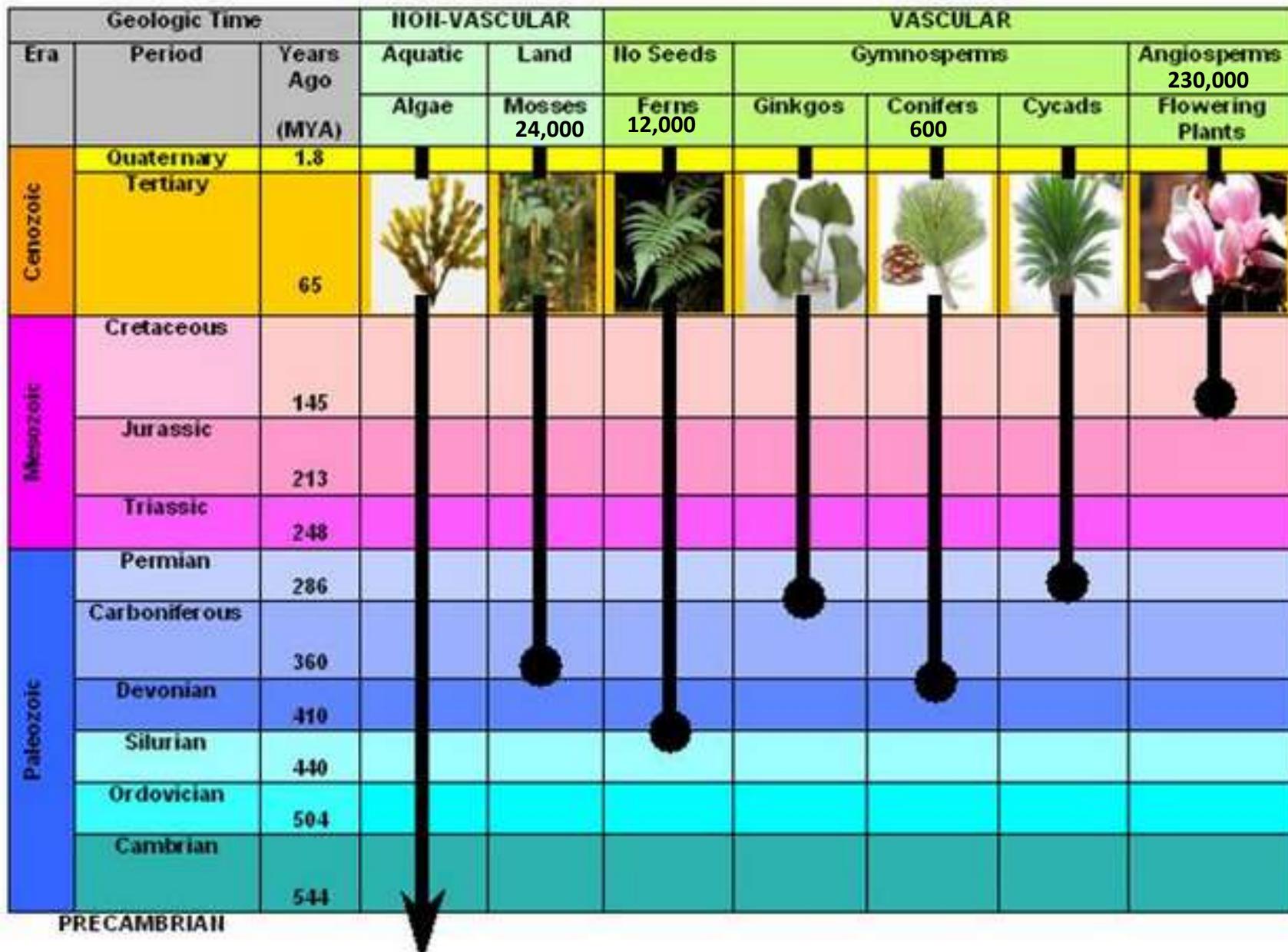


Flowering Plants

Most photographs obtained from :
WTU Herbarium Image Collection –
Burke Museum

PLANT EVOLUTION TIMELINE

X



3,200 vascular plant species in Washington. 143 plant families in Washington

Learning level

- A. Family level -- class 1 & 2
- B. Genus level -- maybe some common ones
- C. Species -- class 3 (eastside) & 4 (Mt. Rainier)

Division: Flowering plants.....Conifers, Ferns, Mosses, Algae, etc.

Family: SunflowerRose, Buttercup, Lily, Orchid, Mustard, Buckwheat, etc.

Genus: Daisy.....Balsamroot, Pussytoes, Agoseris, Arnica, etc.

Species: Subalpine Daisy.....Bitter Daisy, Cut-leaved Daisy, Golden Daisy, etc.

Identifying plants

- A. Thumb through plant books. *
- B. Use apps -- narrow search by plant characteristics.
- C. Turner -- same.
- D. Learn 25 common plant families .
Books & apps. arranged by family.
Modify WNPS plant lists -- alpha by family (the 25 = 90%) *



[Adams](#)

[Franklin](#)

[Lewis](#)

[Snohomish](#)

[Asotin](#)

[Garfield](#)

[Lincoln](#)

[Spokane](#)

[Benton](#)

[Grant](#)

[Mason](#)

[Stevens](#)

[Chelan](#)

[Grays Harbor](#)

[Okanogan](#)

[Thurston](#)

[Clallam](#)

[Island](#)

[Pacific](#)

[Wahkiakum](#)

[Clark](#)

[Jefferson](#)

[Pend Oreille](#)

[Walla Walla](#)

[Columbia](#)

[King](#)

[Pierce](#)

[Whatcom](#)

[Cowlitz](#)

[Kitsap](#)

[San Juan](#)

[Whitman](#)

[Douglas](#)

[Kittitas](#)

[Skagit](#)

[Yakima](#)

[Ferry](#)

[Klickitat](#)

[Skamania](#)

Genus/species	Common Name	Family
<i>Abies lasiocarpa</i>	Sub-alpine fir	Pinaceae
<i>Agoseris glauca</i>	Mountain agoseris	Asteraceae
<i>Antennaria alpina</i>	Alpine pussy-toes	Asteraceae
<i>Antennaria lanata</i>	Woolly pussy-toes	Asteraceae
<i>Arabis lyallii</i>	Lyall's rockcress	Brassicaceae
<i>Arctostaphylos uva-ursi</i>	Bearberry	Ericaceae
<i>Arenaria nuttallii</i>	Nuttall's sandwort	Caryophyllaceae
<i>Arenaria obtusiloba</i>	Arctic sandwort	Caryophyllaceae
<i>Artemesia trifurcata</i>	Three-forked artemesia	Asteraceae
<i>Aster alpinus</i>	Alpine aster	Asteraceae
<i>Carex spectabilis</i>	Showy sedge	Cyperaceae
<i>Castilleja parviflora oreopola</i>	Magenta paintbrush	Scrophulariaceae
<i>Castilleja rupicola</i>	Cliff paintbrush	Scrophulariaceae
<i>Collomia debilis</i>	Alpine collomia	Polemoniaceae
<i>Epilobium alpinum</i>	Alpine willow-herb	Onagraceae
<i>Erigeron aureus</i>	Golden fleabane	Asteraceae
<i>Eriogonum pyrolifolium</i>	Alpine buckwheat	Polygonaceae
<i>Hieracium gracile</i>	Slender hawkweed	Asteraceae
<i>Juncus</i> sp.	Rush	Juncaceae
<i>Juniperus communis</i>	Mountain juniper	Cupressaceae
<i>Luetkea pectinata</i>	Partridge foot	Rosaceae
<i>Lupinus lepidus</i>	Prairie lupine	Fabaceae
<i>Luzula hitchcockii</i>	Smooth woodrush	Juncaceae
<i>Pedicularis contorta</i>	Coiled lousewort	Scrophulariaceae
<i>Pedicularis ornithorhyncha</i>	Bird's-beak lousewort	Scrophulariaceae
<i>Penstemon davidsonii</i>	Davidson's penstemon	Scrophulariaceae
<i>Penstemon procerus</i>	Small-flowered penstemon	Scrophulariaceae
<i>Phlox diffusa</i>	Spreading phlox	Polemoniaceae
<i>Phyllodoce empetriformis</i>	Red mountain heather	Ericaceae
<i>Phyllodoce glanduliflora</i>	Yellow heather	Ericaceae
<i>Pinus albicaulis</i>	White-bark pine	Pinaceae
<i>Poa</i> sp.	Bluegrass	Poaceae

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<i>Pinus albicaulis</i>	White-bark pine	Pinaceae
<i>Poa</i> sp.	Bluegrass	Poaceae

Genus/Species	Common Name	Family	Family Common name
<i>Mertensia paniculata</i>	Tall bluebells	Boraginaceae	Borage
<i>Eriogonum pyrolifolium</i>	Alpine buckwheat	Polygonaceae	Buckwheat
<i>Oxyria digyna</i>	Mountain sorrel	Polygonaceae	Buckwheat
<i>Polygonum bistortoides</i>	Mountain bistort	Polygonaceae	Buckwheat
<i>Polygonum newberryi</i>	Newberry's knotweed	Polygonaceae	Buckwheat
<i>Anemone drummondii</i>	Drummond's anemone	Ranunculaceae	Buttercup
<i>Anemone occidentalis</i>	Mountain pasqueflower	Ranunculaceae	Buttercup
<i>Caltha biflora</i>	White marshmarigold	Ranunculaceae	Buttercup
<i>Caltha leptosepala</i>	Elkslip	Ranunculaceae	Buttercup
<i>Ranunculus eschscholtzii</i>	Snow buttercup	Ranunculaceae	Buttercup
<i>Empetrum nigrum</i>	Crowberry	Empetraceae	Crowberry
<i>Ribes viscosissimum</i>	Sticky currant	Grossulariaceae	Currant
<i>Epilobium alpinum</i>	Alpine willow-herb	Onagraceae	Evening-Primrose
<i>Epilobium angustifolium</i>	Fireweed	Onagraceae	Evening-Primrose
<i>Athyrium distentifolium</i>	Alpine lady fern	Polypodiaceae	Fern
<i>Cheilanthes gracillima</i>	Lace fern	Polypodiaceae	Fern
<i>Cryptogramma crispa</i>	Parsley fern	Polypodiaceae	Fern
<i>Polystichum lonchitis</i>	Holly fern	Polypodiaceae	Fern
<i>Castilleja miniata</i>	Scarlet paintbrush	Scrophulariaceae	Figwort
<i>Castilleja parviflora oreopola</i>	Magenta paintbrush	Scrophulariaceae	Figwort
<i>Castilleja rupicola</i>	Cliff paintbrush	Scrophulariaceae	Figwort
<i>Pedicularis bracteosa</i>	Bracted lousewort	Scrophulariaceae	Figwort
<i>Pedicularis contorta</i>	Coiled lousewort	Scrophulariaceae	Figwort
<i>Pedicularis groenlandica</i>	Elephant's head	Scrophulariaceae	Figwort
<i>Pedicularis ornithorhyncha</i>	Bird's-beak lousewort	Scrophulariaceae	Figwort
<i>Pedicularis racemosa</i>	Sickletop lousewort	Scrophulariaceae	Figwort
<i>Pedicularis rainierensis</i>	Mt. Rainier lousewort	Scrophulariaceae	Figwort
<i>Penstemon davidsonii</i>	Davidson's penstemon	Scrophulariaceae	Figwort
<i>Penstemon fruticosus</i>	Shrubby penstemon	Scrophulariaceae	Figwort
<i>Penstemon procerus</i>	Small-flowered penstemon	Scrophulariaceae	Figwort
<i>Penstemon rupicola</i>	Cliff penstemon	Scrophulariaceae	Figwort
<i>Veronica cusickii</i>	Cusick's speedwell	Scrophulariaceae	Figwort

3,200 vascular plant species in Washington. 143 plant families in Washington

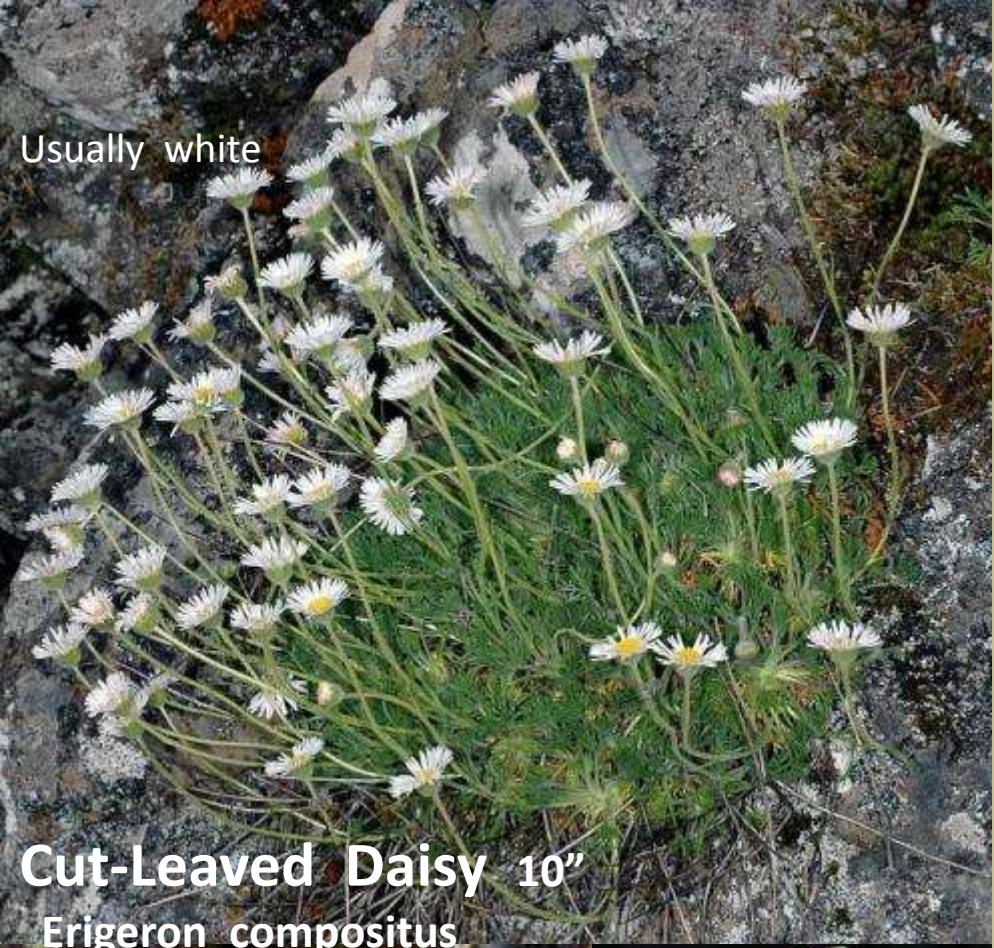
Learning plants

- A. Plant of the day. *
- B. Go on field trips. Remember what you can.
 Take pictures . Store by hike. Study at home.
- C. Study books or on line (UW Herbarium website, other
 apps.)
- D. Power point. Arrange by family -- genus & species.

Sunflower Family Daisies (Erigeron)

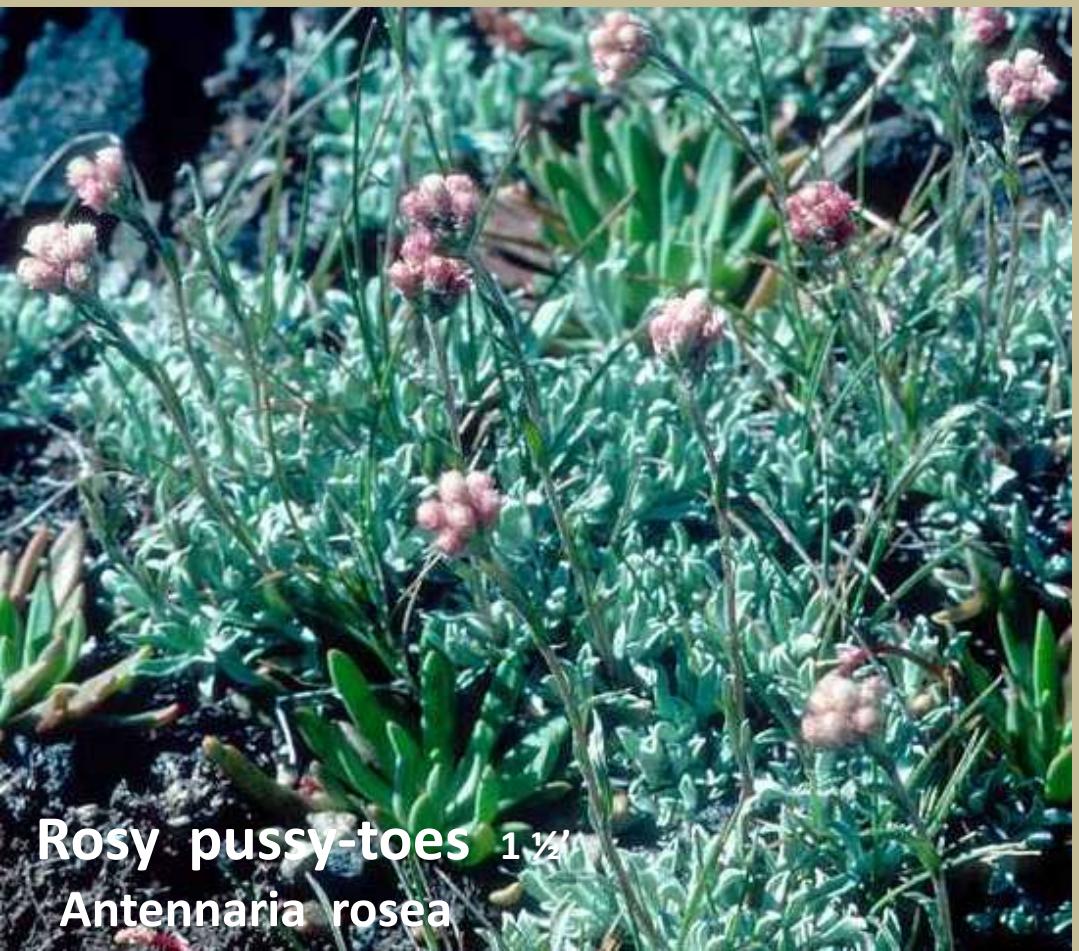






Sunflower Family Pussytoes (*Antennaria*)





Rosy pussy-toes 1 1/2'
Antennaria rosea



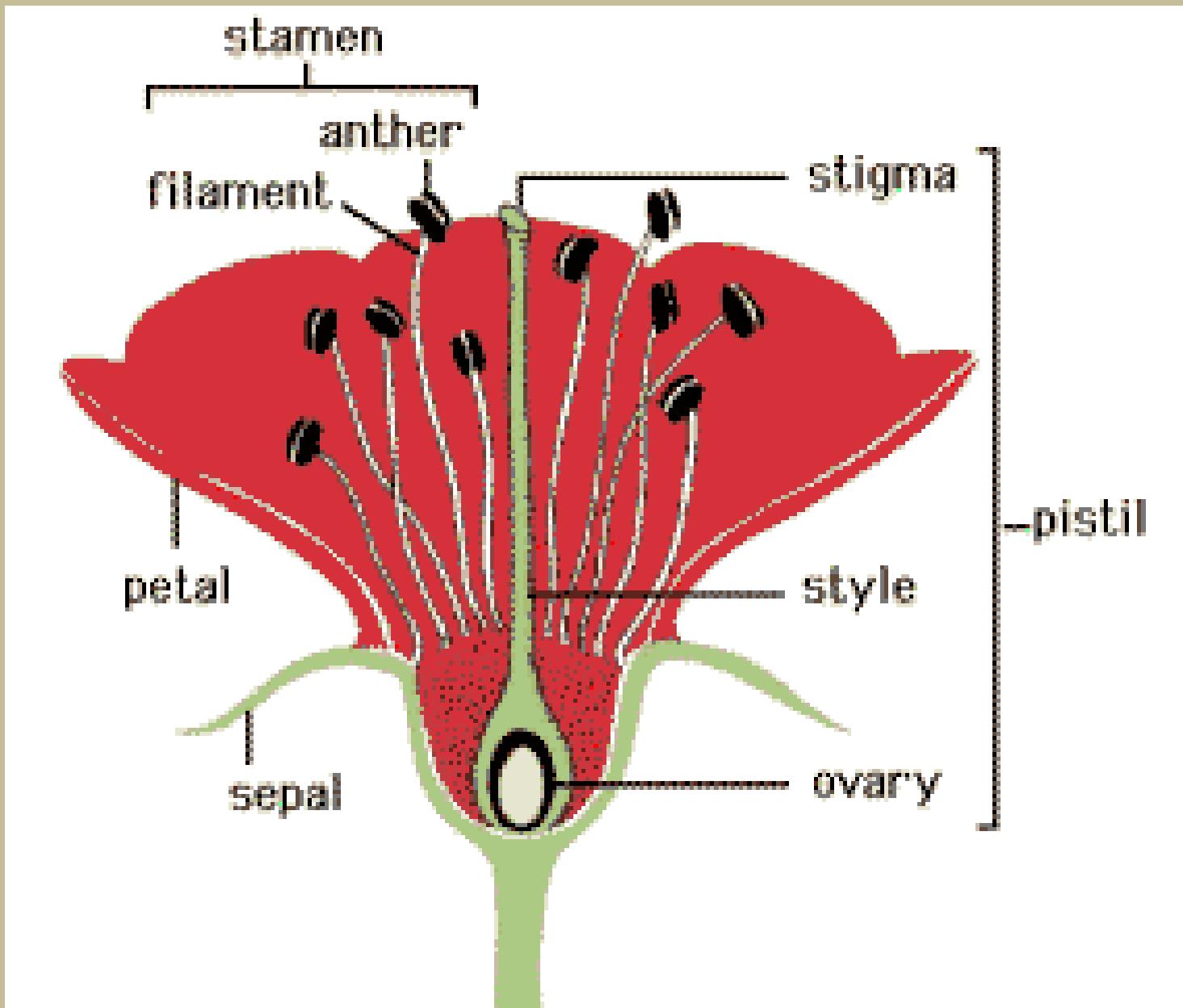
Woolly Pussytoes 8"
Antennaria lanata



Raceme pussy-toes 2'
Antennaria racemosa



Pearly pussy-toes to 1 1/2'
Antennaria anaphaloides

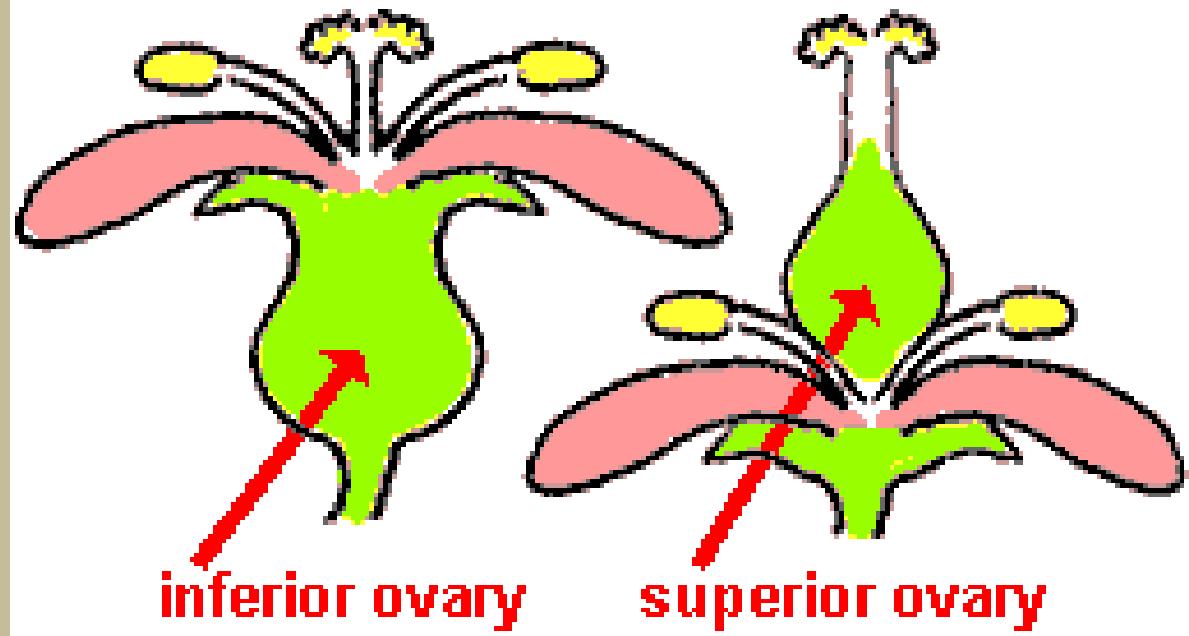




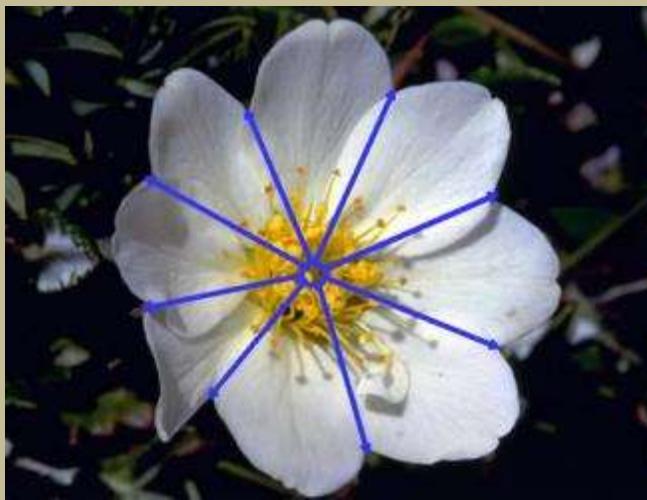
Petals fused



Petals free



Radial
Symmetry



Bilateral
Symmetry



Flowers with central clusters



“Normal Flowers”

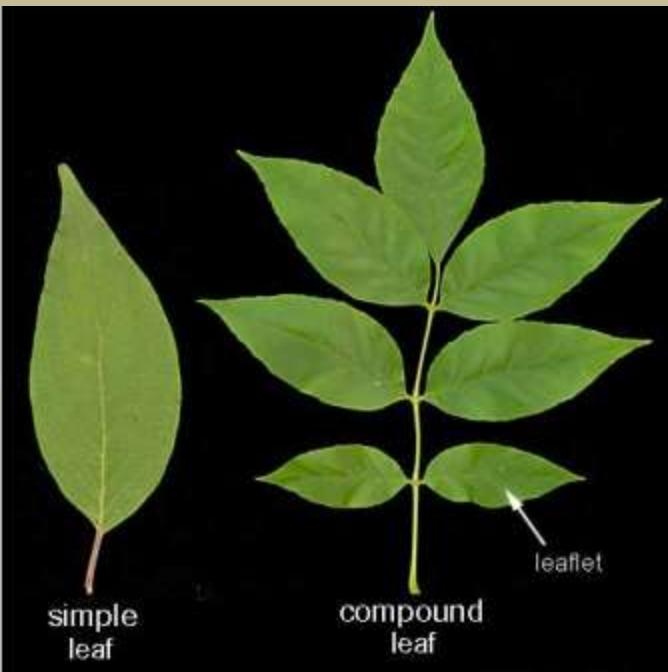




Leaves Opposite



Leaves Alternate

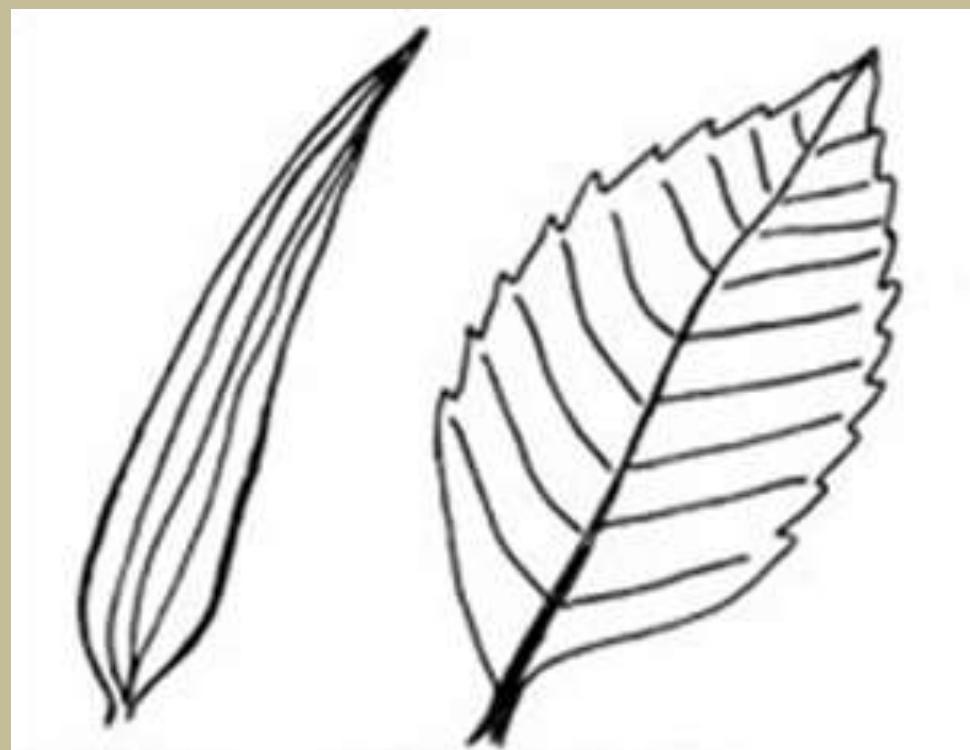


simple
leaf

compound
leaf

Parallel
Veins

Netted
Veins



spec. #	Scientific name	Common name	ID Gr. 1	ID Gr. 2	ID Gr. 3	ID Gr. 4	ID Gr. 5	ID Gr. 6	ID Gr. 7	App.
375	Asteraceae	Sunflower Family			X					
154	Fabaceae	Pea Family				X				
127	Brassicaceae	Mustard Family		X						
110	Rosaceae	Rose Family			X					
97	Scrophulariaceae	Figwort Family				X				
78	Apiaceae	Parsley Family					X			
78	Ranunculaceae	Buttercup Family			X					
73	Liliaceae	Lily Family	X							
73	Caryophyllaceae	Pink Family							X	
59	Boraginaceae	Borage Family						X		
57	Polygonaceae	Buckwheat Family					X			
53	Ericaceae	Heath Family							X	
52	Saxifragaceae	Saxifrage Family						X		
49	Onagraceae	Evening-primrose F.		X						
48	Lamiaceae	Mint Family				X				
46	Polemoniaceae	Phlox Family							X	
33	Orchidaceae	Orchid Family	X							
26	Portulacaceae	Purslane							X	
23	Hydrophyllaceae	Waterleaf Family					X			
20	Violaceae	Violet Family				X				
18	Grossulariaceae	Currant Family								X
15	Crassulaceae	Stonecrop Family						X		
12	Valerianaceae	Valerian					X			
11	Primulaceae	Primrose Family								X

Flowering parts in 3s (or multiples)

Family Key

Lily, Orchid, & Iris

Leaves with parallel veins

Flowering parts in 4s

Leaves with veins in branching pattern

Evening Primrose
Mustard

Flowering parts in 5s (leaves with branching veins)

Flowers with **bilateral symmetry**

Petals fused

Mint
Figwort

Petals free

Pea
Violet
Buttercup - some

Flowers with radial symmetry

Many **small flowers in tight bunches**

Buckwheat
Parsley
Waterleaf
Valerian
Rose - some

Flowers not in tight bunches

Buttercup
Rose
Sunflower – technically
belongs with “Many small
flowers in tight bunches”

Flowers with **central clusters** or seemingly so

(more than 10 stamens crowding the center)

Normal flowers (10 or fewer stamens)

(or just use the “handles” to Id. these 7 Families)

Heath
Phlox
Primrose
Borage

Petals fused

Petals free (or nearly so)

Pink
Purslane
Saxifrage



Lily Family

- Flowers: radial
- 6 tepals & 6 stamens

Iris Family

- Flowers: radial
- 6 tepals & 3 stamens
- Leaves: basal in flat plane

Flower parts in 3s

Flower parts in 4s



- Flowers: petals 4
- Ovary inferior & elongate
- Leaves: often opposite
- Long seed pods & 4 sections

Evening-Primrose Family



Leaves

Parallel veins

Lily Family

Iris Family

Orchid Family

Orchid Family

- Flowers: bilateral
- Lower petal forming lip or bowl



- Flowers: petals 4

- Ovary superior.

- 6 stamens – 4 long, 2 short usually

- Leaves: alternate

- Seed pods in many shapes. 2 sections

Mustard Family

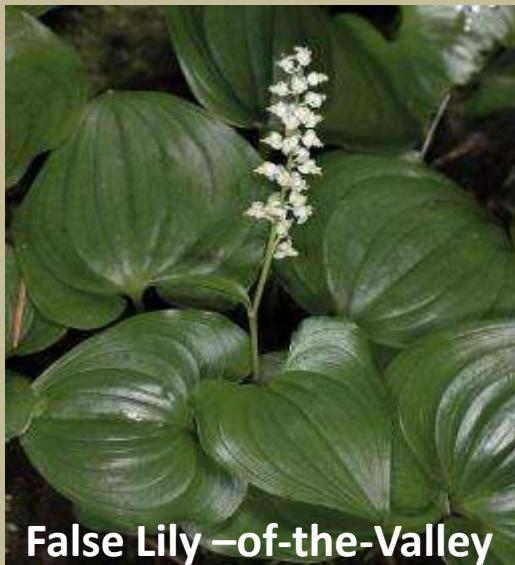
Lily Family



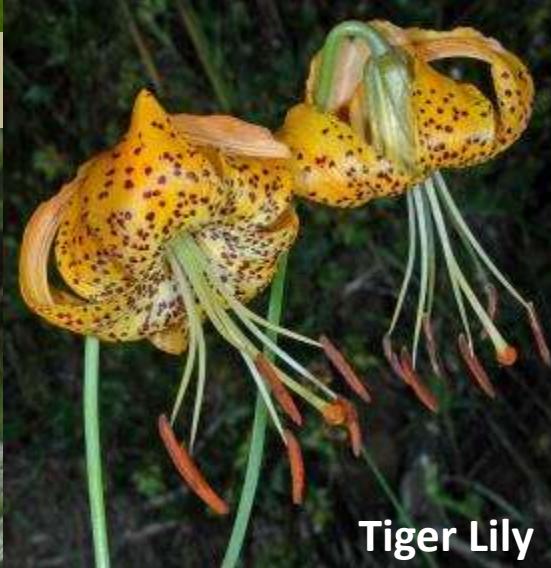
Queen's Cup



Hooker's Fairy Bell



False Lily -of-the-Valley



Tiger Lily



Fawn Lily

Orchid Family



Heart-Leaved Twayblade



Lady Slipper



Fairy Slipper



Spotted Coral Root



Lily Family

- Flowers: radial
- 6 tepals & 6 stamens

Iris Family

- Flowers: radial
- 6 tepals & 3 stamens
- Leaves: basal in flat plane

Flower parts in 3s



Orchid Family

- Flowers: bilateral
- Lower petal forming lip or bowl



Leaves

Parallel veins

Lily Family

Iris Family

Orchid Family



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Evening-Primrose Family



- Flowers: petals 4

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- Leaves: alternate

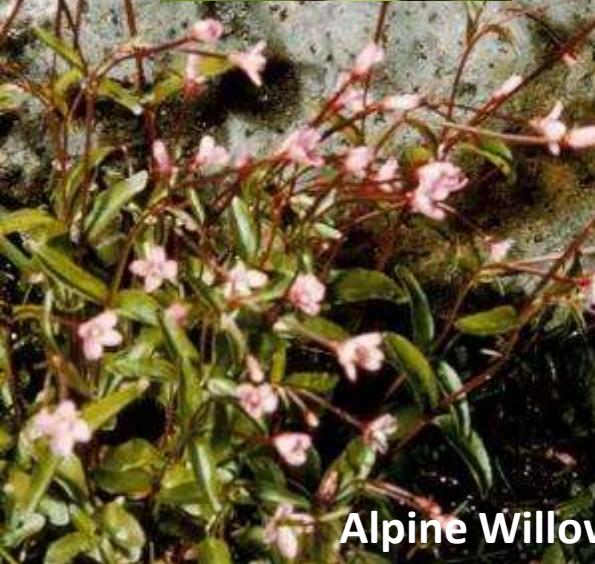
- Seed pods in many shapes. 2 sections

Mustard Family

Evening –Primrose Family



Yellow Willow-Herb



Fireweed

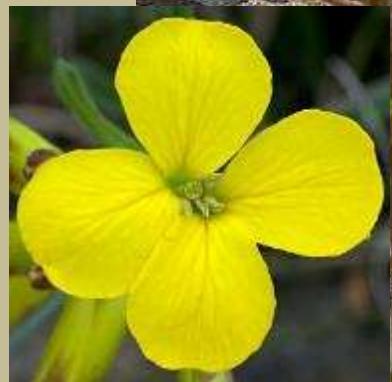


Alpine Willow-Herb

Mustard Family



Draba



Rockcress



Mountain
Wallflower





Figwort Family

- Flowers: bilateral symmetry
- Petals fused
- Leaves: opposite or alternate

5s Bilateral..... Fused



Mint Family

- Flowers: bilateral symmetry
- Petals fused
- Leaves: opposite
- Square stems
- Aromatic usually

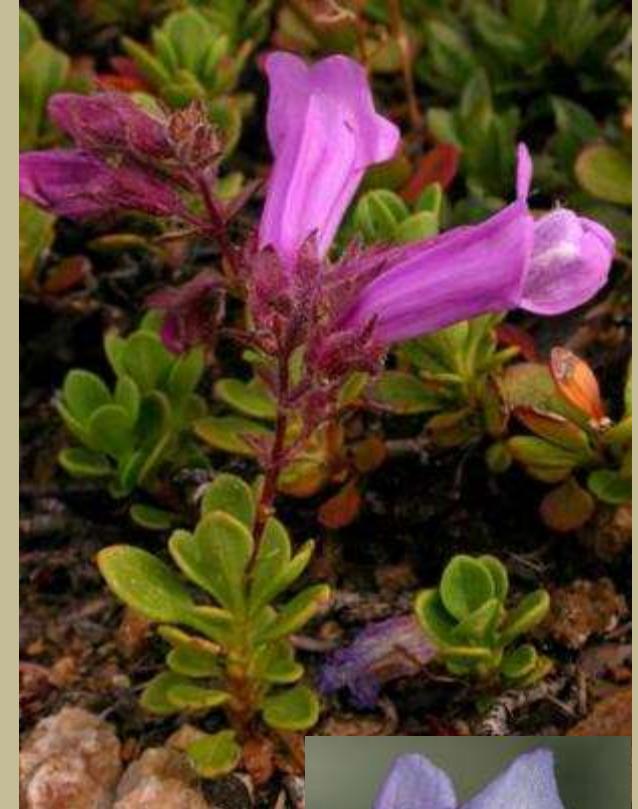
Pea Family

- Flowers: bilateral symmetry
- Petals free or nearly so
- Upper petal the largest
- Leaves: compound



Violet Family

- Flowers: bilateral symmetry
- Petals free
- Lower petal the largest
- Leaves: simple



Monkeyflowers



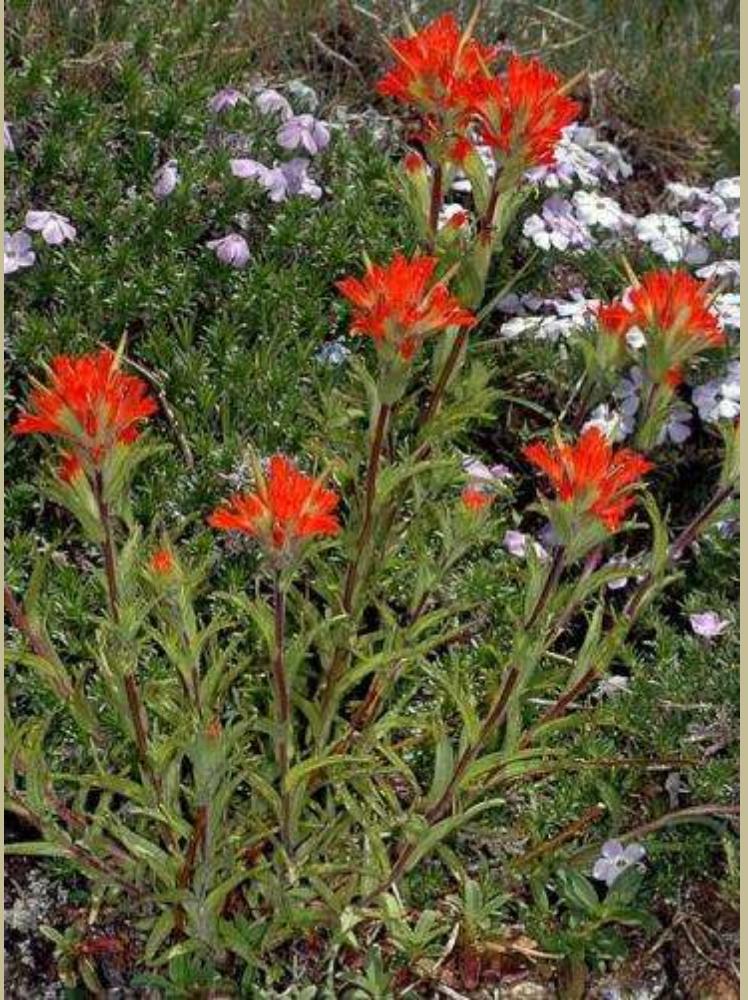
Louseworts

Penstemons

Figwort Family

Figwort Family

Paintbrush



Figwort Family

Paintbrushes (*Castilleja*)



Leaves

All along stem

Tip lobed or not



Flower

Crowded in axils of showy bracts

Long, tubular with beaklike tip

Often greenish.

General
1 – 1 1/2' tall

Bracts

“Brush” is not flower. The leafy bracts surround flowers & resemble brush dipped in paint.
Yellowish or reddish.





Figwort Family

- Flowers: bilateral symmetry
- Petals fused
- Leaves: opposite or alternate

5s Bilateral..... Fused



Mint Family

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Pea Family

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Violet Family

- Flowers: bilateral symmetry
- Petals free
- Lower petal the largest
- Leaves: simple



Lupine



Vetch



Pea Vine



Buckwheat Family

- Flowers: small & in tight bunches
- 6 tepals form small flowers
- Leaves: basal or on stem
- Leaves entire & usually not toothed



Parsley Family

- Flowers: small & in true umbels
- Leaves: usually compound & often fern-like or carrot-like

5s Radial Bunches

- Flowers: small - forming bottlebrush or oval clusters
- Stamens long exerted
- Leaves: usually pinnately compound

Waterleaf Family

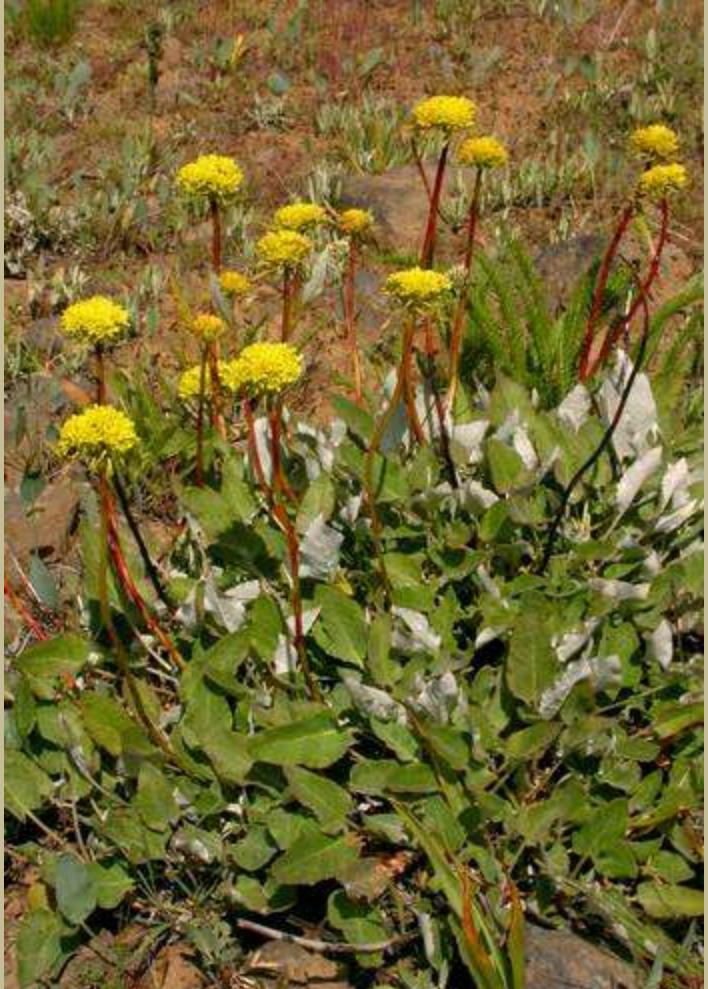
(In Borage Family now)



- Flowers: small & in dense clusters
- Petals fused into narrow 5-lobed tube
- Small family



Valerian Family



Northern Buckwheat



Round-headed
Buckwheat

Buckwheat Family

Sulfur
Buckwheat





Fern leaf Dessert Parsley



Big Seed Lomatium



Barestem Desert Parsley

Parsley Family



Buttercup Family

- Flowers: petals 5 to 12
- Flowers radial or bilateral
- Flowers simple to elaborate
- Leaves: compound or deeply divided



Rose Family

- Flowers: petals 5
- Flowers radial
- Leaves: often oval & serrated



Sunflower Family

- Flowers: appear many “petaled”
- Central cluster present or appears to be absent entirely.
- A compound flower: tiny flowers with 5 fused petals. All flowers packed into a single head.

5s Radial Not bunches
Central clusters



Western Pasqueflower



Buttercup Family



Columbine



Delphinium



Monkshood



Buttercup Family

- Flowers: petals 5 to 12
- Flowers radial or bilateral
- Flowers simple to elaborate
- Leaves: compound or deeply divided



Rose Family

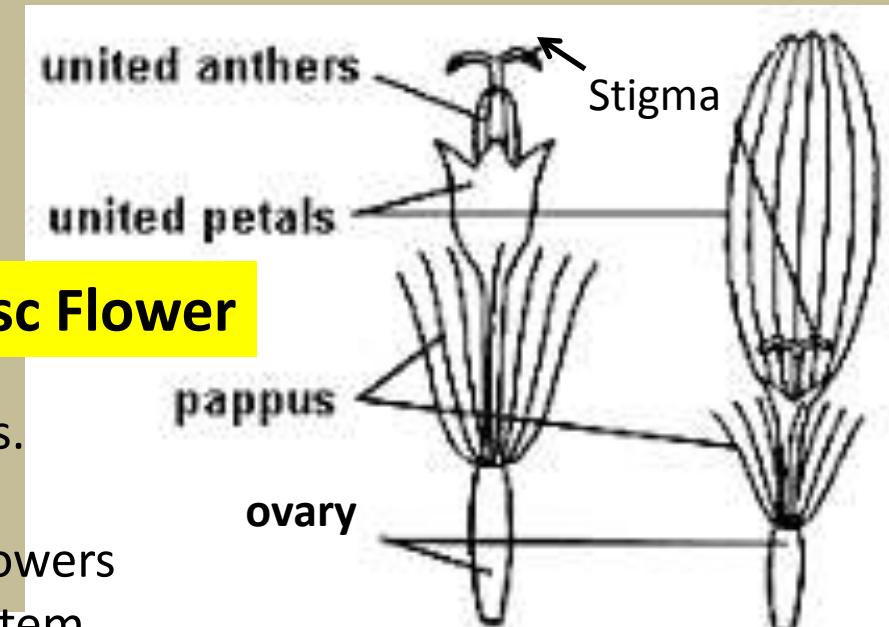
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- Flowers radial
- Leaves: often oval & serrated



Sunflower Family

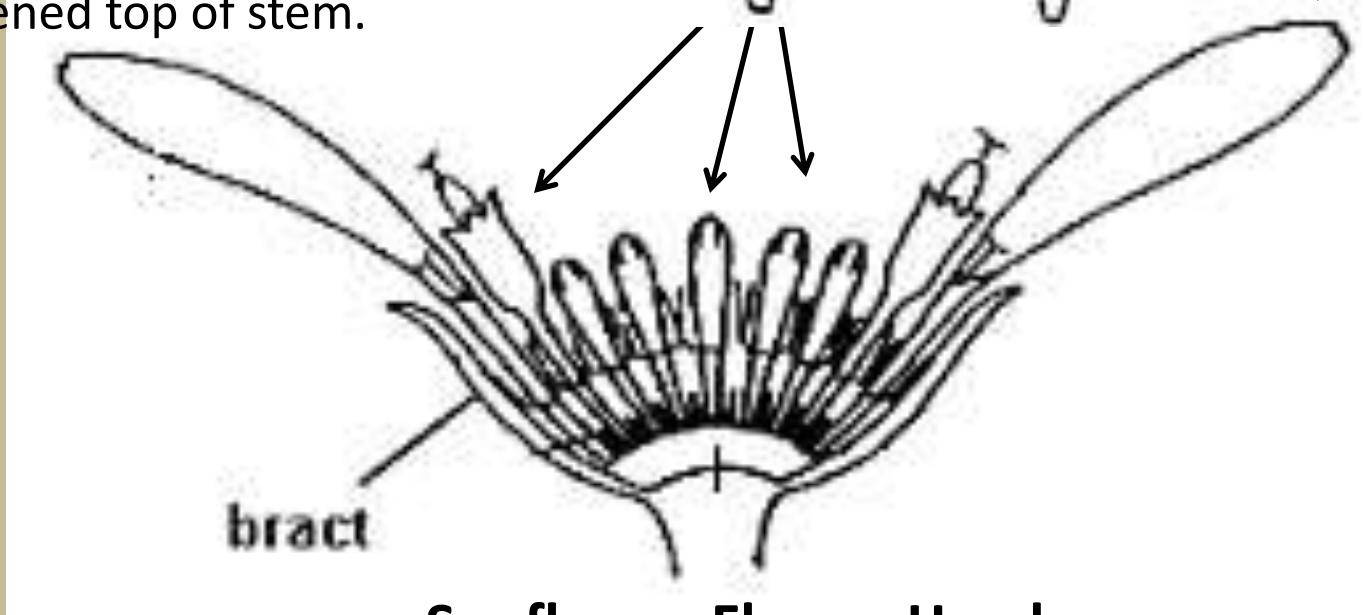
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5s Radial Not bunches
Central clusters

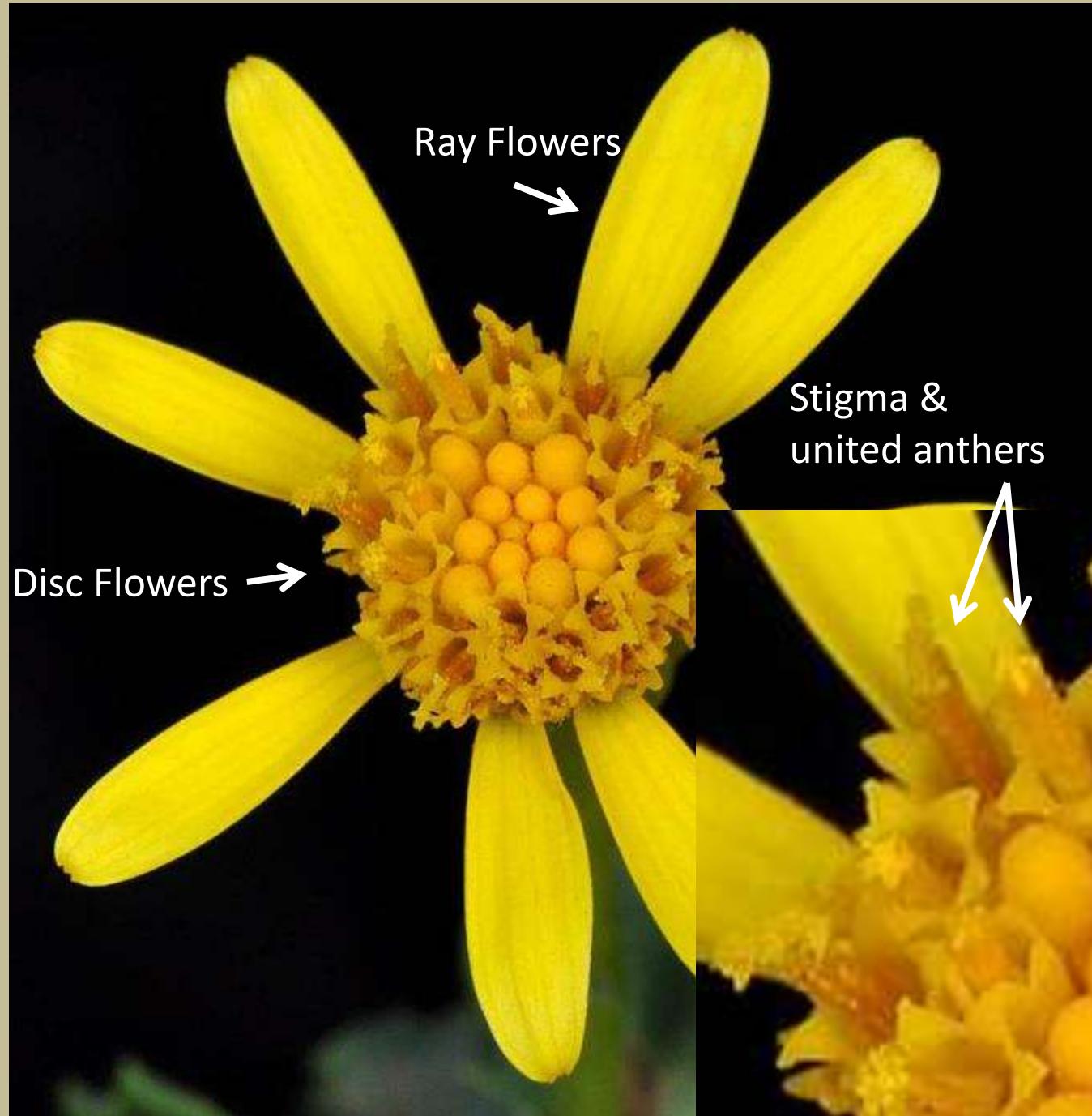


Disc Flower

Headlike flower clusters.
Not a single flower.
Numerous individual flowers
on broadened top of stem.



Sunflower Flower Head





Ray flowers

Stigma & united anthers



Heath Family

- Flower: Petals fused into bells or urns

Phlox Family



- Flower: petals fused forming a tube with nearly perpendicular lobes
- Leaves: often narrow or like ladder

Primrose Family

- Flower: petals fused & sometimes reflexed
- Leaves: often basal



**5 Radial Not bunches
Normal Flowers Petals Fused**

- Flower: petals fused
- Some flowers with central ring
- Fiddlenecks often
- Plant often hairy

Borage Family

(Includes Waterleaf now)



Heath Family Bell or urn : Saprophytes



Heath Family Bell or urn : Heathers



Heath Family Bell or urn : Blueberries



Heath Family Bell or urn : Kinnikinnick



Heath Family Bell or urn : Salal



Heath Family Open : Wintergreen





Heath Family

- Flower: Petals fused into bells or urns



Phlox Family



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- Leaves: often narrow or like ladder

Primrose Family

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**5 Radial Not bunches
Normal Flowers Petals Fused**

- Flower: petals fused
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- Plant often hairy



Borage Family

(Includes Waterleaf now)



Phlox Family

Phlox



Long leaf phlox





Heath Family

- Flower: Petals fused into bells or urns



Phlox Family



- Flower: petals fused forming a tube with nearly perpendicular lobes
- Leaves: often narrow or like ladder

Primrose Family

- Flower: petals fused & sometimes reflexed
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**5 Radial Not bunches
Normal Flowers Petals Fused**

- Flower: petals fused
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- Plant often hairy



Borage Family

(Includes Waterleaf now)



Northern Cryptantha



Borage Family



Bluebells



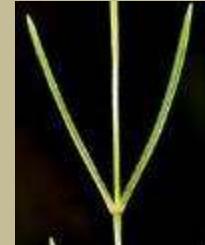
Fiddleneck



Purslane Family

- Flowers: petals free, pink strips often, 2 sepals
- Leaves: often succulent

**5s Radial Not bunches
Normal Flowers Petals Free**



Pink Family

- Flowers: petals free, often notched or divided
- Leaves: opposite, often narrow & borne on enlarged nodes

Saxifrage Family

- Flower: petals free, stigmas 2 & often flaring apart
- Leaves: often basal



Purslane Family



Siberian Minors
Lettuce



Columbia Lewisia



Bud Kovalchik



Western Spring Beauty



Sedum Family

- Small very succulent plants with short fleshy leaves
- Flowers: petals free & yellow



Current Family

- Medium sized shrub to about 6'
- All have maple shaped leaves
- All have berries
- Flowers: petals fused



Appendix Unique Plants



Mustard Family

Dagger-pod

4 tall stamens
2 short stamens

Seed pods
Fruits mature into
Dagger-like pods.





Lily Family



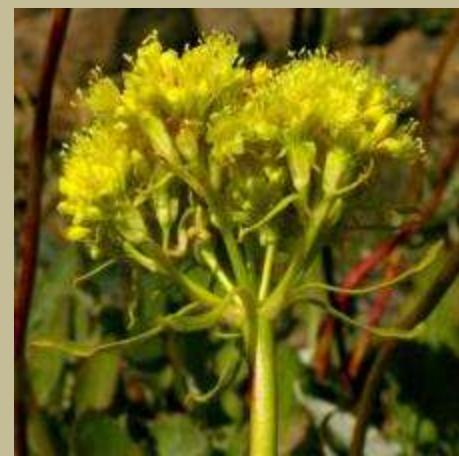
Queens Cup
(Clintonia)



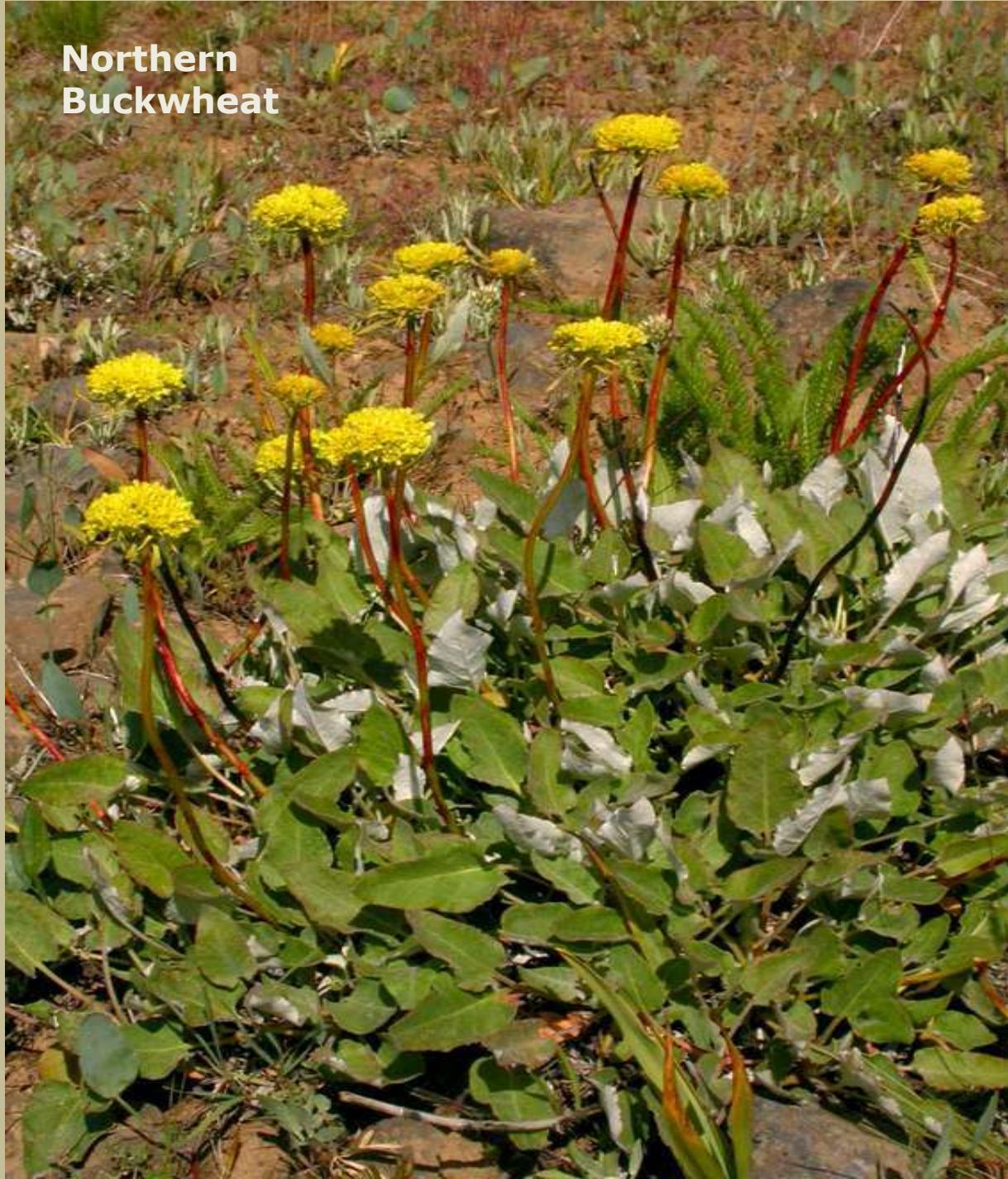
Rose Family

Rubus - Salmonberry





**Northern
Buckwheat**



**Buckwheat
Family**





Figwort Family



Davidson's Penstemon



Orchid Family



White Bog orchid



Parsley Family Desert Parsleys





Mint Family Skullcap (*Scutellaria*)





Saxifrage Family



Spotted Saxifrage





Borage Family

Bluestickseed (Hackelia)



Hairy

Stems & leaves.
Not super obvious



Flower

Short flaring tube.
Central colored ring.

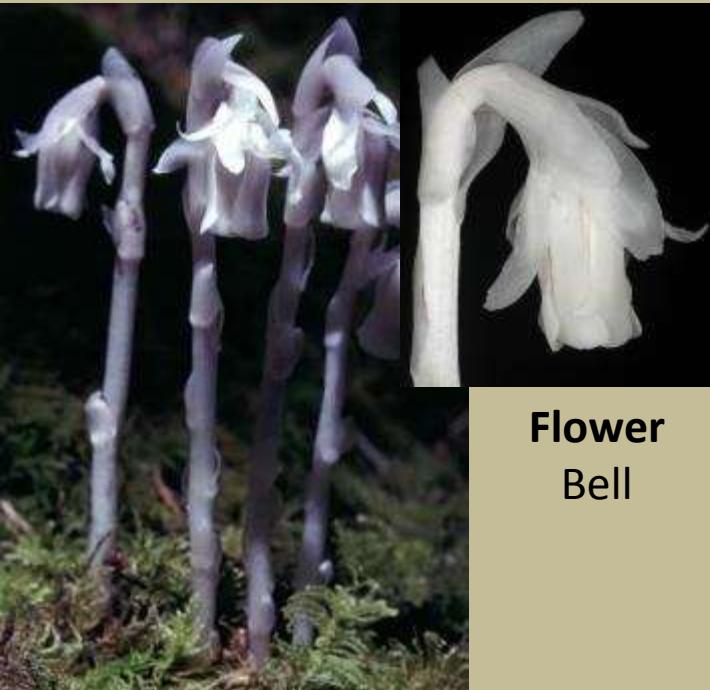
No fiddlehead

General:
3 to 4' tall





Heath Family



Indian-Pipe

Flower
Bell



Pinesap



Flower
Urn

Leaves
Scalelike
White, reddish, yellowish

Saprophyte: parasitize fungi. Live on dead or decomposing matter.

Pinedrops



Phlox Family

Collomia (several species)



Flower

Long narrow tube
with perpendicular lobes



Leaves

Long & narrow

General
To 3' tall



Large-flowered Collomia



Purslane Family

Lewisia

Flower

Often pink stripes.
2 green sepals.



General
More or less succulent.
Smallish plants



Alpine Lewisia



Columbia Lewisia



Pink Family

Chickweed (*Cerastium*)



Flower

Petals often notched or divided.
Obvious superior bulbous ovary.

Leaves

Opposite & narrow
Borne on enlarged nodes



Field Chickweed



Sunflower Family Asters



Cascade Aster





Buttercup Family

