COAST RANGE PROVINCE AND OFFSHORE AREA

CENOZOIC

QUATERNARY — Holocene

Q — ALLUVIUM
Poorly sorted stream and basin deposits. Clay to boulder size.

Qs — DUNE AND BEACH SAND

Qls — LANDSLIDE DEPOSITS
(Shown in areas where practicable; data incomplete).

Ql — LAKE DEPOSITS
Organic silty clay; near Lake Earl.

Qc — FLUVIAL DEPOSITS
Gravel with minor amounts of sand and silt.

Qu — SHELF, SLOPE, AND BASIN DEPOSITS
(Offshore).

QUATERNARY — Pleistocene

Qt — ALLUVIAL TERRACE DEPOSITS

Qmt — MARINE TERRACE DEPOSITS
(On top of wave-cut platforms).

Qby — BATTERY FORMATION
Blue sandstone interbedded with clay. Marine and continental.

QT — UNDIFFERENTIATED PLIO-PLEISTOCENE MARINE AND NON-MARINE DEPOSITS
Sand, silt, and gravel. (Informally known as Gold Bluffs Formation).

TERTIARY — Pliocene

Psg — ST. GEORGE FORMATION
Bluish-gray siltstone and shale; marine.

Pum — MARINE MUDSTONE UNDIFFERENTIATED
(Offshore).

TERTIARY — Eocene-Miocene

Tg — TERTIARY (AURIFEROUS) GRAVEL
Crescent City quadrangle; continental

Mwi — WIMER FORMATION
Friable yellow siltstone, sandstone, and conglomerate; marine.

MESOZOIC

CRETACEOUS

KJf — FRANCISCAN COMPLEX — KJf

A tectonically disrupted subduction complex of sandstone, shale, conglomerate, greenstone (altered basalt), chert, limestone, metagraywacke (semischist), schist and serpentinized ultramafic rocks.

Parts of the Franciscan Complex are melange – a chaotic mixture of fragmented rock masses in a sheared shaly matrix.

Coherent rock masses large enough to be shown on this map are denoted as follows;

- ss — sandstone, shale, conglomerate*
- ch — chert*
- gs — greenstone (altered volcanic rock; locally includes chert)*
- um — serpentinized ultramafic rock*
- mg — metagraywacke*
- sfm — South Fork Mountain Schist*
- rc — Schist of Redwood Creek* (includes metatuff)
- ♦ — Blueschist blocks*

* not necessarily in stratigraphic sequence

Horizontal pattern denotes undifferentiated melange

JURASSIC

WESTERN JURASSIC BELT

JOSEPHINE OPHIOLITE
(Includes other rocks of ophiolitic affinity)

- **Jg** — GALICE FORMATION
  Slate, metagraywacke, some massive greenstone.
- **Jv** — VOLCANIC ROCKS
  Pillow lava, dikes, breccias.
- **Jgd** — GABBRO, DIORITE, AND RELATED ROCKS.
- **Jum** — ULTRAMAFIC ROCKS
  Partially to completely serpentinized peridotite; locally includes mafic rocks.

TRIASSIC

PERMIAN

CARBONIFEROUS

DEVONIAN

SILURIAN

ORDOVICIAN

PALEOZOIC

KLAMATH MOUNTAINS PROVINCE

Q — ALLUVIUM
Poorly sorted stream and basin deposits. Clay to boulder size.

Qt — TERRACE DEPOSITS

t — DREDGE AND MINE TAILINGS

Qg — GLACIAL MORAINE DEPOSITS
(Includes glacial outwash).

Qls — LANDSLIDE DEPOSITS
(Shown in areas where practicable, data incomplete).

Tg — TERTIARY (AURIFEROUS) GRAVEL
Gasquet and Klamath quadrangles; continental.

Mwi — WIMER FORMATION
Friable yellow siltstone and sandstone.

Kh — HORNBROOK FORMATION
Massive arkosic sandstone, conglomerate, shale, and massive white sandstone. Mostly marine; locally coal-bearing.

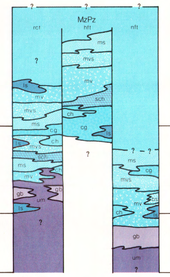
WESTERN PALEOZOIC AND TRIASSIC BELT (MzPz)

An assemblage of diverse rock types. Mostly Mesozoic, although Paleozoic fossils have been found in chert and blocks of limestone. Shown as MzPz unless subdivided as follows:

nft—NORTH FORK TERRANE of Irwin (1972)—Dismembered ophiolite—serpentinite, gabbro, diabase, mafic volcanic rocks, chert and limestone.

hft—HAYFORK TERRANE of Irwin (1972)—Hayfork meta-andesite, argillite, chert-argillite breccia.

rct—RATTLESNAKE CREEK TERRANE of Irwin (1972)—Disrupted, mildly metamorphosed assemblage of ophiolitic rocks—serpentinite, gabbro, mafic volcanic rocks, conglomerate, sandstone, and limestone.



Lithologies of the belt are denoted as follows:

- ms - metasedimentary rocks, argillite, phyllite, conglomerate, breccia, chert, some volcaniclastic rocks.
- mv - metavolcanic rocks, mafic to intermediate flows, tuffs, breccias.
- mvs - volcaniclastic sediments, mixed metavolcanic and metasedimentary rocks.
- sch - amphibolite and greenschist.
- ch - chert
- cg - conglomerate and sedimentary breccia.
- ls - limestone and marble.
- gb - gabbro, diabase and related rocks.
- um - peridotite, serpentinite and metaserpentinite.
- bs - blueschist (♦ -blueschist blocks).

PLUTONIC ROCKS

- **Mzgb** — ULTRAMAFIC-GABBROIC ROCKS
- **Mzg** — GRANITIC ROCKS
  Granite to granodiorite
- **Mzd** — DIORITIC ROCKS
  Tonalite to diorite; some gabbro.

Jcm — CONDREY MOUNTAIN SCHIST
Graphitic schist, greenschist, some blueschist, age uncertain.

MzPz$_s$ — STUART FORK FORMATION
Phyllitic quartzite with blueschist.

CENTRAL METAMORPHIC BELT
(Devonian or older)

- **Pza** — ABRAMS MICA SCHIST
  (Grouse Ridge Formation).
- **Pzs** — SALMON HORNBLENDE SCHIST

EASTERN KLAMATH BELT

- **Jp** — POTEM FORMATION
  Argillite and tuffaceous sandstone.
- **Jbg** — BAGLEY ANDESITE
- **Ja** — ARVISON FORMATION
  Volcaniclastic and pyroclastic rocks, minor andesitic flows.
- **TRmd** — MODIN FORMATION
  Andesitic volcaniclastic, and pyroclastic rocks.
- **TRp** — PIT FORMATION
  Dark shale, siltstone, metavolcanic rocks, minor limestone. (includes Brock Shale and Hosselkus Limestone).
- **TRTRb** — BOLLIBOKKA GROUP
  (Dekkas and Nosoni Formations, undifferentiated); Andesite, mudstone, and tuff.
- **TRml** — McCLOUD LIMESTONE
- **Cb** — BAIRD FORMATION
  Pyroclastic rocks, keratophyre, minor sedimentary rocks.
- **Cbg** — BRAGDON FORMATION
  Graywacke, shale, and minor conglomerate.
- **Dkn** — KENNETT FORMATION
  Siliceous shale, rhyolitic tuff, ls = crystalline limestone.
- **Dc** — COPLEY GREENSTONE
- **DSg** — GAZELLE FORMATION
  Sandstone, shale, chert, conglomerate, limestone, and greenstone. Part of this unit may be melange.
- **Smc** — MOFFET CREEK FORMATION
  Sheared sandstone and shale (melange?).
- **SOd** — DUZEL FORMATION
  Phyllite, graywacke, chert, siltstone, quartzite, limestone, and marble. [Includes the following units of Potter & others (1977): Limestone of Duzel Rock, Duzel Phyllite, Schulmeyer Gulch sequence, Sissel Gulch Graywacke, Greenschist of Skookum Gulch. Parts of the Duzel Formation have been correlated with the Central Metamorphic belt by Cashman (1980)].
- **Oam?** — ANTELOPE MOUNTAIN QUARTZITE
  [Age and stratigraphic position uncertain, Cashman (1980).]

Ov, Ogb, Op — MAFIC VOLCANIC ROCKS AND DIABASE. (Ov)
GABBROIC AND DIORITIC ROCKS. (Includes minor pyroxenite). (Ogb)
TRINITY PERIDOTITE. Partially serpentinized peridotite. (Op)

CASCADE RANGE PROVINCE

Qls — LANDSLIDE DEPOSITS
(Includes avalanche deposits and talus on Mt. Shasta).

Ql — DIATOMACEOUS LAKE DEPOSITS
Copco Reservoir and Butte Valley areas.

Q — ALLUVIUM
Poorly sorted stream and basin deposits. Clay to boulder size.

Qg — GLACIAL DEPOSITS
Rock glaciers, morainal deposits, and outwash.

HIGH CASCADE VOLCANICS

- **Qv** (Cinder cone or volcano)
  - Qv^c - Andesite
  - Qv^b - Basalt (Includes Plutos Cave Basalt)
  - Qv^d - Dacite
  - Qv^{pc} - Pyroclastic rocks, including tuffs, tuff breccias, lahars, and pyroclastic flows
  - Qv^{pb} - Black Butte pyroclastic flow
  - Qv^{ps} - Shastina pyroclastic flow
- **Pv** (Cinder cone or volcano)
  - Pv^a - Andesite
  - Pv^b - Olivine basalt and basaltic andesite

Qvs — VOLCANIC ROCKS OF SHASTA VALLEY
Qv^c - Andesite
Qv^p - Pyroclastic deposits (Debris-avalanche deposits of Crandell and others, 1984).

Tc — TERTIARY CONTINENTAL DEPOSITS
Conglomerate and sandstone.

WESTERN CASCADE VOLCANICS

- **Tv**
  - Tv^a - Andesite flows with some basalt and dacite
  - Tv^p - Andesite tuff breccias
  - Tv^r - Rhyolite tuff
  - Tv^i - Andesite and basalt intrusions and plugs
  - Tv^r - Rhyolite domes

Kh — HORNBROOK FORMATION
Massive arkosic sandstone, conglomerate, shale, and massive white sandstone. Mostly marine; locally coal-bearing.

Graphics by Peggy Walker and Janet Smith

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EXPLANATION FOR THE GEOLOGIC MAP OF THE WEED QUADRANGLE, CALIFORNIA, 1987