

# Species Commonly Confused with *Caulerpa*

**Vision for key:** We designed this key to distinguish among marine seaweed and invertebrate species commonly found in the saltwater aquarium trade that may be confused with species of *Caulerpa*. This is a companion key to our "*Caulerpa* Species Identification Key" (orange cover) and is primarily for those not familiar with organisms in the aquarium trade. If you have difficulty with identification, please see contact info on back page of key.

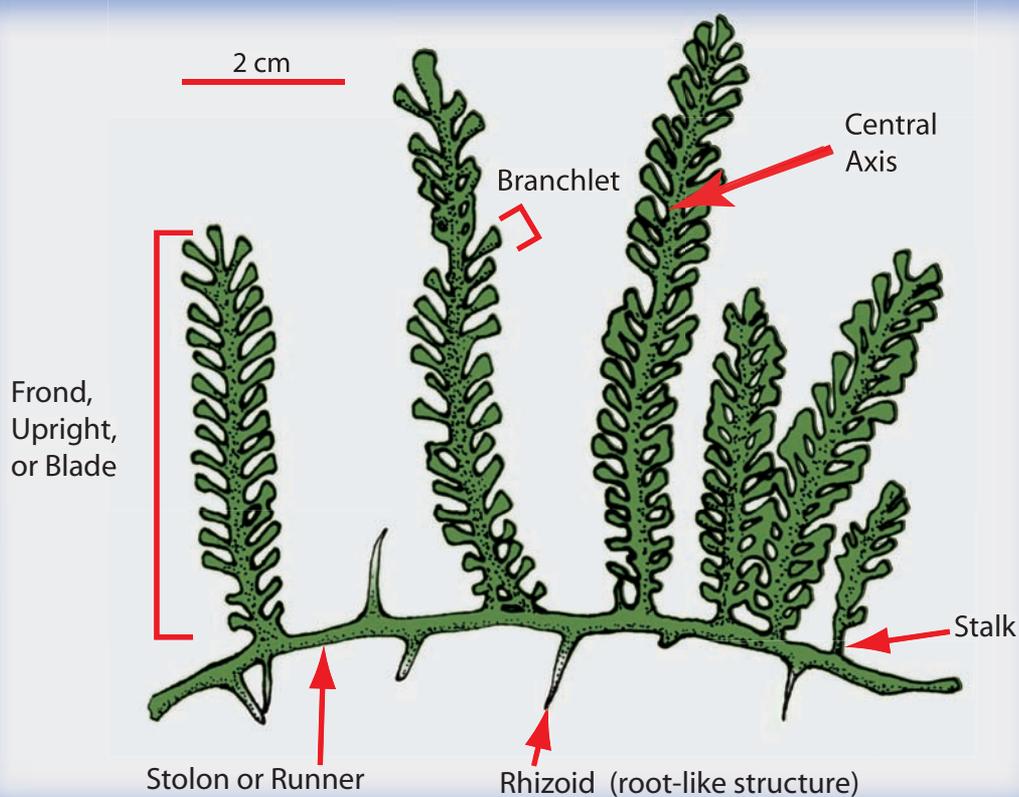
**United States Law:** It is illegal to import or transport *Caulerpa taxifolia* aquarium strain across state lines including internet sale (Federal Noxious Weed Act, 1999; Federal Plant Protection Act, 2000).

**California State Law:** It is illegal to possess, transport, transfer, release alive, import, or sell *Caulerpa taxifolia*, *Caulerpa sertularioides*, *Caulerpa mexicana*, *Caulerpa ashmeadii*, *Caulerpa scalpelliformis*, *Caulerpa racemosa* (and all varieties of *C. racemosa*), *Caulerpa cupressoides*, *Caulerpa verticillata*, and *Caulerpa floridana* (California Fish and Game Code 2300).

**City of San Diego Law:** Bans the possession, sale, and transport of all *Caulerpa* species within city limits (City of San Diego Ordinance 18967)

**Note:** Some of the non-*Caulerpa* species displayed in this guide may be prohibited by certain local, state, and/or federal laws.

Please see the "*Caulerpa* Species Identification Key" (orange cover) for a detailed view of *Caulerpa* species commonly found in the aquarium trade.



***Caulerpa* species** are bright green seaweeds and have blades (fronds) arising from an obvious green runner. Runner attaches alga to substrate with small root-like structures (rhizoids), similar to terrestrial ivy. These seaweeds feel smooth and are filled with fluid. They are flexible; however if damaged, white liquid will ooze from the site of the wound. There are no native *Caulerpa* species in California. Native species of *Caulerpa* are found along the east and west coasts of Florida, including the Florida Keys. *Caulerpa prolifera* is also found in North Carolina.



Seaweeds in red boxes are *Caulerpa* species that could be confused with other salt water seaweed and invertebrate species.

## Feather Algae

Photo: Dr. Linda Walters



**Feather *Caulerpa***  
**Color:** Bright green.  
**Runner:** Yes.  
**Characteristics:** Feathery blades that are smooth and flexible. Up to 25cm high.

Photo: Keeki Stender



### *Laurencia*

**Color:** Beige, pink, dark red, or purple with dark red/purple tips. Under intense sunlight: bright green.  
**Runner:** No runner.  
**Characteristics:** Feathery or bushy. Up to 25 cm high, blade diameter 1 – 2 mm.

Photo: Dr. Linda Walters



Photo: Dr. Linda Walters



### *Bryopsis*

**Color:** Dark green.  
**Runner:** Yes  
**Characteristics:** Feathery blades that are delicate and flexible. Up to 10 cm high.

Photo: Dr. Frederik Leljaert



### *Gracilaria*

**Color:** Dark red/purple. Under intense sunlight: tan to green.  
**Runner:** No runner.  
**Characteristics:** Few to many branches creating a feathery appearance. Rubbery to brittle and flexible. Blade diameter 0.2 - 2.5 cm. Up to 40 cm high.

Photo: Dr. Frederik Leljaert



### *Gelidiella*

**Color:** Dark red/purple.  
**Runner:** Small runners, difficult to detach from substrate.  
**Characteristics:** Feathery branches or few irregular branches. Wiry and stiff. Blades up to 5 cm high, narrow diameter (< 0.5 cm).

## Grape Algae

Photo: Dr. Ante Zuljevic



### *Grape Caulerpa*

**Color:** Bright green.  
**Runner:** Yes.  
**Characteristics:** Branches resemble bunches of "grapes": spherical to club-like. Up to 15 cm high.

Photo: Keeki Stender



### *Botryocladia (Red Grape Caulerpa)*

**Color:** Dark red to maroon.  
**Runner:** A few species have red runners.  
**Characteristics:** Individual or clusters of oval to tear-shaped balloon-like blades (up to 3 cm). Smooth, full of water.

Photo: Dr. Heeren Verbruggen



### *Valonia*

**Color:** Yellow/green to dark green; reflects light.  
**Runner:** No runner.  
**Characteristics:** Clusters of large cylinders, irregular or club-shaped cells (up to 4 cm). Water filled, easy to pop.

Photo: Keeki Stender



### *Valonia (AKA Ventricaria)*

**Color:** Dark green; reflects light.  
**Runner:** No runner.  
**Characteristics:** Large individual or loosely connected clusters of balloon-shaped cells (up to 10 cm). Water filled, easy to pop.

## Flat Algae & Seagrass

Photo: Dr. John Huismann



### *Flat Caulerpa*

**Color:** Bright green.  
**Runner:** Yes.  
**Characteristics:** Flat, elongate to oval fronds resembling grass blades (up to 15 cm), delicate or leathery.

Photo: Keeki Stender



### *Halimeda*

**Color:** Light yellow, bright or dark green.  
**Runner:** No runner.  
**Characteristics:** Segments oval, disc-like, tear-drop, or tri-lobed. Calcified (stiff). Up to 25 cm high.

Photo: Dr. Tom Schills



### *Ulva*

**Color:** Bright green.  
**Runner:** No runner.  
**Characteristics:** Blades are ruffled-flat, thin, easily torn. Up to 70 cm across.

Photo: Dr. Heeren Verbruggen



### *Udoetea*

**Color:** Bright to dark green.  
**Runner:** No runner.  
**Characteristics:** Fan-shaped, leathery, calcified blades, sturdy stalk. Up to 30 cm high.

Photo: Raphael Ritson-Williams



### *Turtle Grass (Thalassia)*

**Color:** Bright to dark green  
**Runner:** Yes, 3-6 mm diameter, white/brown.  
**Characteristics:** Grass-like plants, up to 1 m high. 2 – 6 blades emerge as bundles from runner. Blades: up to 1.5 cm wide, parallel veins along length, round tip.



## Toothed Margin Algae



Photo: Dr. John Huismann

### Toothed Margin *Caulerpa*

**Color:** Bright green.  
**Runner:** Yes.  
**Characteristics:** Toothed margins are wedge to cone-shaped with pointed tips. Up to 25 cm high.



Photo: Dr. Peter Wirtz

### *Halimeda*

**Color:** Light yellow, bright or dark green. Shaded segments may have little color.  
**Runner:** No runner.  
**Characteristics:** Segments oval, disc-like, tear-drop, or tri-lobed and may have a center rib. Little to heavy calcification (stiffening). Up to 25 cm high.



Photo: Dr. Frederik Leljaert

### *Gracilaria*

**Color:** Dark red/purple. Under intense sunlight: tan to green.  
**Runner:** No runner.  
**Characteristics:** Few to many branches creating a feathery appearance. Rubbery to brittle and flexible. Upto 40 cm high. Blade diameter: 0.2 - 2.5 cm.



Photo: Kathrine Grablow

### *Sargassum*

**Color:** Golden to dark brown.  
**Runner:** No runner.  
**Characteristics:** Distinct midrib, may have toothed margins. Air bladders are oval/spherical. Tough and leathery. Length >1 m, blade width <1 cm.

## Fuzzy Algae

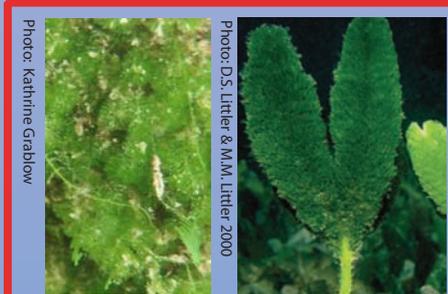


Photo: Kathrine Grablow

Photo: D.S. Litter & M.M. Litter 2000

### Fuzzy *Caulerpa*

**Color:** Bright green.  
**Runner:** Yes.  
**Characteristics:** Finely branched blades creating a mat or whorl of branches along solid (up to 25 cm).

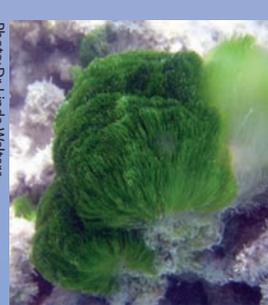


Photo: Dr. Linda Walters

### *Chlorodesmis*

**Color:** Yellow/green to bright green.  
**Runner:** No runner.  
**Characteristics:** Long (8 cm) flexible filaments, tightly packed clumps/tufts.



Photo: Dr. John Huismann

### *Penicillus*

**Color:** Bright to dark green.  
**Runner:** No runner.  
**Characteristics:** Single calcified stalk, stiff calcified shaving-brush cap. Up to 25 cm high.

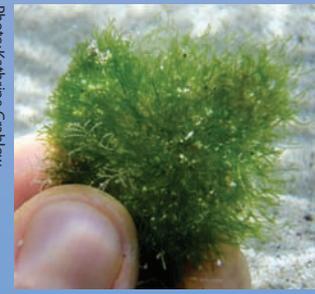


Photo: Kathrine Grablow

### *Derbesia*

**Color:** Yellow/green to bright green.  
**Runner:** No runner.  
**Characteristics:** Fine, thin, tangled, flexible filaments (1 - 5 cm long).



Photo: Susan Zaleski

### *Chaetomorpha*

**Color:** Yellow/green to bright green.  
**Runner:** No runner.  
**Characteristics:** Forms clumps that can exceed 1 m in each direction. Spaghetti-like strand diameter < 0.5 cm.

## Invertebrates



Photo: J. Watanabe

### Bryozoan (*Bugula*)

**Color:** Tan to dark purple.  
**Runner:** No runner.  
**Characteristics:** Stiff colony branches that curve inward toward central axis. Up to 8 cm high.



Photo: Dr. Linda Walters

### Sea Plume

**Color:** White, gray, purple, or yellow.  
**Runner:** No runner.  
**Characteristics:** Soft corals, bushy clusters of feather-like plumes. Visible feeding structures feel slimy. Individuals can exceed 2 m in height.



Photo: Kathrine Grablow

### Feather Duster Worm



Photo: Dr. Linda Walters

### Christmas Tree Worms

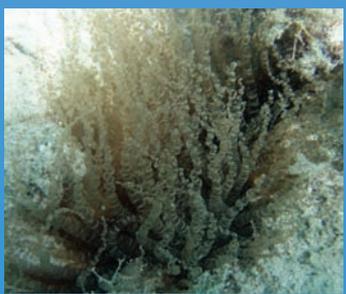


Photo: Kathrine Grablow

### Corkscrew Anemone



Photo: Kathrine Grablow

### Giant Anemone

**Easiest distinguishing characteristic:** These living worms and anemones will retract into tube or crevice if disturbed.

## Disposal of *Caulerpa* and any other unwanted plants and animals:



### To Learn More:

<http://www.usc.edu/org/seagrant/caulerpa/index.html>

**Questions? Want copies of this key or our complimentary "*Caulerpa* Species Identification Key?"**

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#### References

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<http://seanet.stanford.edu/Bryozoa/index.html>

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