Marine Fishes of the Arctic Region
Volume II

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Volume two front cover photo: Fish doctor *Gymnelus viridis* — an adult male collected at Resolute Bay, Nunavut, Canada, and maintained at the Vancouver Aquarium. Photo by Danny Kent, Ocean Wise Vancouver Aquarium, Vancouver, British Columbia, Canada.

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Marine Fishes of the Arctic Region

IDENTIFICATION GUIDE

Pages of fish photographs with labeled identification characteristics are grouped in this section for use as a field guide. In most cases, the photographs will allow identification of specimens without recourse to the black and white illustrations (so-called scientific illustrations), morphological descriptions, and maps provided in the species accounts section in volume I.

In laid-out fish, delicate structures like cirri and barbels lay flat and may not be visible in the photographs; in which case, pointers indicate the area where a structure would be found. Also, for most species the structures may be seen in the scientific illustrations included in the species accounts. Floating a specimen in a bowl of water will allow the structures to float free and easily be seen.

When possible, the guide shows specimens photographed at sea shortly after being taken from the trawl nets or other gear. Some were photographed alive in bins of seawater. Since several collections were frozen at sea, the guide also includes photographs of specimens thawed after receiving them on shore in the laboratory.

Colors fade rapidly and are already altered in specimens that are frozen and thawed soon after capture. However, they are more true to color than are old, preserved specimens in formalin or alcohol. Under both conditions specimens lose their metallic sheen, colors change, and delicate integuments are often damaged or sloughed off. In some photographs the belly looks dark and swollen, and this is often a sign of deterioration caused by freezing and thawing and not due to the coloration of the peritoneum showing through the body wall. We tried to minimize the number of such photographs.

Readers should also be aware that photographs often were taken in less than desirable conditions and we know they are far from perfect. Normal vibrations of the ship while under way, motions of the ship in foul weather, and lack of control over lighting were the main problems in the field. During visits to museum collections, there often was little control over lighting or other conditions. Specimens that were barcoded are identified in the photograph information section.

To help narrow the choices when identifying a specimen, the identification pages are color coded for species presence: ◆ = Pacific Arctic, ♦ = Atlantic Arctic, and ♦ ◆ = Pacific Arctic and Atlantic Arctic.

___________________________
Family: Myxinidae — Hagfishes

*Myxine glutinosa*  
Atlantic hagfish

- Long, eel-like body
- Barbels on snout and side of mouth
- Slime pores in a dense row all along body ventrally
- No scales
- Mouth with evertible tongue and teeth but no jaws
- No paired (pectoral or pelvic) fins
- “Finfolds” present, but not fins with rays

Mouth with ever-tentacle tongue and teeth but no jaws

Slime pores in a dense row all along body ventrally

Barbels on snout and side of mouth

Long, eel-like body

No scales

245 mm
Family: Lamnidae — Mackerel sharks

*Lamna ditropis*  
salmon shark

First dorsal fin high, located above pectoral fins

Keel on caudal fin below caudal peduncle keel

1.8 m, male

Ventral surface white, with dark dusky spots

Teeth long, smooth, pointed

Snout short, distance from snout tip to eye 40% or less of distance from eye to first gill opening

Pair of cusplets at base of each tooth
Family: Lamnidae — Mackerel sharks

*Lamna nasus*  
**porbeagle**

- First dorsal fin high, located above pectoral fins
- White patch on free rear tip of first dorsal fin
- Ventral surface white, without black spots
- Snout long, distance from snout tip to eye 50% or more of distance from eye to first gill opening
- Teeth long, smooth, pointed
- Two keels on caudal fin
- Pair of cusplets at base of each tooth
Family: Cetorhinidae — Basking sharks

*Cetorhinus maximus* basking shark

- **Elongate, pointed snout,** most pronounced in young specimens
- **First dorsal fin** tall, located above space between pectoral and pelvic fins
- **Mouth large,** subterminal
- **Gill slits** almost entirely encircling the head
- **Strong keel on caudal peduncle**
- **Beaklike snout** of young specimen seen from below
- **Teeth** small (3-6 mm high), flat, curved posteriorly, similar in both jaws

*juvenile, 4 m, female*

*juvenile, about 2.5 m, male*
Family: Somniosidae — Sleeper sharks

*Centroscymnus coelolepis*  
Portuguese shark

First dorsal fin located posterior to pectoral fins

Dorsal fins low, nearly equal in size, with very small spine at front of each fin

Uniformly brown to blackish brown

Denticles with rounded crowns, giving appearance of scaley skin like bony fishes

Pelvic fins located far posteriorly, anal fin absent

Caudal fin with strong subterminal notch

Upper teeth thornlike

Lower teeth with short, oblique cusps and long roots

113 cm, gravid female

110 cm, female
Family: Somniosidae — Sleeper sharks

*Somniosus microcephalus*  
Greenland shark

- Predorsal length less than 45% of total length
- First dorsal fin located posterior to pectoral fins
- Dorsal fins low, nearly equal in size, and without spines
- Body robust and flaccid
- Pelvic fins located far back on body, anal fin absent
- Uniformly grayish to blackish brown or black
- Upper teeth thornlike
- Lower teeth with long roots

266 cm
Family: Somniosidae — Sleeper sharks

*Somniosus pacificus*  
Pacific sleeper shark

- Predorsal length more than 45% of total length
- First dorsal fin located posterior to pectoral fins
- Dorsal fins low, nearly equal in size, and without spines
- Uniformly blackish brown to slate green or gray
- Body robust and flaccid
- Pelvic fins located far posteriorly, anal fin absent
- Upper teeth thornlike
- Lower teeth with long roots

Length: 1.7 m
Family: Squalidae — Dogfish sharks

*Squalus acanthias*  
spiny dogfish

- Small white spots on sides
- Single spine at origin of each dorsal fin
- Gray to blue-gray dorsally, white to pale gray ventrally
- Anal fin absent
- Cusps of upper and lower teeth flat, bladelike
- Low crown and root

Note: Morphologically similar to *S. suckleyi* of the North Pacific except for having more vertebrae (mean = 112 vs. 99)
Family: Squalidae — Dogfish sharks

*Squalus suckleyi* spotted spiny dogfish

- One or two rows of small pale spots
- Single spine at origin of each dorsal fin
- Slate gray or greenish brown dorsally, white to pale gray ventrally
- Anal fin absent
- Low crown and root
- Cusps of upper and lower teeth flat, bladelike

Note: Morphologically similar to *S. acanthias* of the Atlantic except for having fewer vertebrae (mean = 99 vs. 112)
Family: Rajidae — Skates

**Amblyraja hyperborea** Arctic skate

- **Eyes far apart**
- **720 mm male**
- **540 mm female**
- **3 pairs of scapular thorns, 2 or 4 pairs uncommon**
- **Lateral keels end abruptly on the anterior horns**
- **Ventral surface blotched with dark gray to black**

---

**Egg case**
Family: Rajidae — Skates

*Amblyraja radiata*  
**starry ray**

- **Dorsal surface** brown, with irregular black spots
- **Median thorns** radially ribbed, 11–19 from nuchal region to first dorsal fin
- **Ventral surface** mainly white
- **Ventral surface** smooth
- **Snout relatively short and broad**
- **Dorsal surface covered with prickles and thornlets**
- **505 mm male**
- **505 mm female**
- **103 mm female**

“Washboard” appearance of ventral surface of egg case
Family: Rajidae — Skates

*Bathyraja parmifera*  
Alaska skate

- **Dorsal surface**
  - More heavily blotched and spotted in some populations
- **Ventral surface**
  - White, less commonly brown
- **Lateral keels**
  - Not ending abruptly on the anterior horns
- **Eyes**
  - Close together
- **Egg case**
- **955 mm**  
  - Male
- **994 mm**  
  - Female
- **845 mm**  
  - Female

1 or 2, occasionally 3, pairs of scapular thorns
Family: Rajidae — Skates

*Bathyraja spinicauda*  
spinytail skate

**Dorsal surface uniformly blue-grayish**

**19–26 median thorns from base of tail to first dorsal fin**

**Dorsal surface densely covered with prickles, giving it a “hairy” or fuzzy appearance**

860 mm  
female

**Ventral surface of disk completely smooth**

**Ventral surface of tail blotched with dark gray to black or completely dark**

**Ventral surface mainly white, with darker regions especially along margins of pectoral and pelvic fins**

**Surface densely covered with denticulated spines**

Snout long, flexible, moderately pointed

860 mm  
female
Family: Rajidae — Skates

*Rajella bathyphila* deepwater ray

- Median thorns 33–41 from nuchal region to first dorsal fin
- Dorsal surface grayish white
- Dorsal surface covered with prickles
- 76 cm female

- Snout elongate
- No thorns on snout
- No more than 3 pairs of medial orbital thornlets*
- Outer corner of pectoral fin acute

- Ventral surface mainly white
- Ventral surface smooth

*See illustration, page 47.*
Family: Rajidae — Skates

*Rajella fyllae*  
round ray

- Dorsal surface light gray or brownish
- No well defined median thorn row; several irregular rows from nape to tail
- Ventral surface mainly white
- Tail longer than disk
- Dorsal surface covered with thorns
- Snout rounded
- Well defined rows of medial orbital thornlets
- Pectoral fin tips rounded
- Median row of thorns present in juveniles < 20 cm TL
- Very long tail in juveniles
- Egg case smooth, anterior horns longer than in *R. lintea*

- 51 cm male
- 46 cm female
- 18 cm
- 108 mm
Family: Rajidae — Skates

*Rajella linteana* sailray

- **Dorsal surface uniformly grayish brown**
- **Ventral surface smooth**
- **Egg case with longitudinal striae and cross-hatching**
- **Median thorns 39–52 from nuchal region to first dorsal fin**
- **Ventral surface of tail with dark stripe, sometimes broken into blotches**
- **Well defined rows of medial orbital thornlets**
- **About 40 thornlets on rostrum (fewer in juveniles)**
- **Dorsal surface covered with prickles**
- **Bead-shaped dark mark on each side of cloaca**
- **Ventral surface creamy white**
- **Snout elongate**
- **Broad dark margins on posterior half of pectoral fins**
- **90 cm female**
- **105 cm female**
Family: Notacanthidae — Spiny eels

*Notacanthus chemnitzii*  
snubnosed spiny eel

- **Snout abrupt, rounded in lateral view**
- **Uniformly brown**
- **Body elongate, but deep**
- **Fins and margin of opercular flap blackish**
- **99 cm TL**
- **Teeth on palatines and dentaries in 2 or more rows, 1 row on premaxillae**
- **8–12 isolated spines**
Family: Synaphobranchidae — Cutthroat eels

*Diastobranchus capensis*  
**basketwork eel**

- **Pectoral fin with filament nearly reaching level of anus**
- **Dorsal fin origin positioned well posterior to anus and origin of anal fin**
- **Cleft of mouth extending about one eye diameter past eye**
- **Dorsal and anal fins confluent with caudal fin**
- **Gill slit oblique and extending below lower end of pectoral fin base**
- **Scales arranged in groups in right-angle basketwork pattern**
- **Anus positioned in anterior quarter of total length**

894 mm  
Fresh specimen

Same specimen, preserved
Family: Clupeidae — Herrings

*Clupea harengus*  Atlantic herring

- **Clupeidae** — Herrings
- **Clupea harengus** — Atlantic herring
- **Dorsal fin**: short, located at about middle of body or slightly posterior to midpoint
- **Caudal fin**: forked
- **Lower jaw**: protrudes beyond upper jaw
- **Back**: blue-black to blue-green
- **Anal fin**: short, placed well behind dorsal fin
- **Scales**: large and deciduous (fall off easily)
- **Body**: deep
- **Scutes on belly**: weakly keeled; post-pelvic scutes 11–17
- **No black spots**: on sides
- **290 mm**
Family: Clupeidae — Herrings

*Clupea pallasii*  Pacific herring

- No black spots on sides
- Dorsal fin short, located at about middle of body or slightly posterior to midpoint
- Lower jaw protrudes beyond upper jaw
- Caudal fin forked
- Back blue-black to blue-green
- Anal fin short, placed well behind dorsal fin
- 220 mm, thawed specimen
- Scales large and deciduous (fall off easily)
- Body deep
- Scutes on belly weakly keeled; post-pelvic scutes 10–14
- 217 mm, fresh specimen
**Argentina silus**  
Atlantic argentine

- **Eye diameter larger than snout length**
- **Dorsal fin short-based, high, located about midway between snout and adipose fin**
- **Pelvic fin base behind last dorsal fin ray**
- **Adipose dorsal fin present**
- **Pectoral fin rays 15–18**
- **Lateral line scales 64–69**

**Dimensions:**
- **430 mm**
- **175 mm**
Family: Microstomatidae — Pencilsmelts

*Bathylagus euryops*  
goiter blacksmelt

- Eye large, 50% or more of head length
- Scales large and deciduous
- Gill opening extending less than halfway up side of body
- Light brown to blackish brown, scale pocket margins black
- Dorsal fin opposite pelvic fins
- Anal fin far back on body, base longer than caudal peduncle
- Narrow adipose dorsal fin

(Scales have fallen off this specimen.)
Family: Microstomatidae — Pencilsmelts

*Nansenia groenlandica*  Greenland argentine

- **Eye large**
- **Body slender and elongate**
- **Dorsal fin a little before midpoint of body**
- **Narrow adipose dorsal fin**
- **Pectoral fins inserted about midway between lateral line and belly profile**
- **Pelvic fins located below dorsal fin**
- **Anal fin far back, almost below adipose dorsal fin**
- **Scales large, easily lost**
- **Body silvery unless scales are lost**

*See illustration, page 69.*
Family: Platytroctidae — Tubeshoulders

*Maulisia microlepis*  
smallscale searsiid

- Eye diameter shorter than snout
- Body scales small
- Lateral line scales large, modified
- Dorsal fin far back on body
- Uniformly blackish brown
- Pelvic fins behind midpoint of body
- Anal fin origin opposite 9th dorsal fin ray
- Also: Photophores absent
Family: Alepocephalidae — Slickheads

Alepocephalus agassizii  
dusky slickhead

- Eye diameter wider than snout length
- Scales very small
- Dorsal fin origin opposite anal fin origin
- Head large, length greater than body depth
- Purplish brown to black
- Anal fin rays 15–18

(Adult)
Family: Osmeridae — Smelts

*Mallotus catervarius*  Pacific capelin

- Metallic blue, green, or yellow-green
- Caudal fin forked
- Pectoral fins large, with 16–21 rays
- Scales very small (170–220 in lateral line)
- Dorsal fin situated above pelvic fins
- Dorsal adipose fin present
- Maxilla not reaching past middle of eye
- Anal fin located posterior to dorsal fin
- 155 mm
- 111 mm
- 71–100 mm
Family: Osmeridae — Smelts

*Mallotus villosus* Atlantic capelin

- Metallic blue, green, yellow-green, or brassy brown
- Caudal fin forked
- Pectoral fins large, with 16–21 rays
- Scales very small (170–220 in lateral line)
- Dorsal fin situated above pelvic fins
- Dorsal adipose fin present
- Maxilla not reaching past middle of eye
- Anal fin located posterior to dorsal fin
- Specimen in water
- Specimen laid out

Dimensions:
- 160 mm
- 165 mm
- 64 mm
Family: Gonostomatidae — Bristlemouths

*Cyclothone microdon*  veiled anglemouth

- Eyes very small
- Uniformly brown to black with dense melanophores on head, body, and fins
- Skin fragile, scales large and deciduous
- Photophores in ventral series evenly spaced
- Mouth large, lower jaw protruding
- Dorsal and anal fins opposite each other
- Gill rakers 19–22
- Gill filaments fused at bases into wide band
- 1 photophore between anal fin and first procurent caudal ray
- Specimen laid out: ~60 mm
- Specimen in water: ~55 mm
Family: Sternopychidae — Marine hatchetfishes

*Argyropelecus hemigymnus*  
short silver hatchetfish

- Eyes tubular, directed dorsally
- Body deep and laterally compressed
- Dorsal blade (anterior to dorsal fin) well developed
- Preanal, anal, and subcaudal photophore groups well separated
- Single posteriorly directed post-abdominal spine with serrate edges and bearing a small posterodorsal spine
- Anal fin rays in two distinct groups separated by central anal photophores
- Posterior pair of dorsal blade elements bearing hooks
- Abdominal keel well developed

Note: In this specimen the stomach is pushed out through the mouth by the expanded gas bladder.

(size not recorded)
Family: Sternoptychidae — Marine hatchetfishes

*Argyropelecus olsforsii*  silver hatchetfish

- Eyes tubular, directed dorsally
- Body deep and laterally compressed
- Dorsal blade (anterior to dorsal fin) well developed
- Posterior elements of dorsal blade without hooks
- Preanal, anal, and subcaudal photophore groups well separated
- Abdominal keel well developed
- 2 separate, equally sized postabdominal spines: 1 directed posterventrally, 1 directed anteroventrally
- Anal fin rays in two distinct groups separated by central anal photophores

(size not recorded)
Family: Sternopychidae — Marine hatchetfishes

Maurolicus muelleri  
pearlsides

- Body fusiform
- Photophores often pink in fresh specimens
- Anal fin not divided into 2 separate ray groups
- Single elevated photophore precedes long anal and subcaudal photophore groups
- Symphyseal photophore present (on lower jaw)
- Abdominal keel and postabdominal spines absent
- Dorsal fin origin behind middle of body length
- Dorsal blade absent
- Abdominal keel and postabdominal spines absent

33 mm
Family: Stomiidae — Barbeled dragonfishes

*Chauliodus sloani*  
*manylight viperfish*

- Teeth at tip of lower jaw extending outside of closed mouth to a point well above level of eye
- Dorsal fin far forward, close to head, first dorsal ray greatly prolonged
- Body iridescent black to silver-blue
- Chin barbel absent in adults
- Large scalelike hexagons in 5 rows along body
- Adipose dorsal fin present
- Adipose ventral fin present*

*See illustration on page 90.*
Family: Stomiidae — Barbeled dragonfishes

*Stomias boa*  boa dragonfish

- Head small, jaws large and angled upward
- Body iridescent black to dark brown
- Dorsal fin far back on body, opposite anal fin
- Adipose dorsal fin absent
- Chin barbel present, about as long as head, with filaments on end*
- Large scalelike hexagons in 6 rows along body
- (Skin often missing from large areas due to damage from fishing gear)

*See illustration on page 92.*
Family: Paralepididae — Barracudinas

*Arctozenus risso* white barracudina

- Snout long and pointed
- Body pale gray
- Dorsal fin well behind midpoint of body
- Adipose dorsal fin present
- Pectoral fin rays 11–13
- Pelvic fins mostly behind dorsal fin base
- Scales large, deciduous, easily lost
- Black area at base of anterior rays of anal fin
- Anal fin far back on body, long-based, with 30–33 rays

Body pale gray
Family: Paralepididae — Barracudinas

*Paralepis coregonoides*  
sharpchin barracudina

- **Snout long and pointed**
- **Iridescent brown to black**
- **Dorsal fin well behind midpoint of body**
- **Adipose dorsal fin present**
- **Pectoral fin rays 13–16**
- **Scales large, deciduous**
- **Pelvic fins slightly in advance of dorsal fin base or below origin of dorsal fin**
- **Anal fin far back on body, long-based, with 21–25 rays**

*See illustration on page 97.*
Family: Myctophidae — Lanternfishes

*Benthosema glaciale* glacier lanternfish

- **PLO** situate anterodorsal to pectoral fin base
- **VLO** about midway between lateral line and pelvic fin base
- **One Pol**
- **Posterior end** of maxilla strongly expanded
- **VO2 elevated**
- **AO discontinuous, more or less divided into two groups**
- **Two Prc, with Prc2 elevated**

Scales and photophores are easily lost in lanternfishes.

*For photophore abbreviations see page 99.*
Family: Myctophidae — Lanternfishes

*Lampanyctus macdonaldi* rakery lanternfish

Lanternfish scales and photophores fall off easily in the net.

*For photophore abbreviations see page 99.*
**Family: Myctophidae — Lanternfishes**

*Myctophum punctatum*  
spotted lanternfish

- **PLO** situated anterodorsal to pectoral fin base
- **VLO** midway between lateral line and pelvic fin base
- One **Pol**
- Posterior end of maxilla strongly expanded
- **PVO** below level of upper end of pectoral fin base, and on an inclined line
- 3 **SAO** on a steep straight line with **VO3**
- Anterior 3 or 4 **AOp** over base of anal fin
- 2 **Prc**, with **Prc2** slightly higher than **Prc1**

*For photophore abbreviations see page 99.*
Family: Myctophidae — Lanternfishes

*For photophore abbreviations see page 99.*
Family: Myctophidae — Lanternfishes

*Protomyctophum arcticum*  
**Arctic telescope**

- Eyes semi-telescopic, pupils and lenses displaced dorsally
- VLO* about 3 times its diameter above pelvic fin base
- Pol absent
- Posterior end of maxilla strongly expanded
- PLO anteroventral to pectoral fin base, in front of and slightly higher than PVO1
- 3 SAO in a straight or weakly angulate line
- AO 14–16, in a continuous line

*For photophore abbreviations see page 99.*
Family: Lampridae — Opahs

*Lampris guttatus*  opah

- Pectoral fins long and sickle-shaped, placed high on body
- Body deep, compressed, ovoid
- Fins bright red
- Body iridescent blue and red, covered with silver spots
Family: Trachipteridae — Ribbonfishes

Trachipterus arcticus  dealfish

Silvery, with 1–5 dark spots along upper sides

Greatest body depth about one-fourth to one-third of the way along its length

Fins bright red

Body axis almost a straight line

Ventral edge of body almost straight, not constricted behind anus

Anal fin absent

Mouth protrusible

64 cm
Family: Macrouridae — Grenadiers  

*Coelorinchus labiatus*  
Spearsnouted grenadier

- Long, sharply pointed snout
- Snout longer than eye diameter
- Smooth, rounded leading edge on second spine (first spine minute, barely discernible)
- Scales absent from underside of head
- Head ridges strong and coarsely spined
- Origin of second dorsal fin anterior to anal fin origin*
- Scale: Prominent median keel composed of overlapping triangular spinules

*See illustration on page 115.*
Family: Macrouridae — Grenadiers

*Coryphaenoides rupestris* roundnose grenadier

- Snout fairly blunt
- Snout length about equal to or shorter than eye diameter
- Rough, serrate leading edge on second spine (first spine minute, barely discernible)
- Origin of second dorsal fin posterior to anal fin origin*
- Scales cover underside of head, including snout
- Suborbital and other head ridges not well developed
- Outer pelvic fin ray elongated*
- Rays of second dorsal fin markedly shorter than anal fin rays
- Scale from a 36 cm fish
- Scale from a 79 cm fish

*See illustration on page 116.*
Family: Macrouridae — Grenadiers

*Macrourus berglax*  roughhead grenadier

- Snout strongly pointed
- Snout length about equal to eye diameter
- Scales absent or mostly absent from underside of head
- Strong suborbital ridge with scales bearing strong spinules
- Origin of second dorsal fin anterior to anal fin origin*
- Rough, serrate leading edge on second spine (first spine minute, barely discernible)
- Serrated median keel formed by strong, closely contiguous spinules
- Body scale of *Macrourus*

*See illustration on page 118.*
Family: Lotidae — Rocklings

*Brosme brosme*  
cusk

**No barbels on snout**

**One barbel on chin***

**Pectoral fins short, not nearly reaching anal fin**

**One dorsal fin, one anal fin, both long-based**

**Dorsal and anal fins partly connected to rounded caudal fin**

**Dorsal, anal, and caudal fins edged with white or pale yellow**

**Juveniles with pale yellow bands**

*See illustration on page 121.*
Family: Lotidae — Rocklings

*Ciliata septentrionalis*  
northern rockling

- Head more than a fifth of total length, jaws more than half of head length
- Second dorsal and anal fins long and of even height
- First dorsal fin ray shorter than half of head length
- One barbel on each anterior nostril
- One long barbel on upper lip, each side
- One long barbel on chin
- Small supplementary barbels on fold of skin fringing upper jaw

119 mm
Family: Lotidae — Rocklings

*Enchelyopus cimbrius*  
fourbeard rockling

First dorsal fin ray elongate, more than half length of head (not shown; see illustration in species account, page ___)

Second dorsal and anal fins long and of even height

One barbel on chin

One barbel on each anterior nostril and one on tip of snout

Posterior end of dorsal and anal fins black
Family: Lotidae — Rocklings

*Gaidropsarus argentatus*  
**Arctic rockling**

- **First dorsal fin ray**: elongate, longer than eye diameter but shorter than head length
- **Second dorsal and anal fins**: long and of even height
- **One barbel on chin**
- **One barbel on each anterior nostril**
- **Some individuals with white spots all over**

<table>
<thead>
<tr>
<th>Length</th>
<th>Image</th>
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</thead>
<tbody>
<tr>
<td>240 mm</td>
<td>![240 mm image]</td>
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<tr>
<td>182 mm</td>
<td>![182 mm image]</td>
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<tr>
<td>275 mm</td>
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</tbody>
</table>

504
Family: Lotidae — Rocklings

*Gaidropsarus ensis* threadfin rockling

- First dorsal fin ray longer than head
- Second dorsal and anal fins long and of even height
- One barbel on each anterior nostril*
- One barbel on chin*

*See illustration on page 129.*
**Molva dypterygia**  blue ling

- **Chin barbel shorter than diameter of eye**
- **No blackish spot on posterior end of first dorsal fin**
- **Dorsal, anal, and caudal fins dark posteriorly, with white edges**
- **Lower jaw slightly protruding beyond upper jaw**
- **Adults in some populations and young fish with dark reddish brown blotches**
- **Caudal peduncle depth 16–17% of head length (not as deep as in *M. molva*)**

*See illustration on page 131.*
**Family: Lotidae — Rocklings**

*Molva molva* ling

- Upper jaw slightly protruding beyond lower jaw
- Second dorsal fin base length less than half of total length of fish
- Caudal peduncle depth about 20% of head length (deeper than in *M. dypterygia*)
- Chin barbel longer than diameter of eye
- Blackish spot on posterior end of first dorsal fin
- Dorsal, anal, and caudal fins dark near margins posteriorly, with white edges
- Juveniles with orange blotches on white background

---

*Measurements:*

- 110 cm
- 54 cm
- About 20 cm
Family: Phycidae — Phycid hakes

*Phycis blennoides*  greater forkbeard

- 5 or 6 scale rows between first dorsal fin base and lateral line
- First dorsal fin with an elongate ray*
- Pelvic fin rays reaching beyond anal fin origin
- 1 anal fin
- 2 dorsal fins, close together
- Black margins on dorsal, anal, and caudal fins
- Dark blotch often present about midway along second dorsal fin
- (Size not recorded)
- 455 mm
- 95 mm

*See illustration on page 136.*
Family: Gadidae — Cods

*Arctogadus glacialis*  polar cod

- **Eye diameter** usually greater than snout length
- **Caudal fin** slightly to moderately emarginate, lobes rounded
- **Olive brown to bluish gray**, including underside, with darker fins and head
- **Lateral line** interrupted along entire length
- **Scales** overlapping, elliptical, easily fall off
- **Chin barbel** absent to longer than pupil diameter
- **Maxilla** not reaching or barely reaching to below pupil
- **Palatine teeth** present, usually well developed
- **Jaws** about equal or lower jaw slightly protruding
- **221 mm**
- **291 mm**
- **145 mm**
- **69 mm**
- **42 mm**

509
Family: Gadidae — Cods

**Boreogadus saida**  
Arctic cod

- Eye diameter about equal to or less than snout length
- Jaws about equal or lower jaw slightly protruding
- Maxilla extends to below middle of pupil or beyond
- Lateral line with curves and interrupted along entire length*
- Scales nonoverlapping, round, embedded
- Palatine teeth absent
- Brownish to bluish black with fine black dots
- Caudal fin deeply emarginate, lobes rounded
- Chin barbel minute or obsolete

*See illustration on page 140.
Family: Gadidae — Cods

*Eleginus gracilis*  saffron cod

- Snout bulbous
- Chin barbel fine, about as long as pupil width
- Upper jaw slightly protrudes beyond lower jaw
- Eye diameter less than snout length
- Scales overlap
- Lateral line continuous to midbody below origin of second dorsal fin
- Body and fins more or less washed with yellow
- Caudal fin truncate
- Brown spots on midsides of juveniles, disappear by about 200 mm TL

- 233 mm fresh specimen
- 211 mm frozen and thawed
- 105–110 mm
- 48–73 mm
Family: Gadidae — Cods

*Elegerinus nawaga*  
*nawaga*

- **Eye diameter less than snout length**
- **Lateral line continuous to below origin of second dorsal fin**
- **Scales overlapping**
- **Snout bulbous**
- **Upper jaw slightly protrudes beyond lower jaw**
- **First anal fin origin below first dorsal fin interspace or below origin of second dorsal fin**
- **Brassy sheen and irregular dark blotches on back and sides**
- **Caudal fin truncate**
Family: Gadidae — Cods

**Gadus chalcogrammus** walleye pollock

- Eye diameter same as or less than snout length
- Lower jaw protrudes beyond upper jaw
- Chin barbel minute or absent
- Lateral line continuous to below first dorsal fin interspace or origin of second dorsal fin
- Scales overlap
- Caudal fin slightly emarginate to truncate
- Brown stripes mostly absent in juveniles, develop with growth
- 35–45 mm
- 470 mm
- 392 mm
- 141 mm
- 126 mm
- 105 mm
- 35–45 mm
Family: Gadidae — Cods

*Gadus macrocephalus*  
Pacific cod

- Eye diameter less than snout length
- Chin barbel long and robust
- Upper jaw and snout protrude slightly beyond lower jaw
- Caudal fin slightly emarginate or truncate
- Lateral line continuous nearly to caudal peduncle
- Brown and yellow mottled pattern
- Scales overlap

Some populations tend to be grayish brown and others gold and orange-yellow.
Family: Gadidae — Cods

**Gadus morhua**  Atlantic cod

- Upper jaw protruding beyond lower jaw
- Chin barbel long, nearly equal to eye diameter
- Jaws may appear equal, neither one protruding, in juveniles
- Checkered pattern of dark blotches in juveniles
- Dorsal and caudal fins without pale margins
- Lateral line continuous to middle of third dorsal fin
- Pectoral fin not reaching origin of first anal fin
- Origin of first anal fin below origin of second dorsal fin
- Caudal fin truncate to slightly emarginate
- Dorsal and caudal fins without pale margins

Dimensions:
- 367 mm
- 105 mm
- 76 mm
Family: Gadidae — Cods

*Melanogrammus aeglefinus*  haddock

**First dorsal fin** high and acuminate

**Lateral line** dark, **continuous to base of caudal fin**

**Upper jaw and snout** protrude slightly beyond lower jaw

**Large black blotch** between pectoral fin and first dorsal fin

**Chin barbel** much smaller than diameter of eye

**Caudal fin** emarginate to truncate

(Adult)
Family: Gadidae — Cods

Merlangius merlangus  whiting

Upper jaw slightly protruding beyond lower jaw
Origin of first anal fin below middle of first dorsal fin
Pectoral fin reaching to or beyond origin of first anal fin
Caudal fin slightly emarginate to truncate
Teeth prominent
Small intervals between dorsal fins
Lateral line continuous to base of caudal fin

Chin barbel absent or small
Often a black blotch near upper part of pectoral fin base
~215–235 mm
~430 mm

(Caudal fin of juvenile gadids is typically more emarginate than in adults.)
Family: Gadidae — Cods

*Micromesistius poutassou*  
blue whiting

- Lower jaw protruding beyond upper jaw
- Chin barbel absent
- Large intervals between dorsal fins
- Caudal fin moderately to strongly emarginate
- Origin of first anal fin before a vertical from origin of first dorsal fin
- Origin of first anal fin reaching beyond origin of first anal fin
- Lateral line running along back and continuous to base of caudal fin
- Sometimes a black blotch near upper part of pectoral fin base

*(Adult) 410 mm*

*(Adult) ~300 mm*
Family: Gadidae — Cods

*Pollachius virens*  
saithe

- Lower jaw protruding beyond upper jaw
- Origin of first anal fin below space between first and second dorsal fins
- Lateral line not strongly curved above pectoral fin
- Chin barbel very short
- Pectoral fin not reaching origin of first anal fin
- Caudal fin moderately to strongly emarginate
- Dorsal fins close together, intervals less than length of first dorsal fin base
- ~300 mm

(Adult)
Family: Gadidae — Cods

*Trisopterus esmarkii*  
**Norway pout**

- Lower jaw projecting beyond upper jaw
- Small dark blotch on upper part of base of pectoral fin, not always distinct
- Dorsal fin intervals very short
- Lateral line continuous to base of caudal fin
- Eye diameter greater than snout length
- Chin barbel short, less than third to almost half diameter of eye*
- Pectoral fin long, extending beyond origin of first anal fin
- Anal fin base long, at least twice length of first dorsal fin base
- Caudal fin slightly to moderately emarginate
- 205 mm
- 150–155 mm

*See illustration on page 160.*
Family: Lophiidae — Goosefishes

*Lophius piscatorius*  
*angler*

First 3 dorsal fin spines situated on head, elongate, the first with a bifid fleshy appendage at end*

Second 3 dorsal fin spines form continuous fin*

Head large, broad, depressed

Gill opening behind and below pectoral fin base

Mouth very wide

*See illustration on page 163.*
Family: Belonidae — Needlefishes

**Belone belone** garfish

- Back dark bluish green, sides silvery
- Upper and lower jaws extended into long beaks with sharp teeth
- Lower jaw slightly longer than upper jaw
- Dorsal and anal fins far back on body, opposite each other
- Dorsal and anal fins not separated into finlets
- Scales small, cycloid, deciduous
- Caudal fin forked

Upper and lower jaws extended into long beaks with sharp teeth

Back dark bluish green, sides silvery

Dorsal and anal fins far back on body, opposite each other

Dorsal and anal fins not separated into finlets

Scales small, cycloid, deciduous

Caudal fin forked

Lower jaw slightly longer than upper jaw

54 cm

150 mm
Family: Scomberesocidae — Sauries

*Scomberesox saurus*  
**Atlantic saury**

- Jaws prolonged, slender, and delicate
- Olive green to dark green or brown on back, sides and belly silvery
- Dorsal fin far back on body, opposite anal fin
- Scales deciduous
- Dorsal finlets 5–7
- Anal finlets 5–7
- Lower jaw slightly longer than upper jaw
Family: Syngnathidae — Pipefishes

Entelurus aequoreus  snake pipefish

- Mouth small, terminal, on tubular snout
- Dorsal fin extending above 7–11 trunk rings
- Membranous pectoral fin present in juveniles (to about 70 mm), absent in subadults and adults
- Body ridges inconspicuous in subadults and adults
- Caudal fin rudimentary
- Dark-margined pale bars on side
Family: Sebastidae — Rockfishes

*Sebastes mentella*  
deepwater redfish

- Bright dark red to violet, often with dusky patch on opercle
- Symphyseal knob well developed and sharply projecting
- Anal fin with 3 spines and 7–11 rays (usually 9)
- Eye large, diameter about 1/3 of head length and greater than snout length
- Lowest preopercular spine directed obliquely forward and downward
**Family: Sebastidae — Rockfishes**

*Sebastes norvegicus*  
golden redfish

- Orange to bright orange-red, often with dusky patch on opercle
- Symphyseal knob absent or weakly developed and rounded
- Eye large, diameter about 1/4 of head length and about equal to or less than snout length
- Anal fin with 3 spines and 7–10 rays (usually 8)
- Lower two preopercular spines directed downward and slightly forward
Family: Sebastidae — Rockfishes

**Sebastes viviparus**  
Norway redfish

- Bright red, with dusky bands on upper sides and dusky patch on opercle
- Symphyseal knob absent or weakly developed and rounded
- Eye large, diameter about 1/3 of head length and greater than snout length
- Anal fin with 3 spines and 6–8 rays
- Lowest preopercular spine directed backward or obliquely backward or downward
- Preserved specimen: 280 mm
- Preserved specimen: 201 mm
Family: Hexagrammidae — Greenlings

*Hexagrammos stelleri*  whitespotted greenling

- Head spines and ridges absent
- Often with black blotch at front of dorsal fin
- Dorsal fin divided past middle by a notch
- Body usually with small white spots
- Caudal peduncle slender (depth equal to or less than snout length)
- One multi-branched flat cirrus above each eye
- Mouth small, maxilla extending below front of eye
- Body covered with small, overlapping ctenoid scales
- Juveniles when fresh are silvery, with blue sheen and dark blue-green back
- Silvery blue sheen of fresh specimen turns dull and reddish brown when frozen and thawed

*Hexagrammidae — Greenlings*
Family: Cottidae — Sculpins

Artediellus atlanticus  Atlantic hookear sculpin

Occipital protuberances usually present, may be low or high

Uppermost preopercular spine hooked upward

Skin on head and body smooth, without granulation

153 mm male

142 mm male

Males develop sharply defined broad black and white bands on fins

135 mm male

91 mm female

135 mm female

135 mm female

55 mm

Skin on head and body smooth, without granulation

153 mm male
Family: Cottidae — Sculpins

*Artediellus scaber* hamecon

- Low occipital protuberances present
- Numerous fleshy cirri on head and front part of lateral line
- Skin on head and front part of body rough, with small granulations
- Uppermost preopercular spine hooked upward

**Measurements:**
- 83 mm male
- 81 mm female
- 29 mm
Family: Cottidae — Sculpins

Artediellus uncinatus  Arctic hookear sculpin

- Whitish areas on head of some specimens not diagnostic, may help camouflage fish as it lies partly buried in substrate.
- Parietal spines absent, mere bumps, or low.
- Uppermost preopercular spine hooked upward.
- First dorsal fin of males high, with white spots and with elongate, free tips on the spines.
- Caudal fin rays usually 22 or 23.
- Some specimens have low parietal spines.
- Pores usually absent between eyes (examine under magnification).

Specimens:
- 89 mm male
- 80 mm male
- 79 mm male
- 73 mm male
- 71 mm male
- 63 mm female
Family: Cottidae — Sculpins

*Enophrys diceraus*  
antlered sculpin

- Eye protrudes above profile of head
- Uppermost preopercular spine long, reaching beyond edge of operculum, bears 2–8 spinules
- Frontoparietal peaks disappear with growth
- 2 projections like fork tangs extend forward from each lachrymal bone
- High nuchal peak

**Measurements:**
- **26 mm**  
  fixed in formalin
- **164 mm**  
  female
- **241 mm**  
  female
- **129 mm**  
  male

**Spots on anal fin membrane and rays**
Family: Cottidae — Sculpins

*Enophrys lucasi*  leister sculpin

- Eye protrudes above profile of head
- High nuchal peak
- Uppermost preopercular spine long, reaching beyond edge of operculum, bears 1–4 spinules
- 2 low projections extend forward from each lachrymal bone
- Spots along anal fin rays
- Frontoparietal peaks disappear with growth
- 131 mm female
- 75 mm
- 34 mm (preserved specimen)
Family: Cottidae — Sculpins

*Gymnocanthus galeatus*  
armorhead sculpin

- **Scales absent except for rough plates covering top of head and interorbital space**
- **4 dark brown to blackish saddles**
- **1 or 2 pairs of low protuberances on top of head**
- **1–3 spinules on elongate first pre-opercular spine**

**Measurements:**
- 297 mm male
- 268 mm female
- 140 mm
- 124 mm
- 119 mm
- 268 mm male

**Notes:**
- 1–3 spinules on elongate first pre-opercular spine
- 1 or 2 pairs of low protuberances on top of head
- Scales absent except for rough plates covering top of head and interorbital space
- 4 dark brown to blackish saddles
Family: Cottidae — Sculpins

*Gymnocanthus pistilliger*  
threaded sculpin

- 2 or 3 pairs of protuberances on top of head
- Reticulate pattern on head, back, upper sides
- 1–4 spinules on dorsal surface of elongate first preopercular spine
- Interorbital space usually smooth
- Scales absent except for weak plates on top of head
- White cirri (sometimes called “threads”) behind pectoral fins in males
- First dorsal fin of young males is spotted as in females, turns mostly black in adult males

- 168 mm female
- 120–124 mm, males
- 87 mm male
Family: Cottidae — Sculpins

*Gymnocanthus tricuspis*  
Arctic staghorn sculpin

- No protuberances on top of head
- Scales absent from body and fins
- Rough plates on top of head, numerous small interorbital plates
- 2 or 3 spinules on elongate first preopercular spine
- First dorsal fin mostly black in males
- Back and upper sides more or less solid colored in adults, no bands or reticulation
- First preopercular spine becomes blunt at tip around 30 mm TL as the spinule nearest the tip begins to develop

- 116 mm female
- 134 mm male
- 87 mm male
- 87 mm female
- 29–34 mm
- 43 mm

2 or 3 spinules on elongate first preopercular spine

87 mm male

87 mm female

43 mm

33 mm
Family: Cottidae — Sculpins

**Hemilepidotus jordani** yellow Irish lord

- 4 or 5 rows of scales in dorsal band below spinous dorsal fin
- Gill membranes yellow
- 3rd dorsal fin spine usually shorter than 2nd
- About 8 rows of scales in ventral band below lateral line, above anal fin
- Anal scale row usually absent
- 4 dark red or brown to blackish bars on sides
- 179 mm
- 398 mm
- 512 mm (caudal fin injured)
- 91 mm
- 59 mm
- 537 mm
**Family:** Cottidae — Sculpins

*Hemilepidotus papilio*  
**butterfly sculpin**

- First 3 dorsal fin spines gradually increase in height.
- 4 blackish bars extend from sides onto dorsal fin.
- Postocular and occipital spines prominent.
- Rows of ventral scale band and anal row evenly spaced between lateral line and anal fin.
- About 4 rows of scales in ventral band.
- 2–4 rows of scales in dorsal band.

Dimensions:
- 167 mm
- 162 mm
- 64 mm
Family: Cottidae — Sculpins

*Icelus bicornis*  twohorn sculpin

- Lateral line scales not extending far onto caudal peduncle, do not reach hypural plate
- Uppermost preopercular spine split at end into 2 or 3 points
- Dorsal and ventral caudal peduncle scales present
- Nuchal spine tall and blunt or pointed
- Parietal spine short and blunt or obsolete
- 1 or more rows of scales often present between dorsal scale row and lateral line and between lateral line and anal fin
- Male urogenital papilla

88 mm female

52 mm male

539
**Family: Cottidae — Sculpins**

**Icelus spatula** spatulate sculpin

- Nuchal spine tall and pointed, ending in thick spine or acute angle
- Parietal spine pointed or blunt
- Uppermost preopercular spine bifurcate
- Dorsal and ventral caudal peduncle scales absent
- No rows of scales between dorsal scale row and lateral line and between lateral line and anal fin
- Male urogenital papilla

*Measurements (in mm)*

- 116 mm female
- 109 mm female
- 53 mm
- 77 mm male
- 70 mm male
- 57 mm male
- 27 mm
Family: Cottidae — Sculpins

*Megalocottus platycephalus*  
belligerent sculpin

- Postocular and occipital protuberances present, often with simple cirri
- Head wide, strongly depressed
- Lower jaw projects beyond upper jaw
- Top and sides of head verrucose ("warty")
- Spiny plates in uneven rows above and below lateral line

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541
Family: Cottidae — Sculpins

*Microcotts sellaris*  brightbelly sculpin

- Head deep, profile abrupt
- Wide membrane connects pelvic fin with belly
- Postocular and occipital protuberances present, usually with a simple cirrus on each
- Two uppermost preopercular spines longest, curved upward

**Male**

**Female**

Size: 113 mm
Family: Cottidae — Sculpins

*Myoxocephalus jaok*  
plain sculpin

Small postocular and occipital protuberances present

Usually 3 preopercular spines; uppermost is straight, unbranched, and long, may reach edge of operculum

Back and upper sides brown and gray, with numerous small black spots

Spiny platelike scales above lateral line in large specimens

Dark bands not well defined, if present

630 mm

340 mm

133 mm

88 mm

34 mm
Family: Cottidae — Sculpins

*Myxocephalus polyacanthocephalus*  
Great Sculpin

- Small postocular and occipital protuberances present
- 3 brown or blackish saddles, usually with darker margins
- 3 or 4 preopercular spines; uppermost straight, unbranched, may reach edge of operculum
- Scales absent
- Specimens with dense white spots can be mistaken for *M. stelleri* (which does not occur in study area)
- Dark saddles persist in adults

- Length data: 146 mm, 281 mm, 775 mm, 24 mm, 37 mm, 34 mm, 66–74 mm
Family: Cottidae — Sculpins

*Myxocephalus quadricornis*  
fourhorn sculpin

Postocular and occipital protuberances present, with rough, wartlike surface in some specimens.

Dorsal fins widely spaced.

Long, slender caudal peduncle.

Irregular rows of spiny platelike scales above and below lateral line, less strongly developed in females and juveniles.

Second dorsal fin particularly high and with ray tips exserted in males.

Lateral line a single row of pores fading on caudal peduncle or extending to caudal fin.
Myoxocephalus scorpioides  
Arctic sculpin

- Postocular and occipital protuberances absent; stout, simple cirri present in their place
- Top of head densely verrucose ("warty")
- Caudal peduncle long and slender
- Uppermost preopercular spine not reaching edge of operculum
- Scattered plates with numerous small spines and raised centers above lateral line
- 211 mm female preserved specimen

Family: Cottidae — Sculpins
Family: Cottidae — Sculpins

*Myxocephalus scorpius*  
shorthorn sculpin

Postocular and occipital protuberances present, often paired; pointed or wedge-shaped

3 indistinct brown bands

Large prickly platelike scales with depressed centers above lateral line

237 mm, male

Postocular and occipital tubercles low in some specimens

273 mm, male

215 mm female

3 or 4 preopercular spines; uppermost straight, unbranched, does not reach margin of operculum

237 mm, male

181 mm, male

76 mm

49 mm

43 mm

34–44 mm
Family: Cottidae — Sculpins

*Trichocottus brashnikovi*  
hairhead sculpin

- No spines or bony protuberances on top of head
- Uppermost preopercular spine straight, unbranched, and long, reaching margin of operculum
- Numerous cirri, some large, flat, and fringed, on head in adults
- Prickly scales on side behind pectoral fin, develop at ~90-95 mm TL
- White band around caudal peduncle
- White spot on end of hypural plate
- Black pectoral fin base in juveniles and to a lesser extent in adults

Measurements:
- 31–34 mm
- 70–81 mm
- 109 mm
- 160 mm
- 200 mm
- 164 mm
Family: Cottidae — Sculpins

*Triglops murrayi*  
moustache sculpin

- **Upper jaw slightly protruding**
- **4 dark brown saddles**
- **Scales arranged along oblique dermal folds**
- **Broken or complete black lines along side**
- **3–6 dark bands on caudal fin**
- **Breast and sides of belly pale, not covered with small black dots**
- **Dark bands on caudal fin often obscured by overall dark coloration of fin in males**
- **Some specimens brightly colored, deep yellow to orange**
**Family: Cottidae — Sculpins**

**Triglops nybelini**  bigeye sculpin

- **Lower jaw slightly protruding**
- **Breast and sides of belly densely peppered with small black dots**
- **Broken or complete black lines along side**
- **Scales arranged along oblique dermal folds**
- **Dark gray to black on back and upper sides, no dark saddles**

**Measurements:**
- Male: 94 mm
- Female: 105 mm
- Female: 108 mm
- Female: 46 mm

---

550
Family: Cottidae — Sculpins

*Triglops pingelii*  ribbed sculpin

- Upper jaw slightly protruding
- Scales arranged along oblique dermal folds
- 4 dark brown saddles
- No dark bands on caudal fin
- Black spots below lateral line, connected in some specimens to form broken or continuous stripes or sinuous patterns
- Chest and sides of belly unpigmented
- Male
- Male
- Male
- Male
- Male
- Male
- Male
- Male
- Male
- Male
- 38 mm
- 53 mm
- 125 mm
- 141 mm
- 145 mm
- 86–131 mm
Family: Hemitripteridae — Sailfin sculpins

*Blepsias bilobus*  crested sculpin

- Top of head with bony ridges, no strong spines
- Body and bases of fins covered with prickles
- Prominent, simple cirri on snout and lower jaw
- Fused gill membranes form free fold across isthmus
- Dorsal and anal fins high
- Pectoral fins large and fan-shaped

**180 mm**

**128 mm**

**93 mm**
Family: Hemitripteridae — Sailfin sculpins

*Nautichthys pribilovius*  
eyeshade sculpin

**Spinous dorsal fin origin far forward on short nape**

**Black bar through eye and across cheek**

**Head spines large and knobby**

**Spinous dorsal fin higher in males than females**

**Spinous dorsal fin higher than soft-rayed dorsal fin**

**Body and bases of fins covered with tiny prickles**

**Black cirri on eyeball and head spines**

**Gill membranes fused without forming free fold across isthmus**

Measurements:
- Female: 109 mm
- Male: 76 mm, 87 mm, 94 mm
Family: Psychrolutidae — Fathead sculpins

*Cottunculus microps*  polar sculpin

- Head spines pronounced
- 3 dark bands on body
- Head large
- Body covered with minute prickles
- Spinous portion of dorsal fin low, partly buried in skin
- Crestlike ridges present on preopercle
- Gill membranes fused without forming free fold across isthmus
Family: Psychrolutidae — Fathead sculpins

*Cottunculus subspinosus* smooth polar sculpin

- Head large
- No crestlike ridges on preopercle
- Body uniformly colored, no dark bands
- Body covered with minute prickles
- Spinous portion of dorsal fin low, partly buried in skin
- Cirri absent from head and body
- Head spines small, hidden by skin, typically not visible

~119 mm

~120 mm
Family: Psychrolutidae — Fathead sculpins

*Eurymen gyrinus*  
smoothcheek sculpin

- **Cirri** present on end of maxilla and on lower jaw
- **Head spines** absent
- **Preopercular spines** absent
- **Spinous and soft-rayed portions of dorsal fin** continuous and about the same height
- **Body** without scales or spinous tubercles
- **Many small, raised, white-rimmed pores** on head
- **Fused gill membranes** form free fold across isthmus
**Agonus cataphractus**  hooknose

- **Family:** Agonidae — Poachers
- **Snout projects beyond mouth**
- **Pair of barbels on underside of snout**
- **Numerous barbels on ventral surface of head including branchiostegal membranes**
- **Head broad and triangular**
- **1 bifurcate pair of barbels at corner of mouth (each side)**
- **A strong pair of spines pointing anteriorly and a smaller pair pointing upwards on the snout**
- **No prominent spines behind eyes or on top of head**
- **31–34 dorsal plates**
- **102 mm**
Family: Agonidae — Poachers

*Aspidophoroides monopterygius*  alligatorfish

- Head small, less than 20% of body length
- One dorsal fin
- Body extremely slender
- No barbel on posterior end of upper jaw
- One row of plates above lateral line plates

| 41 mm | 61 mm | 82 mm |
Agonidae — Poachers

**Aspidophoroides olrikii**  
Arctic alligatorfish

- **Head large, more than 20% of body length**
- **Mature males have white blotch on posterior portion of dorsal fin**
- **Chalky white or pink marks present on head or back of some individuals are not particular to this species and not helpful for identification**
- **Lower jaw protrudes in small juveniles, jaws are about even in adults**
- **One row of plates above lateral line plates**
- **Sharp spines on plates in juveniles, smoother in adults**
- **Body robust**
- **One dorsal fin**
- **77 mm female**
- **54 mm male**
- **69 mm male**
- **559 mm**

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**Additional Information**

- **74–77 mm**  
  3 males, 1 female

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**Mouth**
- **Terminal**

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**Size**
- **54 mm**
- **77 mm**
- **27 mm**

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**Sexual Dimorphism**
- **Mature males have white blotch on posterior portion of dorsal fin**
- **Chalky white or pink marks present on head or back of some individuals are not particular to this species and not helpful for identification**
- **Lower jaw protrudes in small juveniles, jaws are about even in adults**
Family: Agonidae — Poachers

Hypsagonus quadricornis  fourhorn poacher

- Blunt ocular and nuchal spines present
- Body profile high at nape
- Body relatively short and deep
- Large spines on body plates
- Pectoral, pelvic, and anal fin rays long and finger-like, largely without connecting membrane
- A short postocular spine may be present
- Barbel at tip of snout
- Specimen in water
Family: Agonidae — Poachers

*Leptagonus decagonus*  
Atlantic poacher

- **Snout projects beyond mouth**
- **Two dorsal fins**
- **Keels on body plates strongly developed, with sharp, recurved spines**
- **Caudal fin brownish black**
- **Pectoral fins pale to brownish black, especially on distal portion**
- **1 bifurcate barbel near tip of lower jaw (on each side)**
- **4 barbels around posterior end of upper jaw and corner of mouth (on each side)**
- **Barbels on underside of snout absent or rudimentary**
- **174 mm**
- **45 mm**
- **154 mm**
Family: Agonidae — Poachers

*Leptagonus frenatus*  
sawback poacher

- Snout projects beyond mouth
- 1 pair of long barbels on underside of snout
- 4 long barbels around posterior end of upper jaw on each side
- 1 bifurcate barbel on each side of lower jaw near front
- Pectoral, dorsal, and caudal fins brownish black
- Pectoral and dorsal fins with small white spots in some specimens
- Keels on body plates strongly developed, with sharp, recurved spines
- 200 mm
- 244 mm
- 253 mm female
- 249 mm male
- 244 mm
Family: Agonidae — Poachers

**Occella dodecaedron**

- Head and front part of body depressed (flattened)
- Short barbel at posterior end of upper jaw
- Mouth upturned

**Bering poacher**

- Posterior part of body compressed (side to side)
- Orange stripe along midside
- Lower jaw projects beyond upper jaw
- Grayish brown on back, white or bluish white on underside
- Anal fin with 14–16 rays
**Family: Agonidae — Poachers**

*Pallasina barbata*  
**tubenose poacher**

- **Snout long and tubelike**
- **Body tapers to narrow tail**
- **Barbel at tip of lower jaw**
- **Mouth terminal, upturned, lower jaw projecting**
- **Chin barbel small in some populations, individuals, or juveniles**

Preserved specimen: 564 mm
Family: Agonidae — Poachers

**Percis japonica**  dragon poacher

- Body elongate
- Body profile high at nape
- No nuchal spine
- No barbel at tip of snout
- Dorsal fins far apart at bases

Body length: 330 mm
Family: Agonidae — Poachers

*Podothecus accipenserinus* sturgeon poacher

Uppermost preopercular spine not expanded outward in adults

Uppermost preopercular spine moderately expanded outward in some juveniles

Dense clusters of barbels under snout and at corner of mouth

Mouth completely on underside of head and has gap when closed

13–19 snout barbels on each side

264 mm, male

247 mm, female

264 mm,

247 mm,

76 mm,

76 mm,

35 mm

Uppermost preopercular spine not expanded outward in adults

Uppermost preopercular spine moderately expanded outward in some juveniles

Dense clusters of barbels under snout and at corner of mouth

Mouth completely on underside of head and has gap when closed

13–19 snout barbels on each side

264 mm, male

247 mm, female

264 mm,

247 mm,

76 mm,

76 mm,

35 mm

(ventral view)
Family: Agonidae — Poachers

*Podothecus veternus*  
**veteran poacher**

- **Uppermost cheek spine flattened and expanded outward**
- **Dense clusters of barbels under snout and at corners of mouth**
- **6–11 barbels in each snout cluster**
- **Mouth completely on underside of head and has gap when closed**
- **Black blotch on margin of first dorsal fin at front**

**Measurements:**
- **172 mm male**
- **131 mm female**
- **150 mm male**
- **125 mm female**
- **39 mm** (preserved specimen)
- **36 mm**
Family: Cyclopteridae — Lumpsuckers

*Cyclopteropsis jordani* smooth lumpfish

First dorsal fin high, spines unequal in length with middle the longest

No tubercles on posterior part of body

Tubercles in at least 3 rows, well developed, sharply conical

62 mm SL

No tubercles between eyes

Pelvic disk large

Mouth large, cleft wider than interorbital space

(Damage to right side of specimen is due to dissection for the systematic revision of the Cyclopteridae by Ueno [1970]. Caudal fin is missing.)
Family: Cyclopteridae — Lumpsuckers

*Cyclopteropsis mcalpini*  
Arctic lumpsucker

A few bony plates with small spinules, only on sides anteriorly

Mouth directed obliquely upward

Head, belly, and posterior part of body naked

Dorsal fin spines about same length, making fin profile nearly straight

All photos show same adult male
Family: Cyclopteridae — Lumpsuckers

*Cyclopterus lumpus*  
lumpfish

**First dorsal fin** high, crestlike, covered with thick skin

- Body completely covered with small tubercles
- Three rows of large tubercles on each side

- Rows of large tubercles develop by about 20–22 mm TL

- **326 mm female**
- **90 mm**
- **86 mm**
- **29 mm**
- **14 mm**
Family: Cyclopteridae — Lumpsuckers

*Eumicrotremus andriashevi*  
pimpled lumpsucker

First dorsal fin not covered with thick skin

Midoccipital row of tubercles present

Tubercles large and close together

Tubercles present on chin and pectoral fin bases

Large tubercles between dorsal fins often fused

Several irregular rows of small tubercles in interorbital space

56 mm

571
Family: Cyclopteridae — Lumpsuckers

\textit{Eumicrotremus derjugini} leatherfin lumpsucker

- Tubercles absent from chin, throat, and pectoral fin base
- First dorsal fin keel-like, covered with thick skin and tubercles
- Tubercles widely spaced
- Blackish brown on face and back, lighter on lower sides and belly
- Tubercles not developed in this 36-mm specimen
- Tubercles develop around 40 mm TL, sometimes present in smaller species
- Tubercles sometimes present in small species

572
Family: Cyclopteridae — Lumpsuckers

**Eumicrotremus orbis** Pacific spiny lumpsucker

- **70 mm female**
  - First dorsal fin not covered with thick skin
  - Tubercles large and close together

- **4 large tubercles across interorbital space**

- **Row of small tubercles present in adults between dorsal and postorbital rows**

- **Tubercles on chin, throat, and pectoral fin bases**

- **Females pale green, males orange to reddish brown**
  - 29 mm male
  - 4 tubercles across interorbital space develop early in growth

- **Row of small tubercles between dorsal and postorbital rows not developed at this small size, and not present under first dorsal fin in males**

- **Males have fewer, more widely spaced tubercles than females, even as adults**

573
Family: Cyclopteridae — Lumpsuckers

*Eumicrotremus spinosus*  
Atlantic spiny lumpsucker

- First dorsal fin not covered with thick skin
- 4 large tubercles across interorbital space
- Tubercles large and close together
- Inner interorbital row does not diverge to form row of small tubercles between dorsal and postorbital rows (is continuous with dorsal row)
- Tubercles on chin and pectoral fin bases
- 4 tubercles across interorbital space develop early in growth
- Males have fewer, more widely spaced tubercles than females, even as adults
Family: Liparidae — Snailfishes

*Careproctus kidoi*  
Kido’s snailfish

- **Mouth cavity and peritoneum dark brown to black**
- **Gelatinous layer well developed**
- **One suprabranchial pore**
- **Gill opening extending down in front of 2 or 3 pectoral fin rays***
- **Light to dark brown or black**
- **87 mm SL female**
- **59 mm SL male**
- **81 mm SL female**

*See illustration on page 282.*
Family: Liparidae — Snailfishes

*Careproctus micropus*  
*smalleye tadpole*

- **One suprabranchial pore**
- **Pupal round**
- **Mouth cavity and peritoneum pale**
- **Lower pectoral fin rays short, not extending below more than 20% of the length of the upper rays**
- **Pectoral fin rays 27–31**
- **1 nostril on each side (2 in *Liparis* species)**
- **Pale grayish orange or purplish with pale to dark dusky dorsal and anal fins**

*See illustration on page 283.*
Family: Liparidae — Snailfishes

*Careproctus reinhardtii*  sea tadpole

- Coloration pale pink or pinkish gray to orange-pink, with silvery white belly
- Pelvic disk small, about size of eye
- Anus close to disk (not close in *Liparis*)
- Translucent envelope most pronounced in juveniles
- Pupil round
- Peritoneum pale
- Rays of lower pectoral fin lobe long, overlapping more than 45% of upper lobe
- 1 nostril on each side (2 pairs in *Liparis* species)
- Gill opening entirely above pectoral fin base or extending down in front of first few rays
- 2 suprabranchial pores (not easily or always discernible)
- Pectoral fin rays 27–36

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**Measurements:**
- 211 mm
- 163 mm
- 143 mm
- 73 mm

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577
**Liparis atlanticus**

**Atlantic snailfish**

- **Family:** Liparidae — Snailfishes

- Anterior nostrils longer than posterior
- Dorsal fin with distinct notch after ray 5 or 6
- First 4 or 5 dorsal fin rays prolonged and with tips free
- Dorsal fin rays 31–35
- Pectoral fin rays 27–31
- Coloration variable, olive to reddish brown, gray, or black
- Anal fin rays 25–29
- Dorsal and anal fins barely reach caudal fin base or only slightly overlap caudal fin
- Gill opening short, above base of pectoral fin or extending down in front of 1 or 2 rays
- Pelvic disk large, up to 26% of body length
- 92 mm (preserved specimen)
Family: Liparidae — Snailfishes

*Liparis bathyarcticus*  
**nebulous snailfish**

- **Liparis** bathyarcticus**  
  - Vague to distinct blackish bands on dorsal and anal fins**
  - Peritoneum with little or no pigmentation (requires dissection)**
  - Long pectoral fins**
  - Long gill opening**
  - Head and body in Pacific Arctic typically with brown mottling and metallic gold sheen**
  - Striped, spotted, and barred variations common in other regions including Atlantic Canada**

- **Vague** to **distinct** blackish bands on dorsal and anal fins**
- **Peritoneum** with little or no pigmentation (requires dissection)**
- **Long** pectoral fins**
- **Long** gill opening**
- **Head and body** in **Pacific Arctic** typically with brown mottling and metallic gold sheen**
- **Striped, spotted, and barred** variations common in other regions including Atlantic Canada**
Family: Liparidae — Snailfishes

*Liparis fabricii* gelatinous seasnail

- Large eyes
- Peritoneum black, shows through body wall
- Typically with blackish bands on dorsal and anal fins
- Head and body brown to dark gray or black

Dimensions:
- 33 mm (alcoholic specimen)
- 32 mm
- 30 mm
- 94 mm
- 86 mm
- 70 mm
- 54 mm
Family: Liparidae — Snailfishes

*Liparis gibbus* variegated snailfish

- **Long gill opening**
- **Long pectoral fins**

Coloration highly variable, from fine speckles or small dots to bold stripes, bars, or other patterns

Peritoneum with little or no pigmentation (requires dissection)

- 27 mm
- 70 mm
- 95 mm
- 102 mm
- 122 mm
- 154 mm
- 183 mm
- 210 mm
Family: Liparidae — Snailfishes

*Liparis tunicatus* kelp snailfish

**Gill opening** short, usually not extending down in front of pectoral fin rays

**Peritoneum pale** (requires dissection)

**Anterior nostril** much larger than posterior nostril

**Coloration** nearly monotone brown to boldly striped or blotched

**Caudal fin** usually with 1 prominent broad black bar and 1 or more vague narrow bars

**107 mm**

**99 mm**

**91 mm**

**90 mm**

**81 mm**

**76 mm**

**35 mm**

**36 mm**
Family: Liparidae — Snailfishes

*Paraliparis bathybius*  
black seasonail

- **Gill opening short, above pectoral fin**
- **Body elongate**
- **1 nostril on each side**
- **Lower pectoral fin lobes each with 3 or 4 distinctly separate rays**
- **Pelvic fins and pelvic disk absent**
- **Coloration pinkish gray to brownish black, darkest on head**
- **Pyloric caeca long and tapered**
- **Body elongate**
- **Gill opening short, above pectoral fin**
- **Body elongate**
- **1 nostril on each side**
- **Lower pectoral fin lobes each with 3 or 4 distinctly separate rays**
- **Pelvic fins and pelvic disk absent**
- **Coloration pinkish gray to brownish black, darkest on head**
- **Pyloric caeca long and tapered**

198 mm preserved specimen

~220 mm
**Family:** Liparidae — Snailfishes

**Paraliparis copei**  
blacksnout season

- Head and body very pale, almost white, no dark pigment along back
- Body elongate
- Lips, gill cavity, and peritoneum black
- Upper and lower pectoral fin lobes separated by a distinct notch
- 1 nostril on each side
- Gill opening short, above pectoral fin base
- Pelvic disk and pelvic fins absent
Family: Liparidae — Snailfishes

*Rhodichthys regina*  threadfin seasnail

- Body elongate
- Black peritoneum
- Gill opening very long, extending almost to lower pectoral rays
- Lower rays of pectoral fins are bound together in lobes with bifid or trifid filamentous ends
- Pelvic fins and pelvic disk absent
- 2 pairs of nostrils
- Body and fins reddish pink to red
- 170 mm
Family: Carangidae — Jacks

**Trachurus trachurus**  
Atlantic horse mackerel

- Adipose eyelid well developed
- First dorsal fin high, longest spine longer than anterior lobe of second dorsal fin
- Dusky gray to nearly black or bluish green on back, lower sides and belly white to silvery
- Caudal fin forked
- Lower jaw slightly protruding beyond upper jaw
- Black spot near upper angle of operculum
- Scales in lateral line enlarged and thickened as scutes, and expanded dorsally and ventrally
- Caudal peduncle slender
- Caudal fin slender

33 cm
Family: Zoarcidae — Eelpouts

*Gymnelus hemifasciatus* halfbarred pout

- Chin crests absent
- Pelvic fins absent
- Pelvic fins absent
- Mottled pattern on nape and back
- Adult males of typical form turn orange
- Dorsal fin origin usually above anterior half of pectoral fin
- Anal fin black in adult males of both forms
- Bands narrow or wide but relatively uniform in solid-band form
- Bands disintegrate into checkered or mottled pattern toward tail in typical form
- One or more ocelli often present on dorsal fin in both forms
- Bands narrow or wide but relatively uniform in solid-band form
- Female of solid-band form
- Juveniles of solid-band form
- Juvenile of typical form

- 176 mm, female
- 149 mm, female
- 142 mm, male
- 128 mm, male
- 114 mm, male
- 101 mm, female
- 159 mm, female
- 76 mm, female
- 54 mm, male
- 63 mm
Family: Zoarcidae — Eelpouts

**Gymnelus retrodorsalis**  aurora pout

- Predorsal distance long, 25–31% TL
- Dorsal fin origin posterior to tip of extended pectoral fin
- One or more black ocelli ringed with white often present on dorsal fin
- Pectoral fin rays usually 10 or 11
- Pelvic fins absent
- Chin crests absent
- Anal fin black in adult males
- 11–16 broad brown bands
- Pectoral fins narrow at base, width at base about 1/3 the length of the fin
- 115 mm male
- 122 mm female
- 92 mm gravid female

122 mm gravid female

588
Family: Zoarcidae — Eelpouts

Gymnelus viridis  fish doctor

- Dorsal fin origin usually above posterior half of pectoral fin
- Chin crests absent
- Pelvic fins absent
- Anal fin black in adult males
- Dark bands indistinct against dark background in large males
- Background remains white to pale tan in adult females
- Pectoral fin rays usually 11–13
- One or more black ocelli ringed with white often present on dorsal fin
- Bands sometimes split by mottling and look like two bands, especially when viewed from above
- Background remains white to pale tan in adult females

- 187 mm, male
- 188 mm, female
- 174 mm, male
- 172 mm, female
- 146 mm, female
- 121 mm, female
- 70 mm
Family: Zoarcidae — Eelpouts

*Lycenchelys kolthoffi*  
checkered wolf eel

- Dark brown spots and patches on sides and dorsal fin
- Body elongate, slender, depth 5–6% TL at anal fin origin
- White to yellowish white background
- Pectoral fins long, 10–11% TL
- Body covered with small cycloid scales except absent from back in front of dorsal fin, belly, and dorsal and anal fins

183 mm

171 mm  
live specimen in water

590
Family: Zoarcidae — Eelpouts

*Lycenichelys muraena*  
**moray wolf eel**

- Head small, 11–13% TL
- Dorsal fin dark, anal fin light
- Body light to dark brown dorsally, without spots or other markings, lighter ventrally
- Body elongate, slender, depth 4–5% TL at anal fin origin
- Pectoral fins pale, with dark area along dorsal margin
- Body densely covered with small cycloid scales, including abdomen

Body: densely covered with small cycloid scales, including abdomen.
Family: Zoarcidae — Eelpouts

*Lycenchesys paxillus*  common wolf eel

- **Eye large,** 2.4–3.7% SL
- **Body and fins** uniformly dark brown
- **Body** elongate, slender, depth 4–7% TL at anal fin origin
- **Pectoral fins** uniformly dark brown
- **Body densely covered with small cycloid scales, including abdomen**
- **Body** and **fins** uniformly dark brown

164 mm

215 mm
Family: Zoarcidae — Eelpouts

*Lycenichelys platyrhina*  naked wolf eel

- **Head dorsoventrally flattened anteriorly; seen from above, snout broad and rounded**
- **Lateral line ventrolateral**
- **Body uniformly dark brown, fins slightly paler**
- **Head large, 19–22% TL**
- **Body moderately elongate, depth 6–10% TL at anal fin origin**
- **Scales absent**

111 mm SL
Family: Zoarcidae — Eelpouts

*Lycenchelys sarsii*  
Sars’ wolf eel

- **Body** densely covered with small cycloid scales, including bases of vertical fins
- **Lateral lines** mediolateral and ventral
- **Body** elongate, slender, depth 5–6% TL at anal fin origin
- **Pectoral fins** pale anteriorly, dark posteriorly
- **Head pores** large
- **Often with irregular brown spots** on abdomen and along anal fin
- **Body dark brown dorsally, sharply separated from pale ventral surface**
Family: Zoarcidae — Eelpouts

*Lycoodes adolfi*  Adolf’s eelpout

- Pectoral fin rays 16–19, long and thin
- Lateral line ventral, may be difficult to see
- Scales present only posteriorly, beginning at midpoint of fish or further back
- Brownish black turning grayish brown toward the tail, no distinctive color markings

- 193 mm
- 130 mm
- 70 mm
Family: Zoarcidae — Eelpouts

*Lycodes esmarkii* greater eelpout

- 4–9 irregularly shaped white bands on body and dorsal and anal fins
- Body and bases of dorsal, anal, and pectoral fins densely covered with small cycloid scales
- 75 mm: White bands typically more complex and solid in juveniles
- 160 mm: White bands across head
- 440 mm: White bands on body
- Pectoral fin rays 21–23
- Scales present on abdomen
- Lateral lines ventral and mediolateral
- Head pores small
- White band or spots across head above opercular lobes

596
**Family: Zoarcidae — Eelpouts**

*Lycoodes eudipleurostictus*  
**doubleline eelpout**

- **Brown to blackish brown with 5–13 narrow pale bands**
- **Bands simple, not mottled or reticulate, even in large specimens**

- **Pectoral fin margin indented, forming weakly expressed lower lobe**
- **Lateral line double, with complete mediolateral and ventral branches**

- **Pectoral fin rays 19–23**
- **Body covered with small cycloid scales, including nape, abdomen, and dorsal and anal fins**

- **Chin crests low to moderate**

- **Black peritoneum shows through body wall, especially in young fish**
Family: Zoarcidae — Eelpouts

*Lyco*des *frigidus*  glacial eelpout

- Dark gray-brown or gray-violet, without stripes, bands, or other patterns
- Chin crests low, barely evident in adults
- Lateral line ventral, may be difficult to see
- Scales very small, 50 or more rows at midbody between dorsal and anal fins
- Scales absent from dorsal, anal, and caudal fins
- Pectoral fin rays 19–21
- 280 mm
- 76 mm
- 53 mm
Family: Zoarcidae — Eelpouts

*Lycoes gracilis*  
**gracile eelpout**

- **Peritoneum black**
- **Scales absent from abdomen**
- **Ventral lateral line most conspicuous (other rows are predorsal and dorsolateral)**
- **Jaw teeth blunt and robust**
- **Head pores small**
- **0–10 black bands on dorsal fin, typically more numerous anteriorly**
- **Body and bases of dorsal and anal fins covered with small cycloid scales**
- **0–31 more or less conspicuous small black dots on side**
- **Pectoral fin rays 15–21**
- **Chin crests moderately pronounced**

212 mm

220 mm

267 mm
Family: Zoarcidae — Eelpouts

*Lycodes jugoricus*  shulupaoluk

- Chin crests low, partially fused at tips
- Scales absent
- Background white to pale yellowish, bars and top of head brown
- 7–9 wedge-shaped dark bands with lighter centers, widening dorsally and extending onto dorsal fin
- Wedge-shaped dark bands are mostly solid and complete in juveniles
Family: Zoarcidae — Eelpouts

*Lycodes lavalaei*  
**Laval eelpout**

- **Dark reticulation increases and bands become less distinct with growth**
- **Body and bases of dorsal and anal fins densely covered with small cycloid scales**
- **Caudal fin very short**
- **Pectoral fin large, 14–19% TL, with 18–20 rays**
- **Scales absent from abdomen**
- **Lateral line mediolateral**
- **Dorsal fin in adults with white-edged black margin**
- **Upper lip large, overhanging lower jaw**
- **Chin crests moderate, not fused anteriorly**
- **Light band across head in juveniles, less distinct in adults**
- **Juveniles with dark brown or blackish bands, wider on dorsal fin than sides**

*58 cm*  
*192 mm*
Family: Zoarcidae — Eelpouts

*Lycodes luetkenii*  
Lütken’s eelpout

- **Head** large, 25–29% TL
- **Scales** absent in front of dorsal fin
- **Body** covered with small cycloid scales
- **Body** gray-brown or pink with 6–8 white bars
- **Light band** curves forward over top of head
- **Scales** absent from abdomen
- **Lateral line** mediolateral
- **Pectoral fins** large, 15–20% TL, with 22–24 rays
- **Pectoral fins** typically pink
- **Body** gray-brown or pink with 6–8 white bars
- **Scales** absent in front of dorsal fin
- **Body** covered with small cycloid scales
- **Body** gray-brown or pink with 6–8 white bars
- **Head** large, 25–29% TL
- **Scales** absent in front of dorsal fin
- **Body** covered with small cycloid scales
- **Body** gray-brown or pink with 6–8 white bars
- **Light band** curves forward over top of head
- **Scales** absent from abdomen
- **Lateral line** mediolateral
- **Pectoral fins** large, 15–20% TL, with 22–24 rays
- **Pectoral fins** typically pink

*juvenile*
Family: Zoarcidae — Eelpouts

*Lycomes marisalbi*  White Sea eelpout

- Lateral line descends toward anal fin, ascends sharply well behind anal fin origin and continues mediolaterally; may be difficult to see (not visible in this photo)
- Chin crests high, well separated anteriorly, tips rounded
- Scales absent from abdomen and fins
- Scales absent from nape (in front of dorsal fin)
- Pale bands extending from dorsal fin to anal fin in most specimens
- Peritoneum speckled (requires dissection)

65 mm  135 mm  60 mm
Family: Zoarcidae — Eelpouts

*Lycoodes mcallisteri*  McAllister’s eelpout

- Nasal tubes short, not reaching upper lip
- Chin crests low, not fused anteriorly
- Eye large, elliptical*
- White bar across head
- Pectoral fin rays 22–23
- Scales present on predorsal area, abdomen, and pectoral fin bases
- Preanal length relatively short, 43–46% SL
- Ventrolateral lateral line with bend located above anal fin origin
- Body covered with small cycloid scales
- Reddish to dark brown with 6–10 white bars or patches along back and dorsal fin
- Scales present on predorsal area, abdomen, and pectoral fin bases

*In photo, eye enters dorsal profile, but originally described (Møller 2001a) as not entering dorsal profile. Fish may be tilted slightly to the right side, giving false impression.*
Family: Zoarcidae — Eelpouts

*Lycoodes mucosus*  
saddled eelpout

- **92 mm**
  - Scaled present only on posterior half of body, if present
  - In Pacific Arctic, 6 broad brown marks on body, some with U or Y shapes reaching anal fin margin

- **187 mm**
  - Eyes closer together than in *Lycodes turneri*
  - Sometimes with pale spot behind each eye
  - Pale band arches forward over head
  - Brown upper part of head and saddles typically are clearly separated from the white background color in small juveniles

- **229 mm**
  - Dark areas increase and saddles and bands become less distinct with growth

- **318 mm**
  - **42 mm**
  - **66 mm**
  - **100 mm**
  - **298 mm**
  - **481 mm**
Family: Zoarcidae — Eelpouts

**Lycodes paamiut**  
*Paamiut eelpout*

- Nasal tubes short, not reaching upper lip
- Eye large, circular, enters dorsal profile
- Body covered with small cycloid scales
- Mediolateral lateral line from above anus to posterior end of body (other rows are predorsal, dorsolateral, and ventral)
- Chin crests moderate, not fused anteriorly
- Peritoneum and edge of operculum dark brown or black
- Scales present on abdomen
- Scales absent from nape in front of dorsal fin
- First dorsal fin pterygiophore associated with vertebra 4 or 5 (rarely 6)
- Scales present on abdomen
- Pelvic fins relatively long, with 3 rays, tips free
- Pectoral fin rays 18–21, lower 5–8 rays free and thickened
- Body light to dark brown, without marks or bars

157 mm

181 mm
Family: Zoarcidae — Eelpouts

*Lyodes palearis*  
**wattled eelpout**

- **Typically with black blotch at front of dorsal fin, disappears with growth in some individuals.**
- **Chin crests high, sharp, project forward.**
- **Scales dense on belly.**
- **Scales present on body, extend onto head to a line connecting the gill openings, and dorsal and anal fins (in large juveniles and adults).**
- **Narrow white bars, fade and disappear with growth.**
- **2 pale bars in front of dorsal fin, usually disappear with growth.**
Family: Zoarcidae — Eelpouts

*Lycodes pallidus* pale eelpout

- Body uniformly gray-brown to brown or with 3–12 pale bars
- Pelvic fins short, 11–14% TL
- Pectoral fin margin oblique
- Pectoral fins brown, sometimes with base and lower portion white
- Indistinct mediolateral row of neuromasts from above anus to posterior end of body
- Ventral row of neuromasts disappears above anal fin rays 10–20
- Chin crests low to moderately high, separated at symphysis
- Scales absent from predorsal area and abdomen
- Body mostly covered with small cycloid scales
- Head pore small, with small tubes
- 10–18 scales in vertical row from anal fin origin to base of dorsal fin
- 608
Family: Zoarcidae — Eelpouts

*Lycodes polaris*  
polar eelpout

- **Scales absent**
- **9–11 dark bands with pale centers on body and dorsal fin**
- **Coloration usually dark**
- **320 mm**

- **Chin crest tips rounded, well separated, not projecting forward**
- **239 mm**

- **Coloration occasionally pale**

- **220 mm**

- **Chin crests may be high but are rounded (not sharp and not projecting forward as in *L. palearis*)**

- **180 mm**

- **Pale band on head goes straight across, not curving forward**
- **37–43 mm**

- **68 mm**

- **180 mm**

609
Family: Zoarcidae — Eelpouts

**Lycoedem raridens** marbled eelpout

- Dark brown marbled pattern on head and nape
- Scales extend forward to bases of pectoral fins and onto dorsal and anal fins
- Tips of chin crests rounded and widely separated
- Scales absent from abdomen
- Bands black at dorsal fin margin
- Brown bands solid in young fish, become broken and mottled with growth
- Brown patch under eye does not reach eye
- Pale band arching forward on head persists in adults
- Pale spots behind eyes present at early age

- 208 mm
- 388 mm
- 138 mm
- 40–48 mm
- 114 and 128 mm
Family: Zoarcidae — Eelpouts

*Lycodes reticulatus*  Arctic eelpout

- Reticulate pattern on head and neck in adults
- 7–10 broad dark brown bands; anterior bands become reticulate in adults
- Scales absent from nape, sides below dorsal fin anteriorly, lower sides anteriorly, belly, and fins
- Usually 20 pectoral fin rays
- Chin crests close together at symphysis
- Scales extend forward to a point under or a little in front of dorsal fin origin
- Preserved specimen
Family: Zoarcidae — Eelpouts

*Lycodes rossi*  
threespot eelpout

- Chin crests low to high anteriorly, tips rounded
- Scales extend forward to a point under or a little in front of dorsal fin origin in adults
- 5–9 pale bands extend from sides onto dorsal fin
- Usually 18 or 19 pectoral fin rays
- Top of head does not become reticulate, as it does in *L. reticulatus*
- Scales absent from nape, sides below dorsal fin anteriorly, lower sides anteriorly, belly, and fins
- Bands may be irregularly shaped but are not reticulate
- Pale band across top of head broken into 2 or 3 spots, solid, or absent
- Head in some specimens mottled and spotted, but not reticulate
- Chin crests widely spaced at symphysis
- Preserved specimen
- Juveniles pale ventrally, darken with growth of fish

230 mm

203 mm

188 mm

165 mm

130 mm
Family: Zoarcidae — Eelpouts

*Lycodes sagittarius*  archer eelpout

- Chin crests low to moderately high, well separated at symphysis
- Scales present on predorsal area in adults
- Pelvic fins long
- 16–17 pectoral fin rays
- Lateral line ascends sharply in front of or above beginning of anal fin
- Scales pale, distinct against dark background
- Scales cover body, including abdomen, and extend onto dorsal, anal, and caudal fins
- Abdomen blue in juveniles
- Body dark grayish to blackish brown, no pale bands or bars; operculum, top of head, and fins darker
- 427 mm
- 294 mm
- 115 mm
Family: Zoarcidae — Eelpouts

*Lycodes seminudus*  longear eelpout

Scales present on sides posteriorly, extend forward in wedge pattern to tip of pectoral fin or slightly in front of anal fin

Scales absent from nape

Dark brown or black to white, solid-colored or with pale bands

Chin crests low and rounded

Opercular flap longer and more dorsally directed than in other *Lycodes*

Pectoral fins fan-shaped, short and stout

Scales absent from abdomen and fins

Lateral line mediolateral

614
Family: Zoarcidae — Eelpouts

*Lycodes squamiventer*  
**scalebelly eelpout**

- Body light to dark grayish brown, no pale bands or bars; fins and operculum dark brown to black
- Scales present on predorsal area in adults
- Pelvic fins short, less than eye diameter
- Long nasal tubes
- Chin crests moderately high, close together at symphysis
- 17–20 pectoral fin rays
- 19–28 scales in vertical row from anal fin origin to dorsal fin base
- Mediolateral branch of lateral line present from above anus nearly to caudal fin
- Ventral branch of lateral line present
- Small cycloid scales cover body and extend onto posterior portions of dorsal and anal fins
- Abdomen black to bluish black in juveniles
- Scales present on abdomen
- Abdomen black to bluish black in juveniles

*Measurements:*
- 358 mm
- 164 mm
- 92 mm
- 73 mm
Family: Zoarcidae — Eelpouts

**Lyco**des **t**urneri estuarine eelpout

- Bands usually remain fairly distinct in adults.
- 8–12 broad reddish brown to purplish brown bands with blackish borders extend from sides onto dorsal fin.
- Scales absent from head, body, fins.
- Sometimes with pale spot behind each eye.
- Pale band arches forward over head.
- Caution: Some individuals have U-shaped bands (compare with *L. mucosus*).
- Most dark bands do not extend onto anal fin.

- 145 mm within a few hours of capture.
- 438 mm preserved specimen.
- 117 mm after freezing and thawing.
- 65 mm after freezing and thawing.

- 616
Family: Zoarcidae — Eelpouts

*Lycodes vahlii*  
**checker eelpout**

- Teeth blunt
- Chin crests moderate, not fused anteriorly
- 5–12 dark brown to blackish bands on sides and extending onto dorsal fin
- Body densely covered with small cycloid scales
- Pectoral fins short, 9–15% TL, with 18–20 rays
- Dark brown or blackish bands more solid in juveniles, become reticulated with growth
- Scales present on abdomen
- Lateral line ventral
- Head pores small

355 mm

140 mm
Family: Zoarcidae — Eelpouts

*Lycodonus flagellicauda*  
whiptail scutepout

- **Body** elongate, slender, depth 3.5–4.5% TL at anal fin origin
- **Body** uniformly light to dark gray or brown, fins dark brown
- **Body** uniform in light to dark gray or brown
- **Head pores** very large
- **No bony plates** anterior to first dorsal fin ray
- **Bony plates along bases of dorsal and anal fins**
- **About 13 scales in line from anal fin origin to dorsal fin base**
- **Bony plates along bases of dorsal and anal fins**

*Images of Lycodonus flagellicauda* (whiptail scutepout) showing various anatomical features and measurements.
Family: Zoarcidae — Eelpouts

*Lycodonus mirabilis*  chevron scutepout

- Body elongate, slender, depth 3–4% TL at anal fin origin
- 25 or 26 scales in line from anal fin origin to dorsal fin base
- Head pores very large
- 6–12 bony plates anterior to first dorsal fin ray
- Bony plates along bases of dorsal and anal fins
- Body uniformly light to dark gray or brown, fins dark brown

211 mm
Family: Zoarcidae — Eelpouts

*Zoarces viviparus*  viviparous eelpout

Series of black blotches along side of body and dorsal fin

Shallow notch near end of tail with 6–13 short, spine-like rays

Coloration variable, depending on habitat. Often grayish brown above, yellowish below. Pectoral fins dusky yellow to orange, vertical fin margins with yellow to orange.
Family: Stichaeidae — Pricklebacks

*Acantholumpenus mackayi*  
blackline prickleback

- **Acantholumpenus mackayi**
- Black line on back along each side of dorsal fin
- No bands or bars on caudal fin
- Eye diameter less than snout length
- Two broken black lines below the dorsal line
Family: Stichaeidae — Pricklebacks

*Anisarchus medius* stout eelblenny

**Mouth slightly upturned**

146 mm

129 mm

126 mm

129 mm

64 mm

46 mm

43–46 mm

Dorsal and anal fins lap well onto caudal fin

Caudal fin rounded

Anal fin rays at posterior end of fin are longer than dorsal fin rays
Family: Stichaeidae — Pricklebacks

*Chirolophis ascanii*  
Atlantic warbonnet

- **Snout blunt**
- **Long, multibranched fleshy cirri on head between eyes**
- **Coloration variable, pale yellowish brown to dark reddish brown, with or without darker bands**
- **Dark ring around eye and stripe down cheek**
- **Sides of head, cheeks, and lower jaw without dermal appendages**
- **First few dorsal fin spines elongate and with straight or branched cirri, most pronounced in males**
- **Body elongate**
- **Supraorbital cirri more developed in males than females**
- **Short straight cirri on top of head**
- **623**
- **180 mm female**
- **210 mm female**
- **190 mm male?**
- **180 mm female**
- **88 mm**

Coloration variable, pale yellowish brown to dark reddish brown, with or without darker bands.
Family: Stichaeidae — Pricklebacks

*Chirolophis decoratus* decorated warbonnet

1 pair of long, fleshy multi-branched cirri between eyes (see photos below)

Caudal fin plain or mottled, no dark bars*

Shades of tan, brown, and orange or bluish with pale spots and dark bands

Many cirri on top of head

A few widely spaced simple cirri on cheeks and sides of head

First 4–9 dorsal fin spines elongate and with branched cirri

Pelvic fins pale

*Does not show well in this preserved specimen with wrinkled fin. See illustration on page 376.
Family: Stichaeidae — Pricklebacks

*Chirolophis snyderi*  
bearded warbonnet

- **2 pairs of long multibranched cirri** between eyes
- **Widely spaced branched cirri** on lower jaw and preopercle
- **Dark pelvic fins**
- **Dark bands offset in staggered rows**
- **2 broad bars** on caudal fin

122 mm, thawed specimen in water

122 mm, thawed specimen laid out

(Bright pinkish orange and lilac-red coloration lost due to freezing and thawing)
Family: Stichaeidae — Pricklebacks

*Eumesogrommus praecisus*  

Fourline snakeblenny

- **Head somewhat pointed**
- **Body deep and compressed**
- **2 or 3 spines at posterior end of anal fin**
- **More than 1 lateral line**
- **1–3 black spots, sometimes ringed with white, near front of dorsal fin**
- **Spines at end of anal fin**

- **Dark form**
- **Pale form**

**Measurements:**
- 150 mm
- 186 mm
- 135 mm
- 82 mm
- 31 mm

1–3 black spots, some ringed with white, near front of dorsal fin.
Family: Stichaeidae — Pricklebacks

*Leptoclinus maculatus*  
daubed shanny

Lower rays of pectoral fin longer and with tips free of the membrane

Snout overhangs lower jaw

5 dark brown saddles

Dorsal and anal fins do not reach caudal fin

Caudal fin margin straight

Caudal fin solid dark dusky in small juveniles

~ 50 mm

108–157 mm

146 mm

148 mm
Family: Stichaeidae — Pricklebacks

*Lumpenus fabricii* slender eelblenny

- **Mouth** horizontal, snout not overhanging lower jaw
- **Pectoral fins** without long, free lower rays
- **Dorsal and anal fins** barely reach or do not quite reach caudal fin
- **Caudal fin** rounded
- **Eye diameter** same as or less than snout length
- **Dark bands on caudal fin** relatively indistinct
- **Cautions**: Splotches on sides can look like dashlike marks on *L. sagitta.*
Family: Stichaeidae — Pricklebacks

*Lumpenus lampreataeformis*  snakeblenny

*Eye diameter greater than snout length*  
*Body very elongate, 15 times or more longer than deep*  
*Dorsal and anal fins do not reach caudal fin*  
*Caudal fin rounded*  

*Pectoral fins without long, free lower rays*  

229 mm

*Caudal fin damaged in this specimen*
Family: Stichaeidae — Pricklebacks

*Lumpenus sagitta*  
snake prickleback

- Eye diameter about equal to or greater than snout length
- Line of dark dashlike marks along midbody
- 3–9 distinct, irregularly shaped dark bands on caudal fin
- Dorsal and anal fins do not reach caudal fin

Measurements:
- Length: 130 mm
- Length range: 66–126–164 mm
- Width: 41–43 mm

630
Family: Stichaeidae — Pricklebacks

*Stichaeus punctatus*  
Arctic shanny

4–7 black spots, each with white, yellow, or orange stripe or blotch, on dorsal fin

Head pointed

No spines at posterior end of anal fin

1 lateral line

Body and fins yellowish brown to bright red

(Brown glob is detritus lodged against mouth.)
Family: Pholidae — Gunnels

*Pholis fasciata*  banded gunnel

- **Body strongly compressed**
- **Anal fin length less than distance from snout to anal fin**
- **Pectoral fins small, less than 50% of head length**
- **White blotches with black spots extend from back onto dorsal fin**
- **Coloration variable: bright red or orange to brown, yellowish green, or mostly yellow**
- **Pelvic fins tiny, occasionally absent (not shown in these photographs)**
- **Olive green band bordered with black followed by broad white band with fine black border behind**
- **Sinuous black bands reach ventral surface**
**Family: Pholidae — Gunnels**

*Pholis gunnellus*  
**rock gunnel**

- Coloration variable, matching habitat; yellowish to olive brown, reddish brown, and pale red
- On dorsal fin, 9–15 conspicuous black ocelli with white or yellow margins
- Indistinct darker bars present on body in some specimens
- Anal fin length less than distance from snout to anal fin
- Body strongly compressed posteriorly, somewhat rounded anteriorly
- Pectoral fins usually more than 50% of head length
- Anal and caudal fins yellow to orange
- Pelvic fins rudimentary
- Dark bar down cheek from eye
- Anal fin length less than distance from snout to anal fin
- Body strongly compressed posteriorly, somewhat rounded anteriorly
- Indistinct darker bars present on body in some specimens
- Pectoral fins usually more than 50% of head length
- Anal and caudal fins yellow to orange
- Pelvic fins rudimentary
- Dark bar down cheek from eye
Family: Anarhichadidae — Wolffishes

*Anarhichas denticulatus*  
**northern wolffish**

Adults gray or brown with darker brown or violet tones, plain or spotted

Pelvic fins absent

Anal fin rays usually fewer than 50

Dorsal and anal fins not confluent with caudal fin, tail not tapering to a point

Caudal fin more or less truncate

Body and dorsal fin covered with black spots, especially in smaller fish

Body and dorsal fin covered with black spots, especially in smaller fish

Two rows of teeth, no gap, behind canines

Lower jaw dentition

Upper jaw dentition

Anal fin rays usually fewer than 50

Dorsal and anal fins not confluent with caudal fin, tail not tapering to a point

Caudal fin more or less truncate

Body and dorsal fin covered with black spots, especially in smaller fish
Family: Anarhichadidae — Wolffishes

*Anarhichas lupus*  Atlantic wolffish

- Rows of teeth narrow behind canines
- Largest teeth are situated posterior to the narrow area
- Lower jaw dentition

- Premaxilla
- Palatine
- Vomer
- Vomerine tooth patch much longer than palatine patches and extending farther posteriorly
- Upper jaw dentition

- Irregular brown bands on sides and dorsal fin
- Pelvic fins absent
- Anal fin rays usually fewer than 50
- Caudal fin more or less truncate (more rounded than in *A. minor*)
- Dorsal and anal fins not confluent with caudal fin, tail not tapering to a point

- ~640 mm
- 192 mm
- 150 mm
- 58 mm

635
Family: Anarhichadidae — Wolffishes

*Anarhichas minor*  
spotted wolffish

- Pelvic fins absent
- Anal fin rays usually fewer than 50
- Caudal fin truncate
- Spots develop on larger fish
- Dorsal and anal fins not confluent with caudal fin, tail not tapering to a point
- Wide dark bars on small juveniles
- No distinct gap or narrowing of tooth rows behind canines
- Distinct, round, almost black spots on sides and back

Lower jaw dentition

Upper jaw dentition

Lower jaw dentition

Upper jaw dentition

Premaxilla

Palatine

Vomer

Vomerine tooth patch extends posteriorly almost as far as palatine patches or (rarely) slighty beyond them
Family: Anarhichadidae — Wolffishes

*Anarhichas orientalis*  
Bering wolffish

**Adults** brown, reddish brown, or nearly black, with darker blotches roughly arranged in bands.

- Anal fin rays usually more than 50
- Caudal fin round
- Dorsal and anal fins not confluent with caudal fin, tail not tapering to a point
- Larger juveniles with dark longitudinal stripes, less orange
- Small juveniles silvery, with bold black spots, longitudinal stripes, and orange fins

**Gap or single row of teeth** in narrow area of mandible between canines and rows of blunt conical or worn-out teeth.

**Premaxilla**

**Palatine**

**Vomer**

**Upper jaw dentition**

**Lower jaw dentition**
Family: Zaproridae — Prowfishes

Zaprora silenus  profish

- Adults grayish to brown with or without spots and blotches
- Body and dorsal, anal, and caudal fins covered with small cycloid scales
- Pectoral fin longer than head
- Head pores large, open, and numerous
- Pelvic fins absent
- Caudal peduncle short and deep
- Dorsal fin continuous, without notches or elongate elements

- 333 mm
- 139 mm
- 85 mm
- 68 mm
- 20–30 mm
Family: Ammodytidae — Sand lances

*Ammodytes americanus*  
**American sand lance**

- **Head pointed, lower jaw protruding**
- **Numerous close-set oblique skin folds bearing scales along sides (plicae)**
- **Dorsal fin folds down into a groove**
- **Metallic brown to gray brown dorsally, silvery white below, often with blue or gold cast**
- **Caudal fin forked**
- **Lateral line high, running below dorsal fin**
- **Scales on belly loosely arranged**
- **106–126 plicae, usually 112–124**
- **No scales on base of caudal fin**

**~100 mm**

**~150 mm**
Family: Ammodytidae — Sand lances

*Ammodytes dubius*  northern sand lance

- Lateral line high, running below dorsal fin
- Numerous close-set oblique skin folds bearing scales along sides (plicae)
- Dorsal fin folds down into a groove
- Caudal fin forked
- 205 mm preserved specimen
- Head pointed, lower jaw protruding
- Pelvic fins absent
- Scales on belly loosely arranged
- 124–147 plicae, usually 129–138
- Metallic brown to dark gray dorsally, silvery ventrally (colors and sheen turn dull soon after death)
- No scales on base of caudal fin

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640
Family: Ammodytidae — Sand lances

*Ammodytes hexapterus*  
**Arctic sand lance**

- Lateral line high, running below dorsal fin
- Dorsal fin folds down into a groove
- Head pointed, lower jaw protruding
- Numerous close-set skin folds bearing scales (plicae)
- Silvery sheen turns dull soon after death
- Pelvic fins absent
- Silvery body with bluish or golden cast, dark on back and upper sides
- Caudal fin forked
- Lateral line high, running below dorsal fin
- Dorsal fin folds down into a groove
- Head pointed, lower jaw protruding
- Numerous close-set skin folds bearing scales (plicae)
- Silvery sheen turns dull soon after death
- Pelvic fins absent
- Silvery body with bluish or golden cast, dark on back and upper sides
- Caudal fin forked

176 mm

149 mm

136 mm
Family: Ammodytidae — Sand lances

Ammodytes marinus  lesser sand-eel

- Head pointed, lower jaw protruding
- Pelvic fins absent
- Scales on belly loosely arranged
- Number of plicae not diagnostic for this species
- Metallic brown to dark gray dorsally, silvery ventrally
- No scales on base of caudal fin
- Lateral line high, running below dorsal fin
- Numerous close-set oblique skin folds bearing scales along sides (plicae)
- Dorsal fin folds down into a groove
- Caudal fin forked
- Scales on belly loosely arranged
- 142 mm

Number of plicae not diagnostic for this species.
Family: Ammodytidae — Sand lances

*Ammodytes tobianus* small sand-eel

- **179 mm**
- **Caudal fin** forked
- **Dorsal fin** folds down into a groove
- **Lateral line** high, running below dorsal fin
- **Numerous close-set oblique skin folds bearing scales along sides (plicae)**
- **Head pointed, lower jaw protruding (and premaxillae protractile)**
- **Pelvic fins absent**
- **Scales on belly arranged in tight chevrons**
- **Number of plicae not diagnostic for this species**
- **Metallic brown to dark gray on back and upper sides, silvery below**
- **Scales present on base of caudal fin**
Family: Scombridae — Mackerels and tunas

*Scomber scombrus*  
Atlantic mackerel

**Description:**
- **Adipose eyelid well developed**
- **Back and upper sides blue-green with dark, curving vertical stripes**
- **Body elongate, round in cross-section**
- **5 dorsal finlets**
- **Caudal fin forked**
- **5 anal finlets**
- **Dorsal fins far apart**
- **2 keels on side of caudal peduncle**
- **Anal fin opposite second dorsal fin**
- **33–36 cm**

**Characteristics:**
- **Body:** Elongate, round in cross-section.
- **Back and upper sides:** Blue-green with dark, curving vertical stripes.
- **Dorsal fins:** Far apart, with 5 finlets.
- **Caudal fin:** Forked.
- **Anal fin:** Opposite the second dorsal fin.
- **Adipose eyelid:** Well developed.
- **Size:** 33–36 cm.
Family: Pleuronectidae — Righteye flounders

*Glyptocephalus cynoglossus*  
**witch flounder**

- Body and fins thickly speckled with minute black dots
- Scales extremely small, mostly cycloid
- Lateral line nearly straight or with very low curve above pectoral fin
- Blind side dirty white, speckled with minute black dots, in some specimens very dark
- Body thin and elongate
- Caudal fin rounded to double truncate
- Mouth small, maxilla not quite reaching or reaching to below anterior part of eye

Body and fins thickly speckled with minute black dots

Scales extremely small, mostly cycloid

Lateral line nearly straight or with very low curve above pectoral fin

Blind side dirty white, speckled with minute black dots, in some specimens very dark

Body thin and elongate

Caudal fin rounded to double truncate

Mouth small, maxilla not quite reaching or reaching to below anterior part of eye
Family: Pleuronectidae — Righteye flounders

*Hippoglossoides elassodon* flathead sole

- Caudal fin rounded, truncate, or double truncate
- Dorsal and anal fin membranes mostly clear or with dark blotches or bands
- Lateral line slightly curved above pectoral fin
- Symphyseal knob present
- Blind side off-white
- 370 mm
- 197 mm
- 104 mm
- 82 mm
- 32–36 mm
- 60 mm

646
**Family: Pleuronectidae — Righteye flounders**

*Hippoglossoides platessoides*  
**American plaice**

- **Eyed side** grayish brown with indistinct darker spots
- **Scales** ctenoid on eyed side
- **Lateral line** almost straight or with slight curve above pectoral fin
- **Blind side** white to bluish white
- **Mouth** large, maxilla extending to below middle of eye or a little beyond
- **Caudal fin** rounded to double truncate
- **Body** relatively elongate
- **Scales** ctenoid on eyed side
- **Small symphysial knob** present
- **Caudal fin** rounded to double truncate
- **Mouth** large, maxilla extending to below middle of eye or a little beyond
- **Body** relatively elongate
- **Scales** ctenoid on eyed side
- **Small symphysial knob** present

**Measurements:**
- Adult: 167 mm
- 32 mm
Family: Pleuronectidae — Righteye flounders

*Hippoglossus hippoglossus*  
Atlantic halibut

- **Caudal fin** emarginate or double emarginate
- **Body relatively elongate**
- **Lateral line with high arch over pectoral fin**
- **Eyed side** greenish brown to dark brown, young fish covered with dark and light spots and blotches
- **Mouth large, maxilla extending to below midye or beyond eye**
- **Blind side** white

530 mm
Family: Pleuronectidae — Righteye flounders

*Hippoglossus stenolepis*  
Pacific halibut

- Caudal fin emarginate or double emarginate
- Body relatively elongate
- Lateral line with high arch over pectoral fin
- Caudal fin truncate in juveniles
- Eyed side gray to black, densely covered with dark and light spots and blotches (blind side white)
- 633 mm
- 103 mm
- 42 mm
- 25–32 mm

*649*
Family: Pleuronectidae — Righteye flounders

*Limanda aspera*  yellowfin sole

- **Median fins yellowish**
- **Narrow black line at base of dorsal and anal fins**
- **Caudal fin slightly rounded**
- **Blind side snowy white**
- **Maxilla reaching below anterior half of eye**
- **Lateral line with high arch above pectoral fin**

**94 mm**

- Scales on eyed side ctenoid and cycloid; most ctenoid scales have 1 spinule, a few with 2, rarely 3 (use magnification to see spinules)

**250 mm**

**185 mm**

**54 mm**

**30–33 mm**
Family: Pleuronectidae — Righteye flounders

*Limanda limanda*  
**dab**

- Eyed side pale yellow brown or grayish
- Narrow black line at base of dorsal and anal fins
- Scales mostly ctenoid (rough) on eyed side
- Blunt side white
- Lateral line with high arch above pectoral fin
- Mouth small, maxilla reaching below anterior part of eye
- Caudal fin slightly rounded, double truncate, or slightly emarginate

360 mm
Family: Pleuronectidae — Righteye flounders

*Limanda proboscidea*  longhead dab

- Caudal fin nearly straight to slightly rounded
- Blind side bright lemon yellow or yellowish orange
- Head profile concave above eyes, with snout produced forward and longer than eye
- Maxilla scarcely reaching below front edge of eye
- Eyed side brown, covered with small black and whitish spots
- Lateral line with high arch above pectoral fin
- Lateral line with high arch above pectoral fin

Measurements:
- 170 mm
- 113 mm
- 38 mm
- 30 mm
- 19 mm

652
Family: Pleuronectidae — Righteye flounders

*Limanda sakhalinensis* Sakhalin sole

- Caudal fin slightly rounded
- Blind side translucent with bright white highlights
- Median fins brown
- Lateral line with medium to high arch above pectoral fin
- Maxilla reaching below anterior edge to half of eye
- Scales on eyed side mostly ctenoid, with 3–10 spinules (use magnification to see spinules)
- Ctenoid scale of *L. sakhalinensis*

**Measurements:**
- 190 mm
- 117 mm
- 79 mm
- 34 mm

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653
Family: Pleuronectidae — Righteye flounders

*Liopsetta glacialis*  
**Arctic flounder**

- Lateral line nearly straight or slightly curved above pectoral fin
- Postocular ridge terminates in a larger and a smaller low protuberance
- Blind side chalky white to lime green
- Dorsal and anal fins usually with dark spots
- 162 mm SL
- 118 mm SL
Family: Pleuronectidae — Righteye flounders

*Microstomus kitt*  
lemon sole

- Dorsal and anal fins usually with dark spots
- Body ovate, rather deep
- Lateral line with low curve above pectoral fin
- Caudal peduncle very short
- Caudal fin rounded or double truncate
- Blind side white
- Mouth very small, with thick lips, maxilla not extending past anterior part of eye
- Scales cycloid (smooth)
- Anal spine absent
- Often with a pale oval patch behind pectoral fin
- 25 cm

![Image of Microstomus kitt](image.png)
Family: Pleuronectidae — Righteye flounders

*Platichthys flesus*  
European flounder

- Lateral line with very low curve above pectoral fin
- Dark and light spots and red blotches are most pronounced in juveniles
- Mouth small, maxilla extending to below anterior edge or anterior part of eye
- Rough tubercles on eyed side, most strongly developed along lateral line and along bases of dorsal and anal fins
- A left-sided individual well hidden against the seafloor

370 mm
Family: Pleuronectidae — Righteye flounders

*Platichthys stellatus*  
**starry flounder**

Photographs show a left-sided individual. Both left- and right-sided individuals are common.
Family: Pleuronectidae — Righteye flounders

\textit{Pleuronectes platessa} plaice

- **Body**: ovate, rather deep
- **Caudal fin**: rounded or double truncate
- **Eyed side**: brown or greenish brown with distinct red or orange spots
- **Mouth**: small, maxilla extending to below anterior part of eye
- **Lateral line**: with low curve above pectoral fin
- **Scales**: small, cycloid (smooth)
- **4–8 bony knobs on postocular ridge
- **Partially buried in the sand**
Family: Pleuronectidae — Righteye flounders

*Pleuronectes quadrituberculatus*  
Alaska plaice

- Lateral line slightly curved above pectoral fin
- 4–7 bony knobs on postocular ridge
- Eyed side greenish gray to black, young adults spotted and blotched
- Blind side yellow

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<th>332 mm</th>
<th>340 mm</th>
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Family: Pleuronectidae — Righteye flounders

*Reinhardtius hippoglossoides*  
Greenland halibut

- **Caudal fin** truncate or slightly emarginate
- **Eyed side** dark purplish brown to black
- **Lateral line** nearly straight, only slightly rising above pectoral fin
- **Mouth large**, maxilla reaches to below posterior half of eye or beyond eye
- **Anal spine** absent
- **Posterior margin of preopercle** L-shaped (right angle), with 4 or 5 pores near lower edge
- **Bold black bars** on dorsal and anal fins in small juveniles

- **86 mm**
- **92 mm**
- **108 mm**
- **437 mm**

**Bold black bars** on dorsal and anal fins in small juveniles
INFORMATION ON PHOTOGRAPHS AND DRAWINGS IN THE IDENTIFICATION GUIDE

Specimen lengths are total lengths (TL) unless otherwise noted. Catalog numbers are given for archived specimens. The letter P after a number, as in PSR 915P, indicates photographs are available but the specimen was not kept. The notation "uncat." indicates specimens held by a museum but not yet assigned catalog numbers.

Myxine glutinosa
At top: Barents Sea, 2015. By A. V. Dolgov
245 mm, including mouth: North Sea, 2017. By R. M. Wienerroither
Live specimen on deck: Oslofjorden, Norway, 2011. By Ole-Håkon Heier
Live specimen in natural habitat: Høgsfjorden, Norway. By Rudolf Svensen

Lamna ditropis
1.8 m: CAS 230160 (photographs and tissue only), Bering Strait, barcode BASIS2007-171
By M. S. Busby, NOAA, AFSC, Seattle; and C. W. Mecklenburg
Drawings of teeth: Miller and Lea 1972, p. 39

Lamna nasus
Dorsolateral view: North Sea, 2011. By crew from M/S Nesejenta
Tail and head views: Gulf of St. Lawrence. By Claude Nozères, Fisheries and Oceans Canada
Drawings of teeth: Compagno 2001, fig. 79

Cetorhinus maximus
4 m female: incidental catch, Kattegat, November 2015, weight 375 kg. Photograph by Peter R. Møller
Specimen on deck: Barents Sea, Andoy Bank, off Norwegian coast. By Roman Redortsov
2.5 m immature male: Skagerrak, illustration from Andriashev 1954, fig. 13
Drawings of teeth: Bigelow and Schroeder 1948, fig. 23

Centroscymnus coelolepis
113 cm: Denmark Strait, 2014. By Jørgen G. Nielsen
110 cm: Coast of France, 2006. By Samuel P. Iglesias
Section of skin: Irminger Sea, 2014. By Julius Nielsen
Drawings of teeth: Bigelow and Schroeder 1948, fig. 94

Somniosus microcephalus
266 cm: off shore NE Greenland, 2015. By A. Lynghammar
Drawings of teeth: Castro 1982, p. 64 (same as S. pacificus teeth)

Somniosus pacificus
1.7 m: Eastern Bering Sea, 1999. By G. R. Hoff, NOAA, AFSC, Seattle
Drawings of teeth: Castro 1983, p. 64

Squalus acanthias
Lateral view: Barents Sea, 1998. By A. V. Dolgov
Dorsal view: Fjord in central Norway, 2008. By A. Lynghammar
Drawings of teeth: Compagno 1984, p. 111 (same as S. suckleyi teeth)

Squalus suckleyi
Eastern Bering Sea. By J. W. Orr, NOAA, AFSC, Seattle
Drawings of teeth: Compagno 1984, p. 111

Amblyraja hyperborea
720 mm male: Arctic Ocean northwest of Svalbard, 2008, field no BKT80025-1. By A. Lynghammar
638 mm male (detail of head): CAS 236458-01, Beaufort Sea, barcode BEAU2012-37. By C. W. Mecklenburg
540 mm female: CAS 236458-02, Beaufort Sea, barcode BEAU2012-38. By C. W. Mecklenburg
Egg case: Chukchi Borderland, 2010. By L. Lin, Third Institute of Oceanography, State Oceanic Administration, Xiamen

Amblyraja radiata
505 mm male: Barents Sea, 2010
505 mm female: Barents Sea, 2010
103 mm female: ZMUB 23368, NE Greenland, 2015, barcode TUNUVI-37a
Egg case: Barents Sea, 2010
By A. Lynghammar
Bathyraja parmifera
955 mm male: Semidi Islands, W Gulf of Alaska, 2004
994 mm female: PSR 915P, Pribilof Islands, Bering Sea, 2005
845 mm female, Kasatochi Island, Aleutian Islands, 2003
Egg case: UAM 4769, Beaufort Sea, 2012
By C.W. Mecklenburg

Bathyraja spinicauda
860 mm female: Barents Sea, 2010
Egg case (dried): Barents Sea, 2012
By A. Lynghammar

Rajella bathyphila
76 cm: ZMUC P08388, Davis Strait, 1991. By A. Lynghammar

Rajella fyllae
108 mm: MNHN uncat., field no. BPS-3222, west of Svalbard, Greenland Sea, 2015
180 mm female, juvenile: Barents Sea, 2010
510 mm female: Barents Sea, 2010
505 mm, eye thorns: Barents Sea
Egg case: 48 x 29 mm excluding horns (one horn broken), Norwegian Sea, 2010. By Tone Vollen
By A. Lynghammar except 108 mm by Samuel P. Iglesias

Rajella linteal
90 cm: Northern Norway, 2012, barcode AL464. By A. Lynghammar
105 cm: Hardanger Fjord, Norway, 2011, barcode AL637. By A. Lynghammar
Egg case: 107 x 77 mm excluding horns: Iceland. Clark 1926, plate 27, fig. b.

Notacanthus chemnitzii
Lateral view at top: Irminger Sea, 2003. By A. V. Dolgov
99 cm, including close-ups of mouth and dorsal spines: TSZP 1980, Bear Island 2000. By R. M. Wienerroither

Diastobranchus capensis
894 mm: ZMUB 16181, west of Spitsbergen, 2005. By I. Byrkjedal
Drawing of scale pattern: Sulak and Shcherbachev 1997, fig. 9E

Clupea harengus
Lateral view at top: Irminger Sea, 2003. By A. V. Dolgov
290 mm: North Sea, 2017. By R. M. Wienerroither

Clupea pallasii
220 mm, thawed: CAS 230140, W of Kivalina, SE Chukchi Sea, barcode BASIS2007-214
217 mm, fresh: CAS 230133, SW of Point Hope, SE Chukchi Sea, barcode BASIS2007-142
By C.W. Mecklenburg

Argentina silus
430 mm: Trondheims Fjord, Norway, 2010. By A. Lynghammar
Middle: Irminger Sea, 2003. By A. V. Dolgov
175 mm: North Sea, 2017. By R. M. Wienerroither

Bathylagus euryops
Irminger Sea, 2003. By A. V. Dolgov

Nansenia groenlandica
Lateral view at top: Irminger Sea, 2003. By A. V. Dolgov
130 mm: Norwegian Sea, 2010. By R. M. Wienerroither

Maulisia microlepis
Mid-Atlantic Ridge, 2004. By A. V. Dolgov

Alepocephalus agassizii
Mid-Atlantic Ridge, 2004. By A. V. Dolgov
Mallotus catervarius
155 mm: UAM 6394, Beaufort Sea, barcode BEAU2011-107
111 mm: CAS 235326, off SE Coast of Wrangel Island, NW Chukchi Sea, 2012
71–100 mm: UAM 5109, Semidi Islands, SW Gulf of Alaska, 2006
By C. W. Mecklenburg

Mallotus villosus
160 mm: ZMUB 23369, NE Greenland, 2015, barcode TUNUVI-10. By A. Lynghammar
165 mm: Barents Sea, 2017. By R. M. Wienerroither
64 mm: Barents Sea, 2017. By R. M. Wienerroither

Cyclothone microdon
Lateral views: Gulf of St. Lawrence. By Claude Nozères, Fisheries and Oceans Canada
Drawing of first gill arch: Mukhacheva 1964, fig. 11

Argyropelecus hemigymnus
49 mm: ZMUB 23384, Greenland Sea, 2015, barcode TUNUVI-35. By A. Lynghammar
No size: Irminger Sea, 2003. By A. V. Dolgov

Argyropelecus olfersii
Irminger Sea, 2003. By A. V. Dolgov

Maurolicus muelleri
North Sea, 2016. By R. M. Wienerroither

Chauliodus sloani
210 mm: Irminger Sea, 2003. By A. V. Dolgov

Stomias boa
Irminger Sea, 2003. By A. V. Dolgov

Arctozenus risso
Lower: Barents Sea, 1998. By A. V. Dolgov

Paralepis coregonoides
Irminger Sea, 2003. By A. V. Dolgov

Benthosema glaciale
Top photo (adult): Western North Atlantic. By Tracey Sutton, Nova Southeastern University, Florida
76 mm: MNHN uncat., field no. BPS-3292, north of Svalbard, Arctic Ocean, 2015. By Samuel P. Igléias
59 mm: ZMUB 23464, Greenland Sea, 2015, barcode TUNUVI-46. By A. Lynghammar

Lampanyctus macdonaldi
57 mm: ZMUB 23191, Svalbard, 2015, barcode Vp-141/15. By Samuel P. Igléias

Myctophum punctatum
Top and bottom: Gulf of St. Lawrence, 2015. By Claude Nozères, Fisheries and Oceans Canada
Middle: Irminger Sea, 2003. By A. V. Dolgov

Notoscopelus kroyeri
Top and middle: Irminger Sea, 2003. By A. V. Dolgov
Bottom: Gulf of St. Lawrence, 2015. By Claude Nozères, Fisheries and Oceans Canada

Protomyctophum arcticum
42 mm SL: NHMO 8080, Norwegian Sea. By R. M. Wienerroither
Lower photo: Irminger Sea, 2003. By A. V. Dolgov

Lampris guttatus
120 cm: South Africa. By Lara Atkinson

Trachipterus arcticus
64 cm: northern North Sea, 2015. By R. M. Wienerroither
**Coelorinchus labiatus**
414 mm: ZMUB 23307, SE Greenland, 2015
60 mm preanal length: ZMUB 19823, Svalbard, 2008. By I. Byrkjedal
Scale: Cohen et al. 1990, fig. 388

**Coryphaenoides rupestris**
531 mm: Bjørnefjorden, southern Norway, 2004. By I. Byrkjedal
17–71 cm: Trondheims Fjord, Norway, 2010. By A. Lynghammar
20.5 cm: Barents Sea, 2007. By A. Lynghammar
Scales: Cohen et al. 1990, fig. 498

**Macrourus berglax**
No size (adult): Barents Sea, 1998. By A. V. Dolgov
83 cm: Barents Sea, 2008. By A. Lynghammar
108 cm fish held by angler: Tromsø, Norway, 2012. By Sven Jørund Kolstø
Scales: Cohen et al. 1990, fig. 536 (M. carinatus)

**Brosme brosme**
Adult: Barents Sea, 1998. By A. V. Dolgov
Juvenile: Trondheims Fjord, Norway, 2008. By A. Lynghammar
108 cm fish held by angler: Tromsø, Norway, 2012. By Sven Jørund Kolstø

**Ciliata septentrionalis**
119 mm preserved: ZMUB 4537, SW Norwegian coast at Rognøysund, Hordaland. By I. Byrkjedal
2 views of live fish: By Kim Rasmussen, via Otte Bjelland, IMR
2 close-ups showing barbels: By Henk Heessen, courtesy of WoRMS Photo Gallery

**Enchelyopus cimbrius**
Adult: Barents Sea, 1998. By A. V. Dolgov
158 mm: Barents Sea, 2010. By A. Lynghammar

**Gaidropsarus argentatus**
240 mm: MNHN uncat., field no. BPS-3334, west of Svalbard, Greenland Sea, 2015. By Samuel P. Iglesias
182 mm: MNHN uncat., field no. BPS-3364, west of Svalbard, Greenland Sea, 2015. By Samuel P. Iglesias
275 mm: ZMUB 23479, Greenland Sea, offshore, 2015, barcode TUNUVI-61. By A. Lynghammar
Live fish: ZMUB 23487, Greenland Sea, offshore, 2015, barcode TUNUVI-59. By A. Lynghammar

**Gaidropsarus ensis**
31 cm: Denmark Strait, 2003. By A. V. Dolgov
Juvenile, 95 mm: ZMUB 11632, Irminger Sea, 2001. By I. Byrkjedal

**Molva dypterygia**
Adult: Irminger Sea, 2003. By A. V. Dolgov
Young adult: Irminger Sea, 2003. By A. V. Dolgov

**Molva molva**
110 cm: Trondheims Fjord, Norway, 2008. By A. Lynghammar
Juvenile, about 20 cm: Trondheims Fjord, Norway, 2008. By A. Lynghammar

**Phycis blennoides**
455 mm: North Sea, 2012. By R. M. Wienerroither
Middle photo: North Sea. By Thomas de Lange Wenneck
95 mm: North Sea, 2016. By R. M. Wienerroither

**Arctogadus glacialis**
221 mm: UAM 5532, Chukchi Sea slope, barcode RUSALCA2009-140. By C. W. Mecklenburg
291 mm: ZMUC P375192, Baffin Bay, 2001. By P. R. Møller
145 mm: ZMUB 23442, NE Greenland, 2015. By A. Lynghammar
69 mm: ZMUB uncat., NE Greenland, 2017. By A. Lynghammar
42 mm: ZMUB uncat., NE Greenland, 2017. By A. Lynghammar

**Boreogadus saida**
234 mm: MNHN uncat., field no. BPS-3228, Svalbard, 2015. By S. P. Iglesias
220 mm: ZMUB uncat., NE Greenland, 2017. By A. Lynghammar
174 mm: ZIN 534968, NE Chukchi Sea, 2004. By C. W. Mecklenburg and B. A. Sheiko
Eleginus gracilis
233 mm: UAM 5939, SE Chukchi Sea, barcode BASIS2007-205
211 mm: CAS 228559, E Bering Strait, barcode RUSALCA2009-185
105–110 mm: UAM 5939, SE Chukchi Sea, barcode BASIS2007-205
105 mm: CAS 220483, NW Chukchi Sea, 2004

Eleginus nawaga
Kara Sea. By Olga Yu. Chetyrkina, PINRO

Gadus chalcogrammus
470 mm: Sea of Okhotsk off NE Sakhalin Island, 2003
392 mm: ZIN 54844, Chukchi slope, barcode RUSALCA2009-112
141 mm: CAS 230159, E Bering Strait, barcode BASIS2007-170
126 mm: CAS 230111, NE Chukchi Sea, barcode BASIS2007-118
105 mm: CAS 220483, NW Chukchi Sea, 2004
35–45 mm: Semidi Islands, SW Gulf of Alaska, 2004

Gadus macrocephalus
597 mm: PSR 916P, Pribilof Islands, SE Bering Sea, 2005
209 mm: PSR 883P, Semidi Islands, SW Gulf of Alaska, 2006
54–76 mm: PSR 886P, Semidi Islands, SW Gulf of Alaska, 2006
38–54 mm: PSR 716P, Semidi Islands, SW Gulf of Alaska, 2004

Gadus morhua
367 mm: Greenland Sea, 2015. By A. Lynghammar
105 mm: Barents Sea, 2008. By A. Lynghammar
76 mm: MNHN uncat., field no. BPS-3230, Svalbard, 2015. By Samuel P. Iglesias

Melanogrammus aeglefinus
590 mm: Trondheims Fjord, Norway, 2010. By A. Lynghammar
470 mm: North Sea, 2017. By R. M. Wienerroither
Adult, no length: Barents Sea, 1998. By A. V. Dolgov
140 mm: Barents Sea, 2011. By A. Lynghammar

Merlangius merlangus
430 mm: North Sea, 2017. By R. M. Wienerroither
Adult, no length: Barents Sea, 1998. By A. V. Dolgov
170 mm: North Sea, 2017. By R. M. Wienerroither

Micromesistius poutassou
Adult (lower): Trondheims Fjord, Norway, 2010. By A. Lynghammar
~300 mm: Trondheims Fjord, Norway, 2008. By A. Lynghammar

Pollachius virens
Adult: Barents Sea, 1998. By A. V. Dolgov
~300 mm: Trondheims Fjord, Norway, 2009. By A. Lynghammar

Trisopterus esmarkii
Adult, at top: Irminger Sea, 2003. By A. V. Dolgov
205 mm: Barents Sea, 2011. By A. Lynghammar
150–155 mm: Namsen Fjord, Norway, 2009. By A. Lynghammar

Lophius piscatorius
57 and 84 cm: North Sea, 2017. By R. M. Wienerroither
Belone belone
54 cm: Yugina River, White Sea, 2013. By V. N. Chernov
Head and jaws of a 45-cm specimen: southern Norway, 2016. By Kristoffer Øgård
150 mm: SW Norway, 2014. By Kim Rasmussen

Scomberesox saurus
Gulf of St. Lawrence. By Claude Nozères, Fisheries and Oceans Canada

Entelurus aequoreus
By A. V. Dolgov

Sebastes mentella
Barents Sea, 2009. By A. Lynghammar

Sebastes norvegicus
Barents Sea, 2009. By A. Lynghammar

Sebastes viviparus
280 mm: SW Norway, 2012. By Ole-Håkon Heier
201 mm: ZMUB 23745, Svalbard. By I. Birkjedal
Bottom left: Irminger Sea. By A. V. Dolgov
Bottom right, 220mm: Barents Sea. By A. V. Dolgov

Hexagrammos stelleri
220 mm: Sea of Okhotsk off NE Sakhalin, 2003. By B. A. Sheiko
75 mm fresh specimen: Chukchi Sea coast near Barrow, Alaska, 2012. By J. R. Moran, NOAA, ABL, Juneau
76 mm thawed specimen: UAM 2949, SE Bering Sea, barcode PSRBC2012-13. By C. W. Mecklenburg

Arteidiellus atlanticus
153 mm male: ZIN 54850, Chukchi Sea slope, barcode RUSALCA2009-106. By C. W. Mecklenburg
142 mm male: CAS 228530, Chukchi Sea slope, barcode RUSALCA2009-107. By C. W. Mecklenburg
135 mm female: CAS 228533, Chukchi Sea slope, barcode RUSALCA2009-114. By C. W. Mecklenburg
91 mm female: uncat., field no. BPS-3361, Svalbard, 2015. By Samuel P. Iglesias
55 mm: ZMUB uncat., NE Greenland, 2017, TUNU VII specimen no. 37. By A. Lynghammar

Arteidiellus scaber
83 mm male: CAS 220487, NW Chukchi Sea, 2004
81 mm female: CAS 230169, NE Bering Sea, barcode BASIS2007-183
29 mm: UAM 5918, NE Bering Sea, 2007
By C. W. Mecklenburg

Arteidiellus uncinatus
89 mm male: Gulf of St. Lawrence, 2007
80 mm male: St. Lawrence Estuary, 2015
79 mm male: St. Lawrence Estuary, 2012
73 mm male: St. Lawrence Estuary, 2013
71 mm male: St. Lawrence Estuary, 2012
63 mm female: St. Lawrence Estuary, 2012
By Claude Nozères, Fisheries and Oceans Canada

Enophrys dicerus
164 mm female: CAS 228554, SE Chukchi Sea, barcode RUSALCA2009-178
241 mm female: CAS 230189, NE Bering Sea, barcode BASIS2007-197
129 mm male: UAM 4623, NE Bering Sea, 2002
26 mm: UAM 5071, off Kasatochi Island, Aleutian Islands, 2003
By C. W. Mecklenburg

Enophrys lucasi
131 mm female: CAS 230273, Semidi Islands, SW Gulf of Alaska, barcode SMMOCI2007-41
75 mm: CAS 237852, Semidi Islands, SW Gulf of Alaska, 2004
34 mm: UAM 5202, Glacier Bay National Park, SE Gulf of Alaska, 2002
By C. W. Mecklenburg
**Gymnocanthus galeatus**

297 mm male: NE Kodiak Island, SW Gulf of Alaska, 2002
268 mm female: NE Kodiak Island, SW Gulf of Alaska, 2002
140 mm: UAM 4729, Semidi Islands, SW Gulf of Alaska, 2004
124 mm: UAM 4749, Semidi Islands, SW Gulf of Alaska, 2006
119 mm: UAM 4728, Aleutian Islands, 2003

By C. W. Mecklenburg

**Gymnocanthus pistilliger**

168 mm female: UAM 4621, Norton Sound, NE Bering Sea, 2002
120–124 mm males: CAS 230369, Port Clarence, NE Bering Sea, 2006
87 mm male: UAM 4700, Norton Sound, NE Bering Sea, 2002

By C. W. Mecklenburg

**Gymnocanthus tricuspis**

133 mm female: UAM 5545, NE Chukchi Sea, 2009
134 mm male: CAS 230347, SE Chukchi Sea, barcode OSHORO2007-55
126 mm, detail of head: UAM 6390, Beaufort Sea, barcode BEAU2011-08
87 mm male: CAS 228477, SW Chukchi Sea, barcode RUSALCA2009-08
87 mm female: UAM 5537, NE Chukchi Sea, 2009
45 mm: CAS 230056, NE Chukchi Sea, barcode BASIS2007-44
29–34 mm: UW 115884, SE Chukchi Sea, 2004
33 mm, detail of head: UAM 6400, Beaufort Sea, 2011

By C. W. Mecklenburg

**Hemilepidotus jordani**

512 mm: Aleutian Islands, 2003
398 mm: Kasatochi Island, Aleutian Islands, 2003
179 mm: CAS 230288, W Gulf of Alaska, barcode SMMOCI2007-54
91 mm: W Gulf of Alaska, 2004
59 mm: UAM 5053, Kasatochi Island, Aleutian Islands, 2003

By C. W. Mecklenburg

**Hemilepidotus papilio**

167 mm: CAS 220473, SE Chukchi Sea, 2004
162 mm: ZIN 54842, W Bering Strait, barcode RUSALCA2009-182
64 mm: CAS 230178, NE Bering Sea, barcode BASIS2007-193

By C. W. Mecklenburg

**Icelus bicornis**

88 mm female: UAM uncat. (PSR 1874), Beaufort Sea, barcode BEAU2011-18
52 mm male: UAM 6449, Beaufort Sea, barcode BEAU2011-46

By C. W. Mecklenburg. Photographed after freezing and thawing.

Drawing of urogenital papilla: Nelson 1984, fig. 23H

**Icelus spatula**

116 mm female: UAM 6438, Beaufort Sea, barcode BEAU2011-49
109 mm female: CAS 230350, SE Chukchi Sea, barcode OSHORO2008-72
94 mm female: CAS 228518, East Siberian Sea, barcode RUSALCA2009-57
77 mm male: CAS 228492, East Siberian Sea, barcode RUSALCA2009-25
70 mm male: CAS 228506, East Siberian Sea, barcode RUSALCA2009-43
53 mm, head, preserved specimen: UAM 6383-02, NE Chukchi Sea, barcode WWW1003-03
57 mm male: UAM uncat. (PSR 2249-01), SW Chukchi Sea, barcode RUSALCA2012-20
27 mm: CAS 228494, East Siberian Sea, barcode RUSALCA2009-27

By C. W. Mecklenburg

Drawing of urogenital papilla: Nelson 1984, fig. 23G

**Megallocottus platycephalus**

Male by J. W. Orr, NOAA, AFSC, Seattle
Female by D. W. Kessler, NOAA, AFSC, Seattle

**Microcottus sellaris**

Male and female by D. W. Kessler, NOAA, AFSC, Seattle
98 mm, detail of head: UAM 1592, Norton Sound, NE Bering Sea, 1974 (preserved specimen). By C. W. Mecklenburg
113 mm: UW 41422, eastern Bering Sea, 1985 (preserved specimen). By C. W. Mecklenburg
Myoxocephalus jaok
630 mm: Sea of Okhotsk off NE Sakhalin, 2003. By B. A. Sheiko
340 mm: NE Bering Sea, 2006. By Xuehua Cui
133 mm: CAS 230103, NE Chukchi Sea, barcode BASIS2007-108. By C. W. Mecklenburg
89 mm: UAM 4696, Norton Sound, NE Bering Sea, 2002. By C. W. Mecklenburg
34 mm: UAM 6421, Beaufort Sea, barcode BEAU2011-93. By C. W. Mecklenburg

Myoxocephalus polyacanthocephalus
775 mm: PSR 920P, Pribilof Islands, SE Bering Sea, 2005
281 mm: UAM 5766, Tee Harbor, SE Gulf of Alaska, barcode PSR2009-01
146 mm: CAS 230291, Semidi Islands, SW Gulf of Alaska, barcode SMMOCI2007-61
66–74 mm: UAM 5834, Aleutian Islands, 2006
37 mm: UAM 6524, NE Chukchi Sea, barcode AKMAP2011-03
24–34 mm: UAM 4721, Aleutian Islands, 2003
By C. W. Mecklenburg

Myoxocephalus quadricornis
264 mm male: ZMUC P2395546, NE Greenland, 2010. By A. Lynghammar
141 mm male: UAM 6429-01, Beaufort Sea, barcode BEAU2011-146. By C. W. Mecklenburg
32 mm: ZMUC P2395055, NE Greenland, 2010. By A. Lynghammar
Live fish: Under the ice at Resolute Bay, Nunavut, Canada. By Danny Kent, Ocean Wise Vancouver Aquarium

Myoxocephalus scorpioides
105 mm: UW 150436, Nushagak Bay, Bristol Bay, 2007. By C. W. Mecklenburg
~50 mm: Point Barrow, Alaska. By Scott W. Johnson, NOAA, AFSC, Auke Bay Laboratories, Juneau, Alaska

Myoxocephalus scorpius
237 mm male: CAS 230235, NE Bering Sea, 2006. By C. W. Mecklenburg
273 mm male: UAM 4638, NE Bering Sea, 2006. By C. W. Mecklenburg
181 mm male: CAS 230345, SE Chukchi Sea, barcode OSHOR2007-48. By C. W. Mecklenburg
76 mm: ZMUC P2395547, NE Greenland, 2010, barcode AL-9282. By A. Lynghammar
49 mm: CAS 228476, SW Chukchi Sea, barcode RUSALCA2009-06. By C. W. Mecklenburg
34–44 mm: CAS 230309, NE Chukchi Sea, barcode OSHOR2007-11. By C. W. Mecklenburg
43 mm: MNHN uncat., field no. BPS-3257, north of Svalbard, Arctic Ocean, 2015. By Samuel P. Iglesias

Trichocottus brashnikovi
200 mm: Sea of Okhotsk off NE Sakhalin, 2003
164 mm: CAS 230044, NE Bering Sea, 2006
160 mm: Sea of Okhotsk off NE Sakhalin, 2003
109 mm: CAS 228558, W Bering Strait, barcode RUSALCA2009-184
70–81 mm: CAS 230319, NE Chukchi Sea, barcode OSHOR2007-23
31–34 mm: CAS 230122, NE Chukchi Sea, barcode BASIS2007-123
200 and 160 mm by B. A. Sheiko, others by C. W. Mecklenburg

Triglops murrayi
147 mm male: northern Gulf of St. Lawrence, 2006. By Claude Nozères, Fisheries and Oceans Canada

Triglops nybelini
94 mm male: UAM 6302, Beaufort Sea, barcode BEAU2011-131
105 mm female: CAS 228528, Chukchi slope, barcode RUSALCA2009-103
108 mm female: UAM 6453, Beaufort Sea, barcode BEAU2011-63
46 mm: ZIN 54794, Chukchi slope, 2009
By C. W. Mecklenburg

Triglops pingelli
145 mm female: CAS 230338, SE Chukchi Sea, barcode OSHOR2007-37
141 mm male: CAS 230285, W Gulf of Alaska, barcode SMMOCI2007-57
125 mm male: CAS 230292, W Gulf of Alaska, barcode SMMOCI2007-62
53 mm: UAM 6386, Beaufort Sea, barcode BEAU2011-29
38 mm: UAM 2979, NW Chukchi Sea, barcode RUSALCA2012-31
By C. W. Mecklenburg except 86–131 mm, Svalbard, 2011, by A. Lynghammar
Blepsias bilobus
180 mm: S Kuril Islands, 2003. By Boris A. Sheiko
128 mm: CAS 230087, NE Chukchi Sea, barcode BASIS2007-87. By C. W. Mecklenburg
93 mm: UAM 65 10, NE Chukchi Sea, barcode AKMAF2011-08. By C. W. Mecklenburg

Nauctichthys pribilovius
109 mm female: CAS 230152, E Bering Strait, barcode BASIS2007-160
76 mm male: CAS 230313, NE Chukchi Sea, barcode OSHORO2007-15
87 mm: UAM 5791, SE Chukchi Sea, barcode OSHORO2008-51
72 mm: UAM 4692, Norton Sound, NE Bering Sea, 2002
94 mm male, live: UAM 4719, Aleutian Islands, 2003
By C. W. Mecklenburg

Cottunculus microps
~145 mm: ZMUB 21018, NE Greenland, 2010, barcode AL-9251. By A. Lynghammar
135 mm: CAS 228534, Chukchi Sea slope, barcode RUSALCA2009-117. By C. W. Mecklenburg
145 mm: ZMUB 22061, Greenland Sea, 2013, barcode Vp-100/13. By C. W. Mecklenburg

Eurymen gyrinus
19 cm male: Sea of Okhotsk off NE Sakhalin, 2003. By Boris A. Sheiko
111 mm: CAS 230180, NE Bering Sea, barcode BASIS2007-200. By C. W. Mecklenburg

Agonus cataphractus
102 mm: Baie de Seine, France, 2008, from Iglesias (2014)

Aspidophoroides monopterygius
61 mm: UAM 5718, NE Chukchi Sea, barcode OSHORO2008-17
82 mm: UAM 5471, NE Chukchi Sea, barcode OSHORO2008-22
41 mm: UAM 6217, NE Chukchi Sea, formalin-fixed, 2010
By C. W. Mecklenburg

Aspidophoroides olrikii
77 mm female: UAM 5833, NE Chukchi Sea, barcode OSHORO2008-56
69 mm male: UAM 6304, Beaufort Sea, barcode BEAU2011-116
54 mm male: UAM 5727, NE Chukchi Sea, barcode OSHORO2008-38
74–77 mm males and female: CAS 237866, NE Bering Sea, 2006
39 mm: UAM 5873, NE Chukchi Sea, 2007
27 mm (tail broken off): UAM 6373, Beaufort Sea, barcode BEAU2011-83
By C. W. Mecklenburg

Hypsagonus quadricornis
103 mm: CAS 228545, E Bering Strait, 2007, barcode BASIS2007-162
74 mm: CAS 237842, Great Sitkin Island, central Aleutian Islands, 2003
67 mm: UAM 4736, Semidi Islands, W Gulf of Alaska, 2004
49 mm: CAS 237840, Ulak Island, central Aleutian Islands, 2003
38 mm: CAS 230320, NE Chukchi Sea, 2007
By C. W. Mecklenburg

Leptagonus decagonus
174 mm: ZMUB uncat., NE Greenland, 2017. By A. Lynghammar
45 mm: Barents Sea, 2017. By R. M. Wienerroither

Sarritor frenatus
200 mm: southern Kuril Islands, 2003. By Boris A. Sheiko
244–253 mm: UAM 5685, Pribilof Island, SE Bering Sea, 2005. By C. W. Mecklenburg

Occella dodecaedron
180 mm: S Kuril Islands, 2003. By Boris A. Sheiko
107 mm: UAM 5025, Norton Sound, NE Bering Sea, 2002. By C. W. Mecklenburg
**Pallasina barbata**

138 mm: CAS 230148, SE Chukchi Sea, barcode BASIS2007-156
128 mm: UAM 4661, NE Bering Sea, 2006
127 mm: UAM 4628, NE Bering Sea, 2002
107 mm: UAM 5014, NE Bering Sea, 2002
53 mm: UAM 6268, Kachemak Bay, Gulf of Alaska, barcode PSRBC2011-03
By C. W. Mecklenburg

**Percis japonica**

330 mm: off NE Sakhalin Island, Sea of Okhotsk, 2003. By Boris A. Sheiko

**Podothecus accipenserinus**

264 mm male: NE Kodiak Island, W Gulf of Alaska, 2002
247 mm female: UAM 4618, NE Kodiak Island, W Gulf of Alaska, 2002
118 mm: CAS 237846-01, Semidi Islands, SW Gulf of Alaska, 2004
107 mm: UAM 5014, NE Bering Sea, 2002
53 mm: UAM 6268, Kachemak Bay, Gulf of Alaska, barcode PSRBC2011-03
By C. W. Mecklenburg

**Podothecus veternus**

172 mm male: UAM 6264, E Bering Strait, 2006
131 mm female: UAM 5003, Norton Sound, NE Bering Sea, 2002
150 mm male: UAM 4629-01, Norton Sound, NE Bering Sea, 2002
125 mm female: UAM 5018, Norton Sound, NE Bering Sea, 2002
39 mm: UAM 4629-02, Norton Sound, NE Bering Sea, 2002
36 mm: UAM 6359, Beaufort Sea, barcode BEAU2011-14
By C. W. Mecklenburg

**Cyclopteropsis jordani**

62 mm SL: UW 42929 (ex-UBC 59-530), Admiralty Inlet, Baffin Island, Canada, 1955
By C. W. Mecklenburg

**Cyclopteropsis mcalpini**

Adult, Franz Josef Land, 2013, photographs provided by Natalia V. Chernova

**Cyclopterus lumpus**

326 mm and 84 mm: MNHN uncat., field no. BPS-3303, BPS-3304, northeast of Svalbard, 2015. By Samuel P. Iglesias
14.2, 29.0, and 90.0 mm: USNM 118891, Gulf of Maine, 1912. By C. W. Mecklenburg

**Eumicrotremus andriashevi**

56 mm: UAM 4592, NE Chukchi Sea, 1991
79 mm: UAM 4592, NE Chukchi Sea, 1991
83 mm: UW 28383, NE Bering Sea, 1976
By C. W. Mecklenburg

**Eumicrotremus derjugini**

102 mm: CAS 236431, Beaufort Sea, barcode BEAU2011-134
56 mm: CAS 236472, Beaufort Sea, barcode BEAU2012-106
44 mm: UAM 6270, Beaufort Sea, barcode BEAU2011-23
36 mm: UAM 6313, Beaufort Sea, barcode BEAU2011-153
By C. W. Mecklenburg

**Eumicrotremus orbis**

70 mm female: CAS 237901, Glacier Bay, SE Gulf of Alaska, 2002
29 mm male: CAS 237900, Glacier Bay, SE Gulf of Alaska, 2002
By C. W. Mecklenburg

**Eumicrotremus spinosus**

70 mm: USNM 165294, St. Lewis Inlet, Labrador, 1950. By C. W. Mecklenburg
32 mm: USNM 19464, Cape Farewell, southern Greenland, 1939. By C. W. Mecklenburg
**Careproctus kidoi**

87 mm SL female: Paratype, ZMUC P82803
59 mm SL male: Paratype, ZMUC P82819
81 mm SL female: Paratype, ZMUC P82818
All Baffin Bay, 1999. By Steen W. Knudsen

**Careproctus micropus**

124 mm: ZMUC P2395057, barcode AL-9230
109 mm: ZMUC P2395058, barcode AL-9295
All NE Greenland, 2010. By A. Lynghammar

**Careproctus reinhardtii**

211 mm: ZMUC P821987, Moskusokse Fjord, NE Greenland; barcode AL-9231. By A. Lynghammar
163 mm: ZMUB uncat., NE Greenland, barcode RUSALCA2009-70
Ventral view: UAM 2973, Beaufort Sea upper slope, barcode BEAU2011-71. By C. W. Mecklenburg
143 mm: ZMUB 21969, Foster Bugt, Greenland Sea, 2013, barcode Vp-13/42. By C. W. Mecklenburg

**Liparis atlanticus**

Gulf of St. Lawrence. By Claude Nozères, Fisheries and Oceans Canada

**Liparis bathyarcticus**

244 mm: ZIN 54761, NW Chukchi Sea, barcode RUSALCA2009-70
184 mm: CAS 228555, W Bering Strait, barcode RUSALCA2009-180
245 mm: Gulf of St. Lawrence, 2015
110 mm: Gulf of St. Lawrence, 2011
102 mm: UAM 5506, NW Chukchi Sea, barcode RUSALCA2009-67
75 mm: CAS 228481, SW Chukchi Sea, barcode RUSALCA2009-13
35 mm: UAM 5522, NW Chukchi Sea, barcode RUSALCA2009-86
28 mm: CAS 228525, NW Chukchi Sea, barcode RUSALCA2009-92
By C. W. Mecklenburg, except 110 mm and 245 mm by Claude Nozères, Fisheries and Oceans Canada

**Liparis fabricii**

94 mm: UW 116484, NW Chukchi Sea, 2004
86 mm: CAS 228517, East Siberian Sea, barcode RUSALCA2009-56
70 mm: CAS 228490, East Siberian Sea, barcode RUSALCA2009-22
54 mm: CAS 228509, East Siberian Sea, barcode RUSALCA2009-48
33 mm: UAM 6221, NE Chukchi Sea (preserved in alcohol), 2010
32 mm: CAS 228521, East Siberian Sea, barcode RUSALCA2009-64
30 mm: CAS 228488, East Siberian Sea, barcode RUSALCA2009-18
By C. W. Mecklenburg

**Liparis gibbus**

210 mm: ZIN 54878, NE Chukchi Sea, barcode RUSALCA2009-124
183 mm: PSR 1172P, E Bering Strait, 2007
154 mm: CAS 230151-02, E Bering Strait, barcode BASIS2007-165
122 mm: UAM 5541, NE Chukchi Sea, barcode RUSALCA2009-123
102 mm: CAS 230151-03, E Bering Strait, barcode BASIS2007-166
95 mm: CAS 230191, NE Bering Sea, barcode BASIS2007-195 (top of head damaged in trawl net)
70 mm: CAS 228557, W Bering Strait, barcode RUSALCA2009-183
27 mm: UAM 5555, SW Chukchi Sea, barcode RUSALCA2009-130 ( integument damaged)
By C. W. Mecklenburg

**Liparis tunicatus**

107 mm: UAM 6211, NE Chukchi Sea (formalin-fixed), 2010
99 mm: UAM 6232, NE Chukchi Sea (formalin-fixed), 2010
91 mm: UAM 5575, SW Chukchi Sea, barcode RUSALCA2009-150
90 mm: CAS 230136, SE Chukchi Sea, barcode BASIS2007-146
81 mm: CAS 228522, East Siberian Sea, barcode RUSALCA2009-65
76 mm: UW 116499, SW Chukchi Sea, 2004
36 mm: UAM 5519, NW Chukchi Sea, barcode RUSALCA2009-83
35 mm: UAM 5565, SW Chukchi Sea, barcode RUSALCA2009-138
By C. W. Mecklenburg
**Paraliparis bathybius**
220 mm: Barents Sea slope, 2011 (fresh specimen). By A. Lynghammar
198 mm: Canada Basin NNW of Barrow, 2005 (formalin-fixed). By C. W. Mecklenburg

**Paraliparis copei**
Gulf of St. Lawrence. By Claude Nozères, Fisheries and Oceans Canada

**Rhodichthys regina**
170 mm: ZMUB 21000, Greenland Sea, 2010, barcode AL-EX21. By A. Lynghammar

**Trachurus trachurus**
North Sea, 2017. By R. M. Wienerroither

**Gymnelus hemifasciatus**
176 mm female: CAS 230155, E Bering Strait, barcode BASIS2007-169
159 mm female: CAS 230107, NE Chukchi Sea, barcode BASIS2007-112
149 mm female: CAS 220463, E Bering Strait, 2004
101 mm female: CAS 220475, SW Chukchi Sea, 2004
142 mm male: CAS 238054, NE Chukchi Sea, barcode BASIS2007-39
125 mm male: UAM 5520, NW Chukchi Sea, barcode RUSALCA2009-04
114 mm male: ZIN uncat. (PSR 1577), East Siberian Sea, barcode RUSALCA2009-62
76 mm female: CAS 228491, East Siberian Sea, barcode RUSALCA2009-23
63 mm: UAM 5968, NE Chukchi Sea, 2007
54 mm male: UAM 47964, Beaufort Sea, 2013
By C. W. Mecklenburg

**Gymnelus retrodorsalis**
115 mm male: ZMUB 23420, NE Greenland, 2015, barcode TUNUVI-09
122 mm female: ZMUB 23424, NE Greenland, 2015, barcode TUNUVI-65
92 mm gravid female: ZMUB 23365, NE Greenland, 2015, barcode TUNUVI-63
By A. Lynghammar

**Gymnelus viridis**
187 mm male: CAS 235295, NE Chukchi Sea, barcode AKMAP2011-22
188 mm female: UAM 6275, NE Chukchi Sea, barcode BEAU2011-19
174 mm male: CAS 230055, NE Chukchi Sea, barcode BASIS2007-31
172 mm female: CAS 230053, NE Chukchi Sea, barcode BASIS2007-33
146 mm female: CAS 230055, NE Chukchi Sea, barcode BASIS2007-32
121 mm female: UAM 5989, SE Chukchi Sea, barcode OSHORO2008-69
70 mm juvenile: CAS 230182, NE Bering Sea, barcode BASIS2007-204
By C. W. Mecklenburg

**Lycenchelys kolthoffi**
183 mm: ZMUB uncat., NE Greenland, 2017. By A. Lynghammar
171 mm: ZMUB 23433, Greenland Sea, 2015, barcode TUNUVI-24. By A. Lynghammar

**Lycenchelys muraena**
110 mm: ZMUB 23377, NE Greenland, 2015, barcode TUNUVI-23. By A. Lynghammar
167 mm: ZMUB 23218, Svalbard, 2015. By Samuel P. Iglésias

**Lycenchelys paxillus**
Gulf of St. Lawrence. By Claude Nozères, Fisheries and Oceans Canada

**Lycenchelys platyrhina**
111 mm: ZMUC P766286, female, Norwegian Sea, 2001. By P. R. Møller

**Lycenchelys sarsi**
114 mm: ZMUB 22601, Svalbard. By I. Byrkjedal
Lower, about 150 mm: ZMUC P2395054, NE Greenland, 2010, barcode AL-Ex42. By A. Lynghammar

**Lycodes adolfi**
193 mm: UAM 5529, Chukchi Cap, barcode RUSALCA2009-99
130 mm: CAS 230376, Chukchi Cap, barcode RUSALCA2009-98
70 mm: UAM 3527-01, Beaufort Sea, barcode BEAU2012-25
By C. W. Mecklenburg
**Lycodes esmarkii**
440 mm: ZMUC P762737, Greenland, Davis Strait, 1993. By P. R. Møller
160 mm: MNHN uncat., field no. BPS-3314, Svalbard, 2015. By Samuel P. Iglesias
75 mm: Barents Sea, 2016. By R. M. Wienerroither

**Lycodes eudipleurostictus**
287 mm: MNHN uncat., field no. BPS-3307, Svalbard, 2015
250 mm: ZMUB 20989, Greenland Sea, 2010, barcode AL 9256
210 mm: NE Greenland, 2017
117 mm: ZMUB 23448, Greenland Sea offshore, 2015, barcode TUNUVI-14
63 mm: NE Greenland, 2015
By A. Lynghammar except 287 mm by Samuel P. Iglesias.

**Lycodes frigidus**
280 mm (267 mm after preservation): ZMUB 22581, Norwegian Sea, 2010. By I. Byrkjedal
53 and 76 mm: CAS 230372, Canada Basin NNW of Barrow, 2005 (formalin-fixed specimens). By C. W. Mecklenburg

**Lycodes gracilis**
212 mm: ZMUB 21733, Svalbard, 2012. By I. Byrkjedal
Specimen with numerous black dots: Barents Sea. By A. V. Dolgov
220 mm, head: Barents Sea, 2010. By A. Lynghammar
Live fish, 267 mm: MNHN uncat., field no. BPS-3237, Svalbard, 2015. By Samuel P. Iglesias

**Lycodes jugoricus**
292 mm: CAS 236463, Beaufort Sea, barcode BEAU2012-47
156 mm: CAS 236455, Beaufort Sea, barcode BEAU2012-24
81 mm: CAS 236463, Beaufort Sea, barcode BEAU2012-46
By C. W. Mecklenburg. Frozen-thawed specimens
Ventral view of head: Andriashev 1954, fig. 146

**Lycodes lavalaei**
Gulf of St. Lawrence, 2005-06. By Claude Nozères, Fisheries and Oceans Canada

**Lycodes luetkenii**
Middle photo: Baffin Bay, 2001. By P. R. Møller
Juvenile: Barents Sea. By A. V. Dolgov

**Lycodes marisalbi**
135 mm: CAS 237924, Beaufort Sea, barcode BEAU2011-56. By C. W. Mecklenburg
65 mm: CAS 237923, Beaufort Sea, barcode BEAU2011-52. By C. W. Mecklenburg

**Lycodes mccallisteri**
295 mm: ZMUB 22538, Davis Strait, 2009. By I. Byrkjedal

**Lycodes mucosus**
318 mm: UAM 6314, Beaufort Sea, barcode BEAU2011-74
229 mm: CAS 230183, NE Bering Sea, barcode BASIS2007-202
187 mm: ZIN 53587, W Bering Strait, 2004
92 mm: ZIN 53588, SE Chukchi Sea, 2004
66 mm: IMS 30, SW Chukchi Sea, 2004
42 mm: UAM 5560, SW Chukchi Sea, barcode RUSALCA2009-134
Live adult specimen: Resolute, Canadian high Arctic
By C. W. Mecklenburg except live adult by Danny Kent, Ocean Wise Vancouver Aquarium

**Lycodes paamiuti**
157 mm: MNHN uncat., field no. BPS-3326), Svalbard, 2015. By Samuel P. Iglesias
181 mm: ZMUB 23381, NE Greenland, 2015, barcode TUNUVI-22. By A. Lynghammar

**Lycodes palearis**
351 mm: UAM 5844, W Gulf of Alaska, 2002
186 mm: CAS 230137, SE Chukchi Sea, barcode BASIS2007-151
152 mm: CAS 230137, SE Chukchi Sea, barcode BASIS2007-150
57–60 mm: UAM 5086, Norton Sound, NE Bering Sea, 2002
By C. W. Mecklenburg
Lycodes pallidus
220 mm: ZMUB uncat., NE Greenland, 2017. By A. Lynghammar
178 mm: ZMUB uncat., NE Greenland, 2017. By A. Lynghammar
137 mm: ZMUB 23388, NE Greenland, 2015, barcode TUNUVI-33. By A. Lynghammar
131 mm: ZMUB uncat., NE Greenland, 2017. By A. Lynghammar
107 mm: MNHN uncat., field no. BPS-3318, Svalbard, 2015. By Samuel P. Iglesias

Lycodes polaris
320 mm: CAS 235291, Beaufort Sea, barcode BEAU2011-57
239 mm: CAS 220478, SW Chukchi Sea, 2004
220 mm: UAM 6366, Beaufort Sea, barcode BEAU2011-73
180 mm: ZIN 53590, NW Chukchi Sea, 2004
68 mm: IMS 29, NW Chukchi Sea, 2004
37-43 mm: CAS 220460, NW Chukchi Sea, 2004
By C. W. Mecklenburg except 180 mm lateral view by Boris A. Sheiko

Lycodes raridens
388 mm: ZIN 53594, SE Chukchi Sea, 2004
208 mm: UAM 5574, SW Chukchi Sea, barcode RUSALCA2009-148
138 mm: UAM 6367 (frozen-thawed), Beaufort Sea, 2011
114 and 128 mm: CAS 220461, NW Chukchi Sea, 2004
40-48 mm: CAS 230084, NE Chukchi Sea, barcodes BASIS2007-84,-85
By C. W. Mecklenburg

Lycodes reticulatus
306 mm: CAS 235306, Beaufort Sea, barcode BEAU2011-130
198 mm: CAS 236461, Beaufort Sea, barcode BEAU2012-44
103 mm: UAM 47866, Beaufort Sea, 2013 (preserved specimen)
100 mm: CAS 237925, Beaufort Sea, barcode BEAU2011-60
67 mm: UAM 6452-01, Beaufort Sea, barcode BEAU2011-48
46 mm: UAM 6452-02, Beaufort Sea, barcode BEAU2011-47
By C. W. Mecklenburg

Lycodes rossi
230 mm: UW 118734, Beaufort Sea, 2008. By E. Acuna, NOAA, AFSC, Seattle
203 mm: ZMUB 23446, Greenland Sea, 2015, barcode TUNUVI-06. By A. Lynghammar
188 mm: ZMUB 23445, Greenland Sea, 2015, barcode TUNUVI-03. By A. Lynghammar
165 mm: UW 118775, Beaufort Sea, 2008. By Erika Acuña, NOAA, AFSC, Seattle
230 mm preserved (chin crests): UW 118734, Beaufort Sea, 2008. By C. W. Mecklenburg
130 mm: ZMUB 21033, Greenland Sea, 2010, barcode AL-9263. By A. Lynghammar

Lycodes sagittarius
427 mm: CAS 236451-01, Beaufort Sea, barcode BEAU2012-13. By C. W. Mecklenburg
294 mm: CAS 236451-02, Beaufort Sea, barcode BEAU2012-14. By C. W. Mecklenburg
115 mm: CAS 236451-03, Beaufort Sea, barcode BEAU2012-15. By C. W. Mecklenburg

Lycodes seminudus
440 mm: ZIN 54799, Chukchi Cap, barcode RUSALCA2009-83
404 mm: CAS 236446, Beaufort Sea, barcode BEAU2012-03
401 mm: CAS 236453, Beaufort Sea, barcode BEAU2012-18
349 mm: CAS 236457, Beaufort Sea, barcode BEAU2012-32
286 mm: CAS 228526, Chukchi Cap, barcode RUSALCA2009-97
270 mm: ZIN 547985, Chukchi slope, barcode RUSALCA2009-111
226 mm: ZMUB 22352, Greenland Sea, 2013, barcode Vp-39/13
155 mm: ZMUB uncat., NE Greenland, 2017
By C. W. Mecklenburg except 155 mm by A. Lynghammar

Lycodes squamiventer
358 mm: CAS 236452, Beaufort Sea, barcode BEAU2012-16
164 mm: ZMUB 23196, Svalbard, 2015, barcode Vp-146/15
92 mm: CAS 236459-2, Beaufort Sea, 2012
73 mm: UAM 3689, Beaufort Sea, barcode BEAU2012-39
By C. W. Mecklenburg
Lycodes turneri
438 mm: UW 117433, NE Bering Sea, barcode UW117433
145 mm: CAS 228548, SE Chukchi Sea, barcode RUSALCA2009-168
117 mm: CAS 230045, NE Bering Sea, 2006
65 mm: UAM uncat. (PSR 2080), NE Chukchi Sea, barcode AKMAP2011-25
By C. W. Mecklenburg

Lycodes vahlii
Gulf of St. Lawrence. By Claude Nozères, Fisheries and Oceans Canada.

Lycodonus flagellicauda
234 mm, including views of head: ZMUB 23396, NE Greenland, 2015, barcode TUNUVI-37. By A. Lynghammar
239 mm: ZMUB 23198, north of Svalbard, 2015. By Samuel P. Iglesias
202 mm: MNHN uncat., field no. BPS-3313, Svalbard, 2015. By Samuel P. Iglesias

Lycodonus mirabilis
211 mm: ZMUB 21407, Davis Strait, 2011. By I. Byrkjedal

Zoarces viviparus
Top: Trondheim Fjord, Norway, 2007. By Irvin Kilde
Middle: SE Norway, 2017. By Ole-Håkon Heier
Bottom: Ishøj, Denmark, 2012. By P. R. Møller

Acantholumpenus mackayi
182 and 187 mm: CAS 235302, Norton Sound, NE Bering Sea, barcodes PSRBC12-20, -21
125 mm: UAM 5024, Norton Sound, NE Bering Sea, 2002
143 and 212 mm: UAM 4658, E Bering Strait, 2006
By C. W. Mecklenburg

Anisarchus medius
146 mm: CAS 230106, NE Chukchi Sea, barcode BASIS2007-113
126 and 129 mm: PSR 755P, NE Chukchi Sea, 2004
64 mm: CAS 228482, NW Chukchi Sea, barcode RUSALCA2009-14
43 and 46 mm: CAS 228520, East Siberian Sea, barcode RUSALCA2009-63
By C. W. Mecklenburg

Chirolophis ascanii
210 mm female: Trondheim Fjord, Norway, 2008. By Christer W. Gjøvaag
Head of live specimen: Oslofjord, Norway, 2017. By Tine Kinn Kvamme
180 mm female, anterior view in bin of water: Stavanger, Norway, 2017. By Albin Dal
88 mm: Finnmark, Norway, 2011. By A. Lynghammar
190 mm, anterior view of live specimen: SW Norway, 2015. By Thorleif Søvik

Chirolophis decoratus
281 mm, preserved specimen: UW 119212, western Gulf of Alaska 2009. By C. W. Mecklenburg
Live fish, 2 views on red coral: southern British Columbia, 2017. By Danny Kent, Ocean Wise Vancouver Aquarium
Live fish, head with blue: off northern Vancouver Island, British Columbia, 2015. By Kent Forsén, Marinfooto, Göteborg

Chirolophis snyderi
122 mm: UAM 6197, SE Chukchi Sea, 2010, barcode AKCH10-10. By C. W. Mecklenburg

Eumesogrammus praecisus
135 mm: CAS 228524, NW Chukchi Sea, barcode RUSALCA2009-82
186 mm: UAM 6300, Beaufort Sea, barcode BEAU2011-82
150 mm: CAS 230149, E Bering Strait, barcode BASIS2007-61
83 mm: CAS 230052, NE Chukchi Sea, barcode BASIS2007-29
82 mm: ZIN 54837, NW Chukchi Sea, 2009
31 mm: UAM 2983, Beaufort Sea, barcode BEAU2012-10
Live specimen: Cambridge Bay, Nunavut, Canada, 2016
By C. W. Mecklenburg except live specimen by Danny Kent, Ocean Wise Vancouver Aquarium
Drawing of tail: Schmidt and Andriashev 1935, p. 57

Leptoctinus maculatus
146 mm: MNHN uncat., field no. BPS-3287, north of Svalbard, Arctic Ocean, 2015
148 mm: UAM 6439, Beaufort Sea, barcode BEAU2011-67
108–157 mm: UAM 4708, Icy Strait, SE Gulf of Alaska, 2002
~50 mm: (not kept), Semidi Islands, SW Gulf of Alaska, 2001
By C. W. Mecklenburg except 146 mm by Samuel P. Iglésias

**Lumpenus fabricii**
167 mm: UAM 5577, SW Chukchi Sea, barcode RUSALCA2009-153
172 mm: UAM 6392, Beaufort Sea, barcode BEAU2011-94
151 mm: CAS 230102, NE Chukchi Sea, barcode BASIS2007-110
149 mm: UAM 5552, SW Chukchi Sea, UAM tissue RUSALCA2009-164
136 mm: IMS 23, SW Chukchi Sea, 2004
113 mm: CAS 228479, SW Chukchi Sea, barcode RUSALCA2009-11
41 and 43 mm: PSR 1063P, NE Chukchi Sea, 2007
By C. W. Mecklenburg except 136 mm by B. A. Sheiko

**Lumpenus lampretaeformis**
229 mm: MNHN uncat., field no. BPS-3288, Svalbard, 2015. By Samuel P. Iglésias

**Lumpenus sagitta**
126, 130, 164 mm: UAM 4707, Cross Sound, SE Gulf of Alaska, 2002
66 mm: UAM 5807, Semidi Islands, SW Gulf of Alaska, 2006
41–43 mm: PSR 927P, Aleutian Islands, 2006
By C. W. Mecklenburg

**Stichaeus punctatus**
105 mm: CAS 228552, SE Chukchi Sea, barcode RUSALCA2009-176
80 mm: UAM 5813, Aleutian Islands, 2006
117 mm: UAM 5535, NE Chukchi Sea, barcode RUSALCA2009-118
37 mm: UAM 2970, SE Chukchi Sea, 2004
By C. W. Mecklenburg

**Pholis fasciata**
159 mm: CAS 220466, E Bering Strait, 2004
175 mm: CAS 228564, E Bering Strait, barcode RUSALCA2009-189
147 mm: UAM 5588, SE Chukchi Sea, barcode RUSALCA2012-05
29.5 mm: SW Chukchi Sea, 2004
By C. W. Mecklenburg except live fish by Danny Kent, Ocean Wise Vancouver Aquarium

**Pholis gunnellus**
Top: Barents Sea. By A. V. Dolgov
170 mm: Finnmark, Norway. By A. Lynghammar

**Anarhichas denticulatus**
936 mm adult female: MNHN uncat., field no. BPS-3351, northwest of Svalbard, Greenland Sea, 2015. By S. P. Iglésias
661 mm immature: MNHN uncat., field no. BPS-3367, west of Svalbard, Greenland Sea, 2015. By Samuel P. Iglésias
510 mm: Arctic Ocean west of Svalbard, 2011. By A. Lynghammar
81 mm: ZMUB 23210, north of Svalbard, Arctic Ocean, 2015, barcode Vp-159/15. By Samuel P. Iglésias
Drawing of upper jaw and dentition: Barsukov 1959, pl.1-1
Drawing of lower jaw and dentition: Barsukov 1959, pl.II-1

**Anarhichas lupus**
About 640 mm: North Sea, 2017. By R. M. Wienerroither
192 mm: MNHN uncat., field no. BPS-3278, north of Svalbard, Arctic Ocean, 2015. By Samuel P. Iglésias
150 mm: MNHN uncat., field no. BPS-3279, north of Svalbard, Arctic Ocean, 2015. By Samuel P. Iglésias
58 mm: MNHN uncat., field no. BPS-3232, Hinlopenstredet, Svalbard, 2015. By Samuel P. Iglésias
Drawing of upper jaw and dentition: Barsukov 1959, pl.I-3
Drawing of lower jaw and dentition: Barsukov 1959, pl.II-3

**Anarhichas minor**
124 mm: MNHN uncat., field no. BPS-3362, northwest of Svalbard, Greenland Sea, 2015
107 mm: ZMUB 23193, north of Svalbard, Arctic Ocean, 2015
81 mm: MNHN uncat., field no. BPS-3277, north of Svalbard, Arctic Ocean, 2015
56 mm: MNHN uncat., field no. BPS-3239, north of Svalbard, Arctic Ocean, 2015
By Samuel P. Iglésias
Drawing of upper jaw and dentition: Barsukov 1959, pl.I-2
Drawing of lower jaw and dentition: Barsukov 1959, pl.II-2
**Anarhichas orientalis**
510 mm SL: UW 150194, Norton Sound, Bering Sea, 2010; by James W. Orr, NOAA, AFSC, Seattle
179 mm TL: CAS 235292, NE Chukchi Sea, barcode AKMAP2011-05; by C. W. Mecklenburg
95 mm TL: CAS 235373, SE Chukchi Sea, barcode RUSALCA12-43; by C. W. Mecklenburg
Drawing of upper jaw and dentition: Barsukov 1959, pl. I-5
Drawing of lower jaw and dentition: Barsukov 1959, pl. II-5

**Zapora silenus**
333 mm: UAM 5692, Kodiak Island, Gulf of Alaska, 2002 (frozen-thawed)
139 mm: CAS 230187, NE Bering Sea, barcode BASIS2007-194
101 mm: CAS 230141, NE Chukchi Sea, barcode BASIS2007-153
85 mm: UAM 5811, Semidi Islands, Gulf of Alaska, 2006
20–30 mm: Semidi Islands, Gulf of Alaska, 2004
By C. W. Mecklenburg

**Ammodytes americanus**
St. Lawrence Estuary, near shore. By Claude Nozères, Fisheries and Oceans Canada

**Ammodytes dubius**
ZMUB 21886, Davis Strait, 2013. By I. Byrkdal

**Ammodytes hexapterus**
176 mm: CAS 230188, NE Bering Sea, barcode BASIS2007-211
149 mm: CAS 230090, NE Chukchi Sea, barcode BASIS2007-93
136 mm: CAS 235350, SW Chukchi Sea, barcode RUSALCA2012-19
By C. W. Mecklenburg

**Ammodytes marinus**
North Sea, 2016. By R. M. Wienerroither

**Ammodytes tobianus**
SW Norway. By John Olav Flors-Larsen

**Scomber scombrus**
33–36 cm: Trondheim Fjord, Norway, 2008. By A. Lynghammar

**Glyptocephalus cynoglossus**
Eyed and blind sides, upper photos: Barents Sea, 1998. By A. V. Dolgov
Head and lower photo: Trondheim Fjord, 2010. By A. Lynghammar

**Hippoglossoides elassodon**
370 mm: Sea of Okhotsk off NE Sakhalin, 2003
197 mm: CAS 230127, NE Chukchi Sea, barcode BASIS2007-137
104 mm: CAS 230333, NE Chukchi Sea, barcode OSHORO2007-32
82 mm: UAM 5812, Semidi Islands, Gulf of Alaska, 2004
60 mm: UAM uncat. (PSR 2210), SW Chukchi Sea, 2012, barcode RUSALCA 12-10
32 and 36 mm: PSR 875P, Semidi Islands, Gulf of Alaska, 2006
By C. W. Mecklenburg, except 370 mm by Boris A. Sheiko

**Hippoglossoides platessoides**
Adult at top: Barents Sea, 1998. By A. V. Dolgov
167 mm: ZMUB 234, 19, NE Greenland, 2015, barcode TUNUVI-08. By A. Lynghammar
32 mm: Barents Sea, 2017. By R. M. Wienerroither

**Hippoglossus stenolepis**
633 mm: PSR 917P, Pribilof Islands, SE Bering Sea, 2005
103 mm: CAS 230271, Semidi Islands, SW Gulf of Alaska, barcode SMMOCI2007-39
42 mm: UAM 4741, Pribilof Islands, SE Bering Sea, 2005
25–32 mm: PSR 884P, Semidi Islands, SW Gulf of Alaska, 2006
By C. W. Mecklenburg
**Limanda aspera**
250 mm: Sea of Okhotsk off NE Sakhalin, 2003
185 mm: CAS 230143, SE Chukchi Sea, barcode BASIS2007-155
94 mm: CAS 230253, Semidi Islands, SW Gulf of Alaska, barcode SMMOCI2007-17
54 mm: PSR 2191 (specimen lost), SE Chukchi Sea, barcode RUSALCA2012-01
30–33 mm: UAM 5915, NE Bering Sea, 2007
By C. W. Mecklenburg except 250 mm by Boris A. Sheiko
Drawing of scale: Schmidt 1950, fig. 24a

**Limanda limanda**
360 mm: Trondheim Fjord, Norway, 2008. By A. Lynghammar
Eyed and blind side photos below: Barents Sea. By A. V. Dolgov

**Limanda proboscidea**
170 mm: CAS 230171, NE Bering Sea, barcode BASIS2007-185
113 mm: CAS 220469, SW Chukchi Sea, 2004
38 mm: PSR 1034P, SE Chukchi Sea, 2007
30 mm: UAM 6481, NE Chukchi Sea, barcode AKMAP2011-32
19 mm: UAM 6471, NE Chukchi Sea, barcode AKMAP2011-33
By C. W. Mecklenburg

**Limanda sakhalinensis**
190 mm: Sea of Okhotsk off NE Sakhalin, 2003
117 mm: CAS 236434, SW Chukchi Sea, barcode RUSALCA2012-25
79 mm: UAM 5788, SE Chukchi Sea, barcode OSHOR2008-01
34 mm: CAS 236434, SW Chukchi Sea, barcode RUSALCA2012-26
By C. W. Mecklenburg except 190 mm by Boris A. Sheiko
Drawing of scale: Schmidt 1950, fig. 24b

**Liopsetta glacialis**

**Microstomus kitt**
Eyed and blind side at top: Irminger Sea, 2003. By A. V. Dolgov
Frontal view and eyed side, 25 cm: Barents Sea, 2011. By A. Lynghammar

**Platichthys flesus**
370 mm: Oslofjord, Norway, 2014. By Ole-Håkon Heier
Juvenile at left: Oslofjord, Norway, 2015. By Ole-Håkon Heier
Live fish on seafloor: By P. R. Møller

**Platichthys stellatus**
290 mm: Sea of Okhotsk off northeast Sakhalin, 2003. By Boris A. Sheiko

**Pleuronectes platessa**
510 mm: Trondheim Fjord, Norway, 2010. By A. Lynghammar
Middle: Barents Sea, 1998. By A. V. Dolgov
Live fish on seafloor: Denmark. By P. R. Møller

**Pleuronectes quadrituberculatus**
332 mm: Bering Sea, 2007. By C. W. Mecklenburg
340 mm: Sea of Okhotsk off northeast Sakhalin, 2003. By Boris A. Sheiko

**Reinhardtius hippoglossoides**
437 mm: ZIN 5530, Chukchi Borderland, barcode RUSALCA2009-102
108 mm: CAS 236426, NW Chukchi Sea, barcode RUSALCA2009-69
92 mm: PSR 1029P, NE Chukchi Sea, surface haul, 2007, no barcode
86 mm: CAS 230072, NE Chukchi Sea, barcode BASIS2007-72
57 mm: UAM 6194, NE Chukchi Sea, barcode AKCH10-09
By C. W. Mecklenburg
Drawing of head: adapted from Norman 1934, fig. 216
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REFERENCES CITED

For original descriptions of species, generally not included here, see Eschmeyer et al. (2017).


Albert OT (1993) Distribution, population structure and diet of silvery pout (Gadilicus argenteus thori J. Schmidt), poor cod (Trisopterus minutus minutus (L.)), four-bearded rockling (Rhinonemus cimbrius (L.)), and Vahl’s eelpout (Lycoodes vahlii gracilis Reinhardt) in the Norwegian Deep. Sarsia 78:141–154

Albikovskaya LK (1982) Distribution and biomass of the Atlantic wolfish, spotted wolfish and northern wolfish in the Newfoundland area. In: Abundance and life style of commercial fishes of the northwestern Atlantic. PINRO, Murmansk, pp 68–79 [In Russian]


Andriashev AP (1937a) A contribution to the knowledge of the fishes from the Bering and Chukchi Seas. Issled Morei SSSR 25 (Issled Dal’verovstoch Morei 5), Leningrad [In Russian; English translation by Lanz L, Willimovsky NJ, 1955, US Fish Wildl Serv Spec Sci Rep Fish 145]

Andriashev AP (1939) An outline of the zoogeography and origin of the fish fauna of the Bering Sea and neighboring waters. Izdanie Leningradskogo Gosudarstvennogo Universiteta, Leningrad [In Russian. English translation by Merrival A]

Andriashev AP (1948)Ichthyofauna of the Laptev Sea. Tr Zool Ikhtiol Akad Nauk SSSR 7:76–100 [In Russian]


Andriashev AP (1964) List of fishes collected by the expedition onboard the ice-cutter F. Litke (1955) northward of Franz Josef Land and Spitsbergen. Trudy Arkticheskogo i Antarktickogo Nauchno-Issled. Inst 259:373–377 [In Russian]


Andriashev AP, Chernova NV (1997) Two new species of liparid fishes (Liparidae, Scorpaeniformes) from the abyssal part of the eastern North Atlantic. J Ichthyol 37(7):479–484


Antonenko DV, Vdovin AN (2001) Seasonal distribution of the common greenling Hexagrammos stelleri (Hexagrammidae) in Peter the Great Bay (the Sea of Japan). J Ichthyol 41:524–528

Backus RH (1951) New and rare records of fishes from Labrador. Copeia 1951:288–294
Balushkin AV, Sheiko BA, Prirodina VP (2012b) Catalog of specimens in the collection of the Zoological Institute, Russian Academy of Sciences. Osteichthyes, Zoarcoidei: Stichaeidae, Pholidiae, Anarhichadidae. Zoological Institute, RAS, St. Petersburg

Barraclough WE (1952) The agonid fish Pallasina barbata aix (Starks), from British Columbia. J Fish Res Board Can 9(3):143–147


Barsukov VV, Litvinenko NL, Serebryakov VP (1984) Manual for the identification of redfish species of the north Atlantic and adjacent areas. USSR Ministry of Fisheries, Atlantic Scientific-Research Institute of Fisheries and Oceanography, Kalingrad, USSR. Canadian Translation of Fisheries and Aquatic Sciences No. 5168


Bean TH (1879a) Description of a species of Lycodes (L. turneri) from Alaska, believed to be undescribed. Proc US Natl Mus (for 1878) 1:463–466

Bean TH (1879b) Description of a new fish from Alaska (Anarhichas lepturus), with notes upon other species of the genus Anarhichas. Proc US Natl Mus 2(80):212–218


Bergstad OA, Høines ÅS, Krüger-Johnsen EM (2001) Spawning time, age and size at maturity, and fecundity of sandeel, Ammodytes marinus, in the north-eastern North Sea and in unfished coastal waters off Norway. Aquat Living Resour 14:293–301

685


Borkin IV, Grigoryev GV (1986) On finding of pearsides Maurolicus muelleri (Gmelin) (Sternoptychidae) off Novaya Zemlya. Vopr Ikhtiol 26:857–859 [In Russian]


Bouva J (1979) Comparison of the Arctic cod (Boreogadus saida), the polar cod (Arctogadus glacialis), and the toothed cod (A. borisovii). CAPSAC Res Doc 79/50


Chereshnev IA, Volobuev VV, Khovanskij IE, Shestakov AB (2001) Coastal fishes of the northern part of the Sea of Okhotsk. Dalnauka, Vladivostok [In Russian]


Chernova NV (1991) Smallfishes (Liparididae) from the Eurasian Arctic. Murmanskij Morskij Biologicheskij, Akademiya Nauk SSSR: Apatit [In Russian with English summary]


Chernova NV (2005b) Review of Careproctus (Liparidae) of the North Atlantic and adjacent Arctic, including the generic type C. reinhardtii, with rehabilitation of C. gelatinosus (Pallas) from Kamchatka. J Ichthyol 45(Suppl 1):S1–S22
Chernova NV (2007) Ichthyofauna of Franz Josef Land and the northern part of Novaya Zemlya. In: Modern investigations of ichthyofauna in arctic and southern seas of the European part of Russia. Kola Science Center, Russian Academy of Sciences, Apatity, pp 55–74 [In Russian]
Chernova NV (2014b) New species of the genus Careproctus (Liparidae) from the Kara Sea and identification key for congeners of the North Atlantic and Arctic. J Ichthyol 54:757–780
Chernova NV (2014a) Polymorphism of Arctogadus, an alternative point of view: A. borisovi is a valid species. P. 48 in Abstracts, ESSAS Annual Science Meeting. Dynamics of Sub-Arctic Marine Ecosystems, April 7–9, 2014. Natural History Museum of Denmark, University of Copenhagen. [Poster presented at the conference included descriptions and maps for the proposed species.]
Chiperzak DB, Saurette F, Raddi P (1995) First record of Greenland halibut (Reinhardtius hippoglossoides) in the


Christiansen JS, Lynghammar A (2012) Industrial potential of antifreeze proteins (AF(G)Ps) from marine fishes in Arctic Norway – initial screening of species. MABIT Scientific Report BS0040, UiT The Arctic University of Norway, Tromsø


Chumaevskaia-Svetovidova EV (1955) Species composition of fishes in area off Murmansk Biological Station. Proc Murmansk Biol Sta 2:5–11 [In Russian]


Clemens WA, Wilby GV (1946) Fishes of the Pacific coast of Canada. Fish Res.Board Can Bull 68


Collett R (1875) Norges fiske, med bemærkninger om deres udbredelse. Brøgger, Christiania


Collett R (1903) Meddelelser om Norges fiske i aarene 1844-1901. Mallotus villosus (Müller) 1776. Forh Vidensk Selsk Krist 14:147–162 [In Norwegian]


COSEWIC (2010b) COSEWIC assessment and status report on the deepwater redfish/acadian redfish complex *Sebastes mentella* and *Sebastes faciatus*, in Canada. Committee on the Status of Endangered Wildlife in Canada, Ottawa


Davis PS (1990) The first occurrence of torsk, Brosme brosme (Ascanius, 1772) for the coast of Northumberland, and additional records of the swordfish, Xiphias gladius Linnaeus, 1758. Trans Nat Hist Soc Northumbria 55:149


DFO (Department of Fisheries and Oceans) (2013) Wolfish in the Atlantic and Arctic regions. DFO Can Sci Advis Sec Sci Advis Rep 2013/005

DFO (Department of Fisheries and Oceans) (2013) Update to the recovery potential for cusk in Canadian waters. DFO Canadian Science Advisory Secretariat Science Advisory Report 2014/048


Dolgov AV (2011) Atlas of the Barents Sea fishes. PINRO, Murmansk [In Russian]
Dolgov AV (2016) Composition, formation and structure of the Barents Sea fish communities. PINRO, Murmansk [In Russian]


Ebert DA, Stehmann MFW (2013) Sharks, batoids, and chimaeras of the North Atlantic. FAO Species Catalogue for Fishery Purposes No. 7. FAO, Rome


ECNASAP (East Coast of North America Strategic Assessment Project) (1996) Groundfish atlas. Science Sector, Department of Fisheries and Oceans (Canada), and Office of Ocean Resources Conservation and Assessment, National Oceanic and Atmospheric Administration (USA)


http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp


Esipov VK (1935) Fishes and fishery on the Kolguev Island. Za ribnuyu industriyu (For the fishery industry) 10:26–51 [In Russian]

Esipov VK (1937) On the fishes of the Polar Basin and adjacent deep waters. Probl Arkt 4:85–97 [In Russian]

Esipov VK (1939) On the fishes collected by the expedition aboard the ice-breaker "Sadko" in 1935. Zool Zhur 18:877–887 [In Russian]

Esipov VK (1940) Ichthyofauna of the Brothers Laptev Sea. Zool Zhur 19:139–142 [In Russian]


Esipov VK (1952) Fishes of the Kara Sea. Izdatel’stvo Akad Nauk SSSR [In Russian]


Faber DJ (1976) Identification of four northern blennioid fish larvae in the Canadian Atlantic Ocean (Stichaeidae, Lumpenidae). J Fish Res Board Can 33:1798–1802

Fabricius O (1780) Fauna groenlandica, systematice sistens animalia Groenlandiae occidentalis hactenus indagata, quod nomen specificum, trivale, vernaculumque. I. G. Rotte, Hafniae & Lipsiae (Copenhagen & Leipzig)


Francis MP, Campana SE, Jones CM (2007). Age under-estimation in New Zealand porbeagle sharks (Lamna nasus): Is there an upper limit to ages that can be determined from shark vertebrae? Mar Freshw Res 58:10–23


Gilbert CH (1896) Appendix 6.—The ichthyological collections of the steamer Albatross during the years 1890 and 1891. Rep US Fish Comm (for 1893) 19:393–476, pls 20–35
Gill TN (1907) The lumpsucker: its relationships and habits. Smithsonian Mis Coll 50:175–194
Girard CF (1856) Contributions to the ichthyology of the western coast of the United States, from specimens in the museum of the Smithsonian Institution. Proc Acad Nat Sci Phila 8:131–137
Gjøsaeter J (1973) Age, growth, and mortality of the myctophid fish, Benthosema glaciale (Reinhardt), from western Norway. Sarsia 52:14


Goode GB, Bean TH (1879) Description of a species of Lycodes (L. paillus) obtained by the United States Fish Commission. Proc US Natl Mus 2:44–46


Goode GB, Bean TH (1896) Oceanic ichthyology, a treatise on the deep-sea and pelagic fishes of the world, based chiefly upon the collections made by the steamers Blake, Albatross, and Fish Hawk in the northwestern Atlantic, with an atlas containing 417 figures. Smithsonian Contributions to Knowledge 30, 31


Günther A (1880) An introduction to the study of fishes. Adam and Charles Black, Edinburgh

Günther A (1887) Report on the deep-sea fishes collected by H.M.S. Challenger during the years 1873–76. In: Report of the scientific results of the voyage of H.M.S. Challenger during the years 1873–76. Part 57: 1–335, pls. 1–73


Hanke GF, Peden AE, Bedard JM (2014) New records of spiny eels (Albuliformes), true eels (Anguilliformes), and bobtail eels (Saccopharyngiformes) in British Columbia, Canada. Northwest Nat 95:63–76


Hareide NR, Garnes G (2001) The distribution and catch rates of deep water fish along the Mid-Atlantic Ridge from 43 to 61° N. Fish Res 51:297–310


Hemphill DV, Follett WI (1958) First record of the agonid fish Pallasina barbata aix Starks from California. Calif Fish Game 44:281–283


Hildebrandt H (1948) Marine fish of Arctic Canada. Master’s thesis, McGill University, Montreal, Quebec


Hobbs RS (2014) Molecular events in the evolution of freeze resistant fish: type I AFP in cunner (Tautogolabrus adspersus) and type III AFP in the rock gunnel (Pholis gunnellus) and radiated shanny (Ulvaria subbifurcata). PhD thesis. Memorial University of Newfoundland, St. John’s, Newfoundland and Labrador


Hoff GR (2008) A nursery site of the Alaska skate (Bathyraja parmifera) in the eastern Bering Sea. Fish Bull 106:233–244


Hognestad PT, Vader W (1979) Saltvannsfisk I Nord-Norge. University of Tromsø, Tromsø, naturvitenskap 6


Huang L, Wolcott D, Yang H (2012) Tidal characteristics along the western and northern coasts of Alaska. Center for Operational Oceanographic Products and Services, National Ocean Service, NOAA, 14 pp


Hubbs CL, Follett WI (1947) Lamna ditropis, new species, the salmon shark of the North Pacific. Copeia 1947:194


Hubbs CL, Wisner RL (1980) Revision of the sauries (Pisces, Scomberesocidae) with descriptions of two new genera and one new species. Fish Bull 77:511–566


Hulley PA (1981) Results of the research cruises of FRV “Walther Herwig” to South America. LVIII. Family Myctophidae (Osteichthyes, Myctophiformes). Archiv für Fischereiwissenschaften 31:1–300


Hunter JG, Leach ST, McAllister DE, Steigerwald MB (1984) A distributional atlas of records of the marine fishes of Arctic Canada in the National Museums of Canada and Arctic Biological Station. Syllogeus (Ottawa) 52


Hyde JR, Underkoffler KE, Sundberg ME (2014) DNA barcoding provides support for a cryptic species complex within the globally distributed and fishery important opah (Lampris guttatus). Mol Ecol Resour 14:1239–1247

Jensen AS (1952b) Recent finds of Lycodinae in Greenland waters. Medd Groenl 142:70–711


Jensen AS (1944) Contributions to the ichthyofauna of Greenland 4–7. Spolia Zool Mus Haun 4


Jordan DS, Starks EC (1904a) A review of the Cottidae or sculpins found in the waters of Japan. Proc US Natl Mus 27:231–335
Kanayama T (1991) Taxonomy and phylogeny of the family Agonidae (Pisces: Scorpaeniformes). Mem Fac Fish Hokkaido Univ 38(1,2)


705
Kudriavtseva OYu, Karamushko OV (2005) Comparative morphometric analysis of lump sucker Cyclopterus lumpus (Cyclopteridae) from different areas of the eastern Atlantic. Vopr Ikhtiol 45:342–351 [In Russian]
Kukuev EI (1982) Ichthyofauna research on underwater mountain within the North-Atlantic ridge and adjacent areas. CM 2002/M:05
Kukuev EI (2002) Ichthyofauna research on underwater mountain within the North-Atlantic ridge and adjacent areas. CM 2002/M:05
Last PR, Stevens JD (2009) Sharks and rays of Australia. CSIRO, Hobart


Lönnberg AJE (1899) Notes on the fishes collected during the Swedish Arctic Expedition to Spitzbergen and King Charles Land 1898 under the direction of Professor A. G. Nahorst. Bihang Handl Svensk Vet Akad 1899, 24, pt 4(9):1–36


McAllister DE (1963a) A revision of the smelt family, Osmeridae. Natl Mus Can Bull 191, iv + 53 pp


McAllister DE (1964) Fish collections from eastern Hudson Bay. Can Field Nat 78:167–178


McAllister DE (1990) A list of the fishes of Canada. Syllogus (Ottawa) 64


Mecklenburg CW (2003a) Family Hemitripteridae Gill 1872 — sea ravens or sailfin sculpins. Calif Acad Sci Annot Checkl Fish 5
Mecklenburg CW (2003b) Family Pholidae Gill 1893 — gunnels. Calif Acad Sci Annot Checkl Fish 9
Miller DJ, Lea RN (1972) Guide to the coastal marine fishes of California. Calif Dep Fish Game Fish Bull 157

711


Nelson RJ, Bouchard C (2013) Final report: Arctic cod (Boreogadus saida) population structure and connectivity as examined with molecular genetics. NPRB Project 1125. Québec-Océan, Département de Biologie, Université Laval, Québec, QC, Canada


Neyelov AV (1979) Seismosensory system and classification of sculpins (Cottidae: Myxocephalinae, Artediellinace). Leningrad, Nauka [In Russian]


Nielsen J (2017) The Greenland shark (Somniosus microcephalus): Diet, tracking and radiocarbon age estimates reveal the world’s oldest vertebrate. PhD thesis. Department of Biology, University of Copenhagen, Denmark


Nielson JR, Andersen M (2001) Feeding habits and density patterns of Greenland cod, Gadus ogac (Richardson 1836), at West Greenland compared to those of the coexisting Arctic cod, Gadus morhua L. J North Atl Fish Sci 29:1–22


Nikol’skiy GV (1971) Special ichthyology. Vishaya shkola, Moscow [In Russian]


Norcross BL, Holladay BA, Mecklenburg CW (2013) Recent and historical distribution and ecology of demersal fishes in the Chukchi Sea Planning Area. Final report, OCS Study BOEM 2012-073. Coastal Marine Institute, University of Alaska Fairbanks


Nozères C, Bérubé M (2003) Marine species identification guide for the St. Lawrence. Maurice Lamontagne Institute, Fisheries and Oceans Canada


715

Okamura O (ed) (1986) Fishes of the East China Sea and the Yellow Sea. Seikai Regional Fisheries Research Laboratory, Nagasaki


Orr JW, Stevenson DE, Hoff GR, Spies I, McEachran JD (2011) *Bathyraja panthera*, a new species of skate (Rajidae: Arhynchobatinae) from the western Aleutian Islands, with a revision of the subgenus *Actroraja* Ishiyama. NOAA Prof Pap NMFS 11


Otterstrøm CV (1912) Fisk. Danmarks Fauna. GEC Gads Forlag, København

Otterstrøm CV (1914) Danmarks Fauna bd. 15. Fisk II, Blædfinnesisk. GEC Gads Forlag, København

Ottesen CA (2004) Taxonomy, morphology and biology of *Triglops murrayi* and *Triglops nybelini* (family Cottidae) obtained at Svalbard and Jan Mayen. Masters Thesis, Norwegian College of Fishery Science, University of Tromsø


Richardson J (1836) The Fish. In: Fauna Boreali-Americana; or, the zoology of the northern parts of British America: containing descriptions of the objects of natural history collected on the late northern land expeditions, under the command of Sir John Franklin, RN. J. Bentley, London. Part 3: i–xv + 1–327


Rumyantsev AI (1947) The capelin of Japan Sea. Izvestiya TINRO 22:35–74 [In Russian with English summary]


Schulze L, Christiansen JS (1994) Behavioural thermoregulation and swimming activity of two arctic teleosts (subfamily Gadinae) – the polar cod (Boreogadus saida) and the navaga (Eleginus navaga). J Thermal Biol 19:207–212


Soldatov VK (1939) Some new or rare species of fishes of our northern seas. In: Volume in honor of N. M. Knipowitsch (1885–1939), Moscow, pp 151–166 [In Russian]


Soldatov VK (1939) Some new or rare species of fishes of our northern seas. In: Volume in honor of N. M. Knipowitsch (1885–1939), Moscow, pp 151–166 [In Russian]


Steinhart MFW (2012) Complementary redescription of Raja linthea Fries, 1839 (Elasmobranchii, Rajidae) and its revised generic assignment. Zootaxa 3331:1-48


Steindachner F (1876) Ichthyologische Beiträge (V). Sitzb Akad Wissensch Wien 74 (1 Abth):49–240, pls 1–15


Tambovtsev BM (1965) Giant shark in the White Sea. Materials of fisheries investigations in the Northern Basin 5:145–147 [In Russian]


Taranetz AYa (1933) New data on the ichthyofauna of the Bering Sea. Vestnik Dv Filiala Akad Nauk SSSR (Bull Far Eastern Branch Acad Sci USSR) 1933:67–78 [In Russian; new species and summary in English]


Templeman W (1959) Redfish distribution in the North Atlantic. Fish Res Board Can Bull 120

Templeman W (1963) Distribution of sharks in the Canadian Atlantic (with special reference to Newfoundland waters). Fish Res Board Can Bull 140

Templeman W (1969) The scientific name, distribution and characteristics of the Blue ling, Molva dypterygia (Pennant), from west Greenland and Newfoundland areas. FiskDir Skr Ser HavUnders 15:145–162


Tilesius WG von (1810) *Piscium Camtscha*.


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Tilesius WG von (1810) *Piscium Camtscha*.


Urho L, Lehtonen H (2008) Fish species in Finland. Finnish Game and Fisheries Research Institute, Helsinki


Vdovin AN, Shvydkiy GV (2000) Distribution of flatfishes (Pleuronectidae) in Peter the Great Bay during the hydrological summer (July–September). Izv TINRO 127:122–136 [In Russian]


Vladychkov VD (1933) Biological and oceanographic conditions in Hudson Bay. 9. Fishes from the Hudson Bay region (except the Coregonidae). Contrib Can Biol Fish 8(2):13–61


727


Walford LA (1946) A southern record for the Atlantic halibut. Copeia 1946(2):100


Walters V (1953a) The fishes collected by the Canadian Arctic Expedition, 1913–18, with additional notes on the ichthyofauna of western Arctic Canada. Natl Mus Can Bull 128:257–274

Walters V (1953b) Notes on fishes from Prince Patrick and Ellesmere Islands, Canada. Am Mus Novitates 1643


Welcomme RL (1988) International introductions of inland aquatic species. FAO Fish Tech Pap 294


White WT, Last PR (2013) Notes on shark and ray types at the South China Sea Fisheries Research Institute (SCSFRI) in Guangzhou, China. Zootaxa 3752:226–48


Zilanov VK (1966) Some data on the biology of Micromesistius poutassou (Risso) in the north-east Atlantic. ICES CM 1966, Symposium on “The Ecology of Pelagic Fish Species in Arctic Waters” no 21


Yano K, Stevens JD, Compagno LJV (2007) Distribution, reproduction and feeding of the Greenland shark Somniosus (Somniosus) microcephalus, with notes on two other sleeper sharks, Somniosus (Somniosus) pacificus and Somniosus (Somniosus) antarcticus. J Fish Biol 73:374–390


Yano K, Stevens JD, Compagno LJV (2007) Distribution, reproduction and feeding of the Greenland shark Somniosus (Somniosus) microcephalus, with notes on two other sleeper sharks, Somniosus (Somniosus) pacificus and Somniosus (Somniosus) antarcticus. J Fish Biol 73:374–390


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The Appendix table gives, for each of the 229 marine fish species in the Arctic Region, scientific and common names, zoogeographic category, summary of geographic distribution, biotype, and life zone. The 205 species accounts provide the detailed information from which the table was constructed. The 24 species for which sufficient information is lacking to construct meaningful accounts, are only marginally and possibly doubtfully present in the Arctic Region, or are taxonomically problematic are indicated by asterisks (*) by their names; see the introductions to the families for specific comments on those species.

For scientific names of species, the table gives only genus and species. Complete formal scientific names of species include the author or authors and date of publication of the original species description. The formal names are given for the 205 species with accounts at the top of the first page of each account. Others are given in the taxonomy comments in the individual species accounts. All fish species names may be found in the online editions of the Catalog of Fishes (Eschmeyer et al. 2017).

For the zoogeographic patterns, A = Arctic, MA = Mainly Arctic, A–B = Arctic–Boreal, MB = Mainly Boreal, B = Boreal, and WD = Widely Distributed. Definitions are given in the Introduction.

The Distribution column in the table summarizes the species distributions. For Arctic–Boreal species, the oceans where populations occur outside of the Arctic Region are indicated; for instance, North Pacific and western North Atlantic for spatulate sculpin Icelus spatula, North Atlantic for northern wolffish Anarhichas denticulatus, and North Pacific for Arctic flounder Liopsetta glacialis. The same holds for Mainly Arctic species, with presence in adjacent boreal waters specified; for instance, southward into the North Atlantic (but not the Pacific) for the circumpolar twohorn sculpin I. bicornis. For circumpolar species, some species identified as circumpolar have not actually been recorded from all Arctic seas but are assumed to be present. Those are indicated by double asterisks (**) in the table.

Distributions are stated from west to east in the table. For example, for Atlantic hookear sculpin Artedielus atlanticus, "Eastern Canadian Arctic—Chukchi; N Atlantic” means that it occurs in all Arctic seas from eastern Canada to Baffin Bay, Greenland, Iceland, and the Barents, Kara, Laptev, and East Siberian Seas to the Chukchi Sea; with range southward indicated into the North Atlantic.

Where species are restricted to one side or the other of the North Atlantic, this is specified. The faunal affinities of Iceland in this regard have been questioned. We follow Briggs (2003:265), who considered that Iceland’s biotic relationships are almost entirely with the eastern Atlantic. Waters off the north and northwest shores, influenced by the cold East Greenland Current, are included in the Arctic Region and the south and east shores are included in the Boreal Region of the eastern North Atlantic. For the North Pacific, western and eastern are generally determined by the position of the International Dateline.

Circumglobal for Widely Distributed species means around the globe at temperate or temperate and tropical latitudes. For circumglobal species the main distribution in the Arctic Region is identified after the semicolon; e.g., short silver hatchetfish Argyropelecus hemigymnus is circumglobal in temperate and tropical regions, and also found in the Arctic Region adjacent to the North Atlantic.
## APPENDIX

**Scientific and common names, zoogeographic patterns, main distributions, biotypes, and life zones of marine fishes in the Arctic Region**

<table>
<thead>
<tr>
<th>Family &amp; species scientific names</th>
<th>Common name</th>
<th>Zoogeography</th>
<th>Distribution</th>
<th>Biotype</th>
<th>Life zone</th>
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<td>Myxine glutinosa</td>
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<td>Epipelagic, nerito–oceanic</td>
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| **ZAPRORIDAE** | | | | | |
| Zaprora silenus | prowfish | B | N Pacific | Demersal | Eulittoral |

| **AMMODYTIDAE** | | | | | |
| Ammodytes americanus | northern sand lance | A–B | Western N Atlantic | Demersal | Littoral |
| Ammodytes hexapterus | Arctic sand lance | A–B | Hudson Bay—western Greenland—western N Atlantic | Demersal | Epibenthopelagic |
| Ammodytes marinus | lesser sand-eel | M6 | N Atlantic | Demersal | Epibenthopelagic |
| Ammodytes persicostrus* | | | | | |
| Ammodytes robustus | | | | | |
| Ammodytes tobianus | small sand-eel | M6 | Eastern N Atlantic | Demersal | Epibenthopelagic |

| **SCOMBRIDAE** | | | | | |
| Scomber scombrus | Atlantic mackerel | B | N Atlantic | Pelagic | Epipelagic, nerito–oceanic |

| **PLEURONECTIDAE** | | | | | |
| Glyptcephalus cynoglossus | witch flounder | B | N Atlantic | Benthic | Eulittoral |
| Hippoglossus stenolepis | Pacific halibut | B | N Pacific | Benthic | Eulittoral |
| Lepidopsetta polyxystra* | | | | | |
| Limanda aspera | yellowfin sole | MB | N Pacific | Benthic | Sublittoral |
| Limanda limbata | dab | B | Eastern N Atlantic | Benthic | Sublittoral |
| Limanda proboscidea | longhead dab | MB | N Pacific | Benthic | Sublittoral |
| Limanda saxatilis | Arctic flounder | A–B | Eastern N Atlantic | Benthic | Sublittoral |
| Limanda scolopias | | | | | |
| Limanda squamipinnis | | | | | |
| Limanda triseriata | | | | | |
| Micromesus kit | lemon sole | | Eastern N Atlantic | Benthic | Sublittoral |
| Pachychirus flexus | European flounder | B | Eastern N Atlantic | Benthic | Sublittoral–epibenthic |
| Platichthys flesus | European flounder | B | Eastern N Atlantic | Benthic | Sublittoral |
| Platichthys stellatus | | | | | |
| Platycephalus platessa | plaice | B | Eastern N Atlantic | Benthic | Sublittoral |
| Pleuronectes platessa | | | | | |
| Pleuronectes quadrituberculatus | | | | | |
| Reinhardtius hippoglossoides | | | | | |

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* New species and additional information may be added in future updates to the database.