

LOOSE ENDS



Olympia Navigation

4/27/2025

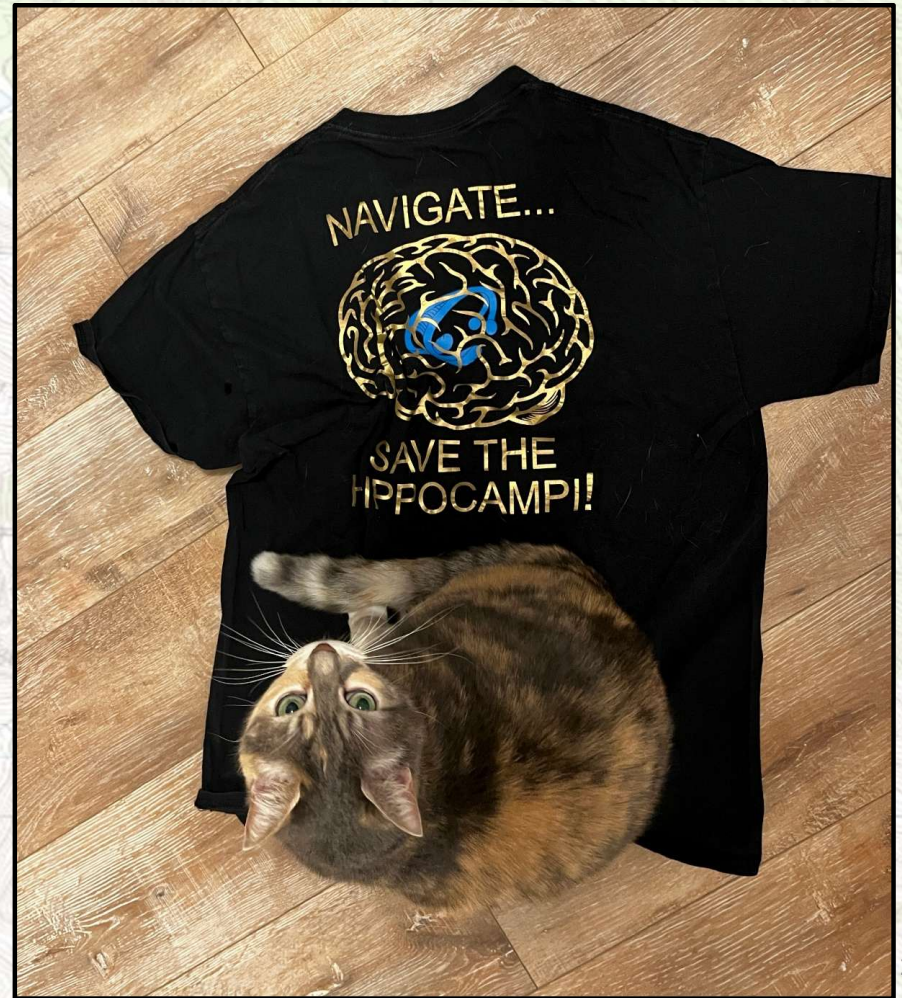
1

LOOSE ENDS: WHY MAP AND COMPASS?

- Back-up to GPS
- Enhanced understanding of GPS/Electronic Navigation Tools
- Still need to know how to interpret terrain features from contours
- Body of literature (small?) that presents evidence that navigation enhances your ability to create lasting/sharper memories



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LOOSE ENDS



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There's always a cat situation...

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LOOSE ENDS: Map Colors and Symbols

Red: Major roads

Blue: Water features

Black: Cultural features, e.g., buildings, minor roads, trails

Green: Vegetated areas

White: Bare areas, or areas with veg too small to be “seen” at map-scale

White w/ Blue Contours: Glaciers and permanent snowfields

Brown: Contour lines (except where on glaciers or snow)

Stippled: Sandy or gravelly areas (brown)







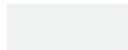




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LOOSE ENDS: Map Colors and Symbols

Black

BUILDINGS AND RELATED FEATURES

| | |
|-------------------------------|---|
| Building |    |
| School; house of worship |  |
| Athletic field |   |
| Built-up area |   |
| Forest headquarters* |  |
| Ranger district office* |  |
| Guard station or work center* |  |

Blue

RIVERS, LAKES, AND CANALS

| | |
|---------------------|---|
| Perennial stream |  |
| Perennial river |  |
| Intermittent stream |  |

| | |
|------------------------|---|
| Perennial lake/pond |  |
| Intermittent lake/pond |  |

GLACIERS AND PERMANENT SNOWFIELDS

| | |
|---------------------|--|
| Contours and limits |  |
| Formlines |  |
| Glacial advance |  |
| Glacial retreat |  |



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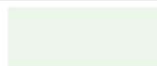
5

LOOSE ENDS: Map Colors and Symbols

Green

VEGETATION

Woodland



Shrubland



Orchard



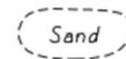
Brown

SURFACE FEATURES

Levee



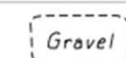
Sand or mud



Disturbed surface



Gravel beach or glacial moraine



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6

LOOSE ENDS: Map Colors and Symbols

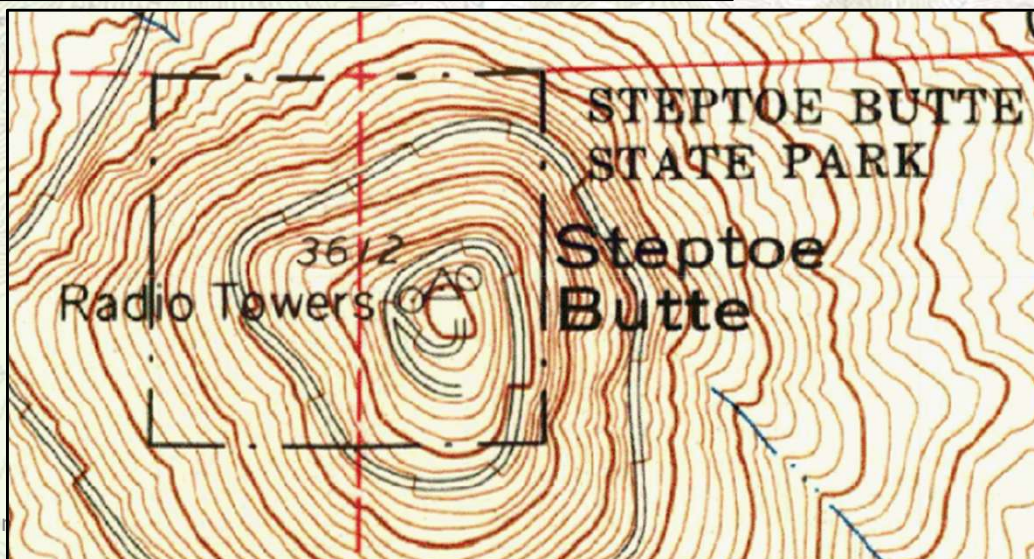
Horizontal and Vertical Control

Horizontal control

| | | |
|---------------------------------------|--------------------|------------------------|
| Third-order or better, permanent mark | \triangle Neace | ∇ Neace |
| With third-order or better elevation | BM \triangle 52 | ∇ Pike BM393 |
| With checked spot elevation | | \triangle 1012 |
| Coincident with found section corner | Cactus \triangle | Cactus ∇ |
| Unmonumented** | | + |

Vertical control

| | |
|--|------------------|
| Third-order or better elevation, with tablet | BM \times 5280 |
| Third-order or better elevation, recoverable mark, no tablet | \times 528 |
| Bench mark coincident with found section corner | BM ∇ 5280 |
| Spot elevation | \times 7523 |



A topographic map of the Paradise Glacier region. The map features brown contour lines indicating elevation, with labels such as 6000, 6200, 6400, 6600, 6800, 7000, 7200, 7400, 7600, 7800, and 8000. Key locations are marked: 'McClure Rock' with a benchmark (BM) of 7385, 'Cowlitz Rocks' at 7450, and 'Paradise Glacier Caves' at 6766. A red arrow points from McClure Rock to Cowlitz Rocks, with a white label 'Bearing = ???' next to it. The map also shows 'Williwakas Glacier' and 'Paradise Glacier'. The word 'NATION' is partially visible at the bottom. Other labels include 'Creek', 'Panorama Point', and 'ier'.



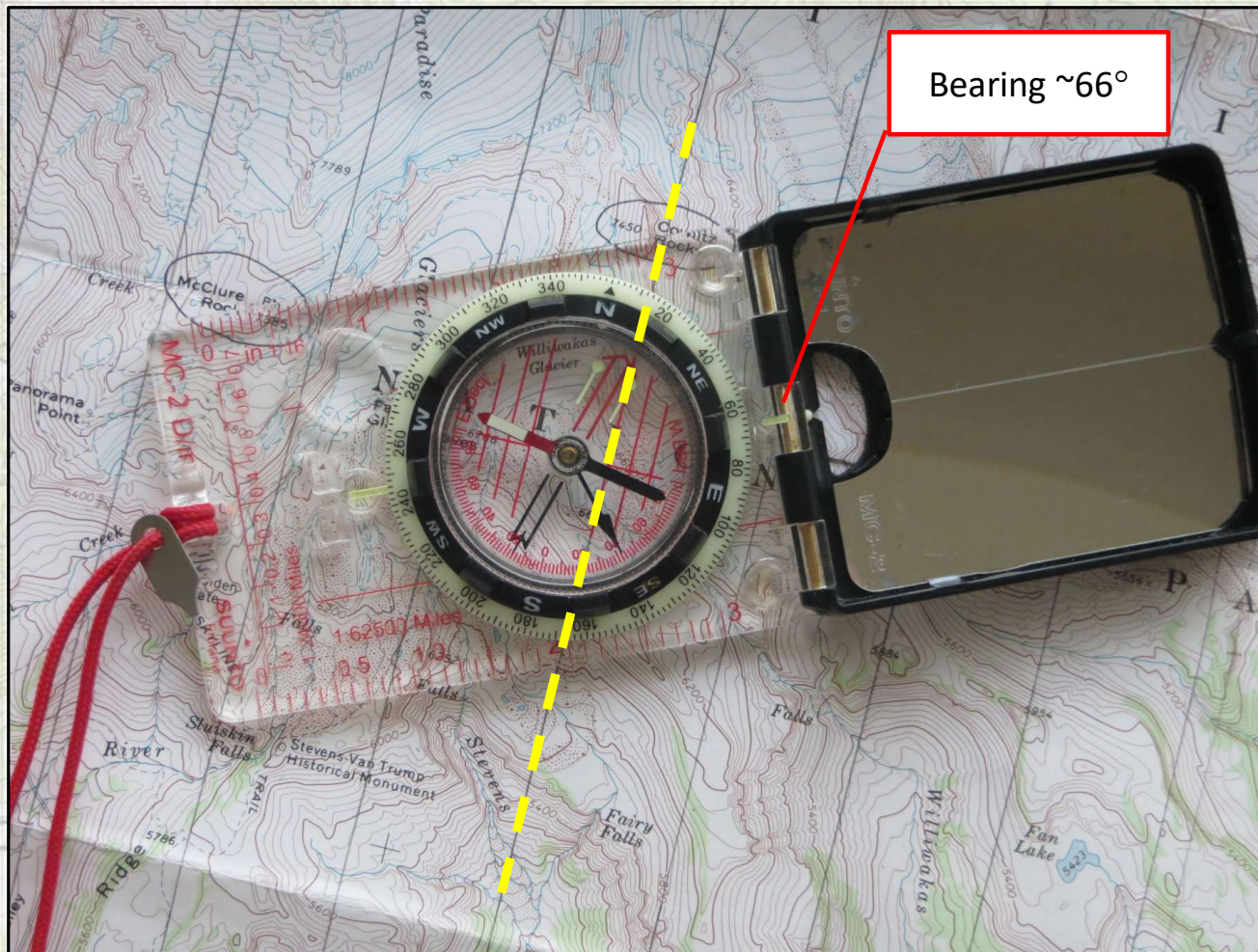
LOOSE ENDS: Taking a Bearing From the Map



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LOOSE ENDS: Taking a Bearing From the Map



Matching maps to ground and vice versa

TERRAIN ASSOCIATION

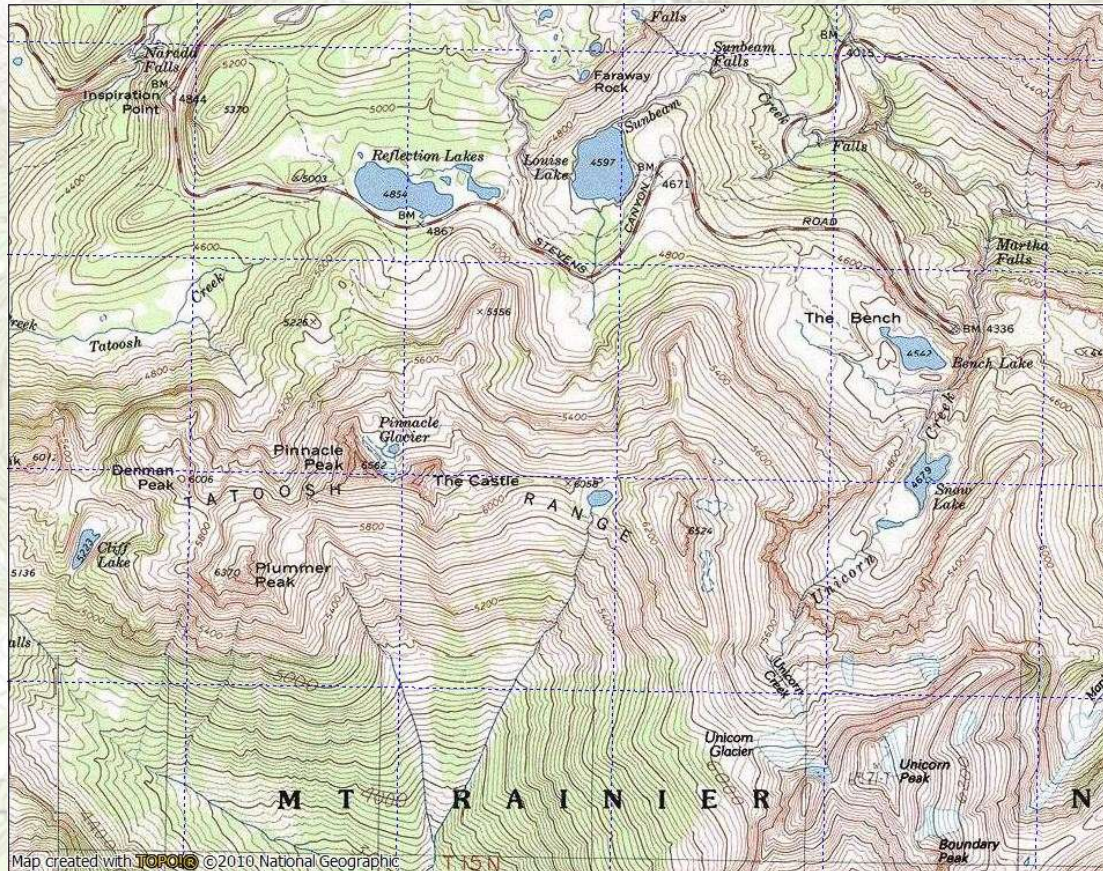


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11

Terrain Association

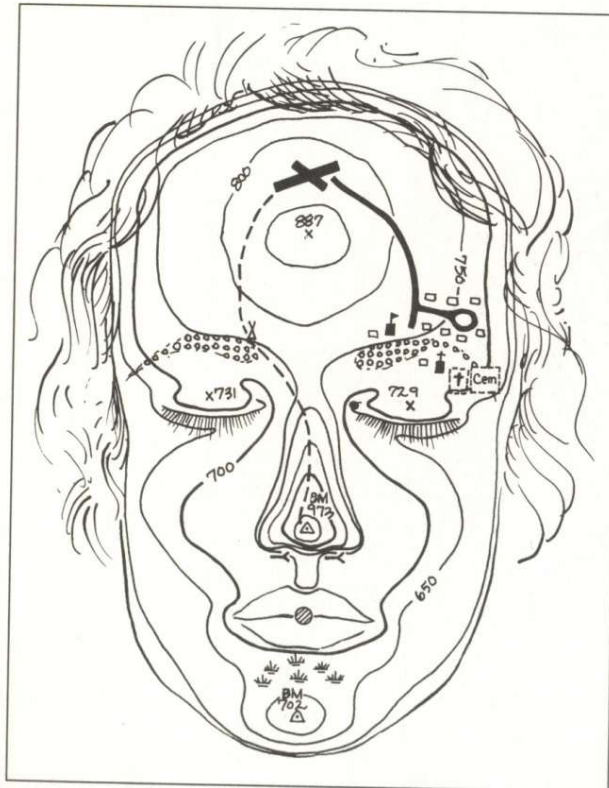


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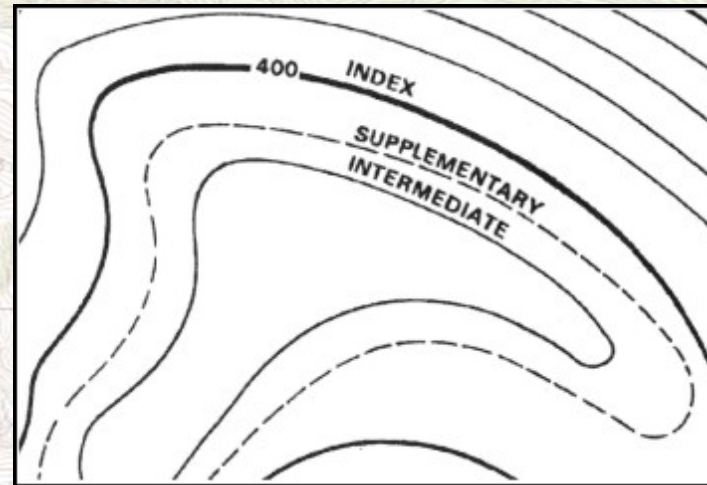
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12

Terrain association: Contours



Ref: Seidman, 1995



Ref: FM 3-25.26



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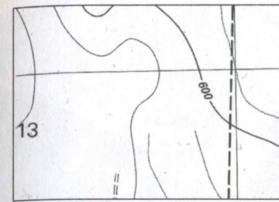
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13

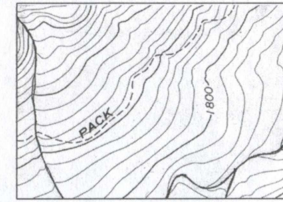
Terrain Assoc. Basic Landforms



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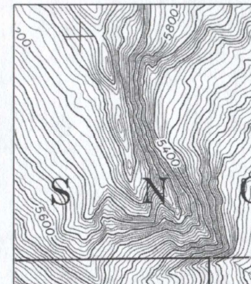
Nearly Flat Area



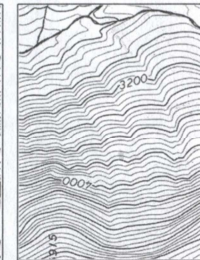
Gentle Slope



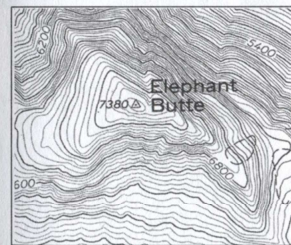
Gully or Couloir



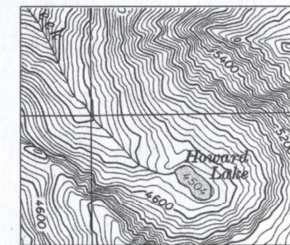
Ridge



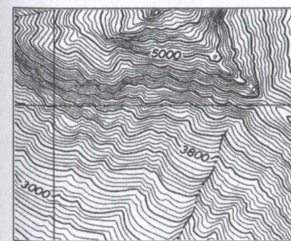
Steep Slope



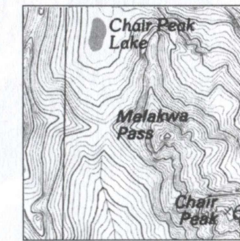
Summit



Cirque or Bowl



Cliffs



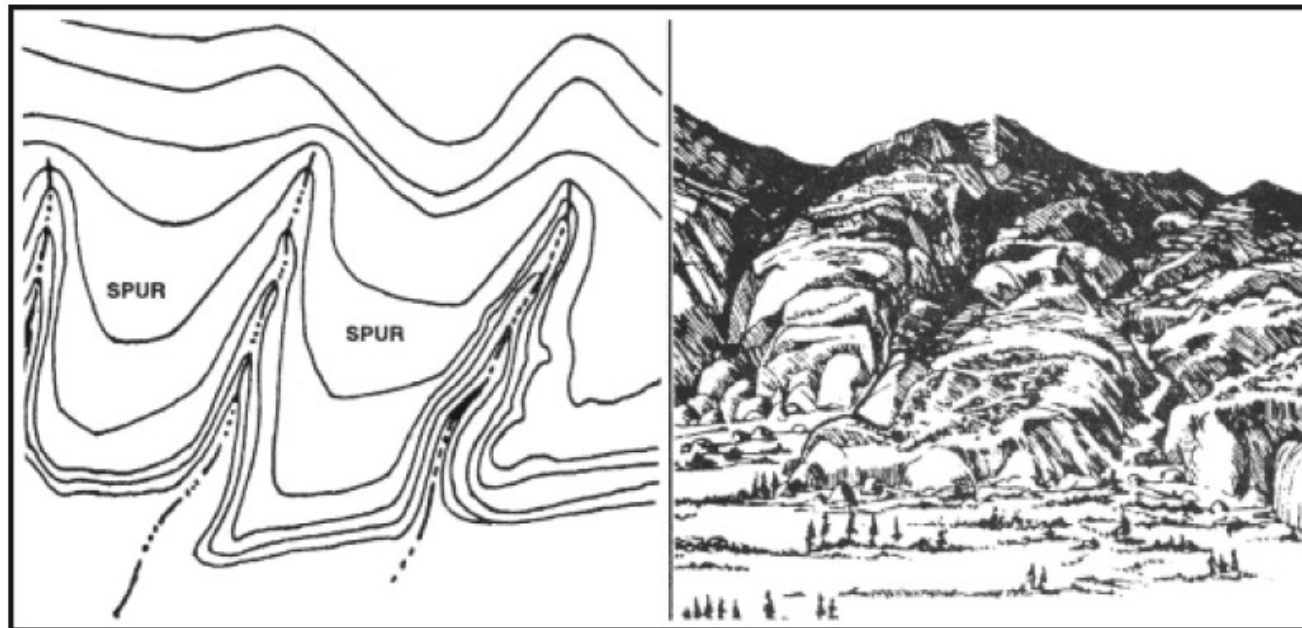
Saddle, Pass, or Col

Ref: Burns and Burns, 2004

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14

Terrain association: Ridges and Drainages



Ref: FM 3-25.26



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15

Ridges and Drainages



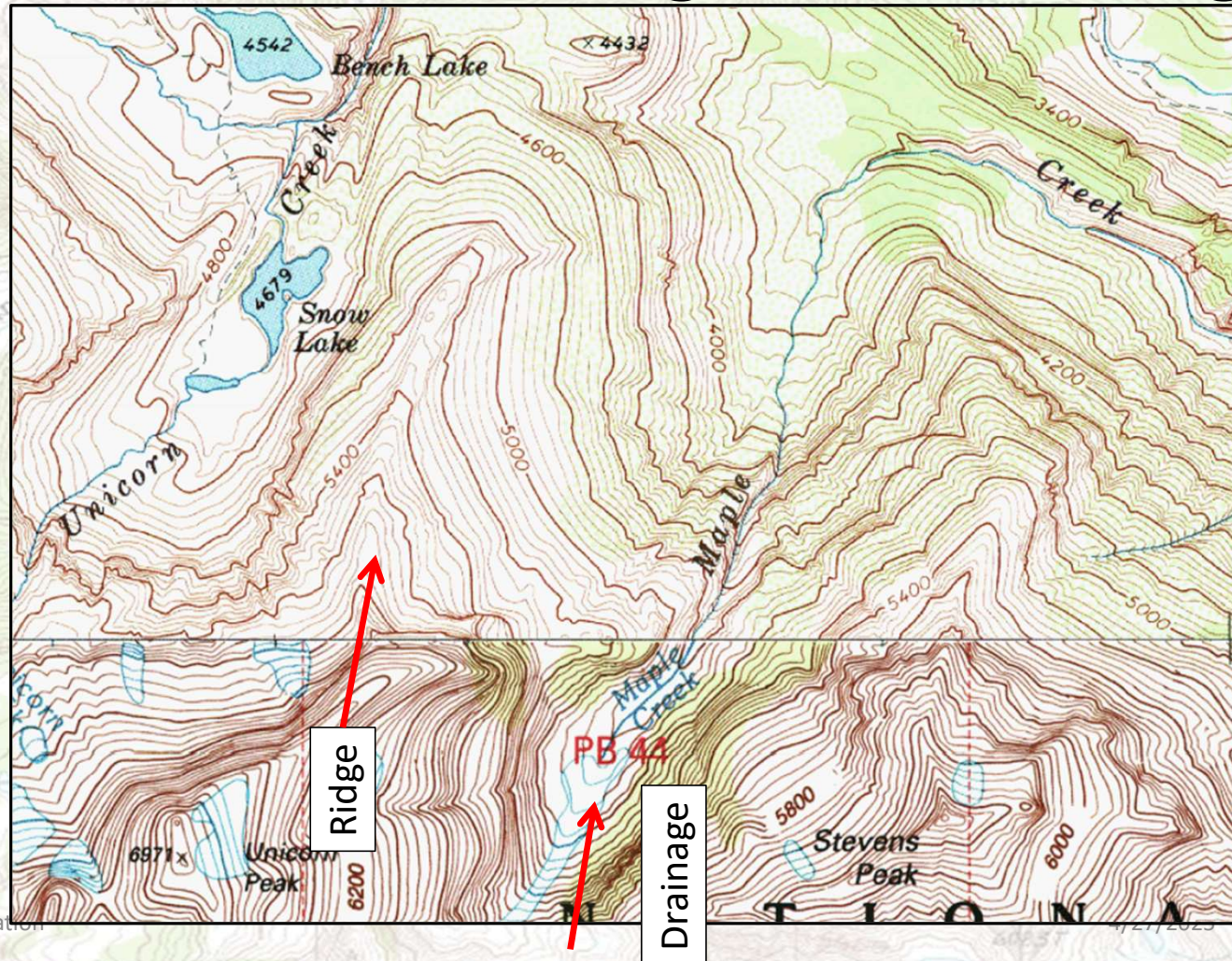
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Coxcomb Mts., JTNP, CA

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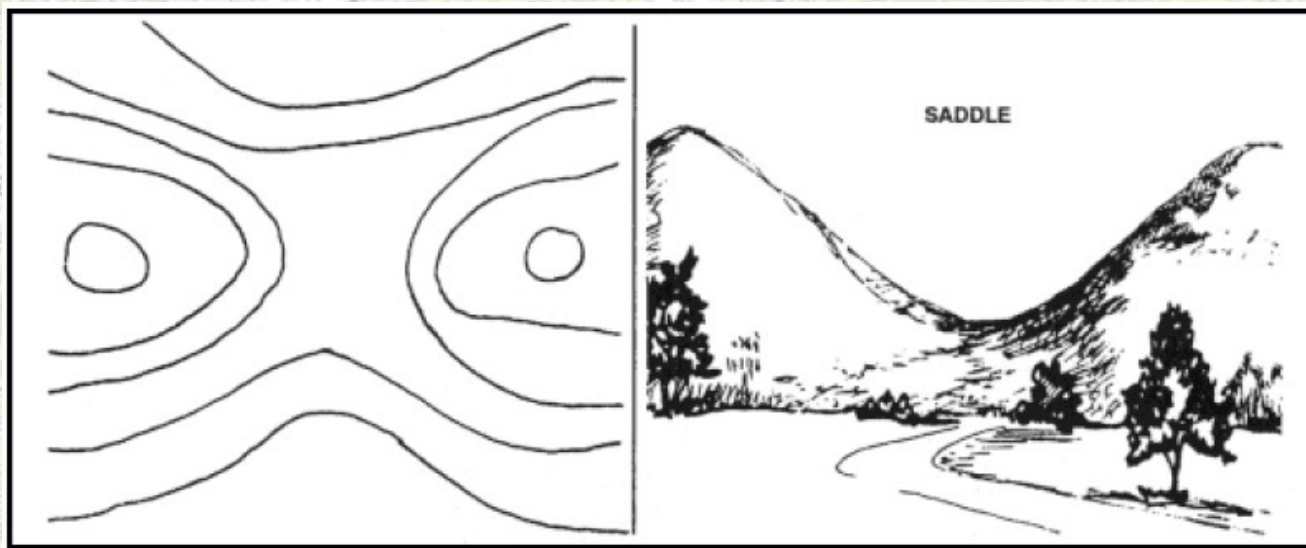
16

Terrain association: Ridges and Drainages



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Terrain association: Saddle



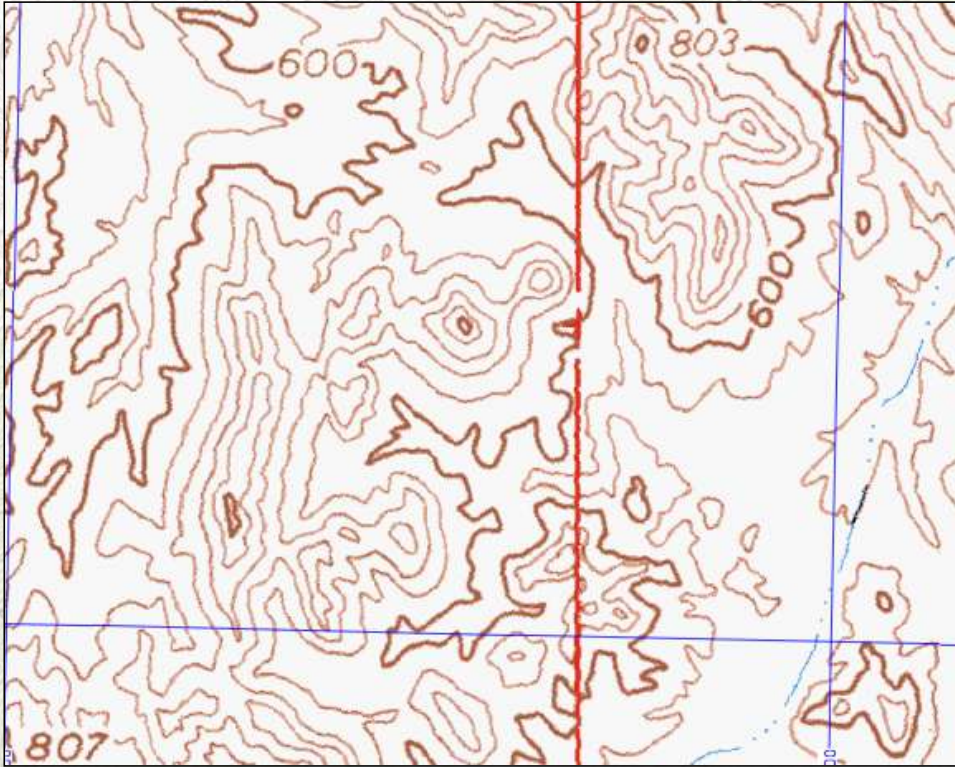
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Ref: FM 3-25.26

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18

Terrain Association: Saddle



Picacho Pk. Wilderness Area, CA



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19

Terrain Association: Saddle and Ridge



Old Baldy Mountain, WA

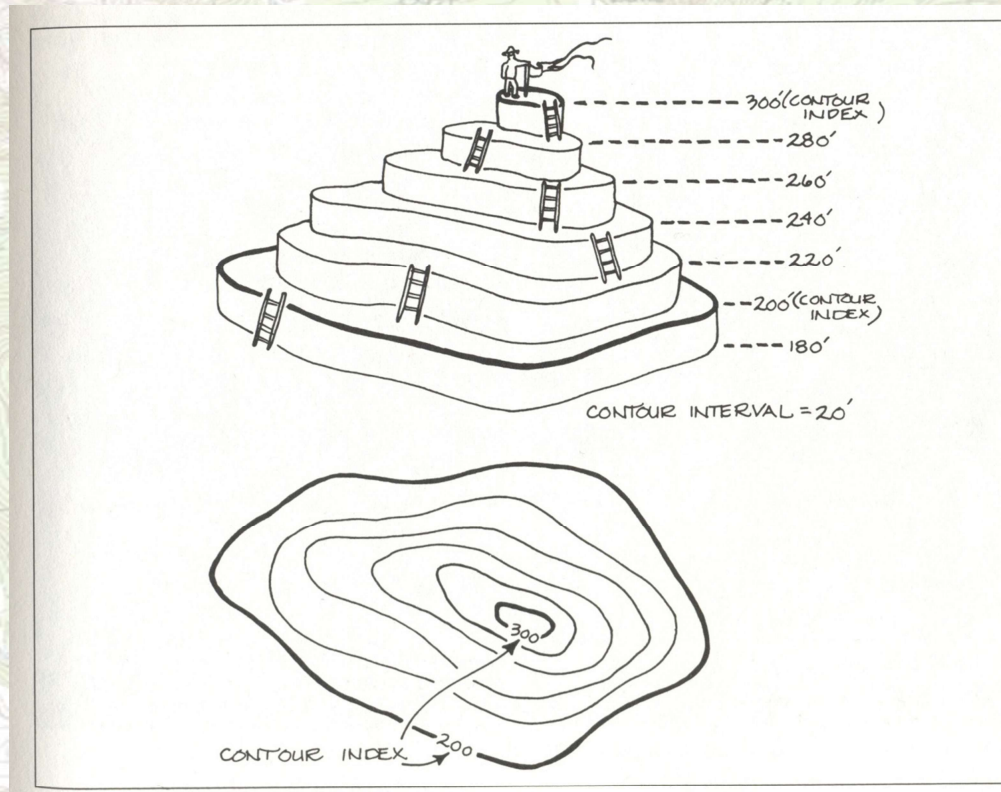


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20

Terrain association: Peak



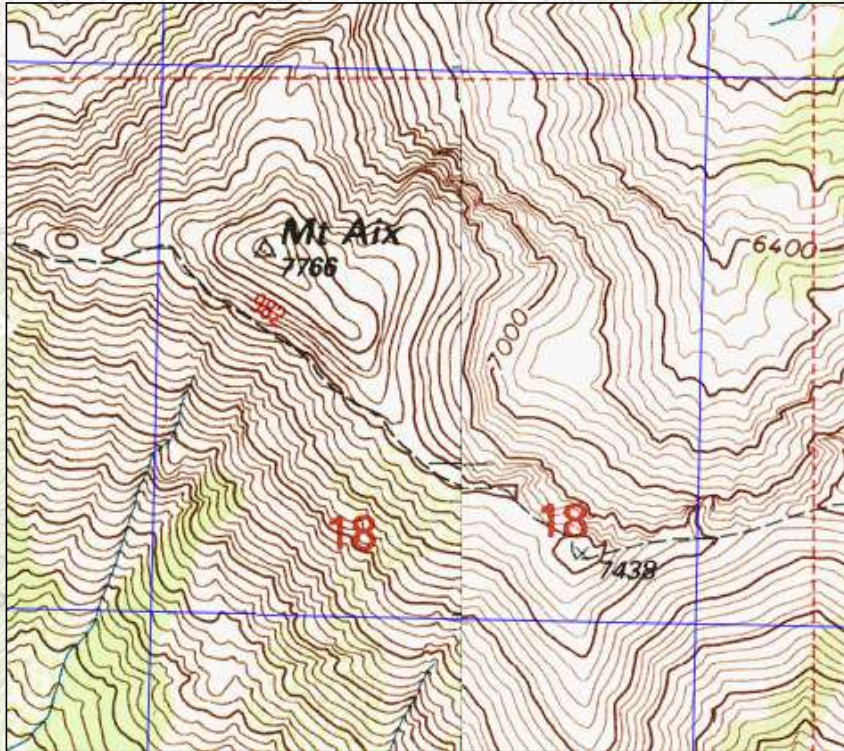
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Ref: Seidman, 1995

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21

Terrain association: Peak



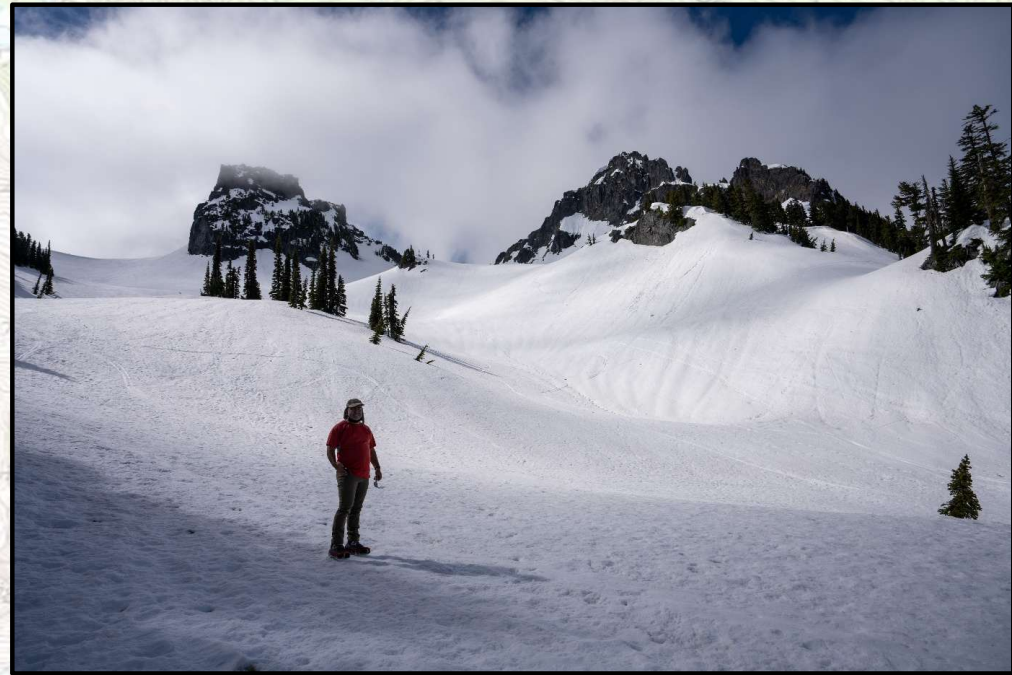
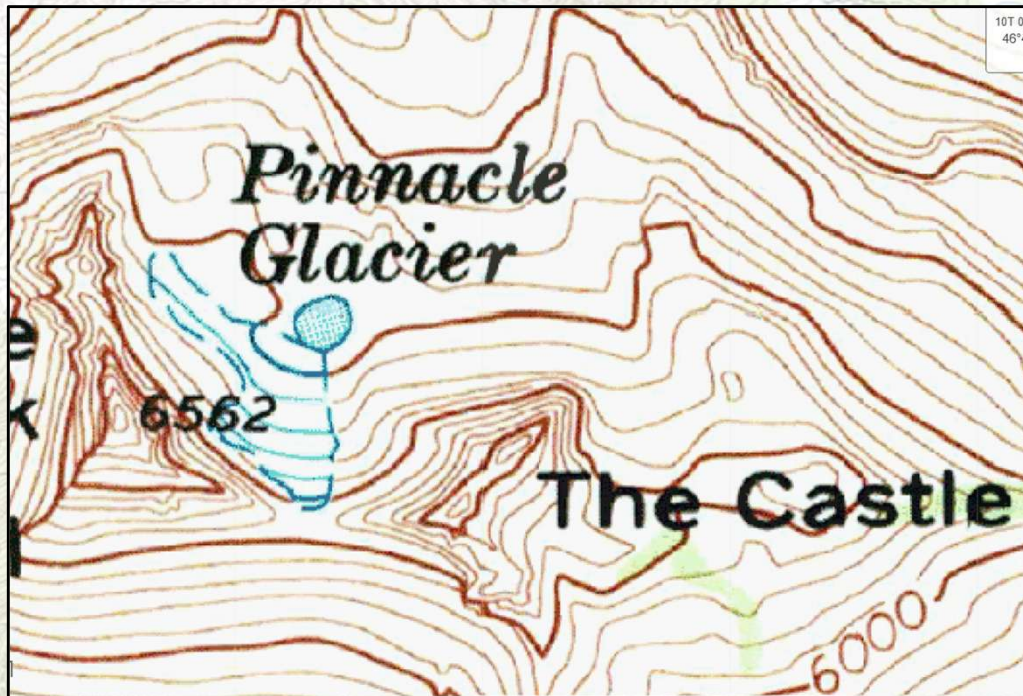
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Mt. Aix

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22

Terrain association: Peak



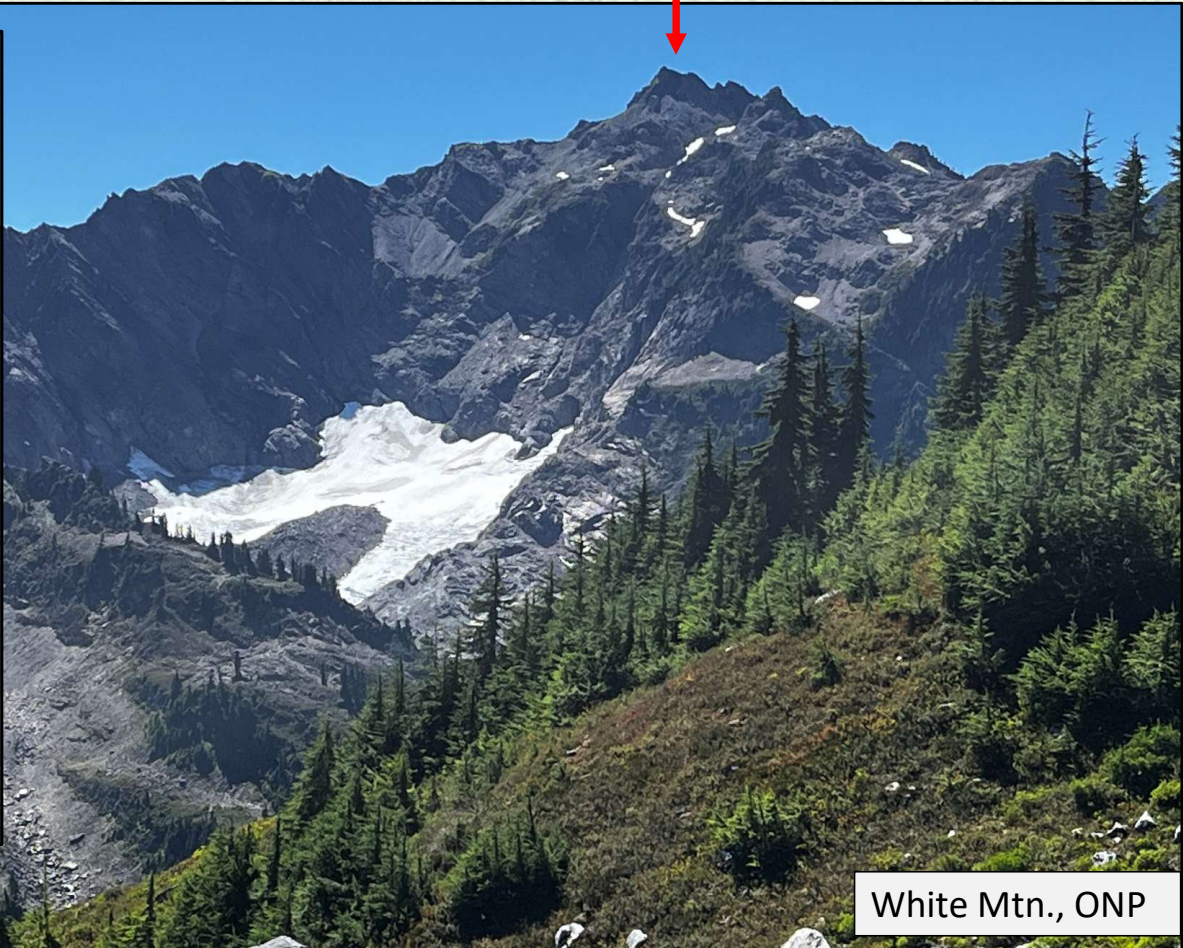
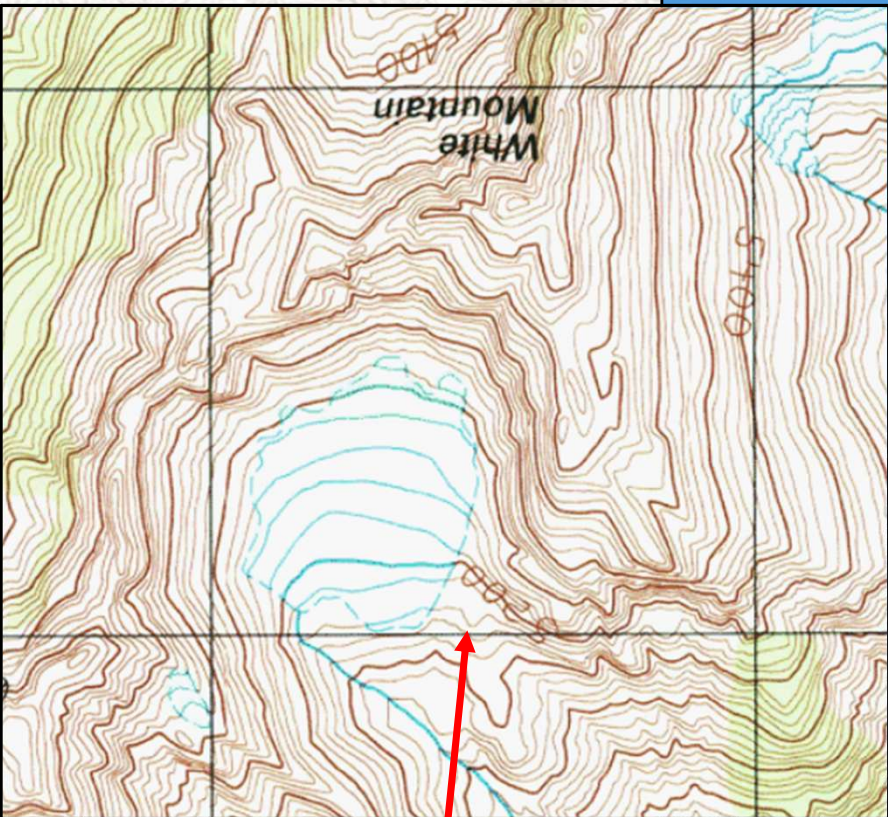
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The Castle, MRNP

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23

Terrain association: Peak



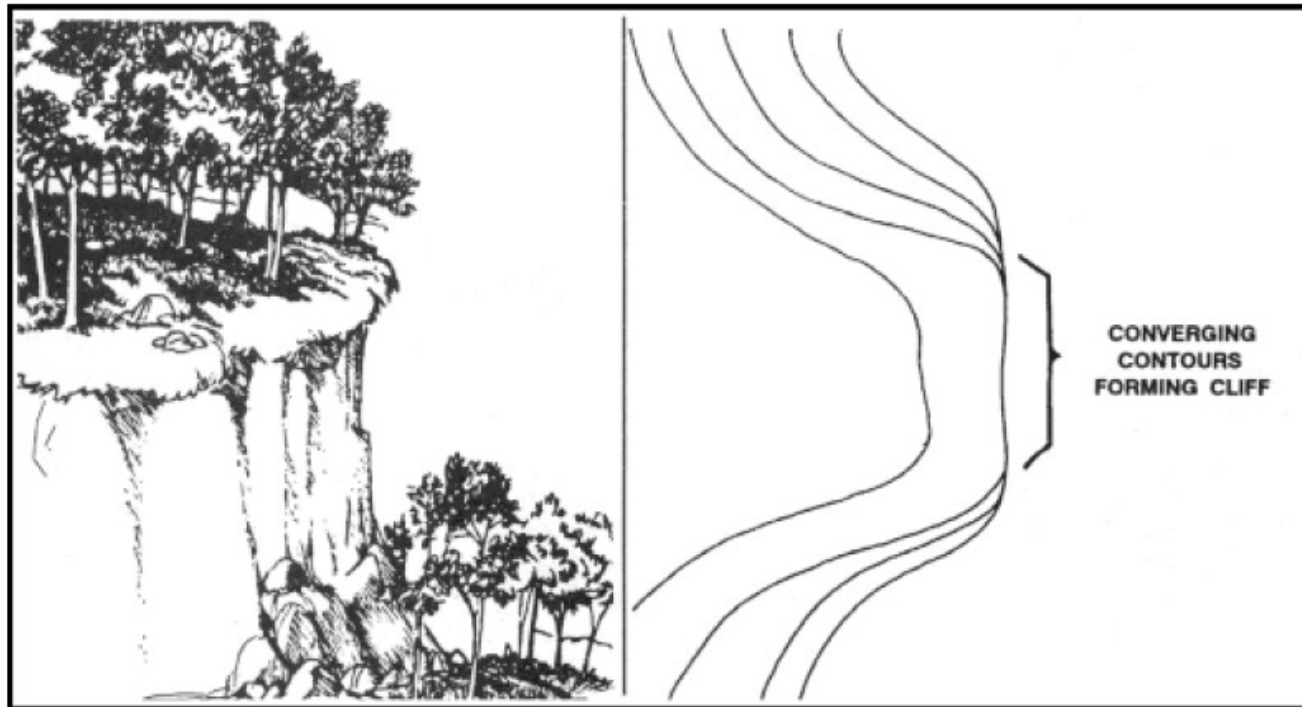
White Mtn., ONP



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Terrain association: Cliff



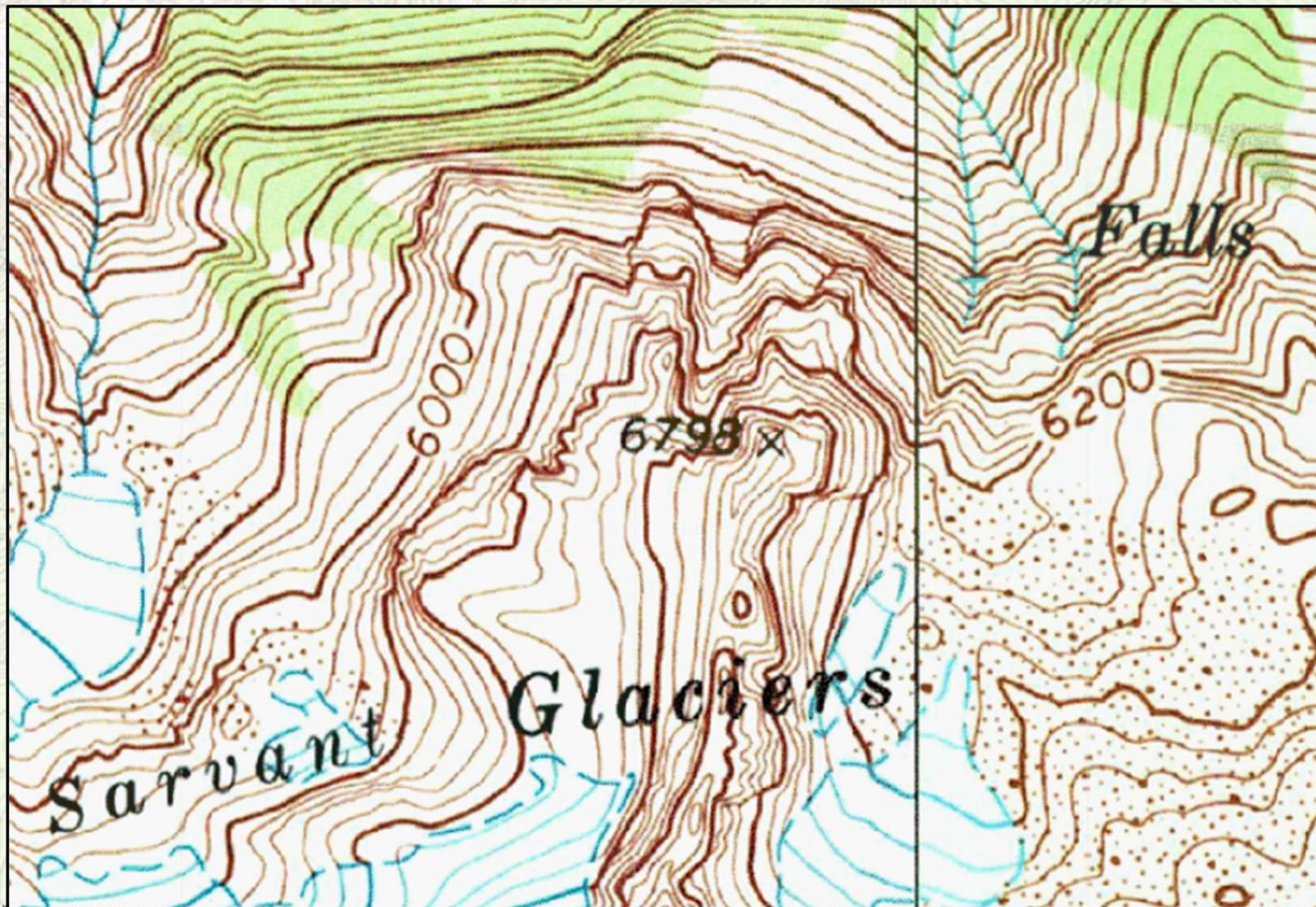
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FM 3-25.26

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25

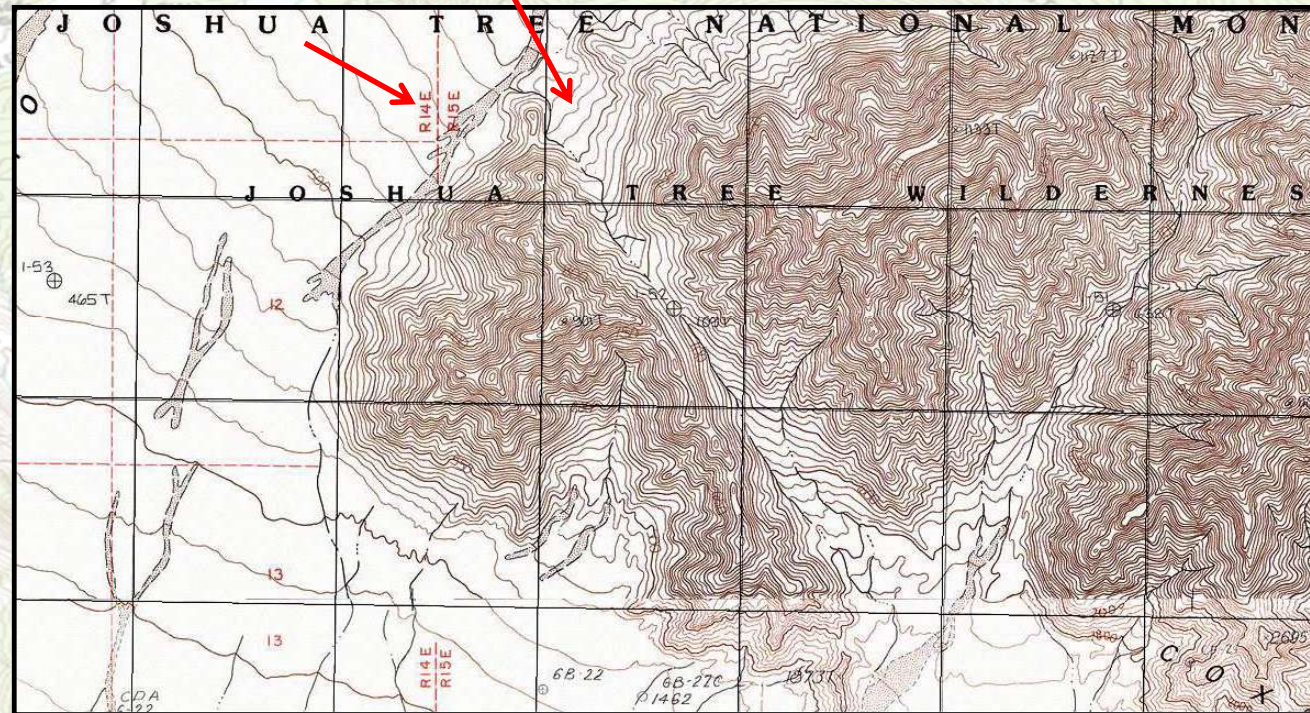
Terrain association: Cliff



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Terrain association

Different Viewpoints

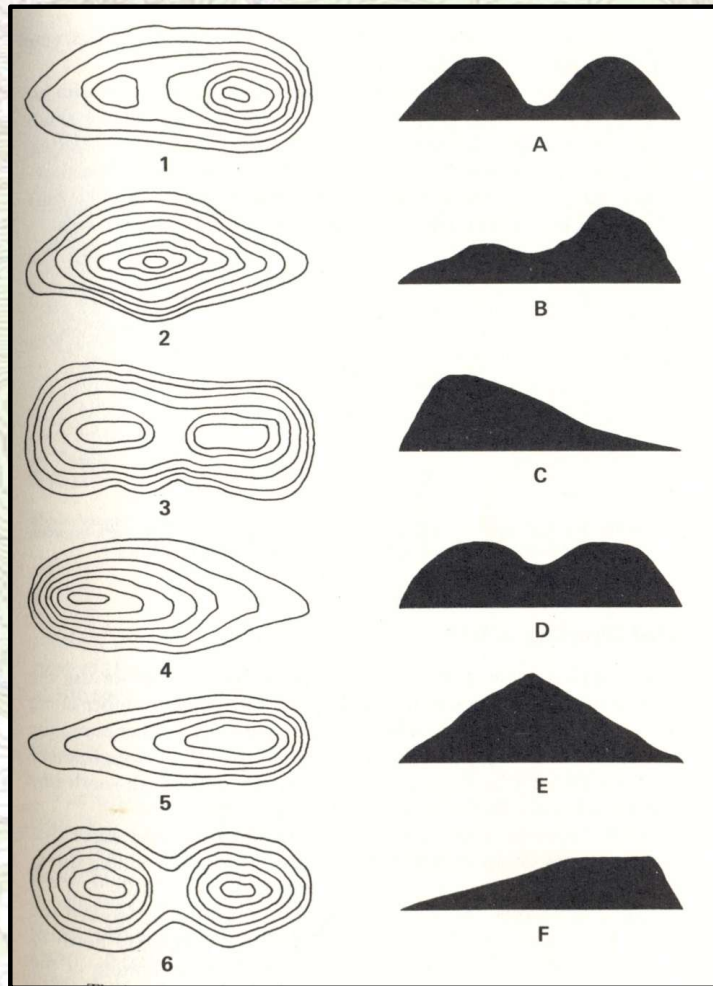


Coxcomb Mountains, CA (JTNP)

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27

Terrain association: Test Yourself



Ref: Kjellstrom, 1976 (Whoa!)

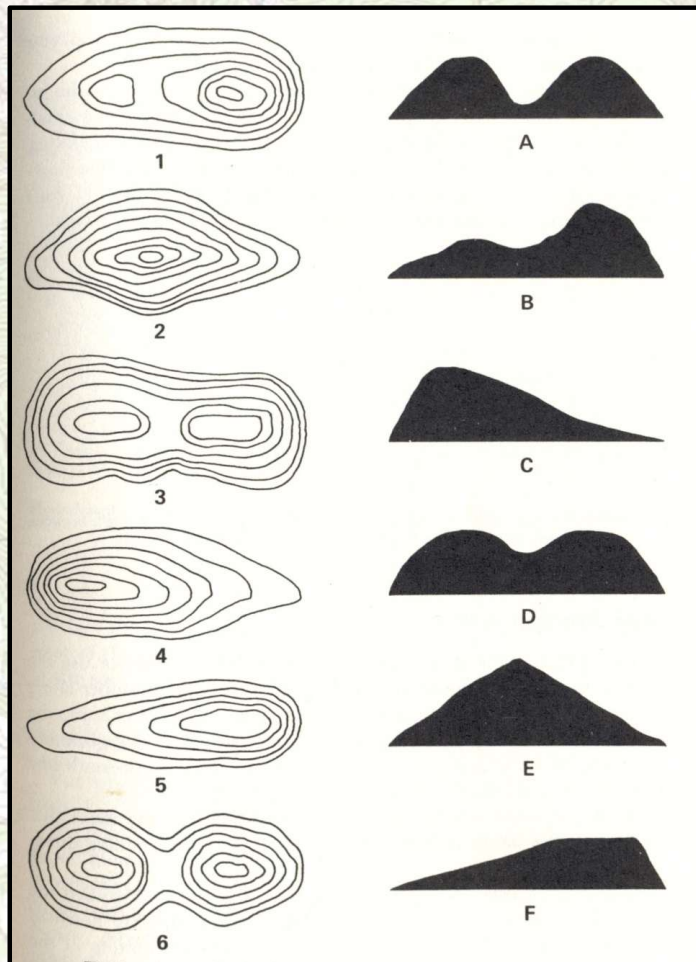


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28

Terrain association: Test Yourself



1 = B
2 = E
3 = D
4 = C
5 = F
6 = A

Ref: Kjellstrom, 1976 (Whoa!)



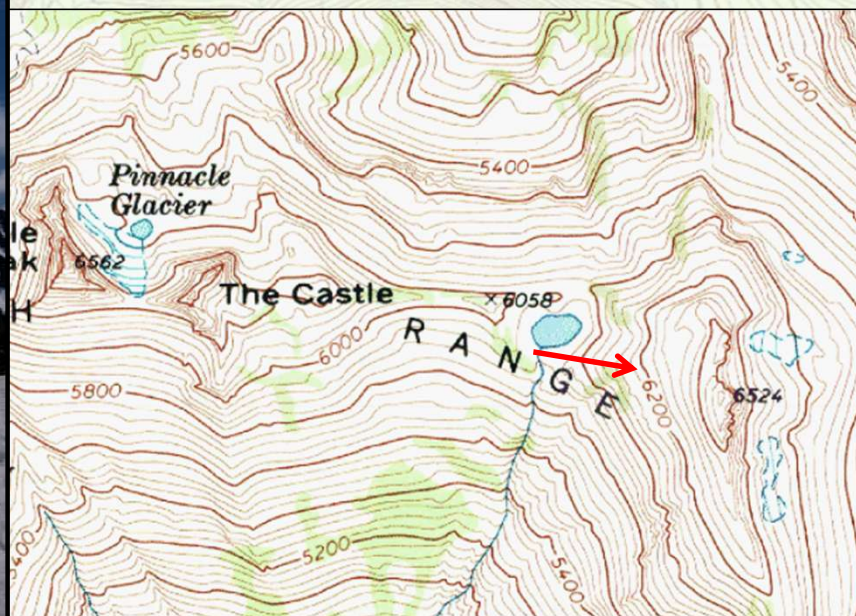
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29

Foss Peak, MRNP

Terrain association, Misc.

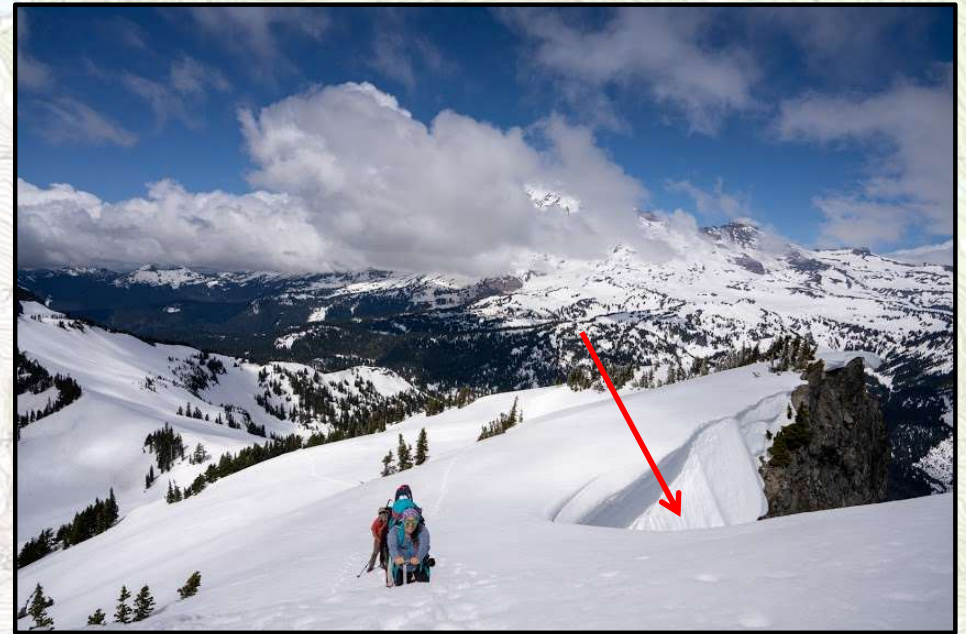


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30

Terrain association, Misc.

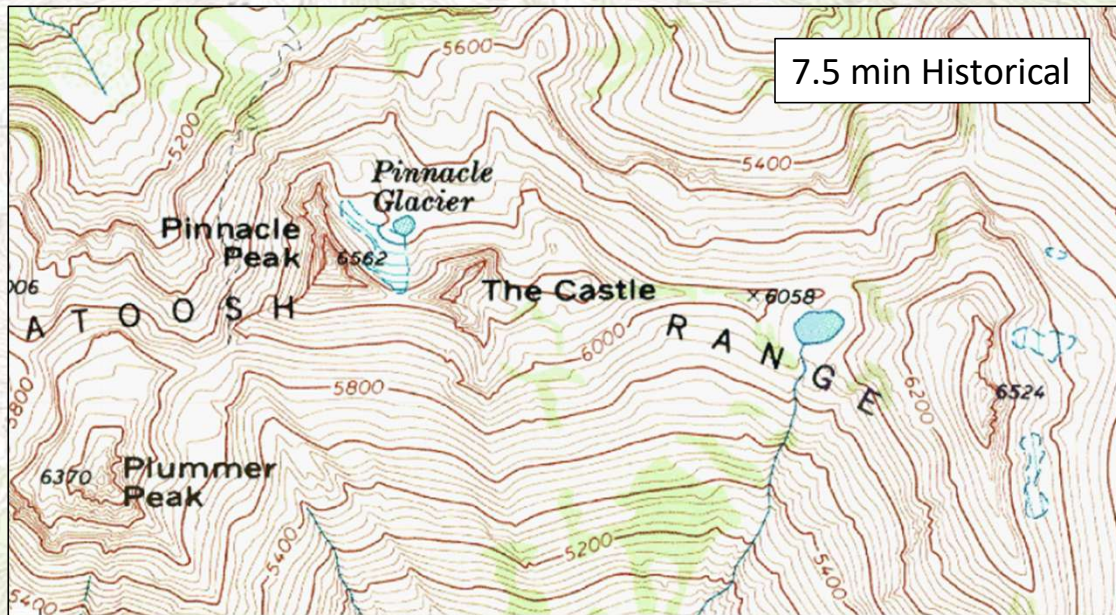


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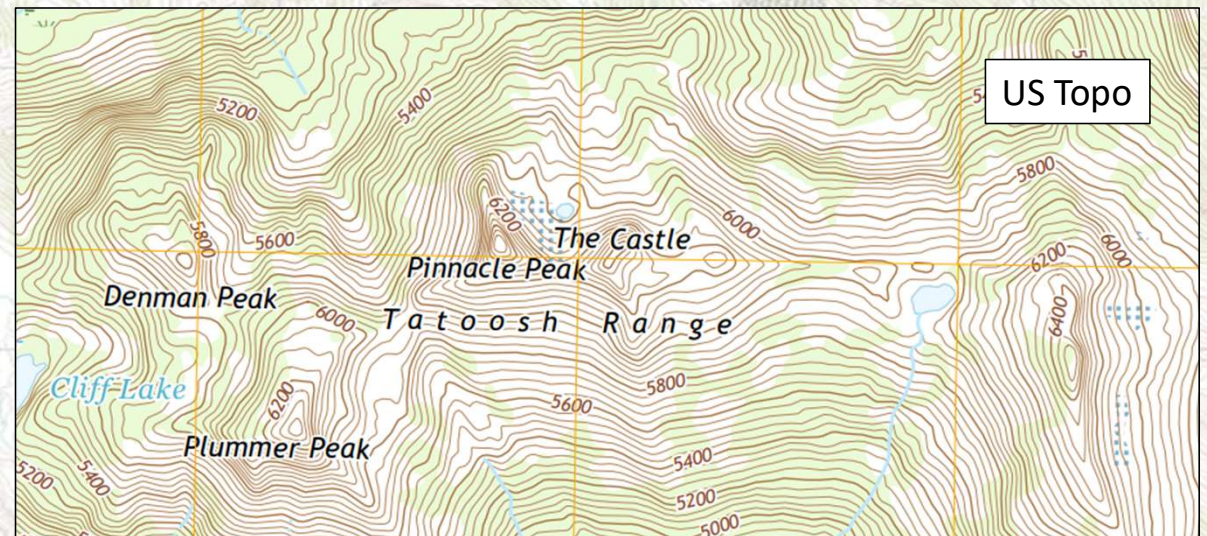
Foss Peak, MRNP

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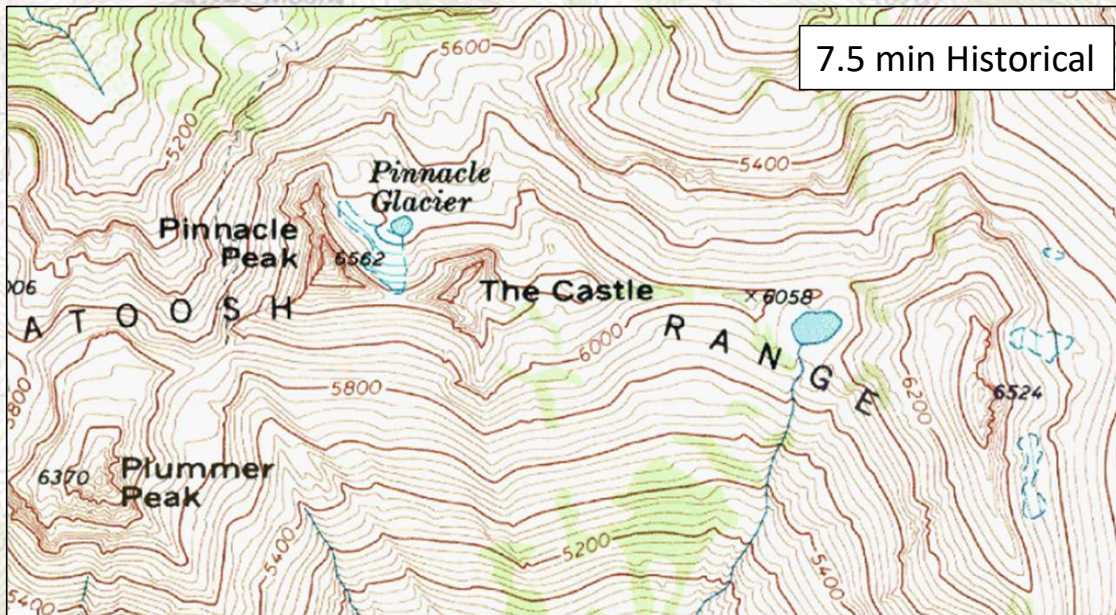
31



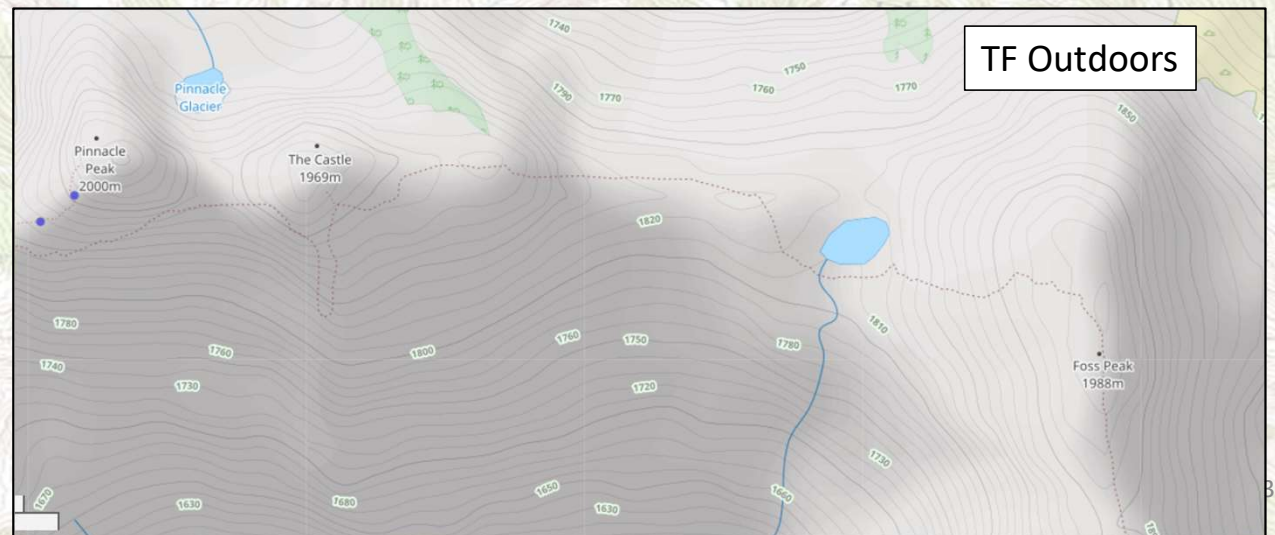
TERRAIN ASSOCIATION, MISC.



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TERRAIN ASSOCIATION, MISC.

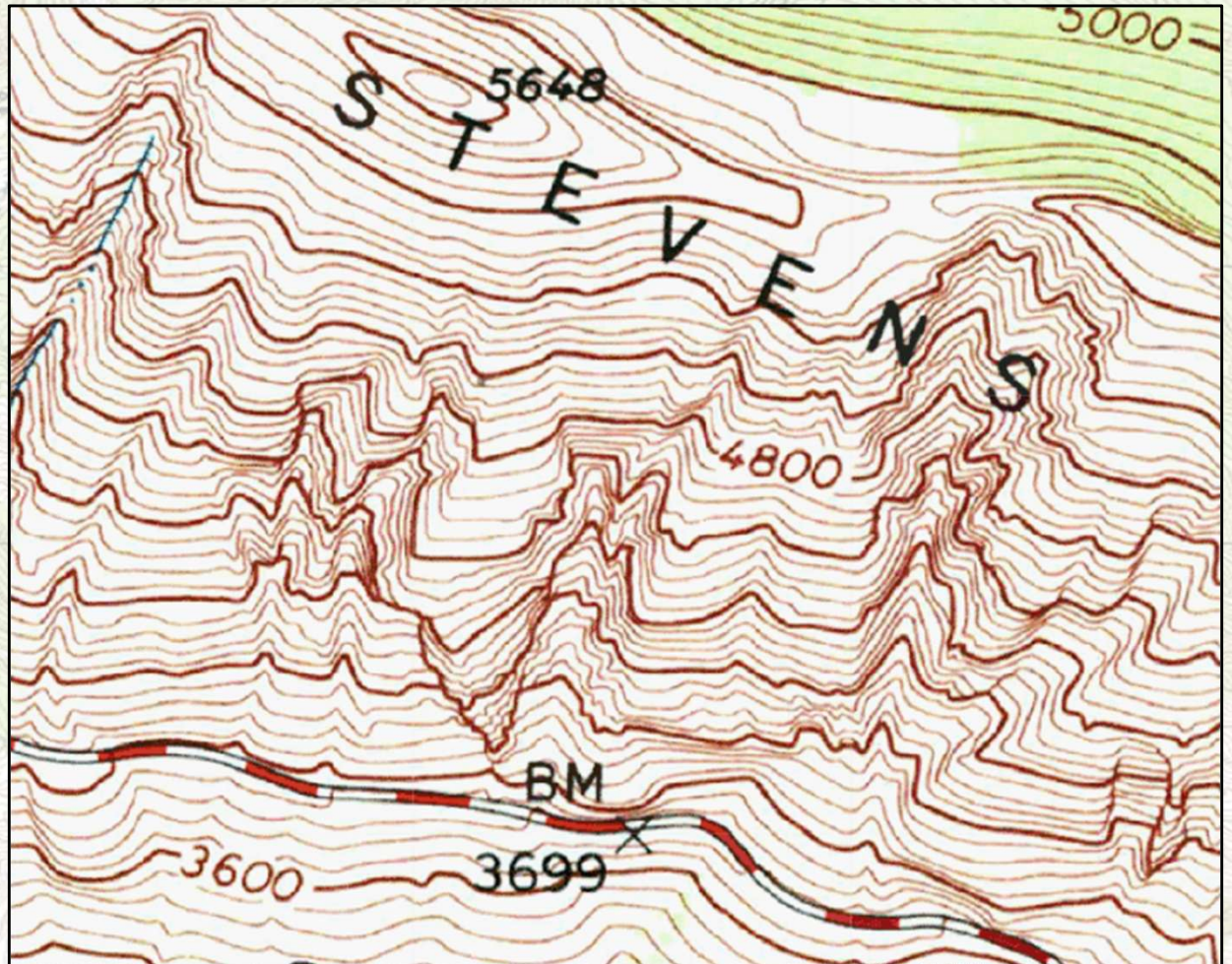


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Terrain association, Misc. – Difficult to Interpret

“There’s something happening here, But what it is ain’t exactly clear...”

-Stephen Stills, Buffalo Springfield (1966)



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A detailed topographic map of the Olympic Peninsula region, showing contour lines, rivers, and various geographical features. The map includes labels for Mount Seattle, Low Divide, Quinault River, Lake Mary, Lake Margaret, Delabarre, Martins Park, Martins Lake, and Mount Christie. The word "OLYMPIC" is prominently displayed across the bottom of the map area.

Questions?



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35