

FIGURE 2.—This reproduction of figure 1 shows the alongshore southerly currents and what we believe to be the offshore relief or rip currents south and east of Galveston, Tex.

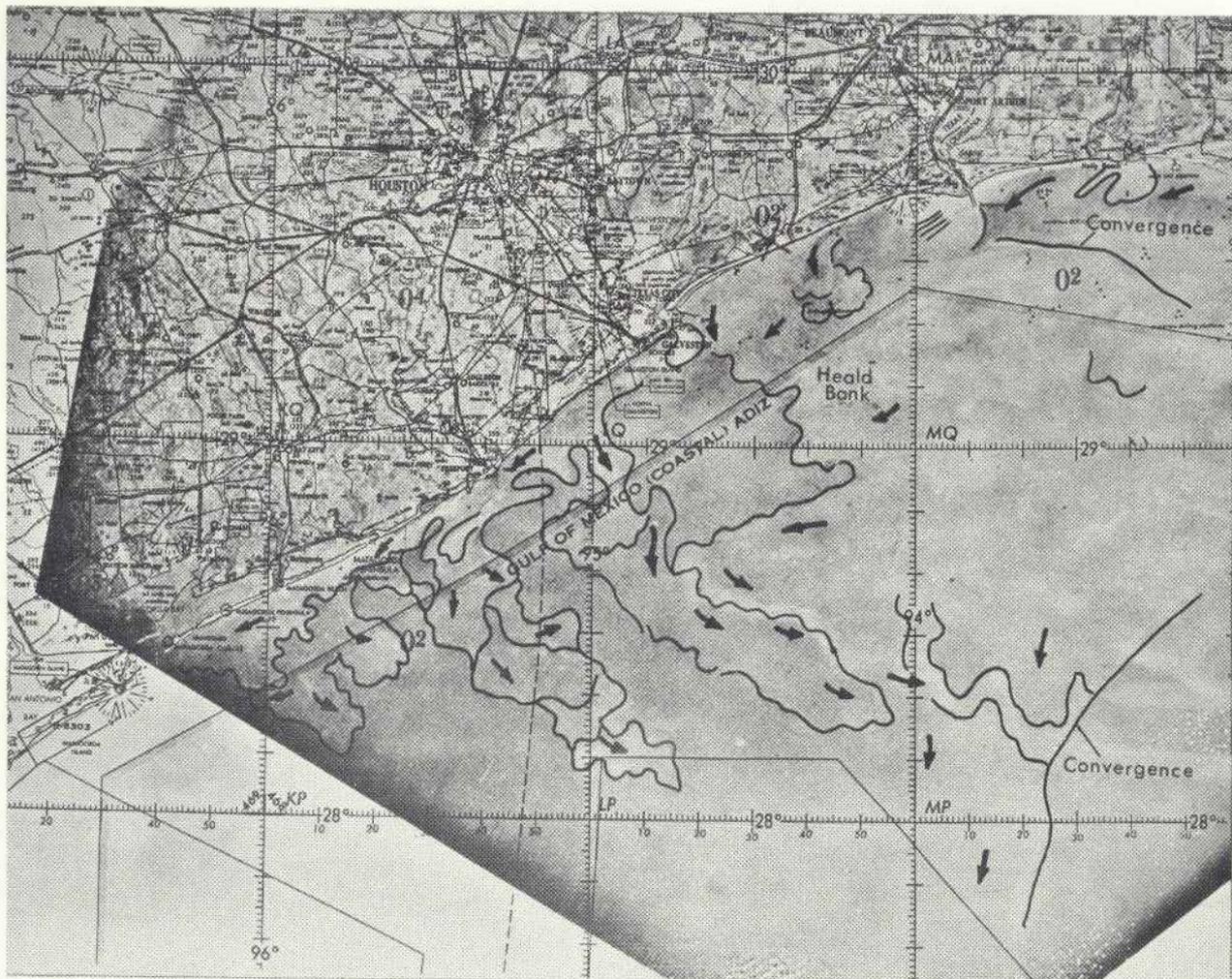


FIGURE 3.—An image of *ONC No. 24*, superimposed over a portion of figure 1 (rectified). The plumes have been outlined, and the directions of the currents are shown by arrows.

fishing grounds for brown shrimp (*Penaeus aztecus aztecus* Ives) in the northern Gulf of Mexico are known to be consistently in this region. In November 1966 (when the Gemini photograph was taken) about 57 percent of the catch of brown shrimp along the Texas Coast came from statistical area 19 and about 54 percent of the fishing effort was expended in this area (table 1). In 1956-66 about 43 percent of the brown shrimp caught in Gulf waters along the Texas Coast came from statistical area 19 (table 2).

Additional evidence for the relation between the plumes and brown shrimp fishing is provided by data gathered in July-September 1964 by personnel of the BCF Biological Laboratory, Galveston, Tex. During this period, which is the height

TABLE 1.—Catch and fishing effort for brown shrimp, by statistical areas, in the Gulf of Mexico along the Texas Coast, November 1966¹

Statistical area	Catch		Effort (trips)	
	Metric tons	Percent	Number	Percent
18.....	36.7	4.0	113	9.5
19.....	450.4	56.9	684	54.4
20.....	99.4	12.6	166	13.2
21.....	205.5	25.9	288	22.9
Total.....	792.0	100.0	1,257	100.0

¹ Source: Gulf Coast shrimp data, reported by depth and area of capture, species, size, number of trips, and days fished, November 1966. U.S. Fish Wildl. Serv., Curr. Fish. Statist. 4358.

of the brown shrimp season, an extensive interview campaign was undertaken to determine, by 10-minute grids, the areas most frequented by vessels fishing for brown shrimp. These data have been