Guide to Fern Identification

1. Identify the type of frond using the drawings & descriptions below
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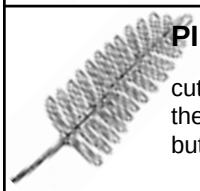
3. If there are additional numbers below #1, go to all of the #2 descriptions until you get a "yes"

SIMPLE

undivided

1. Like branched green sticks, to 6" or more, often in clumps ..... Psilotum nudum
1. Fronds appear leaf-like, often paired, at ground level at base of leafless fertile stalk ..... Ophioglossum petiolatum
1. Fronds slender, 3/8" or less
   2. Edges curled under, hangs like bunch of limp green linguini ..... Vittaria lineata
   2. Edges not curled under, fronds arching ..... Campyloneuem augustifolium
1. Fronds wider than 1/2", strap-shaped, arching
   2. Full frond covered with dimples above and below ..... Campyloneurum phyllitidis
2. Edges serrated; sori in angled lines towards tip of frond ***(rare)*** **.....** Asplenium serratum



PINNATIFID

cut nearly to the midvein but not quite

1. Fronds mostly 6" or smaller, in clumps ..... Pleopeltis polypodioides
1. Fronds 10" or longer, a few to several pairs of pinnae which taper to a point
   2. Pinna taper at tip <u>AND</u> base, several pairs of small pinnae at base ..... Pecluma ptilodon
   2. Rhizome thickly covered with golden hairs & finger-thick ..... Phlebodium aureum
   2. Rhizome green or black, smooth ***(uncommon, exotic)*** **.....** Phymatodes scolopendria

PINNATE

blades divided into leaflets;

each leaflet narrowly attached to the main axis

1. Fronds really large (6' or more); pinnae wide, leathery, smooth, and relatively thick ..... Acrostichum danaeifolium
1. Terminal pinna (but no others) divided into three lobes ..... Tectaria incisa
1. Terminal pinna longer than other pinnae
   2. Sori linear along midrib; frond medium green; stem green ..... Blechnum serrulatum
   2. Sori along edge; stem noticeably hairy; frond dark green ***(exotic)*** **.....** Pteris vittata
   2. Sori completely cover underside of pinnae ***(rare)*** **.....** Thelypteris serrata
1. Terminal pinna not longer than other pinnae
   2. Most pinnae forked at tip, almosta fishtail-like ..... Nephrolepis biserrata cv. forcans
   2. Pinnule tips pointed
      3. Pinnae spaced out; fronds usually 4-8', vine-like ..... Nephrolepis biserrata
      3. Pinnae close; midrib dividing into two almost equal parts ..... Nephrolepis exaltata
      3. Short erect hairs on pinna midveins, stipe dark ***(exotic)*** **.....** Nephrolepis multiflora
   2. Pinnule tips blunt & rounded, pinnae close, round tubers on many roots ***(exotic)*** **.....** Nephrolepis cordifolia

PINNATE-PINNATIFID

pinnate because it has separate leaflets on the main axis,

and pinnatifid because each leaflet has cuts (but not necessarily nearly to the midvein)

1. No small tuft of rusty-brown hairs at pinna base; sori on underside of pinnae
   2. Frond upperside smooth with no or very few hairs
      3. Pinnules cut halfway to midvein, rounded; shiny ..... Thelypteris interrupta
      3. Pinnules cut to (or nearly to) midvein; sori at pinnule midvein
         4. Pinnae very narrow; a few hairs on top ..... Thelypteris palustris
         4. Pinnules rounded; dark green pinnae ..... Dryopteris ludoviciana
         4. Pinnules taper to point; lobes short, blunt; chain-like veins ..... Woodwardia virginica
         4. Lower surface conspicuously resin-dotted ***(rare)*** **.....** Thelypteris resinifera
      3. Terminal pinna divided into 3 lobes, lowermost pinna stalked ..... Tectaria heracleifolia
   2. Frond somewhat to definitely hairy
      3. Blade triangular shaped
         4. Lobes separated; hairy all over ..... Thelypteris kunthii,
         4. Lobes close; lower frond stems not hairy ***(rare)*** **.....** Thelypteris dentata
      3. Blade oval-shaped ***(rare)*** **.....** Thelypteris ovata
1. Small tuft of rusty-brown hairs at base if each pinna where midrib of pinnae meets midrib of frond; no sori on any pinnae but borne on separate spore-bearing frond) ..... Osmunda cinnamomea

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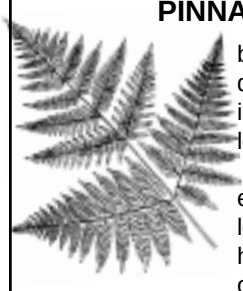
4. Continue until you run out of numbers. Your last "yes" description is identifies the fern.

 **BIPINNATE** blades divided into leaflets; each leaflet has its own leaflets	1. Openly branched fronds; spores on separate stalk at tip of blade ..... Osmunda regalis
 **BIPINNATE-PINNATIFID** blades divided into leaflets; each leaflet has its own *cut* leaflets	1 Large; blade branches into more branches; lobes of pinnae evenly rounded, smooth-edged 2. Fronds stiff; each blade branches into 3 more ..... Pteridium aquilinum 2. Fronds soft; each blade branches into 3 more and each of those branch again ***(exotic)*** **.....** Pteris tripartita 1. Blade bipinnate-pinnatifid to tripinnate (three times cut) 2. Pinnae parallel, whole frond appears flat ..... Ctenitis sloanei, 2. Pinnae at angle to rachis giving a "stepped" appearance to each frond ***(exotic)*** **.....** Macrothelypteris torresiana 1. Pinnae wedge-shaped, coarsely toothed, leathery; found only in pineland habitat ..... Anemia adiantifolia
 **PALMATE** hand-like	1. Frond 1-2" long; form thick climbing mats ***(exotic)*** **.....** Lygodium microphyllum 1. Fronds 4-12" long, epiphytic ***(rare)*** **.....** Ophioglossum palmata
 **WATER FERNS** floating on water surface or rooted under surface	1. Fronds round, fingertip-sized, hairy, bent in middle; in loose mats ..... Salvinia minima 1. Fronds irregulary branched, like flattened juniper twig ***(rare)*** **.....** Azolla caroliniana 1. Fronds like 4-leaf clover; rooted in mud, usually in standing water ..... Marsilea vestita 1. Fronds strongly lobed, almost feathery 2. Fronds large (5–10"), thick stem more than 4" ***(rare)*** **.....** Ceratopteris pteridoidesn 2. Fronds have thin stem less than 3" *(exotic)* ..... Ceratopteris thalictroides,

Notes:

Commonly used terms:

frond ..... the "leaf" of the fern; fertile fronds have sori, sterile fronds don't; the two parts of a frond are the blade (the top part with green leaves) and the stipe (the bottom part with no leaves)
midrib ..... the center "vein" on each pinna
pinna ..... the leaves on the blade (plural *pinnae*)
pinnule ..... each segment on the pinna
rachis ..... the frond stalk; it is also referred to as the *midvein* or *main axis*
rhizome ..... the stem of the fern (it's usually on or just beneath the surface of whatever the fern is growing on)
spore ..... one-celled reproductive unit of non-seed plants; mature fern sori are usually reddish-brown
sporangia .... a spore case (plural *sporangia*)
sori ..... several clusters of sporangia (singular *sorus*)