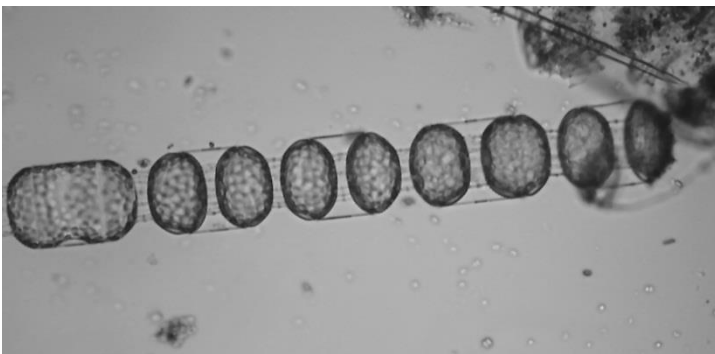
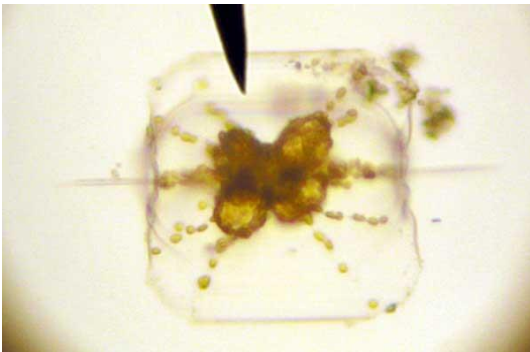




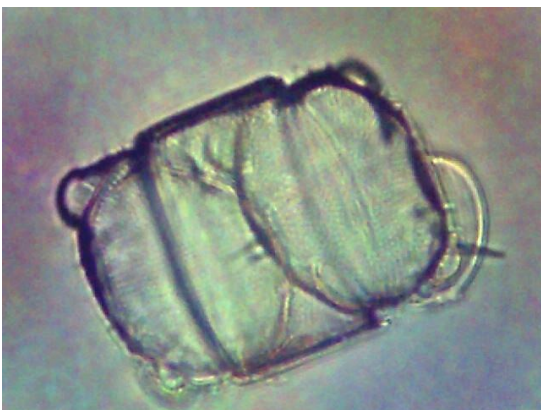
Organism name	Diatom (chains – <i>Chaetoceros</i>)
Phylum Classification	Protista, Chrysophyta
Characteristics	Single-celled autotrophs with SiO ₂ or shells
Habitat Class	Plankton
Feeding Method	Producer
Notes	SiO ₂ shells; ornate shell design.
Source of picture	M. Dubose, San Francisco Bay



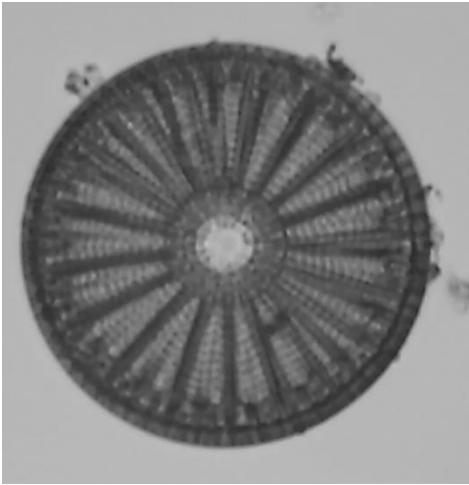
Organism name	Diatom (chains – <i>Stephanopyxis</i>)
Phylum Classification	Protista, Chrysophyta
Characteristics	Single-celled autotrophs with SiO ₂ or shells
Habitat Class	Plankton
Feeding Method	Producer
Notes	SiO ₂ shells; ornate shell design.
Source of picture	M. Dubose, San Francisco Bay



Organism name	Diatoms
Phylum Classification	Protista, Chrysophyta
Characteristics	Single-celled autotrophs with SiO ₂ or shells
Habitat Class	Plankton
Feeding Method	Producer
Notes	SiO ₂ shells; ornate shell design.
Source of picture	K. Wiese, San Francisco Bay



Organism name	Diatoms (pillow)
Phylum Classification	Protista, Chrysophyta
Characteristics	Single-celled autotrophs with SiO ₂ or shells
Habitat Class	Plankton
Feeding Method	Producer
Notes	SiO ₂ shells; ornate shell design.
Source of picture	Ocan 1Lab – WARD's slide of recent marine diatoms



Organism name	Diatoms (centric) -- Coscinodiscus
Phylum Classification	Protista, Chrysophyta
Characteristics	Single-celled autotrophs with SiO ₂ or shells
Habitat Class	Plankton
Feeding Method	Producer
Notes	SiO ₂ shells; ornate shell design.
Source of picture	M. Dubose, San Francisco Bay



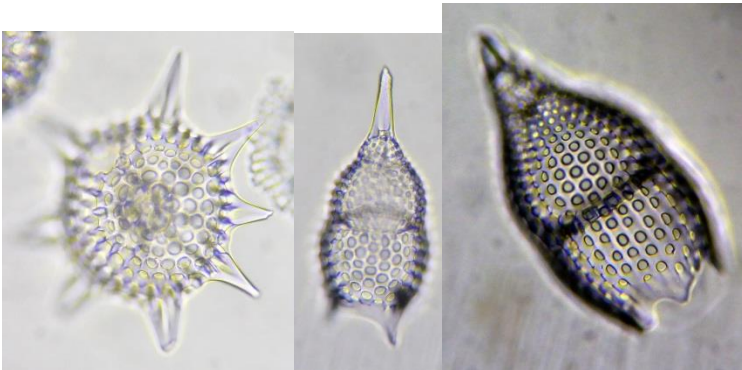
Organism name	Diatom (<i>Isthmia nervosa</i>)
Phylum Classification	Protista, Chrysophyta
Characteristics	Single-celled autotrophs with SiO ₂ or shells
Habitat Class	Plankton
Feeding Method	Producer
Notes	SiO ₂ shells; ornate shell design.
Source of picture	M. Dubose, San Francisco Bay



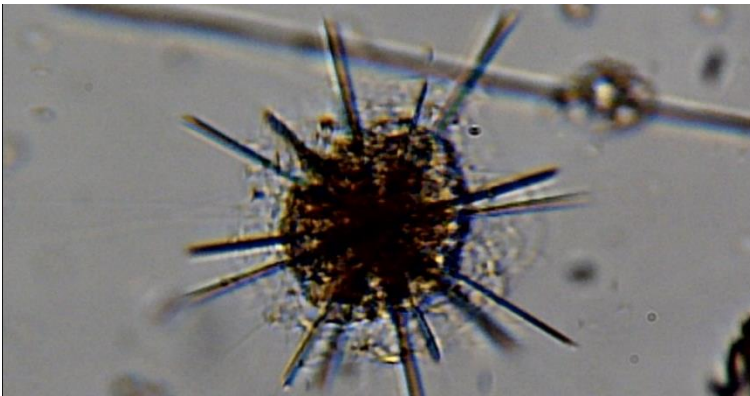
Organism name	Foraminifera (<i>globigerina</i>)
Phylum Classification	Protista, Sarcodina, Rhizopodea
Characteristics	Single cell, CaCO ₃ shell, spines on shell allow for capturing prey; holes in shell allow for movement and feeding through cellular extensions
Habitat Class	Plankton
Feeding Method	Suspension Feeder
Source of picture	M. Dubose, San Francisco Bay



Organism name	Foraminifera
Phylum Classification	Protista, Sarcodina, Rhizopodea
Characteristics	Single cell, CaCO ₃ shell, spines on shell allow for capturing prey; holes in shell allow for movement and feeding through cellular extensions
Habitat Class	Plankton
Feeding Method	Suspension Feeder
Source of picture	M. Dubose, San Francisco Bay



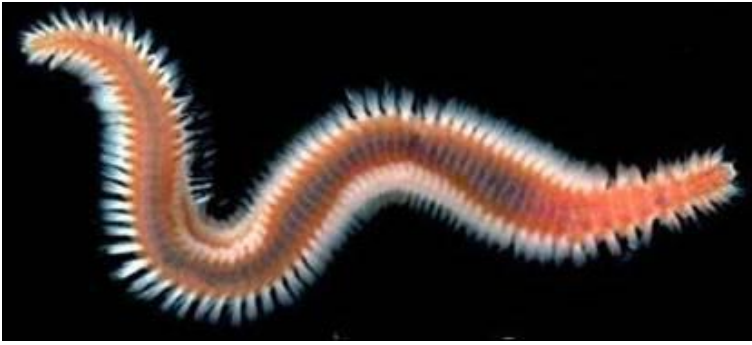
Organism name	Radiolaria
Phylum Classification	Protista, Sarcodina, Actinopodea
Characteristics	Single cell, SiO ₂ shell, spines on shell allow for capturing prey; holes in shell allow for movement and feeding through cellular extensions
Habitat Class	Plankton
Feeding Method	Suspension Feeder
Sample location	San Francisco Bay
Source of picture	K. Wiese



Organism name	Radiolaria (<i>Acanthometron</i>)
Phylum Classification	Protista, Sarcodina, Actinopodea
Characteristics	Single cell, SiO ₂ shell, spines on shell allow for capturing prey; holes in shell allow for movement and feeding through cellular extensions
Habitat Class	Plankton
Feeding Method	Suspension Feeder
Sample location	San Francisco Bay
Source of picture	M. Dubose



Organism name	Tube worm
Phylum Classification	Animal, Annelid, Polychaete
Characteristics	Segmented worm with bristles on each segment
Habitat Class	Benthos
Feeding Method	Filter feeder
Sample location	Pillar Point/Moss Beach
Source of picture	K. Wiese



Organism name	Piling worm
Phylum Classification	Animal, Annelid, Polychaete
Characteristics	Segmented worm with bristles on each segment
Habitat Class	Benthos
Feeding Method	Filter feeder
Sample location	Pier pilings
Source of picture	Unknown (web)



Organism name	Polychaete worm larvae
Phylum Classification	Animal, Annelid, Polychaete
Characteristics	Segmented worm with bristles on each segment, about 3 mm long
Habitat Class	Plankton
Feeding Method	Filter feeder
Sample location	San Francisco Bay
Source of picture	K. Wiese



Organism name	Polychaete worm larvae
Phylum Classification	Animal, Annelid, Polychaete
Characteristics	Segmented worm with bristles on each segment, about 3 mm long
Habitat Class	Plankton
Feeding Method	Filter feeder
Sample location	San Francisco Bay
Source of picture	K. Wiese



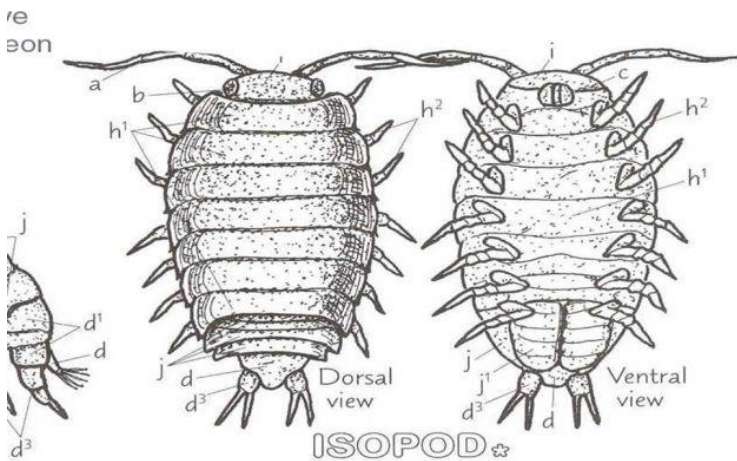
Organism name	Polychaete worm larvae (trochophore)
Phylum Classification	Animal, Annelid, Polychaete
Characteristics	Segmented worm with bristles on each segment, about 1 mm wide
Habitat Class	Plankton
Feeding Method	Filter feeder
Sample location	San Francisco Bay
Source of picture	K. Wiese



Organism name	Polychaete worm larvae -- troctophore
Phylum Classification	Animal, Annelid, Polychaete
Characteristics	Segmented worm with bristles on each segment, about 1 mm wide
Habitat Class	Plankton
Feeding Method	Filter feeder
Sample location	San Francisco Bay
Source of picture	K. Wiese



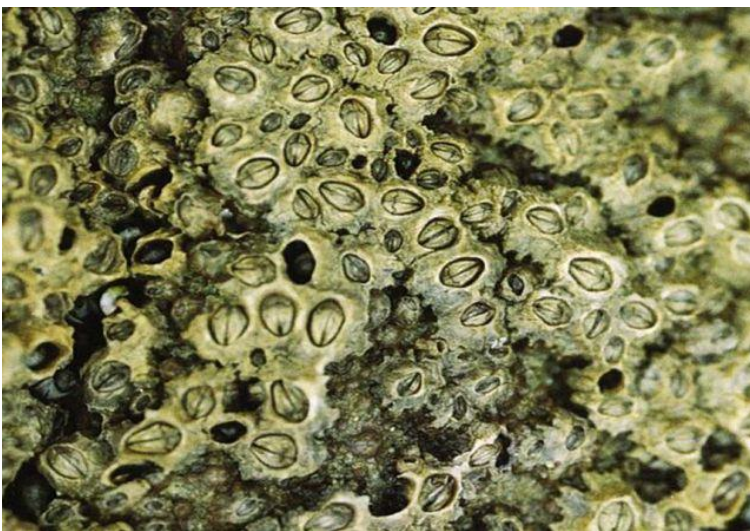
Organism name	Amphipod (amphithoe)
Phylum Classification	Animal, Arthropod
Characteristics	Exoskeleton, jointed appendages, antennae; Lives amongs piling critters or on kelp -- note legs are NOT identical
Habitat Class	Plankton (some species are benthic)
Feeding Method	Predator
Sample location	San Francisco Bay
Source of picture	M. Dubose



Organism name	Isopod
Phylum Classification	Animal, Arthropod
Characteristics	Exoskeleton, jointed appendages, antennae; Lives amongs piling critters or on kelp -- note legs are identical
Habitat Class	Benthos
Feeding Method	Predator or grazer
Sample location	
Source of picture	Tom Niesen, 2nd Edition, 2000, Marine Biology Coloring Book Drawing



Organism name	Gooseneck barnacles
Phylum Classification	Animal, Arthropod
Characteristics	Exoskeleton, jointed appendages (inside); Like a crab attached to a rock -- body and feet inside -- feet extended to filter from water
Habitat Class	Benthos
Feeding Method	Filter feeder
Sample location	Rodeo Beach, California
Source of picture	K. Wiese



Organism name	Buckshot barnacles
Phylum Classification	Animal, Arthropod
Characteristics	Exoskeleton, jointed appendages (inside); Like a crab attached to a rock -- body and feet inside -- feet extended to filter from water
Habitat Class	Benthos – rocky intertidal and SF Bay
Feeding Method	Filter feeder
Sample location	
Source of picture	



Organism name	Nauplius larval barnacle
Phylum Classification	Animal, Arthropod
Characteristics	Exoskeleton, jointed appendages (inside); 1 mm or less long – larval stage only.
Habitat Class	Plankton
Feeding Method	Filter feeder
Sample location	Unknown: www.microscopy-uk.org.uk
Source of picture	(c) Wim van Egmond



Organism name	Nauplius larval copepod
Phylum Classification	Animal, Arthropod
Characteristics	Exoskeleton, jointed appendages (inside); 1 mm or less long – larval stage only.
Habitat Class	Plankton
Feeding Method	Filter feeder
Sample location	San Francisco Bay
Source of picture	M. Dubose



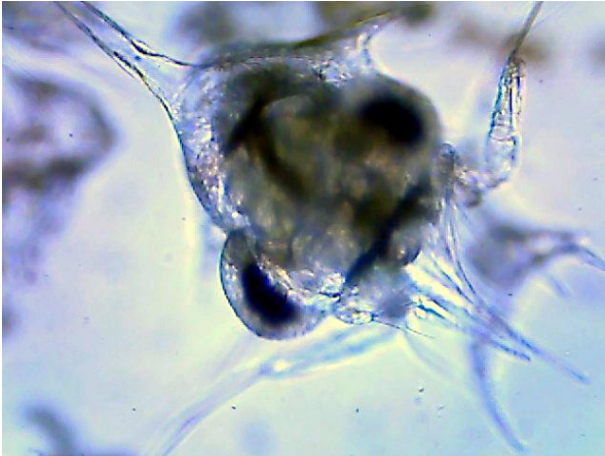
Organism name	Copepod
Phylum Classification	Animal, Arthropod
Characteristics	Exoskeleton, jointed appendages, antennae. This sample: 2 mm.
Habitat Class	Plankton
Feeding Method	Filter feeder
Sample location	San Francisco Bay
Source of picture	M. Dubose



Organism name	Kelp crab
Phylum Classification	Animal, Arthropod
Characteristics	Exoskeleton, jointed appendages, antennae – eats mostly kelp
Habitat Class	Benthos
Feeding Method	Grazer (mostly); Predator (when kelp seasonally dies back)
Sample location	Rodeo Beach, California
Source of picture	K. Wiese



Organism name	Hermit crab
Phylum Classification	Animal, Arthropod
Characteristics	Exoskeleton, jointed appendages, antennae – lives inside discarded gastropod shell
Habitat Class	Benthos – rocky intertidal and SF Bay
Feeding Method	Deposit Feeder
Sample location	
Source of picture	



Organism name	Crab zoea – larvae
Phylum Classification	Animal, Arthropod
Characteristics	Exoskeleton, jointed appendages, antennae
Habitat Class	Planktonic
Feeding Method	Filter feeder
Sample location	San Francisco Bay
Source of picture	K. Wiese



Organism name	Skeleton “shrimp” Caprella sp.
Phylum Classification	Animal, Arthropod
Characteristics	Exoskeleton, jointed appendages, antennae
Habitat Class	Benthic
Feeding Method	Filter feeder
Sample location	San Francisco Bay Fouling Organism
Source of picture	Noah Project



Organism name	Mussels
Phylum Classification	Animal, Mollusc, Bivalve
Characteristics	Mantle, Foot, Visceral Mass -- two symmetrical shells -- siphons.
Habitat Class	Benthos
Feeding Method	Filter Feeder
Sample location	Pillar Point/Moss Beach
Source of picture	K. Wiese



Organism name	Boring Clam
Phylum Classification	Animal, Mollusc, Bivalve
Characteristics	Mantle, Foot, Visceral Mass -- two symmetrical shells -- siphons. Burrows through and lives in rocks. This sample ~ 1 inch wide at top.
Habitat Class	Benthos
Feeding Method	Filter Feeder
Sample location	Pillar Point/Moss Beach
Source of picture	K. Wiese



Organism name	Mollusc gastropod larvae (veliger)
Phylum Classification	Animal, Mollusc, Gastropod
Characteristics	Developing – see cilia and early siphons. This sample ~ 0.5 mm wide
Habitat Class	Plankton
Feeding Method	Filter Feeder
Sample location	San Francisco Bay
Source of picture	K. Wiese



Organism name	Tidepool Sculpin
Phylum Classification	Animal, Chordata, Vertebrata, Bony Fish
Characteristics	Backbone, Bony skeleton, Operculum, External fertilization,
Habitat Class	Nektobenthos
Feeding Method	Predator
Sample location	Pillar Point/Moss Beach
Source of picture	K. Wiese



Organism name	Moray Eel and Wolf Eel
Phylum Classification	Animal, Chordata, Vertebrata, Bony Fish
Characteristics	Backbone, Bony skeleton, Operculum, External fertilization, Powerfully strong jaws -- no paired fins
Habitat Class	Nektobenthos
Feeding Method	Predator
Sample location	Aquarium of the Bay – SF Bay
Source of picture	



Organism name	Anchovies or Sardines
Phylum Classification	Animal, Chordata, Vertebrata, Bony Fish
Characteristics	Backbone, Bony skeleton, Operculum, External fertilization,
Habitat Class	Nekton
Feeding Method	Filter Feeders
Sample location	Aquarium of the Bay – SF Bay
Source of picture	K. Wiese



Organism name	Giant Sea Bass
Phylum Classification	Animal, Chordata, Vertebrata, Bony Fish
Characteristics	Backbone, Bony skeleton, Operculum, External fertilization, Gets up to 7 feet long and 500 lbs;
Habitat Class	Nekton
Feeding Method	Predator
Sample location	Aquarium of the Bay – SF Bay
Source of picture	K. Wiese



Organism name	Monkeyface Eel
Phylum Classification	Animal, Chordata, Vertebrata, Bony Fish
Characteristics	Backbone, Bony skeleton, Operculum, External fertilization,
Habitat Class	Nektobenthos
Feeding Method	Predator
Sample location	Aquarium of the Bay – SF Bay
Source of picture	K. Wiese



Organism name	Striped Sea Bass
Phylum Classification	Animal, Chordata, Vertebrata, Bony Fish
Characteristics	Backbone, Bony skeleton, Operculum, External fertilization, Introduced species in SF Bay
Habitat Class	Nekton
Feeding Method	Predator
Sample location	Aquarium of the Bay – SF Bay
Source of picture	R. Solorzano



Organism name	Sturgeon
Phylum Classification	Animal, Chordata, Vertebrata, Bony Fish
Characteristics	Bony skeleton (though this species does have a mostly cartilaginous skeleton), Operculum, External fertilization, Swim bladders; Mouth on bottom of head, with barbels to sense movement of crustaceans in sediment
Habitat Class	Nektobenthos
Feeding Method	Deposit feeder (mostly molluscs) and occasionally predators
Sample location	Aquarium of the Bay – SF Bay
Source of picture	R. Solorzano



Organism name	Starry Flounder
Phylum Classification	Animal, Chordata, Vertebrata, Bony Fish
Characteristics	Backbone, Bony skeleton, Operculum, External fertilization; Camouflage and hangs out in sand
Habitat Class	Nektobenthos
Feeding Method	Deposit feeder, Predator
Sample location	Aquarium of the Bay – SF Bay
Source of picture	K. Wiese



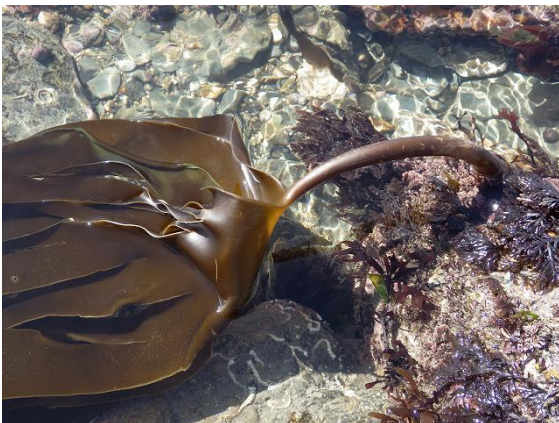
Organism name	Sea Palm
Phylum Classification	Protista, Brown Algae
Characteristics	Brown accessory pigment, no roots or covered seeds -- can get nutrients and gases through all body parts; Holdfast attaches to rock
Habitat Class	Benthos
Feeding Method	Producer
Sample location	Pillar Point/Moss Beach
Source of picture	K. Wiese



Organism name	Rock weed
Phylum Classification	Protista, Brown Algae
Characteristics	Brown accessory pigment, no roots or covered seeds -- can get nutrients and gases through all body parts; Holdfast attaches to rock
Habitat Class	Benthos
Feeding Method	Producer
Sample location	Pillar Point/Moss Beach
Source of picture	K. Wiese



Organism name	Feather Boa Kelp
Phylum Classification	Protista, Brown Algae
Characteristics	Brown accessory pigment, no roots or covered seeds -- can get nutrients and gases through all body parts; Holdfast attaches to rock
Habitat Class	Benthos
Feeding Method	Producer
Sample location	Pillar Point/Moss Beach
Source of picture	K. Wiese



Organism name	Oar Blade Kelp
Phylum Classification	Protista, Brown Algae
Characteristics	Brown accessory pigment, no roots or covered seeds -- can get nutrients and gases through all body parts; Holdfast attaches to rock
Habitat Class	Benthos
Feeding Method	Producer
Sample location	Pillar Point/Moss Beach
Source of picture	David Fenwick



Organism name	Encrusting Bryozoan
Phylum Classification	Animal, Bryozoan
Characteristics	Single layer of CaCO ₃ houses, each individual (no connection) -- with no lophophorate animals inside; colony attached to inside of rock, now dead
Habitat Class	Benthos
Feeding Method	Filter Feeder
Sample location	Pillar Point, Moss Beach
Source of picture	K. Wiese



Organism name	Encrusting Bryozoan
Phylum Classification	Animal, Bryozoan
Characteristics	Single layer of CaCO ₃ houses, each individual (no connection) -- with lophophorate animals inside; living colony attached to mussel
Habitat Class	Benthic
Feeding Method	Filter Feeder
Sample location	San Francisco Bay Pier Pilings
Source of picture	K. Wiese



Organism name	Branching Bryozoan
Phylum Classification	Animal, Bryozoan
Characteristics	Branching structure of CaCO ₃ houses, each individual (no connection) -- with lophophorate animals inside; living colony attached to pilings. Tiny (each less than 1 mm).
Habitat Class	Benthos
Feeding Method	Filter Feeder
Sample location	Monterey Bay Harbor
Source of picture	Copyright: L. & L. Langstroth (www.bscit.berkeley.edu)



Organism name	Branching Bryozoan
Phylum Classification	Animal, Bryozoan
Characteristics	Branching structure of CaCO ₃ houses, each individual (no connection) -- with lophophorate animals inside; living colony attached to pilings. Tiny (each less than 1 mm).
Habitat Class	Benthos
Feeding Method	Filter Feeder
Sample location	San Francisco Bay – Pete’s Harbor
Source of picture	K. Wiese



Organism name	Sea Lions
Phylum Classification	Animal, Chordata, Vertebrata, Mammalia, Carnivora, Pinniped
Characteristics	External ears, rear flippers move around forward for easier movement on land;
Habitat Class	Nekton
Feeding Method	Predator
Sample location	San Francisco Bay – Pier 49
Source of picture	K. Wiese



Organism name	Seals
Phylum Classification	Animal, Chordata, Vertebrata, Mammalia, Carnivora, Pinniped
Characteristics	No external ears; can't move easily on land
Habitat Class	Nekton
Feeding Method	Predator
Sample location	Moss Beach
Source of picture	K. Wiese



Organism name	Leopard Shark
Phylum Classification	Animal, Chordata, Vertebrata, Cartilaginous fish
Characteristics	Cartilaginous skeleton, gill slits, Internal fertilization, no swim bladders
Habitat Class	Nektobenthos
Feeding Method	Deposit Feeder and Predator
Sample location	Aquarium of the Bay – SF Bay
Source of picture	K. Wiese



Organism name	Bat Ray
Phylum Classification	Animal, Chordata, Vertebrata, Cartilaginous fish
Characteristics	Cartilaginous skeleton, gill slits, Internal fertilization, no swim bladders
Habitat Class	Nektobenthos
Feeding Method	Deposit Feeder and Predator
Sample location	Aquarium of the Bay – SF Bay
Source of picture	K. Wiese



Organism name	Big Skate
Phylum Classification	Animal, Chordata, Vertebrata, Cartilaginous fish
Characteristics	Cartilaginous skeleton, gill slits, Internal fertilization, no swim bladders
Habitat Class	Nektobenthos
Feeding Method	Deposit Feeder and Predator
Sample location	Aquarium of the Bay – SF Bay
Source of picture	K. Wiese



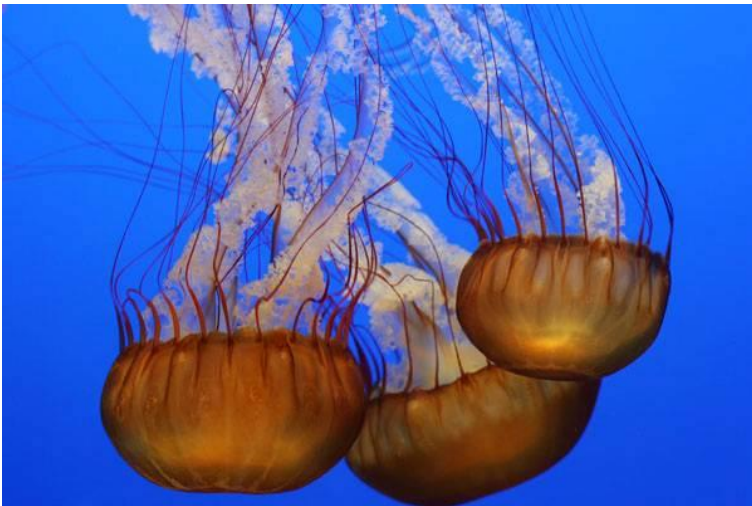
Organism name	Red Octopus <i>Octopus rubescens</i>
Phylum Classification	Animal, Mollusc, Cephalopod
Characteristics	Foot separated into eight tentacles; radula modified into beak; Highly intelligent. Most intelligent invertebrate. Skin can change color and texture to match surroundings.
Habitat Class	Nektobenthos
Feeding Method	Predator
Sample location	Aquarium of the Bay
Source of picture	K. Wiese



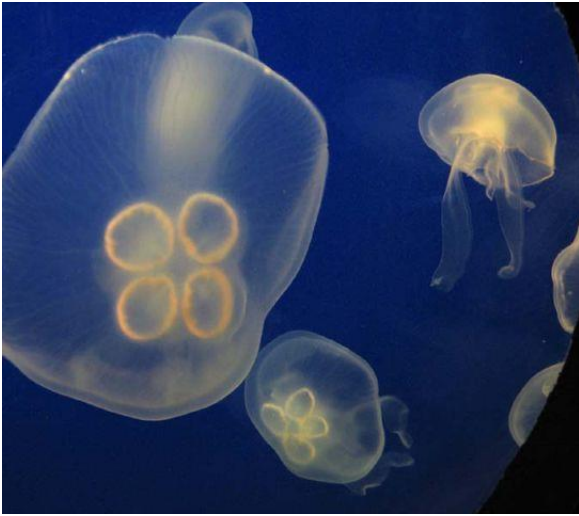
Organism name	Sunburst Anemone
Phylum Classification	Animal, Cnidarian, Anthozoa
Characteristics	Single opening (for food and waste), surrounded by tentacles with stinging cells, no brain or eyes; Can be as large as 8 inches across; not found in colonies.
Habitat Class	Benthos
Feeding Method	Suspension Feeder
Sample location	Moss Beach
Source of picture	K. Wiese



Organism name	Aggregating Anemone
Phylum Classification	Animal, Cnidarian, Anthozoa
Characteristics	Single opening (for food and waste), surrounded by tentacles with stinging cells, no brain or eyes; Found in clone colonies.
Habitat Class	Benthos
Feeding Method	Suspension Feeder
Sample location	Moss Beach
Source of picture	K. Wiese



Organism name	Sea nettle
Phylum Classification	Animal, Cnidarian, Scyphozoa
Characteristics	Single opening (for food and waste), surrounded by tentacles with stinging cells, no brain or eyes
Habitat Class	Plankton
Feeding Method	Suspension Feeder
Sample location	Aquarium of the Bay – SF Bay
Source of picture	F. Parchaso



Organism name	Moon Jelly
Phylum Classification	Animal, Cnidarian, Scyphozoa
Characteristics	Single opening (for food and waste), surrounded by tentacles with stinging cells, no brain or eyes
Habitat Class	Plankton
Feeding Method	Suspension Feeder
Sample location	Aquarium of the Bay – SF Bay
Source of picture	K. Wiese



Organism name	Piling anemone
Phylum Classification	Animal, Cnidarian, Anthozoa
Characteristics	Single opening (for food and waste), surrounded by tentacles with stinging cells, no brain or eyes
Habitat Class	Benthos
Feeding Method	Suspension Feeder
Sample location	Moss Beach
Source of picture	K. Wiese



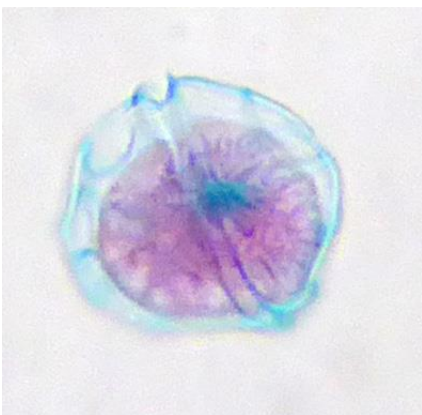
Organism name	Solitary coral
Phylum Classification	Animal, Cnidarian, Anthozoa
Characteristics	Single opening (for food and waste), surrounded by tentacles with stinging cells, no brain or eyes
Habitat Class	Benthos
Feeding Method	Suspension Feeder
Sample location	Moss Beach
Source of picture	K. Wiese



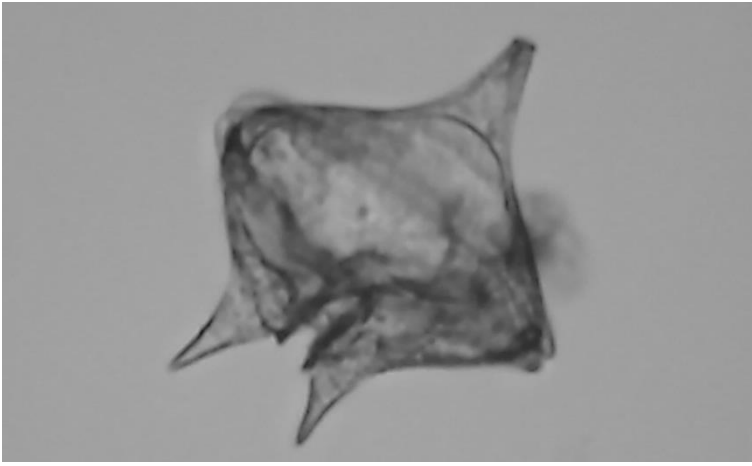
Organism name	Northern Red Anemone (<i>Urticina felina</i>)
Phylum Classification	Animal, Cnidarian, Anthozoa
Characteristics	Single opening (for food and waste), surrounded by tentacles with stinging cells, no brain or eyes
Habitat Class	Benthos
Feeding Method	Suspension Feeder
Sample location	Moss Beach
Source of picture	Lohanne Santos Harvey



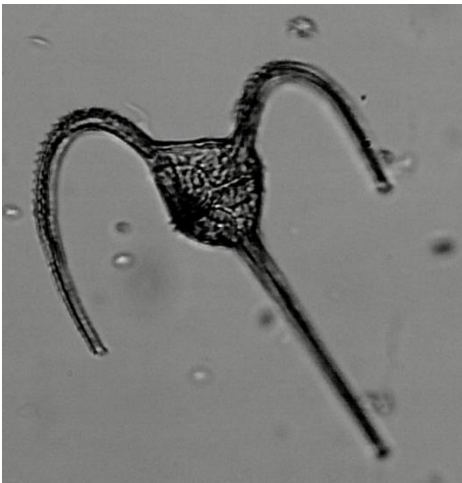
Organism name	Dinoflagellates (<i>Noctiluca</i>)
Phylum Classification	Protista, Pyrrophyta
Characteristics	Single cell, no shell (thick glucose outer layer), 2 flagella, autotrophic and heterotrophic varieties; Some bioluminescent, some highly toxic, leading to red tides
Habitat Class	Plankton
Feeding Method	Producers (autotroph)
Sample location	San Francisco Bay
Source of picture	M. Dubose



Organism name	Dinoflagellate
Phylum Classification	Protista, Pyrrophyta
Characteristics	Single cell, no shell (thick glucose outer layer), 2 flagella, autotrophic and heterotrophic varieties; Some bioluminescent, some highly toxic, leading to red tides
Habitat Class	Plankton
Feeding Method	Producers (autotroph)
Sample location	Microscope Slide
Source of picture	K.Wiese



Organism name	Dinoflagellates (<i>Protoperidinium</i>)
Phylum Classification	Protista, Pyrrophyta
Characteristics	Single cell, no shell (thick glucose outer layer), 2 flagella, autotrophic and heterotrophic varieties; Some bioluminescent, some highly toxic, leading to red tides
Habitat Class	Plankton
Feeding Method	Predators (heterotroph)
Sample location	San Francisco Bay
Source of picture	M. Dubose



Organism name	Dinoflagellates (<i>Ceratium</i>)
Phylum Classification	Protista, Pyrrophyta
Characteristics	Single cell, no shell (thick glucose outer layer), 2 flagella, autotrophic and heterotrophic varieties; Some bioluminescent, some highly toxic, leading to red tides
Habitat Class	Plankton
Feeding Method	Predators (heterotroph)
Sample location	San Francisco Bay
Source of picture	M. Dubose



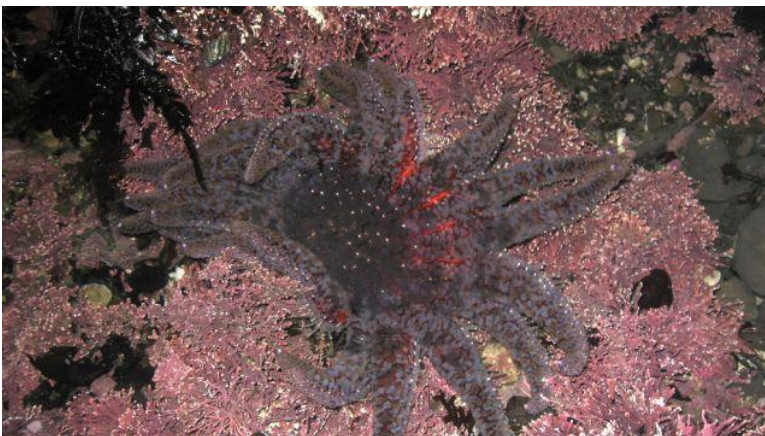
Organism name	Bat Star
Phylum Classification	Animal, Echinoderm
Characteristics	Generally a 5-radiating structure, tube feet, spines (or vestigial spines), water vascular system, no eyes or brain, endoskeleton made of calcareous plates
Habitat Class	Benthos
Feeding Method	Predator
Sample location	Moss Beach
Source of picture	K. Wiese



Organism name	Ochre Star
Phylum Classification	Animal, Echinoderm
Characteristics	Generally a 5-radiating structure, tube feet, spines (or vestigial spines), water vascular system, no eyes or brain, endoskeleton made of calcareous plates
Habitat Class	Benthos
Feeding Method	Predator
Sample location	Moss Beach
Source of picture	K. Wiese



Organism name	Leather Star
Phylum Classification	Animal, Echinoderm
Characteristics	Generally a 5-radiating structure, tube feet, spines (or vestigial spines), water vascular system, no eyes or brain, endoskeleton made of calcareous plates
Habitat Class	Benthos
Feeding Method	Predator
Sample location	Moss Beach
Source of picture	K. Wiese



Organism name	Sunflower Star
Phylum Classification	Animal, Echinoderm
Characteristics	Generally a 5-radiating structure, tube feet, spines (or vestigial spines), water vascular system, no eyes or brain, endoskeleton made of calcareous plates
Habitat Class	Benthos
Feeding Method	Predator
Sample location	Moss Beach
Source of picture	K. Wiese



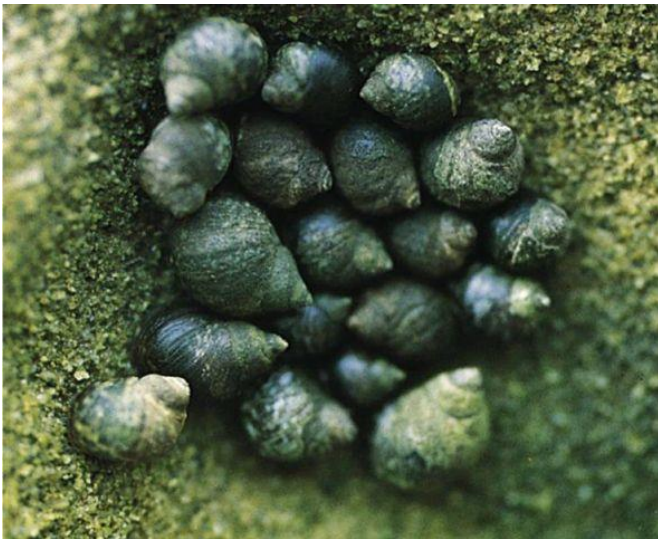
Organism name	Purple Sea Urchin
Phylum Classification	Animal, Echinoderm
Characteristics	Generally a 5-radiating structure, tube feet, spines (or vestigial spines), water vascular system, no eyes or brain, endoskeleton made of calcareous plates; excavates holes in rocks for homes
Habitat Class	Benthos
Feeding Method	Grazer (eats kelp)
Sample location	Moss Beach
Source of picture	K. Wiese



Organism name	Purple Sea Urchin
Phylum Classification	Animal, Echinoderm
Characteristics	Generally a 5-radiating structure, tube feet, spines (or vestigial spines), water vascular system, no eyes or brain, endoskeleton made of calcareous plates; excavates holes in rocks for homes
Habitat Class	Benthos
Feeding Method	Grazer (eats kelp)
Sample location	Moss Beach
Source of picture	K. Wiese



Organism name	California Sea Cucumber
Phylum Classification	Animal, Echinoderm
Characteristics	Generally a 5-radiating structure, tube feet, spines (or vestigial spines), water vascular system, no eyes or brain, endoskeleton made of calcareous plates;
Habitat Class	Benthos
Feeding Method	Deposit Feeder and Filter Feeder
Sample location	Aquarium of the Bay – SF Bay
Source of picture	K. Wiese



Organism name	Periwinkle Snails
Phylum Classification	Animal, Mollusc, Gastropod
Characteristics	Soft bodied, usually protected by a hard, univalve, often coiled CaCO ₃ shell. Three parts to body: muscular foot, visceral mass, mantle. Many have toothed radula; Most have gills, anus, and excretory pores. Obvious heads, flow-through digestion, well-developed nervous system
Habitat Class	Benthos
Feeding Method	Grazer
Sample location	Moss Beach
Source of picture	K. Wiese



Organism name	Black Turban Snail
Phylum Classification	Animal, Mollusc, Gastropod
Characteristics	Soft bodied, usually protected by a hard, univalve, often coiled CaCO ₃ shell. Three parts to body: muscular foot, visceral mass, mantle. Many have toothed radula; Most have gills, anus, and excretory pores. Obvious heads, flow-through digestion, well-developed nervous system
Habitat Class	Benthos
Feeding Method	Grazer
Sample location	Moss Beach
Source of picture	K. Wiese



Organism name	Owl Limpet
Phylum Classification	Animal, Mollusc, Gastropod
Characteristics	Soft bodied, usually protected by a hard, univalve, often coiled CaCO ₃ shell. Three parts to body: muscular foot, visceral mass, mantle. Many have toothed radula; Most have gills, anus, and excretory pores. Obvious heads, flow-through digestion, well-developed nervous system
Habitat Class	Benthos
Feeding Method	Grazer
Sample location	Moss Beach
Source of picture	K. Wiese



Organism name	Owl and Ribbed Limpets
Phylum Classification	Animal, Mollusc, Gastropod
Characteristics	Soft bodied, usually protected by a hard, univalve, often coiled CaCO ₃ shell. Three parts to body: muscular foot, visceral mass, mantle. Many have toothed radula; Most have gills, anus, and excretory pores. Obvious heads, flow-through digestion, well-developed nervous system
Habitat Class	Benthos
Feeding Method	Grazer
Sample location	Moss Beach
Source of picture	K. Wiese



Organism name	Nudibranch: Sea Lemon
Phylum Classification	Animal, Mollusc, Gastropod
Characteristics	Soft bodied. Three parts to body: muscular foot, visceral mass, mantle. Toothed radula; gills, anus, and excretory pores. Obvious heads, flow-through digestion, well-developed nervous system; no shell. Eats hydroids and anemones, moving the stinging cells to their backs for reuse in their cerata. No shells.
Habitat Class	Benthos
Feeding Method	Predator
Sample location	Moss Beach
Source of picture	K. Wiese



Organism name	Nudibranch: Hermissenda
Phylum Classification	Animal, Mollusc, Gastropod
Characteristics	Soft bodied. Three parts to body: muscular foot, visceral mass, mantle. Toothed radula; gills, anus, and excretory pores. Obvious heads, flow-through digestion, well-developed nervous system; no shell. Eats hydroids and anemones, moving the stinging cells to their backs for reuse in their cerata. No shells.
Habitat Class	Benthos
Feeding Method	Predator
Sample location	Moss Beach
Source of picture	K. Wiese



Organism name	Nudibranch: Salted Dorid
Phylum Classification	Animal, Mollusc, Gastropod
Characteristics	Soft bodied. Three parts to body: muscular foot, visceral mass, mantle. Toothed radula; gills, anus, and excretory pores. Obvious heads, flow-through digestion, well-developed nervous system; no shell. Eats hydroids and anemones, moving the stinging cells to their backs for reuse in their cerata. No shells.
Habitat Class	Benthos
Feeding Method	Predator
Sample location	Moss Beach
Source of picture	K. Wiese



Organism name	White-knight Nudibranch, <i>Doris odhner</i>
Phylum Classification	Animal, Mollusc, Gastropod
Characteristics	Soft bodied, usually protected by a hard, univalve, often coiled CaCO ₃ shell. Three parts to body: muscular foot, visceral mass, mantle. Many have toothed radula; Most have gills, anus, and excretory pores. Obvious heads, flow-through digestion, well-developed nervous system; Eats hydroids and anemones, moving the stinging cells to their backs for reuse in their cerata. No shells.
Habitat Class	Benthos
Feeding Method	Predator
Sample location	Moss Beach
Source of picture	K. Wiese



Organism name	Nudibranch, <i>Cadlina modesta</i>
Phylum Classification	Animal, Mollusc, Gastropod
Characteristics	Soft bodied. Three parts to body: muscular foot, visceral mass, mantle. Toothed radula; gills, anus, and excretory pores. Obvious heads, flow-through digestion, well-developed nervous system; no shell. Eats hydroids and anemones, moving the stinging cells to their backs for reuse in their cerata. No shells.
Habitat Class	Benthos
Feeding Method	Predator
Sample location	Moss Beach
Source of picture	K. Wiese



Organism name	Nudibranch: San Diego or Ringed Dorid
Phylum Classification	Animal, Mollusc, Gastropod
Characteristics	Soft bodied. Three parts to body: muscular foot, visceral mass, mantle. Toothed radula; gills, anus, and excretory pores. Obvious heads, flow-through digestion, well-developed nervous system; no shell. Eats hydroids and anemones, moving the stinging cells to their backs for reuse in their cerata. No shells.
Habitat Class	Benthos
Feeding Method	Predator
Sample location	Moss Beach
Source of picture	K.Wiese



Organism name	Nudibranch: Crimson Dorid
Phylum Classification	Animal, Mollusc, Gastropod
Characteristics	Soft bodied. Three parts to body: muscular foot, visceral mass, mantle. Toothed radula; gills, anus, and excretory pores. Obvious heads, flow-through digestion, well-developed nervous system; no shell. Eats hydroids and anemones, moving the stinging cells to their backs for reuse in their cerata. No shells.
Habitat Class	Benthos
Feeding Method	Predator
Sample location	Moss Beach
Source of picture	K. Wiese



Organism name	Nudibranch: Opalescent Hermissenda
Phylum Classification	Animal, Mollusc, Gastropod
Characteristics	Soft bodied. Three parts to body: muscular foot, visceral mass, mantle. Toothed radula; gills, anus, and excretory pores. Obvious heads, flow-through digestion, well-developed nervous system; no shell. Eats hydroids and anemones, moving the stinging cells to their backs for reuse in their cerata. No shells.
Habitat Class	Benthos
Feeding Method	Predator
Sample location	Moss Beach
Source of picture	Lohanne Santos Harvey



Organism name	Nudibranch: Spotted maculate
Phylum Classification	Animal, Mollusc, Gastropod
Characteristics	Soft bodied. Three parts to body: muscular foot, visceral mass, mantle. Toothed radula; gills, anus, and excretory pores. Obvious heads, flow-through digestion, well-developed nervous system; no shell. Eats hydroids and anemones, moving the stinging cells to their backs for reuse in their cerata. No shells.
Habitat Class	Benthos
Feeding Method	Predator
Sample location	Moss Beach
Source of picture	K. Wiese



Organism name	Nudibranch: Triopha maculate
Phylum Classification	Animal, Mollusc, Gastropod
Characteristics	Soft bodied. Three parts to body: muscular foot, visceral mass, mantle. Toothed radula; gills, anus, and excretory pores. Obvious heads, flow-through digestion, well-developed nervous system; no shell. Eats hydroids and anemones, moving the stinging cells to their backs for reuse in their cerata. No shells.
Habitat Class	Benthos
Feeding Method	Predator
Sample location	Pillar Point
Source of picture	K. Wiese



Organism name	Nudibranch: Triopha catalinae
Phylum Classification	Animal, Mollusc, Gastropod
Characteristics	Soft bodied. Three parts to body: muscular foot, visceral mass, mantle. Toothed radula; gills, anus, and excretory pores. Obvious heads, flow-through digestion, well-developed nervous system; no shell. Eats hydroids and anemones, moving the stinging cells to their backs for reuse in their cerata. No shells.
Habitat Class	Benthos
Feeding Method	Predator
Sample location	Pillar Point
Source of picture	K. Wiese



Organism name	Abalone
Phylum Classification	Animal, Mollusc, Gastropod
Characteristics	Soft bodied, usually protected by a hard, univalve, often coiled CaCO ₃ shell. Three parts to body: muscular foot, visceral mass, mantle. Many have toothed radula; Most have gills, anus, and excretory pores. Obvious heads, flow-through digestion, well-developed nervous system;
Habitat Class	Benthos
Feeding Method	Grazer
Sample location	Moss Beach
Source of picture	K. Wiese



Organism name	Sea lettuce
Phylum Classification	Protista, Green Algae
Characteristics	Mostly multiple chlorophyll pigments (might have some accessory ones), no roots or covered seeds -- can get nutrients and gases through all body parts
Habitat Class	Benthos
Feeding Method	Producer
Sample location	San Francisco Bay Pier Pilings
Source of picture	K. Wiese



Organism name	Ocean Pin Cushion ("moss")
Phylum Classification	Protista, Green Algae
Characteristics	Mostly multiple chlorophyll pigments (might have some accessory ones), no roots or covered seeds -- can get nutrients and gases through all body parts
Habitat Class	Benthos
Feeding Method	Producer
Sample location	San Francisco Bay Pier Pilings
Source of picture	K. Wiese



Organism name	Surf Grass
Phylum Classification	Plant
Characteristics	Roots through which nutrients are received. Covered seeds. Gas exchange through leaves. Waxy coating on leaves prevents excessive water loss.
Habitat Class	Benthos
Feeding Method	Producer
Sample location	Moss Beach
Source of picture	K. Wiese



Organism name	Gumboot Chiton
Phylum Classification	Animal, Mollusk, Polyplacophora
Characteristics	Soft bodied. Shell with eight plates (articulated). Head reduced. Three parts to body: muscular foot, visceral mass, mantle. Toothed radula; gills, anus, and excretory pores. Flow-through digestion, well-developed nervous system. Scrapes algae off rock with radula.
Habitat Class	Benthos
Feeding Method	Grazer
Sample location	Moss Beach
Source of picture	K. Wiese



Organism name	Mossy Chiton
Phylum Classification	Animal, Mollusk, Polyplacophora
Characteristics	Soft bodied. Shell with eight plates (articulated). Head reduced. Three parts to body: muscular foot, visceral mass, mantle. Toothed radula; gills, anus, and excretory pores. Flow-through digestion, well-developed nervous system. Scrapes algae off rock with radula.
Habitat Class	Benthos
Feeding Method	Grazer
Sample location	Moss Beach
Source of picture	K. Wiese



Organism name	Lined Chiton
Phylum Classification	Animal, Mollusk, Polyplacophora
Characteristics	Soft bodied. Shell with eight plates (articulated). Head reduced. Three parts to body: muscular foot, visceral mass, mantle. Toothed radula; gills, anus, and excretory pores. Flow-through digestion, well-developed nervous system. Scrapes algae off rock with radula.
Habitat Class	Benthos
Feeding Method	Grazer
Sample location	Moss Beach
Source of picture	K. Wiese



Organism name	Woody Chiton (<i>Mopalia lignose</i>)
Phylum Classification	Animal, Mollusk, Polyplacophora
Characteristics	Soft bodied. Shell with eight plates (articulated). Head reduced. Three parts to body: muscular foot, visceral mass, mantle. Toothed radula; gills, anus, and excretory pores. Flow-through digestion, well-developed nervous system. Scrapes algae off rock with radula.
Habitat Class	Benthos
Feeding Method	Grazer
Sample location	Moss Beach
Source of picture	K. Wiese



Organism name	Black or Leather Chiton (<i>Katharina tunicata</i>)
Phylum Classification	Animal, Mollusk, Polyplacophora
Characteristics	Soft bodied. Shell with eight plates (articulated). Head reduced. Three parts to body: muscular foot, visceral mass, mantle. Toothed radula; gills, anus, and excretory pores. Flow-through digestion, well-developed nervous system. Scrapes algae off rock with radula.
Habitat Class	Benthos
Feeding Method	Grazer
Sample location	Gazos Creek
Source of picture	K. Wiese



Organism name	Encrusting sponge
Phylum Classification	Animal, porifera
Characteristics	Simplest of all marine animals. Porous. No nervous, digestive, respiratory, or circulatory system. Diffusion of wastes, nutrients, gases in and out cell walls. (Separate holes for in/out.) Water drawn into pores by beating of flagellated cells inside body. Body walls supported by spicules (SiO ₂ or CaCO ₃). Filters 3000x body volume/day.
Habitat Class	Benthos
Feeding Method	Filter Feeder
Sample location	San Francisco Bay Pier Pilings
Source of picture	K. Wiese



Organism name	Purple Encrusting Sponge (<i>Haliclona permollis</i>)
Phylum Classification	Animal, porifera
Characteristics	Simplest of all marine animals. Porous. No nervous, digestive, respiratory, or circulatory system. Diffusion of wastes, nutrients, gases in and out cell walls. (Separate holes for in/out.) Water drawn into pores by beating of flagellated cells inside body. Body walls supported by spicules (SiO ₂ or CaCO ₃). Filters 3000x body volume/day.
Habitat Class	Benthos
Feeding Method	Filter Feeder
Sample location	Moss Beach
Source of picture	K. Wiese



Organism name	Branching sponge (<i>Clathria prolifera</i>) RED BEARD SPONGE (<i>Microciona prolifera</i>)
Phylum Classification	Animal, porifera
Characteristics	Simplest of all marine animals. Porous. No nervous, digestive, respiratory, or circulatory system. Diffusion of wastes, nutrients, gases in and out cell walls. (Separate holes for in/out.) Water drawn into pores by beating of flagellated cells inside body. Body walls supported by spicules (SiO ₂ or CaCO ₃). Filters 3000x body volume/day. Sample was found attached to a mussel.
Habitat Class	Benthos
Feeding Method	Filter Feeder
Sample location	San Francisco Bay Pier Pilings

Source of picture	K. Wiese
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Organism name	Sea sacs
Phylum Classification	Protista, Red algae
Characteristics	In addition to chlorophyll, also a red accessory pigment; no roots or covered seeds -- can get nutrients and gases through all body parts. Air in sacs helps them float vertically from holdfast at base
Habitat Class	Benthos
Feeding Method	Producer
Sample location	Moss Beach
Source of picture	K. Wiese



Organism name	Encrusting Coralline Red Algae
Phylum Classification	Protista, Red algae
Characteristics	In addition to chlorophyll, also a red accessory pigment; no roots or covered seeds -- can get nutrients and gases through all body parts.
Habitat Class	Benthos
Feeding Method	Producer
Sample location	Moss Beach
Source of picture	K. Wiese



Organism name	Articulated Coralline Red Algae
Phylum Classification	Protista, Red algae
Characteristics	In addition to chlorophyll, also a red accessory pigment; no roots or covered seeds -- can get nutrients and gases through all body parts.
Habitat Class	Benthos
Feeding Method	Producer
Sample location	Moss Beach
Source of picture	K. Wiese



Organism name	Neptune's Washcloth
Phylum Classification	Protista, Red algae
Characteristics	In addition to chlorophyll, also a red accessory pigment; no roots or covered seeds -- can get nutrients and gases through all body parts.
Habitat Class	Benthos
Feeding Method	Producer
Sample location	Moss Beach
Source of picture	K. Wiese



Organism name	Iridescent Algae
Phylum Classification	Protista, Red algae
Characteristics	In addition to chlorophyll, also a red accessory pigment; no roots or covered seeds -- can get nutrients and gases through all body parts.
Habitat Class	Benthos
Feeding Method	Producer
Sample location	Moss Beach
Source of picture	K. Wiese



Organism name	Fir Needle
Phylum Classification	Protista, Red algae
Characteristics	In addition to chlorophyll, also a red accessory pigment; no roots or covered seeds -- can get nutrients and gases through all body parts.
Habitat Class	Benthos
Feeding Method	Producer
Sample location	Unknown
Source of picture	James Watanabe



Organism name	Solitary Stalked Tunicate
Phylum Classification	Animal, Chordata, Urochordata
Characteristics	Notochord present in embryonic stages (but later lost); Covered by tunic with 2 openings: water in and water out.
Habitat Class	Benthos
Feeding Method	Filter Feeder
Sample location	San Francisco Bay Pier Pilings
Source of picture	K. Wiese



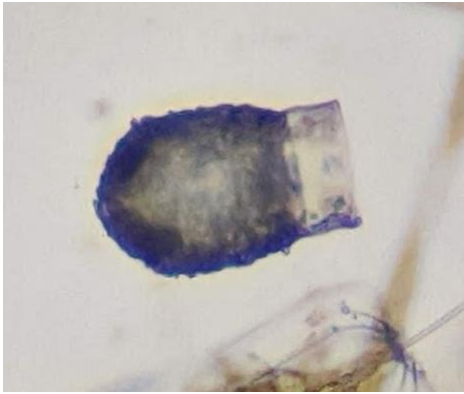
Organism name	Sea grapes
Phylum Classification	Animal, Chordata, Urochordata
Characteristics	Notochord present in embryonic stages (but later lost); Covered by tunic with 2 openings: water in and water out.
Habitat Class	Benthos
Feeding Method	Filter Feeder
Sample location	San Francisco Bay Pier Pilings
Source of picture	K. Wiese



Organism name	Compound Tunicate
Phylum Classification	Animal, Chordata, Urochordata
Characteristics	Notochord present in embryonic stages (but later lost); Covered by tunic with 2 openings: water in and out. Compound tunicates share single out siphon and individual in siphons.
Habitat Class	Benthos
Feeding Method	Filter Feeder
Sample location	San Francisco Bay Pier Pilings
Source of picture	K. Wiese



Organism name	Glassy Plum Hydroid
Phylum Classification	Animal, Cnidarian
Characteristics	Polyp-like organisms that live in a single structure together. Stinging cells on tentacles.
Habitat Class	Benthos
Feeding Method	Suspension Feeder
Sample location	Princeton Harbor Pier Pilings
Source of picture	J. Southworth



Organism name	Tintinnid
Phylum Classification	Protista, ciliate
Characteristics	Single-celled heterotrophs. No shells. Cilia (hairs) create water flow into mouth. They swim in a jumping pattern. Vase-shaped external cases. Up to 0.2 mm wide.
Habitat Class	Plankton
Feeding Method	Filter Feeder
Sample location	North Point Plankton
Source of picture	J. Southworth