



iNaturalist Observations – What Should I Photograph? *Tips for Photographing Some Local Plant Families*

Thank you for participating in the San Diego County Plant Atlas Project on iNaturalist. To optimize the likelihood of being able to identify species from photographs submitted to iNaturalist, we offer these tips about photographing plants.

General Guidelines: Keep in mind that these guidelines are intended to optimize identification, but we want you to submit plant observations to iNaturalist and the San Diego County Plant Atlas Project even if you are unable to follow the guidelines.

1. Try to obtain photographs of the plant as a whole, showing scale if possible by including a recognizable object in the photo. (*e.g.*, for a large tree, have a person stand next to the tree; for a small plant, hold the leaves or flower so that your fingers are in the photo; or you can place a ruler or other scale in the photo.)
2. Take close-up photographs of leaves (both upper and lower surfaces), flowers (straight-on and side views), and fruits.
3. In most cases, it is helpful to photograph both flowers and fruits. While there are some plants that do not bear fruits and flowers at the same time, try to photograph both if possible. A botanist often needs reproductive parts of the plant in order to positively identify it. Including all representative parts of the plant makes it more likely that the species can be determined without having a specimen in hand.
 - a. “Fruit” is a collective term used to describe the different types of mature ovaries that flowering plants can have. The fruit contains the seeds, and some examples are: berry (grape), nut (acorn), capsule (poppy), pod (pea, bean), drupe (plum, cherry), bur (cocklebur, teasel), caryopsis (grass grain), and achene (dandelion or sunflower seeds). With some plants, characteristics of the seeds are used to determine the species.
 - b. If the plant does not have both flowers and fruit, and fruit/seeds are required for a positive identification, then your observation may not be identified as to species. In some cases, a higher level of identification may be possible, such as the family or genus of the plant.
4. Try to have the sun at your back to provide the best light for your photos.
5. Before touching any plant, be sure you know how to recognize and avoid Poison Oak (*Toxicodendron diversilobum*) and other plants that may irritate your skin, such as those in the Nettle Family (Urticaceae).

What exactly should I photograph?

Depending on the plant family, different plant parts may be essential to establish the identity of a photographed plant. With some plants, required features may not be easily photographed in the field (*e.g.*, tiny hairs on the lower side of leaves, bulbs or roots). Below are some tips to

help you understand what you should photograph, depending upon which plant family your observation belongs to. If you do not know what family the plant you observe belongs to, follow the general guidelines above.

FERNS, CONIFERS, EPHEDRA, HORSETAIL

Ferns – (Bracken, Wood Fern, Polypody, Brake Families) – these will look mostly vegetative; need to see sori/indusium (yellow or brown dots) found on back of fronds (leaves), so take photos of both sides of fronds. The farina color on the underside of the blade for *Pentagramma* species is essential.

Conifers – (Cypress, Pine Families) – Pine, Cypress, Juniper – take a photo of the female cones showing the shape of the scales and a photo that shows how many needles are in each bundle.

Ephedraceae – (Ephedra Family) – Ephedra - photograph fruits (stalked, small and brown) at nodes (where leaves join stem) and stem nodes to see how many leaves are present.

Equisetaceae – (Horsetail Family) – Horsetail, Scouring-Rush – photograph fruiting stems which have small cone-like structures (strobili) on tips, plus the base of the plant to see the teeth and coloration at basal nodes.

EUDICOTS

Acanthaceae – (Acanthus Family) – Chuparosa – flower or fruits

Aceraceae – (Maple Family) – Maple, Box-Elder - fruits or flower

Aizoaceae – (Fig-Marigold Family) – Carpobrotus, Iceplant, Sea-Fig - flower, flower color very important, if no flowers, may not be able to determine species.

Amaranthaceae – (Amaranth Family) – Amaranth, Pigweed – closeup of fruits

Anacardiaceae – (Sumac or Cashew Family) – Sumac, Lemonade Berry, Pepper Tree, Poison-Oak – fruits or flower

Apiaceae – (Carrot Family) – Sanicle, Lomatium, Hemlock - fruits essential; if present, flower color is important

Apocynaceae – (Dogbane, incl. Asclepias or Milkweed Family) – Milkweed, Oleander, Periwinkle – flowers and fruits, especially closeup of flower structure

Araliaceae – (Ginseng Family) – Ivy – fruits or flower

Asteraceae – (Composite Family) – Our largest family, includes Daisies, Baccharis, Ragweed, Ambrosia, Thistle, Goldenbush, Tarplant, Filago, Matchweed, Sunflower, Cudweed, Artichoke – flower and fruits if present. Take a side view of flower to show the “involucre” – the structure between the flower and the stem. A close-up photo of fruit is essential for the genus *Stephanomeria*.

Berberidaceae – (Barberry Family) – Barberry – fruits

Betulaceae – (Birch Family) – Alder – fruits or flower

Bignoniaceae – (Bignonia Family) – Catalpa, Desert Willow, Jacaranda - flower

Boraginaceae – (Borage Family) – Fiddleneck, Cryptantha, Popcorn Flower – flowers and mature fruits (found below the flowers on a coiled cyme). The sculpturing and number of the nutlets is especially important in *Cryptantha*, *Pectocarya*, *Plagiobothrys*.

Brassicaceae – (Mustard Family) – Mustard, Rocket, Cress, Peppergrass, Wallflower, Stock, Fringepod – flowers and mature fruits (below flowers at top of plant); leaves at the base of the plant should also be photographed.

Cactaceae – (Cactus Family)

Opuntia & *Cylindropuntia* – Cholla, Prickly-Pear - photograph pads and spines, flowers (must have), and fruits if present.

Ferocactus – Barrel - closeup of areole (spine cluster)

Mammillaria – Fish-Hook - flowers and closeup of areole (spine cluster)

Echinocactus & *Bergerocactus* – Hedgehog, Mound – flowers and/or fruits

Campanulaceae – (Bellflower Family) – Bluecup, Threadplant, Lobelia - flowers and fruits

Caprifoliaceae – (Honeysuckle Family) – flowers and/or fruits

Caryophyllaceae – (Pink Family) – Chickweed, Catchfly, Sand-Spurry - flowers

Chenopodiaceae – (Goosefoot Family) – Tumbleweed, Goosefoot, Saltbush – closeup of fruits

Cistaceae – (Rock-Rose Family) – Rush-Rose, Rock-Rose - flowers and/or fruits

Cleomaceae – (Spiderflower Family) – Bladderpod – flowers and shape of mature fruits

Convolvulaceae – (Morning-Glory, Dodder Family) Convolvulus – Morning-Glory, Bindweed – flowers and fruits, *Calystegia* - leaf shape, and side view of flowers showing outer bracts

Cuscuta – Dodder – orange colored parasite, photograph with flowers (tiny & white); include part of host plant in the photo; Note name of the host plant (if known).

Cornaceae – (Dogwood Family) – flowers and/or fruits

Crassulaceae – (Stonecrop Family) – flowers and basal leaf shape

Dudleya – leaves and flower stalk; note number of leaves in whole rosette and diameter of plant in description

Cucurbitaceae – (Gourd Family) – Melon, Wild Cucumber - flower or fruits

Ericaceae – (Heath Family) – Manzanita – fruits.

Arctostaphylos – photograph base of the shrub/tree to show the burl (woody outgrowth at base of trunk)

Euphorbiaceae – (Spurge Family) – Doveweed, Croton, Castor Bean - closeup of stem nodes showing stipules, fruits and flowers, including a closeup of the cyathium (tiny flower-like structures containing male & female flowers and often with appendages and glands present)

Fabaceae – (Legume Family) – Clover, Vetch, Locoweed, Broom, Pea, Lupine

Acacia – fruits, *Astragalus* – flowers & fruits, *Lathyrus* – flowers, *Acmispon*, *Hosackia*, *Lotus* - fruits, *Lupinus* – flower, *Trifolium* – flower and bracts of the lower, outside of flower clusters, *Vicia* - flower and fruits

Fagaceae – (Oak Family) – fruits (acorns) essential, upper and lower surface of leaves

Fouquieriaceae – (Ocotillo Family) – flowers

Garryaceae – (Silk Tassel Family) – flower or fruits; upper and lower surface of leaves (determining hairs on underside)

Gentianaceae – (Gentian Family) – Canchalagua, Centaury - flowers and basal leaves

Geraniaceae – (Geranium Family) – Storksbill, Geranium – fruits, flowers, and lower leaves

Grossulariaceae – (Gooseberry Family) – Currant – flowers, fruits and presence or absence of spines on stems

Hydrophyllaceae – (Waterleaf Family) – Phacelia, Eucrypta, Baby Blue Eyes, Bluebells, Yerba Santa – flowers, *Phacelia* needs fruits

Lamiaceae – (Mint Family) – Sage, Monardella, Woolly Bluecurls - flowers

Loasaceae – (Loasa Family) – Stick-Leaf, Blazing Star – fruits and closeup of mature seeds

Lythraceae – (Loosestrife Family) flowers, closeup of fruits, growth habit

Malvaceae – (Mallow Family) – Hollyhock, Mallow, Checkerbloom – flowers and mature fruits. *Malacothamnus* -- closeup side view of flower and stem (showing calyx, bracts, & hairs)

Montiaceae – (Purslane Family) – Red Maids, Miner’s-Lettuce, Montia, - flowers and fruits

Myrtaceae – (Myrtle Family) – Gum, Bottlebrush, Eucalyptus – flowers and fruits
Eucalyptus – leaves, trunk shot, flower buds with caps attached and mature fruits

Nyctaginaceae – (Four O’Clock Family) – Wishbone Plant, Ringstem, Sand Verbena – flowers, fruits
Abronia (Sand Verbena) – flower color, fruits
Boerhavia (Spiderlings) – flower arrangement, closeup of fruits, lower part of stem

Oleaceae – (Olive Family) – Ash, Privet - fruits

Onagraceae – (Evening-Primrose Family) – Sun-Cup, Clarkia, California Fuschia, Willow-Herb, Evening Primrose - flowers and fruits essential

Orobanchaceae – (Broom-Rape Family) – Paintbrush, Bird’s Beak - flowers

Oxalidaceae – (Oxalis Family) – Sorrel - flowers

Paeoniaceae – (Peony Family) – flower or fruits

Papaveraceae – (Poppy Family) – Matilija Poppy, Cream Cups, Golden Ear-Drops - flowers and fruits

Phrymaceae – (Hopseed Family) – Monkey Flower – flowers

Plantaginaceae – (Plantain Family) – Snapdragon, Chinese Houses, Toadflax, Penstemon, Plantain, Speedwell – flowers, fruits, and basal leaves
Penstemon – flowers, leaves

Platanaceae – (Sycamore Family) – fruits

Plumbaginaceae – (Leadwort Family) – Marsh Rosemary, Statice - flowers

Polemoniaceae – (Phlox Family) – Gilia, Woolly-Star, Navarretia - flowers

Polygonaceae – (Buckwheat Family) – Spineflower, Buckwheat, Willow Weed, Dock - flowers and basal leaves (for annual plants); flowers (shrubs), closeup of leaves and adjacent stems for varieties of *Eriogonum fasciculatum*

Primulaceae – (Primrose Family) – Shooting Star – flowers

Ranunculaceae – (Buttercup Family) Columbine, Larkspur, Meadow Rue – flowers, fruits

Resedaceae – (Mignonette Family) – Oligomeris, Reseda - fruits

Rhamnaceae – (Buckthorn Family) – Wild Lilac, Redberry, Coffeeberry - flowers and/or fruits
Ceanothus (Wild Lilac) – fruits, closeup of lower leaf surface and stem nodes

Rosaceae – (Rose Family) – Chamise, Mountain-Mahogany, Cotoneaster, Toyon, Horkelia, Cinquefoil, Cherry, Berry, Plum – flowers and/or fruits
Rosa – flowers, especially side view showing sepals and prickles on stems

Rubiaceae – (Coffee Family) – Galium, Bedstraw – fruits, stem node with leaves attached

Rutaceae – (Citrus Family) – Coast Spice Bush - fruits or flowers

Salicaceae – (Willow Family) – Cottonwood, Willow, Poplar – fruits, closeup of flower catkins, both sides of leaves
Saxifragaceae – (Saxifrage Family) – Heuchera, Woodland Star, Alumroot - flowers
Jepsonia - leaves or flowers
Scrophulariaceae – (Figwort Family) – Bee Plant, Mullein - flowers
Solanaceae – (Nightshade Family) – Jimson Weed, Desert Thorn, Tomato Tobacco, Nightshade – flowers especially with a scale next to anthers for white flowered species and/or fruits
Tamaricaceae – (Tamarisk Family) – Tamarisk, Salt-Cedar – flowers, arrangement of flowering spikes on stems
Ulmaceae – (Elm Family) – Elm – fruits and closeup of leaves
Urticaceae – (Nettle Family) – Nettle, Pellitory, Urtica - fruits
Verbenaceae – (Vervain Family) – Lantana, Vervain, Phyla – flower
Verbena- flower and fruits
Violaceae – (Violet Family) – Violet – flower, basal leaves
Viscaceae – (Mistletoe Family) – Mistletoe - parasite; flowers or fruits and host plant (if known, note name of host plant in description)
Vitaceae – (Grape Family) – Grape - flowers
Zygophyllaceae – (Caltrop Family) – Fagonia, Creosote Bush - flower and/or fruits

MONOCOTS

Agavaceae – (Agave Family) – Hesperoyucca, Yucca, Agave - flowers or fruits
Alliaceae – (Onion Family) – Onion – flowers, fruits, bulbs if possible
Arecaceae – (Palm Family) – Palm – frond, fruits or flowers
Asparagaceae – (Asparagus Family) – Smilax, Asparagus - fruits
Cyperaceae – (Sedge Family) – Sedge, Carex, Bulrush – leaves and fruits
Iridaceae – (Iris Family) – Iris, Blue Flag, Blue-Eyed-Grass - leaves and flowers
Juncaceae – (Rush Family) – Rush, Juncus - fruits
Liliaceae – (Lily Family) – Calochortus, Mariposa Lily, Fritillaria, Chocolate Lily - leaves and flowers
Melanthiaceae – (Camas Family) – Zigadenus, Camas - leaves and flower
Nolinaceae – (Nolina Family) – Nolina, Bear-Grass - flowers or fruits
Orchidaceae – (Orchid Family) – Orchid, Coralroot, Rein Orchid – closeup of flowers
Poaceae – (Grass Family) – Grass - leaves and fruits
Themidaceae – (Brodiaea Family) – Goldenstar, Blue Dicks, Wild Hyacinth, Brodiaea - leaves and flowers
Typhaceae – (Cattail Family) – Cattail, Typha – leaves especially at base where clasping stem, and flowering/fruitletting spikes

For more information about the San Diego County Plant Atlas, a project of the San Diego Natural History Museum, visit our website at <https://www.sdnhm.org/plant-atlas/> or email us at plantatlas@sdnhm.org or call 619.255.0298