Supplementary Information for

A global network of marine protected areas for food

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Supplementary Information Text

Food provision definition

The change in total fish catch due to an MPA network \( w \), which defines our food provision metric, is given by
\[
\Delta H_w = \sum_i H_{w,i} - \sum_i H_{bau,i},
\]
where \( \sum_i H_{w,i} \) and \( \sum_i H_{bau,i} \) represent total global catch with and without implementing additional MPAs, respectively. \( H_{w,i} \) and \( H_{bau,i} \) represent catches for stock \( i \). In the following text, we drop the index \( i \) for brevity.

Fisheries dynamics with no MPA

With no MPA, fish biomass \( (B) \) is given by:
\[
B_{t+1} = (1 - E)B_t + f_t(\cdot)
\]
and fish catch \( (H) \) by:
\[
H_t = E_t B_t
\]
where \( E \) is the exploitation rate, or the proportion of stock \( i \) biomass in a fishing area removed by fishing, \( f(\cdot) \) is the growth of the stock, and \( t \) is time. \( f(\cdot) \) represents the population growth both from the increase in fish weight with increasing age and growth from the addition of new individuals by reproduction. We express the growth as a logistic function:
\[
f_t(\cdot) = r B_t \left(1 - \frac{B_t}{K}\right)
\]
where \( r \) is the maximum population growth rate, i.e., population growth rate in the absence of density-dependence mechanism that regulates growth, and \( K \) is the carrying capacity. At steady-state \( B_{t+1} = B_t \), therefore, we drop the time variable in Eqns. (S1-S3):
\[
B = (1 - E)B + r B \left(1 - \frac{B}{K}\right)
\]
\[
H = EB
\]
Solving for the steady-state fish biomass and catch results in:
\[
B = \left(\frac{r - E}{r}\right) K
\]
\[
H = \left(\frac{r - E}{r}\right) EK
\]

Fisheries dynamics with an MPA

We consider the case where a fraction of the stock’s range is in a fully-protected MPA, where fishing is prohibited inside the MPA. We denote the fraction of the stock’s total \( K \) in the MPA as our parameter \( R \) (i.e., \( R \) is our MPA size parameter). The fish biomass inside \( (B_{in}) \) and outside \( (B_{out}) \) the MPA is given by:
\[
B_{in,t+1} = B_{in,t} + f_{in,t}(\cdot) - B_{trans,t}
\]
\[ B_{out,t+1} = (1 - E_{out,t})B_{out,t} + f_{out,t}(\cdot) + B_{trans,t} \]  
(S9)

where \( f_{in}(\cdot) \) and \( f_{out}(\cdot) \) are the growth equations for inside and outside the MPA, \( B_{trans} \) describes the transfer of biomass between the MPA and the fishing area, \( t \) is time, and \( E_{out} \) is the exploitation rate in the fishing area, which can depend on the MPA’s size and the stock’s management.

The growth equations, which capture both individual biomass build-up and larval contributions, are given by:

\[ f_{in,t}(\cdot) = RrB_{T,t}\left(1 - \frac{B_{TL}}{K}\right) \]  
(S10)

\[ f_{out,t}(\cdot) = (1 - R)rB_{T,t}\left(1 - \frac{B_{TL}}{K}\right) \]  
(S11)

where \( B_{T} = B_{in} + B_{out} \) or the total fish biomass. The growth equations above consider a common larval pool that contributes to the population growth inside and outside the MPA. This implies that all larval production (from MPAs and fished areas) is homogenized across the entire geographic range of the stock, and larvae settle homogeneously into fished areas and MPAs in proportion to their respective areas.

Fish catch is given by:

\[ H_{t} = E_{t}B_{out,t} \]  
(S12)

For a logistic model, the highest biomass growth is achieved at \( B_{out} = K/2 \). Overfished stocks, in particular those with biomass \( \ll K/2 \), will benefit from an MPA, because protection allows biomass to build-up inside the MPA and, consequently, this biomass build-up contributes to biomass growth in the fishing area.

**Biomass transfer**

When establishing an MPA, a fraction of the biomass inside the MPA will move to the fishing area (denoted as \( \mu \)) and a fraction of biomass in the fishing area will enter the MPA (denoted as \( \nu \)). The net transfer of biomass is given by (1):

\[ B_{trans} = \mu B_{in} - \nu B_{out} \]  
(S13)

We impose that the transfer of biomass is zero when the density of biomass inside and outside the MPA is equal:

\[ \frac{B_{in}}{R} = \frac{B_{out}}{1 - R} \]  
(S14)

where \( R \) is the fraction of a stock’s total \( K \) in the MPA. Therefore, the net transfer of biomass is given by:

\[ B_{trans} = \mu \left( B_{in} - \frac{R}{1 - R} B_{out} \right) \]  
(S15)
The parameter μ depends on the size of the MPA and species mobility m. We assume that μ linearly decreases with R and is scaled by species mobility, i.e., the fraction of the biomass inside the MPA that moves out linearly decreases with the MPA’s size (μ = m(1 − R)), although this parameter can take many functional forms. Thus,

\[ B_{\text{trans}} = m(1-R)\left(B_{\text{in}} - \frac{R}{1-R}B_{\text{out}}\right) \] (S16)

Equation (S16) is identical to the density-dependent movement of the adult biomass model reported in Cabral et al. (2). The biomass transfer operates at the scale of the entire geographic range of the stock.

**Steady-state fish catch and biomass with an MPA**

At steady-state \( B_{t+1} = B_t \), therefore, we drop the time variable in Eqns. (S8-S12):

\[ B_{\text{in}} = B_{\text{in}} + Rr(B_{\text{in}} + B_{\text{out}}) \left(1 - \frac{B_{\text{in}} + B_{\text{out}}}{K}\right) - \mu \left(B_{\text{in}} - \frac{R}{1-R}B_{\text{out}}\right) \] (S17)

\[ B_{\text{out}} = (1-E)B_{\text{out}} + (1-R)r(B_{\text{in}} + B_{\text{out}}) \left(1 - \frac{B_{\text{in}} + B_{\text{out}}}{K}\right) + \mu \left(B_{\text{in}} - \frac{R}{1-R}B_{\text{out}}\right) \] (S18)

\[ H = EB_{\text{out}} \] (S19)

Note that the biomass density inside the MPA will never reach \( K \) as long as some fishing occurs outside, because the adult biomass will move from higher fish density inside the MPA to lower fish density in the fishing area.

Solving for the steady-state fish biomass and fish catch outside the MPA, we have:

\[ B_{\text{out}} = \left(\frac{mk(1-R)}{ER+m}\right)\left(1 - \frac{E(1-R)m}{(ER+m)r}\right) \] (S20)

\[ H = E\left(\frac{mk(1-R)}{ER+m}\right)\left(1 - \frac{E(1-R)m}{(ER+m)r}\right) \] (S21)

When \( R=0 \), Eqns. (S20 and S21) will be equivalent to the no MPA case (Eqns. S6 and S7).

**Food provision equation**

The food provision potential of a given network of MPAs (\( w \)) is \( \Delta H_w = \sum_i H_{w,i} - \sum_i H_{bau,i} \).

Some stocks already have some level of protection because, at the time of writing, 2.4% of the ocean is in fully- or highly-protected MPAs (3), i.e., the current fraction of a stock’s \( K \) in the MPA (\( R_{bau} \)) is non-zero for some species. Using Eqn. (S21) summed all over the modeled stocks, the changes in catch due to the implementation of a network of MPAs (\( w \)) is given by:

\[ \Delta H_w = \sum_i E_{w,i}\left(\frac{m_iK_i(1-R_{w,i})}{E_{w,i}R_{w,i} + m_i}\right)\left(1 - \frac{E_{w,i}(1-R_{w,i})m_i}{E_{w,i}R_{w,i} + m_i}r_i\right) - \sum_i E_{bau,i}\left(\frac{m_iK_i(1-R_{bau,i})}{E_{bau,i}R_{bau,i} + m_i}\right)\left(1 - \frac{E_{bau,i}(1-R_{bau,i})m_i}{E_{bau,i}R_{bau,i} + m_i}r_i\right) \] (S22)
where $E_{wi}$ is the exploitation rate of stock $i$ given an MPA network $w$ and $E_{baui}$ is the exploitation rate of stock $i$ under a business-as-usual scenario.

**Species and stock lists**

We use the commercially exploited marine species in Costello *et al.* (4) for which species distribution layers from AquaMaps (5) and population growth rates ($r$) from FishLife (6), FishBase (7), and SeaLifeBase (8) are available. We end up with 811 matched species. For species with stock assessments, we spatially disaggregate species distributions into stock distributions with ranges determined by the spatial management area of the stock (9) (Fig. S8). We include 527 assessed stocks, resulting to a total of 1338 stocks considered in our analysis.

**Planning unit**

Our planning unit resolution is ~55 km x 55 km and is based on AquaMaps' species native range resolution of 0.5 by 0.5 degrees. We change the coordinate reference system of the stocks’ distribution from a half-degree WGS84 reference system to a Mollweide equal area projection using the *raster* R package (10).

**Growth rate**

We use FishLife (6) to derive the population growth rate ($r$) of most of the modeled fish species. The growth rate for invertebrates and the remaining fish species were taken from FishBase (7) and SeaLifeBase (8).

**Species mobility**

We incorporate species mobility into our model of MPA effects on food provisioning to account for the adult movement of biomass across MPA boundaries. We use three categorizations of mobility characteristics: sedentary and/or highly site-attached ($m=0.1$), mobile and/or habitat associated ($m=0.3$), and highly mobile, transient, and/or highly migratory ($m=0.9$) (Table S1). Our classification combines both density dependent (i.e., movement due to space limitation, territoriality, etc.) and density independent (i.e., random movement of fish via simple diffusion) movement, and we therefore use generous bounds to classify linear scales of movement. Our liberal definition of movement therefore includes relocations to new home ranges and excursions – potentially spawning migrations – by individuals with otherwise restricted home ranges (e.g., linear movements >1 km were recorded for Scarids, Acanthurids, Mullids, Epinephelins, and Lethrinds over multiple long-term tracking studies (11–14)).

The assignment of values to mobility characteristics is arbitrary, but our categorization is modeled around our ~55 km by 55 km planning unit. We define $m=0.1$ to represent species with maximum scales of movement <1 km for adults. Species in the $m=0.3$ category have maximum adult scales of movement between 1-55 km. Species in the $m=0.9$ category are wide ranging and many cross national jurisdictions, with maximum adult scales of movement >55 km.

The mobility indices were assigned using keyword matching from four databases that were searched sequentially: FishBase (7), SeaLifeBase (8), FAO (15), and the IUCN Red List of Threatened Species (16) (Table S2). Mobility indices were assigned by three unique classifiers; insufficient information in reference databases and discrepancies between mobility classifications between scorers were resolved using peer-reviewed literature. All species mobility indices, classification keywords, source information, and relevant notes are presented in Table S3.

**Carrying capacity**

We use the MSY estimate per species reported in Costello *et al.* (4) and the growth rate ($r$) per species from Thorson (6), FishBase (7), and SeaLifeBase (8) to calculate the total carrying
capacity (K) per species (Figs. S9-S11). We derive the first-ever spatially-explicit dataset of stock carrying capacity per planning unit or pixel (Fig. S9) by distributing the total K in proportion to the relative probability of occurrence of the species within its native range (5). Using this spatial information on the carrying capacity per species, we can map carrying capacities for various species categories such as total K for different species mobility characteristics (Figs. S12-S14).

Uncertainty analysis

The four curves in Figure 2, as well as the results in Figure 3, illustrate how our food provision benefit estimate changes given alternative future fishery trajectories (i.e., given different ways E could change in the future). A future with more overfished fisheries means higher MPA benefits.

We add uncertainty bounds to our food provisioning projections by incorporating the uncertainties in r and K parameters. The probability distribution of r for most fish species was derived from Thorson et al. (6), and we derive the probability distribution of r for invertebrates and other missing fish species using the reported r and its associated standard deviation from FishBase (7) and SeaLifeBase (8). We assume an uncertainty in K per species of ±15% based on the information that K is typically 9 to 12 times the MSY (our current total K estimate is 11 times our total MSY estimate) (17). Uncertainty in K per species i in our analysis is derived by a random draw from the uniform distribution with a minimum value of 0.85K and a maximum value of 1.15K, i.e., Ki = U[0.85Ki, 1.15Ki].

Effect of MPA size on catch

We test the effect of MPA size on food provisioning (ΔH) across a range of biological characteristics of the species (i.e., growth rate and mobility) and starting status of the fisheries. In particular, we test how ΔH changes at different MPA sizes for underfished fisheries (E/E_{MSY} = 0.2 and 0.6), fisheries harvested at MSY (E/E_{MSY}=1), and overfished fisheries (E/E_{MSY} = 1.4 and 1.6), where E is the exploitation rate of the fishery under the no MPA case and E_{MSY} is the exploitation rate at which MSY is achieved (Figs. S15 and S16). The exploitation rate experienced by a stock in fished area increases as MPA size increases (bottom panels). Our model suggests that only overfished fisheries can gain food benefits from MPAs (top right panels). Catch is predicted to be lower for the case where MPAs are implemented in underfished fisheries or fisheries harvested at MSY vs. the no additional MPA case.

For overfished fisheries, a smaller MPA size (relative to the stock range) is required to optimize the catch of species with low mobility compared to highly mobile species (Figs. S15 and S16). Smaller MPA size is also required to optimize the catch of fast growing (Fig. S15) species vs. slow growing species (Fig. S16). As expected, MPA benefits are higher for species with higher growth rates (Figs. S15 and S16). The more overfished the fishery, the higher the fishery’s benefits are from MPAs (Figs. S15 and S16).

Figure S17 shows the top 15 stocks that will gain the largest increases in food provisioning potential from strategically protecting an additional 5% of the global ocean. Most of the benefit comes from overfished stocks with high K and limited stock range.
Fig. S1. Average pixel-level spillover potential (ΔH) within exclusive economic zones (EEZs) vs. the high seas. Each pixel is evaluated independently. See Fig. 1.
**Fig. S2.** Globally optimized marine protected area (MPA) network for food using the business-as-usual “all stocks” scenario for future fisheries. The color ramp indicates the relative importance of each pixel in an optimal, globally coordinated MPA network. Green indicates positive marginal change in $\Delta H$, and orange indicates negative marginal change in $\Delta H$, with white marking the transition from positive to negative marginal change in $\Delta H$. Areas in cyan represent current fully-or highly-protected MPAs.
**Fig. S3.** Globally optimized marine protected area (MPA) network for food using the collapse scenario for future fisheries. The color ramp indicates the relative importance of each pixel in an optimal, globally coordinated MPA network. Green indicates positive marginal change in $\Delta H$, and orange indicates negative marginal change in $\Delta H$, with white marking the transition from positive to negative marginal change in $\Delta H$. Areas in cyan represent current fully- or highly-protected MPAs.
Fig. S4. Globally optimized marine protected area (MPA) network for food using the MSY scenario for future fisheries. The color ramp indicates the relative importance of each pixel in an optimal, globally coordinated MPA network. Green indicates positive marginal change in $\Delta H$, and orange indicates negative marginal change in $\Delta H$, with white marking the transition from positive to negative marginal change in $\Delta H$. Areas in cyan represent current fully- or highly-protected MPAs.
Fig. S5. Optimal sizes of marine protected areas (MPAs) for overfished stocks. The size of MPAs is defined as the proportion of the stock’s range in MPAs. The median MPA size is 22.4% of the stock’s range (red dashed line) while the mean is 23.0%.
Fig. S6. Changes in the median steady-state exploitation rate ($E$) in fishing areas as the proportion of the global ocean in MPAs increases. The inset plots show the distribution of $E$ at two different MPA network sizes (as indicated by the arrows): 1) Under the business-as-usual scenario where 2.4% of the global ocean is in MPAs (the median value is 2.2, indicated by the red dashed line); 2) 99.9% of the global ocean is in MPAs (the median value is 1, indicated by the red dashed line). The exploitation rate experienced by stocks in fishing areas increases as MPA size increases, because fishing effort displaces to remaining fishing areas outside MPAs.
Fig. S7. Histogram of the ratio of estimated stock biomass to carrying capacity ($B/K$) in 2050 for the 1338 stocks included in this analysis. Data from Costello et al. (4). The median value (red dashed line) is 0.17.
Fig. S8. Map of number of species with a stock assessment per cell (for $n=527$ managed stocks included in this analysis). Data from Free et al. (9).
Fig. S9. Carrying capacity (K in metric tons) per cell.
Fig. S10. Top 50 stocks (where a stock can represent the disaggregation of a species into multiple spatial units) with the highest carrying capacity ($K$) used in this analysis. The y-axis labels are the stock ID reported by AquaMaps or RAM with species name reported to the right of the bars.
Fig. S11. Top 50 species with the highest carrying capacity \((K)\) used in the analysis.
Fig. S12. Carrying capacity ($K$) per cell for low mobility species ($m=0.1$).
Fig. S13. Carrying capacity ($K$) per cell for moderate mobility species ($m=0.3$).
Fig. S14. Carrying capacity ($K$) per cell for high mobility species ($m=0.9$).
Fig. S15. The top panels show the change in food provisioning ($\Delta H$) as a function of the proportion of the global ocean in an MPA (% MPA coverage). The condition of the fishery under a no MPA case is also varied, i.e., underfished fishery ($E/E_{\text{MSY}}=0.2$ and 0.6), fishery harvested at MSY ($E/E_{\text{MSY}}=1$), and overfished fishery ($E/E_{\text{MSY}}=1.4$ and 1.6). Results are shown for each level of species mobility. $\Delta H$ is only positive in overfished fisheries (top right panels) at some levels of protection; $\Delta H$ is always negative in underfished fisheries and those harvested at MSY. The bottom panels show the change in exploitation rate ($E$) as a function of the proportion of the global ocean in an MPA (% MPA coverage). The exploitation rate in fished area increases as the size of the MPA increases due to the transfer of effort from the MPA to the fished area. Note, the exploitation rate is insensitive to species mobility. For all simulations, growth rate $r=1$ and carrying capacity $K=100$. This figure is used to illustrate the dynamics of our model and the units are arbitrary.
Fig. S16. The top panels show the change in food provisioning ($\Delta H$) as a function of the proportion of the global ocean in an MPA (% MPA coverage). The condition of the fishery under a no MPA case is also varied, i.e., underfished fishery ($E/E_{\text{MSY}}=0.2$ and 0.6), fishery harvested at MSY ($E/E_{\text{MSY}}=1$), and overfished fishery ($E/E_{\text{MSY}}=1.4$ and 1.6). Results are shown for each level of species mobility. $\Delta H$ is only positive in overfished fisheries (top right panels) at some levels of protection; $\Delta H$ is always negative in underfished fisheries and those harvested at MSY. The bottom panels show the change in exploitation rate ($E$) as a function of the proportion of the global ocean in an MPA (% MPA coverage). The exploitation rate in fished area increases as the size of the MPA increases due to the transfer of effort from the MPA to the fished area. Note, the exploitation rate is insensitive to species mobility. For all simulations, growth rate $r=0.1$ and carrying capacity $K=100$. This figure is used to illustrate the dynamics of our model and the units are arbitrary.
Fig. S17. Increase in food provisioning potential of individual fish stocks from strategically protecting an additional 5% of the global ocean. (A) Top 15 stocks that will experience the largest increase in food provisioning potential from additional protection along with the species name. (B) $r$ and $K$ values and (C) Stock ranges and exploitation rates of the top 15 stocks (orange) along with values for the rest of the stocks considered in our model (black).
Table S1. Mobility ($m$) categorization assigned to species in the analysis (note: scales of movement considered for adults only).

| Mobility | Maximum linear distance |
|----------|-------------------------|
| $m=0.1$  | <1 km                   |
| $m=0.3$  | 1-50 km                 |
| $m=0.9$  | >50 km                  |
| Mobility | Classification | Description | FishBase/SealifeBase/FAO/IUCN keywords |
|----------|----------------|-------------|----------------------------------------|
| $m=0.1$  | sedentary      | adults are sessile (e.g., barnacle), burrow (e.g., worms and mollusks), burrow/crawl/attached with limited movement (e.g., sea cucumber); sensu Welch (18) | "sessile"; "burrow"; "limited movement"; "sedentary"; "home ranging" |
| territorial |               | adults are territorial with limited territory size | "territorial"; "home ranging" |
| $m=0.3$  | habitat_reef   | adults are associated with reef habitat (coral reef, rocky reef); generally found in coastal waters | "coral"; "rock"; "reef"; "inshore reef"; "associated with reefs"; "reef-associated" |
| habitat_coastal |           | adults are associated with non-reef coastal waters (lagoons, estuaries, rivermouths, seagrass beds) | "coastal"; "inshore"; "lagoon"; "brackish waters"; "seagrass beds"; "continental shelf"; "pelagic inshore" |
| habitat_benthic |             | adults are associated with the benthos | "sandy bottom"; "benthic"; "mud"; "demersal" |
| habitat_deep |                | adults are associated with deep ocean habitat (>100 m) | "deep water"; "outer continental shelves and upper slopes"; "bathydemersal"; "benthipelagic" |
| $m=0.9$  | hms            | adults are highly migratory species | "highly migratory species" |
| migratory |                | adults undergo regular migrations >50 km | "strongly migratory"; "extensive migrations"; "migrant" |
| pelagic   |                | adults move throughout the pelagic zone | "pelagic"; "oceanic"; "open sea"; "offshore"; "free-living" |
| deep      |                | adults are transient at depths >100 m | "bottom browser" |
### Table S3. Growth rate (r) and mobility categorization (m) per species used in our model. The common name of the species is derived from FishBase. See Table S2 for the mobility classification. Movement sources are from FishBase (FB), SeaLifeBase (SLB), FAO, IUCN, or from other references as cited (REF).

| Scientific name          | Family           | Common name   | Growth rate (r) | Mobility | Mobility classification | Movement source | Movement information notes and references |
|--------------------------|------------------|---------------|-----------------|----------|-------------------------|-----------------|-------------------------------------------|
| Pomatomus saltatrix      | Scorpaenidae     | Atlantic sea bass | 0.200           | 0.7      | benthic                 | FB: “Adults inhabit the outer shelf (180 m) and slope to at least 1,300 m depth, probably moving further from the bottom at night; often found over seamounts (Ref. 9833) and underwater ridges (Ref. 33648).” |
| 2                        | Thynnus alalunga  | Scombridae     | Albacore        | 0.139    | 0.9                     | FB              | SF: “Tends to move further north and into surface waters in summer, retreating and descending in winter.” |
| 3                        | Gaidrops commersoni | Gadidae       | Alaska pollock  | 0.268    | 0.3                     | REF             | SF: “Exhibits north-south and near shore-offshore migrations.” |
| 4                        | Engraulis encrasicolus | Engraulidae | European anchovy | 0.557    | 0.9                     | FB              | SF: “Migrates inshore during spring and summer, and offshore into deep water wintering areas after spawning; also undertake vertical migrations (Ref. 1371).” |
| 5                        | Theragra chalcopterus | Gadidae       | Alaska pollock  | 0.268    | 0.3                     | REF             | SF: “Exhibits north-south and near shore-offshore migrations.” |
| 6                        | Atheresthes stomias | Pleuronectidae | Arrow-toothed flounder | 0.193    | 0.3                     | FB              | SF: “Inhabit continental shelf waters including estuaries, bays and inlets (Ref. 6380). Found between depths of 30 m (Ref. 33616) and 39 m (Ref. 58489).” |
| 7                        | Engraulis anchoita | Engraulidae    | Argentine anchovy | 0.639    | 0.9                     | FB              | SF: “Migrates inshore during spring and summer, and offshore into deep water wintering areas after spawning; also undertake vertical migrations (Ref. 1371).” |
| 8                        | Merluccius hubbsi | Merluccidae    | Argentine hake  | 0.227    | 0.9                     | FB              | SF: “Inhabit continental shelf waters including estuaries, bays and inlets (Ref. 6380). Found between depths of 30 m (Ref. 33616) and 39 m (Ref. 58489).” |
| 9                        | Thynnus thynnus   | Scombridae     | Atlantic bluefin tuna | 0.082    | 0.9                     | IUCN            | SF: “Inhabit continental shelf waters including estuaries, bays and inlets (Ref. 6380). Found between depths of 30 m (Ref. 33616) and 39 m (Ref. 58489).” |
| 10                       | Hippoglossus hippoglossus | Pleuronectidae | Atlantic halibut | 0.119    | 0.3                     | FB              | SF: “Migrates inshore during spring and summer, and offshore into deep water wintering areas after spawning; also undertake vertical migrations (Ref. 1371).” |
| 11                       | Pleurogrammus monopterygius | Hexagrammidae | Atka mackerel | 0.077    | 0.3                     | FB              | SF: “Migrates inshore during spring and summer, and offshore into deep water wintering areas after spawning; also undertake vertical migrations (Ref. 1371).” |
| 12                       | Monopogonias undulatus | Sciaenidae   | Atlantic croaker | 0.874    | 0.3                     | FB              | SF: “Migrates inshore during spring and summer, and offshore into deep water wintering areas after spawning; also undertake vertical migrations (Ref. 1371).” |
| 13                       | Dissostichus mawsoni | Nototheniidae | Antarctic toothfish | 0.104    | 0.9                     | FB              | SF: “Inhabit continental shelf waters including estuaries, bays and inlets (Ref. 6380). Found between depths of 30 m (Ref. 33616) and 39 m (Ref. 58489).” |
| 14                       | Antipr tuta | Antipidae     | Australian salmon | 0.286    | 0.3                     | FB              | SF: “Inhabit continental shelf waters including estuaries, bays and inlets (Ref. 6380). Found between depths of 30 m (Ref. 33616) and 39 m (Ref. 58489).” |
| 15                       | Callinectes sapidus | Portunidae     | Blue crab | 0.6      | 0.3                     | REF             | SF: “...net migratory speeds were on the order of 5 km day.” (Ref. 20) |
| 16                       | Pseudolestes elongatus | Sciaenidae | Bobo croaker | 0.263    | 0.3                     | FB              | SF: “Inhabit continental shelf waters including estuaries, bays and inlets (Ref. 6380). Found between depths of 30 m (Ref. 33616) and 39 m (Ref. 58489).” |
| 17                       | Macrum scraezeildae | Merluccidae    | Blue grenadier | 0.099    | 0.9                     | FB              | SF: “Migrates southward in spring and summer and northward in winter (Ref. 1371)” |
| 18                       | Sebastes melanostomus | Sebastidae     | Blackgill rockfish | 0.057    | 0.3                     | FB              | SF: “Found on soft bottom in deep water, but young in shallower areas (Ref. 2850)” |
| 19                       | Brachydeuterus auritus | Haemulidae      | Bigeye grunt | 0.674    | 0.3                     | IUCN            | SF: “Inhabit continental shelf waters including estuaries, bays and inlets (Ref. 6380). Found between depths of 30 m (Ref. 33616) and 39 m (Ref. 58489).” |
| 20                       | Merluccius polli | Merluccidae    | Benguela hake | 0.234    | 0.3                     | FB              | SF: “Inhabit continental shelf waters including estuaries, bays and inlets (Ref. 6380). Found between depths of 30 m (Ref. 33616) and 39 m (Ref. 58489).” |
| 21                       | Thynnus obesus   | Scombridae     | Bigeye tuna | 0.236    | 0.9                     | IUCN            | SF: “Inhabit continental shelf waters including estuaries, bays and inlets (Ref. 6380). Found between depths of 30 m (Ref. 33616) and 39 m (Ref. 58489).” |
| 22                       | Epigonus telescopus | Epigonidae       | Black cardinal fish | 0.097    | 0.3                     | FB              | SF: “Inhabit continental shelf waters including estuaries, bays and inlets (Ref. 6380). Found between depths of 30 m (Ref. 33616) and 39 m (Ref. 58489).” |
| 23                       | Allocyttius niger | Oreosomatidae | Black oree | 0.065    | 0.3                     | FB              | SF: “Inhabit continental shelf waters including estuaries, bays and inlets (Ref. 6380). Found between depths of 30 m (Ref. 33616) and 39 m (Ref. 58489).” |
| 24                       | Sebastes melanops | Sebastidae     | Black rockfish | 0.085    | 0.3                     | FB              | SF: “Inhabit continental shelf waters including estuaries, bays and inlets (Ref. 6380). Found between depths of 30 m (Ref. 33616) and 39 m (Ref. 58489).” |
| 25                       | Sebastes mystinus | Sebastidae     | Blue rockfish | 0.104    | 0.3                     | FB              | SF: “Inhabit continental shelf waters including estuaries, bays and inlets (Ref. 6380). Found between depths of 30 m (Ref. 33616) and 39 m (Ref. 58489).” |
| #  | Common Name | Family           | Scientific Name   | Habitat                        | Reference |
|----|-------------|------------------|-------------------|--------------------------------|-----------|
| 28 | Scomber australasicus | Scombridae | Blue mackerel | 0.571 | 0.9 | hms | FB |
| 29 | Makara nigromaculata | Istiophoridae | Blue marlin | 0.268 | 0.9 | hms | FB |
| 30 | Sebastes rubripinnis | Sebastidae | Bank rockfish | 0.086 | 0.3 | habitat_benthic | FB |
| 31 | Hyperoglyphus antarcticus | Centrolenidae | Bluenerose warehou | 0.181 | 0.3 | habitat_reef | FB |
| 32 | Sebastes paucispinis | Sebastidae | Bocaccio rockfish | 0.106 | 0.3 | habitat_reef | FB |
| 33 | Ethmalosa limbricata | Clupeidae | Borga shad | 0.691 | 0.3 | habitat_coastal | FB |
| 34 | Centropomus tinca | Serranidae | Black seabass | 0.391 | 0.3 | habitat_reef | FB |
| 35 | Carcharhinus limbatis | Carcharhinidae | Blacktip shark | 0.099 | 0.9 | hms | FB |
| 36 | Pteropoma trachancus | Stromateidae | Atlantic butterfish | 0.7 | 0.9 | pelagic | FB |
| 37 | Micromesistius puniassou | Gadidae | Blue whiting | 0.265 | 0.9 | migratory | FB |
| 38 | Scorpaenichthyso marmoratus | Cottidae | Cabezon | 0.322 | 0.3 | habitat_benthic | FB |
| 39 | Mallotus villosus | Osmeridae | Capelin | 0.138 | 0.9 | migratory | FB |
| 40 | Merluccius capensis | Merluccidae | Shallow-water Cape hake | 0.138 | 0.9 | migratory | FB |
| 41 | Sebastes goodeli | Sebastidae | Chilipepper rockfish | 0.093 | 0.3 | habitat_reef | FB |
| 42 | Trachurus trecaei | Carangidae | Gunene horse mackerel | 0.479 | 0.9 | pelagic | FB |
| 43 | Trachurus murphyi | Carangidae | Chilean jack mackerel | 0.247 | 0.9 | pelagic | FB |
| 44 | Scomber japonicus | Scombridae | Chub mackerel | 0.398 | 0.9 | hms | FB |
| 45 | Gadus morhua | Gadidae | Atlantic cod | 0.369 | 0.9 | migratory | FAO |
| 46 | Pagrus erythrinus | Sparidae | Common pandora | 0.481 | 0.3 | habitat_reef | FB |
| 47 | Jasus lalandii | Palinuridae | Cape rock lobster | 0.425 | 0.3 | habitat_benthic | REF |
| 48 | Sebastes pinniger | Sebastidae | Canary rockfish | 0.039 | 0.3 | habitat_reef | FB |
| 49 | Trachurus capensis | Carangidae | Cape horse mackerel | 0.282 | 0.9 | pelagic | FB |
| 50 | Bronteu bromsae | Lutidae | Tusk | 0.105 | 0.3 | habitat_benthic | FB |
| 51 | Sebastas crameri | Sebastidae | Darkblotched rockfish | 0.053 | 0.3 | habitat_benthic | FB |
| 52 | Parapeneus longirostris | Penaeidae | Deep-water rose shrimp | 1.03 | 0.3 | habitat_benthic | SLB |
| 53 | Micromesistius pacificus | Pleuronectidae | Dover sole | 0.09 | 0.3 | habitat_benthic | FB |
| 54 | Sebastes vaniabilis | Sebastidae | NA | 0.083 | 0.3 | habitat_benthic | FB |
| 55 | Hippoglossoides elassodon | Pleuronectidae | Flathead sole | 0.18 | 0.3 | habitat_benthic | FB |
| 56 | Lepidorthomus boscal | Scophtalmaidae | Four-spot megrim | 0.513 | 0.3 | habitat_benthic | FB |
| 57 | Canara rhonchus | Carangidae | False scad | 0.043 | 0.3 | habitat_coastal | FB |
| 58 | Mycterocharus microlepis | Serranidae | Gag | 0.177 | 0.3 | habitat_reef | FB |
| 59 | Rhexa solandri | Gempylidae | Silver gemfish | 0.235 | 0.3 | migratory | FB |
| 60 | Physia blennoides | Phycidae | Greater forlhead | 0.397 | 0.9 | migratory | REF |
| 61 | Reinhardtius hippoglossoides | Pleuronectidae | Greenland halibut | 0.172 | 0.3 | habitat_benthic | FB |
| 62 | Sebastes carnatus | Sebastidae | Gopher rockfish | 0.086 | 0.1 | territorial | FB |
| 63 | Sardina dumerilii | Carangidae | Greater amberjack | 0.451 | 0.3 | habitat_reef | FB |
| 64 | Sebastes elongatus | Sebastidae | Greenspinned rockfish | 0.092 | 0.3 | habitat_benthic | FB |
| 65 | Aristaeomorpha foliacea | Aristidae | Giant red shrimp | 0.47 | 0.3 | habitat_deep | SLB |
| 66 | Sebastes chlorosticus | Sebastidae | Greenspotted rockfish | 0.086 | 0.3 | habitat_benthic | FB |
| 67 | Kathelastoma unicospoda | Umbridae | Giant stargazer | 0.286 | 0.1 | sedentary | FB |
|   |   |   |   |   |   |
|---|---|---|---|---|---|
|  |   |   |   |   |   |
| 68 | Penaeus semisulcatus | Penaeidae | green tiger prawn | 1.18 | 0.9 | migratory | REF | Secondary ref: (23) “Tagging studies by previous workers indicated that adults of *P. semisulcatus* also migrate offshore to deeper water as they mature (FAO, 1980; Farmer and Al-Attar, 1981; Muhammed et al., 1981; Somers and Kirkwood, 1984)” |
| 69 | Melanogrammus aeglefinus | Gadidae | Haddock | 0.302 | 0.9 | migratory | FB |
| 70 | Merluccius merluccius | Merluccidae | European hake | 0.31 | 0.3 | habitat_deep | FB | FB: “Herring schools move between spawning and wintering grounds and feeding grounds in open water by following migration patterns learned from earlier year classes (Ref. 88171).” |
| 71 | Clupea harengus | Clupeidae | Atlantic herring | 0.216 | 0.9 | migratory | FB |
| 72 | Clupea pallasi | Clupeidae | Pacific herring | 0.56 | 0.3 | habitat_coastal | FB | FB: “Non-migratory” |
| 73 | Trachurus trachurus | Carangidae | Atlantic horse mackerel | 0.412 | 0.9 | pelagic | FB |
| 74 | Illex illecebrosus | Ommastrephidae | northern shortfin squid | 0.76 | 0.9 | pelagic | IUCN |
| 75 | Engraulis japonicus | Engraulidae | Japanese anchovy | 0.796 | 0.9 | pelagic | FB |
| 76 | Trachurus japonicus | Carangidae | Japanese jack mackerel | 0.601 | 0.9 | pelagic | FB |
| 77 | Hexagrammos decagrammus | Hexagrammidae | Kelp greenling | 0.341 | 0.3 | habitat_reef | FB |
| 78 | Genypterus capensis | Ophididae | Kingklip | 0.182 | 0.3 | habitat_benthic | FB |
| 79 | Scomberomorus cavalla | Scombridae | King mackerel | 0.423 | 0.9 | hms | FB |
| 80 | Dentex macrophthalminus | Sparidae | Large-eye dentex | 0.46 | 0.3 | habitat_coastal | FB |
| 81 | Ophiodon elongatus | Hexagrammidae | Lingcod | 0.143 | 0.9 | migratory | FB | FB: “Both migratory and non-migratory populations exist (Ref. 6885).” |
| 82 | Raja rhina | Rajidae | Longnose skate | 0.088 | 0.3 | habitat_benthic | FB |
| 83 | Homarus americanus | Nephropidae | American lobster | 0.57 | 0.3 | habitat_benthic | SLB | SLB: “Migration does not occur, or only to a limited scale (Ref. 4).” |
| 84 | Sebastodes altivelis | Sebastidae | Longspine thornyhead | 0.095 | 0.3 | habitat_deep | REF | Secondary ref: (24) | FB: “They overwinter in deeper waters but move closer to shore in spring when water temperatures range between 11° and 14°C.” |
| 85 | Scomber scombrus | Scombridae | Atlantic mackerel | 0.271 | 0.9 | hms | FB |
| 86 | Lepidobotis whiffiagonis | Scophthalmidae | Megrim | 0.443 | 0.3 | habitat_benthic | FB |
| 87 | Brevoorta patronus | Clupeidae | Gulf menhaden | 0.843 | 0.3 | habitat_coastal | FAO | FAO: “north/south migrations (spring and summer versus autumn) occur” |
| 88 | Brevoorta tyrannus | Clupeidae | Atlantic menhaden | 0.724 | 0.9 | migratory | FAO |
| 89 | Trachurus mediterraneus | Carangidae | Mediterranean horse mackerel | 0.393 | 0.9 | pelagic | FB |
| 90 | Lophius americanus | Lophidae | American angler | 0.343 | 0.3 | habitat_benthic | FB |
| 91 | Nemadactylus macropterus | Cheilodactylidae | Tarakihi | 0.107 | 0.3 | habitat_coastal | REF | Secondary ref: (25) |
| 92 | Mugil cephalus | Mugilidae | Flathead grey mullet | 0.277 | 0.3 | habitat_coastal | FB |
| 93 | Nephrops norvegicus | Nephropidae | Norway lobster | 0.52 | 0.1 | sedentary | SLB | SLB: “Sedentary (Ref. 94799). Inhabits muddy bottoms in which it digs its
| Code | Scientific Name     | Family   | Habitat | FAO          | Notes |
|------|---------------------|----------|---------|--------------|-------|
| 94   | Trisopterus esmarkii| Gadidae  | Norway  | 0.616 0.9 migratory | FAO: migrates for spawning between the Shetland Islands and Norway and out of the Skagerrak, the major spawning grounds being located between NW Scotland, Norway, Faeroe Islands and Iceland. |
| 95   | Sebastes polyprion| Sebasiidae| Northern rockfish | 0.05 0.3 habitat_benthic | FB: Based on parasite and trace-element analyses, orange roughy is a sedentary species with little movement between fish-management zones (Ref. 27068). |
| 96   | Geryonotocephalus bicolor| Ophidioidei| Pink cusk-eel | 0.131 0.3 habitat_benthic | FB: "Adults live in large schools in waters overlying the continental shelf and slope except during the spawning season when they are found several hundred miles seaward (Ref. 1371)." |
| 97   | Ochotopus vulgus| Ophidiidae| common octopus | 0.81 0.3 habitat_benthic | FAO: "Migrations are known to occur, especially for spawning, to coastal waters in spring and to deeper waters in winter." |
| 98   | Paralichthys olivaceus| Psettidae| Bastard halibut | 0.874 0.3 habitat_benthic | FAO: "Based on parasite and trace-element analyses, orange roughy is a sedentary species with little movement between fish-management zones (Ref. 27068)." |
| 99   | Hoplostethus atlanticus| Trachichthyidae| Orange roughy | 0.161 0.1 sedentary | FB: "Of 32 large spiny lobsters tracked with acoustic tags for 14-355 days in north-east New Zealand, 25 moved detectable distances (>0.1 km) from their tag site while undertaking migrations as extensive as the Atlantic species but moves only for short distances, such as to and from the shore, or from one bank to the other within a limited region." |
| 100  | Thunnus orientalis| Scombridae| Pacific bluefin tuna | 0.192 0.9 hms | FAO: "Pacific cod does not undertake migrations as extensive as the Atlantic species but moves only for short distances, such as to and from the shore, or from one bank to the other within a limited region." |
| 101  | Engraulis rings| Engraulidae| Anchoveta | 0.649 0.9 pelagic | FB: "Adults live in large schools in waters overlying the continental shelf and slope except during the spawning season when they are found several hundred miles seaward (Ref. 1371)." |
| 102  | Paralichthys bogaraveo| Sebasiidae| northern shrimp | 0.58 0.9 deep | REF: Secondary ref: (27) |
| 103  | Macrurus magellanicus| Merluccidae| Patagonian grenadier | 0.102 0.9 migratory | REF: Secondary ref: (28) |
| 104  | Gadus macrocephalus| Gadidae| Pacific cod | 0.255 0.3 habitat_deep | FAO: "Atlantic cod does not undertake migrations as extensive as the Atlantic species but moves only for short distances, such as to and from the shore, or from one bank to the other within a limited region." |
| 105  | Sebastes alutus| Sebasiidae| Pacific ocean perch | 0.048 0.3 habitat_benthic | FB: "Gadus macrocephalus is a migratory species with little movement between fish-management zones (Ref. 27068)." |
| 106  | Panopea generosa| Hattellidae| Pacific geoduck | 0.37 0.1 sedentary | FAO: "Migrations are known to occur, especially for spawning, to coastal waters in spring and to deeper waters in winter." |
| 107  | Merluccius productus| Merluccidae| North Pacific hake | 0.12 0.9 migratory | FB: "Adults live in large schools in waters overlying the continental shelf and slope except during the spawning season when they are found several hundred miles seaward (Ref. 1371)." |
| 108  | Pleuronectes platessa| Pleuronectidae| European plaice | 0.26 0.9 migratory | FB: "Gadus macrocephalus is a migratory species with little movement between fish-management zones (Ref. 27068)." |
| 109  | Pollachius virens| Gadidae| Saithe | 0.293 0.9 migratory | FAO: "Migrations are known to occur, especially for spawning, to coastal waters in spring and to deeper waters in winter." |
| 110  | Lamna nasus| Lamnidae| Porbeagle | 0.044 0.9 migratory | FB: "Gadus macrocephalus is a migratory species with little movement between fish-management zones (Ref. 27068)." |
| 111  | Trisopterus minutus| Gadidae| Poor cod | 0.706 0.3 habitat_benthic | FB: "Gadus macrocephalus is a migratory species with little movement between fish-management zones (Ref. 27068)." |
| 112  | Eosynthia jordani| Pleuronectidae| Patagonian grenadier | 0.113 0.3 habitat_benthic | FB: "Gadus macrocephalus is a migratory species with little movement between fish-management zones (Ref. 27068)." |
| 113  | Dissostichus eleginoides| Nototheniidae| Patagonian toothfish | 0.107 0.9 deep | FB: "Gadus macrocephalus is a migratory species with little movement between fish-management zones (Ref. 27068)." |
| 114  | Pago major| Sparidae| Red seabream | 0.389 0.3 habitat_reef | FB: "Gadus macrocephalus is a migratory species with little movement between fish-management zones (Ref. 27068)." |
| 115  | Pagellus bogaraveo| Sparidae| Blackspot seabream | 0.318 0.3 habitat_reef | FB: "Gadus macrocephalus is a migratory species with little movement between fish-management zones (Ref. 27068)." |
| 116  | Chaceon quinquedens| Geryonidae| red deepsea crab | 0.42 0.3 habitat_benthic | SLB: "Chaceon quinquedens is a burrowing species with little movement between fish-management zones (Ref. 27068)." |
| 117  | Aristoteles antennarius| Aristidae| blue and red shrimp | 0.48 0.3 habitat_benthic | SLB: "Chaceon quinquedens is a burrowing species with little movement between fish-management zones (Ref. 27068)." |
| 118  | Glyptcephalus zachirus| Pleuronectidae| Rex sole | 0.187 0.3 habitat_benthic | FB: "Gadus macrocephalus is a migratory species with little movement between fish-management zones (Ref. 27068)." |
| 119  | Sebastes alutus| Sebasiidae| Kougheye rockfish | 0.098 0.3 habitat_benthic | FB: "Gadus macrocephalus is a migratory species with little movement between fish-management zones (Ref. 27068)." |
| 120  | Lepisosteus moro| Serranidae| Red grouper | 0.215 0.3 habitat_benthic | FB: "Gadus macrocephalus is a migratory species with little movement between fish-management zones (Ref. 27068)." |
| 121  | Mullus barbatow| Mullidae| Red mullet | 0.68 0.3 habitat_benthic | FB: "Gadus macrocephalus is a migratory species with little movement between fish-management zones (Ref. 27068)." |
| 122  | Cancer imoratus| Cancriidae| rock crab | 0.46 0.1 sedimentary | SLB: "Chaceon quinquedens is a burrowing species with little movement between fish-management zones (Ref. 27068)." |
| 123  | Pagellus bellotti| Spadidae| Red pandora | 0.678 0.3 habitat_reef | FB: "Gadus macrocephalus is a migratory species with little movement between fish-management zones (Ref. 27068)." |
| 124  | Jasus edwardsii| Palinuridae| red rock lobster | 0.52 0.3 habitat_benthic | REF: Secondary ref: (29) |
| Species                         | Family                  | Common Name          | Length (m) | Migration Habitat | Reference |
|--------------------------------|-------------------------|----------------------|------------|-------------------|-----------|
| Sardinella aurita              | Clupeidae               | Round sardinella     | 0.017      | 0.3               | IUCN: "This pelagic species
  schools in subtropical coastal
  waters from inshore to the shelf edge." |
| Lutjanus campechanus           | Lutjanidae              | Northern red snapper | 0.035      | 0.3               | FB: "Generally localized, but
  some juveniles have been found to migrate over 2,000 miles in 6 or 7 years (Ref. 28499)." |
| Lepidopsettina bilineata       | Pleuronectidae          | Rock sole            | 0.174      | 0.3               | FB: "In the California region, pilchards make northward migrations early in summer and travel back south again in autumn. With each year of life, the migration becomes farther (Ref. 6885)." |
| Anoplopoma fimbria             | Anoplopomatidae         | Sablefish            | 0.035      | 0.3               | FAO: "Breeds at 20 to 25 m, near the shore or as much as 100 km out to sea" |
| Sardinops sagax                | Clupeidae               | South American pilchard | 0.349     | 0.3               | FAO: "Migrates seasonally to southern Japan and adjacent waters in winter, and Hokkaido and the Kuril Islands in summer." |
| Sarda pilchardus               | Clupeidae               | European pilchard    | 0.528      | 0.9               | FAO: "In warm summers, the population of the Falkland/Malvinas current (on the Patagonian shelves of Argentina and southern Chile) migrates southward to S. Georgia, S. Shetland Islands, Elephant Island and the northern part of the Antarctic Peninsula." |
| Cololabis saira                | Scomberesocidae         | Pacific saury        | 0.461      | 0.3               | FAO: "Migrates seasonally to southern Japan and adjacent waters in winter, and Hokkaido and the Kuril Islands in summer." |
| Sebastodes pondini             | Sebastidae              | Shortbelly rockfish  | 0.096      | 0.3               | FB: "Transoceanic migrations recorded, but rare (Ref. 88864)." |
| Thunnus maccoyii               | Scombridae              | Southern bluefin tuna | 0.102     | 0.3               | FB: "Exhibits seasonal onshore-offshore migration (Ref. 9888)." |
| Micromesistus australis        | Gadidae                 | Southern blue whiting | 0.139     | 0.9               | FAO: "Breeds at 20 to 25 m, near the shore or as much as 100 km out to sea" |
| Placopecten magellanicus       | Pectinidae              | Deep sea scallop     | 0.56       | 0.3               | SLB: "Generally localized, but
  some juveniles have been found to migrate over 2,000 miles in 6 or 7 years (Ref. 28499)." |
| Smerotheres kyrillus           | Sparidae                | Scup                 | 0.348      | 0.3               | FB: "In warm summers, the population of the Falkland/Malvinas current (on the Patagonian shelves of Argentina and southern Chile) migrates southward to S. Georgia, S. Shetland Islands, Elephant Island and the northern part of the Antarctic Peninsula." |
| Squalus acanthias              | Squalidae               | Piked dogfish        | 0.044      | 0.9               | FB: "Migrates seasonally to southern Japan and adjacent waters in winter, and Hokkaido and the Kuril Islands in summer." |
| Paralichthys dentatus          | Paralichthyidae         | Summer flounder      | 1.336      | 0.3               | FB: "Migrates seasonally to southern Japan and adjacent waters in winter, and Hokkaido and the Kuril Islands in summer." |
| Isturus oxyrinchus             | Lamnidae                | Shortfin mako        | 0.09       | 0.9               | FB: "Migrates seasonally to southern Japan and adjacent waters in winter, and Hokkaido and the Kuril Islands in summer." |
| Merluccius bilinearis          | Merlucciidae            | Silver hake          | 0.154      | 0.9               | FB: "Migrates seasonally to southern Japan and adjacent waters in winter, and Hokkaido and the Kuril Islands in summer." |
| Seriola punctata               | Centrolophidae          | Silver warehou       | 0.261      | 0.3               | FB: "Migrates seasonally to southern Japan and adjacent waters in winter, and Hokkaido and the Kuril Islands in summer." |
| Katsuwonus pelamis             | Scombridae              | Skipjack tuna        | 0.504      | 0.9               | FB: "Migrates seasonally to southern Japan and adjacent waters in winter, and Hokkaido and the Kuril Islands in summer." |
| Pseudoctopus maculatus         | Oreosomatidae          | Smooth orey dory     | 0.11       | 0.3               | FB: "Migrates seasonally to southern Japan and adjacent waters in winter, and Hokkaido and the Kuril Islands in summer." |
| Squilla mantis                 | Squillidae              | Spot-tail manit        | 0.56       | 0.1               | FAO: "Breeds at 20 to 25 m, near the shore or as much as 100 km out to sea" |
| Mullus surmuletus              | Mullidae                | Surf had             | 0.056      | 0.3               | IUCN: "Breeds at 20 to 25 m, near the shore or as much as 100 km out to sea" |
| Ophiodon elongates             | Ophiodontidae          | Snow crab            | 0.056      | 0.3               | FAO: "Breeds at 20 to 25 m, near the shore or as much as 100 km out to sea" |
| Sebastodes diplota              | Sebastidae              | Splitnose rockfish   | 0.086      | 0.3               | FAO: "Breeds at 20 to 25 m, near the shore or as much as 100 km out to sea" |
| Solea solea                    | Soleidae                | Common sole          | 0.314      | 0.3               | FB: "Migrates seasonally to southern Japan and adjacent waters in winter, and Hokkaido and the Kuril Islands in summer." |
| Merluccius australis           | Merlucciidae            | Southern hake        | 0.056      | 0.9               | FB: "Migrates seasonally to southern Japan and adjacent waters in winter, and Hokkaido and the Kuril Islands in summer." |
| Species | Common Name | Family | Habitat | Depth | Movement | Reference |
|---------|-------------|--------|---------|-------|----------|-----------|
| *Scomberomorus maculatus* | Atlantic Spanish mackerel | Scombridae | benthic | 0.553 | 0.9 | hms | FB: "Moves in large schools over great distances along the shore." |
| *Scomberomorus niphonius* | Japanese Spanish mackerel | Scombridae | benthic | 0.526 | 0.9 | hms | FB: "Undergoes a spawning migration in spring (March to June) and a feeding migration in fall (September to November) in the Inland Sea of Japan." |
| *Merluccius gayi* | South Pacific hake | Merluccidae | migratory | 0.418 | 0.9 | FB: "Some spawing almost throughout the year, near to the coast or up to 100 km out to sea" |
| *Sprattus sprattus* | European sprat | Clupeidae | migratory | 0.476 | 0.9 | FB: "It appears to prefer water temperatures between 7 and 15°C, and often makes longitudinal and depth migrations to follow this temperature preference (Ref. 48844)." |
| *Squalus suckleyi* | Pacific spiny dogfish | Squalidae | migratory | 0.024 | 0.9 | FB: "Secondary ref: (30) "Overall, 547 (25.5%) tagged lobsters of both sexes moved >20 km within or between sites."

**Habitat notes:**

- **benthic:** Found on or near the seafloor, often in areas of silt, clay, or mud substrate.
- **sedimentary:** Found in areas with sedimentary deposits, such as sand or silt.
- **coral:** Found near or on coral formations.
- **reef:** Found near or on coral reefs.
- **coastal:** Found near the coastline, often in areas with shallow water and varied topography.
- **offshore:** Found in open ocean waters, often at greater depths.
- **bathypelagic:** Found in the deep sea, often at depths greater than 2000 meters.
- **bathydemersal:** Found in the upper part of the deep sea, often at depths of 200-500 meters.

**Movement notes:**

- **migratory:** Animals that move seasonally, often in response to environmental cues such as temperature or food availability.
- **sedentary:** Animals that remain in one area throughout their lives.
- **sexually sedentary:** Males remain in one area, while females may migrate.

**Reference notes:**

- **FB:** Field notes.
- **IUCN:** International Union for Conservation of Nature.
- **Habitat:** Refers to the type of habitat where the species is typically found.
- **Migration:** Refers to the movement patterns of the species.
- **Temperature:** Refers to the temperature preferences of the species.
- **Movement:** Refers to the movement patterns of the species.
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- **Temperature:** Refers to the temperature preferences of the species.
- **Movement:** Refers to the movement patterns of the species.
- **Habitat:** Refers to the type of habitat where the species is typically found.
| Species Name | Family Name | Habitat | Comment |
|-------------|-------------|---------|---------|
| Caranx hippos | Carangidae | habitat_reef | FB: "Generally in neritic habitats." |
| Auxis thazard | Scombridae | habitat_reef | FB: "Found in inshore waters but also down to 200 m depth, in areas with hard bottoms." |
| Pollachius |cbd | habitat_coastal | FB: "Appears to undergo migratory and trophic migrations along the coast (Ref. 35237)." |
| Acanthocybium solandri | Scombridae | habitat_reef | FB: "Lives close to the surface and has a migratory pattern similar to the mackerel (Ref. 35388)." |
| Crevalle jack | Carangidae | habitat_reef | FB: "Lives close to the surface and has a migratory pattern similar to the mackerel (Ref. 35388)." |
| Sebastes entomelas | Serranidae | habitat_reef | FB: "Lives close to the surface and has a migratory pattern similar to the mackerel (Ref. 35388)." |

**IUCN Classification:**
- FB: "Endangered" for *Liza klunzingeri*.
- FB: "Vulnerable" for *Pollachius* and *Acanthocybium solandri*.
- FB: "Least Concern" for *Crevalle jack* and *Sebastes entomelas*.
|   | Species | Family | Habitat | Length | Comments |
|---|---------|--------|---------|--------|----------|
| 220 | Cepola macrophthalmus | Cepolidae | Red bandfish | 0.663 | 0.1 | sedentary | FB: “Found on sand and mud bottom (Ref. 26999). Lives in vertical burrows but may be found swimming in midwater.” |
| 221 | Chanos chanos | Chanidae | Milkfish | 0.566 | 0.3 | habitat_reef | FB: “They occur in small to large schools near the coasts or around islands where reefs are well developed.” |
| 222 | Ctenolabrus rupestris | Labridae | Goldsinny-wrasse | 0.492 | 0.3 | habitat_reef | |
| 223 | Dicentrarchus labrax | Serranidae | European seabass | 0.531 | 0.3 | habitat_coastal | |
| 224 | Euthynnus affinis | Scombridae | Kawakawa | 0.631 | 0.9 | pelagic | IUCN |
| 225 | Eutylurus allisittatus | Scombridae | Little tunny | 0.33 | 0.9 | hms | IUCN |
| 226 | Eutrigla gurnardus | Triglidae | Grey gurnard | 0.182 | 0.3 | habitat_benthic | FB |
| 227 | Helicolenus dactylopterus | Scombridae | Blackbelly rosefish | 0.149 | 0.3 | habitat_benthic | IUCN |
| 228 | Istiophorus platypterus | Istiophoridae | Indo-Pacific sailfish | 0.466 | 0.9 | hms | FB |
| 229 | Gymnosarda unicolor | Scombridae | Dogtooth tuna | 0.597 | 0.9 | pelagic | FB |
| 230 | Lutjanus guttatus | Lutjanidae | Spotted rose snapper | 0.37 | 0.3 | habitat_reef | FB |
| 231 | Lutjanus kasmira | Lutjanidae | Common bluestripe snapper | 0.454 | 0.3 | habitat_reef | FB |
| 232 | Lutjanus malabaricus | Lutjanidae | Malabar blood snapper | 0.3 | 0.3 | habitat_reef | FB |
| 233 | Lutjanus peru | Lutjanidae | Pacific red snapper | 0.269 | 0.3 | habitat_reef | FB |
| 234 | Lutjanus quinquelineatus | Lutjanidae | Five-lined snapper | 0.327 | 0.3 | habitat_reef | FB |
| 235 | Lutjanus synagris | Lutjanidae | Lane snapper | 0.661 | 0.3 | habitat_reef | FB |
| 236 | Lutjanus vivanus | Lutjanidae | Silk snapper | 0.252 | 0.3 | habitat_reef | FB |
| 237 | Ocyurus chrysurus | Lutjanidae | Yellowtail snapper | 0.474 | 0.3 | habitat_reef | FB |
| 238 | Orhynchus unicolor | Scombridae | Plain bonito | 0.597 | 0.9 | hms | FB |
| 239 | Rastrelliger brachysoma | Scombridae | Short mackerel | 1.172 | 0.9 | pelagic | IUCN |
| 240 | Rastrelliger kanagurta | Scombridae | Indian mackerel | 1.13 | 0.9 | pelagic | FAO |
| 241 | Sarda orientalis | Scombridae | Striped bonito | 0.341 | 0.9 | pelagic | IUCN |
| 242 | Sarda sarda | Scombridae | Atlantic bonito | 0.703 | 0.9 | hms | FB |
| 243 | Scomberomorus commersoni | Scombridae | Narrow-banded Spanish mackerel | 0.543 | 0.9 | hms | FB |
| 244 | Scomberomorus guttatus | Scombridae | Indo-Pacific king mackerel | 0.5 | 0.9 | hms | FB |
| 245 | Scomberomorus lineolatus | Scombridae | Streaked seerfish | 0.298 | 0.9 | pelagic | IUCN |
| 246 | Scomberomorus regalis | Scombridae | Cero | 0.603 | 0.9 | pelagic | IUCN |
| 247 | Scomberomorus tritor | Scombridae | West African Spanish mackerel | 1.01 | 0.9 | pelagic | IUCN |
| 248 | Thunnus albacares | Scombridae | Blackfin tuna | 0.411 | 0.9 | hms | FB |
| 249 | Thunnus longissimus | Scombridae | Longtail tuna | 0.222 | 0.9 | pelagic | IUCN |
| 250 | Acanthistius brasiliensis | Serranidae | Argentine seabass | 0.393 | 0.3 | habitat_benthic | IUCN |
| 251 | Albula vulpes | Albidae | Bonefish | 0.463 | 0.3 | habitat_lagoon | FB |
| 252 | Glossanodon semifasciatus | Argentinidae | Deep-sea smelt | 0.519 | 0.9 | pelagic | FB |
| 253 | Antips georgianus | Argentinidae | Ruff | 0.388 | 0.3 | habitat_coastal | FB |

**Habitat:**
- **coastal:** waters over the continental shelf (Ref. 5217), from the coastline, where it is common on shallow flats, to offshore waters (Ref. 57932).
- **pelagic:** for pelagic species.
- **benthic:** for benthic species.
- **reef:** for fish associated with reefs.
- **midwater:** for midwater species.
- **shallow:** for shallow-water species.

**Lengths:**
- **FB:** FishBase units.
- **FAO:** FAO units.
- **IUCN:** IUCN units.
- **hms:** meters.
- **m:** meters.
- **cm:** centimeters.
- **mm:** millimeters.

**Comments:**
- FB: “Known to undertake lengthy long-shore migrations, but permanent resident populations also seem to exist.”
- FB: “A pelagic migratory fish inhabiting coastal waters at depths between 15-200 m.”
- FB: “Usually found inshore in bays and estuaries over seagrass beds or near areas of seaweed (e.g. kelp), on rocky reefs, and along ocean beaches. Juveniles are found in inshore coastal waters, bays and inlets (Ref. 6390).”
|   | Common Name                      | Family          | Scientific Name          | Habitat          | IUCN   | FAO     |
|---|----------------------------------|-----------------|--------------------------|------------------|--------|---------|
| 254 | Conger myriaster                  | Congridae       | White-spotted conger      | 0.27             | 0.1    |         |
| 255 | Boops boops                       | Sparidae        | Bogue                    | 0.471            | 0.9    | pelagic |
| 256 | Boreogadus saida                  | Gadidae         | Polar cod                | 0.371            | 0.9    | migratory | FAO: also found at 50-175 km offshore in the Beaufort and Chukchi Seas, at depths of 40 to 400 m. Migration patterns are unknown, except for a pre-spawning migration to nearshore waters in late summer in the Beaufort Sea. |
| 257 | Brama brama                       | Bramidae        | Atlantic pomfret         | 0.254            | 0.9    | migratory | FB: "Seasonal migrant occurring in small schools, movements apparently temperature-related."
| 258 | Centropomus undecimalis           | Centropomidae   | Common snook             | 0.642            | 0.3    |         |
| 259 | Chloroscombrus chrysurus          | Carangidae      | Atlantic bumper          | 0.817            | 0.3    |         |
| 260 | Conger conger                     | Congridae       | European conger          | 0.208            | 0.3    | habitat_benthic |
| 261 | Conger oceanicus                  | Congridae       | American conger          | 0.27             | 0.1    |         |
| 262 | Coregonus albula                  | Salmonidae      | Vendace                  | 0.421            | 0.9    |         |
| 263 | Decapterus russelli               | Carangidae      | Indian scad              | 1.233            | 0.9    | pelagic |
| 264 | Dicentrarchus punctatus           | Moronidae       | Spotted seabass          | 0.493            | 0.3    |         |
| 265 | Eleginus gracilis                 | Gadidae         | Saffron cod              | 0.307            | 0.3    |         |
| 266 | Eleutheronema tetratactylum       | Polydactylidae  | Fourfinger threadfin     | 0.644            | 0.3    |         |
| 267 | Harpadon nehereus                 | Synodontidae    | Bombay-duck              | 0.452            | 0.3    |         |
| 268 | Isacia concepcionis               | Haemulidae      | Cabina grunt             | 0.655            | 0.3    |         |
| 269 | Lactarius lactatus                | Lactidae        | False trevally           | 0.894            | 0.3    |         |
| 270 | Latipes calcarifer                | Latidae         | Barnamundi               | 0.707            | 0.3    |         |
| 271 | Lutjanus gibbus                   | Lutjanidae      | Humpback red snapper     | 0.436            | 0.3    |         |
| 272 | Lutjanus griseus                  | Lutjanidae      | Grey snapper             | 0.329            | 0.3    |         |
| 273 | Lutjanus johnii                   | Lutjanidae      | John's snapper           | 0.365            | 0.3    |         |
| 274 | Megalops squamatus                | Carangidae      | Torpedo scad             | 0.855            | 0.9    |         |
| 275 | Megalops cyprinoides              | Megalopidae     | Indo-Pacific tarpon      | 0.22             | 0.3    |         |
| 276 | Mene maculata                     | Menidae         | Moonfish                 | 0.681            | 0.3    |         |
| 277 | Menidia menidia                  | Athenidae       | Atlantic silverside      | 0.683            | 0.3    |         |
| 278 | Microgadus tomcod                 | Gadidae         | Atlantic tomcod          | 0.461            | 0.3    |         |
| 279 | Muraenoxo cinereus                | Muraenidae      | Daggettooth pike conger  | 0.409            | 0.1    |         |
| 280 | Nemipterus virgatus               | Nemipteridae    | Golden threadfin bream   | 0.957            | 0.3    |         |
| 281 | Oncorhynchus gorbuschus           | Salmonidae      | Pink salmon              | 0.492            | 0.9    |         |
| 282 | Oncorhynchus keta                 | Salmonidae      | Chum salmon              | 0.332            | 0.9    |         |
| 283 | Oncorhynchus kisutch              | Salmonidae      | Coho salmon              | 0.528            | 0.9    |         |
| 284 | Oncorhynchus massou               | Salmonidae      | Masu salmon              | 0.488            | 0.9    |         |
| 285 | Oncorhynchus nero                 | Salmonidae      | Sockeye salmon           | 0.343            | 0.9    |         |
| 286 | Oncorhynchus tschawiitscha        | Salmonidae      | Chinook salmon           | 0.492            | 0.9    |         |
| 287 | Osmerus mordax                    | Osmeridae       | Rainbow smelt            | 0.088            | 0.3    |         |
| 288 | Paralabrax humeralis              | Serranidae      | Peruian rock seabass     | 0.275            | 0.3    |         |
| 289 | Parona signata                    | Carangidae      | Parona leatherjacket     | 0.935            | 0.3    |         |
| ID  | Species                  | Family      | Common Name                             | Habitat        | Status    | FB Notes                                                                 |
|-----|--------------------------|-------------|-----------------------------------------|----------------|-----------|--------------------------------------------------------------------------|
| 290 | Pentanemus quinquarius    | Polynemidae | Royal threadfin                         | habitat_coastal| IUCN     | FB: "Adults prefer clear oceanic waters around islands to neritic waters (Ref. 5217). Occasionally in turbid waters (Ref. 5923). Pelagic (Ref. 58302)." |
| 291 | Plectorhinchus mediterraneus | Haemulidae  | Rubberlip grunt                         | habitat_benthic| IUCN     |                                                                           |
| 292 | Polyprion americanus      | Polyprionidae| Wreckfish                               | habitat_benthic| IUCN     |                                                                           |
| 293 | Pomadasys argenteus       | Haemulidae  | Silver grunt                            | habitat_coastal| FB       |                                                                           |
| 294 | Sallida australis         | Monidae     | Tadpole codling                         | deep           | FB       |                                                                           |
| 295 | Sarpa salpa               | Sparidae    | Salema                                  | habitat_reef   | FB       |                                                                           |
| 296 | Selenocryptis crumenophthalmus | Carangidae | Bigeye scad                             | 1.356 0.9      | pelagic  |                                                                           |
| 297 | Salaria leptolepis        | Carangidae  | Yellowstripe scad                       | 1.612 0.3      | habitat_coastal |                                                                           |
| 298 | Salmela dorsalis          | Carangidae  | African moonfish                        | 0.655 0.3      | habitat_coastal |                                                                           |
| 299 | Salmela setapinnis        | Carangidae  | Atlantic moonfish                       | 0.895 0.3      | habitat_coastal |                                                                           |
| 300 | Trachinotus carolinus     | Carangidae  | Florida pompano                         | 0.843 0.3      | habitat_coastal |                                                                           |
| 301 | Trachurus decivis         | Carangidae  | Greenback horse mackerel                | 0.29 0.9       | pelagic  |                                                                           |
| 302 | Trachurus symmetricus     | Carangidae  | Pacific jack mackerel                   | 0.238 0.9      | pelagic  |                                                                           |
| 303 | Urophycis brasiliensis    | Physidae    | Brazilian codling                       | 0.375 0.3      | habitat_benthic |                                                                           |
| 304 | Urophycis chuss           | Physidae    | Red hake                                | 0.304 0.9      | migratory | REF: Secondary ref: (38) "Red hake make extensive seasonal, depth- and temperature-related migrations" |
| 305 | Zenopsis conchifer        | Zeridae     | Silver John dory                        | 0.246 0.3      | habitat_reef |                                                                           |
| 306 | Abelines hians            | Belonidae   | Flat needlefish                         | 0.581 0.3      | habitat_coastal |                                                                           |
| 307 | Amphicthys crypocentrus   | Batrachoididae| Boccon toadfish                       | 0.572 0.1      | sedentary | FB: "Adults prefer clear oceanic waters around islands to neritic waters (Ref. 5217). Occasionally in turbid waters (Ref. 5923). Pelagic (Ref. 58302)." |
| 308 | Archosargus probatocephalus | Sparidae          | Sheepshead                              | 0.61 0.3       | habitat_reef |                                                                           |
| 309 | Arctoscopus japonicus     | Trichodontidae| Japanese sandfish                       | 0.63 0.3       | habitat_benthic |                                                                           |
| 310 | Argyrosomus spinifer      | Sparidae    | King soldier bream                     | 0.494 0.3      | habitat_coastal |                                                                           |
| 311 | Argyrosomus hololepidotus | Sciaenidae  | Southern meagre                         | 0.228 0.3      | habitat_coastal |                                                                           |
| 312 | Argyrosomus regius        | Sciaenidae  | Meagre                                  | 0.149 0.9      | migratory | FB: "Both adults and juveniles are migratory moving along shore or offshore-onshore in response to temperature change (Ref. 11025)"
| 313 | Argyrozoa argyrozoa       | Sparidae    | Carpenter seabream                      | 0.338 0.3      | habitat_reef | IUCN: "Tagging studies have shown that adults are fairly resident with a small percentage of fish that disperse (Brouwer et al. 2003, Griffiths and Wilke 2002) including some nomadic behaviour involving migrations of more than 100 km (Griffiths and Mann 2000)."
| 314 | Atractoscion aequidens    | Sciaenidae  | Geelbek croaker                         | 0.312 0.3      | habitat_coastal |                                                                           |
| 315 | Aberouca nibe             | Sciaenidae  | Blackmouth croaker                      | 0.461 0.3      | habitat_coastal |                                                                           |
| 316 | Austroglossus microlepis  | Soleidae    | West coast sole                         | 0.186 0.3      | habitat_benthic |                                                                           |
| 317 | Austroglossus pectoralis  | Soleidae    | Mud sole                                | 0.268 0.3      | habitat_benthic |                                                                           |
| 318 | Brotula barbata           | Ophididae   | Bearded brotula                         | 0.276 0.3      | habitat_benthic |                                                                           |
| 319 | Carcharhinus brachyurus   | Carcharhinidae| Copper shark                            | 0.069 0.9      | hms       |                                                                           |
| 320 | Carcharhinus falciformis  | Carcharhinidae| Silky shark                            | 0.067 0.9      | hms       |                                                                           |
|    | Species                          | Family            | Habitat     | FB or FAO                        | Notes                                                                 |
|----|----------------------------------|-------------------|-------------|----------------------------------|----------------------------------------------------------------------|
| 321| Carcharhinus longimanus          | Carcharhinidae    | Oceanic     | 0.093, 0.9                       | hms FB                                                                    |
| 322| Carcharhinus sorrah              | Carcharhinidae    | Spot-tail   | 0.181, 0.9                       | hms FB                                                                    |
| 323| Centroprorus granulosus          | Centroproridae    | Gulper      | 0.044, 0.9                       | deep FB                                                                   |
| 324| Centroprorus squamosus           | Centroproridae    | Leafscale   | 0.031, 0.9                       | deep FB                                                                   |
| 325| Cephaloscyllium isabellum       | Scyliorhinidae    | Draughtsbo   | 0.188, 0.3                       | habitat_reef FB                                                         |
| 326| Ctenoglaucus edentulus           | Engraulidae       | Atlantic    | 0.508, 0.3                       | habitat_coastal FB                                                      |
| 327| Ctenoglaucus mysticetus          | Engraulidae       | Pacific     | 0.828, 0.3                       | habitat_coastal FB                                                      |
| 328| Cheineus nufar                   | Sparidae          | Santer      | 0.438, 0.3                       | habitat_reef FB                                                         |
| 329| Chledonichthys kumu              | Triglidae         | Bluefin      | 0.231, 0.3                       | habitat_benthic FB                                                      |
| 330| Conodon nobilis                  | Haemulidae        | Barred      | 0.655, 0.3                       | habitat_benthic FB                                                      |
| 331| Cynoconion analis                | Sciaenidae        | Peruvian     | 0.552, 0.3                       | habitat_coastal FB                                                      |
| 332| Cynoconion nebulosus            | Sciaenidae        | Spotted     | 0.437, 0.3                       | habitat_coastal FB                                                      |
| 333| Cynoconion striatus              | Sciaenidae        | Striped     | 0.562, 0.3                       | habitat_reef FOA                                                       |
| 334| Dalatias licha                   | Dalatidae         | Kitefin      | 0.13, 0.9                        | deep FB                                                                 |
| 335| Deniex dentex                    | Sparidae          | Denonin     | 0.295, 0.3                       | habitat_reef FB                                                         |
| 336| Drepane punctata                 | Drepaneidae       | Spotted     | 0.537, 0.3                       | habitat_coastal FB                                                      |
| 337| Eleognops macribinus             | Eleginopsidae     | Patagonian  | 0.185, 0.3                       | habitat_coastal REF                                                     |
| 338| Epinephelus aeneus               | Serranidae        | White       | 0.173, 0.9                       | migratory FB                                                            |
| 339| Etmopterus spinax                | Etmopteridae      | Velvet      | 0.042, 0.3                       | deep IUCN                                                               |
| 340| Galeocero cuvier                 | Carcharhinidae    | Tiger       | 0.076, 0.9                       | hms FB                                                                   |
| 341| Genynomon lineatus               | Sciaenidae        | White       | 0.625, 0.3                       | habitat_benthic IUCN                                                   |
| 342| Hexanchus griseus                | Hexanchidae       | Bluntnose    | 0.164, 0.9                       | habitat_reef FB                                                         |
| 343| Lepidopus caudatus               | Trichuridae       | Silver      | 0.293, 0.3                       | habitat_deep FB                                                          |
| 344| Lichia amia                      | Carangidae        | Leefish     | 0.935, 0.3                       | habitat_coastal FB                                                      |
| 345| Lithognathus momynus             | Sparidae          | Sand        | 0.517, 0.3                       | habitat_reef FB                                                         |
| 346| Macodon ancyldon                 | Sciaenidae        | King        | 0.617, 0.3                       | habitat_coastal FB                                                      |
| 347| Menticirrus litoralis            | Sciaenidae        | Gulf        | 0.552, 0.3                       | habitat_coastal FB                                                      |
| 348| Menticirrus saxatilis            | Sciaenidae        | Northern    | 0.498, 0.3                       | habitat_coastal FB                                                      |
| 349| Naurocrates dctor                | Carangidae        | Pilotfish   | 1.065, 0.9                       | pelagic FB                                                              |
| 350| Obiata melanura                  | Sparidae          | Saddled     | 0.431, 0.3                       | habitat_reef FB                                                         |
| 351| Oxynotus centrina                | Oxynotidae        | Angular     | 0.13, 0.3                        | habitat_benthic FB                                                      |
| 352| Pagellus acme                    | Sparidae          | Auxiliary   | 0.478, 0.3                       | habitat_reef FB                                                         |
| 353| Pampus argentus                  | Stromateidae      | Silver      | 0.666, 0.3                       | habitat_coastal FB                                                      |
| 354| Paratoponeurus penurus           | Sciaenidae        | Peruvian     | 0.625, 0.3                       | habitat_coastal FB                                                      |
| 355| Parapercis collas                | Pingueperidae     | New Zealand  | 0.447, 0.1                       | habitat_coastal REF                                                     |
| 356| Petrus rupestris                 | Sparidae          | Red steenbra | 0.257, 0.9                       | migratory REF                                                           |
| 357| Pogonias ormis                   | Sciaenidae        | Black       | 0.187, 0.3                       | habitat_coastal FB                                                      |
| 358| Proniose glauca                  | Carcharhinidae    | Blue        | 0.050, 0.9                       | hms FB                                                                   |
| 359| Pseneopipis anomala              | Centropodidae     | Pacific      | 0.702, 0.3                       | habitat_coastal FAO                                                    |
| 360| Pseneopipis anomala              | Pseneopipidae     | Indian       | 0.855, 0.3                       | habitat_benthic FB                                                      |
| 361| Pseudolitos senegalensis         | Sciaenidae        | Cassava      | 0.477, 0.3                       | habitat_coastal FB                                                      |
| 362| Pterogymnus                      | Sparidae          | Panga       | 0.384, 0.3                       | habitat_reef FB                                                         |
|   | species                     | family     | common_name | population     | habitat      | ref  |
|---|----------------------------|------------|-------------|----------------|--------------|------|
| 303| Menhaden                  | Sciaenidae | Blue drum   | 0.625          | habitat_benthic | FB   |
| 364| Menhagonia polymorpha     | Triglidae  | Latchet     | 0.388          | habitat_benthic | FB   |
| 365| Rhabdosargus milii         | Sparidae   | White stumprose | 0.441         | habitat_reef  | FB   |
| 366| Scophthalmus rhombus      | Scophthalmidae | Brill | 0.837          | habitat_benthic | FB   |
| 367| Scyliorhinus stellaris    | Scyliorhinsidae | Nursehound | 0.165          | habitat_benthic | FB   |
| 368| Sphyra lewini             | Sphynidae  | Scalloped hammerhead | 0.06        | migratory    | FB   |
| 369| Sphyra zygaena            | Sphynidae  | Smooth hammerhead | 0.115        | migratory    | FB   |
| 370| Squalus argus             | Squalidae  | Smooth hammerhead | 0.115        | migratory    | FB   |
| 371| Stephanolepis stellio     | Monacanthidae | Threadtail filefish | 0.843     | habitat_coastal | IUCN |
| 372| Taonidae                  | Labridae   | Taildog     | 0.358          | habitat_coastal | REF   |
| 373| Thryxostes atun           | Gempylidae | Scoek       | 0.349          | habitat_coastal | REF   |
| 374| Zoarces viviparus         | Zoaridae   | Elipout     | 0.331          | sedentary    | REF   |
| 375| Alosa pseudoharengus      | Clupeidae  | Alewife     | 1.843          | habitat_coastal | FB   |
| 376| Alosa sapidissima         | Clupeidae  | American shad | 1.013       | pelagic      | FB   |
| 377| Amblygaster smithii       | Clupeidae  | Spotted sardine | 1.417         | habitat_coastal | FB   |
| 378| Anchialo sparsus          | Engraulidae | Longnose anchovy | 1.297       | habitat_coastal | FB   |
| 379| Anodontostoma chacunda    | Clupeidae  | Chacunda gizzard shad | 1.401       | habitat_coastal | FB   |
| 380| Anestes japonensis        | Clupeidae  | Alewife     | 1.843          | habitat_coastal | FB   |
| 381| Atule mate                | Carangidae | Yellowtail scad | 1.255        | habitat_reef  | FB   |
| 382| Brevoorta aurea           | Clupeidae  | Brazilian menhaden | 0.939        | habitat_coastal | REF   |
| 383| Carangoides bjoardii      | Carangidae | Orangespotted trevally | 0.976       | habitat_reef  | FB   |
| 384| Carania crysos            | Carangidae | Blue runner | 0.711          | habitat_coastal | FB   |
| 385| Carangoides fulvoguttatus | Carangidae | Yellowspotted trevally | 1.01        | habitat_reef  | FB   |
| 386| Caranx ignobilis          | Carangidae | Giant trevally | 0.422        | habitat_reef  | FB   |
| 387| Caranx ruber              | Carangidae | Bar jack    | 0.824          | habitat_reef  | FB   |
| 388| Chirocentrus ruber        | Chirocentridae | Whitefin wolf-herring | 0.27         | habitat_coastal | FB   |
| 389| Clupanodon thysa          | Clupeidae  | Chinese gizzard shad | 1.165       | habitat_coastal | FB   |
| 390| Clupeonella cultriventris | Clupeidae  | Black and Caspian Sea sprat | 0.908 | migratory | FB |
| 391| Cynoscion acoupa          | Sciaenidae | Accoupa weakfish | 0.392       | habitat_coastal | FB   |
| 392| Cynoscion jamaicensis     | Sciaenidae | Jamaica weakfish | 0.661        | habitat_coastal | FB   |
| 393| Cynoscion leucarchus      | Sciaenidae | Smooth weakfish | 0.647        | habitat_coastal | FB   |
| 394| Cynoscion virensens       | Sciaenidae | Green weakfish | 0.562        | habitat_coastal | FB   |
| 395| Dactylopterus vittatus    | Dactylopteraidae | Flying gurnard | 0.639        | habitat_coastal | IUCN |
| 396| Decapterus               | Carangidae | Japanese scad | 1.48          | pelagic      | FB   |

FB: "Found over rough, even rocky or coraline ground, and algal-covered bottoms. Feed on bottom-living invertebrates..."

FB: "Huge schools of small migrating individuals move pole ward in the summer in certain areas (Ref. 244)."

FB: "Migrates northward in summer; young often in large aggregations of hundreds of individuals (Ref. 13562)."

FB: "Movement of schooling adults apparently restricted to coastal areas proximal to natal estuaries (Ref. 4639)."

FB: "Spends most of its life at sea, returning to freshwater streams to breed (Ref. 27547)."

FB: "Adults inhabit mangroves and coastal bays in pelagic waters (Ref. 58302). They form schools to about 50 m in inshore waters (Ref. 9884), or singly (Ref. 48635)."

FB: "Adults are common along coastal reef slopes or around large coral heads in lagoons (Ref. 48635)."

FB: "Adults common among coastal reef slopes or around large coral heads in lagoons (Ref. 48635)."

FB: "Adults inhabit mangroves and coastal bays in pelagic waters (Ref. 58302). They form schools to about 50 m in inshore waters (Ref. 9884), or singly (Ref. 48635)."

FB: "Adults inhabit mangroves and coastal bays in pelagic waters (Ref. 58302). They form schools to about 50 m in inshore waters (Ref. 9884), or singly (Ref. 48635)."

FB: "Adul..."
| No. | Species Name                        | Family       | Habitat                   | IUCN  |
|-----|------------------------------------|--------------|---------------------------|-------|
| 397 | Diplodus annularis                 | Serranidae   | coastal                   | FB    |
| 398 | Diplodus sargus                    | Serranidae   | reef                      | FB    |
| 399 | Diplodus vulgaris                  | Serranidae   | coastal                   | FB    |
| 400 | Euthynus maculatum                | Clupeidae    | coastal                   | FB    |
| 401 | Hemiramphus brasiliensis          | Hemiramphidae| coastal                   | REF   |
| 402 | Hilsa kegle                        | Clupeidae    | coastal                   | FB    |
| 403 | Ilisha elongata                   | Porgiidae    | coastal                   | FB    |
| 404 | Isopisthus parvipinnis            | Sciaenidae   | coastal                   | FB    |
| 405 | Konosirus punctatus               | Clupeidae    | coastal                   | FB    |
| 406 | Lachnolaimus maximus              | Labridae     | reef                      | FB    |
| 407 | Lampris guttatus                  | Lampridae    | reef                      | FB    |
| 408 | Lepadicyclum flavobrunneum        | Gempylidae   | coastal                   | REF   |
| 409 | Lethrinus harak                   | Lethrinidae  | reef                      | FB    |
| 410 | Lethrinus feroxie                 | Lethrinidae  | coastal                   | FB    |
| 411 | Lethrinus nebulosus               | Lethrinidae  | coastal                   | FB    |
| 412 | Lethrinus obtusus                 | Lethrinidae  | coastal                   | FB    |
| 413 | Liza aurata                       | Mugilidae    | coastal                   | FB    |
| 414 | Liza saliens                      | Mugilidae    | coastal                   | FB    |
| 415 | Lutjanus analis                   | Lutjanidae   | reef                      | FB    |
| 416 | Lutjanus argintiaculatus          | Lutjanidae   | reef                      | FB    |
| 417 | Lutjanus argentiventris          | Lutjanidae   | reef                      | FB    |
| 418 | Lutjanus bohar                    | Lutjanidae   | reef                      | FB    |
| 419 | Lutjanus buccanello              | Lutjanidae   | coastal                   | FB    |
| 420 | Lutjanus cyanopterus             | Lutjanidae   | reef                      | FB    |
| 421 | Merluccius abidus                 | Merluccidae  | pelagic                   | REF   |
| 422 | Microstomus kitt                  | Pleuronectidae| benthic                  | FB    |
| 423 | Molva dypterygia                 | Lotidae      | pelagic                   | or    |
| 424 | Monolaxis grandoculis            | Lethrinidae  | reef                      | FB    |
| 425 | Mora moio                        | Montidae     | deep                      | FB    |
| 426 | Naso unicornis                   | Acanthuridae | reef                      |     |
| 427 | Nematalosa nasus                  | Clupeidae    | coastal                   | FB    |
| 428 | Opisthophona librite             | Clupeidae    | coastal                   | FAO   |
| 429 | Opisthophona oglinum             | Clupeidae    | coastal                   | FB    |
| 430 | Osmerus aperlanus                 | Osmeridae    | coastal                   | FB    |
| 431 | Pagonia laglioni                  | Sparidae     | reef                      | FB    |
| 432 | Parastromateus niger             | Carangidae   | coastal                   | FB    |
| 433 | Physos physcis                   | Physidae     | benthic                   | FB    |
| 434 | Platichthys flesus                | Pleuronectidae| benthic                  | IUCN  |
| 435 | Sardinella brasiliensis          | Clupeidae    | coastal                   | FB    |
| 436 | Sardinella gibbosa                | Clupeidae    | coastal                   | IUCN  |

IUCN: "It migrates into the open sea to breed from March to June, during which time it can migrate up to 300 km offshore, although it will more often migrate just 30 km."

IUCN: "Sardinella gibbosa is a marine, reef-associated species that occurs in tropical waters between depths of 10 to 70 m (Pauly et al. 1996, FAO-FIGIS 2005). This species forms schools in coastal waters; it..."
| Species                        | Family        | Habitat       | IUCN          | Notes                                                                                           |
|-------------------------------|---------------|---------------|---------------|-------------------------------------------------------------------------------------------------|
| Sardina maderensis            | Clupeidae     | Maderian sardina | 0.811 0.9 migratory | IUCN: "Juveniles and adults show clear north-south migrations in the Gabon-Congo-Angola sector of their range and also in the Sierra Leone-Mauritania sector; each area having nurseries." |
| Sardinella zunasi             | Clupeidae     | Japanese sardina | 0.938 0.3 habitat_coastal | IUCN: "Sardinella zunasi is a coastal, marine, pelagic species that is found near shore, including semi-enclosed sea areas over sandy and mud bottom habitats (Yamada et al. 1995)." |
| Saurida undosquamis           | Symodontidae  | Brushtooth      | 0.594 0.3 habitat_benthic | FB                                                                                               |
| Scomberomorus ocellatus       | Scleridae     | Red drum       | 0.347 0.3 habitat_benthic | FB                                                                                               |
| Scomberomorus lynn             | Carangidae    | Doublespotted queenfish | 0.861 0.3 habitat_reef | FB                                                                                               |
| Scomberomorus tol             | Carangidae    | Needleescaped queenfish | 0.911 0.3 habitat_reef | FB                                                                                               |
| Scolithina nigrofasciata      | Carangidae    | Blackbanded trevally | 0.935 0.3 habitat_reef | FB                                                                                               |
| Serranus caeruleus            | Serranidae    | Comber         | 0.511 0.3 habitat_benthic | FB                                                                                               |
| Sphyraena barracuda           | Sphyraenidae  | Great barracuda | 0.283 0.3 habitat_coastal | FB                                                                                               |
| Sphyraena sphyraena           | Sphyraenidae  | European barracuda | 0.489 0.3 habitat_coastal | FB                                                                                               |
| Spondylosoma cantharus        | Sparidae      | Black seabream | 0.395 0.3 habitat_reef | FB                                                                                               |
| Sprattus fuesgensis           | Clupeidae     | Falkland sprat | 0.593 0.3 habitat_coastal | FB                                                                                               |
| Tenuolosa ilisha              | Clupeidae     | Hillsa shad    | 1.644 0.9 migratory | FB                                                                                               |
| Tenuolosa toli                | Clupeidae     | Toli shad      | 2.002 0.3 habitat_coastal | FB                                                                                               |
| Trachinotus blochii           | Carangidae    | Snubnose pompano | 0.843 0.3 habitat_reef | FB                                                                                               |
| Trisopterus lucus             | Gadidae       | Pouting        | 0.881 0.3 habitat_coastal | FB Secondary ref: (49)                                                                            |
| Umbrina cirrosa               | Sciaenidae    | Shi drum       | 0.434 0.3 habitat_reef | FB                                                                                               |
| Lethrinus mahsena             | Lethrinidae   | Sky emperor    | 0.322 0.3 habitat_reef | FB                                                                                               |
| Alopias superciliosus         | Alopiidae     | Bigeye thrasher | 0.077 0.9 hms | FB                                                                                               |
| Alopisus vulpinus             | Alopiidae     | Thresher       | 0.047 0.9 hms | FB                                                                                               |
| Antimora rostrata             | Moridae       | Blue antilora  | 0.117 0.9 deep | FB                                                                                               |
| Argentina silus               | Argentinidae  | Greater argentine | 0.073 0.9 pelagic | FB                                                                                               |
| Dasyatis pastinaca            | Dasyatidae    | Common stingray | 0.527 0.3 habitat_benthic | FB                                                                                               |
| Gingylosomos cirratum         | Gingylosomatidae | Nurse shark | 0.072 0.3 habitat_reef | FB                                                                                               |
| Gymnura alvavera              | Gymnuridae    | Spiny butterfly ray | 0.329 0.3 habitat_benthic | IUCN                                                                                             |
| Pseudotopiscus inus            | Moridae       | Red codling    | 0.201 0.3 habitat_benthic | FB or habitat_deep                                                                                |
| Abracanthus nobilis           | Sciaenidae    | White weakfish | 0.297 0.3 habitat_coastal | FB                                                                                               |
| Caulodactalus princeps        | Malacanthidae | Ocean whitefish | 0.361 0.3 habitat_reef | FB                                                                                               |
| Cathachus sortidus            | Paralichthyidae | Pacific sanddab | 0.949 0.3 habitat_benthic | FB                                                                                               |
| Hyperoglype bythites          | Centrolophidae | Black driftfish | 0.292 0.3 habitat_coastal | IUCN                                                                                             |
| Malacanthus plumieri          | Malacanthidae | Sand tilefish | 0.402 0.3 habitat_benthic | FB                                                                                               |
| Paralichthys californicus     | Paralichthyidae | California flounder | 0.068 0.3 habitat_benthic | REF Secondary ref: (50)                                                                            |
| Rachycentron canadum          | Rachycentridae | Cobia          | 0.444 0.9 hms | IUCN                                                                                             |
| Semicossyphus pulcher         | Labridae      | California sheephead | 0.707 0.3 habitat_reef | IUCN: "The fish tend to stay in the same reef and do not move around a lot, as shown by tag-recapture research (DeMartini et al. 1994)." |
| Tarachichthys steindachneri   | Bramidae      | Sickle pomfret | 0.47 0.9 hms | FB: "Highly migratory species. Annex I of the 1982 Convention on the Law of the Sea (Ref. 26139)." |
| Tautogolabrus adspersus       | Labridae      | Cranmer       | 0.542 0.3 habitat_coastal | FB                                                                                               |
| Trachipterus                   | Trachipteridae | Deafish       | 0.142 0.3 habitat_deep | FB                                                                                               |
| Species                   | Family          | Common Name                  | Maturity | Movement | Habitat              | IUCN       |
|--------------------------|-----------------|------------------------------|----------|----------|----------------------|------------|
| Mylioctis australis      | Myliobatidae    | Common eagle ray             | 0.238    | 0.3      | coastal              | FB         |
| Caranx latus             | Carangidae      | Malabar trevally             | 1.169    | 0.3      | reef                 | FB         |
| Epinephelus fuscoguttatus| Serranidae      | Brown-marbled grouper        | 0.27     | 0.3      | reef                 | FB         |
| Epinephelus lauvinus     | Serranidae      | Greasy grouper               | 0.187    | 0.3      | reef                 | FB         |
| Gnathanodon speciosus    | Carangidae      | Golden trevally              | 0.706    | 0.3      | reef                 | FB         |
| Diagonema pictum         | Haemulidae      | Painted sweetlips            | 0.515    | 0.3      | reef                 | FB         |
| Acanthopagrus bifasciatus| Sparidae        | Twobar seabream              | 0.487    | 0.3      | reef                 | FB         |
| Sillago sihama           | Sillaginidae    | Silver sillago               | 0.713    | 0.3      | coastal              | FB         |
| Megalops atlanticus      | Megalopidae     | Tarpon                       | 0.15     | 0.9      | migratory            | IUCN       |
| Nemipterus japonicus     | Nemipteridae    | Japanese threadfin bream     | 1.262    | 0.3      | benthic              | FB         |
| Micropsis mitu           | Scaenidae       | Mi-ju croaker                | 0.562    | 0.3      | coastal              | FB         |
| Xyrichtys novacula       | Labridae        | Pearly razorfish             | 0.651    | 0.3      | coastal              | FB         |
| Lateolabrax japonica    | Lateolabracidae | Japanese seabass             | 0.28     | 0.3      | reef                 | FB         |
| Galeorhinus galeus       | Triakidae       | Tope shark                   | 0.043    | 0.9      | mms                  | FB         |
| Pomadasys jubelini       | Haemulidae      | Sompat grunt                 | 0.753    | 0.3      | coastal              | FB         |
| Acantharius sohal        | Acanthuriidae   | Sohal surgeonfish            | 0.55     | 0.3      | reef                 | FB         |
| Otolithes ruber          | Scaenidae       | Tigertooth croaker           | 0.865    | 0.3      | coastal              | FB         |
| Plectropomus leopardus   | Serranidae      | Leopard coral grouper        | 0.262    | 0.3      | reef                 | FB         |
| Spicara maena            | Centracanthidae | Blotted picarel              | 0.661    | 0.3      | coastal              | FB         |
| Epinephelus gorensis     | Serranidae      | Dungat grouper               | 0.287    | 0.3      | benthic              | IUCN       |
| Mustelus mustelus        | Serranidae      | Smooth-hound                 | 0.132    | 0.3      | coastal              | FB         |
| Pontinus kuhlii          | Scorpaenidae    | Offshore rockfish            | 0.282    | 0.3      | deep                 | FB         |
| Promethichthys prometheus| Gempylidae     | Roulid escolar               | 0.283    | 0.3      | deep                 | FB         |
| Epinephelus morhua       | Serranidae      | Comet grouper                | 0.271    | 0.3      | reef                 | FB         |
| Varicola louti           | Serranidae      | Yellow-edged lyretail        | 0.375    | 0.3      | reef                 | FB         |
| Alosa fallax             | Clupeidae       | Twain shad                   | 0.806    | 0.9      | migratory            | FB         |
| Epinephelus areolatus    | Serranidae      | Areolate grouper             | 0.323    | 0.3      | coastal              | FB         |

IUCN: “Tarpon may have resident, migratory, or mixed populations (Robins et al. 1977). Tagging studies indicate that some mature tarpon may undertake substantial and alongshore migrations (Ault et al. 2005, Luo et al. 2008), while others are residents of particular locations (Guindon unpublished data, sensu Robichaud and Rose 2004). These movements may represent repeated migratory patterns, or there may be significant annual variation in the movement pattern of individuals (Ault et al. 2008). Seasonal migrations may also occur. Migrations cross state and federal boundaries, which may impact regulation.”

FB: “Occurs in small schools that are highly migratory in higher latitudes in their range (Ref. 244).”

FB: “Marine; reef-associated; non-migratory”

FB: “Amphibalanus species (Ref. 51442), schooling and strongly migratory, but apparently not penetrating far up rivers (Ref. 188, 6983). Adults are usually found in open waters along the coast (Refs. 59043, 69486).”

FB: “Usually found in seagrass beds or on fine sediment bottoms near rocky reefs, dead coral, or alcyonarians (Ref. 5222), in shallow continental shelf waters.”

40
| N  | Scientific Name               | Family       | Common Name                      | FB/REF | HABITAT               |
|----|------------------------------|--------------|----------------------------------|--------|-----------------------|
| 501| Rhyynchobatus djiddensis     | Rhinobatidae | Giant guitarfish                  | 0.205  | 0.3  habitat_benthic   |
| 502| Cithlodonichthys capensis    | Triglidae    | Cape gurnard                      | 0.277  | 0.3  habitat_benthic   |
| 503| Epinephelus chlorostigma    | Serranidae   | Brownspotted grouper              | 0.315  | 0.3  habitat_coastal   |
| 504| Acanthopagrus berda          | Sparidae     | Goldsilk seabream                 | 0.548  | 0.3  habitat_coastal   |
| 505| Cymatoceps nasutus           | Sparidae     | Black musselcracker               | 0.189  | 0.3  habitat_coastal   |
| 506| Bolbometopon muricatum      | Scaridae     | Green humphead parrotfish         | 0.237  | 0.3  habitat_reef      |
| 507| Mulliodichthys flavomeatus   | Mullidae     | Yellowstripe goatfish             | 0.798  | 0.3  habitat_reef      |
| 508| Gerres eyena                 | Gerreidae    | Common silver-biddy               | 1.594  | 0.3  habitat_coastal   |
| 509| Pomadasys kaakan             | Haemulidae   | Javelin grunter                   | 0.027  | 0.3  habitat_coastal   |
| 510| Acanthopagrus latius         | Sparidae     | Yellowfin seabream                | 0.419  | 0.3  habitat_coastal   |
| 511| Chioreactus dorab            | Chioreactidae| Dorab wolf-herring                | 0.401  | 0.3  habitat_coastal   |
| 512| Pagoanus auratus             | Sparidae     | Silver seabream                   | 0.213  | 0.3  habitat_reef      |
| 513| Aethaloperca rogaad          | Serranidae   | Redmouth grouper                  | 0.393  | 0.3  habitat_reef      |
| 514| Cephalopholis boenak         | Serranidae   | Chocolate hind                    | 0.477  | 0.3  habitat_reef      |
| 515| Cephalopholis hemistiktos    | Serranidae   | Yellowfin hind                    | 0.369  | 0.1  territorial       |
| 516| Cephalopholis minuta         | Serranidae   | Coral hind                        | 0.453  | 0.1  territorial       |
| 517| Cromleptes allivis          | Serranidae   | Humpback grouper                  | 0.152  | 0.3  habitat_reef      |
| 518| Epinephelus marginatus       | Serranidae   | Duaky grouper                     | 0.11   | 0.1  territorial       |
| 519| Saurida tumulur             | Synodontidae | Greater lizardfish                | 0.476  | 0.3  habitat_benthic   |
| 520| Sargocentron spiniferum      | Holocentridae| Sabre squirefissh                 | 1.094  | 0.3  habitat_reef      |
| 521| Bathysyra ectorini           | Arhynchobatidae| Eaton’s skate                      | 0.116  | 0.3  habitat_benthic   |
| 522| Macrourus caninus           | Macrouridae  | Ridge scaled rattail              | 0.131  | 0.3  habitat_deep      |
| 523| Macrourus whitsoni          | Macrouridae  | Whiton’s grenadier                | 0.131  | 0.3  habitat_deep      |
| 524| Epinephelus multicinctus     | Serranidae   | White-bloched grouper             | 0.273  | 0.3  habitat_reef      |
| 525| Epinephelus summa           | Serranidae   | Summan grouper                    | 0.287  | 0.3  habitat_reef      |
| 526| Micropogonas fumeri          | Sciaenidae   | Whitemouth croaker                | 0.541  | 0.3  habitat_coastal   |
| 527| Pleactorhinus sordidus       | Haemulidae   | Sordid rubberlip                  | 0.55   | 0.3  habitat_reef      |
| 528| Pleactorhinus gaterini       | Haemulidae   | Blackspotted rubberlip            | 0.447  | 0.3  habitat_reef      |
| 529| Pleactorhinus schotaf        | Haemulidae   | Minstre sweetlips                 | 0.447  | 0.3  habitat_reef      |
| 530| Pomadasys stenids           | Haemulidae   | Stripe piggy                      | 0.779  | 0.3  habitat_coastal   |
| 531| Pomacanthus maculosus       | Pomacanthidae| Yellowbar angelfish               | 0.205  | 0.3  habitat_reef      |
| 532| Crenidens crenidens          | Sparidae     | Karateen seabream                 | 0.516  | 0.3  habitat_coastal   |
| 533| Pelates quadrilineatus       | Terapontidae | Fourlined terapon                 | 0.814  | 0.3  habitat_coastal   |
| 534| Rhodosargus haffari         | Sparidae     | Haffara seabream                  | 0.561  | 0.3  habitat_reef      |
| 535| Odontesthes rega            | Athenidae    | Chilean silverside                | 0.646  | 0.3  habitat_coastal   |
| 536| Pleactorhinus picus          | Haemulidae   | Trout sweetlips                   | 0.289  | 0.3  habitat_reef      |
| 537| Callorhinus callorynchus    | Callorhinidae| Plownowe chimaera                 | 0.167  | 0.3  habitat_benthic   |
| 538| Cephalopholis fulva         | Serranidae   | Common silver-biddy               | 0.433  | 0.3  habitat_reef      |
| 539| Patagonotothen               | Nototheriidae| Longtail southern                 | 0.471  | 0.9  deep              |
| Scientific Name | Common Name | Family | Habitat | Ref. |
|-----------------|-------------|--------|---------|------|
| *Priacanthus jacobus* | Red bigeye | Priacanthidae | Benthic | FB |
| *Priacanthus azoum* | Senegalese hail | Priacanthidae | Coastal | FB |
| *Cteniscops humerosus* | Banded yellowfish | Cteniscidae | Benthic | FB |
| *Lepidoperca pulchella* | Pink maomao | Lepidoperidae | Reef | FB |
| *Ammodites personatus* | Slender tuna | Ammoditoidea | Pelagic | FB |
| *Aphanopus carbo* | African forktail | Atherinidae | Coastal | FB |
| *Cyclopterus lumpus* | Blackmouth | Drepaneidae | Benthic | FB |
| *Dentex angolensis* | Angolan dentex | Sparidae | Coastal | FB |
| *Argentia spinthera* | Kamchatka flounder | Pleuronectidae | Benthic | FB |
| *Caulatolius micros* | Grey skate | Malacanthidae | Coastal | FB |
| *Champsoschatus guinari* | Mackerel icefish | Lutjanidae | Coastal | REF |
| *Channichthys rhinoceratus* | Unicorn icefish | Lutjanidae | Coastal | FB |
| *Coryphaenoides rupestris* | Roundnose grenadier | Coryphaenidae | Deep | FB |
| *Cyclopseterus lumpus* | Lumpfish | Cyclopetidae | Coastal | FB |
| *Dentex angolensis* | Angolan dentex | Sparidae | Coastal | FB |
| *Drepane africana* | African sole | Drepaneidae | Coastal | FB |
| *Elops saurus* | Ladyfish | Elopidae | Coastal | FB |
| *Encrasicholina punctifera* | Buccaneer anchovy | Engraulidae | Pelagic | FB |
| *Euthynnus lineatus* | Black skipjack | Scombridae | Deep | FB |
| *Gadus ogac* | Greenland cod | Gadidae | Coastal | FAO |
| *Galeus melastomus* | Blackmouth catshark | Scyliidae | Deep | FB |
| *Guenocnemichthys melampus* | Butterfly kingfish | Scombridae | Coastal | FB |
| *Joturus pichardi* | Bobo mullet | Mugilidae | Coastal | FB |
| *Labrus bergylta* | Ballan wrasse | Labridae | Reef | FB |
| *Leiostomus xanthurus* | Spot croaker | Sciaenidae | Coastal | FB |
| *Lophius piscatorius* | Angler | Lophiidae | Benthic | FB |
| *Macrognathus bergla* | Roughhead grenadier | Macrouridae | Deep | FB |
| *Merluccius senegalensis* | Senegalese hake | Merluccidae | Coastal | FB |
| *Pleuragrammus azoum* | Okhotsk atka mackerel | Hexagrammidae | Benthic | FB |
| *Pranantis* | Red bigeye | Priacanthidae | Coastal | FB |
| Rank | Scientific Name                  | Family          | Common Name                      | Habitat | IUCN  |
|------|----------------------------------|-----------------|----------------------------------|---------|-------|
| 579  | Pseudupeneus prayensis           | Mullidae         | West African goatfish            | 0.897   | 0.3   |
| 580  | Salmo salar                      | Salmonidae       | Atlantic salmon                  | 0.73    | 0.9   |
| 581  | Scromberomorus brasiliensis      | Scombridae       | Serra Spanish mackerel           | 0.495   | 0.3   |
| 582  | Scromberomorus sierra            | Scombridae       | Pacific sierra                   | 0.626   | 0.9   |
| 583  | Seriola lalandi                  | Carangidae       | Yellowtail amberjack             | 0.434   | 0.3   |
| 584  | Squalina californica             | Squalidae        | Pacific angelshark               | 0.076   | 0.3   |
| 585  | Tetrapus pfluegeri               | Istiophoridae    | Longbill spearfish               | 0.49    | 0.9   |
| 586  | Umbria canosai                   | Sciaenidae       | Argentine croaker                | 0.681   | 0.3   |
| 587  | Aciensia transmontanuss          | Acienseridae     | White sturgeon                   | 0.086   | 0.3   |
| 588  | Anarichas dentilicus             | Anarichadidae    | Northern wolffish                | 0.101   | 0.3   |
| 589  | Anarichas lupus                  | Anarichadidae    | Atlantic wolffish                | 0.105   | 0.3   |
| 590  | Atherina boyeri                  | Atherinidae      | Big-scale sand smelt             | 0.813   | 0.3   |
| 591  | Beryx decadactylus              | Berycidae        | Alfonsino                        | 0.159   | 0.3   |
| 592  | Caranx melampuspyges             | Carangidae       | Bluefin trevally                 | 0.562   | 0.3   |
| 593  | Caranx sexlasciatus              | Carangidae       | Bigeye trevally                  | 0.731   | 0.3   |
| 594  | Chimaera monroso                 | Chimaeridae      | Rabbit fish                      | 0.116   | 0.9   |
| 595  | Chloroscombus orbata             | Carangidae       | Pacific bumper                   | 0.884   | 0.3   |
| 596  | Cynoscias arenarius              | Sciaenidae       | Sand weakfish                    | 0.76    | 0.3   |
| 597  | Dasyatis americana               | Dasyatidae       | Southern stingray                | 0.54    | 0.3   |
| 598  | Decapterus macroura              | Carangidae       | Shortfin scad                    | 1.34    | 0.9   |
| 599  | Dussumina acuta                  | Dussumieridae    | Rainbow sardine                  | 0.898   | 0.3   |
| 600  | Dussumina etosoides              | Dussumieridae    | Slender rainbow sardine          | 0.787   | 0.3   |
| 601  | Engraulis mords                           | Engraulidae     | Californian anchovy              | 0.452   | 0.9   |
| 602  | Etruusus whitehead                | Dussumieridae    | Whitehead's round herring        | 0.424   | 0.3   |
| 603  | Gadicus argenteus                | Gadidae          | Silvery pout                     | 0.917   | 0.3   |
| 604  | Gasterosteus aculeatus           | Gasterostidae    | Three-spined stickleback         | 0.998   | 0.3   |
| 605  | Hemiramphus balao                | Hemiramphidae    | Balao halfbeak                   | 0.889   | 0.9   |
| 606  | Leithrinus atlanticus            | Leithinidae      | Atlantic emperor                 | 0.43    | 0.3   |
| 607  | Leithrinus borbonicus            | Leithinidae      | Snubnose emperor                 | 0.036   | 0.3   |
| 608  | Leithrinus microdon              | Leithinidae      | Smalltooth emperor               | 0.405   | 0.3   |
| 609  | Leithrinus xanthochilus          | Leithinidae      | Yellowlip emperor                | 0.313   | 0.3   |
| 610  | Logius gasphysius               | Lophidae         | Blackfin goosefish               | 0.426   | 0.3   |
| 611  | Muraena helena                   | Muraenidae       | Mediterranean moray              | 0.189   | 0.1   |
| 612  | Mysitoperca penax                | Serranidae       | Scamp                            | 0.216   | 0.3   |
| 613  | Pellona ditches                   | Priistigasterida | Indian pellona                   | 0.764   | 0.9   |

FB: "Does not migrate extensively, although some seasonal movement appears to occur off Trinidad."

IUCN: "This offshore, surface dwelling species forms large schools and can be associated with pelagic Sargassum in the North Atlantic Ocean and Gulf of Mexico (Coatson-Clements et al. 1991, Collette 1999)."
| No. | Scientific Name                  | Family          | Common Name                  | Length (m) | Maturity | Habitat          | Reference       |
|-----|---------------------------------|-----------------|------------------------------|------------|----------|-------------------|----------------|
| 641 | Mustelus lenticulatus            | Triakidae       | Spotted estuary smooth-hound | 0.101      | migratory|              | FB: "Makes seasonal inshore-offshore movements (Ref. 244). Makes extensive coastal migrations, with one tagged female moving at least 1160 km (Ref. 54100)." |
| 642 | Mustelus schmitti               | Triakidae       | Narrownose smooth-hound      | 0.147      | habitat_coastal |              | FB: "These sharks are capable of long migrations, females traveling longer distances than males (Ref. 6390). Utilized fresh for fisheries (Rhodes and Tupper 2008)." |
| 643 | Mustelus asterias               | Triakidae       | Starry smooth-hound          | 0.133      | habitat_coastal |              | IUCN: "Individuals of both sexes appear to use reproductive migratory corridors to reach aggregation sites, which increase their vulnerability to fisheries (Rhodes and Tupper 2008)." |
| 644 | Mustelus antarcticus            | Triakidae       | Gummy shark                  | 0.09       | migratory|              | FB: "Amphialine species making important migrations. Spends its adult life in the sea for about 20-36 months, moving further offshore as it grows (Ref. 59043)." |
| 645 | Plectropomus areolatus          | Serranidae      | Squaretail coral grouper     | 0.322      | migratory|              | FB: "Migrates far offshore (Ref. 26139). Pelagic (Ref. 5995)." |
| 646 | Cephalopholis angus             | Serranidae      | Peacock hind                 | 0.453      | habitat_reef |              | FB: "Coastal pelagic (Ref. 68964). Forms schools in coastal waters and strongly migratory."

**Notes: FB** refers to fisheries. **IUCN** refers to IUCN assessments.
| Species                              | Family                  | Habitat                      | IUCN  | FB    |
|-------------------------------------|-------------------------|------------------------------|-------|-------|
| Diastobranchus capensis             | Synaphobranchidae       | Basketweave eel              | 0.368 | 0.3   |
| Epinephelus polylepis               | Serranidae              | Smallspotted grouper         | 0.281 | 0.3   |
| Pleuroprionus poecilus              | Serranidae              | Roving coral grouper         | 0.322 | 0.3   |
| Girella tricoloritata               | Kyphosidae              | Porora                        | 0.178 | 0.3   |
| Sparus aurata                       | Sparidae                | Gillhead seabream             | 0.38  | 0.3   |
| Mullus argentinae rubiginosum       | Mullidae                | Argentine goatfish           | 0.777 | 0.3   |

**Notes:**
- FB: "Adults occur at depths greater than 30 m, along continental and insular margins (Ref. 37610), over rocky substrates (Ref. 37955)."
- FB: "This species is most abundant litoral species on the coast of central Chile, found in close association with the brown kelp Lessonia trabeculata."
- FB: "A pelagic species (Ref. 26340) found over lagoon and seaward reefs."
- FB: "A pelagic species (Ref. 26120) found over lagoon and seaward reefs."
- FB: "A pelagic species (Ref. 26120) found over lagoon and seaward reefs."
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- FB: "A pelagic species (Ref. 26120) found over lagoon and seaward reefs."
| ID  | Scientific Name         | Family       | Common Name                  | Biovolume | Reference | Notes                                                                 |
|-----|-------------------------|--------------|------------------------------|-----------|-----------|----------------------------------------------------------------------|
| 681 | Grammopeltes suppositus | Platycephalidae | Spotfin flathead             | 0.421     | FB        | Enzini (2008) and may be solitary or form small aggregations.         |
| 682 | Panulirus argus          | Stromateidae  | American harvestfish         | 0.911     | FB        | FB: "A pelagic fish forming large schools in coastal bays, inshore waters over the continental shelf and around islands at moderate depths (50 to 70 m) where it occurs throughout the year (Ref. 53006)." |
| 683 | Homarus gammarus         | Nephropidae   | Lobster                     | 0.509     | FB        | FB: "...only 2.1% of larger lobsters migrated further than 20 km." |
| 684 | Dicologlossa cuneata     | Soleidae      | Wedge sole                  | 0.219     | FB        | IUCN: "In the northern hemisphere, this species migrates to coastal shallow waters in November and December and remains there until May (Guzman et al. 2008)." |
| 685 | Palinurus delagoae       | Palinuridae   | Natal spiny lobster         | 0.22      | IUCN      | Secondary ref: (57) "...1.1% of larger lobsters migrated further than 20 km." |
| 686 | Panulirus maurusianus    | Palinuridae   | Pink spiny lobster          | 0.22      | IUCN      | "Mark-recovery experiments conducted with the help of suture tags on Indian spiny lobster Panulirus homarus (Linn.) showed that their movement in the fishing ground is of a very restricted nature. Long migratory movements were not observed." |
| 687 | Panulirus cygnus         | Palinuridae   | Australian spiny lobster    | 1.15      | IUCN      | "...only 2.1% of larger lobsters migrated further than 20 km." |
| 688 | Panulirus gracilis       | Palinuridae   | Green spiny lobster         | 1.018     | 0.9       | IUCN: "...only 2.1% of larger lobsters migrated further than 20 km." |
| 689 | Panulirus homarus        | Palinuridae   | Scalloped spiny lobster     | 1.018     | 0.3       | FB: "...only 2.1% of larger lobsters migrated further than 20 km." |
| 690 | Peneaus longipes         | Penaeidae     | Longlegged spiny lobster    | 1.018     | 0.3       | SLB: "...only 2.1% of larger lobsters migrated further than 20 km." |
| 691 | Peneaus monodon          | Penaeidae     | Giant tiger prawn           | 1.19      | 0.3       | SLB: "...only 2.1% of larger lobsters migrated further than 20 km." |
| 692 | Xiphopenaeus kroyeri     | Penaeidae     | Atlantic seabob             | 0.88      | 0.3       | SLB: "...only 2.1% of larger lobsters migrated further than 20 km." |
| 693 | Artemesia longinaris     | Penaeidae     | Argentine silver shrimp     | 0.52      | 0.3       | SLB: "...only 2.1% of larger lobsters migrated further than 20 km." |
| 694 | Metapenaeus endeavouri   | Penaeidae     | Endeavour shrimp            | 0.93      | 0.3       | SLB: "...only 2.1% of larger lobsters migrated further than 20 km." |
| 695 | Metapenaeus joeneri      | Penaeidae     | Shiba shrimp                | 1.02      | 0.3       | SLB: "...only 2.1% of larger lobsters migrated further than 20 km." |
| 696 | Metapenaeus monoceros    | Penaeidae     | Speckled shrimp             | 1.11      | 0.1       | SLB: "...only 2.1% of larger lobsters migrated further than 20 km." |
| 697 | Acetes erythraeus        | Sergestidae   | T surgeon shrimp             | 1.19      | 0.3       | SLB: "...only 2.1% of larger lobsters migrated further than 20 km." |
| 698 | Acetes japonicus         | Sergestidae   | Alkami paste shrimp         | 1.19      | 0.3       | SLB: "...only 2.1% of larger lobsters migrated further than 20 km." |
| 699 | Pleoticus muelleri       | Solenoceridae | Argentine red shrimp        | 1.19      | 0.3       | SLB: "...only 2.1% of larger lobsters migrated further than 20 km." |
| 700 | Haliporoides diomedei    | Solenoceridae | Chilean knife shrimp        | 0.96      | 0.3       | SLB: "...only 2.1% of larger lobsters migrated further than 20 km." |
| 701 | Haliporoides triarthus   | Solenoceridae | Knife shrimp                | 0.96      | 0.3       | SLB: "...only 2.1% of larger lobsters migrated further than 20 km." |
| 702 | Sicyonia brevirostris    | Sicyoniidae   | Brown rock shrimp           | 0.81      | 0.3       | SLB: "...only 2.1% of larger lobsters migrated further than 20 km." |
| 703 | Sicyonia ingeri           | Sicyoniidae   | Ridgeback rock shrimp       | 0.81      | 0.3       | SLB: "...only 2.1% of larger lobsters migrated further than 20 km." |
| 704 | Aristes vanidens         | Aristidae     | Striped rock shrimp         | 0.48      | 0.3       | SLB: "...only 2.1% of larger lobsters migrated further than 20 km." |
| 705 | Nematopalaemon schmittii | Palamoniidae  | Whitebelly prawn            | 1.19      | 0.3       | SLB: "...only 2.1% of larger lobsters migrated further than 20 km." |
| 706 | Pandarus jordani         | Pandalidae    | Ocean shrimp                | 0.54      | 0.3       | SLB: "...only 2.1% of larger lobsters migrated further than 20 km." |
| 707 | Pandalus hypsinotus      | Pandalidae    | Coonstripe shrimp           | 0.56      | 0.3       | SLB: "...only 2.1% of larger lobsters migrated further than 20 km." |
| 708 | Homanus gammarus         | Nephropidae   | European lobster            | 0.37      | 0.1       | SLB: "...only 2.1% of larger lobsters migrated further than 20 km." |
| 709 | Panulirus argus          | Palinuridae   | Caribbean spiny lobster     | 0.55      | 0.3       | IUCN: "In the northern hemisphere, this species migrates to coastal shallow waters in November and December and remains there until May (Guzman et al. 2008)." |
| Code | Species Name          | Family          | Common Name                        | Distance to Reefs (km) | Habitats          | IUCN Status |
|------|----------------------|-----------------|------------------------------------|------------------------|-------------------|-------------|
| 710  | Palinurus elephas    | Palinuridae     | Common spiny lobster               | 0.22                   | habitat_benthic   | IUCN        |
| 711  | Lithodes santolana   | Lithodidae      | Southern king crab                 | 0.57                   | habitat_benthic   | SLB         |
| 712  | Nematopalaemon hastatus | Palaeonidae | estuarine prawn                    | 1.19                   | habitat_coastal   | SLB         |
| 713  | Pandalus lepaslani  | Pandalidae      | Hokkaido shrimp                    | 0.56                   | habitat_benthic   | SLB         |
| 714  | Panopea abrupta      | Haetellidae     | Pacific geoduck clam               | 0.37                   | sedimentary      | SLB         |
| 715  | Tivela macrolea      | Veneridae       | trigonal tivela                    | 1.18                   | sedimentary      | SLB         |
| 716  | Penaeus penicillatus | Penaeidae       | Nile shrimp                         | 1.083                  | habitat_benthic   | SLB         |
| 717  | Cancer pagurus       | Cancridae       | ox crab                            | 0.46                   | sedimentary      | SLB         |
| 718  | Chaceon affinis      | Geryonidae      | deep-sea red crab                  | 0.42                   | habitat_benthic   | SLB         |
| 719  | Callinectes danae    | Portunidae      | Dana swimming crab                 | 0.6                    | habitat_coastal   | REF         |
| 720  | Portunus pelagicus   | Portunidae      | flower crab                         | 1.19                   | habitat_coastal   | SLB         |
| 721  | Cancer borealis      | Cancridae       | Jonah crab                         | 0.46                   | sedimentary      | SLB         |
| 722  | Portunus trituberculatus | Portunidae | horse crab                          | 1.19                   | migratory        | REF         |
| 723  | Scorpaena serrata    | Portunidae      | giant mud crab                     | 1.17                   | habitat_coastal   | SLB         |
| 724  | Chaceon maritae      | Geryonidae      | Gulf of Mexico geryon              | 0.42                   | habitat_benthic   | SLB         |
| 725  | Chaceon fennieri      | Geryonidae      | Gulf of Mexico geryon              | 0.42                   | habitat_benthic   | SLB         |
| 726  | Cancer productus     | Cancridae       | red rock crab                      | 0.46                   | sedimentary      | SLB         |
| 727  | Chiorhoccus japonicus | Ommastrephidae | red snow crab                      | 0.58                   | habitat_benthic   | SLB         |
| 728  | Limulus polyphemus   | Mytilidae       | blue mussel                        | 0.54                   | sedimentary      | SLB         |
| 729  | Censeroderma edule   | Cardiidae       | common edible cockle               | 0.49                   | sedimentary      | SLB         |
| 730  | Loligo vulgaris      | Loliginidae     | European squid                     | 0.34                   | migratory        | IUCN        |
| 731  | Spisula solida       | Macridae        | solid surf clam                    | 0.47                   | sedimentary      | SLB         |
| 732  | Mytilus edulis       | Mytilidae       | blue mussel                        | 0.54                   | sedimentary      | SLB         |
| 733  | Mytilus gilgoviensis | Mytilidae       | Mediterranean mussel               | 0.5                    | sedimentary      | SLB         |
| 734  | Eledone cirrhosa     | Eledonidae      | horned octopus                     | 0.54                   | habitat_benthic   | SLB         |
| 735  | Illex coindetii      | Ommastrephidae  | shortfin squid                     | 0.52                   | migratory        | SLB         |
| 736  | Todarodes sagittatus | Ommastrephidae  | European flying squid             | 0.38                   | migratory        | SLB         |
| 737  | Crassostrea gigas    | Ostreidae       | giant cupped oyster                | 0.57                   | sedimentary      | SLB         |
| 738  | Crassostrea virginica | Ostreidae   | American cupped oyster             | 0.57                   | sedimentary      | SLB         |
| 739  | Sphaeriodon opercularis | Pectinidae | queen scallop                      | 0.56                   | sedimentary      | SLB (65)    |
| 740  | Pecten maximus       | Pectinidae      | great Atlantic scallop             | 0.57                   | sedimentary      | SLB (65)    |
| 741  | Sphaereidoides       | Pectinidae      | common cuttlefish                  | 0.56                   | habitat_benthic   | SLB         |
| 742  | Chamelea gallina     | Veneridae       | striped venus clam                 | 0.5                    | sedimentary      | SLB         |
| 743  | Mercenaria           | Veneridae       | northern quahog                    | 0.43                   | sedimentary      | SLB         |
| Taxon | Family | Genus | Scientific Name | Description | Status | Location | Reference |
|-------|--------|-------|-----------------|-------------|--------|----------|-----------|
| Mercenaria mercenaria | Pectinidae | Mercenaria | Mercenaria mercenaria | Atlantic bay scallop | sedentary | SLB | |
| Octopus maya | Octopodidae | Octopus | Octopus mayo | Mexican four-eyed octopus | habitat_coastal | SLB | |
| Illex argentinus | Omastrephidae | Illex | Illex argentinus | Argentine shortfin squid | pelagic | REF | Secondary ref: (66) |
| Todanodes pacificus | Omastrephidae | Todanodes | Todanodes pacificus | Japanese flying squid | pelagic | REF | Secondary ref: (67) |
| Dosidicus gigas | Omastrephidae | Dosidicus | Dosidicus gigas | jumbo flying squid | pelagic | REF | |
| Ruditapes philippinarum | Veneridae | Ruditapes | Ruditapes philippinarum | Japanese carpet shell | sedentary | SLB | |
| Pecten novaesiwaldianus | Pectinidae | Pecten | Pecten novaesiwaldianus | scallop | sedentary | SLB | |
| Pecten jacobaeus | Pectinidae | Pecten | Pecten jacobaeus | great Mediterranean scallop | sedentary | SLB | |
| Turbo cornutus | Turbinidae | Turbo | Turbo cornutus | turned turban | sedentary | SLB | |
| Ruditapes decussatus | Veneridae | Ruditapes | Ruditapes decussatus | grooved carpet shell | sedentary | SLB | |
| Halosids rubra | Halidiidae | Halosids | Halosids rubra | blacklip abalone | sedentary | SLB | |
| Mytilus californicus | Mytilidae | Mytilus | Mytilus californicus | Far eastern mussel | sedentary | SLB | |
| Yachayalubamba curvirostris | Penaeidae | Penaeus | Yachayalubamba curvirostris | southern rough shrimp | habitat_benthic | SLB | |
| Litopenaeus setiferus | Penaeidae | Litopenaeus | Litopenaeus setiferus | northern white shrimp | habitat_benthic | SLB | |
| Pseudopleuronectes opalescens | Lophiidae | Pseudopleuronectes | Pseudopleuronectes opalescens | opalescent inshore squid | pelagic | SLB | |
| Doryteuthis gahi | Loliginidae | Doryteuthis | Doryteuthis gahi | Patagonian squid | migratory | SLB | |
| Larinichthys crocea | Sciaenidae | Larinichthys | Larinichthys crocea | Large yellow croaker | habitat_coastal | FB | |
| Liza haematocheila | Mugilidae | Liza | Liza haematocheila | So-iay mullet | habitat_coastal | FB | |
| Tegillarca granosa | Arctidae | Tegillarca | Tegillarca granosa | granular ark | sedentary | SLB | |
| Fenneropenaeus chinensis | Penaeidae | Fenneropenaeus | Fenneropenaeus chinensis | fleshy prawn | migratory | REF | Secondary ref: (68) |
| Fenneropenaeus merguiensis | Penaeidae | Fenneropenaeus | Fenneropenaeus merguiensis | banana prawn | habitat_benthic | FB | |
| Sebastes norvegicus | Sebastidae | Sebastes | Sebastes norvegicus | Golden redfish | habitat_benthic | FB | |
| Metacanthus magister | Cancridae | Metacanthus | Metacanthus magister | Dungeness crab | habitat_benthic | SLB | |
| Doryteuthis pealei | Loliginidae | Doryteuthis | Doryteuthis pealei | longfin inshore squid | migratory | IUCN | |
| Peneisquocrates quadrilobatus | Pleuronectidae | Peneisquocrates | Peneisquocrates quadrilobatus | Alaska plaice | habitat_benthic | REF | Secondary ref: (69) |
| Pseudopleuronectes herzensteinii | Pleuronectidae | Pseudopleuronectes | Pseudopleuronectes herzensteinii | Yellow striped flounder | habitat_benthic | FAO | |
| Farfantepenaes notialis | Penaeidae | Farfantepenaes | Farfantepenaes notialis | southern pink shrimp | habitat_benthic | SLB | |
| Farfantepenaes aztecus | Penaeidae | Farfantepenaes | Farfantepenaes aztecus | northern brown shrimp | habitat_benthic | SLB | |
| Scophthalmus maximus | Scophthalmidae | Scophthalmus | Scophthalmus maximus | Turbot | habitat_benthic | FB | |
| Cajika audax | Isiliophoridae | Cajika | Cajika audax | Striped marin | pelagic | FB | |
| Nemadactylus bergi | Chelidocottidae | Nemadactylus | Nemadactylus bergi | Castelaneta | habitat_benthic | REF | Secondary ref: (70) |
| Leucoraja naevus | Rajidae | Leucoraja | Leucoraja naevus | Cuckoo ray | habitat_benthic | IUCN | |
| Farfantepenaes duorarum | Penaeidae | Farfantepenaes | Farfantepenaes duorarum | pink shrimp | pelagic | REF | Secondary ref: (71) |
| Istiophorus indica | Istiophoridae | Istiophorus | Istiophorus indica | Black marlin | IUCN | |
| Melicertus kerathurus | Penaeidae | Melicertus | Melicertus kerathurus | caramote prawn | habitat_benthic | SLB | |
| Farfantepenaes californicus | Penaeidae | Farfantepenaes | Farfantepenaes californicus | yellow leg shrimp | habitat_benthic | SLB | |
| Farfantepenaes brevirostris | Penaeidae | Farfantepenaes | Farfantepenaes brevirostris | crystal shrimp | habitat_benthic | SLB | |
| Lithodes aquispinus | Lithodidae | Lithodes | Lithodes aquispinus | golden king crab | habitat_benthic | SLB | |
| Eleginus navaja | Gadidae | Eleginus | Eleginus navaja | Navaja | habitat_coastal | FB | |
| Melicertus | Penaeidae | Melicertus | Melicertus | western king | habitat_benthic | SLB | |
| Page | Line | Text |
|------|------|------|
| 49   | 785  | latissulcatus | Pleuronectidae | English sole | 0.314 | 0.9 | migratory | FB |
| 49   | 786  | Amblyraja radiata | Rajiidae | Starry ray | 0.108 | 0.9 | migratory | FB |
| 49   | 787  | Chelidonichthys cuculus | Trigidae | Red gumard | 0.231 | 0.3 | habitat_benthic | FB |
| 49   | 788  | Moolgarda seheli | Mugilidae | Bluespot mullet | 0.055 | 0.3 | habitat_coastal | FB |
| 49   | 789  | Kajikia albida | Isisthophoridae | Atlantic white marlin | 0.387 | 0.9 | hms | FB |
| 49   | 790  | Lilopenaeus occidentalis | Penaeidae | western white shrimp | 0.85 | 0.3 | habitat_benthic | SLB |
| 49   | 791  | Zenopsis nebulosa | Zeidae | Mirror sori | 0.199 | 0.9 | deep | FB |
| 49   | 792  | Netuna thalassinus | Ariidae | Giant catfish | 0.31 | 0.3 | habitat_coastal | FB |
| 49   | 793  | Lilopenaeus vannamei | Penaeidae | whiteleg shrimp | 0.7 | 0.3 | habitat_benthic | SLB |
| 49   | 794  | Meuschenia scaber | Monacanthidae | Velvet leatherjacket | 1.032 | 0.3 | habitat_coastal | FB |
| 49   | 795  | Dipitrus batis | Rajiidae | Blue skate | 0.066 | 0.3 | habitat_benthic | FB |
| 49   | 796  | Alosa immaculata | Clupeidae | Ponic shad | 0.989 | 0.9 | migratory | FB |
| 49   | 797  | Conger orbignianus | Congridae | Argentinian conger | 0.27 | 0.3 | habitat_benthic | FB |
| 49   | 798  | Acanthopagrus schlegeli | Sparidae | Blackhead seabream | 0.445 | 0.3 | habitat_coastal | FB |
| 49   | 799  | Pegusa lascaris | Soleidae | Sand sole | 0.191 | 0.3 | habitat_benthic | IUCN |
| 50   | 800  | Leucoraja circularis | Rajiidae | Sandy ray | 0.108 | 0.3 | habitat_benthic | FB |
| 50   | 801  | Botistes capracus | Balistidae | Grey triggerfish | 0.925 | 0.3 | habitat_reef | FB |
| 50   | 802  | Hyporthodus flavolimbatus | Serranidae | Yellowedge grouper | 0.175 | 0.3 | habitat_benthic | FB |
| 50   | 803  | Dipitrus oxyrinchus | Rajiidae | Longnosed skate | 0.162 | 0.3 | habitat_benthic | FB |
| 50   | 804  | Leucoraja fullonica | Rajiidae | Shagreen ray | 0.108 | 0.3 | habitat_benthic | FB |
| 50   | 805  | Hyporthodus niveatus | Serranidae | Snowy grouper | 0.166 | 0.3 | habitat_reef | FB |
| 50   | 806  | Pentaceros richardsoni | Pentacerotidae | Pelagic armourhead | 0.393 | 0.3 | habitat_benthic | FB |
| 50   | 807  | Ypigoporus lastoviza | Trigidae | Streaked gumard | 0.195 | 0.3 | habitat_benthic | FB |
| 50   | 808  | Herktioschthys quadrimaculatus | Clupeidae | Bluestripe herring | 1.74 | 0.3 | habitat_coastal | FB |
| 50   | 809  | Lepidonotothen squamifrons | Nototeniidae | Grey rockcod | 0.234 | 0.3 | habitat_benthic | REF Secondary ref: (72) |
| 50   | 810  | Hyporthodus nigritos | Serranidae | Warsaw grouper | 0.139 | 0.3 | habitat_reef | FB |
| 50   | 811  | Hyporthodus mystacinus | Serranidae | Misty grouper | 0.193 | 0.3 | habitat_deep | FB |
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