

U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY
OPEN FILE REPORT
OFR 03-095

Text accompanies map
Map of Quaternary Faults and Folds in Oregon

by

Stephen F. Personius, Richard L. Dart, Lee-Ann Bradley and Kathleen M. Haller

2003

This report is preliminary and has not been reviewed for conformity with U.S. Geological Survey editorial standards or with the North American Stratigraphic Code. Any use of trade, firm, or product names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

A PDF file for this map is available at <http://pubs.usgs.gov/of/2003/ofr-03-095/>

A Project of International Lithosphere Program Task Group II-2, Major Active Faults of the World
Project coordination by Michael N. Machette (Co-chairman, ILP Task Group II-2)

Scale 1:750,000
Lambert Conformal Conic Projection, Clarke 1866
(1st standard parallel 33 degrees N, 2nd standard parallel 45 degrees N;
longitude of central meridian 121 degrees 30 minutes W; latitude of origin 42 degrees)

Index of 1 degree by 2 degree topographic map sheets for Oregon

Enlargement of the Portland Area
Scale 1:250,000
Lambert Conformal Conic Projection, Clarke 1866
(First standard parallel 33 degrees north,
second standard parallel 45 degrees north;
longitude of central meridian 122 degrees, 37 minutes, 30 seconds west;
latitude of origin 42 degrees)

MAP EXPLANATION

TIME OF MOST RECENT SURFACE RUPTURE

Holocene (<10,000 years) or post last glaciation (<15,000 years; 15 ka);
no historic ruptures in Oregon to date

Late Quaternary (<130,000; post penultimate glaciation)

Late and middle Quaternary (<750,000 years; 750 ka)

Quaternary, undifferentiated (<1,600,000 years; <1.6 Ma)

Class B structure (age or origin uncertain)

SLIP RATE

>5 mm/year

1.0-5.0 mm/year

0.2-1.0 mm/year

<0.2 mm/year

TRACE

Mostly continuous at map scale

Mostly discontinuous at map scale

Inferred or concealed

STRUCTURE TYPE AND RELATED FEATURES

Normal or high-angle reverse fault

Strike-slip fault

Thrust fault

Anticlinal fold

Synclinal fold

Monoclinial fold

Plunge direction of fold

Fault section marker

DETAILED STUDY SITES

Trench site

Subduction zone study site

CULTURAL AND GEOGRAPHIC FEATURES

Divided highway

Primary or secondary road

Permanent river or stream

Intermittent river or stream

Permanent or intermittent lake

DATA ON SUSPECT (CLASS C) FAULTS AND FOLDS IN OREGON

Name of structure	Reason for exclusion
Unnamed feature near Applegate	No evidence of Quaternary offset
Unnamed features in Camas Valley	No evidence of Quaternary offset
Unnamed faults on Cedar Mountain	No evidence of Quaternary offset
Unnamed fault southeast of Condon	No evidence of Quaternary offset
Unnamed features near Drews Reservoir	No evidence of Quaternary offset
Firn Hill fault zone	No evidence of Quaternary offset; reported scarps probably caused by differential erosion
Fulmar fault	No evidence of Quaternary offset on seafloor
Unnamed feature near Grants Pass	No evidence of Quaternary offset
Harrisburg anticline	No geomorphic expression; no unequivocal evidence of Quaternary deformation
Unnamed faults near Ireland Flat	No evidence of Quaternary offset
Limekiln fault	No evidence of Quaternary offset
Mount Hood fault	No evidence of Quaternary offset
Pony Slough faults	No geomorphic expression; no unequivocal evidence of Quaternary deformation
Salmon River fault zone	No evidence of Quaternary offset
Sandy River fault zone	No evidence of Quaternary offset
Sherwood/Lake Oswego fault	No evidence of Quaternary offset
Swan Island fault	No geomorphic expression; no unequivocal evidence of Quaternary deformation
Unnamed faults near Wagonfire Mountain	No evidence of Quaternary offset

Data on Quaternary faults and folds in Oregon

Abbreviations: ka, thousands of years ago; Ma, millions of years ago; N R, not reported or not applicable.

Fault numbers not used on map or in database are 783, 792, 800, 815, 816, 818, 825, 848, 849, 859, 860, 861 and 865.

580	Faults near The Dalles	<1.6 Ma	<0.2	54.3	96.7	N 38 W	"Dextral, Normal, Thrust"
708	Unnamed faults near Jaussaud Creek	<750 ka	<0.2	5.8	11.1	N 18 E	Normal
709	South Grande Ronde Valley faults	<750 ka	<0.2	20.1	98.3	N 39 W	Normal
710	Ukiah Valley faults	<750 ka	<0.2	32	56.7	N 61 W	Normal
711	Sumpter Valley faults	<750 ka	<0.2	12.3	22.3	N 44 W	Normal
712	Unnamed East Baker Valley faults	<1.6 Ma	<0.2	27.3	30.2	N 40 W	Normal
713	Powder River Peninsula fault zone	<15 ka	<0.2	5.4	16.9	N 28 W	Normal-Sinistral
714	Helvetia fault	<1.6 Ma	<0.2	7.4	7.4	N 26 W	"Normal?, Reverse?, Dextral?"
715	Beaverton fault zone	<750 ka	<0.2	14.7	15.1	N 86 E	"Normal?, Reverse?"

716	Canby-Molalla fault	<15 ka	<0.2	50	52.5	N 34 W	Dextral-Reverse?
717	Newberg fault	<1.6 Ma	<0.2	5	5	N 42 W	Dextral-Reverse
718	Gales Creek fault zone	<1.6 Ma	<0.2	72.7	152.1	N 41 W	Dextral-Reverse
719	Salem-Eola Hills homocline	<1.6 Ma	<0.2	31.2	34.3	N 26 W	monocline
781	Cascadia subduction zone	<15 ka	>5	>535.6	>547.1	N 28 W	Thrust
782	Blanco transform fault zone	<15 ka	>5	>106.5	>362.6	N 11 E	"Dextral-Normal, Normal, Thrust"
784	Cascadia fold and thrust belt	<15 ka	5-Jan	>483.4	>3188.0	N 30 W	"Anticline, Syncline, Thrust"
785	Unnamed offshore faults	<15 ka	5-Jan	>196.3	>334.6	N 11 W	"Sinistral, Dextral, Reverse, Normal"
786	Stonewall anticline	<15 ka	5-Jan	80.2	124.9	N 13 W	"Anticline, Reverse?"
787	Bald Mountain-Big Lagoon fault zone	<130 ka	0.2-1	95	96.7	N 27 W	Thrust or Reverse
788	"Fault ""J"""	<15 ka	5-Jan	7.6	10.5	N 69 W	"Normal, Sinistral?"
789	Nehalem Bank fault	<15 ka	5-Jan	101	113.2	N 15 W	"Dextral, Reverse"
790	"Fault ""H"""	<15 ka	>5	48.7	81.3	N 49 W	"Normal, Sinistral?"
791	"Fault ""G"""	<15 ka	>5	56.7	138.3	N 74 W	Sinistral
793	Thompson Ridge fault	<15 ka	>5	48.6	34.5	N 56 W	Sinistral
794	Coos Basin fault	<15 ka	>5	35.4	67.5	N 74 W	Sinistral
795	Heceta Bank structure	<15 ka	>5	18.2	18.2	N 58 W	"Sinistral?, Monocline?"
796	Heceta South fault	<15 ka	>5	60.3	84.3	N 54 W	Sinistral
797	Alvin Canyon fault	<15 ka	>5	71.2	60	N 68 W	Sinistral
798	Daisy Bank fault	<15 ka	>5	80.1	91	N 63 W	Sinistral
799	Wecoma fault	<15 ka	>5	96	178.5	N 66 W	Sinistral
801	Wallowa fault	<750 ka	<0.2	56.4	118.8	N 51 W	Normal
802	West Grande Ronde Valley fault zone	N R	N R	48.5	86.5	N 19 W	N R
802a	Mount Emily section	<15 ka	<0.2	29	44.9	N 02 W	Normal
802b	La Grande section	<15 ka	<0.2	14.5	25.8	N 30 W	Normal
802c	Craig Mountain section	<15 ka	<0.2	9.6	15.7	N 49 W	Normal
803	East Grande Ronde Valley fault zone	<15 ka	<0.2	49.9	79.6	N 35 W	Normal
804	West Baker Valley fault	<130 ka	<0.2	32.6	68.5	N 54 W	Normal
805	Juniper Mountain fault	<15 ka	<0.2	17.4	23.8	N 81 W	Normal
806	Cottonwood Mountain fault	<15 ka	<0.2	41.9	69.4	N 33 W	Normal
807	Faults near Unity Valley	<15 ka	<0.2	46.3	151.5	N 61 W	Normal
808	Faults near Owyhee Dam (Class B)	<1.6 Ma	<0.2	37.4	59.5	N 13 W	Normal
809	Pine Valley graben fault system	N R	N R	35.2	57.2	N 44 W	N R
809a	Brownlee section	<1.6 Ma	<0.2	17.1	18.9	N 45 W	Normal
809b	Halfway-Posey Valley section	<15 ka	<0.2	25.4	38.2	N 43 W	Normal
810	Unnamed faults near Murderers Creek	<750 ka	<0.2	10.8	15.9	N 71 W	Normal? Reverse?
811	Unnamed fault in Fox Basin (Class B)	<1.6 Ma	<0.2	6.1	6.1	N 64 W	Normal
812	Unnamed fault in Logan Valley	<750 ka	<0.2	9.4	9.4	N 57 W	Normal
813	Unnamed fault near Polk Butte (Class B)	<1.6 Ma	<0.2	5.5	8.6	N 80 W	Normal? Reverse?
814	Unnamed faults northwest of Condon (Class B)	<1.6 Ma	<0.2	21.8	43.3	N 52 W	Normal? Dextral?
817	Unnamed faults on Dry Mountain (Class B)	<1.6 Ma	<0.2	6.2	9.8	N 44 W	Normal
819	Brothers fault zone	<1.6 Ma	<0.2	62.4	56.5	N 43 W	Normal? Dextral?
820	Unnamed faults near Diamond Craters (Class B)	<15 ka	<0.2	4.8	7	N 37 W	Normal? Dextral?
821	Donner und Blitzen fault	<1.6 Ma	<0.2	25.8	34	N 18 E	Normal
822	Unnamed fault near V lake	<1.6 Ma	<0.2	12.8	13	N 69 W	Normal? Dextral?
823	Unnamed fault near Dry Valley	<1.6 Ma	<0.2	19.2	20.7	N 21 E	Normal
824	Unnamed fault near Catlow Valley	N R	N R	77	76.4	N 00	N R
824a	Catlow Valley section	<1.6 Ma	<0.2	55.8	61.1	N 02 W	Normal

824b	Hawksy Walksy Valley section	<1.6 Ma	<0.2	11.3	15.4	N 08 E	Normal
826	Guano Valley faults	<1.6 Ma	<0.2	49.2	130.3	N 09 E	"Normal, Normal-Dextral"
827	Warner Valley faults	N R	N R	132	259.8	N 09 E	N R
827a	East Warner Valley section	<15 ka	<0.2	89	135.2	N 09 E	Normal
827b	West Warner Valley section	<1.6 Ma	<0.2	42.1	45.8	N 03 E	Normal
827c	Coleman Valley section	<1.6 Ma	<0.2	43.5	78.8	N 07 W	Normal
828	Goose Lake graben faults	<750 ka	<0.2	55.4	107.2	N 09 W	Normal
829	Abert Rim fault	N R	N R	77.1	84.8	N 15 E	N R
829a	Lake Abert section	<15 ka	0.2-1	41.5	46.8	N 14 E	Normal
829b	Northern section	<1.6 Ma	<0.2	35.4	38	N 17 E	Normal
830	Unnamed faults north of Abert Lake	<750 ka	<0.2	28.6	86.2	N 36 W	Normal
831	Winter Rim fault system	N R	N R	57.9	122.3	N 38 W	N R
831a	Slide Mountain section	<15 ka	0.2-1	32.8	75.8	N 57 W	Normal
831b	Winter Ridge section	<15 ka	0.2-1	25.9	38.2	N 04 W	Normal
831c	Ana River section	<15 ka	0.2-1	7.5	8.4	N 15 W	Normal
832	Faults east of Summer Lake	<750 ka	<0.2	62.1	96.7	N 16 W	Normal
833	Faults north of Summer Lake	<750 ka	<0.2	25.7	270.6	N 10 W	Normal
834	Paulina Marsh fault	<15 ka	0.2-1	34.6	131	N 25 W	"Normal, Sinistral?"
835	Southeast Newberry fault zone	<15 ka	0.2-1	66.3	204.5	N 34 W	Normal-Sinistral
836	Unnamed fault near Antelope Mountain	<1.6 Ma	<0.2	37.6	80.3	N 36 W	Normal
837	Southwest Newberry fault zone	<750 ka	<0.2	35.6	121.9	N 41 E	Normal
838	La Pine graben faults	<130 ka	<0.2	45.6	149.3	N 20 E	Normal
839	Chemult graben fault system	N R	N R	69.6	514.6	N 07 E	N R
839a	Western section	<130 ka	<0.2	48.8	226	N 14 E	Normal
839b	Walker Rim section	<750 ka	<0.2	60.4	288.5	N 01 E	Normal
840	Faults on the Modoc Plateau	<1.6 Ma	<0.2	39.5	83.5	N 20 W	Normal
841	Unnamed faults near Millican Valley	<750 ka	<0.2	39.7	50.9	N 54 W	Normal
842	Unnamed faults near Kiwa Butte	<1.6 Ma	<0.2	6.9	5.1	N 45 W	Unknown
843	Klamath graben fault system	N R	N R	147.7	446.6	N 17 W	N R
843a	West Klamath Lake section	<15 ka	0.2-1	90.6	220.5	N 05 W	Normal
843b	East Klamath Lake section	<1.6 Ma	<0.2	25.3	25.7	N 15 W	Normal
843c	South Klamath Lake section	<15 ka	0.2-1	59.3	200.4	N 31 W	Normal
844	Sky Lakes fault zone	<15 ka	<0.2	77.3	198.3	N 18 W	Normal
845	Hite fault system	N R	N R	140.7	184	N 20 E	N R
845a	Hite section	<1.6 Ma	<0.2	87	90	N 27 E	Sinistral-Normal
845b	Kooskooskie section	<750 ka	<0.2	18.9	18.9	N 00	Sinistral-Normal
845c	Thorn Hollow section	<130 ka	<0.2	44	45.5	N 10 E	Sinistral-Normal
845d	Agency section	<1.6 Ma	<0.2	27.9	29.4	N 26 E	Sinistral-Normal
846	Wallula fault system	<15 ka	<0.2	62.9	160.2	N 53 W	Dextral? Reverse? Normal?
847	Arlington-Shutler Butte fault	<750 ka	<0.2	52.2	53.4	N 43 W	Dextral? Normal?
850	Unnamed faults near Tygh Ridge (Class B)	<1.6 Ma	<0.2	26.3	31.7	N 83 E	"Reverse or Thrust, Dextral"
851	Warm Springs fault zone	<750 ka	<0.2	31.7	115.3	N 03 E	Normal
852	Sisters fault zone	<130 ka	<0.2	52.9	131.5	N 26 W	"Normal, Normal-Dextral?"
853	Metolius fault zone	N R	N R	93.6	155.9	N 22 W	N R
853a	Green Ridge section	<750 ka	<0.2	29.4	50.2	N 11 W	Normal-Dextral?
853b	Rimrock-Tumalo section	<750 ka	<0.2	44.7	56.6	N 29 W	Normal-Dextral?
853c	Northwest Rift zone section	<15 ka	<0.2	42.9	49.1	N 26 W	Normal-Dextral?
854	Unnamed faults NE of Diamond Lake	<750 ka	<0.2	44.4	39.6	N 00	Normal

855	Unnamed fault zone near Blue Mountain	<1.6 Ma	<0.2	8.7	6.7	N 23 W	Normal
856	Steens fault zone	N R	N R	192.1	264.7	N 11 E	N R
856a	Crowley section	<750 ka	<0.2	42.6	27.5	N 39 E	Normal
856b	Mann Lake section	<750 ka	<0.2	42.8	42.6	N 29 E	Normal
856c	Alvord section	<15 ka	0.2-1	36.1	69.3	N 01 W	Normal
856d	Fields section	<15 ka	<0.2	15.6	23	N 13 E	Normal
856e	Tum Tum section	<750 ka	<0.2	18.4	17.5	N 24 W	Normal
856f	Denio section	<15 ka	0.2-1	37.3	84.8	N 09 E	Normal
857	Mickey Basin faults	<15 ka	<0.2	8.1	18	N 33 E	Normal
858	Tule Springs Rims fault	<750 ka	<0.2	33.4	33.5	N 11 E	Normal
862	Unnamed faults near Sutherlin (Class B)	<750 ka	<0.2	27.7	34.5	N 49 E	Normal?
863	Upper Willamette River fault zone (Class B)	<1.6 Ma	<0.2	44	50.8	N 52 W	Dextral?
864	Clackamas River fault zone	<1.6 Ma	<0.2	28.6	92.9	N 19 W	"Dextral, Normal"
866	Hood River fault zone <1.6 Ma	<0.2	44.3	80.8	N 11 W	"Normal, Dextral?"	
867	Eagle Creek thrust fault (Class B)	<1.6 Ma	<0.2	8.1	9	N 44 E	Thrust
868	Bull Run thrust fault (Class B)	<1.6 Ma	<0.2	9.4	9.5	N 44 E	Thrust
869	Corvallis fault zone (Class B)	<1.6 Ma	<0.2	40.4	44.6	N 33 E	"Thrust, Sinistral?"
870	Owl Creek fault	<750 ka	<0.2	14.9	14.9	N 05 E	Reverse
871	Mill Creek fault	<1.6 Ma	<0.2	18.4	20.1	N 66 E	Reverse-Sinistral?
872	Waldo Hills fault	<1.6 Ma	<0.2	11.8	11.8	N 45 E	"Normal?, Reverse?"
873	Mount Angel fault	<15 ka	<0.2	29.7	30.4	N 43 W	Reverse-Dextral
874	Bolton fault (Class B)	<1.6 Ma	<0.2	8.8	9.2	N 53 W	Reverse-Dextral
875	Oatfield fault	<1.6 Ma	<0.2	28.7	27.3	N 41 W	Reverse-Dextral
876	East Bank fault	<15 ka	<0.2	28.9	29	N 46 W	Reverse-Dextral
877	Portland Hills fault	<1.6 Ma	<0.2	49.3	50.4	N 37 W	Reverse-Dextral? Thrust?
878	Grant Butte fault	<750 ka	<0.2	9.9	16.6	N 77 E	Normal
879	Damascus-Tickle Creek fault zone	<750 ka	<0.2	16.7	83.8	N 00	Dextral-Reverse
880	Lacamas Lake fault	<750 ka	<0.2	23.7	23.8	N 43 W	Dextral-Normal? or Reverse?
881	Tillamook Bay fault zone	<1.6 Ma	<0.2	31.8	47.6	N 56 W	Reverse-Sinistral
882	Happy Camp fault	<1.6 Ma	<0.2	3.3	3.4	N 73 W	Thrust
883	Siletz Bay faults	<130 ka	<0.2	11.6	10	N 73 W	Normal? Reverse?
884	Cape Foulweather fault	<130 ka	0.2-1	10.4	10.8	N 69 E	Reverse? Sinistral?
885	Yaquina faults	<130 ka	0.2-1	12.7	18.5	N 79 E	Reverse? Sinistral?
886	Waldport faults	<130 ka	<0.2	14.5	18.9	N 13 E	Normal? Reverse? Sinistral?
887	Unnamed Siuslaw River anticline	<750 ka	0.2-1	11.6	21	N 10 W	Anticline
888	Sunset Bay-Cape Arago folds and faults	<130 ka	0.2-1	4.2	9.5	N 52 W	Dextral Normal? Reverse?
889	East South Slough faults	<750 ka	<0.2	7.8	14.1	N 70 W	Reverse? Sinistral?
890	South Slough thrust and reverse faults	<130 ka	<0.2	13.3	62	N 08 E	"Reverse, Thrust"
891	South Slough syncline	<15 ka	0.2-1	17.3		N 07 W	Syncline
892	Pioneer anticline	<130 ka	0.2-1	13.8	24.8	N 33 W	Anticline
893	Coquille fault	<15 ka	0.2-1	27.1	28.3	N 30 W	Reverse?
894	Cape Blanco anticline	<15 ka	0.2-1	8.1	8.1	N 74 W	"Anticline, Reverse or Thrust?"
895	Beaver Creek fault zone	<130 ka	0.2-1	17	33.2	N 65 E	Normal
896	Battle Rock fault zone	<750 ka	<0.2	48	48.7	N 16 W	Normal Dextral?
897	Whaleshead fault zone	<130 ka	0.2-1	43	139	N 12 W	"Dextral, Sinistral"
898	Chetco River fault	<130 ka	0.2-1	5.6	7.8	N 05 W	Reverse? Dextral?
1490	East Pueblo Valley fault zone	<130 ka	<0.2	28.1	58.3	N 17 E	Normal
1507	Hoppin Peaks fault zone	N R	N R	91.1	140.1	N 01 E	N R

1507a	Oregon Canyon Mountains section	<750 ka	<0.2	44	54.2	N 16 W	Normal
1507b	Hoppin Peaks section	<130 ka	<0.2	54.9	85.9	N 12 E	Normal
1508	Santa Rosa Range fault system	N R	N R	127.6	374.3	N 11 E	N R
1508a	Owyhee River section	<15 ka	<0.2	46.7	112.4	N 48 E	Normal
1508b	Quinn River section	<15 ka	<0.2	57.5	192.6	N 07 W	Normal
1508c	Santa Rosa Peak section	<15 ka	<0.2	27.8	69.4	N 01 E	Normal
1800	Unnamed Sheephead Mountains faults	<1.6 Ma	<0.2	28.7	77.6	N 12 E	Normal
1801	Warm Springs fault	<1.6 Ma	<0.2	8.7	16.3	N 16 W	Normal
1802	Harney fault	<750 ka	<0.2	29.5	30.6	N 02 W	Normal
1803	Unnamed East Christmas Lake Valley faults	<1.6 Ma	<0.2	41.9	62.2	N 24 W	"Normal, Dextral?"
1804	Unnamed fault east of the Dust Bowl	<750 ka	<0.2	14.1	12.6	N 14 W	Normal
1805	Unnamed faults near Arrowwood Point (Class B)	<750 ka	<0.2	13.1	15.4	N 68 W	Normal
1806	Newberry volcano ring faults (Class B)	<15 ka	<0.2	7.6	26.5	N 16 W	Normal
1807	Mount Mazama ring faults (Class B)	<15 ka	<0.2	8	27.1	N 87 W	Normal
1808	Unnamed fault near Lookout Butte	<1.6 Ma	<0.2	8.1	8.2	N 19 E	Normal
1809	White Branch fault zone	<750 ka	<0.2	18.3	18.6	N 06 E	Normal