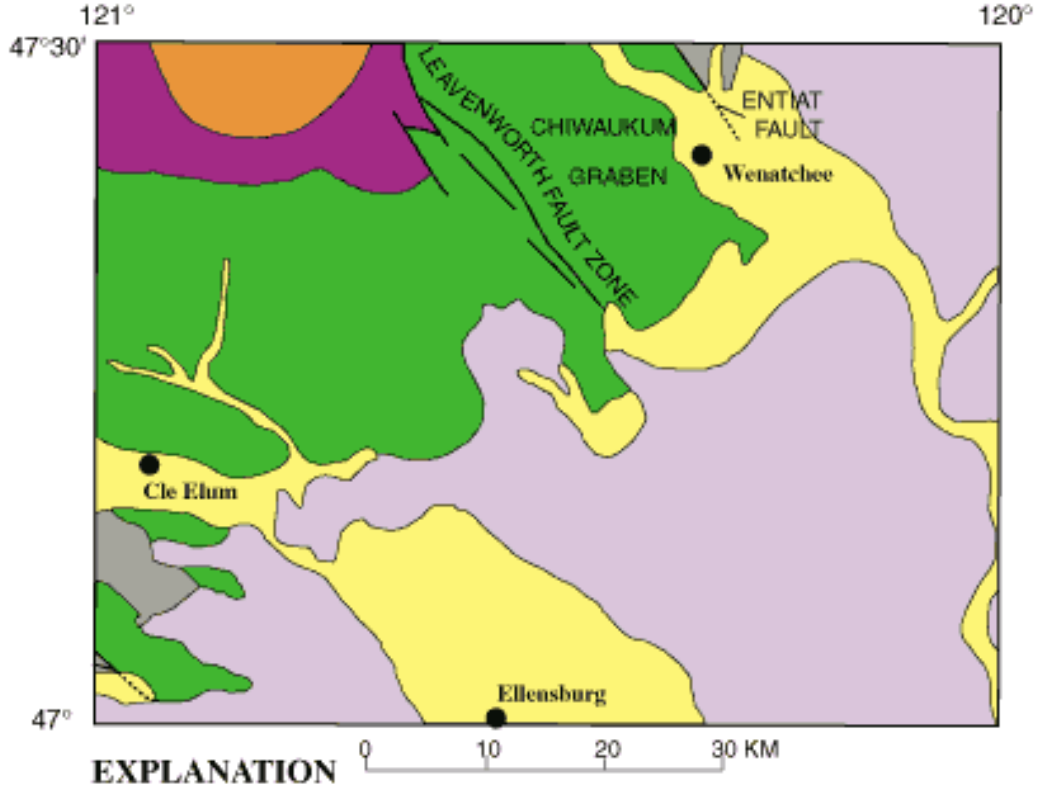
Wenatchee Mountains – Eastside Ecosystem

The Wenatchee Mountains …

- in the rain shadow of the main Cascade Range
- Between US-2 and I-90
- Home to Mt. Stuart
- Full of great wildflower displays
- Contain many serpentine areas
- Have many rare and endemic species of wildflowers



EXPLANATION

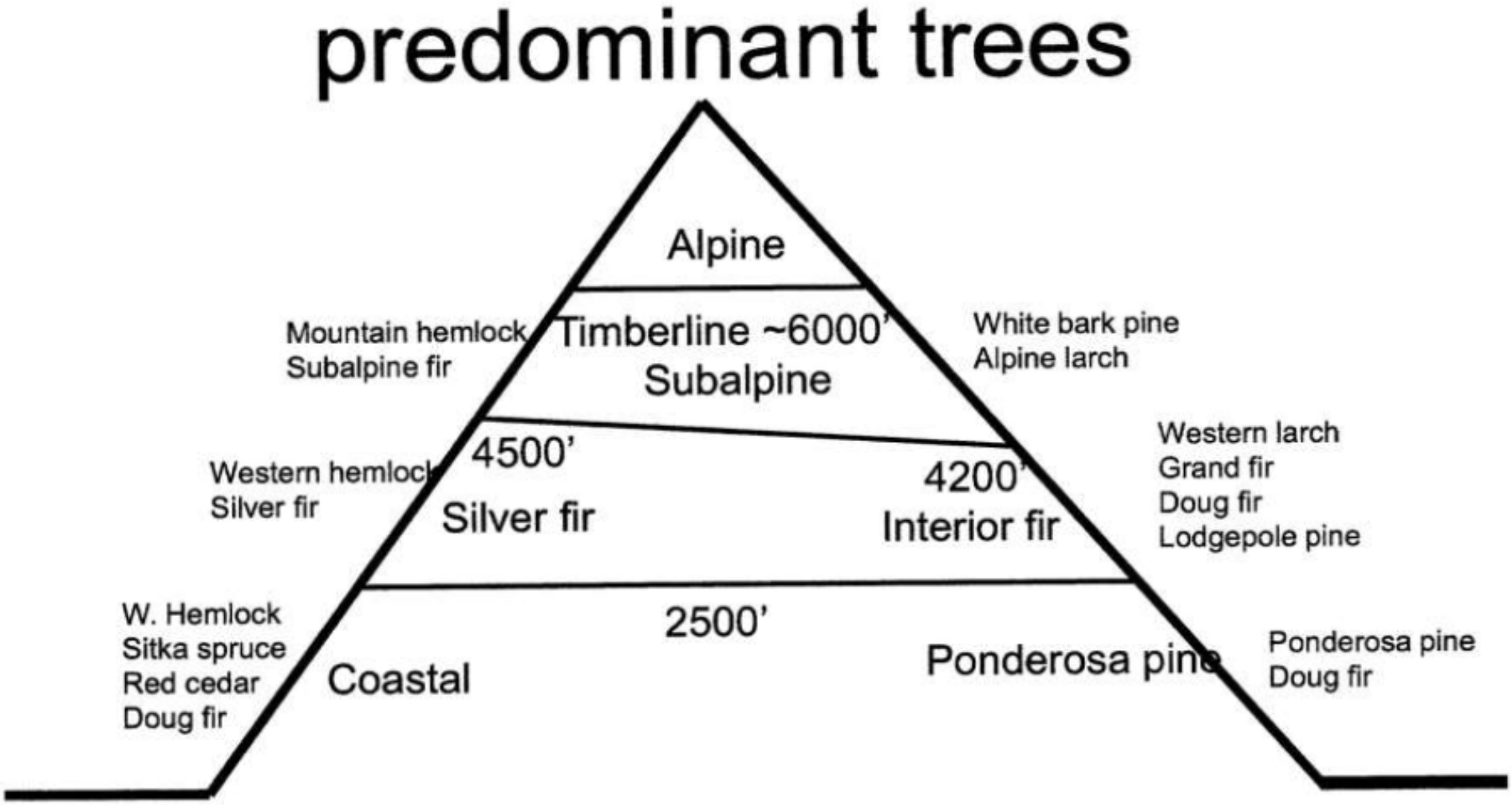
- Surficial deposits — QUATERNARY AND TERTIARY
- Columbia River Basalt Group — TERTIARY
- Middle and lower Tertiary sedimentary and volcanic rocks — TERTIARY
- Rocks of Mount Stuart batholith — CRETACEOUS
- Low-grade metamorphic suite and Swakane Biotite Gneiss — PRE-LATE CRETACEOUS
- Ingalls Tectonic Complex — CRETACEOUS OR JURASSIC

AREA OF QUADRANGLE

Serpentine

- Serpentine soils
  poor plant productivity
  high rates of endemism
  distinct vegetation types tolerant of low nutrients and high heavy metal concentrations

Life Zones


predominant trees
Alpine
Mountain hemlock
Subalpine fir
Timberline ~6000'
Subalpine
White bark pine
Alpine larch
Western hemlock
Silver fir
4500'
Silver fir
4200'
Interior fir
Western larch
Grand fir
Doug fir
Lodgepole pine
W. Hemlock
Sitka spruce
Red cedar
Doug fir
Coastal
2500'
Ponderosa pine
Ponderosa pine
Doug fir

A hike in Esmerelda Basin

Photo by Dave Shema

Mammals
Hoary marmot (or is it other marmot)
Blacktailed deer
Pine marten

Rattlesnake
Garter snake

Silver Fir

(E) Grand Fir

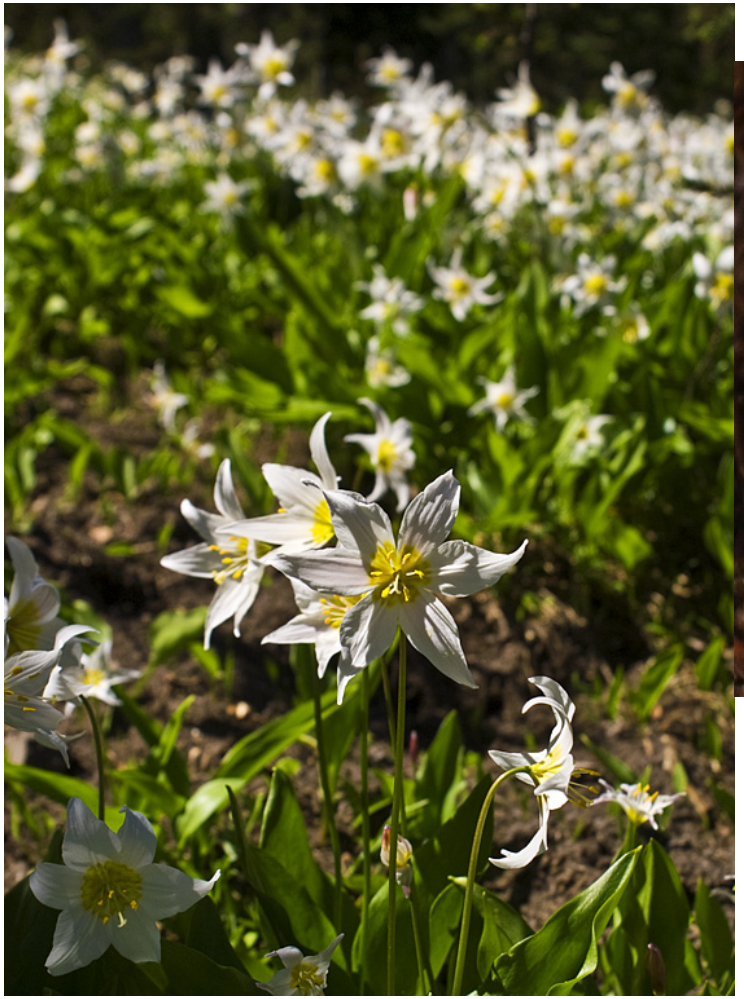
Whitebark Pine

Family – Lily

Parallel veins

Have 3 petals, 3 sepal, and 6 stamens

Avalanche Lily



Glacier Lily

Family – Lily

Corn lily (false hellebore)

Beargrass

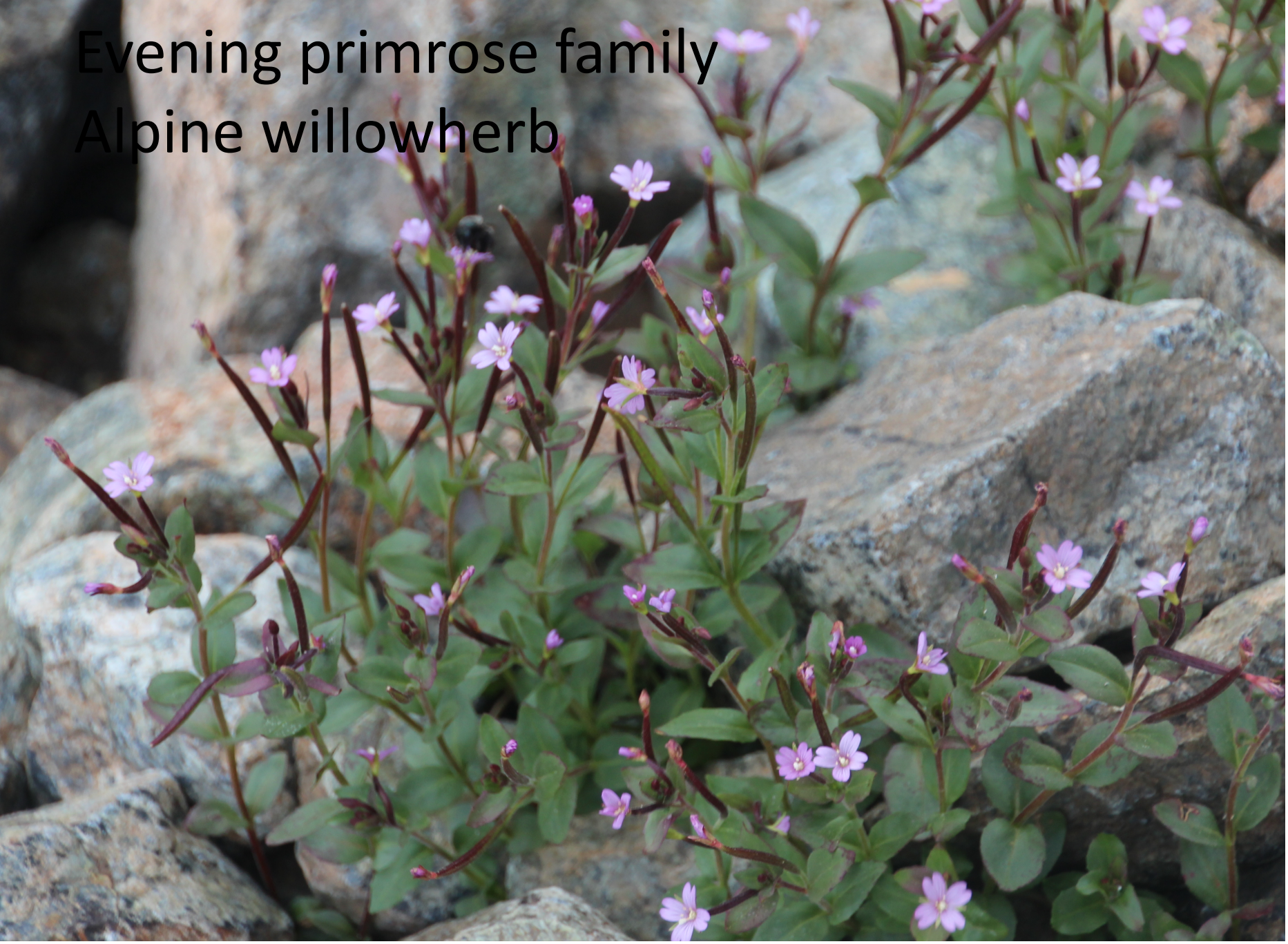
Orchid family

- Parallel veins
- Bilateral symmetry flowers
  - Lowest petal forms a lip
  - Upper petals often form a hood

Calypso Orchid

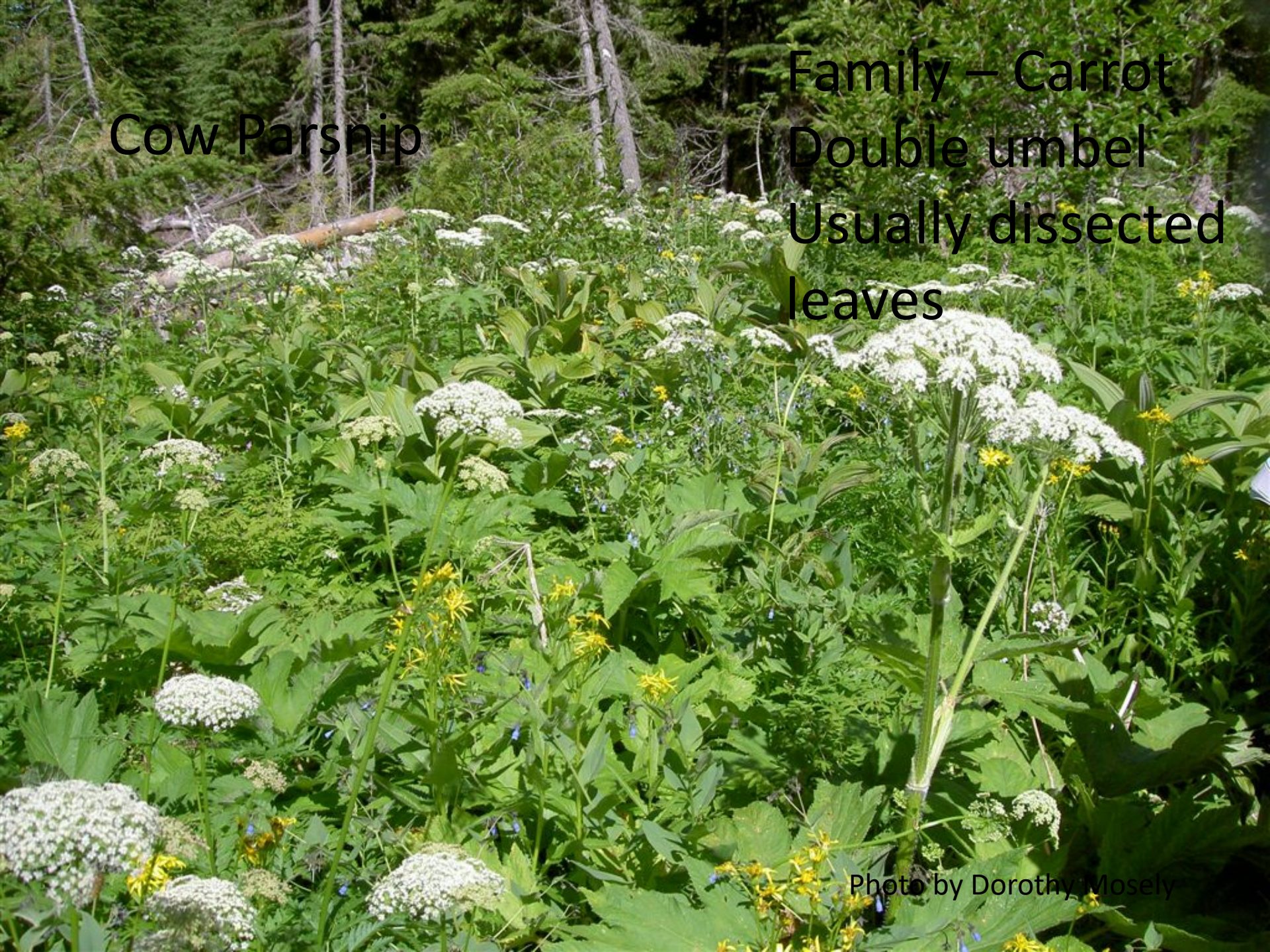
Western Coralroot

Mustard family
4 petals
Superior ovary
Western wallflower
Erysimum capitatum

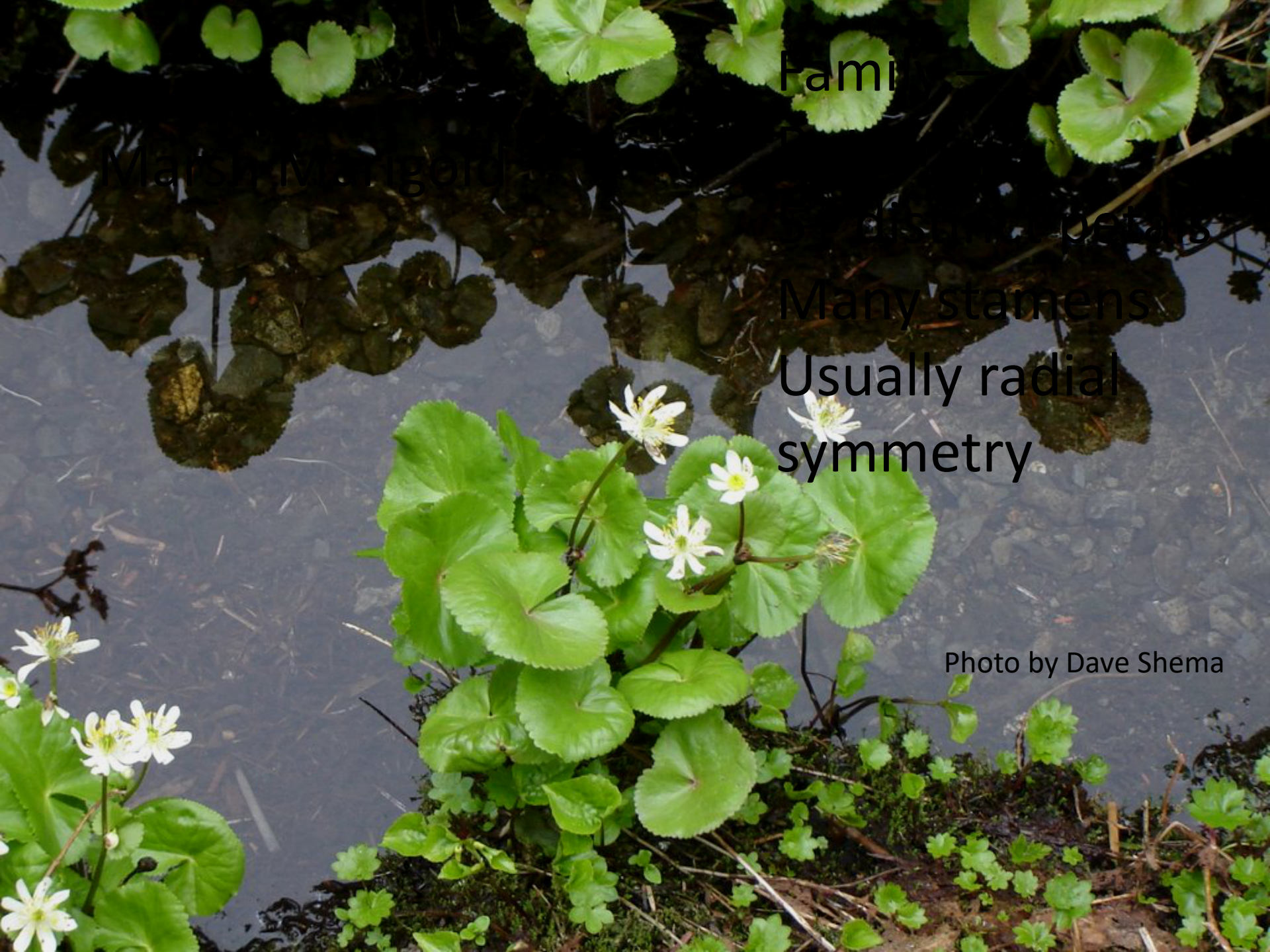

Evening primrose family
Alpine willowherb

Wood Violet
Family – Violet
5 petals free
Bilateral
symmetry
Photo by Dave Shema

Family – Violet
Goosefoot Violet
Photo – Dave Shema


Cow Parsnip
Family – Carrot
Double umbel
Usually dissected leaves
Photo by Dorothy Mosely

Family - Carrot
Brandegee's
Desert Parsley
Photo by Virginia Tripp



Fami

Marsh Marigold

5 distinct petals

Many stamens

Usually radial symmetry

Photo by Dave Shema

Family - Buttercup
Globeflower
Photo by Don Schaechtel

Family – Sunflower/Aster (Asteraceae)

- Flowers have a composite head – with ray flowers and disk flowers.

Silverback Luina

Family - Aster

Photo by Margaret Amory

Arrowleaf Balsamroot

Family - Aster

Photo by Dave Shema

Rosy Pussytoes

Family - Aster

Photo by Virginia Tripp

Spreading
Plox
Family – Phlox
5 petals
Fused tube
Perpendicular
flower top
Photo by Dave Shema

Skyrocket
Scarlet Gilia
Family - Phlox
Photo by Dave Shema

Brook Saxifrage
Family – Saxifrage
5 petals
Basal leaves
Many small flowers on stalk with few leaves
Photo by Dave Shema

Woodland Star
Saxifrage
Family - Saxifrage
Photos by Dave Shema
& Cindy Luksus

Tall Bluebells
Family - Borage
Fused petals
Flowers on fiddlehead
Eye looking back in center
Photo by Gini Tripp

Jessica's Stickweed
Photo by Gini Tripp
Family - Borage

Broadleaf Lupine
Family - Pea
Bilateral symmetry
Look like pea flowers
Nitrogen fixing
Photo by Don Schaechtel

Alpine Lupine
Family - Pea
Photo by Dave Shema

Pacific
Rhododendron
Family - Heath
Bells and urns
5 petals fused
Photo by Don Schaechtel

White Heather
Family - Heath
Photo by Hannchen Menck

Pinemat Manzanita

Family - Heath

Photo by Virginia T

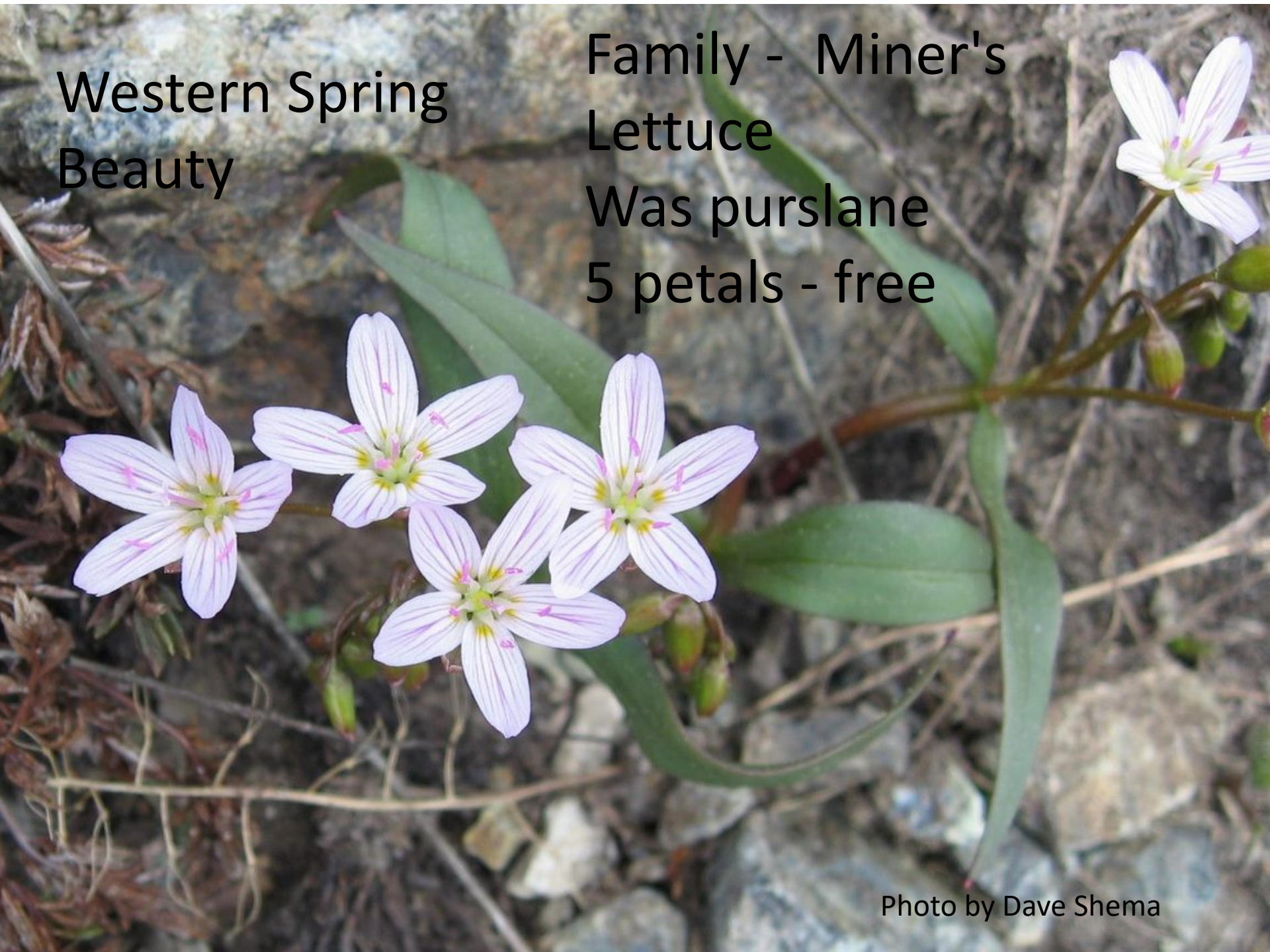
Family – Rose (Rosaceae)

- Lots of common plants in the Rose family
  - Apples, pears, peaches, almonds, raspberries, strawberries, and roses!
- Compound, alternate, leaves
- 5 petals, 5 sepals, and 15+ stamens
- Significant contributors to soil nitrogen thanks to Nitrogen-fixing *Frankia* bacteria.

Nootka Rose
Family - Rose
Photo by Michale Kelly

Family - Rose
Shrubby Cinquefoil
Photo by Don Scha

Cascade Mountain Ash
Photo by Virginia Tripp
Family - Rose


Western Spring Beauty
Family - Miner's Lettuce
Was purslane
5 petals - free
Photo by Dave Shema

Family - Spring-beauty

Microstylis

Photo by Don Schaechter

Columbia lewisia
purslane famiuly

Family - Spring-beauty
Alpine Spring Beauty
Photo by Gini Tripp

Jeffrey's
Shooting Star
Family - Primrose
Fused petals
Bent 'backwards'
Photo by Dave Shema

Lanceleaf Stonecrop
Family - Stonecrop
Or sedum
Generally yellow flowers
Succulent leaves
Photo by Dave Shema

Parsley Fern – rock outcroppings

Fragile fern

Indian Dream Fern

Birding – Lecture 2
Outside Song B

Natural World Class

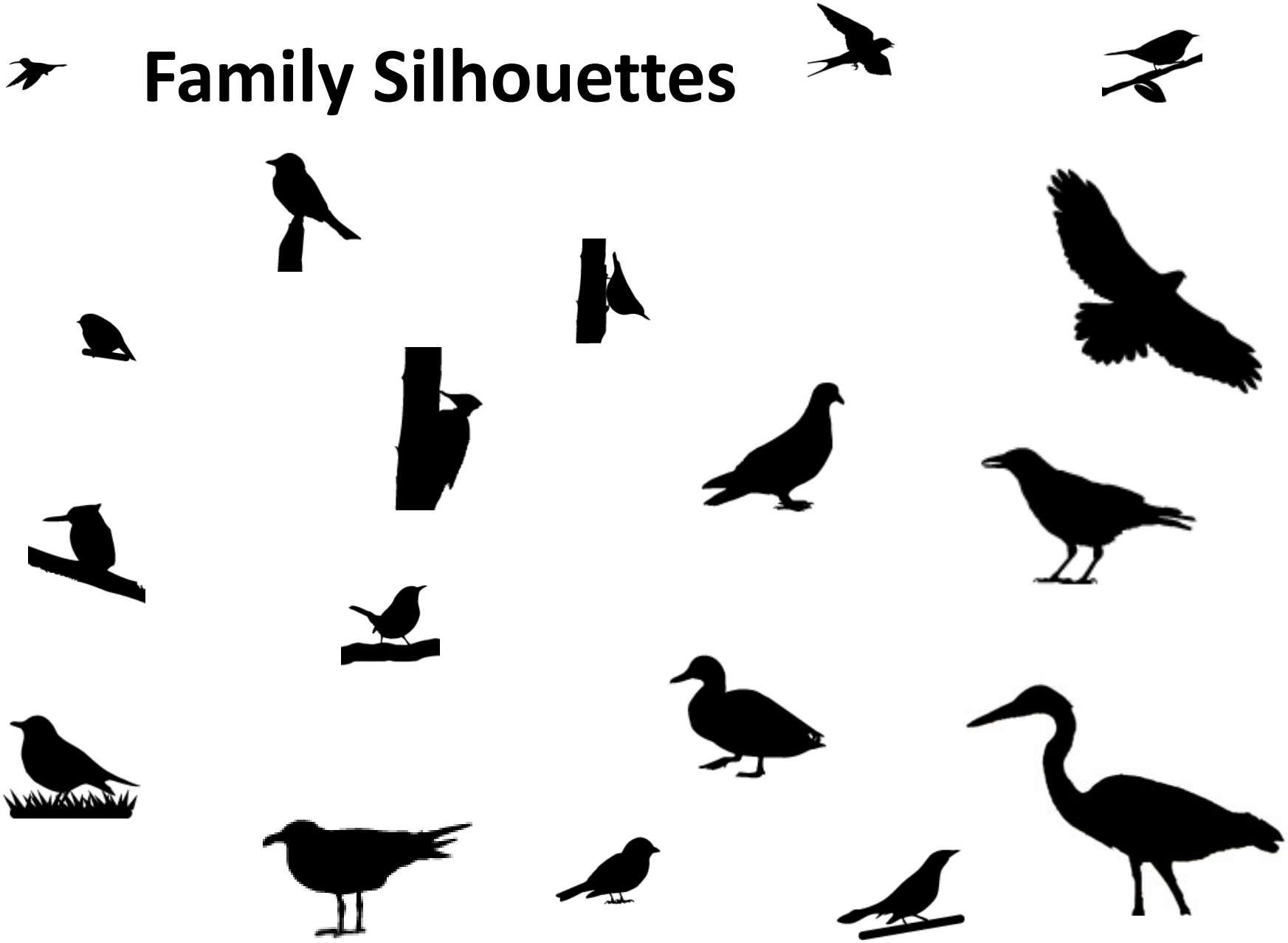
Song Birds - Passeriformes

- More than half of all bird species (~ 6000)
- Roughly half of all bird families (~100)
  - special toe arrangement for perching
  - 3 forward, one backward
  - Syrinx muscles at base of the windpipe
    - Oscine song birds – multiple muscles controlling air flow separately from each lung
    - Sub-oscine perching birds – (Tyrant Flycatchers)

Review

- **associate Size, Silhouette, Behavior with specific bird families**
- **wild card: use Habitat, range and season to assign a probability**
- **field characteristics: Song and Plumage Pattern to identify species**

Family Silhouettes



Common Song Bird Silhouettes of Eastern Washington

Ravens, crows, jays and magpies

Alert, noisy
Social

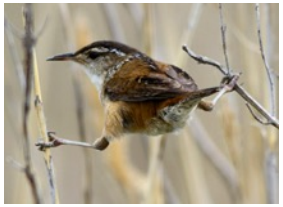
Corvid field characteristics:
Distinctive calls, body shape
Color, Range

Wrens

Cocked tail
Barring on tail & back
Elaborate long song

Wren field characteristics:
Habitat

Marsh Wren



Rock Wren

Canyon Wren

Bewick's Wren

Thrushes

Often on ground
Potbelly thrush shape
Eats worms, insects
Complex tones in song

Warblers

Small
Active, moving quickly
Thin bill

Warbler field characteristics:
Distinctive songs
Plumage patterns

Oriole – Grosbeak - Tanager

? **Medium sized, arboreal, loud sing-song, slow moving**

Field Characteristics: Call note; bill shape; bright colors

Probability: only member of family in Washington (sort of)

Woodland Thrushes

Brownish
Spotted throats & breasts
Amazing tone to song

Field characteristics :
Eye ring
Color contrast of back and tail
Distinctive song and call notes

Hermit Thrush

Swainson’s Thrush

Trillers

Chipping Sparrow

Dark-eyed Junco

Belted Kingfisher!

Mammals – pine squirrel

pika

Ground squirrel

Chipmunk

Black Tailed deer