The FLORIDA GEOGRAPHER

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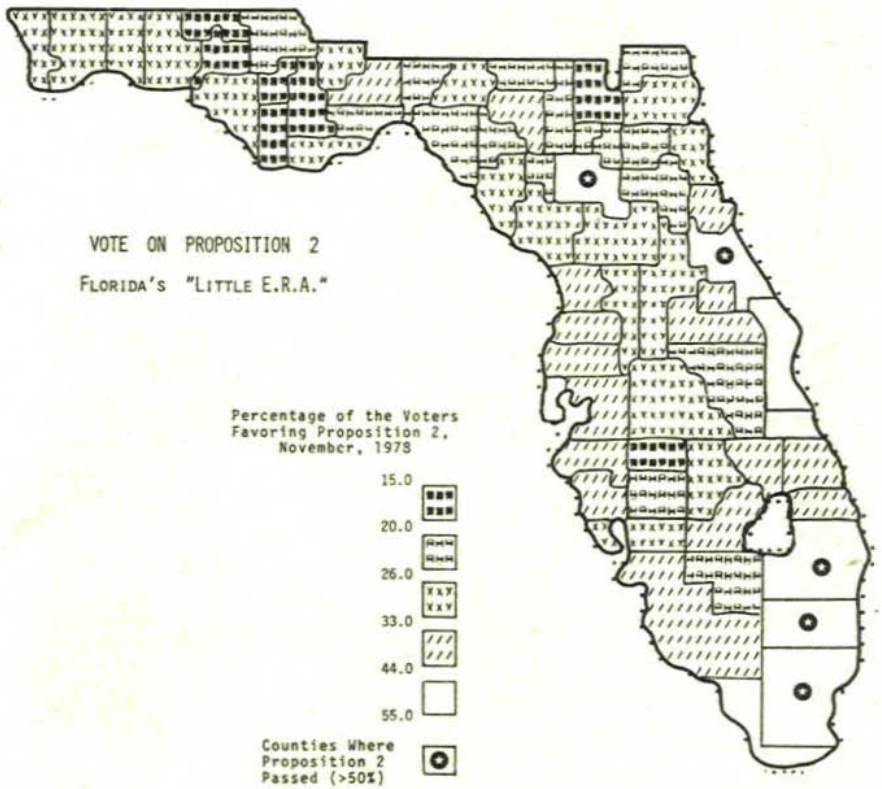

The Florida Geographer is the official publication of The Florida Society of Geographers, and is distributed without cost to members of the Society. Two numbers per year will be published, pending receipt of an adequate number of acceptable manuscripts.

The Florida Geographer is a state-wide journal, with broad coverage of geographical topics relating to the state and its several regions. No restrictions are placed on the content of articles, providing that they deal with some aspect of the geography of Florida, i.e., local studies within the state, matters of the state generally, or the relation of Florida to other areas.

Manuscripts are solicited from all who feel they have research worthy of dissemination. No specific format requirements are presently in force, although the editor would prefer manuscripts to be typed double-spaced following the general format of the articles in the present number. However, authors should not be dissuaded from submitting manuscripts because of format considerations; the editor is willing to undertake extensive revisions. As this number demonstrates, we are able to reproduce maps, charts, and tables.

We would like to publish an original map on the cover of each number, so a special request is made to all who have maps of the state or regions of the state which would be of interest to the Society's membership.

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About the Cover...

Proposition Two of the state-wide elections of 1978 would have prohibited discrimination on the basis of sex within Florida, and therefore was dubbed Florida's "Little Equal Rights Amendment." The proposition failed in all but five counties (Alachua, 52%; Broward, 52%; Dade, 52%; Palm Beach, 54%; and Volusia, 55%). This choropleth map of the vote was done by Robert S. Marvin on the Univac 1100 computer using the C-MAP program.

THE FLORIDA GEOGRAPHER

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CONTENTS

FLORIDA'S ILLICIT DRUG TRAFFIC

Patrick O'Sullivan and Rance Ellis

The increasing attention paid to the geographical incidence and ecology of crime[1] has not been accompanied by investigations of the economic geography of illicit activities. No emulation of Durand's study of Appalachian moonshining[2] has yet emerged to map the doings of the dope trade. This scant heed would seem a serious oversight, especially among those concerned with Florida.

Description

In October 1978 a congressional committee reported that drug smuggling was Florida's single biggest commercial activity, turning over $7 billion a year.[3] The twelve tons a day required by the 20 million regular users and 50 million occasional users of marijuana in the USA are provided by soaring clandestine imports, along with the output of an estimated 12 million home growers concentrated in Hawaii, Florida, Louisiana, Texas, Iowa, and Georgia. It is estimated that 80 percent of the marijuana and 50 percent of the heroin illegally imported come in over Florida's coast.[4] Using custom's seizures as a proxy for imports it is evident that south Florida is the chief area of egress in the nation. The Miami Region of Customs (encompassing North and South Carolina, Georgia, Florida, Puerto Rico, and the Virgin Islands) accounted for 57 percent of all cocaine seized and 87 percent of all marijuana seized in 1978.[5] During 1977 and 1978 the flow of coastal smuggling increased most rapidly in the Southeast, leaving the Mexican border trade far behind. The coast of the Southeast accounts for 62 percent of the aircraft and vessels seized by Customs. If the rate of increase in seizures reflects the increase in trade, then it has grown threefold over the last two years. Figures 1 and 2 show the seizures of marijuana and cocaine by national customs regions. Within the Southeast, 84 percent of the cocaine and 55 percent of the marijuana were seized in the southern ten counties of Florida. The concentration of this traffic within the region is given in Figure 3, showing the seizures of cocaine and marijuana by sectors of the Southeast coast. The rapid increase in trade is being accommodated by larger vessels which stand outside territorial waters while their cargo is landed by small, fast boats. By air several hundred flights a day by small craft bring the goods in undetected by FAA or NORRAD radar. Even large freighters are used. A DC-7 carrying ten tons of marijuana from Colombia with a street value of $22 million means $2 million for the smuggler, which is sufficient to overcome a lot of risk aversion.

Once the material has landed there is no way of tracking its movement with any accuracy. However, it seems clear that from Florida it mostly makes its way north up I-95 and I-75. One proxy measure of the drug market which is collected on a regular basis is the number of drug abuse mentions. The Drug Enforcement Administration collects and publishes these data for each of twenty-one SMSAs. "Mentions" are cases appearing in hospital emergency rooms and clinics. Under the assumption that abuse cases are a constant proportion of users across the nation, this should be a good index of demand. Figure 4 maps these data for 1977. There is clearly a close correlation with total population. From an examination of the points of entry in Figures 1, 2, and 3 and the distribution of demand in Figure 4, it seems evident that these high value per bulk products are transported considerable distances internally, entering the country along the most difficult coasts to monitor and traveling overland with impunity to metropolitan market centers.

The flurry of police and customs activity seeking to intercept this illegal trade has not proven very successful. Law enforcement has lost out, particularly in the case of the highest value per weight item -- heroin.

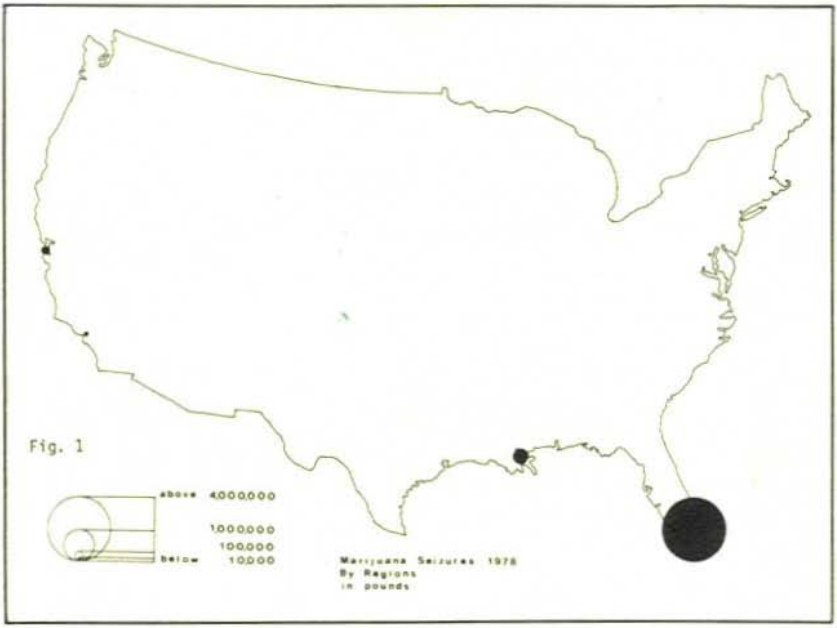
above 4,000,000
1,000,000
100,000
below 10,000
Marijuana Seizures 1978
By Regions
in pounds

Fig. 1

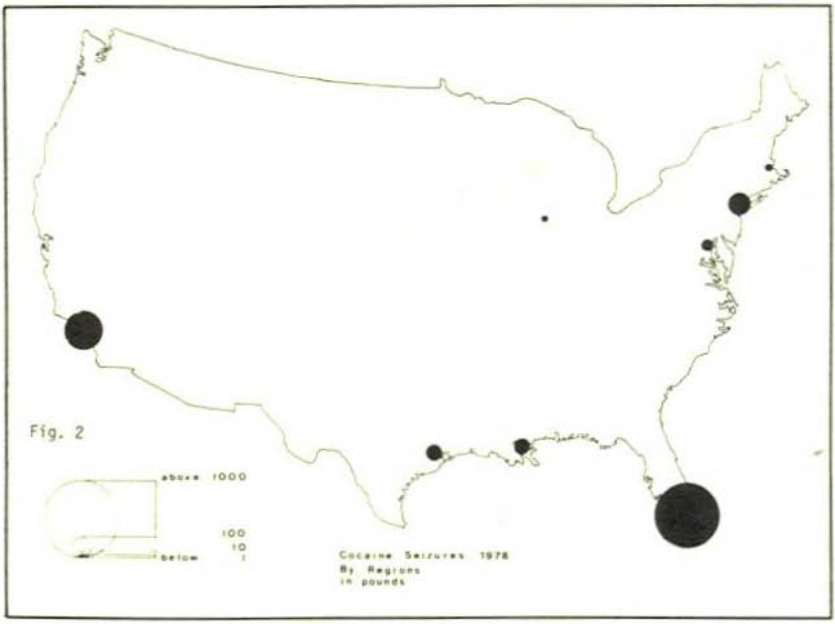
above 1000
100
10
below 1
Cocaine Seizures 1978
By Regions
in pounds

Fig. 2

The $1 billion campaign to disrupt and discourage drug smuggling intercepts less than 20 percent of the total volume traded. The legal penalties involved are no great deterrent. The smugglers are often well-educated young people seeking early retirement after a brief and daring career. They are willing to risk light sentences for large profits and can afford effective lawyers and boats which are faster and better equipped than those of their pursuers.

Large amounts of money are being made in this business. According to Bourne,[6] the Commerce Department estimates that the marijuana traffic alone is the third leading business in the nation with an annual turnover of $48 billion, exceeded only by Exxon and General Motors. Exceeding even tourism in Florida, the drug business attracts a good deal of foreign risk capital and much of the increase in Miami foreign bank accounts from $25 million in 1976 to $250 million in 1978 is involved in financing the marijuana and cocaine trade. The final incidence of the wealth generated by this traffic is not necessarily to be seen in Florida but where the investors choose to spend or reinvest their profits. Undoubtedly some of this largesse is pumped into legitimate Floridian developments but the traces are carefully covered and unlikely to be revealed unless proposed state grand jury indictments of businessmen involved transpire. What is visible and more readily attributable to smuggling income is the reflections of affluence in small, previously dilapidated fishing villages where nocturnal road traffic has increased of late.

Prescription

The lessons of history would suggest that prohibition cannot prevail in an atomistic society which prefers a minimum of formal or social control. Right now enforcement of restrictions on trade and possession are not succeeding. A victory such as the reduction of the Mexican poppy crop in 1976 and the consequent decrease of heroin availability, is offset by the use of other products from other sources. The volume of White Chinese heroin arriving from Europe increased notably in 1977 and 1978. The Administration has contemplated legalization of marijuana and cocaine. The Treasury has examined the feasibility of the governmental control of marijuana imports, with a duty being levied. They evidently considered it practical.[7] There is thus a distinct possibility of a relaxation of restrictions.

In judging the implications of such a step for the general well-being, it comes down to the balance between satisfying what Rottenberg[8] called the demand for euphoria of some and the desire to coerce what others regard as a noxious habit. From the benefit of euphoria to those who indulge must be subtracted the social cost of clearing up the mess of death and illness resulting from abuse and addiction. On the other hand, against any reduction in use to satisfy the antipathetic majority must be set the high cost of trying to stamp it out, including the crime, mayhem, potential for corruption and monopoly profits encouraged by legal restriction. Illegality inhibits the market, encouraging truly cut-throat competition and the creation of artificial monopolies. Small fry cannot turn to the state for protection from the lethal predatory acts of the more organized and ruthless. Having obtained a degree of monopoly over the distribution of a product in very inelastic demand, any costs of evasion of enforcement agencies, mostly accruing as increased transport costs, can be passed on to the consumer.

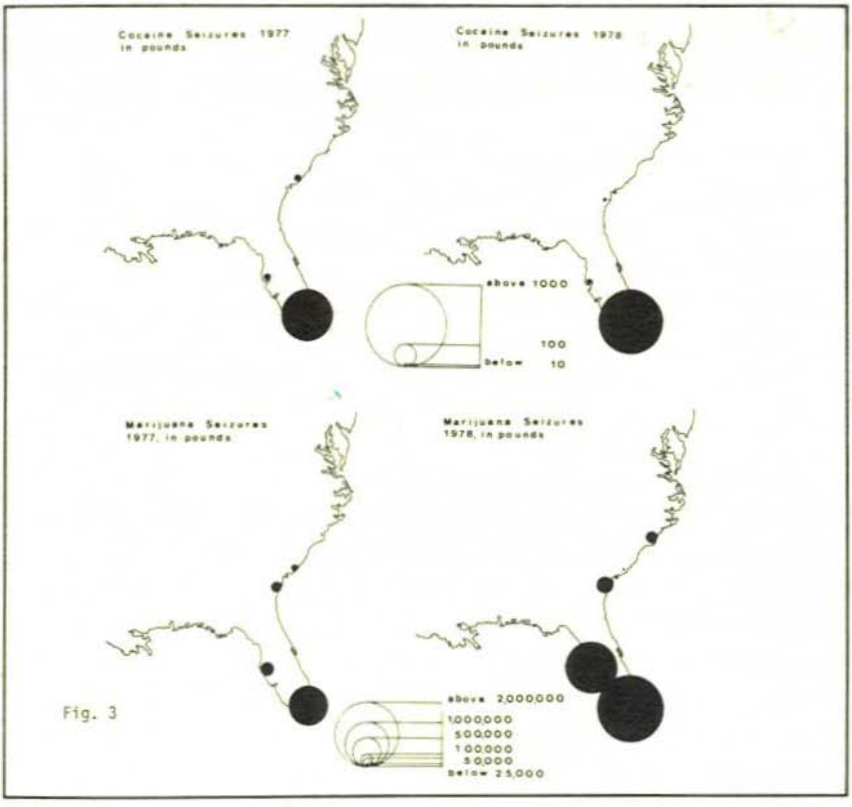
Cocaine Seizures 1977
in pounds
Cocaine Seizures 1978
in pounds
above 1000
100
below 10
Marijuana Seizures
1977, in pounds
Marijuana Seizures
1978, in pounds
above 2,000,000
1,000,000
500,000
100,000
50,000
below 25,000

Fig. 3

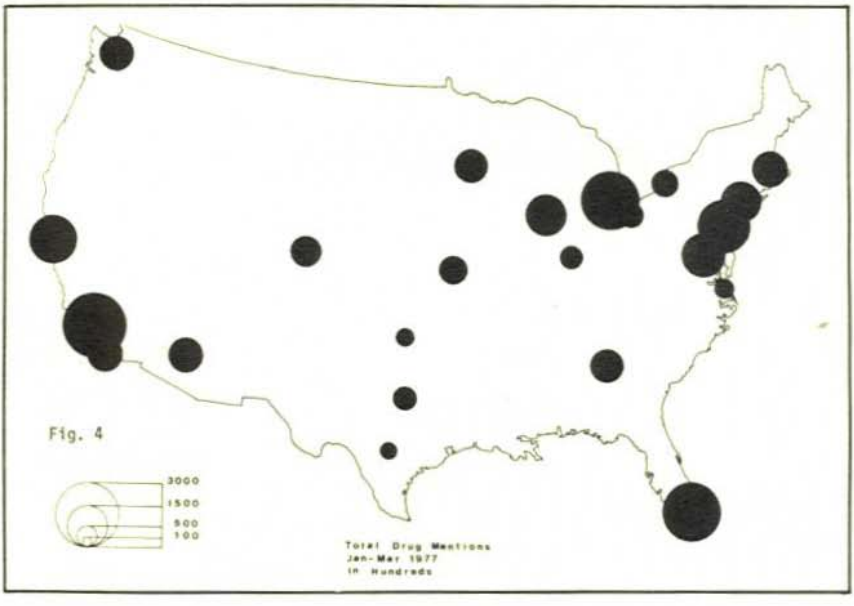
3000
1500
500
100
Total Drug Mentions
Jan-Mar 1977
in Hundreds

Fig. 4

If drug use were inelastic in demand, as some evidence suggests, then removing the legal barriers to the trade will not result in a vast extension of consumption but mostly a reduction in the cost of euphoria to the existing users along with a reduction of direct and indirect law enforcement costs. The crucial issue is whether the demand for drugs is inelastic as price decreases as well as when it increases. Addicts demand is inelastic to a price rise. The question is whether the path to addiction is widened by a reduction in price and easy availability. Will the number of users increase markedly with lower prices and greater availability? Marijuana is widely available at present. It has been estimated that 56 percent of all high school seniors have tried it and that 10 percent use it daily.[9] School children, the most susceptible, are the most exposed now. They are also the most vulnerable to the attraction of forbidden fruit, which would diminish with the removal of legal restraint. It is also clear that marijuana and cocaine are not excessively dangerous or addictive. For these substances at least, the choice between the overrated joys of temporary departure from reality for some and the misinformed disdain for dirty habits of others, would most simply be resolved in the same way that it is for alcohol and tobacco use in most communities. For more dangerous and addictive narcotics, depressants, stimulants and hallucinogens, some sense of collective responsibility may sustain legal control where familial or social control do not function effectively.

Prediction

Should the restrictions on the consumption, sale, and trade in marijuana and cocaine be removed it is quite probable that the current volume of traffic passing through Florida would decrease. Florida's advantage for the illegal trade is a long coastline of relatively inaccessible inlets and landings close to the Caribbean and Latin American sources. When the advantages of remote points of entry and the comparative security of overland transport are removed, major sea and airports closer to the major markets should gain the traffic. It is not surprising that one source of opposition to making the business legal is among Floridian drug traders. In the words of a marijuana and cocaine importer from Tampa: "It's part of the American tax revolt. Pot and coke prices have been about the same for years. Thousands of organizations are making a living from it. The feds can't stop it. So who needs it legal so we can pay a dope tax?"[10]

There may be an alternative outlet for such entrepreneurs in agriculture. Florida is presently second to Hawaii in domestic production of cannabis with a crop of some $70 million in value. This is grown surreptitiously on government or paper company land. The adoption of the sinsenillas hybrid with a tetra-hydrocannabial content five times that of common Mexican marijuana has led to a boom in clandestine domestic production. As a legal crop it would generate a considerable return.

The solutions to the drug traffic which are being applied currently do not appear to stand much chance of lasting success. They are efforts to raise the costs of operation to an industry which can write off the loss of a $2 million aircraft without flinching. In Florida, Governor Graham and many legislators wish to enact legislation to impose mandatory and heavier sentences and encourage "mules" (loaders and pushers, the laborers of the trade) to turn State's evidence against the entrepreneurs and organizers. This might well merely raise the illegal reward for loyalty and possible penalty for squealing. At the federal level, the Air Force is providing training and equipment for better surveillance of illegal air freighting, but as yet the internal movement from a multiplicity of small coastal points of sea-borne entry is only faced with the scanty resources of the poorly paid Agricultural Inspectorate. All that is necessary is to take a route avoiding inspection stations. For the foreseeable future, then, Florida's illicit drug traffic will continue to flourish.

1. D. E. Georges, *The Geography of Crime and Violence: A Spatial and Ecological Perspective*, Resource Papers for College Geography No. 78-1 (Washington, D.C.: Association of American Geographers, 1978).

2. L. Durand, Jr., "Mountain Moonshining in East Tennessee," *Geographical Review* 46 (1956): 168-181.

3. "Business this Week" item in *The Economist*, 14 October 1978, p. 113.

4. T. Batten (Producer), For Your Information program "Drugs in America," broadcast 29 November 1978 by WETA 26 Greater Washington Educational Telecom Association Inc.; transcript (Santa Ana CAL: PTV Publications 1978), p. 14.

5. US Customs Service, Miami Region, News Release, 16 November 1978.

6. P. Bourne (former White House health advisor) speaking at the annual meeting of the Southeastern Conference on Alcoholism and Drug Abuse, quoted in *Florida Flambeau*, 4 December 1978, p. 4.

7. B. L. Collier, "The New U.S. Drug War," *Parade*, 17 September 1978, pp. 4-7.

8. S. Rottenberg, "The Clandestine Distribution of Heroin, Its Discovery and Suppression," *Journal of Political Economy* 76 (January/February 1968): 78-90.

9. University of Wisconsin survey report quoted in *Florida Flambeau*, 1 December 1978, p. 15.

10. Collier, "New U.S. Drug War," p. 7.

Don Brandes

CONTAINERIZATION: A STRATEGY TO INCREASE MARITIME TRADE BETWEEN CENTRAL AMERICA AND FLORIDA

Bruce E. Marti

Changes in technology can induce spatial reorganization of transportation networks. Spatial reorganization is the process by which individual locations adapt their functional roles relative to their connectivity or accessibility within the entire system.[1] In the general cargo element of marine transport, spatial reorganization has resulted from the container revolution, which came about from a need to automate the shipment of goods. A container is a moveable, self-contained rectangular box that can function as a warehouse and may be stacked on land or in the holds of ships.[2] Containerization has, in a general sense, solved a major logistical problem by allowing cargo to be loaded and discharged more quickly than by using the traditional sling-and-boom method,[3] thus increasing the efficiency of dock-side labor and therefore reducing the turnaround time of merchant vessels in port.[4]

Containerization and the spatial reorganization which followed began in the highly industrialized regions of the world. The container port demands more land area than a conventional break-bulk facility to store and marshal cargo, so such ports have expanded. Where land adjacent to existing ports has not been available, new locations have been sought for container operations. Growth and acceptance of containerization has also changed the characteristics of the type of vessel engaged in maritime trade. A containership--the new ship--is designed and specially constructed to carry only containerized cargo.

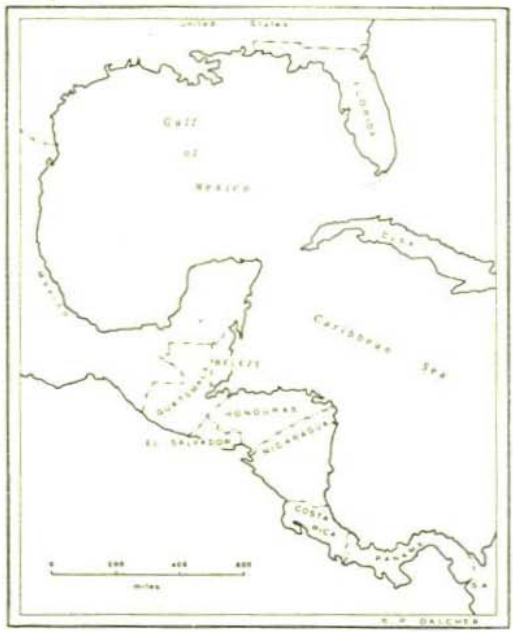

Fig. 1

A promising feature of container technology is that the versatile container can reduce dead haul milage,[5] especially on trade routes where flows are heavy in both directions. Areas which presently have high containerization ratios are well-developed industrial nations with mature infrastructures. By contrast, container technology is disproportionately low in developing countries where maritime flows are heavy out of, but light into the nations. On these routes, containerships transport empty containers on return trips from areas where cargo is unavailable. Little revenue is collected when a ship carries boxes empty of cargo.

Other difficulties affect containerization potential in developing areas. In 1972, Couper stated that containerization "cannot always be introduced to the trade of developing countries due to the inadequacy of supporting infrastructure at ports and in hinterlands."[6] Notwithstanding, the unit-load principle offers distinct advantages to any form of transport regardless of the present development status of transportation facilities or even the volume of traffic. Containerization is a modern tool of industrial, agricultural, and transportation development. Its adoption demands not only capital but also imagination and willingness to accept the challenge to change.[7]

This paper is concerned with maritime trade between a developing region and one which is more developed. It addresses the question of a strategy for increasing trade interaction between the two types of regions. Prior investigations have implied that a strategy of containerization may ameliorate trade imbalances through traffic generation.[8] Here I suggest a strategy to containerize beef exported from Central America to Florida as an initial step to correct imbalances in trade.

Methodology

A three-factor system of complimentarity, intervening opportunity, and transferability was postulated by Edward Ullman to describe the role of transportation and the basis of spatial interaction.[9] The first objective of this study is to examine the flows of one commodity (fresh and frozen beef) exported from Central America to Florida in the context of Ullman's system. This inquiry establishes the permanency of the flows so that their potential application to transport innovation might be evaluated. Next, data surveying the flows of containers between Florida ports and the ports of Central America are examined to determine the relationships of the unbalanced movement between the two regions. Finally, potential increases in containerized movements to Central America are addressed.

Commerce in Beef

The beef cattle industry in Central America has expanded recently because of two economic policies, to increase self-sufficiency in food production, and to develop new exports to provide foreign exchange to balance payments for essential imports. Beef exports have increased considerably at the expense of domestic consumption, suggesting the second of these policies has dominated.[10]

Ullman's complimentarity principle asserts that circulation or interaction results from areal differentiation between two locales, with a demand in one and a supply in the other. During the first two years of the study period (1972 and 1973) complimentarity accounted for an increase in Florida's beef imports from Central America, 18 percent and 15 percent respectively. In 1974, beef imports declined 16 percent because of political rather than economic reasons: instability in Nicaragua, Guatemala, and Honduras (Table 1).

When expressed as a percentage of the total of meat imported to Florida, Central American beef imports have risen steadily. In 1971 they accounted for 47 percent; in 1972, 51 percent; in 1973, 75 percent; and in 1974 they reached a high of 83 percent. The volume of beef imported to Florida has fluctuated, but the demand of the Florida market for beef products should increase. No intervening opportunities (developed market economies) exist between Central America and Florida, so the present pattern of beef trade should continue.

Seven Florida ports discharged meat from foreign origins, but Tampa and Miami greatly surpassed the others (Table 2). The rise of Miami over Tampa after 1972 can be attributed to Miami's proximity to Central America in terms of actual distance as well as in Miami's connections with Latin American banking institutions. This shift in location illustrates Ullman's transferability principle. Increased demand at Miami has dislocated Tampa's importance as an importing center, in favor of Miami, because the distance between market and supply is diminished. In each year of this study at least 90 percent of the meat discharged at Miami originated in Central America.

TABLE 1

FRESH OR FROZEN MEAT TO FLORIDA PORTS FROM CENTRAL AMERICA
1971-1974

(In Tons)

	1971	1972	1973	1974
Costa Rica	14,078	19,233	20,864	28,091
El Salvador	----	3,644	4,388	6,664
Nicaragua	13,713	23,855	27,030	13,571
Honduras	14,183	13,345	18,833	12,714
Guatemala	24,378	19,652	19,498	14,378
Panama*	824	1,401	1,019	1,044
Beleze	----	----	98	37
TOTAL	67,176	81,130	91,730	76,499

*Note: Tonnage from the Canal Zone not included.

Source: U.S. Department of Commerce, Bureau of Census SM-305-305IT - *U.S. Waterborne General Imports and Inbound In-Transit Shipments.*

TABLE 2

FRESH OR FROZEN MEAT BY FLORIDA PORT OF ENTRY
1971-1974

(In Tons)

	1971	1972	1973	1974
Tampa	85,000	87,668	44,569	25,795
Miami	41,999	62,421	74,397	63,775
Port Everglades	8,434	5,007	3,065	941
Palm Beach	38	19	----	25
Jacksonville	11	----	----	17
Fort Pierce	7,032	414	----	42
Port Canaveral	----	----	----	1,433
TOTAL	143,636	155,529	122,021	92,028

Source: U.S. Department of Commerce, Bureau of Census SM-305-305IT - *U.S. Waterborne General Imports and Inbound In-Transit Shipments.*

Container Flows

Flow data of containers for 1974 between the two regions were extracted from an unpublished Maritime Administration (MARAD) report.[11] Because of relatively low volumes, container traffic between Central America and Florida moves predominantly on the decks of conventional vessels rather than on containerships. Only four of the Central American nations (Costa Rica, Guatemala, Honduras, and Panama) experienced containerized international trade with the United States (Table 3). The import/export ratio between Florida and Central America was the highest for Panama with 6.03, followed by Honduras (1.72) and Guatemala (1.70), while the ratio with Costa Rica was in best balance with 1.35. These ratios

TABLE 3

FLOW OF CONTAINERS BETWEEN CENTRAL AMERICA AND FLORIDA PORTS

1974

Florida Imports

Country	Number of Containers	Cubic Ft.*	Tons
Costa Rica	894	667	15,165
Guatemala	1,747	1,174	28,182
Honduras	1,465	1,273	22,121
Panama	290	141	2,534
TOTAL	4,396	3,255	68,002

Florida Exports

Country	Number of Containers	Cubic Ft.*	Tons
Costa Rica	1,211	966	19,943
Guatemala	2,967	1,808	45,890
Honduras	2,521	3,092	36,027
Panama	1,749	1,774	16,724
TOTAL	8,448	7,640	118,584

*Cubic Ft. are in thousands

Source: Compiled from, U.S. Department of Commerce/Maritime Administration, Unpublished report, *1974 MARAD Containerized Foreign Trade Data*, 1976.

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indicate that in number of containers the flow of traffic is biased toward commerce originating in the United States. Similar ratios utilizing total cubic feet and total tons likewise show this directional bias in container trade. Therefore, the possibilities of back-hauling[12] the excess containers from Central America with agricultural products should reduce transportation costs per unit of product.

Potential for Containerization of Central American Commerce

Several commodity flows between Florida and Central America are strong enough to require regular services by conventional vessels. Such flows could easily be containerized if certain prerequisites were met. Port and interchange facilities must be adapted to the receiving and handling of containers. Governmental regulations must be favorable. Cargoes for export must be assured.

Transportation can perform an increasingly prominent role in the progress toward economic maturity of the still developing economies. Containerization as a transport tool has the ability to increase interaction between Central America and Florida and it also has the potential of balancing trade between the two regions. Containerization could lead to more intensive agricultural development by expediting movements to domestic market places and by supplying refrigeration at the point of field production. This would allow producers to extend and increase their domestic as well as their international market areas. Beef exported from Central America is only one commodity which is suitable for the transition from conventional to automated handling. Planning and coordination, both within each nation as well as from the developed trading nations, would encourage the development of this transport innovation.

* * *

1. J. Lowe and S. Moryadas, *The Geography of Movement* (Boston: Houghton Mifflin, 1975), pp. 294-97.

2. R. O. Goss, *Studies in Maritime Economics* (Cambridge: M.I.T. Press, 1968), p. 154.

3. The sling-and-boom method utilizes a ship's gear to hoist small quantities of cargo to and from the pier when transfering or moving cargo between ship and shore.

4. C. O'Loughlin, *The Economics of Sea Transport* (Oxford: Pergamon Press, 1971), pp. 117-18.

5. G. F. Mott, *Transportation Century* (Baton Rouge: Louisiana State University Press, 1966), p. 199.

6. A. D. Couper, *The Geography of Sea Transport* (London: Hutchinson, 1972), p. 184.

7. United Nations, Department of Economic and Social Affairs, *An Examination of Some Aspects of the Unit-Load System of Cargo Shipments: Application to Developing Countries* (New York: United Nations, 1969), p. 15.

8. United Nations, Department of Economic and Social Affairs, *Containers, Pallets and Other Methods for the Intermodal Movement of Freight: Application to Developing Countries* (New York: United Nations, 1970), p. 42.

9. E. L. Ullman. "The Role of Transportation and the Bases for Interaction," in *Man's Role in Changing the Face of the Earth*, ed. W. L. Thomas, Jr. (Chicago: University of Chicago Press, 1956), pp. 862-80.

10. U.S. Department of Agriculture, Foreign Agricultural Service, *The Beef Cattle Industries of Central America and Panama*, by J. P. Rourke. FAS M-208 (Washington: U.S.G.P.O., 1969). Data of meat flows taken from the U.S. Bureau of the Census records for the years 1971-1974 were consulted. Virtually all export production of meat in Central America is beef: U.S. Bureau of the Census. *U.S. Waterborne General Imports and Inbound In-Transit Shipments* (Washington: U.S.G.P.O., 1971, 1972, 1973, and 1974). The reader is referred also to A. K. Hemphill, "Livestock Prospects Mixed in Central America-Mexico," *Foreign Agriculture* 14 (48) (1976), pp. 2-4 for an analysis of beef production in Central America.

11. U.S. Department of Commerce, *Maritime Administration, 1974 MARAD Containerized Foreign Trade Data* (unpublished report).

12. The practice of back-hauling reduces freight rates along a route by developing commodity flows in the direction of the light traffic flow.

THE MARKET PATTERN OF FRESH WINTER VEGETABLES FROM FLORIDA

Joyce McJunkin and Ronald Schultz

Florida is the major supplier of fresh winter vegetables in the United States. This paper examines the importance of individual markets to the Florida winter vegetable industry and the importance of the Florida winter vegetable industry to the individual markets.

Data

The volume of selected winter vegetables shipped from Florida to the thirty-seven major U.S. markets, and the total volume of these vegetables received at the markets from all sources for the 1959-60 and 1969-70 seasons were obtained from publications of the United States Department of Agriculture[1] (Table 1). The importance of each market to the Florida winter vegetable industry is portrayed in Figure 1. The dominance of the northeastern markets is evident in both years. Nine cities in the northeast received more than half of the total vegetables sent from Florida. New York City alone received 24 percent of the total from Florida in 1959-60 and 21 percent in 1969-70. Philadelphia was the second most important individual market, receiving approximately ten percent in both years. Only 6 percent of the selected winter vegetables were delivered to markets west of the Mississippi River in both years.

The relative stability of a market tended to vary with the size of the market. A comparison of the percentage change in the carlot unloads for the two years in each market and the unload figures for 1959-60 shows that the larger markets were more stable than the smaller ones (Figure 2). The two largest markets (> 2000 carlots) had less than a 10 percent variation, moderately sized markets (between 1000 and 2000 carlots) all varied under 50 percent, and small markets (< 1000 carlots) varied from less than one percent to more than 1000 percent.

Significance of Markets to Florida

A standard approach to explaining the pattern of flows over space fits empirical data to a version of the gravity model of spatial interaction.[2] The gravity model postulates that the volume of interaction between two places is directly related to the size or level of "attraction" of each place and inversely related to the distance separating them. In addition to population and distance it was hypothesized that education, income, and unemployment rates would influence the volume of demand at individual destinations. Income and education should have a positive impact on the demand for fresh, winter vegetables whereas the unemployment rate should negatively influence the volume of shipment if economic conditions are important determinates of market demand. The size of "attraction" of each market was captured by the population of its Standard Metropolitan Statistical Area. Distance was measured as highway miles.[3] Pompano Beach was chosen as the point of origin because of its large farmer's market from which the majority of Florida's winter vegetables are sent. Median school years completed for individuals twenty-five years of age and older and median income for all families and unrelated individuals were the operational measures of education and income.

The model can be expressed as the following equation:

$$VEGT = \beta_0 \cdot POP^{\beta_1} \cdot INC^{\beta_2} \cdot ED^{\beta_3} \cdot DIST^{\beta_4} \cdot UR^{\beta_5}$$

where VEGT = the number of carlots of vegetables shipped to each market from Florida and POP, INC, ED, DIST, and UR = the population, income, education, distance, and unemployment-rate variables defined above. In order to apply ordinary

TABLE 1

CARLOT UNLOADS OF FRESH FLORIDA VEGETABLES BY CITY:
TOTAL, PERCENT, AND COMPARATIVE EDUCATION*

	1959				1969			
	VEGT from FL	% FL Unloads to City	% from FL of all Unloads	Rel. Ed.	VEGT from FL	% FL Unloads to City	% from FL of all Unloads	Rel. Ed.
Albany, NY	132	.6	14	A	223	1.0	32	B
Atlanta, GA	1,487	6.7	40	0	1,463	6.3	44	0
Baltimore, MD	1,256	5.6	32	B	1,020	4.4	14	B
Birmingham, AL	1,063	4.8	37	B	700	3.0	43	B
Boston, MA	1,632	7.3	30	A	1,277	5.5	30	A
Buffalo, NY	155	.7	10	B	286	1.2	29	B
Chicago, IL	1,328	6.0	16	B	1,115	4.8	22	0
Cincinnati, OH	517	2.3	22	B	727	3.1	33	B
Cleveland, OH	326	1.5	7	0	760	3.3	26	0
Columbia, SC	1,433	6.4	52	B	1,319	5.6	54	B
Dallas, TX	211	.9	8	A	132	.6	9	A
Denver, CO	33	.1	2	A	36	.2	4	A
Detroit, MI	828	3.7	25	0	1,458	6.2	36	B
Fort Worth, TX	51	.2	6	A	20	.1	8	0
Houston, TX	208	.9	14	A	179	.8	16	0
Indianapolis, IN	309	1.4	13	A	237	1.0	25	A
Kansas City, MO	129	.6	8	A	200	.9	18	A
Los Angeles, CA	1	.0	0	A	17	.1	0	A
Louisville, KY	331	1.5	27	B	428	1.8	41	B
Memphis, TN	202	.9	14	B	151	.6	25	B
Miami, FL	352	1.6	36	A	609	2.6	56	0
Milwaukee, WI	67	.3	9	A	83	.4	19	0
Minneapolis, MN	56	.3	4	A	80	.3	10	A
Nashville, TN	144	.6	22	B	232	1.0	10	B
New Orleans, LA	313	1.4	20	B	310	1.3	15	B
New York City, NY	5,366	24.1	22	B	4,997	21.4	44	0
Oklahoma City, OK	4	.0	6	A	48	.2	11	A
Philadelphia, PA	2,285	10.3	28	B	2,322	9.9	36	B
Pittsburgh, PA	696	3.1	18	B	1,242	5.3	36	0
Portland, OR	13	.1	1	A	4	.0	1	A
Providence, RI	112	.5	15	B	148	.6	39	B
St. Louis, MO	317	1.4	11	B	330	1.4	21	B
Salt Lake City, UT	6	.0	1	A	0	.0	0	A
San Antonio, TX	91	.4	4	B	32	.1	2	B
San Francisco, CA	36	.2	1	A	4	.0	0	A
Seattle, WA	24	.1	5	A	45	.2	3	A
Washington, D.C.	722	3.2	37	A	1,136	4.9	46	A
TOTALS	22,236				23,570			

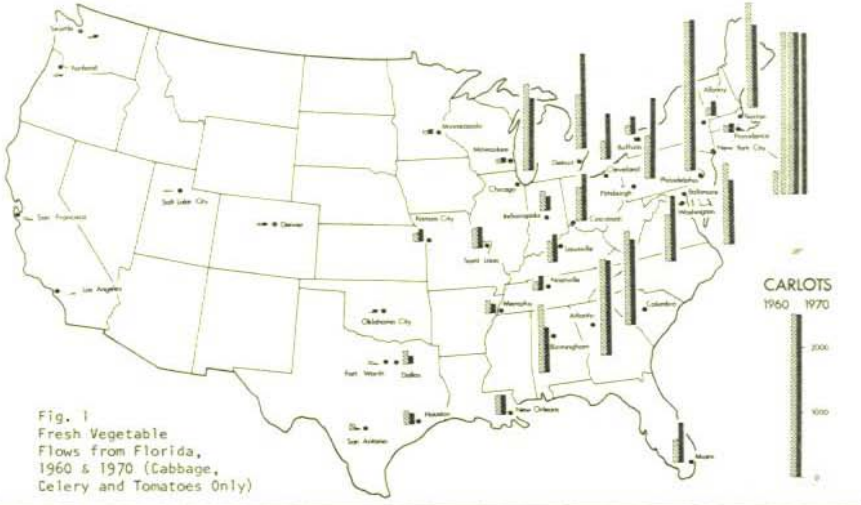


Fig. 1
Fresh Vegetable
Flows from Florida,
1960 & 1970 (Cabbage,
Celery and Tomatoes Only)

least squares regression to estimate the parameters of the model, the equation must be expressed in linear form. This is accomplished by taking logarithms of all variables which yields the following estimating equation:

$$\log VEGT = \log \beta_0 + \beta_1 \log POP + \beta_2 \log INC + \beta_3 \log ED - \beta_4 \log DIST - \beta_5 \log UR$$

Table 2 presents the results of the regressions. In addition to regressing the sum of the selected vegetables (VEGT) against the independent variables, each vegetable was examined separately for both years.

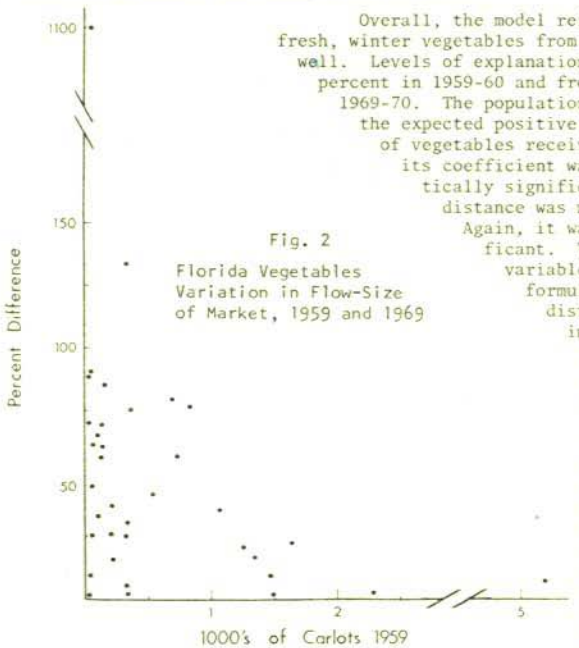


Fig. 2
Florida Vegetables
Variation in Flow-Size
of Market, 1959 and 1969

Overall, the model reflects the flow of fresh, winter vegetables from Florida reasonably well. Levels of explanation ranged from 42 to 63 percent in 1959-60 and from 50 to 69 percent in 1969-70. The population of each market had the expected positive influence on the volume of vegetables received in both years and its coefficient was uniformly statistically significant. The effect of distance was negative as hypothesized. Again, it was consistently significant. Thus, the two most basic variables in gravity model formulations (population and distance) were found to be important determinants of the spatial pattern of winter vegetable flows from Florida.

The unemployment rate was always negatively related to the volume of vegetables received at a market as expected, but it was significant in only six of the nine regressions. Nevertheless, we may conclude that the performance level of the local economy does affect the demand for fresh, winter vegetables. This conclusion is supported by the results for the income variable. Although only in one case did income achieve statistical significance, in all but one regression its coefficient was positively signed suggesting that markets with higher median incomes are consuming additional winter vegetables beyond what their raw population and distance from Florida would predict.

The level of formal education was statistically significant. But the negative relationship between fresh, winter vegetable consumption and education was unexpected. In order to explore the reason for this reverse relationship a regional comparison of median school years completed by the adult population was made (Table 1). Market centers west of the Mississippi River were practically all above the mean of median school years completed in both years. Northern market education levels varied closely around the mean whereas market centers in the south tended to be well below average. Because distance is a significant factor in explaining the volume of vegetables received at a market and because of the proximity of lower educational markets to Florida and conversely the remoteness of the markets with higher levels of education, the negative relationship between education and market demand may be a further reflection of the distance effect. Alternatively, the true relationship may be that the less educated use more fresh vegetables in family meals. Perhaps the more educated females because of work or other commitments use more prepared foods, including vegetables.

In summary, we may conclude this section by re-emphasizing that the major markets for Florida fresh, winter vegetables are in the northeastern section of the United States and that the markets displayed a stability over the ten years generally relative to their size. An expanded gravity model formulation fit the data fairly well with population, distance, unemployment, and income factors affecting the flow of fresh vegetables in the expected manner. Education, however, was negatively related to market consumption contrary to original expectations.

Significance of Florida to Markets

Although Florida is the major winter vegetable supplier to United States markets, competition from other sources should affect the proportion of each market's total consumption supplied by the state. Thus, distance from other major production areas as well as distance from Florida should influence the proportion of a market's total receipt of winter vegetables that come from Florida. Distances from Laredo, Texas (as representative of the southern Texas and Mexican supply areas) and from Blythe, California (representing southern California and Arizona production areas) to the thirty-seven markets again were measured in highway miles. Florida vegetables received at a market were expressed as a proportion of all vegetables received at that market.

The hypothesis was that increased proximity of a market to other supply areas would decrease the proportion of Florida vegetables consumed in that market. This can be represented as a test of a distance decay model of the following form:

$$PFVEGT = \beta_0 + \beta_1 \log DISTC + \beta_2 \log DISTT - \beta_3 \log DISTF$$

where PFVEGT = vegetables from Florida as a proportion of total vegetables received at a market during 1959-60 and 1969-70 and DISTC, DISTT, and DISTF are the respective distances of a market from California, Texas, and Florida origins.

The Florida distance variable was expected to be negatively related to the importance of Florida vegetables to the cities. That is, the proportion of Florida vegetables of the total vegetables received in a city would decrease (increase) as distance from Florida increased (decreased). However, regression coefficients on the California and Texas distance variables were expected to be positive. That is, as distance from these competing supply areas increased (decreased), the proportion of vegetables supplied by Florida would increase (decrease).

The outcome of the analysis was in accordance with the expected pattern (Table 3). Distance from Florida has a consistently negative relationship with the importance of Florida vegetables at markets, whereas there were positive relationships between the importance of Florida vegetables and distance from the two competing source areas. The level of explanation ranged from 43 to 53 percent for the 1959-60 flows and from 50 to 74 percent for the 1969-70 season.

Figure 3 depicts the nature of the distance decay relationships. For the sake of clarity only two independent variables (Pompano Beach, Florida and Blythe, California as source areas) are represented. Although physical distance from Pompano Beach remains the same along the arc AB, a decreasing proportion of vegetables supplied by Pompano Beach occurs as one nears point B. In essence, distance from Pompano Beach is being controlled for (held constant) while distance from Blythe, California is allowed to vary. This modification of the friction of distance concept with a competing supplier may be expanded to two or more additional suppliers, however, the graphic visualization of the problem becomes complex.

In summary, the distance decay model was a significant predictor of the relative importance of Florida vegetables to individual markets across the country even where major competitors also had access to these markets. We conclude that Florida's significance as a supplier is strongly related to proximity of all production areas to the markets.

TABLE 2

SUMMARY TABLE OF STEP-WISE MULTIPLE REGRESSION RESULTS
OF MODIFIED GRAVITY MODEL[5]

		1959-60				1969-70					
		CAB	CEL	TOMT	VEGT	CAB	CEL	TOMT	BEAT	CUC	VEGT
POP	β	1.01*	1.02*	.97*	.88*	.97*	1.17*	1.18*	1.06*	1.34*	1.22*
	t	1.8	2.9	2.4	2.9	1.8	3.6	4.2	3.9	4.6	3.9
DIST	β	-1.37*	-1.33*	- .81*	-1.01*	-1.27*	- .93*	- .73*	- .76*	- .60*	- .78*
	t	2.6	3.9	2.1	3.0	2.4	2.9	2.2	2.8	2.1	2.5
ED	β	-13.83*	-13.39*	-9.20*	-11.15*	-32.07*	-20.54*	-18.54*	-19.95*	-10.93	-20.17*
	t	2.7	4.0	2.5	3.4	2.5	2.7	2.4	3.1	1.6	2.7
INC	β	.84	1.08	- .76	†	4.07	3.43*	†	.92	1.25	1.15
	t	.2	.5	.3	†	1.5	1.9	†	.6	.7	.6
UR	β	-1.17	-2.71*	-1.07	-1.53	-2.44*	-2.99*	-2.07*	-2.71*	- .94	-2.28*
	t	.8	2.7	1.0	1.4	1.9	3.8	2.5	4.1	1.3	3.1
R^2		.43	.63	.42	.48	.50	.67	.54	.69	.59	.63

*Coefficient is significant at the .05 level of error using a one tail "t" test

†Insufficient F ratio for entry

TABLE 3

SUMMARY TABLE OF STEP-WISE MULTIPLE REGRESSION RESULTS
OF DISTANCE DECAY MODEL

		1959-60				1969-70					
		PFCAB	PFCEL	PFTOM	PFVEG	PFCAB	PFCEL	PFTOM	PFBEA	PFCUC	PFVEG
DISTF	β	-.14*	-.41*	-.13*	-.17*	-.19*	-.29*	-.20*	-.22*	-.30*	-.24*
	t	2.4	5.2	2.1	3.2	3.1	3.2	2.8	2.6	5.3	4.4
DISTC	β	.22*	†	.33*	.27*	.38*	.44*	.43*	.45*	.32*	.37*
	t	2.4	†	3.6	3.4	4.1	3.3	4.0	3.6	3.8	4.5
DISTT	β	.15*	†	†	†	.26*	†	†	†	2.0*	.14*
	t	2.1	†	†	†	3.6	†	†	†	3.1	2.2
R^2		.47	.43	.47	.53	.69	.52	.55	.50	.74	.72

*Coefficient is significant at the .05 level of error using a one tail "t" test

†Insufficient F ratio for entry

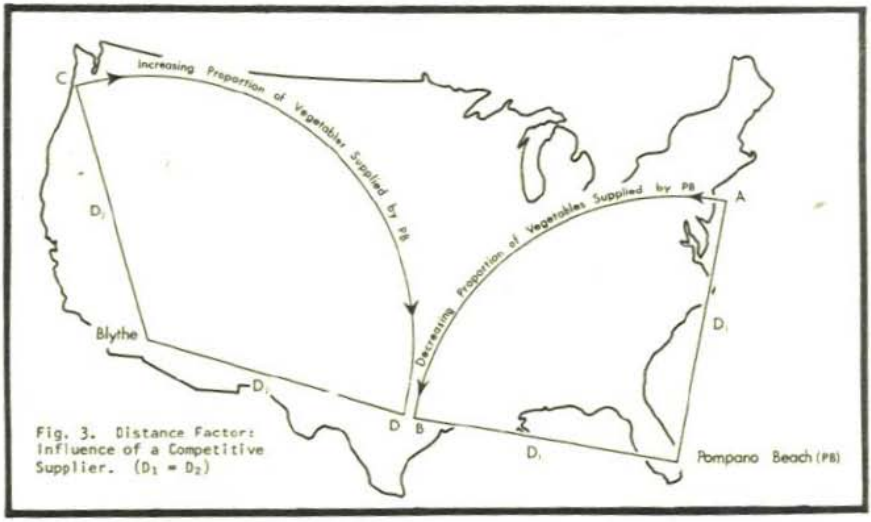


Fig. 3. Distance Factor: Influence of a Competitive Supplier. ($D_1 = D_2$)

Conclusion

This study has examined the pattern of fresh winter vegetable sales from Florida. A modified gravity model explained approximately half of the variation in the volume of sales by market. Population, distance from Florida, and the unemployment rate were significant explanators of the spatial pattern of sales. A measure of the level of formal education also was significant but with the reverse sign than expected. This may be a further reflection of the effect of distance due to the particular regional pattern of the education measure or it may reflect a greater propensity for the more highly educated to substitute prepared foods for fresh vegetables.

The importance of the Florida winter vegetable industry to the markets was examined also. An expanded distance decay model was estimated using in addition to distance from Florida distance from southern California and southern Texas. There was a negative relationship between distance from Florida and the importance of Florida vegetables to the market and at the same time a positive relationship between distance from the competing supply areas and the importance of Florida vegetables at the market.

* * *

1. U.S. Department of Agriculture, Agricultural Marketing Service, Fruit and Vegetable Division, Market News Branch, *Carlot Unloads of Certain Fruits and Vegetables in 100 U.S. and 5 Canadian Cities, Also Truck Unloads in 39 U.S. Cities and 5 Canadian Cities* (Washington, D.C.: U.S. Government Printing Office, 1960); and U.S. Department of Agriculture, Consumer and Marketing Service, Fruit and Vegetable Division, Market News Branch, *Fresh Fruit and Vegetable Unload Totals for 41 Cities* (Washington, D.C.: U.S. Government Printing Office, 1970).

2. Ronald Abler, John S. Adams, and Peter Gould, *Spatial Organization: The Geographer's View of the World* (Englewood Cliffs, N.J.: Prentice-Hall, 1971) pp. 221-30.

3. Rand McNally and Company, *Rand McNally Road Atlas* (Chicago, 1976).

4. In Table 1, "VEGT from Florida" refers to the total vegetable carlot unloads originating in Florida unloaded at cities indicated (VEGT combines cabbage, celery, and tomatoes for 1959 and cabbage, celery, tomatoes, beans, and cucumbers for 1969); "% FL Unloads to Cities" refers to the percentage of the total Florida fresh winter vegetable production which was unloaded in cities indicated; "% from FL of all Unloads" refers to the percentage of the total vegetable unloads in cities indicated which originated in Florida; and "Rel. Ed." is relative education: a comparison is made to the U.S. median school years completed for 1960 and 1970 (A=above U.S. median school years completed, B=below, and 0=equal to U.S. median school years completed).

5. In Table 2, "VEGT" for 1959-60 is the sum of CAB, CEL, and TOMT; for 1969-70, "VEGT" is the sum of CAB, CEL, TOMT, BEAT, and CUC. Other than distance, the variables for Table 2 were obtained from the *U.S. Census of Population: 1960 and 1970* (See text for definitions).

SEASONAL FLUCTUATIONS OF ART SHOW LOCATION AND FREQUENCY

Donald Brandes

The topic of art usually brings to mind well known artists and great museums and galleries. There is, however, another side to the world of art involving day-to-day activities of the thousands of journeyman artists who have not and probably never will "make it big." The vast majority of working artists remain as small retail business people, selling their works whenever and wherever they can, hoping to make a big sale but never counting on it.

For the past two years I have been a part-time artist and a full-time geographer. The importance of location as a major factor in marketing artwork became particularly intriguing to me, and therefore I decided to study some of the location factors of art sales with the intention of enhancing future sales and profits.

The most popular art marketing outlets are large group shows. These are organized by promoters in a variety of locations. The artist usually pays for an allotted space in which to display items for sale. Assorted artists and craftsmen, including painters, printmakers, sculptors, and jewelry makers, gather to display their creations along the curb of a closed street, in a city park or shopping mall, or at whatever site being used for that particular show. The number of artists participating in a given show varies widely. Most art shows attract some 50-150 artists, but some may be as large as 1,000 participants.

In deciding which shows to attend, I observed that the quantity and location of shows in Florida seemed to vary seasonally. I hypothesized that art show activity is closely related to season of the year: warm southerly locations are sought during the winter; cooler locations in the northern parts of the state become desirable as spring comes and the south becomes too warm. When the entire state becomes hot during the summer, art show activities move northward. Supporting the hypothesis is the fact that Florida is prominent as a winter tourist area, and thus it was further assumed that the frequency of art shows in Florida would increase in autumn to a maximum during the winter, and gradually decrease in the spring to reach very low levels in the summer.

In order to test these assumptions, I constructed a series of maps on which locations of all known art shows in Florida were plotted in two-month intervals for the twelve-month period of most recent data (Figs. 1-6).[1] These maps appear to support the hypothesis. The general trend for art show activity to be concentrated progressively further south during the autumn and winter is revealed in Figures 1-3. Figure 4 illustrates the increase in the number of shows in the central portion of the state during the spring while activity in the southern portion has declined slightly. Figures 5 and 6 reveal the small number of Florida art shows during the summer and their almost complete absence from the populous southeastern coast where activity had been most heavily concentrated during the late fall and winter.

The relative lack of shows in the summer reduces the opportunities to sell art products in Florida during that season. Artists residing in Florida with one or more years of show circuit experience usually abandon the art show circuit during the summer and use that time to prepare merchandise for fall and winter sale. It is generally agreed that those few summer shows which are in Florida are not profitable to attend. Out-of-state artists who visit Florida during the cooler months return north during the summer. These northern artists claim that highly profitable shows occur in northern states during the summer and I questioned if a journey north in summer would profit my business.


Fig. 1
FLORIDA
ART SHOWS
SEPT. & OCT. 1977


Fig. 4
FLORIDA
ART SHOWS
MAR. & APR. 1978


Fig. 2
FLORIDA
ART SHOWS
NOV. & DEC. 1977


Fig. 5
FLORIDA
ART SHOWS
MAY & JUNE 1978


Fig. 3
FLORIDA
ART SHOWS
JAN. & FEB. 1978


Fig. 6
FLORIDA
ART SHOWS
JULY & AUG. 1978

Next I hypothesized that art shows in summer occurred in progressively more northerly locations in a wave-like pattern through the southeastern states into the Northeast and Midwest, reaching the most northerly states during the hottest months. If so, a Florida-based artist could follow the wave north, beginning in nearby southern states in the early summer, and progressing north to the northern-most states of New England and the Midwest by July and August.

A second series of maps was made to test this hypothesis (Figs. 7-12). These maps locate all of the known art shows occurring in the eastern United States for the twelve-month period previously examined. The expected wave-like movement of art show activity between Florida and northern states does appear but is weak. Art shows in Maine, Vermont, upstate New York, Michigan, and Minnesota reach their highest frequency during the warmest months, but the greatest concentration of art show activity for the eastern United States as a whole never progresses that far north.

The wave-like progression of shows south to north with season is obscured because many art shows are held in enclosed sites, such as shopping malls or civic centers, where the effects of inclement weather are reduced. Thus, snow and subfreezing temperatures do not totally prevent art shows, although these factors do dissuade them. Moreover, large urban centers (particularly the Chicago, New Jersey-New York City-Connecticut, and Washington, D.C. areas) concentrate art show activity over many months, from spring until late autumn. If the heavy concentration of activities in these populous urban centers were removed from the maps, the north-south seasonal progression of art show frequency would be more apparent.

Other states individually do not display the marked tendency which Florida has for a north-south fluctuation of art show activities within its boundaries, but taken collectively, the remainder of the eastern United States generally experiences the same behavior as Florida by itself. As spring and summer come, art show activity penetrates progressively further into more northerly states. As autumn approaches, northern shows become fewer. When northern weather restricts outdoor activities, shows occur with increasing frequency in more southerly states, particularly Florida. For almost half the year Florida hosts more art shows than any other state.

It would seem that the number of art shows by month in Florida should be related inversely to the number of shows occurring in the remainder of the eastern United States. This assumption was tested. The results support the assumption, but only moderately (Figs. 13 and 14, Table 1). A correlation procedure applied to these data yielded a value of -.43. The negative correlation verifies the inverse relationship between the two data sets, but the value of correlation indicates that only .18 of the variance of either data set can be explained by variations in the other set.

TABLE 1

SEASONAL VARIATION IN ART SHOW ACTIVITY

	Florida		East U.S.	
	Number of Shows	Percentage	Number of Shows	Percentage
Sept.	9	4.16	218	12.94
Oct.	25	11.57	195	11.57
Nov.	39	18.06	170	10.09
Dec.	11	5.09	72	4.27
Jan.	21	9.72	26	1.54
Feb.	35	16.20	49	2.90
Mar.	33	15.28	76	4.51
Apr.	26	12.04	160	9.49
May	8	3.70	180	10.68
June	4	1.85	179	10.62
July	5	2.32	176	10.44
Aug.	0	0.00	184	10.92
Total	216	100.00	1685	100.00

FIGURE 7

EASTERN UNITED STATES
ART SHOWS
SEPTEMBER 1977

FIGURE 8

EASTERN UNITED STATES
ART SHOWS
NOVEMBER 1977

FIGURE 9

EASTERN UNITED STATES
ART SHOWS
JANUARY 1978

FIGURE 10

EASTERN UNITED STATES
ART SHOWS
MARCH 1978

FIGURE 11

EASTERN UNITED STATES
ART SHOWS
MAY 1978

FIGURE 12

EASTERN UNITED STATES
ART SHOWS
JULY 1978

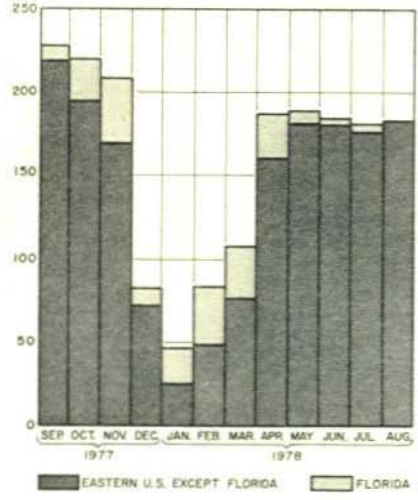


Fig. 13. Number of Art Shows by Month

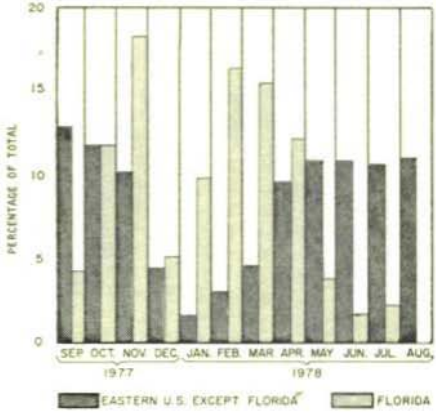


Fig. 14. Percentage of Art Shows by Month

Although Florida experiences its highest frequency of art shows during the cooler months and the group of other states experiences its period of least activity at this time, the pattern of change in frequency is not a continuous curve upward or downward for either area. During some months, frequency of art show activity is high or low respectively for both areas. Florida experiences a brief sharp peak during October and November, while the more northerly states are still hosting a large number of shows. In December, frequency of shows in both areas drops off sharply, and in April art show activity in the north has already reached its high warm season range while Florida is still experiencing its high rate of cool season activity.

The results of this investigation have been used along with other independently derived information on sales and profit potentials as a means of determining when and where it would be most advantageous to sell art. Some art shows are not profitable to enter, so it becomes necessary for the artist to locate in an area where several shows are available. The chances of entering a good one are thus increased. It becomes desirable to locate in the locale of greatest show frequency. During warm months, when Florida-based artists may desire to find shows elsewhere, nearby states (Georgia, Alabama, the Carolinas, for example) do not have the high show frequency which those artists require. The principal concentration of art show activity during this time jumps directly to distantly removed northern states, imposing great and often prohibitive expense on the Florida artist. Many Florida artists, myself included, have determined that it is not adequately profitable to pursue the art show circuit north during the summer.

* * *

1. The sources of information regarding art show dates and locations were periodical publications in which show organizers advertise to attract artists. The foremost of these publications is *Sunshine Artist*, a monthly magazine based in Orlando, Florida but with nation-wide circulation. Other sources included *American Artist*, *Art News*, and *Art Scene*.

Don Brandes

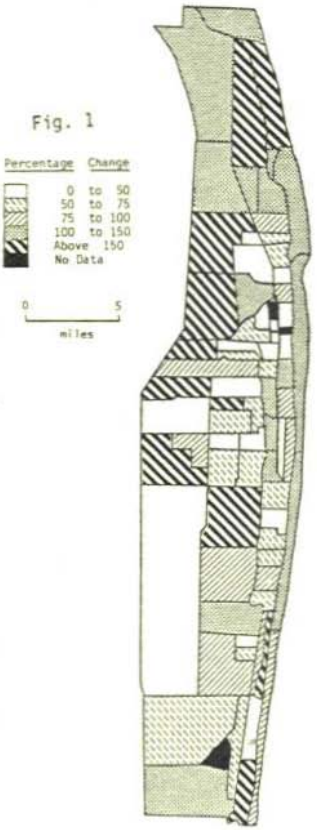
HOUSING VALUES IN PALM BEACH COUNTY: 1970 TO 1977

John A. Kraynick

In a dynamic, growing area, the spatial pattern of housing values can change significantly over time. Analysis of the single-family housing market within the urbanized area of Palm Beach County reveals the extent that the median housing value changed from 1970 to 1977. Data obtained from sale transaction records of the County Property Appraiser were aggregated for each census tract, and a median value was computed for each year in each tract.

The value of Palm Beach County housing increased substantially, from $18,000 in 1970 to $36,900 in 1977. The increase, however, was not uniform throughout the county. Some census tracts experienced more rapid increases than others. Between 1970 and 1977, eighteen census tracts experienced increases of 0 to 50 percent in the median value of housing, twenty-seven tracts increased between 50 and 100 percent, seventeen increased from 100 to 150 percent, and eleven showed median housing value increases of more than 150 percent. These groupings reveal substantial deviations in the percentage increase in median housing values within the urbanized area of Palm Beach County. A Spearman's rank order correlation analysis was performed on the two data sets, yielding value of .545. This positive correlation coefficient implies that those tracts which had high median housing values in 1970 were likely to have high median housing values in 1977, and those that were low in 1970 most likely had low values in 1977.

Fig. 1



The map of 1970 to 1977 percentage change in median housing value reveals that the highest increases (over 150 percent) were found immediately west of the fully developed area and along the Intracoastal Waterway in the northern part of the county (Fig. 1). The second highest increases (100 to 150 percent) were in those tracts adjacent to the coast (or were on the Intracoastal Waterway) and also generally concentrated in the northern area of the county. Median housing value increases of between 50 and 100 percent were located in an inland strip running north-south the length of the county. The smallest increases (less than 50 percent) were concentrated in the central city area and in those western tracts which have maintained a strong agricultural base.

There appears to be three relatively distinct zones of value change, coastal, central, and western. The coastal and western zones experienced high percent increases in median housing values (over 100 percent). The coastal zone is characterized by high stable land values, luxury housing, and little expansion of the housing stock. In this area the attraction of natural amenities (such as the ocean or Intracoastal Waterway) keeps median values high.

The western zone, conversely, is an area of rapid suburban growth with accelerating land values brought on by large increases in the housing stock. In this zone attraction to man-made amenities of new developments (e.g., golf courses) coupled with the desire to escape declining neighborhoods helps force median housing values upward.

The central zone generally witnessed small increases (less than the countywide average) in median housing values. This area is typified by an older housing stock, little or no new construction, and less stability within neighborhoods. In the census tracks where neighborhoods are declining housing values show their smallest increase.

In areas of rapid growth, like Palm Beach County, median housing values exhibit high percentage increases. These increases in part reflect increased demand due to in-migration of individuals, either for permanent residences or for second homes (which comprise a major component of the housing market in resort areas). Much of the housing demand within Palm Beach County was focused on areas with inherent natural amenities or in areas of new development characterized by man-made amenities. Conversely, areas devoid of such features or dominated by land uses in transition showed only small percentage increases in median housing value.

CONTRIBUTORS TO THIS ISSUE

Donald Brandes is a graduate student at the University of Florida. He is also a commercial artist. The drawings on pages 6, 23, and 28 are examples of his work, and are printed with his permission.

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THE HEALTH OF GEOGRAPHY IN TWO-YEAR COLLEGES IN THE SOUTHEAST

Patricia E. Kixmiller

"The status of geography in the two-year colleges in the Southeastern Division is somewhat improved over the last few years."[1] This statement opened Harry Schaleman's 1976 report on the status of geography in the two-year colleges in the nine states of the Southeastern Division of the Association of American Geographers (AAG). The results of my 1978 survey for the AAG suggests, on the contrary, that geography is on the decline in this region.

The survey consisted of seven questions. The first four dealt with the number of geography courses taught at the institution, frequency of the offerings, and the enrollment per course. Information was also solicited as to whether the respondent taught only geography or other disciplines as well. The remaining questions solicited comments concerning the status of geography at their institution and the possible role the AAG might take to strengthen that status.

The survey disclosed that 68 percent of the schools who responded include geography in their curriculum. The most popular courses are: regional geography (taught in 45 percent of the colleges), physical geography (24 percent), introduction to geography (20 percent), human geography (15 percent), conservation of natural resources (8 percent), and economic geography (6 percent). Approximately 5000 students a year register for geography courses distributed as follows: Tennessee (31 percent), Florida (30 percent), Alabama (12.5 percent), Georgia (9.5 percent), North Carolina (9 percent), Mississippi (4 percent), South Carolina (2.1 percent), Arkansas (1.9 percent), and Louisiana (none).

Of the twenty schools that responded stating that geography was not included in their curriculum, eighteen said that they had never included geography and had no intention of doing so in the future. Only two schools, both in Tennessee, indicated that they were interested in including geography in their curriculum. Secondly, of the sixty geographers who responded to my survey, only three were teaching geography full-time. The remaining fifty-seven were teaching the range from two courses a year in geography to three a term. These part-time geographers also teach history, political science, sociology, biology, chemistry, psychology, environmental science, coal mine reclamation (!), physical education, astronomy, geology, economics, anthropology, physics, calculus, precalculus, and English. It appears that a geographer in the two-year college must, of necessity, be a jack-of-all-trades. Notably, of the three full-time geographers, two are employed in Tennessee two-year colleges. Perhaps Tennessee is the only state in the region where geography is growing in popularity. Quite a few part-time geographers are also working either part-time or full-time in college administration.

Of the geographers who responded, 77 percent were men. The majority of the women worked with a male counterpart; where there was only one geographer employed by a college, that geographer tended to be a man. This is not really surprising as geography still remains a man's field. The majority of the two-year colleges in the Southeastern Division employ only one geographer and in 10 percent of the schools who responded to the survey, this person is not a full-time faculty member.

The complaints of my two-year colleagues remain the same. First, there is a lack of communication among geographers both within and between states, which leads to a feeling of isolation. Second is the problem of educating administrators, teaching colleagues in other disciplines, and the public at large regarding the nature and importance of geography. This can be an

especially frustrating task when one is the only geographer employed by a college. One of my respondents, Mary Triplette, put it beautifully when she wrote, "Too many persons still consider geography to be what they had in the fourth grade." She goes on to say that geography is perhaps more relevant today than many of the social sciences generally offered in the curriculum, but that this fact has not been made clear. She feels, as do many other geographers, that a major image change needs to take place.[2] Third, there is a problem in finding suitable textbooks for world regional geography at the community college level. Too often the reading level is too high, the presentation too dry, and balance in regional emphasis lacking. This may not present problems for the student with a background in basic place location and a university reading level. But the majority of the students in the two-year and community colleges have no idea where places are located and read at the high school level or lower.

These complaints have been aired year after year with no visible action forthcoming to solve them. I would like to suggest two possible solutions to the problem of communication. First, a division newsletter should be written by the two-year college coordinator for colleagues in the community and two-year colleges. Second, the division two-year college coordinator should appoint state coordinators to facilitate communication within their states and between the states and the division.

In conclusion, the Southeastern Division has a number of geographers in the two-year colleges who are valiantly struggling to preserve geography as part of the curriculum in their colleges, but all of this struggling will be for naught if solutions are not found for the problems discussed above. As I stated, I feel geography is declining in the two-year colleges in the Southeast. This is based on the comments received from the survey respondents as well as the poor response to the survey. Most of the respondents indicated that enrollment in geography has declined in the past two years and as a result the number of courses and sections has also declined. The poor response to the survey could be blamed on several possibilities: 1) geography is no longer taught at the school, 2) there is a geographer, but he/she no longer teaches geography, 3) the school no longer exists, and 4) apathy on the part of the geographer at the college. The previous survey yielded a 90 percent response, this one only 32 percent. Approximately 100 schools included geography in their curriculum according to the 1976 survey, but only fifty-five schools did in 1978. Therefore, one may conclude that the health of geography in the two-year colleges of the Southeast is not good.

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1. Harry J. Schaleman, "Commission on Geography in the Two-Year Colleges, AAG, Southeastern Division," University of South Florida (Unpublished Report), 1976, p. 1.

2. Mary Triplette, Southwestern Technical Institute, Sylva, North Carolina, personal communication, 1978.

Harry J. Schaleman, Jr., who wrote "The Status of Geography in Florida's Community and Junior Colleges" in the previous number of *The Florida Geographer* was not identified among the list of contributors to that issue. He is associate professor and director of geography at the St. Petersburg Campus of the University of South Florida. Our apologies, Harry.

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The Florida Society of Geographers was chartered in 1964 as a non-profit organization, for the purpose of furthering professionalism in geography through the application of geographic techniques in all areas of education, government, and business in Florida. The society supports these objectives by promoting acquaintance and discussion among its members and with scholars and practitioners in related fields by stimulating research and field investigation, by encouraging publication of scholarly studies, and by performing services to aid the advancement of its members and the field of geography in Florida.

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