Oil *on the* Edge

Offshore Development, Conflict, Gridlock

Robert Gramling

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By
Robert Gramling

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To Eileen

Preface

As a child I spent my summers on the Atlantic coast of Florida south of Jacksonville. I became a perpetual beachcomber endlessly bringing back treasures for my mother to admire, thereby reinforcing an activity that has been a joy for a lifetime. I learned to fish from my father and have been a fisherman as long as I can remember. The Whiting and Red Drum of the Atlantic, sea turtles laying their eggs at night, the wide expanse of the white sand beach became a part of me, and though I did not have the concepts to express it, I came to understand that these things were beyond value in the traditional sense of the word. We moved to Tallahassee and my explorations moved to the Gulf of Mexico. I fished for bountiful Speckled Trout on the grass flats off St. Marks and Spanish Mackerel off Cape San Blas when the great schools seemed almost thick enough to walk on. In my own lifetime I have seen this abundance dangerously diminish.

I came to Louisiana over two decades ago and in time came to love the coastal marshes as much as the white sands of my youth. By the time I arrived in Louisiana, wherever I went in the coastal marshes and offshore I encountered the incongruous shapes of coastal and offshore oil development. Given my love of the coast it was impossible not to become curious about these anomalies as I fished around them in coastal waters and offshore.

I first began to seriously study the process of offshore development in 1976 and have been doing so, off and on, ever since. This

book is not a simple catalogue of offshore development, but rather a reflection of what I think is important for us to know and remember in order to learn from our mistakes. At its broadest level, the evolution of offshore development provides both a microcosm of technological change and the subsequent impacts on our human and physical environment. It also provides an example of how various policy scenarios dictated at the highest levels of our government mitigated or exacerbated those impacts. In short, the offshore development scenario provides a laboratory for the study of policy and social impacts. This book is an attempt to use that laboratory.

The story of offshore development is one of almost unparalleled technological evolution, as the search for oil moved first into the coastal marshes, then the nearshore estuaries, and finally offshore. Today production platforms in the Gulf of Mexico stand in over thirteen hundred feet of water and over a hundred miles offshore, and there are over three thousand of them in federal waters alone. In order to accomplish this level of growth, however, a policy environment that encouraged development was necessary. The consequences of this rapid development, within an encouraging policy context and during an exuberant era with an almost unlimited faith in technology, were alterations of the coastal environment, the infrastructure, and human capital. The effects of these alterations are only beginning to be fully realized.

Today the majority of the offshore federal lands in the United States are closed by Presidential and Congressional action to the very agency within the Department of Interior that was created to lease and manage them. It would be difficult to interpret this as anything but a statement on past policy and management initiatives. The current gridlock on the Outer Continental Shelf serves no one, neither those who support nor those who oppose offshore development. Perhaps, by examining how we came to be at this impasse we can learn something about how to avoid similar situations in the future.

This research was funded in part by the Minerals Management Service, U.S. Department of Interior. The views, discussions, and conclusions in this book are, however, entirely those of the author.

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	POPULATION OF SELECT COASTAL ZONE PARISHES 1940–1990						PERCENTAGE CHANGE 1940–1990				
PARISH/COUNTY	**1940**	**1950**	**1960**	**1970**	**1980**	**1990**	**40/50**	**50/60**	**60/70**	**70/80**	**80/90**
Louisiana											
Assumption	18,541	17,278	17,991	19,564	22,084	22,753	–6.8	4.1	8.7	12.9	3.0
Calcasieu	56,506	89,635	145,475	145,415	167,223	168,134	58.6	62.3	0.0	15.0	0.5
Cameron	7,203	6,244	6,909	8,194	9,336	9,260	–13.3	10.7	18.6	13.9	–0.8
Iberia	37,183	40,059	51,672	57,397	63,752	68,297	7.7	29.0	11.1	11.1	7.1
Jefferson	50,427	103,873	208,769	337,568	454,592	448,306	106.0	101.0	61.7	34.7	–1.4
Lafayette	43,941	57,743	84,656	111,745	150,017	164,762	31.4	46.6	32.0	34.2	9.8
Lafourche	38,615	42,209	55,381	68,941	82,483	85,860	9.3	31.2	24.5	19.6	4.1
Orleans	494,537	570,445	627,525	593,471	557,515	496,938	15.3	10.0	–5.4	–6.1	–10.9
Plaquemines	12,318	14,239	22,545	25,225	26,049	25,575	15.6	58.3	11.9	3.3	–1.8
St. Mary	31,458	35,848	48,833	60,752	64,253	58,086	14.0	36.2	24.4	5.8	–9.6
Terribonne	35,880	43,328	60,771	76,049	93,393	96,982	20.8	40.3	25.1	22.8	3.8
Vermillion	37,750	36,929	38,855	43,071	48,458	50,055	–2.2	5.2	10.9	12.5	3.3
Louisiana	2,363,880	2,683,516	3,257,022	3,643,180	4,205,900	4,219,973	13.5	21.4	11.9	15.4	0.3

Table 5.1. **continued**

	POPULATION OF SELECT COASTAL ZONE PARISHES 1940–1990						PERCENTAGE CHANGE 1940–1990				
PARISH/COUNTY	**1940**	**1950**	**1960**	**1970**	**1980**	**1990**	**40/50**	**50/60**	**60/70**	**70/80**	**80/90**
Texas											
Brazoria	27,069	46,549	76,204	108,312	169,587	121,862	72.0	63.7	42.1	56.6	–28.1
Calhoun	5,911	9,222	16,592	17,831	19,574	19,053	56.0	79.9	7.5	9.8	–2.7
Cameron	83,202	125,170	151,098	140,368	209,727	260,120	50.4	20.7	–7.1	49.4	24.0
Chambers	7,511	7,871	10,379	12,187	18,538	20,088	4.8	31.9	17.4	52.1	8.4
Galveston	81,173	113,066	140,364	169,812	195,940	217,399	39.3	24.1	21.0	15.4	11.0
Harris	528,961	806,701	1,243,158	1,741,912	2,409,547	2,818,199	52.5	54.1	40.1	38.3	17.0
Jefferson	145,329	195,083	245,659	244,773	250,938	239,397	34.2	25.9	–0.4	2.5	–4.6
Matagorda	20,066	21,559	25,744	27,913	37,828	36,928	7.4	19.4	8.4	35.5	–2.4
Nueces	92,661	165,471	221,573	237,544	268,215	291,145	78.6	33.9	7.2	12.9	8.5
Orange	17,382	40,567	60,357	71,170	83,838	80,509	133.4	48.8	17.9	17.8	-4.0
San Patricio	28,871	35,842	45,021	47,288	58,013	58,749	24.1	25.6	5.0	22.7	1.3
Texas	6,414,824	7,711,194	9,579,677	11,198,655	14,229,191	16,986,510	20.2	24.2	16.9	27.1	19.4
U.S.	131,669,275	150,697,361	179,323,175	203,225,299	226,549,448	248,709,873	14.5	19.0	13.3	11.5	9.8

Source: U.S. Department of Commerce, Bureau of the Census 1940, 1950, 1960, 1970, 1980, 1990.

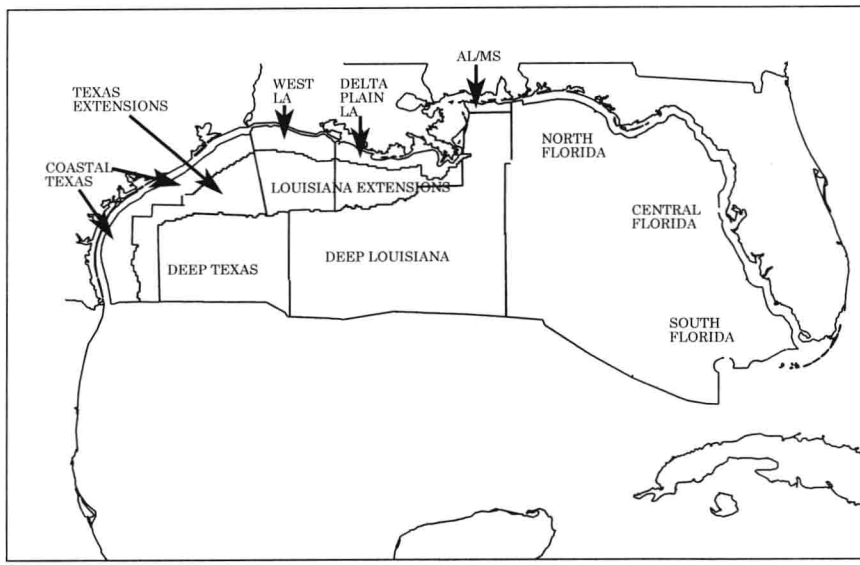

Fig. 5.1. **Gulf Offshore Areas.**

creased federal offerings, movement into these areas increased, along with sales in deeper water in both Louisiana and Texas.

Looking at the second panel in Table 5.2 we can see, however, although sales moved into other regions in the Gulf of Mexico, that the primary area of actual development (i.e., siting of production platforms) continued to be off the deltaic plain with accompanying movement into western Louisiana waters. This geographic trend in lease sales and development was paralleled by construction of offshore production platforms.

Table 5.3 shows the number of offshore production platforms under construction worldwide in 1975, 1978, and 1981. Several important trends are noticeable. First, like sales and development, by 1975 the offshore fabrication industry had begun to move out of the Louisiana deltaic plain into Texas, a trend that accelerated over the next decade and a half. Second, throughout this period following the embargo until the peak of the offshore boom in 1981, the Gulf of Mexico continued to be the site of almost half of the world offshore production platform construction. Third, throughout this period Louisiana dominated the market for fabrication of production platforms within the Gulf.

In a similar fashion, Louisiana dominated the fabrication of offshore support vessels, becoming a world leader in the construction of literally thousands of crew boats, supply boats, push boats, tow boats, and various other more specialized offshore vessels (*Ocean Industry* 1974; Tubb 1978).

In spite of this dominance in offshore construction and support, the geography of the deltaic plain did provide one limitation. Between the Calcasieu River and the mouth of the Mississippi, a nautical distance of approximately 200 miles, and containing the area of heaviest offshore development, historically there have been no deep-water ports. The only exceptions are the Atchafalaya River, which has a twenty-foot-deep-channel as far inland as Morgan City and more recently Bayou LaFourche. With the Atchafalaya River, the actual frontage on the river is extremely limited with most of the connections to the major fabrication yards, both in Morgan City and throughout the deltaic plain, being via the Gulf Intracoastal Waterway, which is only guaranteed to twelve-foot depths. Bayou LaFourche has a twenty-foot depth for only several miles inland from its mouth, and this only for the last decade. This does not pose a problem for the fabrication of steel-jacketed production platforms, which are fabricated on their side, loaded onto a barge(s) of less than twelve-foot draft, and taken offshore. It does mean that no shipbuilding facilities have emerged.

Unlike production platforms, exploratory drilling rigs must be fabricated and floated to their initial destination, and virtually all of the deep-water rigs require more than twelve feet of water. As the offshore rig technology evolved, by necessity, construction moved out of Louisiana. By 1976, much of the U.S. construction of exploratory rigs was taking place in Texas and Mississippi (primarily Pascagoula and Vicksburg), a general trend that continued into the 1980s (*Ocean Industry* 1976; Tubb 1977). In addition to direct activities occurring in the Gulf, movement into many of the "frontier" regions, under the new push for offshore development on federal lands, continued to be supported from the Gulf. Experienced offshore workers and even decks for production platforms off California continued to come from the Gulf (Gould et al. 1991).

In spite of the incredible rate of growth of the economy and the freak entrepreneurial conditions (noted in chapter 4) under which the growth occurred (Gramling and Brabant 1986a; Gramling and

Table 5.2. Gulf Area by Leases Sold

	GULF AREA BY TOTAL LEASES SOLD											
	DELTA LA[a]	DELTA EX-LA[b]	EAST LA[c]	WEST LA[d]	DEEP LA[e]	COAST TX[f]	EX TX[g]	DEEP TX[h]	AL MS[i]	NO FL[j]	MIDL FL[k]	SO FL[l]
Before 1954	169	0	13	96	0	97	0	0	0	0	0	0
1954–1959	115	0	0	98	0	46	0	0	0	0	0	0
1960–1964	219	108	37	173	0	59	0	0	0	0	0	0
1965–1969	110	45	56	31	0	124	36	0	0	0	0	0
1970–1974	112	133	42	272	52	23	169	14	3	39	26	0
1975–1979	117	59	28	229	24	157	121	3	0	9	16	14
1980–1984	267	218	137	425	576	499	206	146	47	92	7	89
1985–1989	267	259	108	473	1,293	465	261	207	33	78	8	13
1990–1993	179	154	79	336	456	252	99	57	11	74	19	0
Total	1,555	976	500	2,133	2,401	1,722	892	427	94	292	76	116

Table 5.2. **continued**

	GULF AREA BY LEASE DATE WITH AT LEAST ONE PLATFORM INSTALLED BY 1992											
	DELTA LA[a]	DELTA EX-LA[b]	EAST LA[c]	WEST LA[d]	DEEP LA[e]	COAST TX[f]	EX TX[g]	DEEP TX[h]	AL MS[i]	NO FL[j]	MIDL FL[k]	SO FL[l]
Before 1954	80	0	5	31	0	2	0	0	0	0	0	0
1954–1959	41	0	0	15	0	3	0	0	0	0	0	0
1960–1964	100	33	11	42	7	0	0	0	0	0	0	0
1965–1969	36	8	15	8	0	4	2	0	0	0	0	0
1970–1974	49	47	9	115	7	6	59	3	0	0	0	0
1975–1979	43	20	14	83	4	48	27	0	0	0	0	0
1980–1984	86	26	50	117	13	110	17	1	17	0	0	0
1985–1989	27	14	12	49	6	55	8	0	5	0	0	0
1990–1993	2	1	2	1	1	1	0	0	0	0	0	0
Total	464	149	118	461	31	236	113	4	22	0	0	0

Source: Minerals Management Service 1993. (a) Deltaic plain Louisiana (original offshore areas); (b) Extension areas off the deltaic plain (e.g., Grand Isle South edition); (c) Louisiana, mouth of the Mississippi and eastward; (d) Louisiana west of Vermillion Bay; (e) Deep water Louisiana (south of the original "south editions" to the limits of U.S. waters); (f) Coastal Texas (original offshore areas); (g) Extension areas off Texas; (h) Deep water off Texas; (i) Off Alabama and Mississippi; (j) Northern and Western Florida offshore areas (including Destin Dome and DeSota Canyon areas); (k) Middle Florida (including the Florida Middle Grounds); (l) South Florida (including Pulley Ridge).

Table 5.3. **Fixed Platforms Under Construction—January 1975, March 1978, and March 1981**

	TOTALS			PERCENTAGE		
LOCATION	1975	1978	1981	1975	1978	1981
California	1	0	2	0.6	0	0.6
Louisiana	61	55	94	37.4	37.4	30.4
Texas	9	20	52	5.5	13.6	16.8
Outside U.S.	92	72	161	56.4	49.0	52.1
Total worldwide	163	147	309	100	100	100

Source: Davis and Place 1983.

Freudenburg 1990), the direction of the growth was one that would seemingly be an almost textbook example of regional economic development success. As Lovejoy and Krannich (1982) have noted in summarizing the economic development debate, often the "success" of a particular economic development scenario hinges at least as much on the ability of the region to capture spin-off and spill-over activities, as on the primary development. These linked activities, both upstream (those that supply the primary activity) and downstream (those that use the product produced by the primary activity), can generate jobs and capital, which supplement the primary activity and result in a more diversified form of development.

Since the Gulf of Mexico was the primary area for offshore development throughout the 1950s, 1960s, and much of the 1970s, and since the problems faced were local, most of the technological and human capital development was, by necessity, a local phenomenon. Because much of the support for these activities had to be local, as a consequence, the capture of spin-off was almost inevitable. The extent to which this happened can be seen by examining offshore-related employment (often a more important indicator of development than population growth, Gramling 1992) in one of the areas most closely tied to offshore development, the Louisiana deltaic plain, west of the Mississippi River delta. Table 5.4 shows total employment, employment in oil and gas extraction, and employment in three of the sectors most directly related to offshore activity: metal fabrication (platform construction), ship and boat building

and repair, and water transportation for Lafayette, Lafourche, and St. Mary and Terrebonne parishes. These are certainly not the entire employment associated with offshore oil, and, in fact, examination of only these limited sectors misses much of the employment directly related to offshore development (e.g., offshore catering, marine diesel mechanics, hot shot drivers, etc.) and most of the secondary and tertiary employment (e.g., land transportation, construction, insurance, accounting, etc.). Nevertheless, the marked increase in employment in only these sectors in the late 1950s and early 1960s, as the offshore system of development was emerging, and the steady proportion of total employment (up to 30%) through the mid-1980s are indicative of the extent to which the social and economic environments along the coastal Gulf were affected by offshore trends. The growth of employment in oil and gas extraction exploded following the settlement of the litigation between Louisiana and the federal government and the resumption of an aggressive federal leasing program in 1959. While employment grew slowly during the 1964–1974 decade, it again jumped significantly following the 1973–1974 embargo. Employment in the linked sectors grew more steadily throughout the 1959–1979 period and by 1974 had actually exceeded employment in the primary sector in two of the parishes.

REBUILDING THE ENVIRONMENT

The growth was vigorous in both the primary and the linked industrial sectors through the 1970s. However, that growth was predicated on an extractive economic activity. As noted in chapter 1, pithole-like volatility is characteristic of extractive activity both because of eventual resource exhaustion and because of the way in which extractive enterprises affect the local environment (Bunker 1984, 1989; Gramling and Freudenburg 1990; Freudenburg and Gramling 1992a). Because extractive enterprises must locate in proximity to the resource, they cannot necessarily locate near existing development and take advantage of shared labor supplies and support sectors. As a result, they must often rebuild the local environment (social, economic, and physical) to provide support for the extractive activity. This rebuilding of the environ-