

## **Larval fish collected and identified along the California Coast**

Since the mid-1980s TENERA has conducted a large number of studies of the ichthyoplankton along the California coastline from San Francisco Bay and the Sacramento-San Joaquin River Delta to San Diego Bay. The following are lists of the larval fish collected and identified by TENERA from the various locations. All collections were conducted using 335 micron mesh plankton nets. Written field and laboratory procedures with QA/QC reviews were used throughout all of these studies. All identifications were completed using a variety of references including but not limited to Moser 1996, Matarese et al 1989, Feeney 1992, and the Alaska Fisheries Science Center website (<http://access.afsc.noaa.gov/ichthyo/index.cfm>). The identification of some of the *Sebastes* was determined and verified by DNA analysis. The size range of many of the fish was determined by using a microscope based image analysis software program with customized add-ons. TENERA has also worked with larval otoliths to assist in determining an age/length relationship for certain of the collected larval fish families.

### **Larval fish collection locations:**

- Sacramento-San Joaquin River Delta
- San Francisco Bay
- Moss Landing and Elkhorn Slough
- Morro Bay National Estuary
- Central California Outer Coast
- Offshore of Ventura
- Santa Monica Bay
- Offshore of Los Angeles
- Alamitos Bay and LA/LB Harbor Complex
- Los Angeles Outer Coast
- San Diego Outer Coast
- Aqua Hedionda Lagoon and outer coast
- San Diego Bay

## Larval fish collected and identified from Sacramento-San Joaquin River Delta

| Order              | Family         | Taxon                                   | Common Name              |
|--------------------|----------------|---|--------------------------|
| Clupeiformes       | Clupeidae      | <i>Clupea pallasii</i>                  | Pacific herring          |
|                    | Clupeidae      | <i>Dorosoma petenense</i>               | threadfin shad           |
|                    | Engraulidae    | <i>Engraulis mordax</i>                 | northern anchovy         |
| Osmeriformes       | Osmeridae      | <i>Hypomesus pretiosus</i>              | surf smelt               |
|                    | Osmeridae      | <i>Hypomesus transpacificus</i>         | delta smelt              |
|                    | Osmeridae      | <i>Spirinchus thaleichthys</i>          | longfin smelt            |
| Cypriniformes      | Cyprinidae     | <i>Cyprinus</i> spp.                    | common carp              |
|                    | Cyprinidae     | <i>Notemigonus crysoleucas</i>          | golden shiner            |
|                    | Cyprinidae     | <i>Pogonichthys macrolepidotus</i>      | splittail                |
| Cyprinodontiformes | Fundulidae     | <i>Lucania parva</i>                    | rainwater killifish      |
| Gasterosteiformes  | Gasterosteidae | <i>Gasterosteus aculeatus</i>           | threespine stickleback   |
| Scorpaeniformes    | Cottidae       | <i>Cottus asper</i>                     | prickly sculpin          |
|                    | Cottidae       | <i>Leptocottus armatus</i>              | Pacific staghorn sculpin |
| Perciformes        | Centrarchidae  | <i>Lepomis</i> spp.                     | sunfishes                |
|                    | Centrarchidae  | <i>Micropterus salmoides</i>            | largemouth bass          |
|                    | Percidae       | <i>Percina macrolepida</i>              | bigscale logperch        |
|                    | Embiotocidae   | <i>Hysterocarpus traskii</i> (juvenile) | tule perch               |
|                    | Moronidae      | <i>Morone saxatilis</i>                 | striped bass             |
|                    | Gobiidae       | <i>Acanthogobius flavimanus</i>         | yellowfin goby           |
|                    | Gobiidae       | <i>Tridentiger</i> spp.                 | gobies                   |

**Larval fish collected and identified from San Francisco Bay**

| <b>Order</b>      | <b>Family</b>  | <b>Taxon</b>                       | <b>Common Name</b>       |
|-------------------|----------------|------------------------------------|--------------------------|
| Clupeiformes      | Clupeidae      | <i>Clupea pallasii</i>             | Pacific herring          |
|                   | Clupeidae      | Clupeidae                          | herrings                 |
|                   | Engraulidae    | Engraulidae                        | anchovies                |
|                   | Engraulidae    | <i>Engraulis mordax</i>            | northern anchovy         |
| Osmeriformes      | Osmeridae      | Osmeridae                          | smelts                   |
| Myctophiformes    | Myctophidae    | <i>Stenobranchius leucopsarus</i>  | northern lampfish        |
| Gadiformes        | Gadidae        | Gadidae                            | codfishes                |
|                   | Gadidae        | <i>Microgadus proximus</i>         | Pacific tomcod           |
| Ophidiiformes     | Bythitidae     | <i>Brosmophycis marginata</i>      | red brotula              |
| Atheriniformes    | Atherinopsidae | <i>Atherinops affinis</i>          | topsmelt                 |
|                   | Atherinopsidae | Atherinopsidae                     | silversides              |
|                   | Atherinopsidae | <i>Atherinopsis californiensis</i> | jacksmelt                |
| Gasterosteiformes | Syngnathidae   | Syngnathidae                       | pipefishes               |
|                   | Syngnathidae   | <i>Syngnathus leptorhynchus</i>    | bay pipefish             |
|                   | Syngnathidae   | <i>Syngnathus</i> spp.             | pipefishes               |
| Scorpaeniformes   | Scorpaenidae   | <i>Sebastes</i> spp.               | rockfishes               |
|                   | Hexagrammidae  | Hexagrammidae                      | greenlings               |
|                   | Hexagrammidae  | <i>Ophiodon elongatus</i>          | lingcod                  |
|                   | Hexagrammidae  | <i>Oxylebius pictus</i>            | painted greenling        |
|                   | Cottidae       | <i>Artedius lateralis</i>          | smoothhead sculpin       |
|                   | Cottidae       | <i>Artedius</i> spp.               | sculpins                 |
|                   | Cottidae       | <i>Clinocottus analis</i>          | wooly sculpin            |
|                   | Cottidae       | <i>Clinocottus</i> spp.            | sculpins                 |
|                   | Cottidae       | Cottidae                           | sculpins                 |
|                   | Cottidae       | <i>Cottus asper</i>                | prickly sculpin          |
|                   | Cottidae       | <i>Hemilepidotus spinosus</i>      | brown Irish lord         |
|                   | Cottidae       | <i>Hemilepidotus</i> spp.          | Irish lord               |
|                   | Cottidae       | <i>Leptocottus armatus</i>         | Pacific staghorn sculpin |
|                   | Cottidae       | <i>Oligocottus</i> spp.            | sculpins                 |
|                   | Cottidae       | <i>Scorpaenichthys marmoratus</i>  | cabezon                  |
|                   | Agonidae       | <i>Odontopyxis trispinosa</i>      | pygmy poacher            |
|                   | Agonidae       | <i>Stellerina xyosterna</i>        | pricklebreast poacher    |
|                   | Cyclopteridae  | Cyclopteridae                      | snailfishes              |
|                   | Cyclopteridae  | <i>Liparis</i> spp.                | snailfishes              |

*(table continued)*

**Larval fish collected and identified from San Francisco Bay (continued)**

| <b>Order</b>      | <b>Family</b>   | <b>Taxon</b>                      | <b>Common Name</b> |
|-------------------|-----------------|-----------------------------------|--------------------|
| Perciformes       |                 |                                   |                    |
|                   | Gobiesocidae    | Gobiesocidae                      | clingfishes        |
|                   | Gobiesocidae    | <i>Gobiesox</i> spp.              | clingfishes        |
|                   | Sciaenidae      | <i>Genyonemus lineatus</i>        | white croaker      |
|                   | Sciaenidae      | Sciaenidae                        | croakers           |
|                   | Sciaenidae      | <i>Seriphus politus</i>           | queenfish          |
|                   | Bathymasteridae | Bathymasteridae                   | ronquils           |
|                   | Blennidae       | <i>Hypsoblennius</i> spp.         | combtooth blennies |
|                   | Clinidae        | <i>Gibbonsia</i> spp.             | kelpfishes         |
|                   | Clinidae        | <i>Heterostichus rostratus</i>    | giant kelpfish     |
|                   | Chaenopsidae    | Chaenopsidae                      | tube blennies      |
|                   | Stichaeidae     | <i>Cebidichthys violaceus</i>     | monkeyface eel     |
|                   | Stichaeidae     | Stichaeidae                       | pricklebacks       |
|                   | Pholidae        | Pholidae                          | gunnels            |
|                   | Ammodytidae     | <i>Ammodytes hexapterus</i>       | Pacific sand lance |
|                   | Ammodytidae     | Ammodytidae                       | sand lances        |
|                   | Gobiidae        | <i>Acanthogobius flavimanus</i>   | yellowfin goby     |
|                   | Gobiidae        | CI goby complex                   | gobies             |
|                   | Gobiidae        | <i>Clevelandia ios</i>            | arrow goby         |
|                   | Gobiidae        | <i>Gillichthys mirabilis</i>      | longjaw mudsucker  |
|                   | Gobiidae        | <i>Ilypnus gilberti</i>           | cheekspot goby     |
|                   | Gobiidae        | <i>Lepidogobius lepidus</i>       | bay goby           |
|                   | Gobiidae        | <i>Rhinogobiops nicholsi</i>      | blackeye goby      |
| Pleuronectiformes |                 |                                   |                    |
|                   | Pleuronectidae  | <i>Isopsetta isolepis</i>         | butter sole        |
|                   | Pleuronectidae  | <i>Parophrys vetulus</i>          | English sole       |
|                   | Pleuronectidae  | <i>Platichthys stellatus</i>      | starry flounder    |
|                   | Pleuronectidae  | <i>Pleuronectes bilineatus</i>    | rock sole          |
|                   | Pleuronectidae  | Pleuronectidae                    | righteye flounders |
|                   | Pleuronectidae  | <i>Pleuronichthys guttulatus</i>  | diamond turbot     |
|                   | Pleuronectidae  | <i>Pleuronichthys</i> spp.        | turbots            |
|                   | Pleuronectidae  | <i>Pleuronichthys verticalis</i>  | hornyhead turbot   |
|                   | Pleuronectidae  | <i>Psettichthys melanostictus</i> | sand sole          |
|                   | Paralichthyidae | <i>Citharichthys sordidus</i>     | Pacific sanddab    |
|                   | Paralichthyidae | <i>Citharichthys</i> spp.         | sanddabs           |
|                   | Paralichthyidae | <i>Citharichthys stigmaeus</i>    | speckled sanddab   |
|                   | Paralichthyidae | Paralichthyidae                   | sand flounders     |
|                   | Paralichthyidae | <i>Paralichthys californicus</i>  | California halibut |

CI gobies complex comprises larvae of *Clevelandia ios* and/or *Ilypnus gilberti*.

**Larval fish collected and identified from Moss Landing and Elkhorn Slough**

| <b>Order</b>      | <b>Family</b>   | <b>Taxon</b>                       | <b>Common Name</b>      |
|-------------------|-----------------|------------------------------------|-------------------------|
| Clupeiformes      | Clupeidae       | <i>Clupea pallasii</i>             | Pacific herring         |
|                   | Clupeidae       | Clupeidae                          | herrings                |
|                   | Clupeidae       | <i>Sardinops sagax</i>             | Pacific sardine         |
|                   | Engraulidae     | <i>Engraulis mordax</i>            | northern anchovy        |
| Osmeriformes      | Osmeridae       | Osmeridae                          | smelts                  |
|                   | Argentinidae    | <i>Argentina sialis</i>            | Pacific argentine       |
| Myctophiformes    | Myctophidae     | <i>Leuroglossus stilbius</i>       | California smoothtongue |
|                   | Myctophidae     | <i>Lipolagus ochotensis</i>        | popeye blacksmelt       |
|                   | Myctophidae     | <i>Stenobranchius leucopsarus</i>  | northern lampfish       |
|                   | Myctophidae     | <i>Tarletonbeania crenularis</i>   | blue lanternfish        |
| Cypriniformes     | Catostomidae    | <i>Catostomus occidentalis</i>     | Sacramento sucker       |
| Ophidiiformes     | Ophidiidae      | Ophidiidae                         | cusks-eels              |
|                   | Bythitidae      | <i>Brosmophycis marginata</i>      | red brotula             |
| Belonodei         | Scomberesocidae | <i>Cololabis saira</i>             | Pacific saury           |
| Atheriniformes    | Atherinopsidae  | <i>Atherinops affinis</i>          | topsmelt                |
|                   | Atherinopsidae  | Atherinopsidae                     | silversides             |
|                   | Atherinopsidae  | <i>Atherinopsis californiensis</i> | jacksmelt               |
|                   | Atherinopsidae  | <i>Leuresthes tenuis</i>           | California grunion      |
| Gasterosteiformes | Aulorhynchidae  | <i>Aulorhynchus flavidus</i>       | tubesnout               |
|                   | Gasterosteidae  | <i>Gasterosteus aculeatus</i>      | threespine stickleback  |
|                   | Syngnathidae    | Syngnathidae                       | pipefishes              |
|                   | Syngnathidae    | <i>Syngnathus</i> spp.             | pipefishes              |
| Scorpaeniformes   | Scorpaenidae    | <i>Sebastes aurora</i>             | aurora rockfish         |
|                   | Scorpaenidae    | <i>Sebastes diploproa</i>          | splitnose rockfish      |
|                   | Scorpaenidae    | <i>Sebastes jordani</i>            | shortbelly rockfish     |
|                   | Scorpaenidae    | <i>Sebastes</i> spp.               | rockfishes              |
|                   | Scorpaenidae    | <i>Sebastolobus</i> spp.           | thornyheads             |
|                   | Hexagrammidae   | Hexagrammidae                      | greenlings              |
|                   | Hexagrammidae   | <i>Ophiodon elongatus</i>          | lingcod                 |
|                   | Hexagrammidae   | <i>Oxylebius pictus</i>            | painted greenling       |
|                   | Hexagrammidae   | <i>Zaniolepis</i> spp.             | combfishes              |
|                   | Cottidae        | <i>Artedius lateralis</i>          | smoothhead sculpin      |
|                   | Cottidae        | <i>Artedius</i> spp.               | sculpins                |
|                   | Cottidae        | <i>Clinocottus analis</i>          | wooly sculpin           |
|                   | Cottidae        | Cottidae                           | sculpins                |

(table continued)

## Larval fish collected and identified from Moss Landing and Elkhorn Slough (continued)

| Order                       | Family          | Taxon                              | Common Name              |
|-----------------------------|-----------------|------------------------------------|--------------------------|
| Scorpaeniformes (continued) |                 |                                    |                          |
|                             | Cottidae        | <i>Cottus asper</i>                | prickly sculpin          |
|                             | Cottidae        | <i>Leptocottus armatus</i>         | Pacific staghorn sculpin |
|                             | Cottidae        | <i>Oligocottus</i> spp.            | sculpins                 |
|                             | Cottidae        | <i>Ruscarius creaseri</i>          | roughcheek sculpin       |
|                             | Cottidae        | <i>Scorpaenichthys marmoratus</i>  | cabezon                  |
|                             | Agonidae        | Agonidae                           | poachers                 |
|                             | Agonidae        | <i>Xeneretmus latifrons</i>        | blackeye poacher         |
|                             | Liparidae       | <i>Liparis fucensis</i>            | slipskin snailfish       |
|                             | Liparidae       | <i>Liparis</i> spp.                | snailfishes              |
| Perciformes                 |                 |                                    |                          |
|                             | Gobiesocidae    | Gobiesocidae                       | clingfishes              |
|                             | Gobiesocidae    | <i>Gobiesox</i> spp.               | clingfishes              |
|                             | Sciaenidae      | <i>Genyonemus lineatus</i>         | white croaker            |
|                             | Bathymasteridae | Bathymasteridae                    | ronquils                 |
|                             |                 | Blennioidei                        | blennies                 |
|                             | Blennidae       | <i>Hypsoblennius</i> spp.          | combtooth blennies       |
|                             | Clinidae        | <i>Gibbonsia</i> spp.              | kelpfishes               |
|                             | Chaenopsidae    | Chaenopsidae                       | tube blennies            |
|                             | Stichaeidae     | <i>Cebidichthys violaceus</i>      | monkeyface eel           |
|                             | Stichaeidae     | Stichaeidae                        | pricklebacks             |
|                             | Pholidae        | Pholidae                           | gunnels                  |
|                             | Ammodytidae     | <i>Ammodytes hexapterus</i>        | Pacific sand lance       |
|                             | Gobiidae        | CIQ goby complex                   | gobies                   |
|                             | Gobiidae        | <i>Gillichthys mirabilis</i>       | longjaw mudsucker        |
|                             | Gobiidae        | <i>Lepidogobius lepidus</i>        | bay goby                 |
|                             | Gobiidae        | <i>Rhinogobiops nicholsi</i>       | blackeye goby            |
|                             | Gobiidae        | <i>Typhlogobius californiensis</i> | blind goby               |
| Pleuronectiformes           |                 |                                    |                          |
|                             | Pleuronectidae  | <i>Glyptocephalus zachirus</i>     | rex sole                 |
|                             | Pleuronectidae  | <i>Isopsetta isolepis</i>          | butter sole              |
|                             | Pleuronectidae  | <i>Lyopsetta exilis</i>            | slender sole             |
|                             | Pleuronectidae  | <i>Parophrys vetulus</i>           | English sole             |
|                             | Pleuronectidae  | <i>Platichthys stellatus</i>       | starry flounder          |
|                             | Pleuronectidae  | <i>Pleuronectes bilineatus</i>     | rock sole                |
|                             | Pleuronectidae  | Pleuronectidae                     | righteye flounders       |
|                             | Pleuronectidae  | <i>Pleuronichthys verticalis</i>   | hornyhead turbot         |
|                             | Pleuronectidae  | <i>Psettichthys melanostictus</i>  | sand sole                |
|                             | Paralichthyidae | <i>Citharichthys sordidus</i>      | Pacific sanddab          |
|                             | Paralichthyidae | <i>Citharichthys stigmaeus</i>     | speckled sanddab         |
|                             | Paralichthyidae | Paralichthyidae                    | sand flounders           |
|                             | Paralichthyidae | <i>Paralichthys californicus</i>   | California halibut       |

CIQ gobies complex comprises larvae of *Clevelandia ios*, *Ilypnus gilberti* and/or *Quietula y-cuada*.

## Larval fish collected and identified from Morro Bay National Estuary

| Order             | Family         | Taxon                              | Common Name               |
|-------------------|----------------|------------------------------------|---------------------------|
| Clupeiformes      | Clupeidae      | <i>Clupea pallasii</i>             | Pacific herring           |
|                   | Clupeidae      | Clupeidae                          | herrings                  |
|                   | Clupeidae      | <i>Sardinops sagax</i>             | Pacific sardine           |
|                   | Engraulidae    | <i>Engraulis mordax</i>            | northern anchovy          |
| Osmeriformes      | Osmeridae      | Osmeridae                          | smelts                    |
|                   | Argentinidae   | <i>Argentina sialis</i>            | Pacific argentine         |
| Myctophiformes    | Myctophidae    | <i>Diaphus theta</i>               | California headlight fish |
|                   | Myctophidae    | <i>Diogenichthys atlanticus</i>    | longfin lanternfish       |
|                   | Myctophidae    | <i>Lipolagus ochotensis</i>        | popeye blacksmelt         |
|                   | Myctophidae    | Myctophidae                        | lanternfishes             |
|                   | Myctophidae    | <i>Nannobranchium regalis</i>      | pinpoint lanternfish      |
|                   | Myctophidae    | <i>Nannobranchium ritteri</i>      | broadfin lampfish         |
|                   | Myctophidae    | <i>Nannobranchium</i> spp.         | lanternfishes             |
|                   | Myctophidae    | <i>Stenobranchius leucopsarus</i>  | northern lampfish         |
|                   | Myctophidae    | <i>Sternoptyx</i> spp.             | hatchetfishes             |
| Gadiformes        | Merlucciidae   | <i>Merluccius productus</i>        | Pacific hake              |
|                   |                |                                    |                           |
| Ophidiiformes     | Bythitidae     | <i>Brosmophycis marginata</i>      | red brotula               |
| Atheriniformes    | Atherinopsidae | <i>Atherinops affinis</i>          | topsmelt                  |
|                   | Atherinopsidae | Atherinopsidae                     | silversides               |
|                   | Atherinopsidae | <i>Atherinopsis californiensis</i> | jacksmelt                 |
| Lampridiformes    | Trachipteridae | Trachipteridae                     | ribbon fishes             |
|                   | Trachipteridae | <i>Trachipterus altivelis</i>      | king-of-the-salmon        |
| Gasterosteiformes | Aulorhynchidae | <i>Aulorhynchus flavidus</i>       | tubesnout                 |
|                   | Syngnathidae   | Syngnathidae                       | pipefishes                |
|                   | Syngnathidae   | <i>Syngnathus leptorhynchus</i>    | bay pipefish              |
|                   | Syngnathidae   | <i>Syngnathus</i> spp.             | pipefishes                |
| Scorpaeniformes   | Scorpaenidae   | <i>Sebastes aurora</i>             | aurora rockfish           |
|                   | Scorpaenidae   | <i>Sebastes</i> spp.               | rockfishes                |
|                   | Scorpaenidae   | <i>Sebastolobus</i> spp.           | thornyheads               |
|                   | Hexagrammidae  | Hexagrammidae                      | greenlings                |
|                   | Hexagrammidae  | <i>Oxylebius pictus</i>            | painted greenling         |
|                   | Hexagrammidae  | <i>Zaniolepis frenata</i>          | shortspine combfish       |
|                   | Hexagrammidae  | <i>Zaniolepis</i> spp.             | combfishes                |

(table continued)

**Larval fish collected and identified from Morro Bay National Estuary (continued)**

| <b>Order</b>                | <b>Family</b>   | <b>Taxon</b>                       | <b>Common Name</b>       |
|-----------------------------|-----------------|------------------------------------|--------------------------|
| Scorpaeniformes (continued) |                 |                                    |                          |
|                             | Cottidae        | <i>Artedius lateralis</i>          | smoothhead sculpin       |
|                             | Cottidae        | <i>Artedius</i> spp.               | sculpins                 |
|                             | Cottidae        | <i>Clinocottus analis</i>          | wooly sculpin            |
|                             | Cottidae        | Cottidae                           | sculpins                 |
|                             | Cottidae        | <i>Cottus asper</i>                | prickly sculpin          |
|                             | Cottidae        | <i>Icelinus</i> spp.               | sculpins                 |
|                             | Cottidae        | <i>Leptocottus armatus</i>         | Pacific staghorn sculpin |
|                             | Cottidae        | <i>Oligocottus maculosus</i>       | tidepool sculpin         |
|                             | Cottidae        | <i>Oligocottus</i> spp.            | sculpins                 |
|                             | Cottidae        | <i>Orthonopias triacis</i>         | snubnose sculpin         |
|                             | Cottidae        | <i>Radulinus</i> spp.              | sculpins                 |
|                             | Cottidae        | <i>Ruscarius creaseri</i>          | roughcheek sculpin       |
|                             | Cottidae        | <i>Ruscarius</i> spp.              | sculpins                 |
|                             | Cottidae        | <i>Scorpaenichthys marmoratus</i>  | cabezon                  |
|                             | Agonidae        | Agonidae                           | poachers                 |
|                             | Agonidae        | <i>Odontopyxis trispinosa</i>      | pygmy poacher            |
|                             | Liparidae       | <i>Liparis fucensis</i>            | slipskin snailfish       |
|                             | Liparidae       | <i>Liparis</i> spp.                | snailfishes              |
| Perciformes                 |                 |                                    |                          |
|                             | Gobiesocidae    | <i>Gobiesox</i> spp.               | clingfishes              |
|                             | Haemulidae      | Haemulidae                         | grunts                   |
|                             | Haemulidae      | <i>Xenistius californiensis</i>    | salema                   |
|                             | Sciaenidae      | <i>Genyonemus lineatus</i>         | white croaker            |
|                             | Sciaenidae      | Sciaenidae                         | croakers                 |
|                             | Sciaenidae      | <i>Seriphus politus</i>            | queenfish                |
|                             | Bathymasteridae | Bathymasteridae                    | ronquils                 |
|                             |                 | Blennioidei                        | blennies                 |
|                             | Blennidae       | <i>Hypsoblennius</i> spp.          | combtooth blennies       |
|                             | Clinidae        | Clinidae                           | kelp blennies            |
|                             | Clinidae        | <i>Gibbonsia</i> spp.              | kelpfishes               |
|                             | Chaenopsidae    | Chaenopsidae                       | tube blennies            |
|                             | Chaenopsidae    | <i>Neoclinus</i> spp.              | fringeheads              |
|                             | Stichaeidae     | <i>Cebidichthys violaceus</i>      | monkeyface eel           |
|                             | Stichaeidae     | Stichaeidae                        | pricklebacks             |
|                             | Pholidae        | Pholidae                           | gunnels                  |
|                             | Labrisomidae    | Labrisomidae                       | labrisomid blennies      |
|                             | Ammodytidae     | <i>Ammodytes hexapterus</i>        | Pacific sand lance       |
|                             | Gobiidae        | CIQ goby complex                   | gobies                   |
|                             | Gobiidae        | <i>Gillichthys mirabilis</i>       | longjaw mudsucker        |
|                             | Gobiidae        | <i>Lepidogobius lepidus</i>        | bay goby                 |
|                             | Gobiidae        | <i>Rhinogobiops nicholsi</i>       | blackeye goby            |
|                             | Gobiidae        | <i>Typhlogobius californiensis</i> | blind goby               |
|                             | Centrolophidae  | <i>Icichthys lockingtoni</i>       | medusa fish              |

CIQ gobies complex comprises larvae of *Clevelandia ios*, *Ilypnus gilberti* and/or *Quietula y-cuada*. (table continued)

**Larval fish collected and identified from Morro Bay National Estuary (continued)**

| <b>Order</b> | <b>Family</b>   | <b>Taxon</b>                      | <b>Common Name</b> |
|--------------|-----------------|-----------------------------------|--------------------|
|              | Pleuronectidae  | <i>Hypsopsetta</i> spp.           | turbots            |
|              | Pleuronectidae  | <i>Microstomus pacificus</i>      | Dover sole         |
|              | Pleuronectidae  | <i>Parophrys vetulus</i>          | English sole       |
|              | Pleuronectidae  | <i>Platichthys stellatus</i>      | starry flounder    |
|              | Pleuronectidae  | <i>Pleuronectes bilineatus</i>    | rock sole          |
|              | Pleuronectidae  | Pleuronectidae                    | righteye flounders |
|              | Pleuronectidae  | <i>Pleuronichthys</i> spp.        | turbots            |
|              | Pleuronectidae  | <i>Pleuronichthys verticalis</i>  | hornyhead turbot   |
|              | Pleuronectidae  | <i>Psettichthys melanostictus</i> | sand sole          |
|              | Paralichthyidae | <i>Citharichthys sordidus</i>     | Pacific sanddab    |
|              | Paralichthyidae | <i>Citharichthys</i> spp.         | sanddabs           |
|              | Paralichthyidae | <i>Citharichthys stigmaeus</i>    | speckled sanddab   |
|              | Paralichthyidae | Paralichthyidae                   | sand flounders     |
|              | Paralichthyidae | <i>Paralichthys californicus</i>  | California halibut |

## Larval fish collected and identified from central California Outer Coast

| Order          | Family          | Taxon                               | Common Name               |
|----------------|-----------------|-------------------------------------|---------------------------|
| Clupeiformes   | Clupeidae       | Clupeidae                           | herrings                  |
|                | Clupeidae       | <i>Sardinops sagax</i>              | Pacific sardine           |
|                | Engraulidae     | Engraulidae                         | anchovies                 |
|                | Engraulidae     | <i>Engraulis mordax</i>             | northern anchovy          |
| Osmeriformes   | Osmeridae       | Osmeridae                           | smelts                    |
|                | Osmeridae       | <i>Spirinchus starksi</i>           | night smelt               |
|                | Argentinidae    | <i>Argentina sialis</i>             | Pacific argentine         |
|                | Argentinidae    | Argentinidae                        | argentinines              |
|                | Bathylagidae    | Bathylagidae                        | blacksmelts               |
|                | Bathylagidae    | <i>Bathylagus pacificus</i>         | Pacific blacksmelt        |
|                | Bathylagidae    | <i>Bathylagus</i> spp.              | blacksmelts               |
|                | Bathylagidae    | <i>Leuroglossus</i> spp.            | smoothtongues             |
|                | Bathylagidae    | <i>Leuroglossus stilbius</i>        | California smoothtongue   |
|                | Bathylagidae    | <i>Lipolagus ochotensis</i>         | popeye blacksmelt         |
|                | Microstomatidae | <i>Microstoma</i> spp.              | dusky pencilsmelts        |
| Stomiiformes   | Gonostomatidae  | <i>Cyclothone signata</i>           | showy bristlemouth        |
|                | Gonostomatidae  | Cyclothone spp.                     | bristlemouths             |
|                | Gonostomatidae  | Gonostomatidae                      | bristlemouths             |
|                | Sternoptuchidae | <i>Sternoptyx</i> spp.              | hatchetfishes             |
|                | Stomiidae       | <i>Chauliodus macouni</i>           | Pacific viperfish         |
|                | Stomiidae       | <i>Stomias atriventer</i>           | black-belly dragonfish    |
|                | Phosichthyidae  | <i>Vinciguerria lucetia</i>         | Panama lightfish          |
|                | Phosichthyidae  | <i>Vinciguerria poweriae</i>        | highseas lightfish        |
| Aulopiformes   | Synodoniidae    | <i>Synodus lucioceps</i>            | California lizardfish     |
|                | Paralepididae   | <i>Lestidiops ringens</i>           | slender barracudina       |
| Myctophiformes | Myctophidae     | <i>Ceratoscopelus townsendi</i>     | dogtooth lampfish         |
|                | Myctophidae     | <i>Diaphus theta</i>                | California headlight fish |
|                | Myctophidae     | <i>Diogenichthys atlanticus</i>     | longfin lanternfish       |
|                | Myctophidae     | <i>Diogenichthys laternatus</i>     | diogenes lanternfish      |
|                | Myctophidae     | <i>Diogenichthys</i> spp.           | lanternfishes             |
|                | Myctophidae     | <i>Hygophum atratum</i>             | thickhead lanternfish     |
|                | Myctophidae     | Myctophidae                         | lanternfishes             |
|                | Myctophidae     | <i>Nannobranchium regalis</i>       | pinpoint lanternfish      |
|                | Myctophidae     | <i>Nannobranchium ritteri</i>       | broadfin lampfish         |
|                | Myctophidae     | <i>Nannobranchium</i> spp.          | lanternfishes             |
|                | Myctophidae     | <i>Lampancytus</i> spp.             | possible lantern fish     |
|                | Myctophidae     | <i>Protomyctophum crockeri</i>      | California flashlightfish |
|                | Myctophidae     | <i>Stenobranchius leucopsarus</i>   | northern lampfish         |
|                | Myctophidae     | <i>Symbolophorus californiensis</i> | California lanternfish    |

(table continued)

**Larval fish collected and identified from central California Outer Coast (continued)**

| <b>Order</b>               | <b>Family</b>   | <b>Taxon</b>                       | <b>Common Name</b>    |
|----------------------------|-----------------|------------------------------------|-----------------------|
| Myctophiformes (continued) |                 |                                    |                       |
|                            | Myctophidae     | <i>Tarletonbeania crenularis</i>   | blue lanternfish      |
|                            | Myctophidae     | <i>Triphoturus mexicanus</i>       | Mexican lampfish      |
| Batrachoidiformes          |                 |                                    |                       |
|                            | Batrachoididae  | <i>Porichthys notatus</i>          | plainfin midshipman   |
| Gadiformes                 |                 |                                    |                       |
|                            | Gadidae         | Gadidae                            | codfishes             |
|                            | Gadidae         | <i>Microgadus proximus</i>         | Pacific tomcod        |
|                            | Merlucciidae    | <i>Merluccius productus</i>        | Pacific hake          |
|                            | Merlucciidae    | <i>Merluccius</i> spp.             | hakes                 |
| Ophidiiformes              |                 |                                    |                       |
|                            | Bythitidae      | <i>Cataetyx rubrirostris</i>       | rubynose brotula      |
|                            | Ophidiidae      | <i>Chilara taylori</i>             | spotted cusk-eel      |
|                            | Ophidiidae      | Ophidiidae                         | cusk-eels             |
|                            | Ophidiidae      | <i>Ophidion scrippsae</i>          | basketweave cusk-eel  |
|                            | Bythitidae      | <i>Brosmophycis marginata</i>      | red brotula           |
| Beloniformes               |                 |                                    |                       |
|                            | Scomberesocidae | <i>Cololabis saira</i>             | Pacific saury         |
| Atheriniformes             |                 |                                    |                       |
|                            | Atherinopsidae  | <i>Atherinops affinis</i>          | topsmelt              |
|                            | Atherinopsidae  | Atherinopsidae                     | silversides           |
|                            | Atherinopsidae  | <i>Atherinopsis californiensis</i> | jacksmelt             |
|                            | Atherinopsidae  | <i>Leuresthes tenuis</i>           | California grunion    |
| Stephanoberyciformes       |                 |                                    |                       |
|                            | Melamphaidae    | <i>Melamphaes parvus</i>           | little bigscale       |
|                            | Melamphaidae    | <i>Melamphaes</i> spp.             | big scales            |
|                            | Melamphaidae    | Melamphaidae                       | bigscale fishes       |
|                            | Melamphaidae    | <i>Poromitra crassiceps</i>        | crested bigscale      |
| Lampridiformes             |                 |                                    |                       |
|                            | Trachipteridae  | <i>Trachipterus altivelis</i>      | king-of-the-salmon    |
| Gasterosteiformes          |                 |                                    |                       |
|                            | Aulorhynchidae  | <i>Aulorhynchus flavidus</i>       | tubesnout             |
|                            | Syngnathidae    | Syngnathidae                       | pipefishes            |
|                            | Syngnathidae    | <i>Syngnathus californiensis</i>   | kelp pipefish         |
|                            | Syngnathidae    | <i>Syngnathus leptorhynchus</i>    | bay pipefish          |
|                            | Syngnathidae    | <i>Syngnathus</i> spp.             | pipefishes            |
| Scorpaeniformes            |                 |                                    |                       |
|                            | Agonidae        | Agonidae                           | poachers              |
|                            | Agonidae        | <i>Agonomalus mozinoi</i>          | kelp poacher          |
|                            | Agonidae        | <i>Bothragonus swanii</i>          | rockhead              |
|                            | Agonidae        | <i>Odontopyxis trispinosa</i>      | pygmy poacher         |
|                            | Agonidae        | <i>Stellerina xyosterna</i>        | pricklebreast poacher |
|                            | Cottidae        | <i>Artedius harringtoni</i>        | scalyhead sculpin     |

(table continued)

**Larval fish collected and identified from central California Outer Coast (continued)**

| <b>Order</b>                | <b>Family</b> | <b>Taxon</b>                        | <b>Common Name</b>       |
|-----------------------------|---------------|-------------------------------------|--------------------------|
| Scorpaeniformes (continued) |               |                                     |                          |
|                             | Cottidae      | <i>Artedius lateralis</i>           | smoothhead sculpin       |
|                             | Cottidae      | <i>Artedius meanyi</i>              | Puget Sound sculpin      |
|                             | Cottidae      | <i>Artedius</i> spp.                | sculpins                 |
|                             | Cottidae      | <i>Chitonotus pugetensis</i>        | roughback sculpin        |
|                             | Cottidae      | <i>Chitonotus/Icelinus</i> spp.     | sculpins                 |
|                             | Cottidae      | <i>Clinocottus analis</i>           | wooly sculpin            |
|                             | Cottidae      | <i>Clinocottus</i> spp.             | sculpins                 |
|                             | Cottidae      | Cottidae                            | sculpins                 |
|                             | Cottidae      | <i>Enophrys</i> spp.                | buffalo sculpins         |
|                             | Cottidae      | <i>Enophrys taurina</i>             | bull sculpin             |
|                             | Cottidae      | <i>Hemilepidotus spinosus</i>       | brown Irish lord         |
|                             | Cottidae      | <i>Hemilepidotus</i> spp.           | Irish lord               |
|                             | Cottidae      | <i>Icelinus quadriseriatus</i>      | yellowchin sculpin       |
|                             | Cottidae      | <i>Icelinus</i> spp.                | sculpins                 |
|                             | Cottidae      | <i>Leptocottus armatus</i>          | Pacific staghorn sculpin |
|                             | Cottidae      | <i>Nautichthys oculo-fasciatus</i>  | sailfin sculpin          |
|                             | Cottidae      | <i>Oligocottus maculosus</i>        | tidepool sculpin         |
|                             | Cottidae      | <i>Oligocottus snyderi</i>          | fluffy sculpin           |
|                             | Cottidae      | <i>Oligocottus</i> spp.             | sculpins                 |
|                             | Cottidae      | <i>Oligocottus/Clinocottus</i> spp. | sculpins                 |
|                             | Cottidae      | <i>Orthonopias triacis</i>          | snubnose sculpin         |
|                             | Cottidae      | <i>Radulinus asprellus</i>          | slim sculpin             |
|                             | Cottidae      | <i>Radulinus</i> spp.               | sculpins                 |
|                             | Cottidae      | <i>Ruscarius creaseri</i>           | roughcheek sculpin       |
|                             | Cottidae      | <i>Ruscarius meanyi</i>             | Puget Sound sculpin      |
|                             | Cottidae      | <i>Ruscarius</i> spp.               | sculpins                 |
|                             | Cottidae      | <i>Scorpaenichthys marmoratus</i>   | cabezon                  |
|                             | Cottidae      | <i>Synchirus gilli</i>              | manacled sculpin         |
|                             | Cyclopteridae | Cyclopteridae                       | snailfishes              |
|                             | Hexagrammidae | Hexagrammidae                       | greenlings               |
|                             | Hexagrammidae | <i>Hexagrammos decagrammus</i>      | kelp greenling           |
|                             | Hexagrammidae | <i>Hexagrammos lagocephalus</i>     | rock greenling           |
|                             | Hexagrammidae | <i>Hexagrammos</i> spp.             | greenlings               |
|                             | Hexagrammidae | <i>Ophiodon elongatus</i>           | lingcod                  |
|                             | Hexagrammidae | <i>Oxylebius pictus</i>             | painted greenling        |
|                             | Hexagrammidae | <i>Zaniolepis frenata</i>           | shortspine combfish      |
|                             | Hexagrammidae | <i>Zaniolepis latipinnis</i>        | longspine combfish       |
|                             | Hexagrammidae | <i>Zaniolepis</i> spp.              | combfishes               |
|                             | Liparidae     | <i>Liparis mucosus</i>              | slimy snailfish          |
|                             | Liparidae     | <i>Liparis pulchellus</i>           | showy snailfish          |
|                             | Liparidae     | <i>Liparis</i> spp.                 | snailfishes              |

(table continued)

**Larval fish collected and identified from central California Outer Coast (continued)**

| <b>Order</b>                | <b>Family</b>   | <b>Taxon</b>                         | <b>Common Name</b>             |
|-----------------------------|-----------------|--------------------------------------|--------------------------------|
| Scorpaeniformes (continued) |                 |                                      |                                |
|                             | Scorpaenidae    | <i>Sebastes atrovirens</i>           | kelp rockfish                  |
|                             | Scorpaenidae    | <i>Sebastes auriculatus</i>          | brown rockfish                 |
|                             | Scorpaenidae    | <i>Sebastes aurora</i>               | aurora rockfish                |
|                             | Scorpaenidae    | <i>Sebastes carnatus/chrysomelas</i> | gopher/black & yellow rockfish |
|                             | Scorpaenidae    | <i>Sebastes caurinus</i>             | copper rockfish                |
|                             | Scorpaenidae    | <i>Sebastes constellatus</i>         | starry rockfish                |
|                             | Scorpaenidae    | <i>Sebastes crocotulus</i>           | sunset rockfish                |
|                             | Scorpaenidae    | <i>Sebastes diploproa</i>            | splitnose rockfish             |
|                             | Scorpaenidae    | <i>Sebastes dalli</i>                | calico rockfish                |
|                             | Scorpaenidae    | <i>Sebastes entomelas</i>            | widow rockfish                 |
|                             | Scorpaenidae    | <i>Sebastes flavidus</i>             | yellowtail rockfish            |
|                             | Scorpaenidae    | <i>Sebastes gilli</i>                | bronzespot rockfish            |
|                             | Scorpaenidae    | <i>Sebastes goodei</i>               | chilipeppet                    |
|                             | Scorpaenidae    | <i>Sebastes hopkinsi</i>             | squarespot rockfish            |
|                             | Scorpaenidae    | <i>Sebastes jordani</i>              | shortbelly rockfish            |
|                             | Scorpaenidae    | <i>Sebastes levis</i>                | cow cod                        |
|                             | Scorpaenidae    | <i>Sebastes mystinus</i>             | blue rockfish                  |
|                             | Scorpaenidae    | <i>Sebastes nebulosus</i>            | china rockfish                 |
|                             | Scorpaenidae    | <i>Sebastes paucispinis</i>          | bocaccio                       |
|                             | Scorpaenidae    | <i>Sebastes rastrelliger</i>         | grass rockfish                 |
|                             | Scorpaenidae    | <i>Sebastes rosaceus</i>             | rosy rockfish                  |
|                             | Scorpaenidae    | <i>Sebastes semicinctus</i>          | halfbanded rockfish            |
|                             | Scorpaenidae    | <i>Sebastes serranoides</i>          | olive rockfish                 |
|                             | Scorpaenidae    | <i>Sebastes serricpes</i>            | treefish                       |
|                             | Scorpaenidae    | <i>Sebastes saxicola</i>             | stripetail rockfish            |
|                             | Scorpaenidae    | <i>Sebastes</i> spp.                 | rockfishes                     |
|                             | Scorpaenidae    | <i>Sebastolobus alascanus</i>        | shortspine thornyhead          |
|                             | Scorpaenidae    | <i>Sebastolobus</i> spp.             | thornyheads                    |
| Perciformes                 |                 |                                      |                                |
|                             | Ammodytidae     | <i>Ammodytes hexapterus</i>          | Pacific sand lance             |
|                             | Bathymasteridae | Bathymasteridae                      | ronquils                       |
|                             | Bathymasteridae | <i>Rathbunella</i> spp.              | ronquils                       |
|                             | Blennidae       | Blenniidae                           | blennies                       |
|                             | Blennidae       | <i>Hypsoblennius gilberti</i>        | rockpool blenny                |
|                             | Blennidae       | <i>Hypsoblennius jenkinsi</i>        | mussel blenny                  |
|                             | Blennidae       | <i>Hypsoblennius</i> spp.            | combtooth blennies             |
|                             | Carangidae      | <i>Trachurus symmetricus</i>         | jack mackerel                  |
|                             | Centrolophidae  | <i>Icichthys lockingtoni</i>         | medusa fish                    |
|                             | Chaenopsidae    | Chaenopsidae                         | tube blennies                  |
|                             | Chaenopsidae    | <i>Neoclinus</i> spp.                | fringeheads                    |
|                             | Chaenopsidae    | <i>Neoclinus uninotatus</i>          | onespot fringehead             |

Larval *Sebastes* identifications based on DNA analysis.

(table continued)

**Larval fish collected and identified from central California Outer Coast (continued)**

| <b>Order</b> | <b>Family</b> | <b>Taxon</b>                       | <b>Common Name</b>   |
|--------------|---------------|------------------------------------|----------------------|
| Perciformes  |               |                                    |                      |
|              | Clinidae      | Clinidae                           | kelp blennies        |
|              | Clinidae      | <i>Gibbonsia elegans</i>           | spotted kelpfish     |
|              | Clinidae      | <i>Gibbonsia metzi</i>             | striped kelpfish     |
|              | Clinidae      | <i>Gibbonsia</i> spp.              | kelpfishes           |
|              | Clinidae      | <i>Heterostichus rostratus</i>     | giant kelpfish       |
|              | Gobiesocidae  | Gobiesocidae                       | clingfishes          |
|              | Gobiesocidae  | <i>Gobiesox maeandricus</i>        | northern clingfish   |
|              | Gobiesocidae  | <i>Gobiesox rhessodon</i>          | California clingfish |
|              | Gobiesocidae  | <i>Gobiesox</i> spp.               | clingfishes          |
|              | Gobiesocidae  | <i>Rimicola muscarum</i>           | kelp clingfish       |
|              | Gobiesocidae  | <i>Rimicola</i> spp.               | kelp clingfishes     |
|              | Gobiidae      | <i>Acanthogobius flavimanus</i>    | yellowfin goby       |
|              | Gobiidae      | CIQ goby complex                   | gobies               |
|              | Gobiidae      | <i>Gillichthys mirabilis</i>       | longjaw mudsucker    |
|              | Gobiidae      | <i>Lepidogobius lepidus</i>        | bay goby             |
|              | Gobiidae      | <i>Lethops connectens</i>          | halfblind goby       |
|              | Gobiidae      | <i>Lythrypnus dalli</i>            | bluebanded goby      |
|              | Gobiidae      | <i>Lythrypnus</i> spp.             | gobies               |
|              | Gobiidae      | <i>Lythrypnus zebra</i>            | zebra goby           |
|              | Gobiidae      | <i>Rhinogobiops nicholsi</i>       | blackeye goby        |
|              | Gobiidae      | <i>Typhlogobius californiensis</i> | blind goby           |
|              | Haemulidae    | Haemulidae                         | grunts               |
|              | Haemulidae    | <i>Xenistius californiensis</i>    | salema               |
|              | Icosteidae    | <i>Icosteus aenigmaticus</i>       | ragfish              |
|              | Kyphosidae    | <i>Girella nigricans</i>           | opaleye              |
|              | Kyphosidae    | Kyphosidae                         | sea chubs            |
|              | Labridae      | Labridae                           | wrasses              |
|              | Labridae      | <i>Oxyjulis californica</i>        | senorita             |
|              | Labridae      | <i>Semicossyphus pulcher</i>       | California sheephead |
|              | Labrisomidae  | Labrisomidae                       | labrisomid blennies  |
|              | Pholidae      | <i>Apodichthys fucorum</i>         | rockweed gunnel      |
|              | Pholidae      | Pholidae                           | gunnels              |
|              | Pomacentridae | <i>Chromis punctipinnis</i>        | blacksmith           |
|              | Pomacentridae | Pomacentridae                      | damselishes          |
|              | Sciaenidae    | <i>Atractoscion nobilis</i>        | white seabass        |
|              | Sciaenidae    | <i>Cheilotrema saturnum</i>        | black croaker        |
|              | Sciaenidae    | <i>Genyonemus lineatus</i>         | white croaker        |
|              | Sciaenidae    | <i>Menticirrhus undulatus</i>      | California corbina   |
|              | Sciaenidae    | <i>Roncador stearnsii</i>          | spotfin croaker      |
|              | Sciaenidae    | Sciaenidae                         | croakers             |
|              | Sciaenidae    | <i>Seriphus politus</i>            | queenfish            |
|              | Sciaenidae    | <i>Umbrina roncador</i>            | yellowfin croaker    |

CIQ gobies complex comprises larvae of *Clevelandia ios*, *Ilypnus gilberti* and/or *Quietula y-cuada*. (table continued)

**Larval fish collected and identified from central California Outer Coast (continued)**

| <b>Order</b>            | <b>Family</b>   | <b>Taxon</b>                     | <b>Common Name</b>     |
|-------------------------|-----------------|----------------------------------|------------------------|
| Perciformes (continued) |                 |                                  |                        |
|                         | Scombridae      | <i>Scomber japonicus</i>         | Pacific mackerel       |
|                         | Scombridae      | Scombridae                       | mackerels and tunas    |
|                         | Serranidae      | <i>Paralabrax clathratus</i>     | kelp bass              |
|                         | Serranidae      | <i>Paralabrax nebulifer</i>      | barred sand bass       |
|                         | Serranidae      | <i>Paralabrax</i> spp.           | sea basses             |
|                         | Sphyraenidae    | <i>Sphyraena argentea</i>        | Pacific barracuda      |
|                         | Stichaeidae     | <i>Anoplarchus purpureus</i>     | high cockscomb         |
|                         | Stichaeidae     | Anoplarchus spp.                 | cockscombs             |
|                         | Stichaeidae     | <i>Cebidichthys violaceus</i>    | monkeyface eel         |
|                         | Stichaeidae     | <i>Chirolophis nugator</i>       | mosshead warbonnet     |
|                         | Stichaeidae     | <i>Plectobranhus evides</i>      | bluebarred prickleback |
|                         | Stichaeidae     | Stichaeidae                      | pricklebacks           |
|                         | Stichaeidae     | <i>Xiphister mucosus</i>         | rock prickleback       |
|                         | Stichaeidae     | <i>Xiphister</i> spp.            | pricklebacks           |
|                         | Stromateidae    | <i>Peprilus simillimus</i>       | Pacific butterfish     |
|                         | Tetragonuridae  | <i>Tetragonurus cuvieri</i>      | smalleye squaretail    |
| Pleuronectiformes       |                 |                                  |                        |
|                         | Cynoglossidae   | Cynoglossidae                    | tonguefishes           |
|                         | Cynoglossidae   | <i>Symphurus atricaudus</i>      | California tonguefish  |
|                         | Paralichthyidae | <i>Citharichthys sordidus</i>    | Pacific sanddab        |
|                         | Paralichthyidae | <i>Citharichthys</i> spp.        | sanddabs               |
|                         | Paralichthyidae | <i>Citharichthys stigmaeus</i>   | speckled sanddab       |
|                         | Paralichthyidae | <i>Hippoglossina stomata</i>     | bigmouth sole          |
|                         | Paralichthyidae | Paralichthyidae                  | sand flounders         |
|                         | Paralichthyidae | <i>Paralichthys californicus</i> | California halibut     |
|                         | Paralichthyidae | <i>Xystreureys liolepis</i>      | fantail sole           |
|                         | Pleuronectidae  | <i>Embassichthys bathybius</i>   | deepsea sole           |
|                         | Pleuronectidae  | <i>Glyptocephalus zachirus</i>   | rex sole               |
|                         | Pleuronectidae  | <i>Hypsopsetta</i> spp.          | turbots                |
|                         | Pleuronectidae  | <i>Isopsetta isolepis</i>        | butter sole            |
|                         | Pleuronectidae  | <i>Lepidopsetta bilineata</i>    | rock sole              |
|                         | Pleuronectidae  | <i>Lepidopsetta</i> spp.         | soles                  |
|                         | Pleuronectidae  | <i>Lyopsetta exilis</i>          | slender sole           |
|                         | Pleuronectidae  | <i>Microstomus pacificus</i>     | Dover sole             |
|                         | Pleuronectidae  | <i>Parophrys vetulus</i>         | English sole           |
|                         | Pleuronectidae  | <i>Platichthys stellatus</i>     | starry flounder        |
|                         | Pleuronectidae  | <i>Pleuronectes bilineatus</i>   | rock sole              |
|                         | Pleuronectidae  | <i>Pleuronectes</i> spp.         | righteye flounders     |
|                         | Pleuronectidae  | Pleuronectidae                   | righteye flounders     |
|                         | Pleuronectidae  | <i>Pleuronichthys coenosus</i>   | c-o turbot             |

(table continued)

**Larval fish collected and identified from central California Outer Coast (continued)**

| <b>Order</b>                  | <b>Family</b>  | <b>Taxon</b>                      | <b>Common Name</b> |
|-------------------------------|----------------|-----------------------------------|--------------------|
| Pleuronectiformes (continued) |                |                                   |                    |
|                               | Pleuronectidae | <i>Pleuronichthys decurrens</i>   | curlfin turbot     |
|                               | Pleuronectidae | <i>Pleuronichthys guttulatus</i>  | diamond turbot     |
|                               | Pleuronectidae | <i>Pleuronichthys ritteri</i>     | spotted turbot     |
|                               | Pleuronectidae | <i>Pleuronichthys</i> spp.        | turbots            |
|                               | Pleuronectidae | <i>Pleuronichthys verticalis</i>  | hornyhead turbot   |
|                               | Pleuronectidae | <i>Psettichthys melanostictus</i> | sand sole          |
|                               | Pleuronectidae | <i>Psettichthys</i> spp.          | soles              |

## Larval fish collected and identified from offshore of Ventura

| Order             | Family        | Taxon                              | Common Name               |
|-------------------|---------------|------------------------------------|---------------------------|
| Clupeiformes      |               |                                    |                           |
|                   | Clupeidae     | <i>Sardinops sagax</i>             | Pacific sardine           |
|                   | Engraulidae   | Engraulidae                        | anchovies                 |
|                   | Engraulidae   | <i>Engraulis mordax</i>            | northern anchovy          |
| Myctophiformes    |               |                                    |                           |
|                   | Myctophidae   | <i>Diaphus theta</i>               | California headlight fish |
|                   | Myctophidae   | Myctophidae                        | lanternfishes             |
|                   | Myctophidae   | <i>Nannobranchium</i> spp.         | lanternfishes             |
|                   | Myctophidae   | <i>Stenobranchius leucopsarus</i>  | northern lampfish         |
|                   | Myctophidae   | <i>Triphoturus mexicanus</i>       | Mexican lampfish          |
| Gadiformes        |               |                                    |                           |
|                   | Merlucciidae  | <i>Merluccius productus</i>        | Pacific hake              |
| Ophidiiformes     |               |                                    |                           |
|                   | Ophidiidae    | <i>Chilara taylori</i>             | spotted cusk-eel          |
|                   | Ophidiidae    | Ophidiidae                         | cusk-eels                 |
|                   | Ophidiidae    | <i>Ophidion scrippsae</i>          | basketweave cusk-eel      |
| Gasterosteiformes |               |                                    |                           |
|                   | Syngnathidae  | <i>Syngnathus</i> spp.             | pipefishes                |
| Scorpaeniformes   |               |                                    |                           |
|                   | Cyclopteridae | Cyclopteridae                      | snailfishes               |
|                   | Hexagrammidae | <i>Zaniolepis latipinnis</i>       | longspine combfish        |
|                   | Liparidae     | <i>Liparis</i> spp.                | snailfishes               |
|                   | Scorpaenidae  | Scorpaenoidei                      | sculpins                  |
|                   | Scorpaenidae  | <i>Scorpaena guttata</i>           | California scorpionfish   |
|                   | Scorpaenidae  | <i>Sebastes levis</i>              | cow cod                   |
|                   | Scorpaenidae  | <i>Sebastes</i> spp.               | rockfishes                |
| Perciformes       |               |                                    |                           |
|                   | Blennidae     | <i>Hypsoblennius jenkinsi</i>      | mussel blenny             |
|                   | Blennidae     | <i>Hypsoblennius</i> spp.          | combtooth blennies        |
|                   | Clinidae      | Clinidae                           | kelp blennies             |
|                   | Gobiidae      | CIQ goby complex                   | gobies                    |
|                   | Gobiidae      | <i>Lepidogobius lepidus</i>        | bay goby                  |
|                   | Gobiidae      | <i>Lythrypnus</i> spp.             | gobies                    |
|                   | Gobiidae      | <i>Rhinogobiops nicholsi</i>       | blackeye goby             |
|                   | Gobiidae      | <i>Typhlogobius californiensis</i> | blind goby                |
|                   | Labridae      | Labridae                           | wrasses                   |
|                   | Labridae      | <i>Oxyjulis californica</i>        | senorita                  |
|                   | Labridae      | <i>Semicossyphus pulcher</i>       | California sheephead      |
|                   | Pomacentridae | <i>Chromis punctipinnis</i>        | blacksmith                |
|                   | Pomacentridae | <i>Hypsypops rubicundus</i>        | garibaldi                 |
|                   | Pomacentridae | Pomacentridae                      | damselfishes              |

CIQ gobies complex comprises larvae of *Clevelandia ios*, *Ilypnus gilberti* and/or *Quietula y-cuada*. (table continued)

**Larval fish collected and identified from offshore of Ventura (continued)**

| <b>Order</b>            | <b>Family</b>   | <b>Taxon</b>                     | <b>Common Name</b>    |
|-------------------------|-----------------|----------------------------------|-----------------------|
| Perciformes (continued) |                 |                                  |                       |
|                         | Sciaenidae      | <i>Genyonemus lineatus</i>       | white croaker         |
|                         | Sciaenidae      | Sciaenidae                       | croakers              |
|                         | Serranidae      | <i>Paralabrax clathratus</i>     | kelp bass             |
|                         | Serranidae      | <i>Paralabrax nebulifer</i>      | barred sand bass      |
|                         | Serranidae      | <i>Paralabrax</i> spp.           | sea basses            |
|                         | Sphyraenidae    | <i>Sphyraena argentea</i>        | Pacific barracuda     |
| Pleuronectiformes       |                 |                                  |                       |
|                         | Cynoglossidae   | <i>Symphurus atricaudus</i>      | California tonguefish |
|                         | Paralichthyidae | <i>Citharichthys sordidus</i>    | Pacific sanddab       |
|                         | Paralichthyidae | <i>Citharichthys</i> spp.        | sanddabs              |
|                         | Paralichthyidae | <i>Citharichthys stigmaeus</i>   | speckled sanddab      |
|                         | Paralichthyidae | <i>Hippoglossina stomata</i>     | bigmouth sole         |
|                         | Paralichthyidae | <i>Paralichthys californicus</i> | California halibut    |
|                         | Pleuronectidae  | <i>Lepidopsetta bilineata</i>    | rock sole             |
|                         | Pleuronectidae  | <i>Lyopsetta exilis</i>          | slender sole          |
|                         | Pleuronectidae  | <i>Parophrys vetulus</i>         | English sole          |
|                         | Pleuronectidae  | Pleuronectidae                   | righteye flounders    |
|                         | Pleuronectidae  | <i>Pleuronichthys coenosus</i>   | c-o turbot            |
|                         | Pleuronectidae  | <i>Pleuronichthys verticalis</i> | hornyhead turbot      |

## Larval fish collected and identified from Santa Monica Bay

| Order             | Family         | Taxon  | Common Name               |
|-------------------|----------------|--|---------------------------|
| Clupeiformes      | Clupeidae      | <i>Clupea pallasii</i>                       | Pacific herring           |
|                   | Clupeidae      | <i>Etrumeus teres</i>                        | round herring             |
|                   | Clupeidae      | <i>Sardinops sagax</i>                       | Pacific sardine           |
|                   | Engraulidae    | Engraulidae                                  | anchovies                 |
|                   | Engraulidae    | <i>Engraulis mordax</i>                      | northern anchovy          |
| Osmeriformes      | Argentinidae   | <i>Argentina sialis</i>                      | Pacific argentine         |
|                   | Bathylagidae   | Bathylagidae                                 | blacksmelts               |
|                   | Bathylagidae   | <i>Leuroglossus stilbius</i>                 | California smoothtongue   |
|                   | Bathylagidae   | <i>Lipolagus ochotensis</i>                  | popeye blacksmelt         |
| Stomiiformes      | Gonostomatidae | <i>Cyclothone signata</i>                    | showy bristlemouth        |
| Myctophiformes    | Myctophidae    | <i>Diaphus theta</i>                         | California headlight fish |
|                   | Myctophidae    | Myctophidae                                  | lanternfishes             |
|                   | Myctophidae    | <i>Nannobranchium</i> spp.                   | lanternfishes             |
|                   | Myctophidae    | <i>Stenobranchius leucopsarus</i>            | northern lampfish         |
|                   | Myctophidae    | <i>Triphoturus mexicanus</i>                 | Mexican lampfish          |
| Gadiformes        | Merlucciidae   | <i>Merluccius productus</i>                  | Pacific hake              |
| Ophidiiformes     | Bythitidae     | <i>Brosmophycis marginata</i>                | red brotula               |
|                   | Ophidiidae     | <i>Chilara taylori</i>                       | spotted cusk-eel          |
|                   | Ophidiidae     | Ophidiidae                                   | cusk-eels                 |
|                   | Ophidiidae     | <i>Ophidion scrippsae</i>                    | basketweave cusk-eel      |
| Atheriniformes    | Atherinopsidae | <i>Atherinops affinis</i>                    | topsmelt                  |
|                   | Atherinopsidae | Atherinopsidae                               | silversides               |
|                   | Atherinopsidae | <i>Atherinopsis californiensis</i>           | jacksmelt                 |
|                   | Atherinopsidae | <i>Leuresthes tenuis</i>                     | California grunion        |
| Gasterosteiformes | Syngnathidae   | Syngnathidae                                 | pipefishes                |
|                   | Syngnathidae   | <i>Syngnathus leptorhynchus</i>              | bay pipefish              |
|                   | Syngnathidae   | <i>Syngnathus</i> spp.                       | pipefishes                |
| Scorpaeniformes   | Agonidae       | <i>Odontopyxis trispinosa</i>                | pygmy poacher             |
|                   | Cottidae       | <i>Artedius lateralis</i>                    | smoothhead sculpin        |
|                   | Cottidae       | <i>Artedius</i> spp.                         | sculpins                  |
|                   | Cottidae       | <i>Chitonotus pugetensis</i>                 | roughback sculpin         |
|                   | Cottidae       | <i>Chitonotus</i> spp./ <i>Icelinus</i> spp. | sculpins                  |
|                   | Cottidae       | <i>Clinocottus analis</i>                    | wooly sculpin             |

(table continued)

### Larval fish collected and identified from Santa Monica Bay (continued)

| Order                       | Family          | Taxon  | Common Name              |
|-----------------------------|-----------------|--|--------------------------|
| Scorpaeniformes (continued) |                 |  |                          |
|                             | Cottidae        | <i>Clinocottus</i> spp.                          | sculpins                 |
|                             | Cottidae        | Cottidae   | sculpins                 |
|                             | Cottidae        | <i>Cottus asper</i>                              | prickly sculpin          |
|                             | Cottidae        | <i>Icelinus quadriseriatus</i>                   | yellowchin sculpin       |
|                             | Cottidae        | <i>Icelinus</i> spp.                             | sculpins                 |
|                             | Cottidae        | <i>Leptocottus armatus</i>                       | Pacific staghorn sculpin |
|                             | Cottidae        | <i>Oligocottus</i> spp.                          | sculpins                 |
|                             | Cottidae        | <i>Oligocottus</i> spp./ <i>Clinocottus</i> spp. | sculpins                 |
|                             | Cottidae        | <i>Ruscarius creaseri</i>                        | roughcheek sculpin       |
|                             | Cottidae        | <i>Ruscarius meanyi</i>                          | Puget Sound sculpin      |
|                             | Cottidae        | <i>Scorpaenichthys marmoratus</i>                | cabezon                  |
|                             | Cyclopteridae   | Cyclopteridae                                    | snailfishes              |
|                             | Hexagrammidae   | Hexagrammidae                                    | greenlings               |
|                             | Hexagrammidae   | <i>Oxylebius pictus</i>                          | painted greenling        |
|                             | Hexagrammidae   | <i>Zaniolepis frenata</i>                        | shortspine combfish      |
|                             | Hexagrammidae   | <i>Zaniolepis latipinnis</i>                     | longspine combfish       |
|                             | Hexagrammidae   | <i>Zaniolepis</i> spp.                           | combfishes               |
|                             | Liparidae       | <i>Liparis mucosus</i>                           | slimy snailfish          |
|                             | Liparidae       | <i>Liparis</i> spp.                              | snailfishes              |
|                             | Scorpaenidae    | <i>Scorpaena guttata</i>                         | California scorpionfish  |
|                             | Scorpaenidae    | Scorpaenidae                                     | scorpion fishes          |
|                             | Scorpaenidae    | <i>Sebastes paucispinis</i>                      | bocaccio                 |
|                             | Scorpaenidae    | <i>Sebastes</i> spp.                             | rockfishes               |
|                             | Scorpaenidae    | <i>Sebastolobus altivelis</i>                    | longspine thornyhead     |
|                             | Scorpaenidae    | <i>Sebastolobus</i> spp.                         | thornyheads              |
| Perciformes                 |                 |  |                          |
|                             | Bathymasteridae | Bathymasteridae                                  | ronquils                 |
|                             | Blennidae       | Blenniidae                                       | blennies                 |
|                             | Blennidae       | <i>Hypsoblennius jenkinsi</i>                    | mussel blenny            |
|                             | Blennidae       | <i>Hypsoblennius</i> spp.                        | combtooth blennies       |
|                             | Carangidae      | <i>Trachurus symmetricus</i>                     | jack mackerel            |
|                             | Clinidae        | <i>Gibbonsia</i> spp.                            | kelpfishes               |
|                             | Clinidae        | <i>Heterostichus rostratus</i>                   | giant kelpfish           |
|                             | Chaenopsidae    | Chaenopsidae                                     | tube blennies            |
|                             | Gobiesocidae    | Gobiesocidae                                     | clingfishes              |
|                             | Gobiesocidae    | <i>Gobiesox</i> spp.                             | clingfishes              |
|                             | Gobiesocidae    | <i>Rimicola</i> spp.                             | kelp clingfishes         |
|                             | Gobiidae        | <i>Acanthogobius flavimanus</i>                  | yellowfin goby           |
|                             | Gobiidae        | CIQ goby complex                                 | gobies                   |
|                             | Gobiidae        | <i>Gillichthys mirabilis</i>                     | longjaw mudsucker        |
|                             | Gobiidae        | <i>Lepidogobius lepidus</i>                      | bay goby                 |
|                             | Gobiidae        | <i>Lythrypnus</i> spp.                           | gobies                   |

CIQ gobies complex comprises larvae of *Clevelandia ios*, *Ilypnus gilberti* and/or *Quietula y-cuada*.

(table continued)

**Larval fish collected and identified from Santa Monica Bay (continued)**

| <b>Order</b>            | <b>Family</b>   | <b>Taxon</b>                        | <b>Common Name</b>    |
|-------------------------|-----------------|-------------------------------------|-----------------------|
| Perciformes (continued) |                 |                                     |                       |
|                         | Gobiidae        | <i>Lythrypnus zebra</i>             | zebra goby            |
|                         | Gobiidae        | <i>Rhinogobiops nicholsi</i>        | blackeye goby         |
|                         | Gobiidae        | <i>Typhlogobius californiensis</i>  | blind goby            |
|                         | Haemulidae      | <i>Anisotremus davidsonii</i>       | sargo                 |
|                         | Haemulidae      | Haemulidae                          | grunts                |
|                         | Haemulidae      | <i>Xenistius californiensis</i>     | salema                |
|                         | Kyphosidae      | <i>Girella nigricans</i>            | opaleye               |
|                         | Kyphosidae      | Kyphosidae                          | sea chubs             |
|                         | Kyphosidae      | <i>Medialuna californiensis</i>     | halfmoon              |
|                         | Labridae        | <i>Halichoeres semicinctus</i>      | rock wrasse           |
|                         | Labridae        | Labridae                            | wrasses               |
|                         | Labridae        | <i>Oxyjulis californica</i>         | senorita              |
|                         | Labridae        | <i>Semicossyphus pulcher</i>        | California sheephead  |
|                         | Labrisomidae    | Labrisomidae                        | labrisomid blennies   |
|                         | Pomacentridae   | <i>Chromis punctipinnis</i>         | blacksmith            |
|                         | Pomacentridae   | <i>Hypsypops rubicundus</i>         | garibaldi             |
|                         | Pomacentridae   | Pomacentridae                       | damselishes           |
|                         | Sciaenidae      | <i>Atractoscion nobilis</i>         | white seabass         |
|                         | Sciaenidae      | <i>Cheilotrema saturnum</i>         | black croaker         |
|                         | Sciaenidae      | <i>Genyonemus lineatus</i>          | white croaker         |
|                         | Sciaenidae      | <i>Menticirrhus undulatus</i>       | California corbina    |
|                         | Sciaenidae      | <i>Roncador stearnsii</i>           | spotfin croaker       |
|                         | Sciaenidae      | Sciaenidae                          | croakers              |
|                         | Sciaenidae      | <i>Seriphus politus</i>             | queenfish             |
|                         | Sciaenidae      | <i>Umbrina roncador</i>             | yellowfin croaker     |
|                         | Serranidae      | <i>Paralabrax clathratus</i>        | kelp bass             |
|                         | Serranidae      | <i>Paralabrax maculatofasciatus</i> | spotted sand bass     |
|                         | Serranidae      | <i>Paralabrax</i> spp.              | sea basses            |
|                         | Sphyraenidae    | <i>Sphyraena argentea</i>           | Pacific barracuda     |
|                         | Sphyraenidae    | <i>Sphyraena</i> spp.               | barracudas            |
|                         | Stromateidae    | <i>Peprilus simillimus</i>          | Pacific butterfish    |
| Pleuronectiformes       |                 |                                     |                       |
|                         | Cynoglossidae   | Cynoglossidae                       | tonguefishes          |
|                         | Cynoglossidae   | <i>Symphurus atricaudus</i>         | California tonguefish |
|                         | Paralichthyidae | <i>Citharichthys sordidus</i>       | Pacific sanddab       |
|                         | Paralichthyidae | <i>Citharichthys</i> spp.           | sanddabs              |
|                         | Paralichthyidae | <i>Citharichthys stigmaeus</i>      | speckled sanddab      |
|                         | Paralichthyidae | <i>Hippoglossina stomata</i>        | bigmouth sole         |
|                         | Paralichthyidae | Paralichthyidae                     | sand flounders        |
|                         | Paralichthyidae | <i>Paralichthys californicus</i>    | California halibut    |
|                         | Paralichthyidae | <i>Xystreurus liolepis</i>          | fantail sole          |

(table continued)

**Larval fish collected and identified from Santa Monica Bay (continued)**

| <b>Order</b>                  | <b>Family</b>  | <b>Taxon</b>                      | <b>Common Name</b> |
|-------------------------------|----------------|-----------------------------------|--------------------|
| Pleuronectiformes (continued) |                |                                   |                    |
|                               | Pleuronectidae | <i>Isopsetta isolepis</i>         | butter sole        |
|                               | Pleuronectidae | <i>Lepidopsetta bilineata</i>     | rock sole          |
|                               | Pleuronectidae | <i>Lyopsetta exilis</i>           | slender sole       |
|                               | Pleuronectidae | <i>Microstomus pacificus</i>      | Dover sole         |
|                               | Pleuronectidae | <i>Parophrys vetulus</i>          | English sole       |
|                               | Pleuronectidae | <i>Platichthys stellatus</i>      | starry flounder    |
|                               | Pleuronectidae | <i>Pleuronectes</i> spp.          | righteye flounders |
|                               | Pleuronectidae | Pleuronectidae                    | righteye flounders |
|                               | Pleuronectidae | <i>Pleuronichthys guttulatus</i>  | diamond turbot     |
|                               | Pleuronectidae | <i>Pleuronichthys ritteri</i>     | spotted turbot     |
|                               | Pleuronectidae | <i>Pleuronichthys</i> spp.        | turbots            |
|                               | Pleuronectidae | <i>Pleuronichthys verticalis</i>  | hornyhead turbot   |
|                               | Pleuronectidae | <i>Psettichthys melanostictus</i> | sand sole          |

**Larval fish collected and identified from offshore of Los Angeles**

| <b>Order</b>      | <b>Family</b>    | <b>Taxon</b>                        | <b>Common Name</b> |
|-------------------|------------------|-------------------------------------|--------------------|
| Clupeiformes      |                  |                                     |                    |
|                   | Clupeidae        | Clupeidae                           | herrings           |
|                   | Clupeidae        | <i>Opisthonema</i> spp.             | thread herrings    |
|                   | Clupeidae        | <i>Sardinops sagax</i>              | Pacific sardine    |
|                   | Engraulidae      | Engraulidae                         | anchovies          |
|                   | Engraulidae      | <i>Engraulis mordax</i>             | northern anchovy   |
| Stomiiformes      |                  |                                     |                    |
|                   | Phosichthyidae   | Vinciguerria spp.                   | lightfishes        |
| Myctophiformes    |                  |                                     |                    |
|                   | Myctophidae      | Myctophidae                         | lanternfishes      |
|                   | Myctophidae      | <i>Stenobranchius leucopsarus</i>   | northern lampfish  |
|                   | Myctophidae      | <i>Triphoturus mexicanus</i>        | Mexican lampfish   |
| Ophidiiformes     |                  |                                     |                    |
|                   | Ophidiidae       | Ophidiidae                          | cusks-eels         |
|                   | Bythitidae       | <i>Brosmophycis marginata</i>       | red brotula        |
| Gasterosteiformes |                  |                                     |                    |
|                   | Macroramphosidae | <i>Macroramphosus gracilis</i>      | slender snipefish  |
|                   | Syngnathidae     | Syngnathus spp.                     | pipefishes         |
| Scorpaeniformes   |                  |                                     |                    |
|                   | Cottidae         | <i>Oligocottus/Clinocottus</i> spp. | sculpins           |
|                   | Hexagrammidae    | <i>Oxylebius pictus</i>             | painted greenling  |
|                   | Scorpaenidae     | Scorpaenidae                        | scorpion fishes    |
|                   | Scorpaenidae     | <i>Sebastes levis</i>               | cow cod            |
|                   | Scorpaenidae     | Sebastes spp.                       | rockfishes         |
| Perciformes       |                  |                                     |                    |
|                   | Blennidae        | <i>Hypsoblennius</i> spp.           | combtooth blennies |
|                   | Gobiidae         | CIQ goby complex                    | gobies             |
|                   | Gobiidae         | <i>Lythrypnus dalli</i>             | bluebanded goby    |
|                   | Gobiidae         | <i>Lythrypnus</i> spp.              | gobies             |
|                   | Gobiidae         | <i>Lythrypnus zebra</i>             | zebra goby         |
|                   | Gobiidae         | <i>Rhinogobiops nicholsi</i>        | blackeye goby      |
|                   | Gobiidae         | <i>Typhlogobius californiensis</i>  | blind goby         |
|                   | Serranidae       | <i>Paralabrax clathratus</i>        | kelp bass          |
|                   | Serranidae       | <i>Paralabrax</i> spp.              | sea basses         |
|                   | Carangidae       | Carangidae                          | jacks              |
|                   | Carangidae       | <i>Seriola lalandi</i>              | yellowtail jack    |
|                   | Carangidae       | <i>Trachurus symmetricus</i>        | jack mackerel      |
|                   | Haemulidae       | Haemulidae                          | grunts             |
|                   | Haemulidae       | <i>Xenistius californiensis</i>     | salema             |
|                   | Kyphosidae       | <i>Girella nigricans</i>            | opaleye            |
|                   | Kyphosidae       | <i>Medialuna californiensis</i>     | halfmoon           |
|                   | Labridae         | <i>Halichoeres semicinctus</i>      | rock wrasse        |
|                   | Labridae         | Labridae                            | wrasses            |

CIQ gobies complex comprises larvae of *Clevelandia ios*, *Ilypnus gilberti* and/or *Quietula y-cuada*.

(table continued)

**Larval fish collected and identified from offshore of Los Angeles (continued)**

| <b>Order</b>            | <b>Family</b>   | <b>Taxon</b>                     | <b>Common Name</b>         |
|-------------------------|-----------------|----------------------------------|----------------------------|
| Perciformes (continued) |                 |                                  |                            |
|                         | Labridae        | <i>Oxyjulis californica</i>      | senorita                   |
|                         | Labridae        | <i>Semicossyphus pulcher</i>     | California sheephead       |
|                         | Sciaenidae      | <i>Atractoscion nobilis</i>      | white seabass              |
|                         | Sciaenidae      | Sciaenidae                       | croakers                   |
|                         | Sciaenidae      | <i>Seriphus politus</i>          | queenfish                  |
|                         | Sciaenidae      | <i>Umbrina roncador</i>          | yellowfin croaker          |
|                         | Pomacentridae   | <i>Chromis punctipinnis</i>      | blacksmith                 |
|                         | Pomacentridae   | <i>Hypsypops rubicundus</i>      | garibaldi                  |
|                         | Pomacentridae   | Pomacentridae                    | damsel-fishes              |
|                         | Sphyraenidae    | <i>Sphyraena argentea</i>        | Pacific barracuda          |
|                         | Scombridae      | <i>Sarda chiliensis</i>          | Pacific bonito             |
|                         | Scombridae      | Scombridae                       | mackerels and tunas        |
|                         | Stromateidae    | <i>Peprilus simillimus</i>       | Pacific butterfish         |
| Mugilliformes           |                 |                                  |                            |
|                         | Mugilidae       | <i>Mugil cephalus</i>            | striped mullet             |
| Pleuronectiformes       |                 |                                  |                            |
|                         | Cynoglossidae   | <i>Symphurus atricaudus</i>      | California tonguefish      |
|                         | Cynoglossidae   | <i>Symphurus</i> spp.            | straightmouth tonguefishes |
|                         | Paralichthyidae | <i>Citharichthys sordidus</i>    | Pacific sanddab            |
|                         | Paralichthyidae | <i>Citharichthys</i> spp.        | sanddabs                   |
|                         | Paralichthyidae | <i>Citharichthys stigmaeus</i>   | speckled sanddab           |
|                         | Paralichthyidae | <i>Paralichthys californicus</i> | California halibut         |
|                         | Pleuronectidae  | <i>Pleuronichthys coenosus</i>   | c-o turbot                 |
|                         | Pleuronectidae  | <i>Pleuronichthys</i> spp.       | turbots                    |
|                         | Pleuronectidae  | <i>Pleuronichthys verticalis</i> | hornyhead turbot           |

## Larval fish collected and identified from Alamitos Bay and LA/LB Harbor Complex

| Order             | Family         | Taxon  | Common Name               |
|-------------------|----------------|--|---------------------------|
| Clupeiformes      |                | Clupeiformes                                     | herrings and anchovies    |
|                   | Clupeidae      | Clupeidae  | herrings                  |
|                   | Clupeidae      | <i>Sardinops sagax</i>                           | Pacific sardine           |
|                   | Engraulidae    | Engraulidae                                      | anchovies                 |
|                   | Engraulidae    | <i>Engraulis mordax</i>                          | northern anchovy          |
| Osmeriformes      |                |  |                           |
|                   | Bathylagidae   | <i>Leuroglossus</i> spp.                         | smoothtongues             |
|                   | Bathylagidae   | <i>Leuroglossus stilbius</i>                     | California smoothtongue   |
|                   | Bathylagidae   | <i>Lipolagus ochotensis</i>                      | popeye blacksmelt         |
| Myctophiformes    |                |  |                           |
|                   | Myctophidae    | <i>Diaphus theta</i>                             | California headlight fish |
|                   | Myctophidae    | Myctophidae                                      | lanternfishes             |
|                   | Myctophidae    | <i>Stenobranchius leucopsarus</i>                | northern lampfish         |
|                   | Myctophidae    | <i>Triphoturus mexicanus</i>                     | Mexican lampfish          |
| Gadiformes        |                |  |                           |
|                   | Merlucciidae   | <i>Merluccius productus</i>                      | Pacific hake              |
| Ohpidiiformes     |                |  |                           |
|                   | Ophidiidae     | Ophidiidae                                       | cusk-eels                 |
|                   | Ophidiidae     | <i>Ophidion scrippsae</i>                        | basketweave cusk-eel      |
| Atheriniformes    |                |  |                           |
|                   | Atherinopsidae | <i>Atherinops affinis</i>                        | topsmelt                  |
|                   | Atherinopsidae | Atherinopsidae                                   | silversides               |
|                   | Atherinopsidae | <i>Atherinopsis californiensis</i>               | jacksmelt                 |
|                   | Atherinopsidae | <i>Leuresthes tenuis</i>                         | California grunion        |
| Gasterosteiformes |                |  |                           |
|                   | Syngnathidae   | Syngnathidae                                     | pipefishes                |
|                   | Syngnathidae   | <i>Syngnathus leptorhynchus</i>                  | bay pipefish              |
|                   | Syngnathidae   | <i>Syngnathus</i> spp.                           | pipefishes                |
| Scorpaeniformes   |                |  |                           |
|                   | Cottidae       | <i>Artedius harringtoni</i>                      | scalyhead sculpin         |
|                   | Cottidae       | <i>Artedius lateralis</i>                        | smoothhead sculpin        |
|                   | Cottidae       | <i>Chitonotus pugetensis</i>                     | roughback sculpin         |
|                   | Cottidae       | <i>Chitonotus</i> spp./ <i>Icelinus</i> spp.     | sculpins                  |
|                   | Cottidae       | <i>Clinocottus analis</i>                        | wooly sculpin             |
|                   | Cottidae       | <i>Clinocottus</i> spp.                          | sculpins                  |
|                   | Cottidae       | Cottidae   | sculpins                  |
|                   | Cottidae       | <i>Icelinus quadriseriatus</i>                   | yellowchin sculpin        |
|                   | Cottidae       | <i>Icelinus</i> spp.                             | sculpins                  |
|                   | Cottidae       | <i>Leptocottus armatus</i>                       | Pacific staghorn sculpin  |
|                   | Cottidae       | <i>Oligocottus</i> spp.                          | sculpins                  |
|                   | Cottidae       | <i>Oligocottus</i> spp./ <i>Clinocottus</i> spp. | sculpins                  |
|                   | Cottidae       | <i>Orthonopias triacis</i>                       | snubnose sculpin          |

(table continued)

**Larval fish collected and identified from Alamitos Bay and LA/LB Harbor Complex**  
(continued)

| <b>Order</b>    | <b>Family</b>   | <b>Taxon</b>                       | <b>Common Name</b>   |
|-----------------|-----------------|------------------------------------|----------------------|
| Scorpaeniformes |                 |                                    |                      |
|                 | Cottidae        | <i>Ruscarius creaseri</i>          | roughcheek sculpin   |
|                 | Cottidae        | <i>Scorpaenichthys marmoratus</i>  | cabezon              |
|                 | Hexagrammidae   | Hexagrammidae                      | greenlings           |
|                 | Hexagrammidae   | <i>Oxylebius pictus</i>            | painted greenling    |
|                 | Hexagrammidae   | <i>Zaniolepis frenata</i>          | shortspine combfish  |
|                 | Hexagrammidae   | <i>Zaniolepis</i> spp.             | combfishes           |
|                 | Scorpaenidae    | Scorpaenidae                       | scorpion fishes      |
|                 | Scorpaenidae    | <i>Sebastes</i> spp.               | rockfishes           |
| Perciformes     |                 |                                    |                      |
|                 | Bathymasteridae | Bathymasteridae                    | ronquils             |
|                 | Blennidae       | <i>Hypsoblennius gilberti</i>      | rockpool blenny      |
|                 | Blennidae       | <i>Hypsoblennius jenkinsi</i>      | mussel blenny        |
|                 | Blennidae       | <i>Hypsoblennius</i> spp.          | combtooth blennies   |
|                 | Clinidae        | Clinidae                           | kelp blennies        |
|                 | Clinidae        | <i>Gibbonsia</i> spp.              | kelpfishes           |
|                 | Clinidae        | <i>Heterostichus rostratus</i>     | giant kelpfish       |
|                 | Chaenopsidae    | Chaenopsidae                       | tube blennies        |
|                 | Chaenopsidae    | <i>Neoclinus</i> spp.              | fringeheads          |
|                 | Gobiesocidae    | Gobiesocidae                       | clingfishes          |
|                 | Gobiesocidae    | <i>Gobiesox</i> spp.               | clingfishes          |
|                 | Gobiidae        | <i>Acanthogobius flavimanus</i>    | yellowfin goby       |
|                 | Gobiidae        | CIQ goby complex                   | gobies               |
|                 | Gobiidae        | <i>Clevelandia ios</i>             | arrow goby           |
|                 | Gobiidae        | <i>Gillichthys mirabilis</i>       | longjaw mudsucker    |
|                 | Gobiidae        | <i>Ilypnus gilberti</i>            | cheekspot goby       |
|                 | Gobiidae        | <i>Lepidogobius lepidus</i>        | bay goby             |
|                 | Gobiidae        | <i>Lythrypnus</i> spp.             | gobies               |
|                 | Gobiidae        | <i>Lythrypnus zebra</i>            | zebra goby           |
|                 | Gobiidae        | <i>Quietula y-cauda</i>            | shadow goby          |
|                 | Gobiidae        | <i>Rhinogobiops nicholsi</i>       | blackeye goby        |
|                 | Gobiidae        | <i>Tridentiger trigonocephalus</i> | chameleon goby       |
|                 | Gobiidae        | <i>Typhlogobius californiensis</i> | blind goby           |
|                 | Serranidae      | <i>Paralabrax</i> spp.             | sea basses           |
|                 | Haemulidae      | Haemulidae                         | grunts               |
|                 | Haemulidae      | <i>Xenistius californiensis</i>    | salema               |
|                 | Kyphosidae      | <i>Girella nigricans</i>           | opaleye              |
|                 | Labridae        | Labridae                           | wrasses              |
|                 | Labridae        | <i>Oxyjulis californica</i>        | senorita             |
|                 | Labridae        | <i>Semicossyphus pulcher</i>       | California sheephead |
|                 | Labrisomidae    | Labrisomidae                       | labrisomid blennies  |
|                 | Labrisomidae    | <i>Paraclinus</i> spp.             | clinid               |

CIQ gobies complex comprises larvae of *Clevelandia ios*, *Ilypnus gilberti* and/or *Quietula y-cauda*.

(table continued)

**Larval fish collected and identified from Alamitos Bay and LA/LB Harbor Complex**  
(continued)

| <b>Order</b>      | <b>Family</b>   | <b>Taxon</b>                     | <b>Common Name</b>    |
|-------------------|-----------------|----------------------------------|-----------------------|
| Perciformes       | Pomacentridae   | <i>Hypsypops rubicundus</i>      | garibaldi             |
|                   | Pomacentridae   | Pomacentridae                    | damselfishes          |
|                   | Sciaenidae      | <i>Cheilotrema saturnum</i>      | black croaker         |
|                   | Sciaenidae      | <i>Genyonemus lineatus</i>       | white croaker         |
|                   | Sciaenidae      | <i>Menticirrhus undulatus</i>    | California corbina    |
|                   | Sciaenidae      | <i>Roncador stearnsii</i>        | spotfin croaker       |
|                   | Sciaenidae      | Sciaenidae                       | croakers              |
|                   | Sciaenidae      | <i>Seriphus politus</i>          | queenfish             |
|                   | Sciaenidae      | <i>Umbrina roncador</i>          | yellowfin croaker     |
|                   | Sphyraenidae    | <i>Sphyraena argentea</i>        | Pacific barracuda     |
|                   | Sphyraenidae    | <i>Halichoeres semicinctus</i>   | rock wrasse           |
|                   | Stichaeidae     | Stichaeidae                      | pricklebacks          |
|                   | Stromateidae    | <i>Peprilus simillimus</i>       | Pacific butterfish    |
| Pleuronectiformes | Cynoglossidae   | Cynoglossidae                    | tonguefishes          |
|                   | Cynoglossidae   | <i>Symphurus atricaudus</i>      | California tonguefish |
|                   | Paralichthyidae | <i>Citharichthys sordidus</i>    | Pacific sanddab       |
|                   | Paralichthyidae | <i>Citharichthys</i> spp.        | sanddabs              |
|                   | Paralichthyidae | <i>Citharichthys stigmaeus</i>   | speckled sanddab      |
|                   | Paralichthyidae | Paralichthyidae                  | sand flounders        |
|                   | Paralichthyidae | <i>Paralichthys californicus</i> | California halibut    |
|                   | Paralichthyidae | <i>Xystreurus liolepis</i>       | fantail sole          |
|                   | Pleuronectidae  | <i>Isopsetta isolepis</i>        | butter sole           |
|                   | Pleuronectidae  | <i>Lyopsetta exilis</i>          | slender sole          |
|                   | Pleuronectidae  | <i>Parophrys vetulus</i>         | English sole          |
|                   | Pleuronectidae  | Pleuronectidae                   | righteye flounders    |
|                   | Pleuronectidae  | <i>Pleuronichthys guttulatus</i> | diamond turbot        |
|                   | Pleuronectidae  | <i>Pleuronichthys ritteri</i>    | spotted turbot        |
|                   | Pleuronectidae  | <i>Pleuronichthys</i> spp.       | turbots               |
|                   | Pleuronectidae  | <i>Pleuronichthys verticalis</i> | hornyhead turbot      |

## Larval fish collected and identified from Los Angeles Outer Coast

| Order             | Family          | Taxon                              | Common Name              |
|-------------------|-----------------|------------------------------------|--------------------------|
| Clupeiformes      |                 |                                    |                          |
|                   | Engraulidae     | Engraulidae                        | anchovies                |
|                   | Engraulidae     | <i>Engraulis mordax</i>            | northern anchovy         |
| Myctophiformes    |                 |                                    |                          |
|                   | Myctophidae     | Myctophidae                        | lanternfishes            |
|                   | Myctophidae     | <i>Stenobranchius leucopsarus</i>  | northern lampfish        |
|                   | Myctophidae     | <i>Triphoturus mexicanus</i>       | Mexican lampfish         |
| Atheriniformes    |                 |                                    |                          |
|                   | Atherinopsidae  | Atherinopsidae                     | silversides              |
|                   | Atherinopsidae  | <i>Atherinopsis californiensis</i> | jacksmelt                |
| Gasterosteiformes |                 |                                    |                          |
|                   | Syngnathidae    | <i>Syngnathus</i> spp.             | pipefishes               |
| Scorpaeniformes   |                 |                                    |                          |
|                   | Cottidae        | Cottidae                           | sculpins                 |
|                   | Cottidae        | <i>Leptocottus armatus</i>         | Pacific staghorn sculpin |
|                   | Cottidae        | <i>Ruscarius creaseri</i>          | roughcheek sculpin       |
|                   | Cottidae        | <i>Scorpaenichthys marmoratus</i>  | cabezón                  |
|                   | Hexagrammidae   | <i>Oxylebius pictus</i>            | painted greenling        |
|                   | Scorpaenidae    | Scorpaenidae                       | scorpion fishes          |
|                   | Scorpaenidae    | <i>Sebastes</i> spp.               | rockfishes               |
| Perciformes       |                 |                                    |                          |
|                   | Blennidae       | <i>Hypsoblennius jenkinsi</i>      | mussel blenny            |
|                   | Blennidae       | <i>Hypsoblennius</i> spp.          | combtooth blennies       |
|                   | Clinidae        | <i>Gibbonsia</i> spp.              | kelpfishes               |
|                   | Chaenopsidae    | Chaenopsidae                       | tube blennies            |
|                   | Labrisomidae    | Labrisomidae                       | labrisomid blennies      |
|                   | Gobiesocidae    | <i>Gobiesox</i> spp.               | clingfishes              |
|                   | Gobiidae        | <i>Acanthogobius flavimanus</i>    | yellowfin goby           |
|                   | Gobiidae        | CIQ goby complex                   | gobies                   |
|                   | Gobiidae        | <i>Gillichthys mirabilis</i>       | longjaw mudsucker        |
|                   | Gobiidae        | <i>Ilypnus gilberti</i>            | cheekspot goby           |
|                   | Gobiidae        | <i>Lepidogobius lepidus</i>        | bay goby                 |
|                   | Gobiidae        | <i>Lythrypnus</i> spp.             | gobies                   |
|                   | Gobiidae        | <i>Rhinogobiops nicholsi</i>       | blackeye goby            |
|                   | Pomacentridae   | Pomacentridae                      | damsel fishes            |
|                   | Sciaenidae      | <i>Atractoscion nobilis</i>        | white seabass            |
|                   | Sciaenidae      | <i>Cheilotrema saturnum</i>        | black croaker            |
|                   | Sciaenidae      | <i>Genyonemus lineatus</i>         | white croaker            |
|                   | Sciaenidae      | Sciaenidae                         | croakers                 |
|                   | Sciaenidae      | <i>Seriphus politus</i>            | queenfish                |
|                   | Scombridae      | Scombridae                         | mackerels and tunas      |
| Pleuronectiformes |                 |                                    |                          |
|                   | Paralichthyidae | <i>Citharichthys sordidus</i>      | Pacific sanddab          |
|                   | Paralichthyidae | <i>Citharichthys</i> spp.          | sanddabs                 |

CIQ gobies complex comprises larvae of *Clevelandia ios*, *Ilypnus gilberti* and/or *Quietula y-cuada*. (table continued)

**Larval fish collected and identified from Los Angeles Outer Coast (continued)**

| <b>Order</b>                  | <b>Family</b>   | <b>Taxon</b>                     | <b>Common Name</b> |
|-------------------------------|-----------------|----------------------------------|--------------------|
| Pleuronectiformes (continued) |                 |                                  |                    |
|                               | Paralichthyidae | <i>Citharichthys stigmaeus</i>   | speckled sanddab   |
|                               | Paralichthyidae | <i>Hippoglossina stomata</i>     | bigmouth sole      |
|                               | Paralichthyidae | Paralichthyidae                  | sand flounders     |
|                               | Paralichthyidae | <i>Paralichthys californicus</i> | California halibut |
|                               | Paralichthyidae | <i>Xystreureys liolepis</i>      | fantail sole       |
|                               | Pleuronectidae  | Pleuronectidae                   | righteye flounders |
|                               | Pleuronectidae  | <i>Pleuronichthys guttulatus</i> | diamond turbot     |
|                               | Pleuronectidae  | <i>Pleuronichthys ritteri</i>    | spotted turbot     |
|                               | Pleuronectidae  | <i>Pleuronichthys</i> spp.       | turbots            |
|                               | Pleuronectidae  | <i>Pleuronichthys verticalis</i> | hornyhead turbot   |

## Larval fish collected and identified from San Diego Outer Coast

| Order             | Family                | Taxon                               | Common Name               |
|-------------------|-----------------------|-------------------------------------|---------------------------|
| Clupeiformes      | Clupeidae             | Clupeidae                           | herrings                  |
|                   | Clupeidae             | <i>Sardinops sagax</i>              | Pacific sardine           |
|                   | Engraulidae           | <i>Anchoa</i> spp.                  | bay anchovies             |
|                   | Engraulidae           | Engraulidae                         | anchovies                 |
|                   | Engraulidae           | <i>Engraulis mordax</i>             | northern anchovy          |
| Osmeriformes      | Bathylagidae          | <i>Lipolagus ochotensis</i>         | popeye blacksmelt         |
| Aulopiformes      | Synodontidae          | <i>Synodus lucioceps</i>            | California lizardfish     |
| Myctophiformes    | Myctophidae           | <i>Diaphus theta</i>                | California headlight fish |
|                   | Myctophidae           | Myctophidae                         | lanternfishes             |
|                   | Myctophidae           | <i>Stenobranchius leucopsarus</i>   | northern lampfish         |
|                   | Myctophidae           | <i>Triphoturus mexicanus</i>        | Mexican lampfish          |
| Gadiformes        | Merlucciidae          | <i>Merluccius productus</i>         | Pacific hake              |
| Ohpidiiformes     | Ophidiidae            | Ophidiidae                          | cusks-eels                |
| Atheriniformes    | Atherinopsidae        | <i>Atherinops affinis</i>           | topsmelt                  |
|                   | Atherinopsidae        | Atherinopsidae                      | silversides               |
|                   | Atherinopsidae        | <i>Atherinopsis californiensis</i>  | jacksmelt                 |
|                   | Atherinopsidae        | <i>Leuresthes tenuis</i>            | California grunion        |
| Gasterosteiformes | Syngnathidae          | <i>Syngnathus exilis</i>            | barcheek pipefish         |
|                   | Syngnathidae          | <i>Syngnathus</i> spp.              | pipefishes                |
| Scorpaeniformes   | Cottidae              | <i>Artedius lateralis</i>           | smoothhead sculpin        |
|                   | Cottidae              | Cottidae                            | sculpins                  |
|                   | Cottidae              | <i>Leptocottus armatus</i>          | Pacific staghorn sculpin  |
|                   | Cottidae              | <i>Oligocottus/Clinocottus</i> spp. | sculpins                  |
|                   | Cottidae              | <i>Orthonopias triacis</i>          | snubnose sculpin          |
|                   | Cottidae              | <i>Ruscarius creaseri</i>           | roughcheek sculpin        |
|                   | Cottidae              | <i>Scorpaenichthys marmoratus</i>   | cabezon                   |
|                   | Hexagrammidae         | <i>Oxylebius pictus</i>             | painted greenling         |
| Perciformes       | Scorpaenidae          | <i>Sebastes</i> spp.                | rockfishes                |
|                   | Blennidae             | <i>Hypsoblennius jenkinsi</i>       | mussel blenny             |
|                   | Blennidae             | <i>Hypsoblennius</i> spp.           | combtooth blennies        |
|                   | Clinidae              | Clinidae                            | kelp blennies             |
| Clinidae          | <i>Gibbonsia</i> spp. | kelpfishes                          |                           |

(table continued)

### Larval fish collected and identified from San Diego Outer Coast (continued)

| Order             | Family          | Taxon                              | Common Name           |
|-------------------|-----------------|------------------------------------|-----------------------|
| Perciformes       |                 |                                    |                       |
|                   | Clinidae        | <i>Heterostichus rostratus</i>     | giant kelpfish        |
|                   | Chaenopsidae    | Chaenopsidae                       | tube blennies         |
|                   | Gobiesocidae    | Gobiesocidae                       | clingfishes           |
|                   | Gobiesocidae    | <i>Gobiesox</i> spp.               | clingfishes           |
|                   | Gobiesocidae    | <i>Rimicola eigenmanni</i>         | slender clingfish     |
|                   | Gobiesocidae    | <i>Rimicola</i> spp.               | kelp clingfishes      |
|                   | Gobiidae        | <i>Acanthogobius flavimanus</i>    | yellowfin goby        |
|                   | Gobiidae        | CIQ goby complex                   | gobies                |
|                   | Gobiidae        | <i>Gillichthys mirabilis</i>       | longjaw mudsucker     |
|                   | Gobiidae        | <i>Lepidogobius lepidus</i>        | bay goby              |
|                   | Gobiidae        | <i>Rhinogobiops nicholsi</i>       | blackeye goby         |
|                   | Gobiidae        | <i>Typhlogobius californiensis</i> | blind goby            |
|                   | Labrisomidae    | Labrisomidae                       | labrisomid blennies   |
|                   | Serranidae      | <i>Paralabrax clathratus</i>       | kelp bass             |
|                   | Serranidae      | <i>Paralabrax</i> spp.             | sea basses            |
|                   | Haemulidae      | <i>Anisotremus davidsonii</i>      | sargo                 |
|                   | Haemulidae      | Haemulidae                         | grunts                |
|                   | Haemulidae      | <i>Xenistius californiensis</i>    | salema                |
|                   | Kyphosidae      | <i>Girella nigricans</i>           | opaleye               |
|                   | Labridae        | <i>Halichoeres semicinctus</i>     | rock wrasse           |
|                   | Labridae        | Labridae                           | wrasses               |
|                   | Labridae        | <i>Oxyjulis californica</i>        | senorita              |
|                   | Labridae        | <i>Semicossyphus pulcher</i>       | California sheephead  |
|                   | Sciaenidae      | <i>Atractoscion nobilis</i>        | white seabass         |
|                   | Sciaenidae      | <i>Cheilotrema saturnum</i>        | black croaker         |
|                   | Sciaenidae      | <i>Genyonemus lineatus</i>         | white croaker         |
|                   | Sciaenidae      | <i>Menticirrhus undulatus</i>      | California corbina    |
|                   | Sciaenidae      | <i>Roncador stearnsii</i>          | spotfin croaker       |
|                   | Sciaenidae      | Sciaenidae                         | croakers              |
|                   | Sciaenidae      | <i>Seriphus politus</i>            | queenfish             |
|                   | Sciaenidae      | <i>Umbrina roncador</i>            | yellowfin croaker     |
|                   | Pomacentridae   | <i>Hypsypops rubicundus</i>        | garibaldi             |
|                   | Sphyraenidae    | <i>Sphyraena argentea</i>          | Pacific barracuda     |
|                   | Scombridae      | <i>Sarda chiliensis</i>            | Pacific bonito        |
|                   | Stromateidae    | <i>Peprilus simillimus</i>         | Pacific butterfish    |
| Pleuronectiformes |                 |                                    |                       |
|                   | Cynoglossidae   | <i>Symphurus atricaudus</i>        | California tonguefish |
|                   | Paralichthyidae | <i>Citharichthys sordidus</i>      | Pacific sanddab       |
|                   | Paralichthyidae | <i>Citharichthys</i> spp.          | sanddabs              |
|                   | Paralichthyidae | <i>Citharichthys stigmaeus</i>     | speckled sanddab      |
|                   | Paralichthyidae | Paralichthyidae                    | sand flounders        |
|                   | Paralichthyidae | <i>Paralichthys californicus</i>   | California halibut    |
|                   | Paralichthyidae | <i>Xystreurus liolepis</i>         | fantail sole          |

CIQ gobies complex comprises larvae of *Clevelandia ios*, *Ilypnus gilberti* and/or *Quietula y-cuada*.

(table continued)

**Larval fish collected and identified from San Diego Outer Coast (continued)**

| <b>Order</b>      | <b>Family</b>  | <b>Taxon</b>                     | <b>Common Name</b> |
|-------------------|----------------|----------------------------------|--------------------|
| Pleuronectiformes |                |                                  |                    |
|                   | Pleuronectidae | <i>Lyopsetta exilis</i>          | slender sole       |
|                   | Pleuronectidae | <i>Parophrys vetulus</i>         | English sole       |
|                   | Pleuronectidae | Pleuronectidae                   | righteye flounders |
|                   | Pleuronectidae | <i>Pleuronichthys guttulatus</i> | diamond turbot     |
|                   | Pleuronectidae | <i>Pleuronichthys ritteri</i>    | spotted turbot     |
|                   | Pleuronectidae | <i>Pleuronichthys</i> spp.       | turbots            |
|                   | Pleuronectidae | <i>Pleuronichthys verticalis</i> | hornyhead turbot   |

## Larval fish collected and identified from Aqua Hedionda Lagoon and outer coast

| Order             | Family         | Taxon                               | Common Name               |
|-------------------|----------------|-------------------------------------|---------------------------|
| Clupeiformes      |                | Clupeiformes                        | herrings and anchovies    |
|                   | Clupeidae      | Clupeidae                           | herrings                  |
|                   | Clupeidae      | <i>Sardinops sagax</i>              | Pacific sardine           |
|                   | Engraulidae    | <i>Anchoa delicatissima</i>         | slough anchovy            |
|                   | Engraulidae    | Engraulidae                         | anchovies                 |
|                   | Engraulidae    | <i>Engraulis mordax</i>             | northern anchovy          |
| Osmeriformes      |                |                                     |                           |
|                   | Bathylagidae   | <i>Lipolagus ochotensis</i>         | popeye blacksmelt         |
| Stomiiformes      |                |                                     |                           |
|                   | Gonostomatidae | <i>Cyclothone acclinidens</i>       | bent tooth bristlemouth   |
|                   | Gonostomatidae | <i>Cyclothone</i> spp.              | bristlemouths             |
| Myctophiformes    |                |                                     |                           |
|                   | Myctophidae    | <i>Diaphus theta</i>                | California headlight fish |
|                   | Myctophidae    | Myctophidae                         | lanternfishes             |
|                   | Myctophidae    | <i>Nannobranchium ritteri</i>       | broadfin lampfish         |
|                   | Myctophidae    | <i>Nannobranchium</i> spp.          | lanternfishes             |
|                   | Myctophidae    | <i>Stenobranchius leucopsarus</i>   | northern lampfish         |
|                   | Myctophidae    | <i>Symbolophorus californiensis</i> | California lanternfish    |
|                   | Myctophidae    | <i>Triphoturus mexicanus</i>        | Mexican lampfish          |
| Batrachoidiformes |                |                                     |                           |
|                   | Batrachoididae | <i>Porichthys myriaster</i>         | specklefin midshipman     |
| Ohpidiiformes     |                |                                     |                           |
|                   | Ophidiidae     | <i>Chilara taylori</i>              | spotted cusk-eel          |
|                   | Ophidiidae     | Ophidiidae                          | cusk-eels                 |
|                   | Ophidiidae     | <i>Ophidion scrippsae</i>           | basketweave cusk-eel      |
| Beloniformes      |                |                                     |                           |
|                   | Hemiramphidae  | <i>Hyporhamphus rosae</i>           | California halfbeak       |
| Atheriniformes    |                |                                     |                           |
|                   | Atherinopsidae | <i>Atherinops affinis</i>           | topsmelt                  |
|                   | Atherinopsidae | Atherinopsidae                      | silversides               |
|                   | Atherinopsidae | <i>Atherinopsis californiensis</i>  | jacksmelt                 |
|                   | Atherinopsidae | <i>Leuresthes tenuis</i>            | California grunion        |
| Gasterosteiformes |                |                                     |                           |
|                   | Syngnathidae   | <i>Cosmocampus arctus</i>           | snubnose pipefish         |
|                   | Syngnathidae   | Syngnathidae                        | pipefishes                |
|                   | Syngnathidae   | <i>Syngnathus californiensis</i>    | kelp pipefish             |
|                   | Syngnathidae   | <i>Syngnathus leptorhynchus</i>     | bay pipefish              |
|                   | Syngnathidae   | <i>Syngnathus</i> spp.              | pipefishes                |
| Scorpaeniformes   |                |                                     |                           |
|                   | Agonidae       | Agonidae                            | poachers                  |
|                   | Cottidae       | <i>Clinocottus analis</i>           | wooly sculpin             |
|                   | Cottidae       | <i>Clinocottus</i> spp.             | sculpins                  |
|                   | Cottidae       | <i>Icelinus</i> spp.                | sculpins                  |

(table continued)

**Larval fish collected and identified from Aqua Hedionda Lagoon and adjacent outer coast (continued)**

| <b>Order</b>                | <b>Family</b> | <b>Taxon</b>                       | <b>Common Name</b>       |
|-----------------------------|---------------|------------------------------------|--------------------------|
| Scorpaeniformes (continued) |               |                                    |                          |
|                             | Cottidae      | <i>Leptocottus armatus</i>         | Pacific staghorn sculpin |
|                             | Cottidae      | <i>Oligocottus</i> spp.            | sculpins                 |
|                             | Cottidae      | <i>Ruscarius creaseri</i>          | roughcheek sculpin       |
|                             | Scorpaenidae  | <i>Sebastes jordani</i>            | shortbelly rockfish      |
|                             | Scorpaenidae  | <i>Sebastes</i> spp.               | rockfishes               |
|                             | Hexagrammidae | Hexagrammidae                      | greenlings               |
|                             | Hexagrammidae | <i>Zaniolepis frenata</i>          | shortspine combfish      |
| Perciformes                 |               |                                    |                          |
|                             | Blennidae     | <i>Hypsoblennius gentilis</i>      | bay blenny               |
|                             | Blennidae     | <i>Hypsoblennius jenkinsi</i>      | mussel blenny            |
|                             | Blennidae     | <i>Hypsoblennius</i> spp.          | combtooth blennies       |
|                             | Carangidae    | <i>Trachurus symmetricus</i>       | jack mackerel            |
|                             | Chaenopsidae  | Chaenopsidae                       | tube blennies            |
|                             | Clinidae      | Clinidae                           | kelp blennies            |
|                             | Clinidae      | <i>Gibbonsia</i> spp.              | kelpfishes               |
|                             | Clinidae      | <i>Heterostichus rostratus</i>     | giant kelpfish           |
|                             | Gobiidae      | <i>Acanthogobius flavimanus</i>    | yellowfin goby           |
|                             | Gobiidae      | CIQ goby complex                   | gobies                   |
|                             | Gobiidae      | <i>Clevelandia ios</i>             | arrow goby               |
|                             | Gobiidae      | <i>Gillichthys mirabilis</i>       | longjaw mudsucker        |
|                             | Gobiidae      | <i>Ilypnus gilberti</i>            | cheekspot goby           |
|                             | Gobiidae      | <i>Lepidogobius lepidus</i>        | bay goby                 |
|                             | Gobiidae      | <i>Quietula y-cauda</i>            | shadow goby              |
|                             | Gobiidae      | <i>Rhinogobiops nicholsi</i>       | blackeye goby            |
|                             | Gobiidae      | <i>Typhlogobius californiensis</i> | blind goby               |
|                             | Gobiesocidae  | Gobiesocidae                       | clingfishes              |
|                             | Gobiesocidae  | <i>Gobiesox</i> spp.               | clingfishes              |
|                             | Gobiesocidae  | <i>Rimicola eigenmanni</i>         | slender clingfish        |
|                             | Gobiesocidae  | <i>Rimicola</i> spp.               | kelp clingfishes         |
|                             | Haemulidae    | <i>Anisotremus davidsonii</i>      | sargo                    |
|                             | Haemulidae    | Haemulidae                         | grunts                   |
|                             | Haemulidae    | <i>Xenistius californiensis</i>    | salema                   |
|                             | Kyphosidae    | <i>Girella nigricans</i>           | opaleye                  |
|                             | Kyphosidae    | Kyphosidae                         | sea chubs                |
|                             | Kyphosidae    | <i>Medialuna californiensis</i>    | halfmoon                 |
|                             | Labridae      | <i>Halichoeres semicinctus</i>     | rock wrasse              |
|                             | Labridae      | Labridae                           | wrasses                  |
|                             | Labridae      | <i>Oxyjulis californica</i>        | senorita                 |
|                             | Labridae      | <i>Semicossyphus pulcher</i>       | California sheephead     |

CIQ gobies complex comprises larvae of *Clevelandia ios*, *Ilypnus gilberti* and/or *Quietula y-cauda*.

(table continued)

**Larval fish collected and identified from Aqua Hedionda Lagoon and adjacent outer coast (continued)**

| <b>Order</b>      | <b>Family</b>   | <b>Taxon</b>                     | <b>Common Name</b>    |
|-------------------|-----------------|----------------------------------|-----------------------|
| Perciformes       | Labrisomidae    | Labrisomidae                     | labrisomid blennies   |
|                   | Labrisomidae    | <i>Paraclinus</i> spp.           | clinid                |
|                   | Pomacentridae   | <i>Chromis punctipinnis</i>      | blacksmith            |
|                   | Pomacentridae   | <i>Hypsypops rubicundus</i>      | garibaldi             |
|                   | Pomacentridae   | Pomacentridae                    | damsel-fishes         |
|                   | Serranidae      | <i>Paralabrax clathratus</i>     | kelp bass             |
|                   | Serranidae      | <i>Paralabrax nebulifer</i>      | barred sand bass      |
|                   | Serranidae      | <i>Paralabrax</i> spp.           | sea basses            |
|                   | Sciaenidae      | <i>Atractoscion nobilis</i>      | white seabass         |
|                   | Sciaenidae      | <i>Cheilotrema saturnum</i>      | black croaker         |
|                   | Sciaenidae      | <i>Genyonemus lineatus</i>       | white croaker         |
|                   | Sciaenidae      | <i>Menticirrhus undulatus</i>    | California corbina    |
|                   | Sciaenidae      | <i>Roncador stearnsii</i>        | spotfin croaker       |
|                   | Sciaenidae      | Sciaenidae                       | croakers              |
|                   | Sciaenidae      | <i>Seriphus politus</i>          | queenfish             |
|                   | Sciaenidae      | <i>Umbrina roncador</i>          | yellowfin croaker     |
|                   | Scombridae      | <i>Scomber japonicus</i>         | Pacific mackerel      |
|                   | Sphyraenidae    | <i>Sphyraena argentea</i>        | Pacific barracuda     |
|                   | Stromateidae    | <i>Peprilus simillimus</i>       | Pacific butterfish    |
| Pleuronectiformes | Cynoglossidae   | Cynoglossidae                    | tonguefishes          |
|                   | Cynoglossidae   | <i>Symphurus atricaudus</i>      | California tonguefish |
|                   | Paralichthyidae | <i>Citharichthys sordidus</i>    | Pacific sanddab       |
|                   | Paralichthyidae | <i>Citharichthys</i> spp.        | sanddabs              |
|                   | Paralichthyidae | <i>Citharichthys stigmaeus</i>   | speckled sanddab      |
|                   | Paralichthyidae | <i>Hippoglossina stomata</i>     | bigmouth sole         |
|                   | Paralichthyidae | Paralichthyidae                  | sand flounders        |
|                   | Paralichthyidae | <i>Paralichthys californicus</i> | California halibut    |
|                   | Paralichthyidae | <i>Xystreureys liolepis</i>      | fantail sole          |
|                   | Pleuronectidae  | <i>Lyopsetta exilis</i>          | slender sole          |
|                   | Pleuronectidae  | <i>Parophrys vetulus</i>         | English sole          |
|                   | Pleuronectidae  | Pleuronectidae                   | righteye flounders    |
|                   | Pleuronectidae  | <i>Pleuronichthys guttulatus</i> | diamond turbot        |
|                   | Pleuronectidae  | <i>Pleuronichthys ritteri</i>    | spotted turbot        |
|                   | Pleuronectidae  | <i>Pleuronichthys</i> spp.       | turbots               |
|                   | Pleuronectidae  | <i>Pleuronichthys verticalis</i> | hornyhead turbot      |

## Larval fish collected and identified from San Diego Bay

| Order             | Family         | Taxon                              | Common Name              |
|-------------------|----------------|------------------------------------|--------------------------|
| Clupeiformes      | Clupeidae      | Clupeidae                          | herrings                 |
|                   | Engraulidae    | <i>Anchoa delicatissima</i>        | slough anchovy           |
|                   | Engraulidae    | <i>Anchoa</i> spp.                 | bay anchovies            |
|                   | Engraulidae    | Engraulidae                        | anchovies                |
|                   | Engraulidae    | <i>Engraulis mordax</i>            | northern anchovy         |
| Myctophiformes    | Myctophidae    | <i>Nannobranchium</i> spp.         | lanternfishes            |
| Batrachoidiformes | Batrachoididae | <i>Porichthys myriaster</i>        | specklefin midshipman    |
| Perciformes       | Gobiesocidae   | <i>Gobiesox rhesodon</i>           | California clingfish     |
|                   | Gobiesocidae   | <i>Gobiesox</i> spp.               | clingfishes              |
| Beloniformes      | Belonidae      | <i>Strongylura exilis</i>          | California needlefish    |
|                   | Hemiramphidae  | <i>Hyporhamphus rosae</i>          | California halfbeak      |
| Atheriniformes    | Atherinopsidae | <i>Atherinops affinis</i>          | topsmelt                 |
|                   | Atherinopsidae | Atherinopsidae                     | silversides              |
|                   | Atherinopsidae | <i>Atherinopsis californiensis</i> | jacksmelt                |
|                   | Atherinopsidae | <i>Leuresthes tenuis</i>           | California grunion       |
| Gasterosteiformes | Syngnathidae   | <i>Hippocampus ingens</i>          | Pacific seahorse         |
|                   | Syngnathidae   | <i>Syngnathus leptorhynchus</i>    | bay pipefish             |
|                   | Syngnathidae   | <i>Syngnathus</i> spp.             | pipefishes               |
| Scorpaeniformes   | Agonidae       | <i>Odontopyxis trispinosa</i>      | pygmy poacher            |
|                   | Cottidae       | <i>Artedius</i> spp.               | sculpins                 |
|                   | Cottidae       | <i>Clinocottus analis</i>          | wooly sculpin            |
|                   | Cottidae       | Cottidae                           | sculpins                 |
|                   | Cottidae       | <i>Leptocottus armatus</i>         | Pacific staghorn sculpin |
|                   | Cottidae       | <i>Oligocottus</i> spp.            | sculpins                 |
|                   | Cottidae       | <i>Ruscarius creaseri</i>          | roughcheek sculpin       |
|                   | Scorpaenidae   | <i>Sebastes</i> spp.               | rockfishes               |
| Perciformes       | Blennidae      | <i>Hypsoblennius jenkinsi</i>      | mussel blenny            |
|                   | Blennidae      | <i>Hypsoblennius</i> spp.          | combtooth blennies       |
|                   | Carangidae     | <i>Trachurus symmetricus</i>       | jack mackerel            |
|                   | Clinidae       | <i>Gibbonsia</i> spp.              | kelpfishes               |
|                   | Chaenopsidae   | Chaenopsidae                       | tube blennies            |
|                   | Gobiidae       | <i>Acanthogobius flavimanus</i>    | yellowfin goby           |
|                   | Gobiidae       | CIQ goby complex                   | gobies                   |
|                   | Gobiidae       | <i>Clevelandia ios</i>             | arrow goby               |

CIQ gobies complex comprises larvae of *Clevelandia ios*, *Ilypnus gilberti* and/or *Quietula y-cuada*.

(table continued)

**Larval fish collected and identified from San Diego Bay (continued)**

| <b>Order</b>            | <b>Family</b>   | <b>Taxon</b>                       | <b>Common Name</b>  |
|-------------------------|-----------------|------------------------------------|---------------------|
| Perciformes (continued) |                 |                                    |                     |
|                         | Gobiidae        | <i>Gillichthys mirabilis</i>       | longjaw mudsucker   |
|                         | Gobiidae        | <i>Ilypnus gilberti</i>            | cheekspot goby      |
|                         | Gobiidae        | <i>Lepidogobius lepidus</i>        | bay goby            |
|                         | Gobiidae        | <i>Quietula y-cauda</i>            | shadow goby         |
|                         | Gobiidae        | <i>Typhlogobius californiensis</i> | blind goby          |
|                         | Labridae        | Labridae                           | wrasses             |
|                         | Labrisomidae    | Labrisomidae                       | labrisomid blennies |
|                         | Sciaenidae      | <i>Atractoscion nobilis</i>        | white seabass       |
|                         | Sciaenidae      | <i>Cheilotrema saturnum</i>        | black croaker       |
|                         | Sciaenidae      | <i>Genyonemus lineatus</i>         | white croaker       |
|                         | Sciaenidae      | <i>Menticirrhus undulatus</i>      | California corbina  |
|                         | Sciaenidae      | <i>Roncador stearnsii</i>          | spotfin croaker     |
|                         | Sciaenidae      | Sciaenidae                         | croakers            |
|                         | Serranidae      | <i>Paralabrax clathratus</i>       | kelp bass           |
|                         | Serranidae      | <i>Paralabrax</i> spp.             | sea basses          |
|                         | Serranidae      | Serranidae                         | sea basses          |
| Pleuronectiformes       |                 |                                    |                     |
|                         | Paralichthyidae | <i>Citharichthys</i> spp.          | sanddabs            |
|                         | Paralichthyidae | <i>Citharichthys stigmaeus</i>     | speckled sanddab    |
|                         | Paralichthyidae | Paralichthyidae                    | sand flounders      |
|                         | Paralichthyidae | <i>Paralichthys californicus</i>   | California halibut  |
|                         | Pleuronectidae  | <i>Pleuronichthys guttulatus</i>   | diamond turbot      |
|                         | Pleuronectidae  | <i>Pleuronichthys ritteri</i>      | spotted turbot      |

CIQ gobies complex comprises larvae of *Clevelandia ios*, *Ilypnus gilberti* or *Quietula y-cauda*.