



PRELIMINARY GUIDE TO THE IDENTIFICATION OF THE EARLY LIFE HISTORY STAGES OF
POMATOMID FISHES OF THE WESTERN CENTRAL ATLANTIC

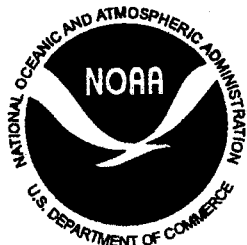
BY

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Blueish, *Pomatomus saltatrix* (Family Pomatomidae), is a monotypic, pelagic, highly migratory species of circumtropical distribution (Briggs 1960), absent only from the eastern Pacific (Kendall and Walford 1979). Bluefish support a large recreational fishery along the east coast of the United States (Juanes et al. 1996) but only a small fishery along the Gulf of Mexico. Rare along the west coast of Florida, about 72% of the total Gulf of Mexico recreational bluefish catch occurs off Louisiana and Texas, with 90% caught within three miles of shore (Holliday 1986). Bluefish reportedly occur along South America from Venezuela through Brazil but little is known about their early life history.

Bluefish migratory patterns in the Gulf of Mexico are unknown but adults overwinter off eastern Florida and migrate northward along the U. S. Atlantic coast during spring. Available data suggests bimodal spawning during spring and fall along both the U. S. Atlantic and Gulf of Mexico coasts, with juvenile bluefish utilizing coastal and estuarine waters. Spawning may be associated with hydrographically dynamic areas as evidenced by higher larval densities near frontal zones off the Mississippi River (Ditty et al. 1988) and off West Africa (Conand & Franqueville 1973), current shear zones off Cape Hatteras, North Carolina, convergence zones off the New York Bight (Shima, 1989), and in upwelling areas of the South Atlantic Bight (Collins & Stender 1987).

MERISTICS

Vertebrae:	
Precaudal	11
Caudal	15
Total	26
Number of Fin Spines and Rays:	
First Dorsal	VII-VIII+I
Second Dorsal	23-26(23-28)
Total Dorsal Elements	31-35
Anal	II, 25-27(24-29)
Total Anal Elements	26-31
Pectoral	16-17
Pelvic	I, 5
Caudal	
Dorsal Secondary	9-10
Principal	9+8
Ventral Secondary	8-9
Total	34-36
Gillrakers on First Arch:	
Upper	3
Lower	11
Total	14
Branchiostegals	7

LIFE HISTORY

Range: Throughout area, rare or absent between S.Fla. & northern S. America
 Habitat: Epipelagic, shelf and oceanic
 ELH Pattern: Oviparous, pelagic eggs and larvae
 Spawning:
 Season: Bimodal spring and fall in Gulf of Mexico, spring through fall along Atlantic coast of U. S.
 Area: Mid to outer shelf
 Mode: Serial spawner
 Migration: North coast of South America
 Age at First Maturity: 2 years
 Longevity: 8+ years in Gulf of Mexico; 12+ years along Atlantic coast of separate U.S.

LITERATURE

Deuel et al. 1966, Norcross et al. 1974
 Kendall & Walford 1979, Barger 1990
 Chiarella & Conover 1990, Ditty & Shaw 1995

EARLY LIFE HISTORY DESCRIPTION**EGGS:**

Diameter: 0.9-1.2 mm; mean: 1.0 mm
 No. of Oil Globules: One
 Oil Globule Diameter: 0.2-0.3 mm; mean: 0.25 mm
 Yolk:
 Shell: Smooth, transparent
 Hatch Size: 2.0-2.2 mm TL
 Incubation: 48 hrs at 20°C; 36 hrs at 25°C
 Pigmentation: Oil globule and embryo
 Diagnostic Characters: Narrow perivitelline space

LARVAE:

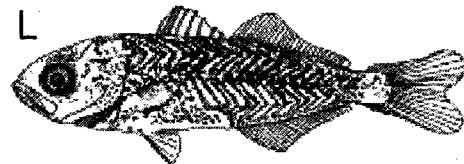
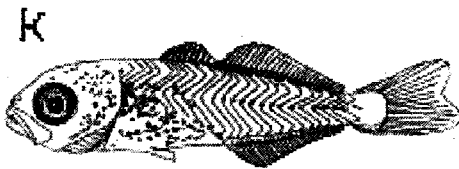
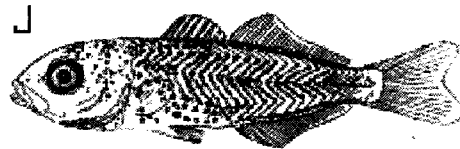
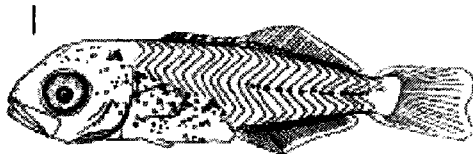
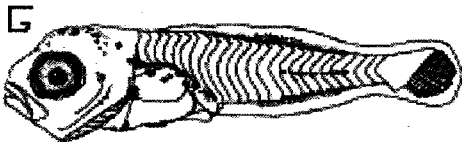
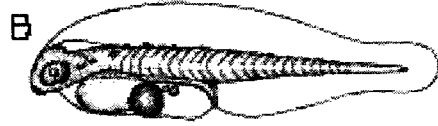
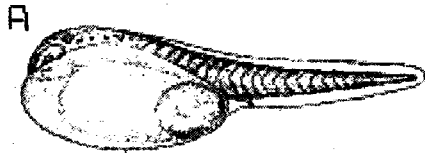
Length at Flexion: 5-6 mm SL
 Length at Transformation: 14 mm SL
 Sequence of Fin Development: D₂, A, D₁, P₁, P₂
 Pigmentation: Cap of pigment over midbrain and nape; melanophores along dorsal, lateral, and ventral midlines of tail, at first singly and later coalescing; prominent melanophore on visceral mass below pectoral fin base
 Diagnostic Characters: Myomere count lower than in similar stromateoids and scombrids; lack of preopercular spines; most closely resembles *Cubiceps pauciradiatus* in pigmentation

ILLUSTRATIONS

From left to right, all measurements TL in mm:
 Figs. A -3.1, B - 2.7, C - 3.5 are from Deuel et al. 1966
 Figs. D -3.3, E - 4.5, G - 6.0, I - 9.3, J - 12.2, K - 16.3, L - 20.9 are from Norcross et al. 1974
 Figs. F - 4.3, H - 7.3 are from Pearson 1941

POMATOMIDAE

Pomatomus saltatrix (Linnaeus 1766)



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