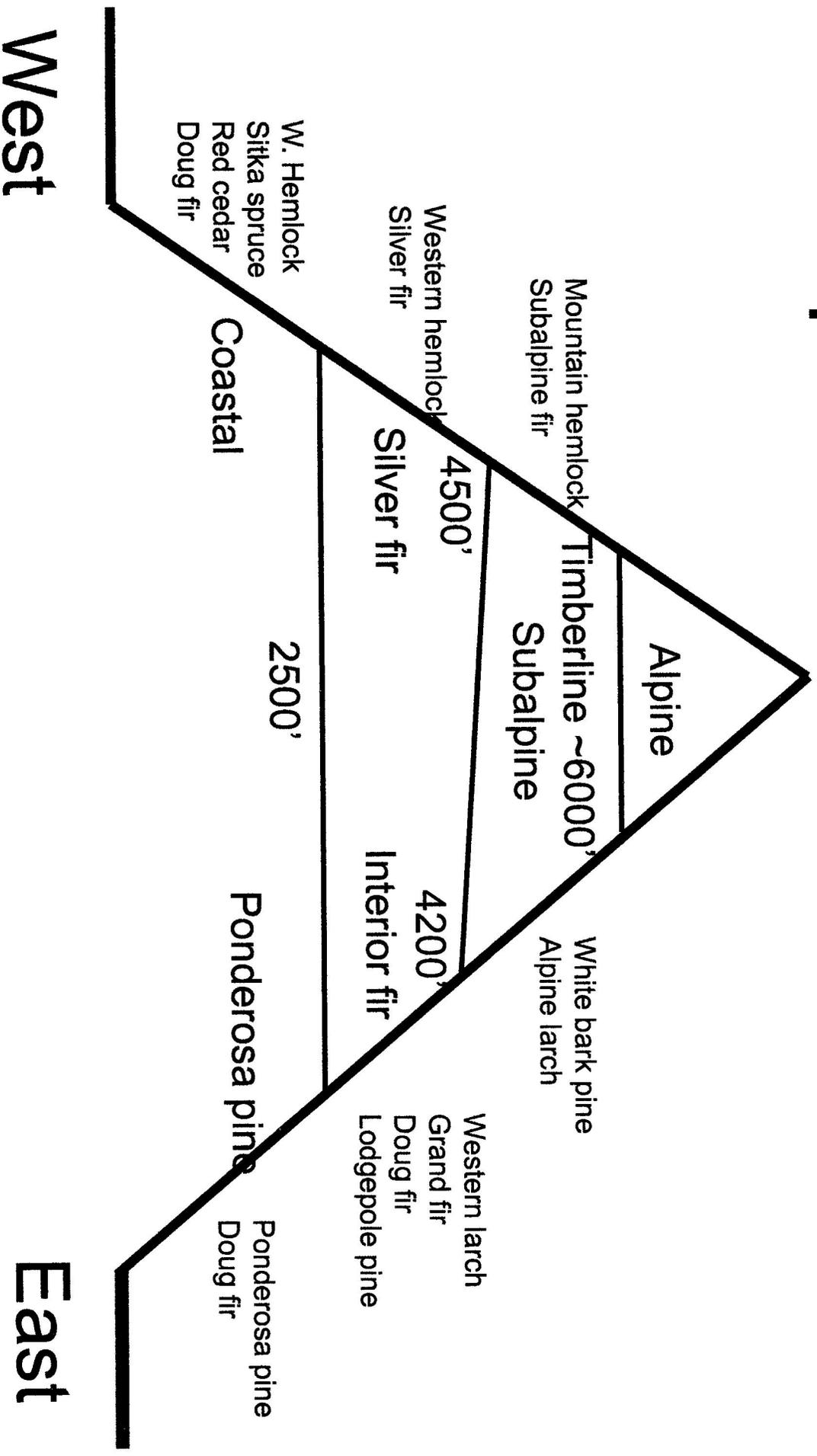


LIFE ZONES (FOREST COMMUNITIES) OF WESTERN AND CENTRAL WASHINGTON

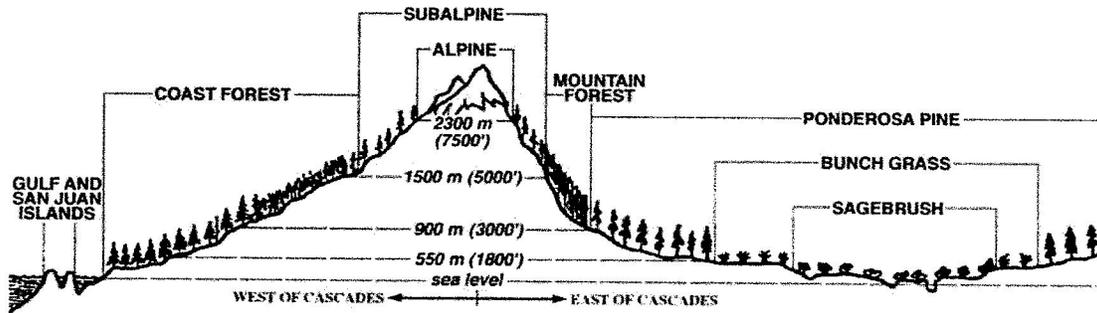
Life Zone	Location and Elevation*	Representative Trees
Coastal Forest	West slopes Sea level to 2,500 ft	Western Hemlock Douglas-fir Western Red Cedar
Silver Fir	West slopes 2,000 to 4,500 ft	Silver Fir Western Hemlock
Subalpine	West and East 4,200 to timberline	Subalpine Fir Mountain Hemlock
Alpine	Above timberline	
Interior Fir	East slopes 2,000 to 4,500 ft	Grand Fir Douglas-fir Lodgepole Pine Western Larch
Ponderosa Pine	East slopes 1,000 to 2,500 ft	Ponderosa Pine Douglas-fir

- The listed elevations are not absolutes. There will be a transition between life zones and the elevations depend on aspect, latitude, soil fertility, annual rainfall and snow pack, and other factors.

Location: zones and predominant trees



LIFE ZONES OF WASHINGTON

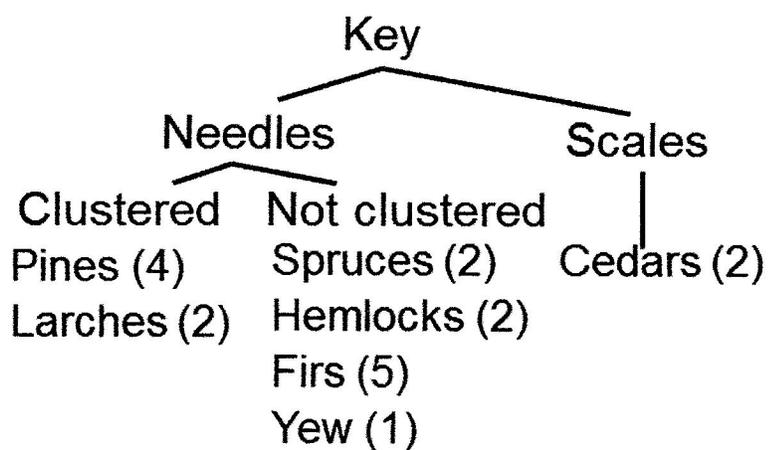
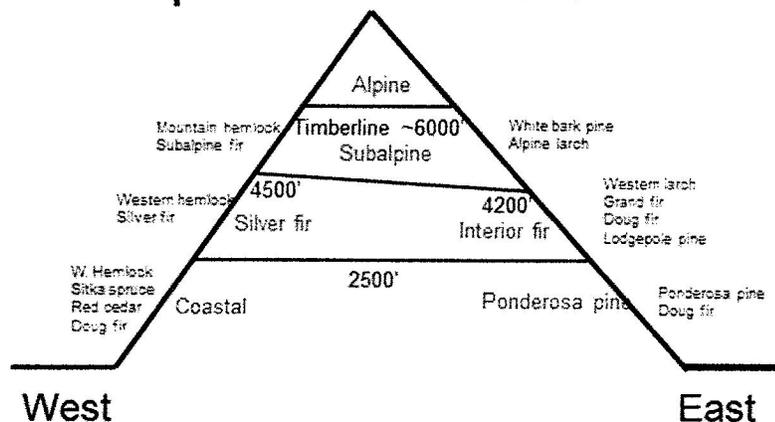


Conifers of Washington (by Mickey Eisenberg)

Conifers: Only 18

Pines (4)	Playing in the
Firs (5)	Forest
Spruces (2)	Should
Hemlocks (2)	Help
Yew (1)	You
Larches (2)	Learn
Cedars (2)	Conifers

Location: zones and predominant trees



Seattle Naturalists Quick Guide to 18 Cascade Conifers



Mountaineers.org
May, 2013

18 Cascade conifers
Douglas Fir <i>Pseudotsuga menziesii</i>
Western Hemlock <i>Tsuga heterophylla</i>
Mountain Hemlock <i>Tsuga mertensiana</i>
Silver Fir <i>Abies amabilis</i>
Grand Fir <i>Abies grandis</i>
Noble Fir <i>Abies procera</i>
Subalpine Fir <i>Abies lasiocarpa</i>
Ponderosa Pine <i>Pinus ponderosa</i>
Lodgepole Pine <i>Pinus contorta</i>
Western White Pine <i>Pinus monticola</i>
White Bark Pine <i>Pinus albicaulis</i>
Sitka Spruce <i>Picea sitchensis</i>
Engelmann Spruce <i>Picea engelmannii</i>
Western Red Cedar <i>Thuja plicata</i>
Alaska Cedar <i>Chamaecyparis nootkatensis</i>
Alpine Larch <i>Larix lyallii</i>
Western Larch <i>Larix occidentalis</i>
Pacific Yew <i>Taxus brevifolia</i>

18 Cascade Conifers	Description	Elevation	Cones	Needles	Stomata	Other
Douglas Fir	Bottle brush	Up to 4500	3-4 in, 3 pt bracts	1 in, flat, pointy tip	2 bottom	Not true fir
Western Hemlock	Droopy top	Up to 4500	.5-.75 in	Unequal	2 bottom	State tree
Mountain Hemlock	Less droopy	Over 4000	1-3 in	More equal	Top & btm	
Silver Fir	Pale btm need	2000-5000	3.5-6 in	Sides & top	2 bottom	Silver bark
Grand Fir	2 rows of needles	2000-5000	2-4.5 in, gm-brn	Equal, side by side	2 bottom	
Noble Fir	Blue green	3000-5000	4-7 in, bracts	4 sides, top groove	2 top	Rainier and south
Subalpine Fir	Bottle brush	Over 4500	2.5-4 in	Equal	2 top, faint	Steeple
Ponderosa Pine	Distinctive	Up to 4500	3-6 in	3, 5-10 in		East only
Lodgepole Pine			1-2 in	2, 1-3 in		L = 2
Western White Pine		Up to 5000	6-11 in	5, splayed		W = 5
Whitebark Pine		5000+	2-3 in	5, stouter, bundled		W = 5
Sitka Spruce	Coastal most	Up to 2000	2.5-4 in	++Prickly	2 top	
Engelmann Spruce	Mountains	3000-6000	1.5-2.5 in	4 sides, prickly, blue green	Top & bottom	Can roll needles, East most
Western Red Cedar	Reddish bark	Up to 4000	.5 in, rosebud	Smooth scales		West mostly
Alaska (Yellow) Cedar	Droopy branches	3000-6500	.5 in, roundish	Prickly scales		West only, krummholz
Alpine Larch	Deciduous	Over 5000	Bracts	Clusters	4-sided need	East only
Western Larch	Deciduous	3000-5000	Bracts	Clusters	3-sided need	East only
Pacific Yew	Bush in shade	Up to 8000	Red berry	Like Grand	No stomata	West only

A Simple Key to Conifers (cone-bearing plants) of the Washington Cascades

Leaves scale-like (Cypress Family)

- Western Red Cedar
 - Cones have scales, up to 3,500 ft
- Alaska Yellow Cedar
 - Cones are round, 3,000-6,000 ft
- Common Juniper
 - Low-growing with sharp needle-like scales, 2,500-7,500 ft

Leaves needle-like (Pine Family)

Needles in bunches of 2-5 (Pines)

- Lodgepole Pine
 - 2 needles per bunch, mostly east
- Ponderosa Pine
 - 3 needles per bunch, mostly east
- Western White Pine
 - 5 needles per bunch, 2,000-5,000 ft
- Whitebark Pine
 - 5 needles per bunch, 5,000+ ft

Needles single

Needles flat and round at base, buds round, cones point up (Firs)

- Silver Fir
 - Needles on top half of branch, 1 in, 2,000-5,000 ft
- Grand Fir
 - Needles two-ranked on branch, 1 in or more alternating longer and shorter,
- Subalpine Fir
 - Needles whitish on top, purplish cones 2-4 in, 4,500+ ft
- Noble Fir
 - Needles whitish on top, cones 4-8 in, more common in S. Cascades, 3,000-5,000 ft

2,000-5,000 ft

ft

Needles flat and thin at base, cones hang

- Douglas Fir (not a true fir, nor a hemlock)
 - Needles encircle branch, 1 in, buds pointed, bracted cones 2-4 in, up to 4,500 ft
- Western Hemlock
 - Needles vary in length from ¼-¾ in, top droops, cones less than 1 in, up to
- Mountain Hemlock
 - Needles ½ in, same length, cones 1-2 inches, 4,000+ ft

4,500 ft

Needles soft, cones fruit-like (Yews)

- Western Yew
 - Shrub-like, 2,000-4,000 ft

Needles sharp and woody at base, cones hanging (Spruces)

- Engelmann Spruce
 - Generally east, cones 2-4 in with papery scales, 3,000-6,000 ft
- Sitka Spruce
 - In coastal forests, rare in Cascades, up to 2,000 ft

Needles in clusters, deciduous (Larches)

Western Larch

Needles pale green in summer and yellow in fall, cones 1.5 in, east, 3,000-5,000 ft

Alpine Larch

Subalpine, needles green in summer and yellow in fall, cones 2-3 in, east, 5,000+ ft

Tips for using your field guide to identify shrubs and flowering plants

Shrubs, which have woody stems, are shown by family on pages 157-179. Note that some shrubs, such as kinnickinnick, are low-growing. To identify a shrub, flip through the pictures and seek a match. Details about the flowers, leaves, or other features are listed on the opposite page to confirm the identity. Don't be disappointed if you can't identify a shrub by the leaves alone; sometimes you need to see flowers, leaves, and fruit to make a positive identification.

Wildflowers are arranged by color, then by family, on pages 87-155 (read the cautions about using color to aid identification on pages 85-86). When you find a wildflower that you don't know, flip through the pictures of flowers that color and seek a match. Again, confirming details are listed on the opposite page. Not all flowers are pictured, so if you don't see an exact match read the description to see if it mentions similar species or just satisfy yourself that you are close.

For both shrubs and wildflowers there is a good illustrated glossary on pages 78-85 that will help you with the botanical terms. With experience you will start to see how plant families are related, and this will help your identification skills. For example:

- Plants in the Lily family have flower parts in 3s or 6s and the leaves have parallel veins.
- Flowers in the Violet family look like small pansies. In the Northwest they may be yellow, purple, or white.
- Flowers in the Orchid family look like tiny orchid corsages.
- Plants in the Mustard family have flowers with 4 petals in a cross (though other families also have flowers with parts in 4s).
- Plants in the Aster or Sunflower family have composite flower heads, which means that the "flowers" are actually groups of many little flowers. Dandelions are an example with all ray flowers and daisies are an example with both disc flowers and ray flowers (take a close look at them with a magnifying glass).
- Plants in the Rose family have 5 petals, 5 sepals, and many stamens.

Basic Birding – Tips

Resources:

The Nature Shop – Seattle Audubon – 8050 35th Ave NE – www.seattleaudubon.org

Cornell Laboratory of Ornithology – www.allaboutbirds.org

(Macaulay Library of Natural Sounds)



Burke Museum – University of Washington – www.burkemuseum.org/ornithology

Mountaineers bookstore

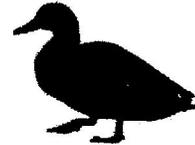
Methodology:

Size & Shape

Behavior

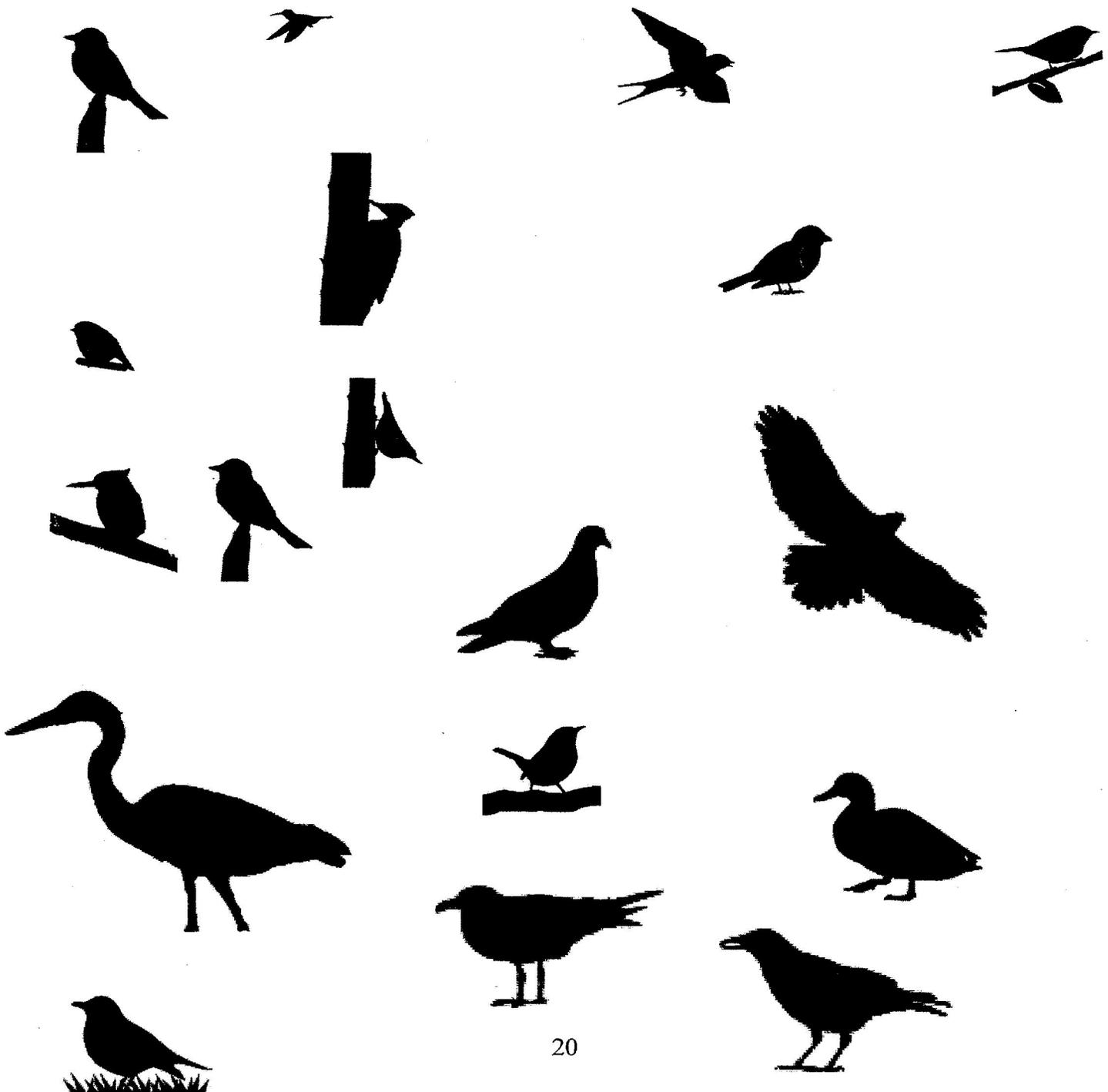
Habitat & Season

Sounds & Plumage



Notes: Ways to improve your birding skills

- Buy a bird field guide (The Audubon Nature Shop) – learn the silhouettes of bird families
- Buy a bird finding book
(See ‘Additional References’ section in back)
- Get a checklist for the area you are visiting
(Ask at visitors’ centers, search on the internet, for Sand Point (Magnuson Park) – The Nature Shop)
- Go birding (especially with people more knowledgeable than you)
- Take a course/go on an field trip with your local Audubon chapter
- Learn to recognize bird songs and calls



ferns

The life cycle of a fern is an interesting one and involves two separate plants. Ferns reproduce by means of spores which are borne in brownish clusters on the undersides of the leaflets of fertile ferns. The ripe spore clusters dry and spring open, dispersing thousands of spores. These spores develop into tiny intermediate plants called gametophytes. In this phase sexual reproduction occurs. The fertilized egg then develops into a new fern.

I. Fronds divided into simple leaflets

A. Leaflets toothed on the edges Sword fern

B. Leaflets smooth on the edges

1. Grows on tree trunks, stumps, sometimes rocks Licorice fern

2. Grows on moist forest floor Deer fern

II. Fronds divided into compound leaflets

A. Fern stalk shiny black Maidenhair fern

B. Fern stalk not shiny black

1. Stalks arising in clusters and covered with loose scales

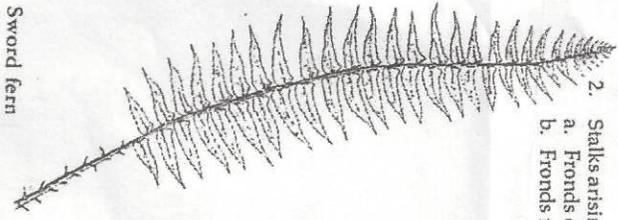
a. Fronds widest at the middle Lady fern

b. Fronds widest at the base Spreading wood fern

2. Stalks arising singly, lacking loose scales

a. Fronds delicate, horizontal, 1' tall or less Oak fern

b. Fronds robust, usually 1-4' tall Bracken fern



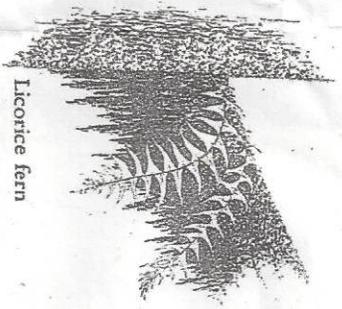
Sword fern



Oak fern



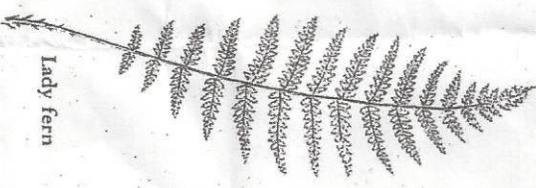
Spreading wood fern



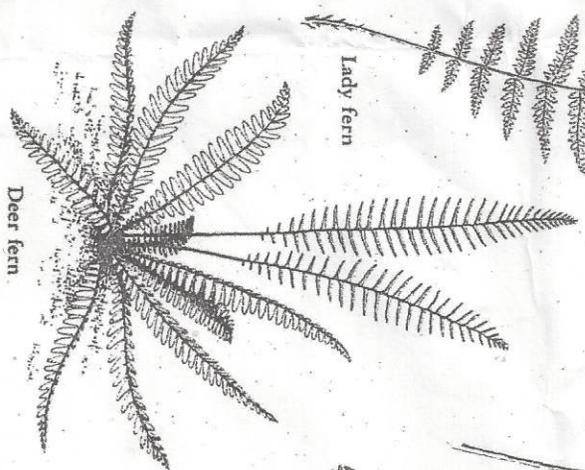
Licorice fern



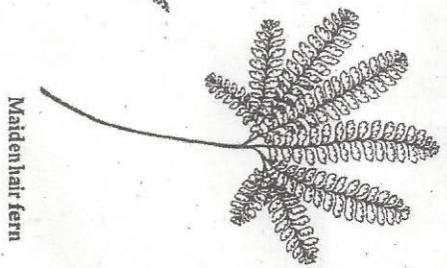
Deer fern



Lady fern



Bracken fern



Maidenhair fern

TYRANT Flycatchers		Family: Tyrannidae
	Olive-sided Fly.	Quick 3 beers
184	Western Wood-Pewee	"phee-eer" burry, slightly down-slurred
190	Pacific-Slope Fly.	"seeeyeet" upslurred, high, thin
185	Willow Fly.	"fitz-bew" loud, raspy, emphatic, two-syllabled. Stand alone.
187	Hammonds Fly.	"tsi-pik....grr-vik" two-syllabled & two phrases. 1st high & clear, 2nd lower & raspy
189	Dusky Flycatcher	"sibip" short, high, pure-ish always starts here
		"quwerrp" rough & nasal 2nd two's order varies.
		"psuweet" lot like Pac. Slope Fly. May skip 2nd or 3rd
Each word is separate..		
188	Gray Flycatcher	"jr-vrip" Rough & emphatic. Two syllables -- two or three rapidly repeated Sounds a bit robin like.
193	Say's Phoebe	"pee-ur" clear, plaintive whistle. Slightly descending. Introductory stuttering notes.
194	Eastern Kingbird	dtzee,dtzee, dtzee,.... wires
195	Western Kingbird	"kit or whit" audio tape on fast forward. High, squeaky, Impulsive, bickering notes.
NUTHATCHES		Family: Sittidae
226	Red-breasted Nuthatch	naak, naak, naak,..... nasal, slow, drawn-out miniature tin horn. Continuously repeated.
227	White-breasted Nut.	ank, ank, ank,..... less nasal, faster.
228	Pigmy Nuthatch	peep, peep, peep,..... clear, high-pitched, incessant
BROWN CREEPER		Family: Certhiidae
229	Brown Creeper	treeees, pretty little trees, SEE very high & thin. Ends on a high note.
EMBERIZINE SPARROWS & THEIR ALLIES		Family: Emberizidae
273	Spotted Towhee	trill very rapid. Shorter than junco. Can be intro notes. where are youuuuu like 3 whistles - last one drawn out

	Golden Crowned Sparrow	Oh, dear, me	up..down.. Up
281	Sage Sparrow	flip flip...freeeee (twice)	hoarse or mumbled. Stutter the 1st part
277	Brewer's Sparrow	zerrrrrrrrrrrrr cheeeeeeeee deeee-deee-dee zrr-zrr=zrr=zeeee	long, varied series of trills & buzzes. Can be canary like
276	Chipping Sparrow	Trill	mechanical. Slower than towhee
283	Grasshopper Sparrow	tik tuk tikeeeeeeeeeez	very high, insectlike buzz preceded by weak tik tuk
282	Savannah Sparrow	ti ti ti tweeeeeee tiso	high, fine buzz, preceded by intro. Little noes. Last tiso fades off. Short
278	Vesper Sparrow	Start followed by final	paired whistles - two notes slow, musical trills trails off
279	Lark Sparrow	whistles, buzzes, & trills	complex series, slow, choppy rhythm, high, mechanical. Funny & weird
289	White-crowned Sp.		
	Song Sparrow		slow & short
286	Lincoln Sparrow	chi, jew-jew-jew / jew-je- eeeeeee / do-je-e-e-e-to	second part is quite high trill. Continuous jumble of husky chirping trills. Bubbly like house wren. Short
291	Dark-eyed Junco	Trill	slow. Can almost count. Bell like
	Fox Sparrow	Wit; tip; swit, wit swit- swit teer trill	Long. 1st = sep. notes. Then faster leading to trill.
	WRENS		Family: Troglodytidae
		2 - 4 tus	
232	Bewick's Wren	t-t zree drr-dree tututututu	Extremely varied. Always has thin, rising buzzes & slow trills
233	House Wren Shortish	Rapid series of rattles & trills ending in descending series of bubbling liquid trills. Extremely varied.	
234	Winter Wren	tinkling trills & thin buzzes	long, continuous, complex
235	Marsh Wren	tik k jijijijijijiji-jrr or tuk t jet-t-t-t-t-t-t-trr	Buzzing like sound. gurgling, rattling trill w/ dist. musical & mech. quality
	Rock Wren		3 repeater
	Canyon Wren		liquid whistle, decelerating as moves down the scale.
	VIREOS		Family: Vireonidae
201	Red-eyed Vireo	here-I-am, in-the-tree, look- up, at-the top.....	"Preacher Bird" contiuous prases - one every 2 seconds Fast

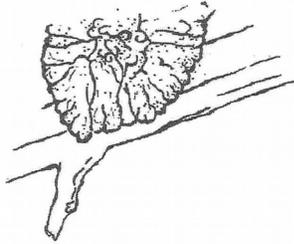
200	Warbling Vireo	Receiver, receiver, receiver, RECEIPT!	lengthy warble. Regular up & down.
199	Hutton's Vireo	"chu-weet"	annoyingly insistant repeater of single note or phrase. Can go up or down but the notes in each series stays the same.
198	Cassin's Vireo	question & answer	deliberate series of simple, burry phrases. Long pauses between each phrase.
WOOD - WARBLERS			Family: Parulidae
257	Orange-crowned W.	trill	fast & fairly flat. Ascends & speeds up slightly before dropping off at the end.
258	Nashville Warbler	cheepa-cheepa-cheepa ti-ti-ti-ti-ti	part 1: 2 syllable notes Slow part 2: lower
260	Yellow Warbler	sweet sweet sweet ti ti ti to soo	sweet, high, clear slurred notes. Variable in details
261	Yellow -rumped W.	sidl sidl sidl sidl seedl seedl seedl seedl	Clear, loose warble. Variable & confusing. Ascends, swells slightly & then drags at end. Short
262	Black-throated Gray W.	zeedle, zeedle, zeedle,zeet che	ascending, buzzy. Sharp inflection on final phrase
263	Townsend's Warbler &		Tough & variable. Similar to Black -throated Gray W.
264	Hermit Warbler		Less buzzy, higher pitched, more whistled.
267	MacGillivray's W.		Two part. Lower & slower than Wilsons. Drops in pitch in part 2. Similar to Nashville W. Shorter.
268	Common Yellowthroat	wichety wichety wichety	
269	Wilson's Warbler	chee-chee-chee....chet-chet	Rapid, high-pitched chatter, drops in pitch towards the end
270	Yellow-breasted Chat	clucks, whistles, squeaks & squawks	extremeluy varied. Long pauses between phrases.
THRUSHES			Family: Turdidae
271	Western Tanager		
	Townsend's Solitaire	very long continuous, disjointed, finchlike warble; clear, whistled notes	
241	Mountain Bluebird	jerrf, jerrf, jewr, jipo, jerrf jewr	series of low, burry whistles
240	Western Bluebird	pew,pew,pew,pew...	a series of call notes. fairly hard, low whistles .

247	Varied Thrush	whistle	single, long whistle on one pitch
243	Veery	veer, veer, veer, veer	smooth, rolling, descending. About 4 veers
244	Swainson's Thrush		upward-spiraling, flutelike phrases
245	Hermit Thrush		ethereal, tremelo-like phrases
	MIMIDS		Family: Mimidae
249	Gray Catbird		very long, rambling, halting warble, slow tempo; mewy quality of low, hoarse notes with high, sharp chips & squeaks interspersed
251	Sage Thrasher		run-on warble of mellow, rolling or churring whistles with jerky tempo but very little pitch change. 10+ seconds.
	KINGLETS		Family: Regulidae
237	Golden-crowned Kinglet	see see see si si si tititichichichi	speed part 2: lower, tumbling chickadee-like chatter
238	Ruby-crowned Kinglet	sii si sisisi berr berr berr pudi pudi pudi pudi see	begins with very high notes & ends with low, whistled chant. Lively, varied & loud.
	CARDINALS		Family: Cardinalidae
294	Black-headed Grosbeak		
	E&W=summer		
295	Lazuli Bunting (295)	1,2,3,4,5,jumble jumble	high, sharp warble, jumbled. Variable
	E=summer		
	Icterids		Family: Icteridae
	Western Meadowlark, Yellow-headed Blackbird, Re-winged Blackbird		
296	Bobolink		
302	Brown-headed Cowbird		
301	Brewer's Blackbird		
303	Bullock's Oriole		
	FINCHES		Family: Fringillidae
315	Evening Grosbeak (315)	kleerr, kleerr.....	repetition of call notes. High, sharp, ringing trill like House Sparrow.
	W=all yr E=winter		
306	Pine Grosbeak	fillip illy dilly didalidoo	lowish,lazy, unaccented warble of soft, whistled notes
	E=all yr, narrow band near mts		
307	Purple Finch		

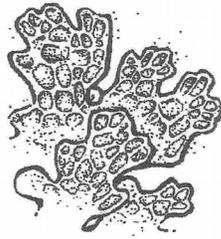
Ten Common Lichens You Can Identify

Form	Color	Photo	Description	Genus	Common Name(s)
Foliose	Grey, brown, greenish		Usually large lobes. Rhizines sometimes long. Usually large apothecia .	Peltigera	Frog Pelt Lichen
	Greenish, brownish		Lobes medium size, suberect, curved often. Apothecia common.	Cetraria	Iceland Lichen or Ruffle Lichen
	Grey-green (top) Blackish (below)		Appressed small lobes. Velcro-hooks (rhizines) under. Soredia &/or isidia often present.	Parmelia	Shield Lichen or Waxpaper Lichen
	Grey-green (top) White/Brown (below)		Looser larger lobes. Highly variable.	Platismatia	Rag Lichen
	Grey-green (top) Black (below)		Hollow tube-like lobes. Appressed or erect. May have apothecia, soredia, isidia &/or pycnidia.	Hypogymnia	Tube Lichen
Fruticose & Foliose	Grey-green (top) White (below)		Bushy, lobes straplike & divides (forks) regularly.	Evernia	Antler Lichen
Fruticose	Varies		Primary: small appressed scales. Secondary: erect finger like podetia. Large genus with much variation.	Cladonia	Cladonia
	Grey-green		Tufted, lobes narrow & divides (forks) unevenly.	Ramalina	Ramalina
	Light green		Tufted & hairlike, or long & pendulous. Central cord.	Usnea	Beard Lichen
	Light green		Pendulous (no central cord).	Alectoria	Witch's Hair

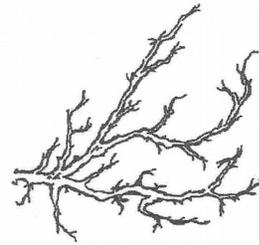
Form



crustose

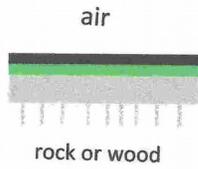


foliose

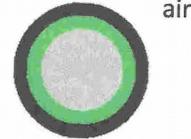
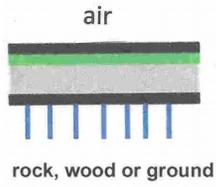


fruticose

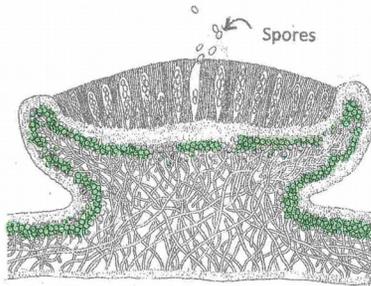
Structure



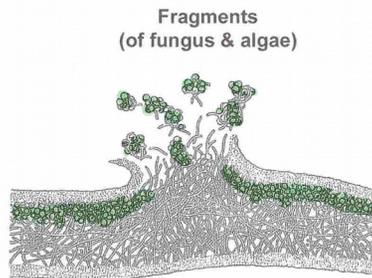
cortex
algal layer
medulla
rhizines



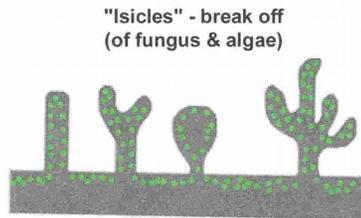
Reproduction



Sexual: Apothecia



Asexual: Soredia



Asexual: Isidia

Flowering parts in 3s (or multiples)
Leaves with parallel veins

Lily, Orchid, & Iris

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

Petals free

Mint
Figwort

Pea
Violet
Buttercup - some

Flowers with radial symmetry

Many small flowers in tight bunches

Flowers not in tight bunches

Buckwheat
Parsley
Waterleaf
Valerian
Rose - some

Buttercup
Rose
Sunflower — technically belongs with "Many small flowers in tight bunches"

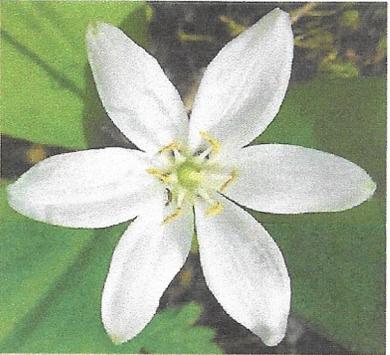
Flowers with central clusters or seemingly so (more than 10 stamens crowding the center)

Normal flowers (10 or fewer stamens) (or just use the "handles" to id. these 7 Families)

Pink
Purslane
Saxifrage

Petals fused
Petals free (or nearly so)

Heath
Phlox
Primrose
Borage



Lily Family

- Flowers: radial
- 6 tepals & 6 stamens



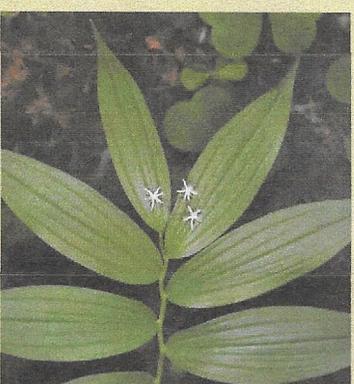
Iris Family

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



Orchid Family

- Flowers: bilateral
- Lower petal forming lip or bowl



Leaves

Parallel veins

- Lily Family
- Iris Family
- Orchid Family



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



Flower parts in 4s



Mustard Family

- Flowers: petals 4
- Ovary superior.
- 6 stamens – 4 long, 2 short usually
- Leaves: alternate
- Seed pods in many shapes. 2 sections



Evening-Primrose Family



Figwort Family



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



Mint Family



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

5s Bilateral..... Fused

5s Bilateral..... Free

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



Buckwheat Family

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



5s Radial Bunches

Waterleaf Family

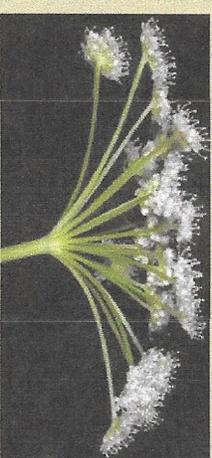
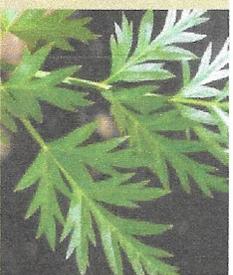
(In Borage Family now)

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



Parsley Family

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



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

- Small family

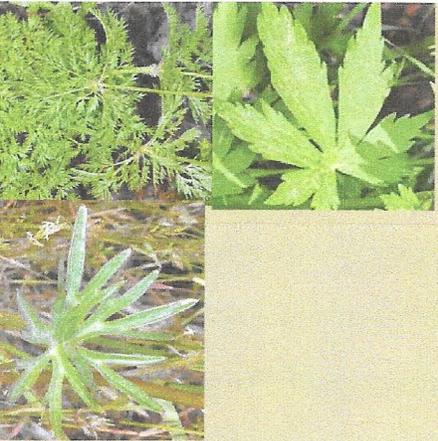
Valerian Family





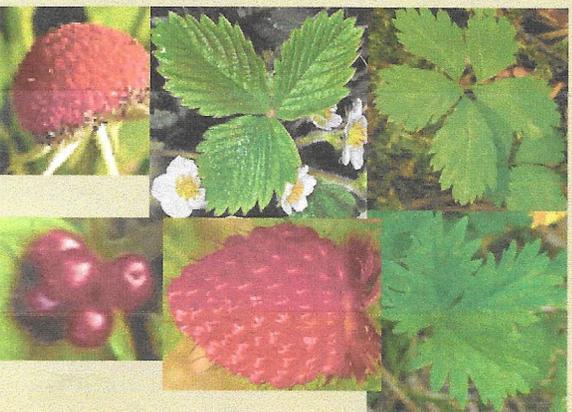
Buttercup Family

- 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

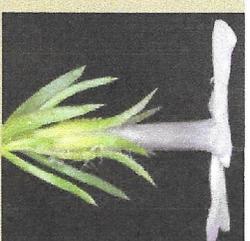
- Flowers: appear many "petaled"
- Central cluster present or appears to be absent entirely.
- A compound flower: tiny flowers with 5 fused petals. All flowers packed into a single head.

5s Radial Not bunches
Central clusters



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
- Fiddleheads often
- Plant often hairy



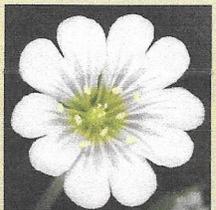
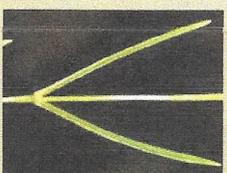
Borage Family

(Includes Waterleaf now)



Purslane Family

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



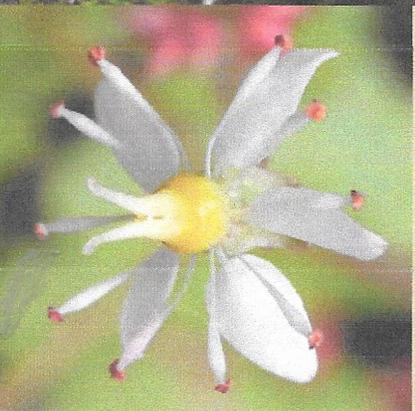
Pink Family

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

5s Radial Not bunches
Normal Flowers Petals Free

Saxifrage Family

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



Sedum Family

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



Appendix

Unique Plants

Current Family

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

