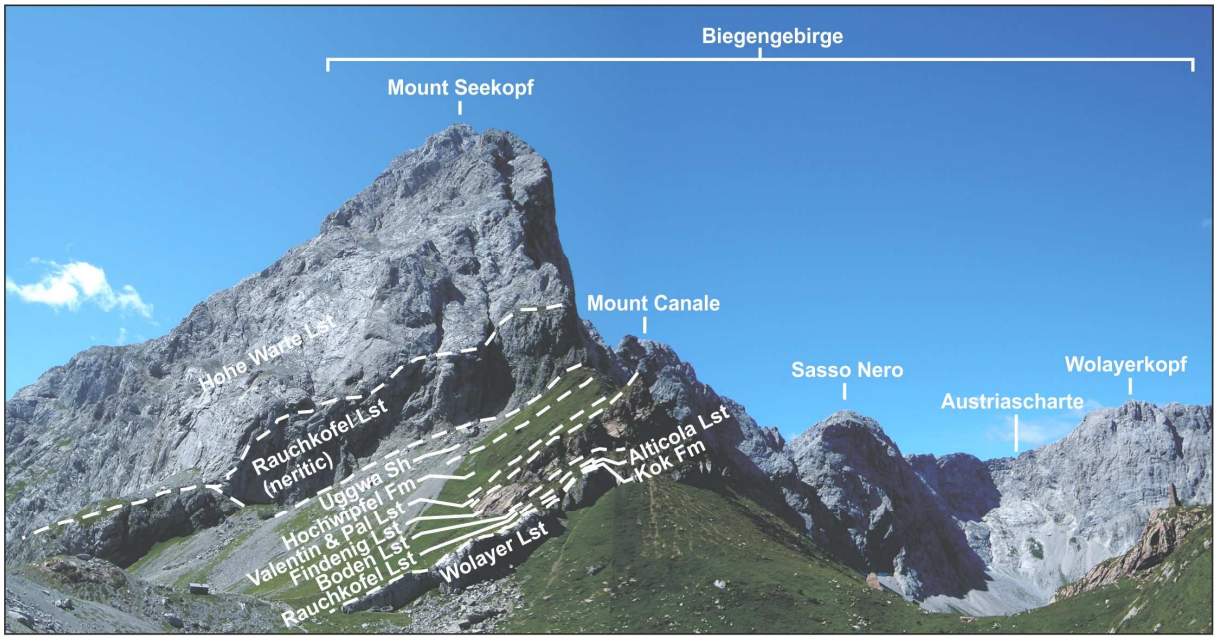

SOUTHERN SHALLOW WATER FACIES ⇌ PELAGIC CARBONATE FACIES

K **KELLERWAND NAPPE / RAUCHKOFEL NAPPE**
Locality: Mount Seekopf & Seekopfsockel

SOUTHERN SHALLOW WATER FACIES

L **KELLERWAND NAPPE**
Locality: Passo Volaia area (RLF III section)

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Field-Workshop: Infrastructure

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