



**Annual
Water
Use
Survey**

1987

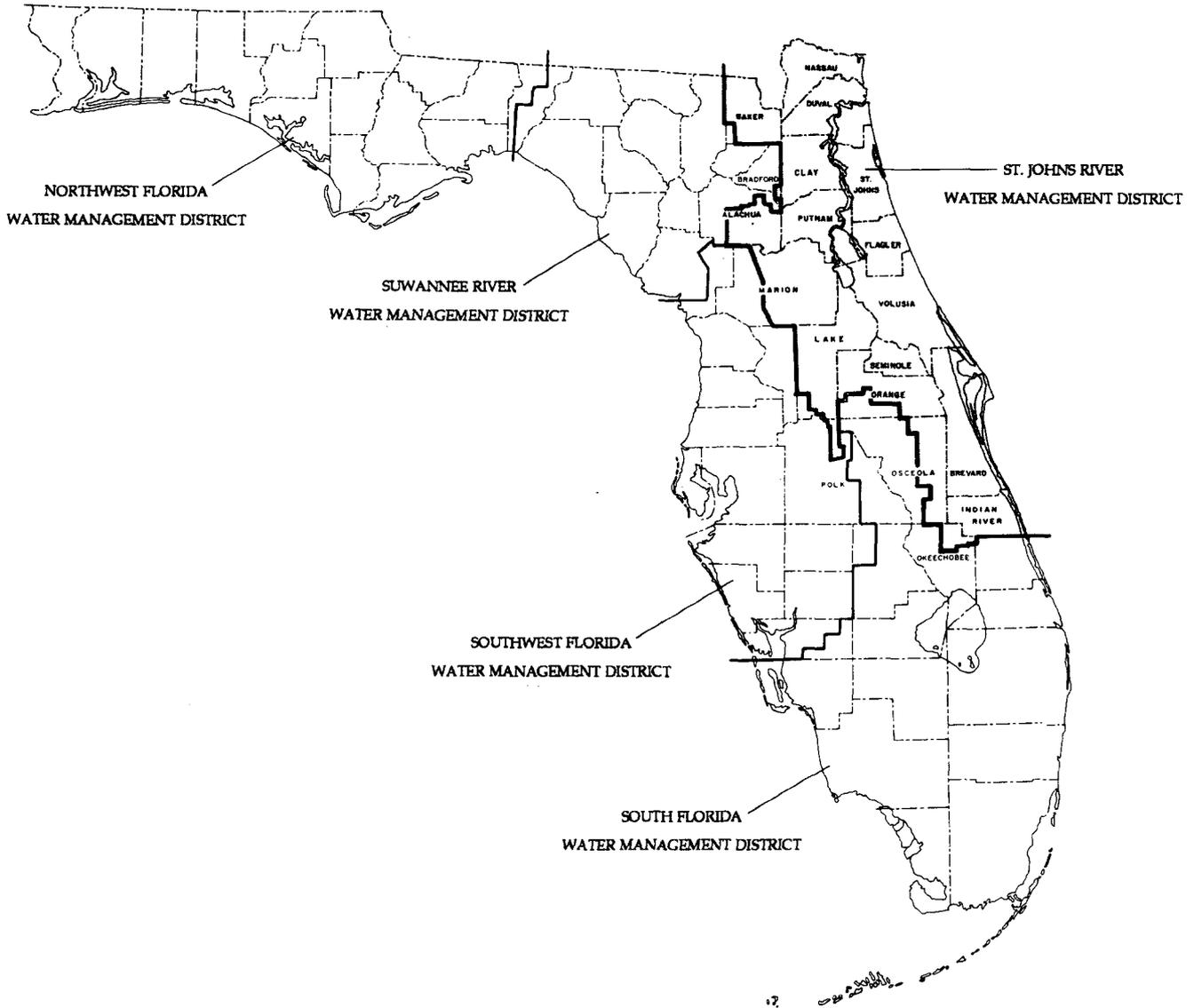
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ANNUAL WATER USE SURVEY: 1987

by
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St. Johns River Water Management District
Palatka, FL

1990



THE ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

The St. Johns River Water Management District (SJRWMD) was created by the Florida Legislature in 1972 to be one of five water management districts in Florida. It includes all or parts of nineteen counties in northeast Florida. The mission of SJRWMD is to manage water resources to insure their continued availability while maximizing environmental and economic benefits. It accomplishes its mission through regulation; applied research; assistance to federal, state, and local governments; operation and maintenance of water control works; and land acquisition and management. Technical reports are published to disseminate information collected by SJRWMD in pursuit of its mission.

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ABSTRACT

Water use data for 1987 were collected by county for the St. Johns River Water Management District (SJRWMD). They were compiled by category of use: public supply, domestic self-supply, commercial/industrial self-supply, agricultural irrigation, thermoelectric power generation self-supply, heat pump/air conditioning use, and free-flowing wells. Graphs and tables present total water use data district-wide and by category. The appendix presents specific data for each county.

The total amount of water used in SJRWMD for 1987 was 2,858.06 million gallons per day (mgd), of which about half (49 percent, 1,408.89 mgd) was fresh water and just over half (51 percent, 1,449.17 mgd) was saline. This amount of fresh water includes a relatively small amount of slightly saline water used for agricultural irrigation and for public supply in Brevard, Indian River, and Volusia counties. Ground water accounted for 75 percent of the fresh water used. All saline water use was from surface water sources. Most of the ground water used in SJRWMD (90 percent) came from the Floridan aquifer. The use of fresh ground water increased 9 mgd in 1987.

The largest amount of fresh ground water (36.5 percent) was used for public supply, followed by agricultural irrigation (35.5 percent). This is the largest percentage of total ground water use for public supply since the inception of the annual water use survey in 1978. This is also the first time that fresh ground water use for public supply in SJRWMD has exceeded ground water use estimated for agricultural irrigation. Agricultural irrigation used the largest amount of fresh surface water (58 percent) and total fresh water (41 percent) in SJRWMD for 1987.



INTRODUCTION

PURPOSE AND SCOPE

This report assesses water use in the St. Johns River Water Management District (SJRWMD) for 1987. This assessment addresses the quantities of water used, indicates trends in use, and provides the data required to establish water budgets and water use projections. These data have been published annually by the district since 1978. The term "water use" as used in this report refers to both the specific categories of water use and the quantities of water withdrawn from ground and surface water sources.

Water use is compiled for all of Brevard, Clay, Duval, Flagler, Indian River, Nassau, Putnam, St. Johns, Seminole, and Volusia counties and for those portions of Alachua, Baker, Bradford, Lake, Marion, Okeechobee, Orange, Osceola, and Polk counties that lie within SJRWMD boundaries (Figure 1).

Water use is compiled for the following categories: public supply, domestic self-supply, commercial/industrial self-supply (including institutional/recreational self-supply and mining), agricultural irrigation (including livestock use), self-supplied thermoelectric power generation, heat pump/air conditioning, and free-flowing wells.

In this report, the classification of water as to fresh, slightly saline, and saline is based on water quality and water use. Fresh water includes both potable and nonpotable water and is used for public and domestic supply, irrigation, commercial/industrial use, and power generation. Saline water is generally too salty for irrigation, but may be used for power generation and commercial/industrial use. Slightly saline water generally requires treatment for public supply use. It can be treated by reverse osmosis, or by blending with fresh water to achieve potable standards. Slightly saline water may also be used for commercial/industrial and irrigation purposes without treatment. Definitions for these water types are included in the glossary.

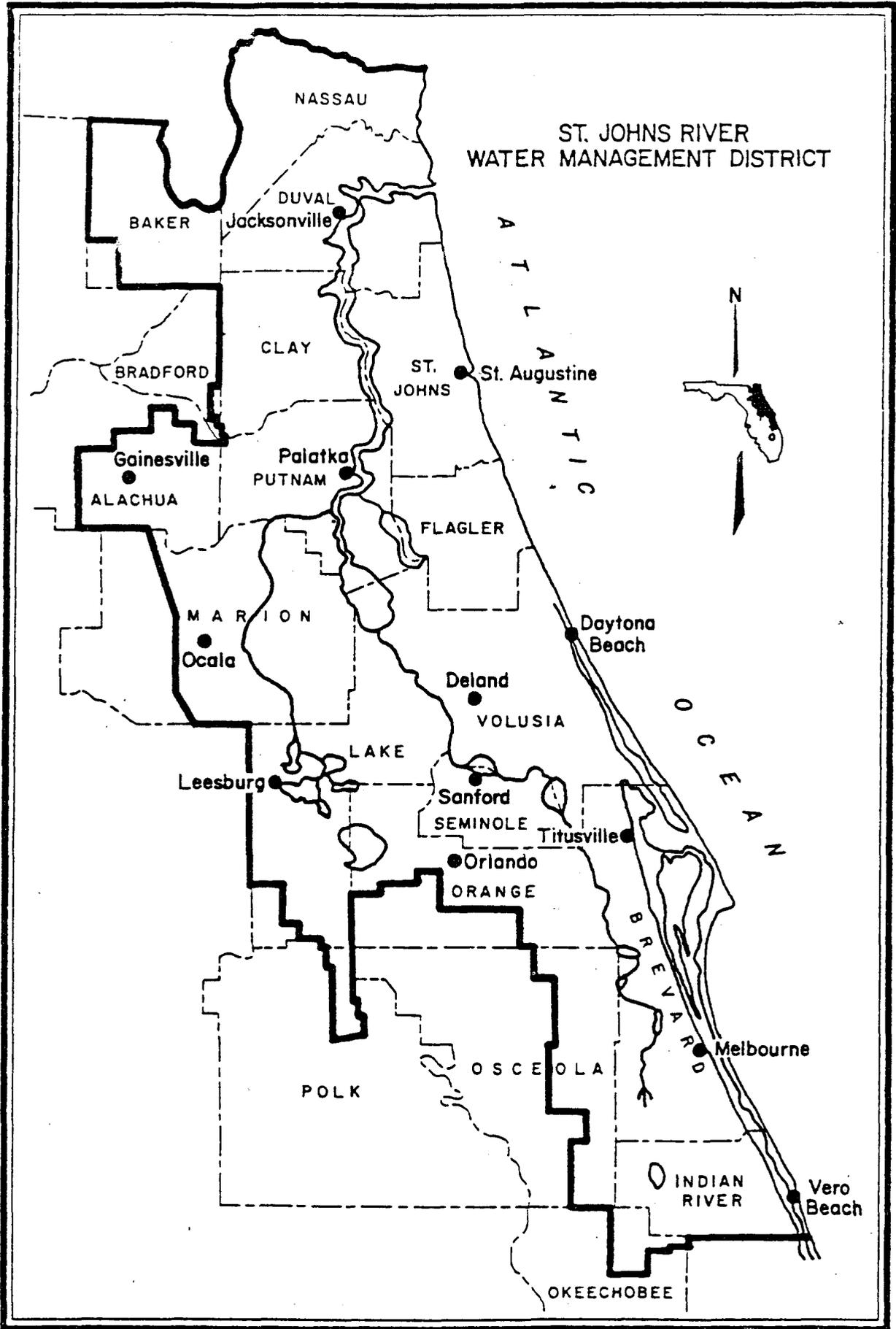


Figure 1. St. Johns River Water Management District

DATA SOURCES AND RELIABILITY

Data for public supplies, self-supplied industries, institutions, and thermoelectric power plants are collected by SJRWMD. Agricultural water use is estimated using the modified Blaney-Criddle computer irrigation model (USDA 1970), the Agricultural Field Scale Irrigation Requirements Simulation model (AFSIRS) of the University of Florida (Smajstrla 1986), and SJRWMD benchmark farms data, in combination with the crop data supplied by the Institute of Food and Agricultural Sciences county extension office (IFAS), the U. S. Department of Agriculture (USDA) Soil Conservation Service (SCS), the USDA Agricultural Stabilization and Conservation Services (ASCS), and the SJRWMD consumptive use permit files (CUP). The heat pump/air conditioning figures are calculated from the Brevard County well inventory list 1975-77, the Volusia County Vol-Data File (U. S. Geological Survey 11/20/80), conversations with Heating Ventilation Air Conditioning (HVAC) dealers in Putnam County, and the district consumptive use permit (CUP) files. Residential use is calculated for only three counties: Brevard, Volusia, and Putnam. Data for the remaining 16 counties are presently being inventoried. Non-residential use data (industrial and commercial) were collected through the CUP files for all counties. Data for the free-flowing well inventory are collected by the district in compliance with the requirements of the Florida Water Quality Assurance Act of 1983.

Water use data are expressed in million gallons per day (mgd). Water use values are the average annual quantities withdrawn (see glossary) and are rounded to whole numbers. The tables in this report show values in mgd and are reported to two places to the right of the decimal or to 10,000 gallons per day. The accuracy of these values varies from category to category. Data for public supply uses are considered reliable to the nearest 10,000 gallons per day because they are derived from metered pumpage. Data for agricultural water use are considered less reliable because they are estimated.



SUMMARY OF WATER USE IN 1987

In 1987, the total amount of water used in SJRWMD was 2,858.06 mgd, of which 1,408.89 mgd, or 49 percent, was fresh water and 1,449.17 mgd or 51 percent, was saline. Ground water accounted for 75 percent of the fresh water used while all of the saline water use was from surface water sources. For definitions of fresh and saline water as used in this report see the glossary.

FRESH GROUND WATER

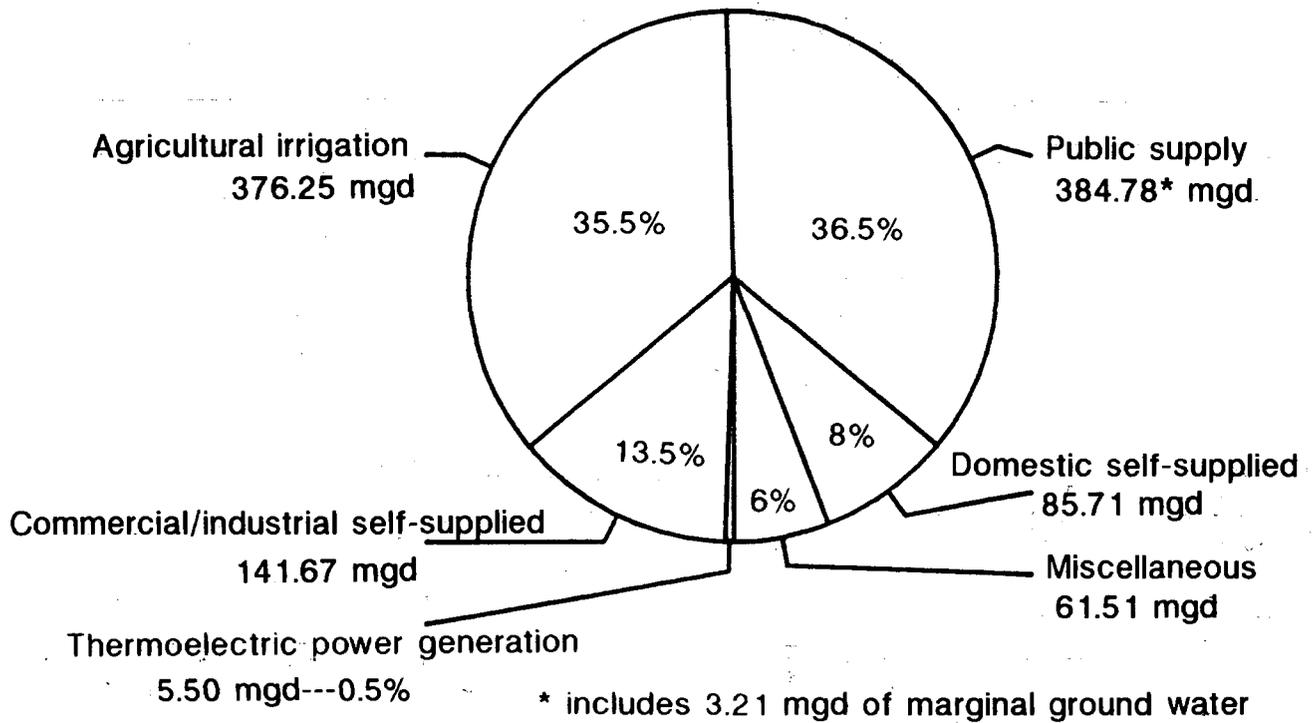
Public supply accounted for 36.5 percent of the total ground water used during 1987 (Figure 2). The Floridan aquifer supplied 90 percent of the ground water used (Table 1). This is the largest reported percentage of total ground water use for public supply since the inception of the annual water use survey in 1978. Further, this is the first time in SJRWMD that fresh ground water use for public supply has exceeded ground water use estimated for agricultural irrigation. There are two reasons for this. Late winter freezes caused irreversible crop damage, shortening the irrigation season. Additionally, extremely low rainfall during April, May, and June prompted increases in public supply demand, primarily for lawn irrigation.

The second largest category of fresh ground water use in SJRWMD was agricultural irrigation, using 35.5 percent of the total fresh ground water (Figure 2). Other categories of ground water use were commercial/industrial self-supply (13.5 percent), domestic self-supply (8 percent), and miscellaneous uses. Miscellaneous includes heat pumps and air conditioning (4.5 percent) and free-flowing wells (1.5 percent). Thermoelectric power generation accounted for less than 1 percent (0.5 percent) of the total ground water used in SJRWMD in 1987. Fresh ground water use in SJRWMD increased 9 mgd between 1986 and 1987.

The largest amount of fresh ground water use by county in 1987 was in Duval County (Table 2). Fresh ground water use exceeded 100 mgd in three counties: Duval (173.06 mgd), Orange (147.71 mgd), and Brevard (147.16 mgd) counties. These three counties accounted for 44 percent of the ground water use in SJRWMD in 1987.

St. Johns River Water Management District

GROUND WATER



SURFACE WATER

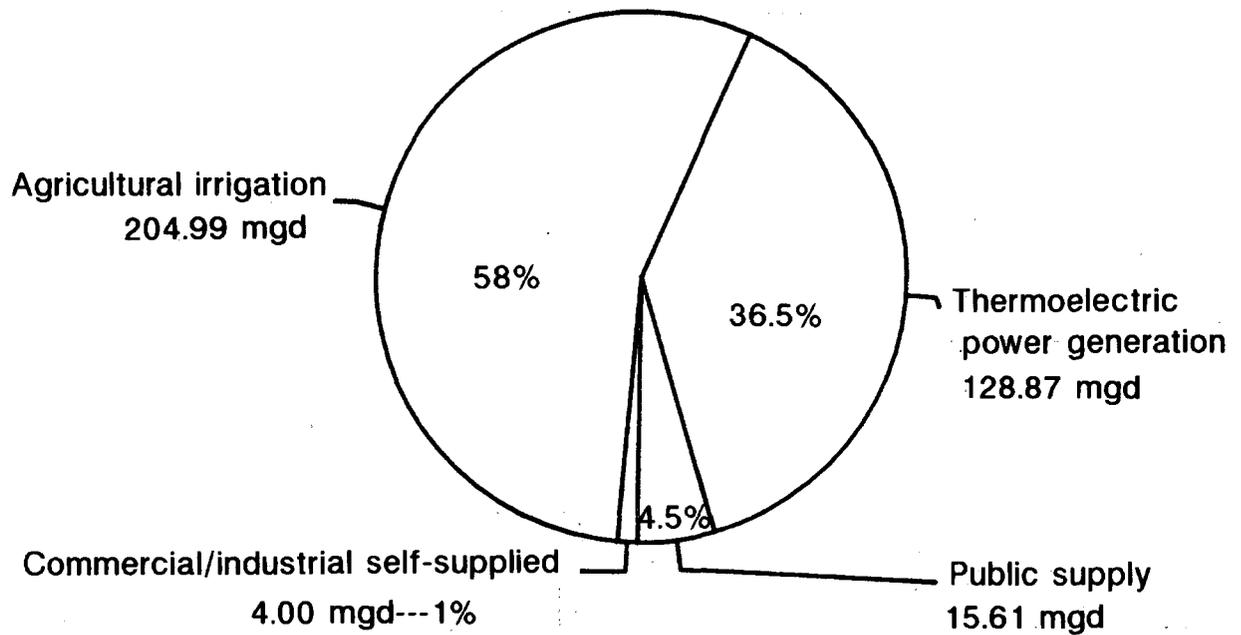


Figure 2. Fresh ground and surface water use by category, 1987

Table 1

Aquifer withdrawals by county with the percentage of use from each aquifer, St. Johns River Water Management District, 1987 (million gallons per day)

| County | Intermediate and Surficial | | Floridan | | Total Ground |
|-----------------|----------------------------|-----|----------|------|--------------|
| Alachua | 1.74 | 6% | 28.56 | 94% | 30.30 |
| Baker | 2.75 | 48% | 3.03 | 52% | 5.78 |
| Bradford | 0.02 | 6% | 0.34 | 94% | 0.36 |
| Brevard | 24.19 | 16% | 122.97 | 84% | 147.16 |
| Clay | 3.23 | 14% | 20.54 | 86% | 23.77 |
| Duval | 15.96 | 9% | 157.10 | 91% | 173.06 |
| Flagler | 2.21 | 25% | 6.50 | 75% | 8.71 |
| Indian River | 18.88 | 28% | 47.80 | 72% | 66.68 |
| Lake | 6.86 | 8% | 83.09 | 92% | 89.95 |
| Marion | 6.27 | 19% | 26.08 | 81% | 32.35 |
| Nassau | 3.25 | 7% | 40.40 | 93% | 43.65 |
| Okeechobee | 0.00 | 0% | 7.28 | 100% | 7.28 |
| Orange | 2.52 | 2% | 145.19 | 98% | 147.71 |
| Osceola | 0.00 | 0% | 5.61 | 100% | 5.61 |
| Polk | 0.20 | 2% | 10.79 | 98% | 10.99 |
| Putnam | 5.48 | 8% | 66.30 | 92% | 71.78 |
| St. Johns | 5.79 | 15% | 32.03 | 85% | 37.82 |
| Seminole | 2.10 | 3% | 64.32 | 97% | 66.42 |
| Volusia | 4.83 | 6% | 81.21 | 94% | 86.04 |
| District Totals | 106.29 | 10% | 949.13 | 90% | 1,055.42 |

FRESH SURFACE WATER

The major fresh surface water use category in 1987 was agricultural irrigation, which accounted for 58 percent of the total surface water used in SJRWMD (Figure 2). Thermoelectric power generation accounted for 36.5 percent of the total fresh surface water use. Public supply (4.5 percent) and commercial/industrial self-supply (1 percent) accounted for the remaining 5.5 percent of total fresh surface water use. Fresh surface water use decreased by 25 mgd between 1986 and 1987. The majority of this decrease (65 percent) is a result of the redefinition of surface water use associated with mining operations. In previous report, water used to transport materials from the mine pit to the plant and water pumped for dewatering the pit was considered a surface water use. In this report it is considered conveyance (see glossary) and therefore it is not accounted for.

The largest amount of fresh surface water use in 1987 by county was in Volusia County (123.83 mgd) (Table 2). Of this amount, 91 percent (117.25 mgd) was used for thermoelectric power generation, with the remaining portion used for agricultural irrigation. The second largest amount of fresh surface water use by county in 1987 was in Indian River County (106.28 mgd), all of which was used for agricultural irrigation. Water use in these two counties accounted for 66.5 percent of the fresh surface water use in SJRWMD in 1987.

USE TRENDS

Total fresh water use between 1975 and 1987 has fluctuated from year to year, but generally has been increasing (Figure 3). This trend--with the exceptions of 1981 (a drought year) and 1985 (a wet year)--reflects the overall increase in population, changes in agricultural commodities and increases in tourism throughout the district. Between 1986 and 1987 fresh water use reflects the following changes within each category (Figure 4): public supply increased 5 percent (18.44 mgd), domestic self-supply increased 4 percent (3.38 mgd), and power generation increased 0.5 percent (0.65 mgd). However, agricultural irrigation decreased 6 percent, (36.73 mgd) and commercial/industrial supply decreased 2 percent (2.79 mgd). The prime reason for the decrease in agricultural irrigation fresh water use between 1986 and 1987 is the lowered water demand for irrigation during the months of February and March resulting from greater than normal rainfall and irreversible freeze damage to crops in 1987. Specifically, fresh ground water uses in SJRWMD increased 9 mgd, while fresh surface water use decreased 25 mgd between 1986 and 1987. Of that amount, a majority (16.5 mgd) was a reduction in surface water use in the commercial/industrial self-supply category. Water withdrawn for mine pit dewatering and product conveyance is not counted as a use in this report. However, commercial/industrial self-

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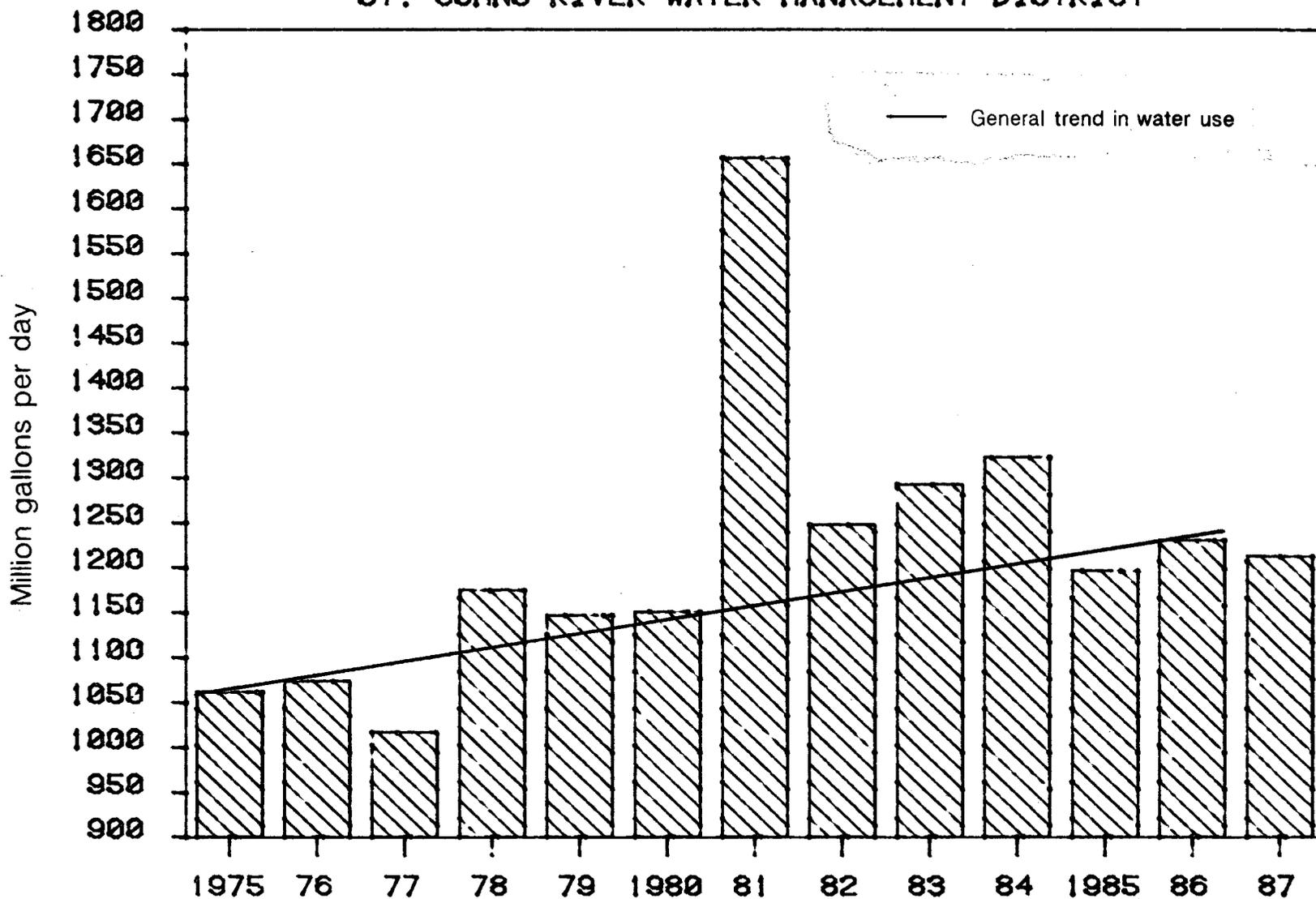
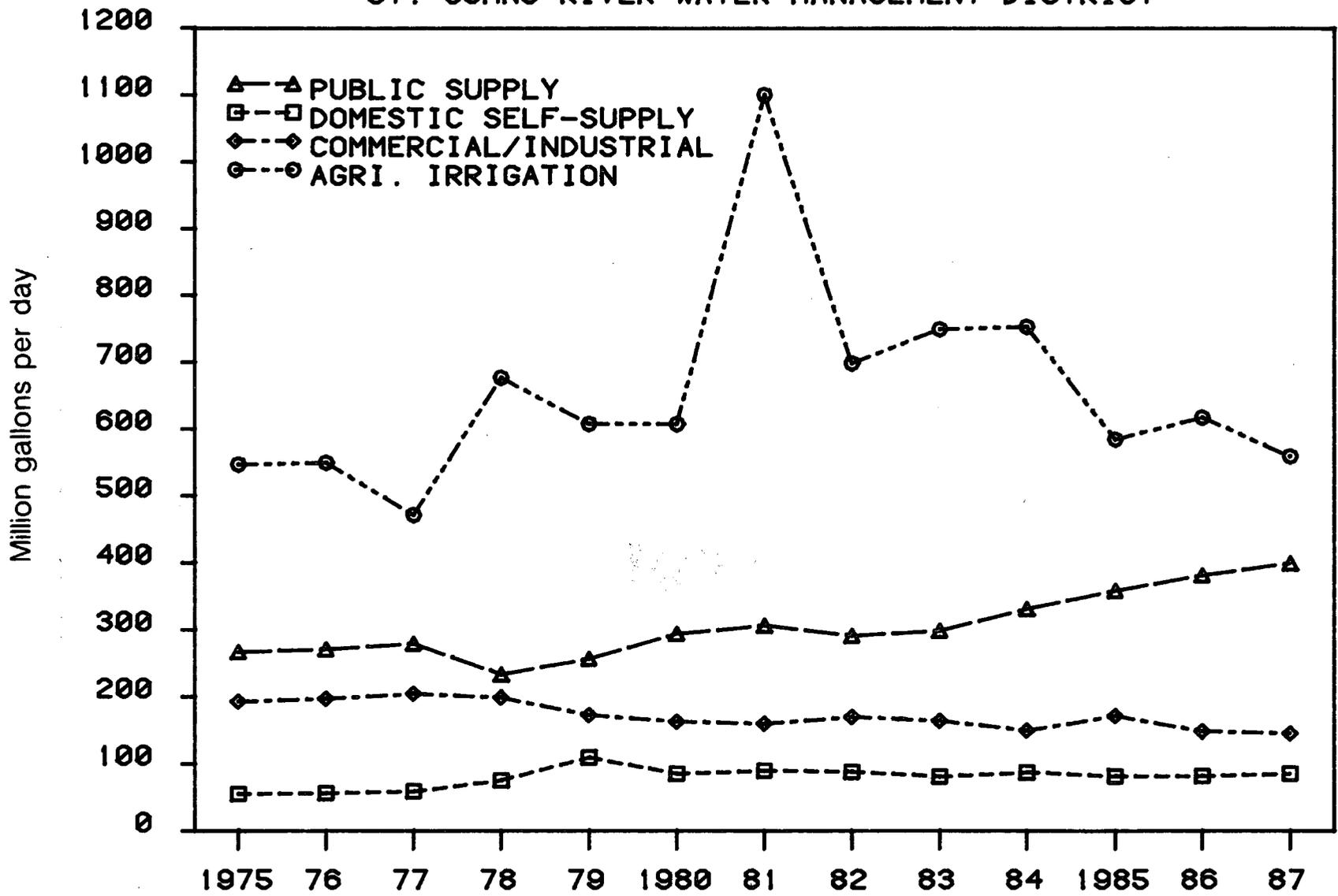


Figure 3. Total fresh water use from 1975 to 1987. Values do not include thermoelectric power generation or miscellaneous water use.

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(note: values do not include thermoelectric power generation or miscellaneous water use)

Figure 4. Fresh water use by category from 1975 to 1987

Table 2

Total water use by county, St. Johns River Water Management District, 1987
(million gallons per day)

| County | Fresh Water | | | Saline Water | | | Reuse |
|-----------------|-------------|---------|----------|--------------|----------|----------|-------|
| | Ground | Surface | Totals | Ground | Surface | Totals | |
| Alachua | 30.30 | 0.16 | 30.46 | 0.00 | 0.00 | 0.00 | 0.00 |
| Baker | 5.78 | 2.23 | 8.01 | 0.00 | 0.00 | 0.00 | 0.00 |
| Bradford | 0.36 | 0.00 | 0.36 | 0.00 | 0.00 | 0.00 | 0.00 |
| Brevard | 147.16 | 27.21 | 174.37 | 0.00 | 1,004.27 | 1,004.27 | 0.48 |
| Clay | 23.77 | 0.38 | 24.15 | 0.00 | 0.00 | 0.00 | 0.00 |
| Duval | 173.06 | 0.98 | 174.04 | 0.00 | 434.88 | 434.88 | 1.74 |
| Flagler | 8.71 | 1.09 | 9.80 | 0.00 | 0.00 | 0.00 | 0.00 |
| Indian River | 66.68 | 106.50 | 172.96 | 0.00 | 8.61 | 8.61 | 0.00 |
| Lake | 89.95 | 12.70 | 102.65 | 0.00 | 0.00 | 0.00 | 3.07 |
| Marion | 32.35 | 1.42 | 33.77 | 0.00 | 0.00 | 0.00 | 0.24 |
| Nassau | 43.65 | 0.96 | 44.61 | 0.00 | 1.41 | 1.41 | 0.58 |
| Okeechobee | 7.28 | 0.25 | 7.53 | 0.00 | 0.00 | 0.00 | 0.00 |
| Orange | 147.71 | 47.79 | 195.50 | 0.00 | 0.00 | 0.00 | 6.61 |
| Osceola | 5.61 | 7.20 | 12.81 | 0.00 | 0.00 | 0.00 | 0.00 |
| Polk | 10.99 | 1.08 | 12.07 | 0.00 | 0.00 | 0.00 | 0.00 |
| Putnam | 71.78 | 16.66 | 88.44 | 0.00 | 0.00 | 0.00 | 0.00 |
| St. Johns | 37.82 | 1.08 | 38.90 | 0.00 | 0.00 | 0.00 | 0.40 |
| Seminole | 66.42 | 2.17 | 68.59 | 0.00 | 0.00 | 0.00 | 0.00 |
| Volusia | 86.04 | 123.83 | 209.87 | 0.00 | 0.00 | 0.00 | 0.52 |
| District Totals | 1,055.42 | 353.47 | 1,408.89 | 0.00 | 1,449.17 | 1,449.17 | 13.64 |

Note: 0.00 value means no pumpage was reported over 10,000 gallons per day.

supplied ground water use increased nearly 15 mgd as a result of the reopening of a pulp and paper mill in Duval County. This resulted in a net loss of nearly 3 mgd for commercial/industrial self-supplied water use.

SEASONAL FLUCTUATIONS

Water use is closely related to rainfall. The months of March, April, and May are normally dry and are also peak crop irrigation months. Consequently, irrigation demands peak during these months. Public supply demands also peak during these three months as water use for residential lawn irrigation increases due to the dry conditions. Seasonal fluctuations of use varied from the pattern of the previous two years in 1987. In 1985 and 1986, February, March, April, and May are peak water use months. However, in 1987, March received higher than normal rainfall, and rainfall for April, May, and June was below normal. This caused the water demand in February and March to be significantly lower than during past years and to peak higher than the previous two years in April (Figure 5). The months of April, May, and June accounted for more than 37 percent of the year's water use. These three months accounted for 31.7 percent of water use in 1985 and 30 percent of the water use in 1986.

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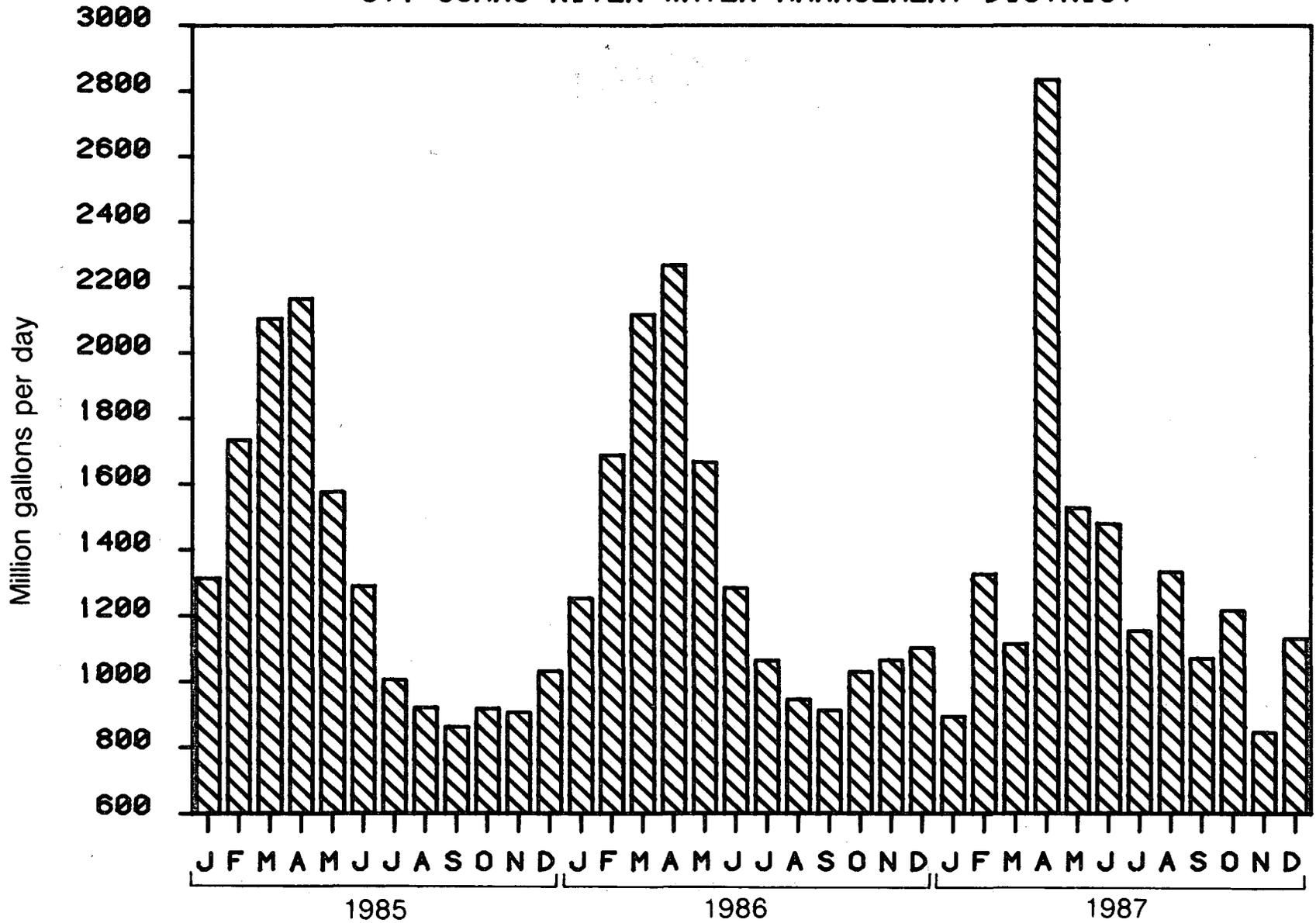


Figure 5. Monthly fresh water use from January 1985 to December 1987

WATER USE BY CATEGORY

PUBLIC SUPPLY

Methods and Data Reliability

The public supply category includes water used by both government and privately owned suppliers. According to the Florida Department of Environmental Regulation (FDER), any system serving 25 people or more is considered a public water supply system. For this survey, public water supply systems that served 400 people or more or used more than 0.01 mgd were inventoried. This accounts for the major public supply utilities in SJRWMD. Water use for smaller utilities in SJRWMD are included in the domestic self-supply category. Water use and population data were collected by SJRWMD, using information from its CUP files or data supplied by FDER monthly operating reports. In 1987, 195 public utilities were inventoried in SJRWMD.

Summary of Water Use

Total water use for public supply amounted to 400.39 mgd, of which 96 percent was ground water. Of that total, 3.21 mgd was slightly saline water (see glossary) treated by reverse osmosis or diluted for use as potable water. In previous SJRWMD annual water use surveys, slightly saline water in the public supply category was reported as saline water.

Public supply accounted for 36.5 percent of the fresh ground water use for 1987. Fresh water use for public supply increased 5 percent between 1986 and 1987 (18.44 mgd). Public supply pumpage increased due to extremely low rainfall during April, May, and June and agricultural pumpage decreased due to heavy rainfall in February and March.

The majority (365.99 mgd) of the ground water used for public supply was derived from the Floridan aquifer. The remainder (18.79 mgd) was derived from the surficial or intermediate aquifers. The City of Melbourne was the only public supply utility that used surface water, which accounted for 5 percent (15.61 mgd) of the total public supply water use.

Orange (110.90 mgd) and Duval (94.28 mgd) counties were the counties with the largest public supply water use, accounting for nearly 52 percent of the public supply water use in 1987 (Table 3). Duval (561,345) and Orange (473,892) counties also have the largest number of people served by public supply systems (Figure 6), and contain nearly 40 percent of the district's total population. Total population served by the 195 public supply systems inventoried accounted for 82 percent (2,403,847) of the district's total population. Water use for public supply in Orange County totaled 139.81 mgd, of which 110.90 mgd (79 percent) was used in SJRWMD and 28.91 mgd in the South Florida Water Management District (SFWMD). Orange County's total also includes 23.49 mgd for the City of Cocoa's public supply system (Brevard County). Duval County's total includes the district's single largest public supplier, the City of Jacksonville, which accounted for 66.23 mgd (this value includes Mandarin Utilities, which the City of Jacksonville acquired during 1987).

In 1987, public supply in SJRWMD fluctuated from a low of 337 mgd in January to a high of 495 mgd in June (Figure 7). This fluctuation relates to seasonal differences in residential demand, primarily for lawn irrigation, and increased demand due to seasonal population changes and tourism.

Public supply water was supplied to the following categories in SJRWMD for 1987: domestic (household), commercial, industrial, and other (irrigation and power generation). Public supply water was also used for fire fighting, water lost to leakage, and system maintenance. Domestic uses, which include indoor and outdoor household uses, accounted for 70 percent of the water delivered by public supply systems (Figure 8). This number was derived from information collected as part of the district's CUP process or provided by individual utilities. The average quantity of water used per capita solely for domestic purposes in 1987 was estimated at 117 gallons per day (gpd). The overall public supply per capita for SJRWMD in 1987 was 167 gpd.

DOMESTIC SELF-SUPPLY

Methods and Data Reliability

Domestic self-supply is defined here as water provided by individual domestic wells or by small utilities (utilities supplying fewer than 400 residents, which are not inventoried under the public supply category). In 1987, an estimated population of 515,181 people used 85.71 mgd of domestic self-supplied water, all of which was ground water. This population was calculated by subtracting the number of residents served by public supply systems from the total county population. Water use was calculated by multiplying the county per capita in gallons per day times the domestic self-supplied population for each county (Table 4). The per capita was derived by

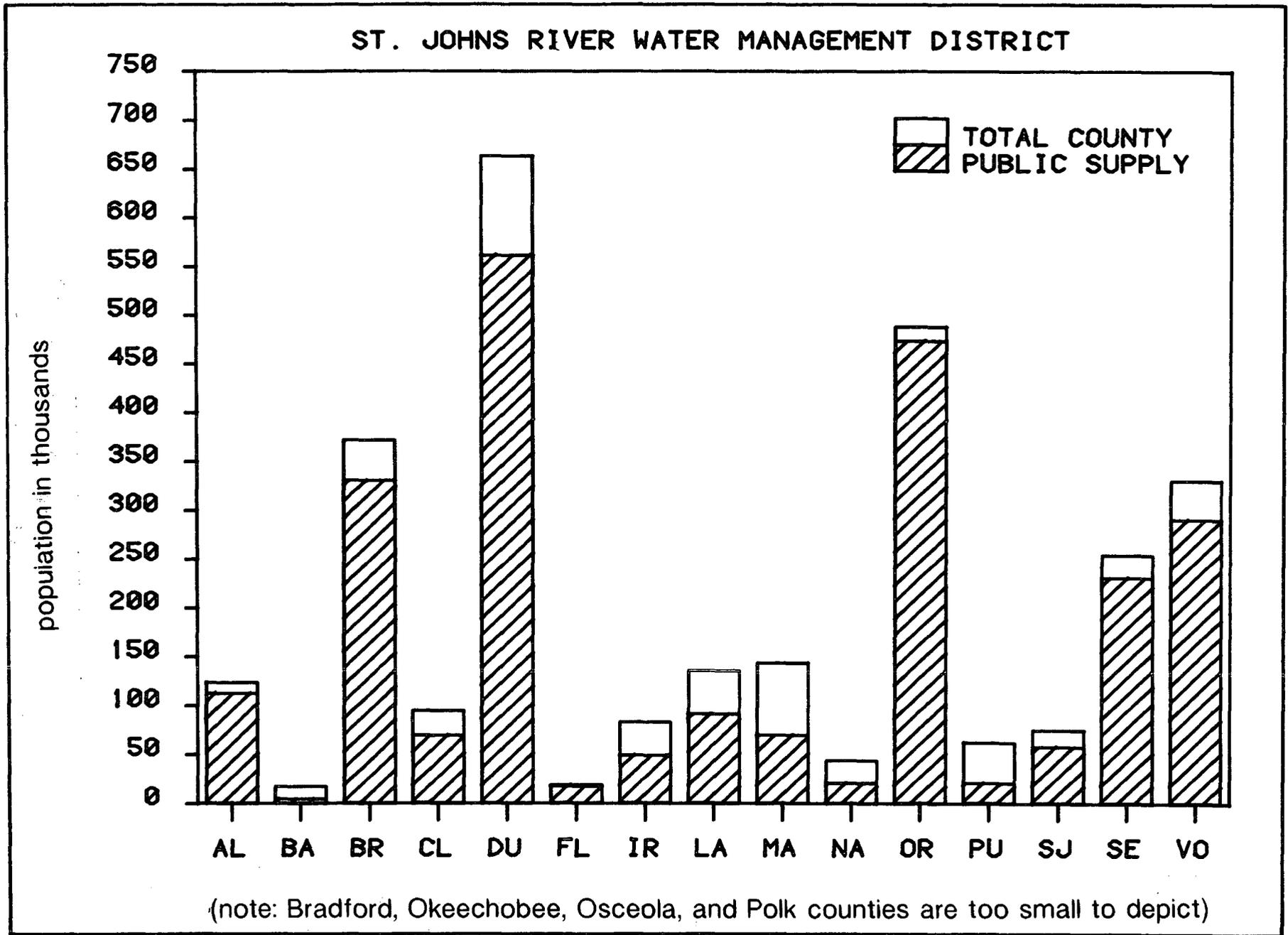


Figure 6. County population and population served by public supply in 1987

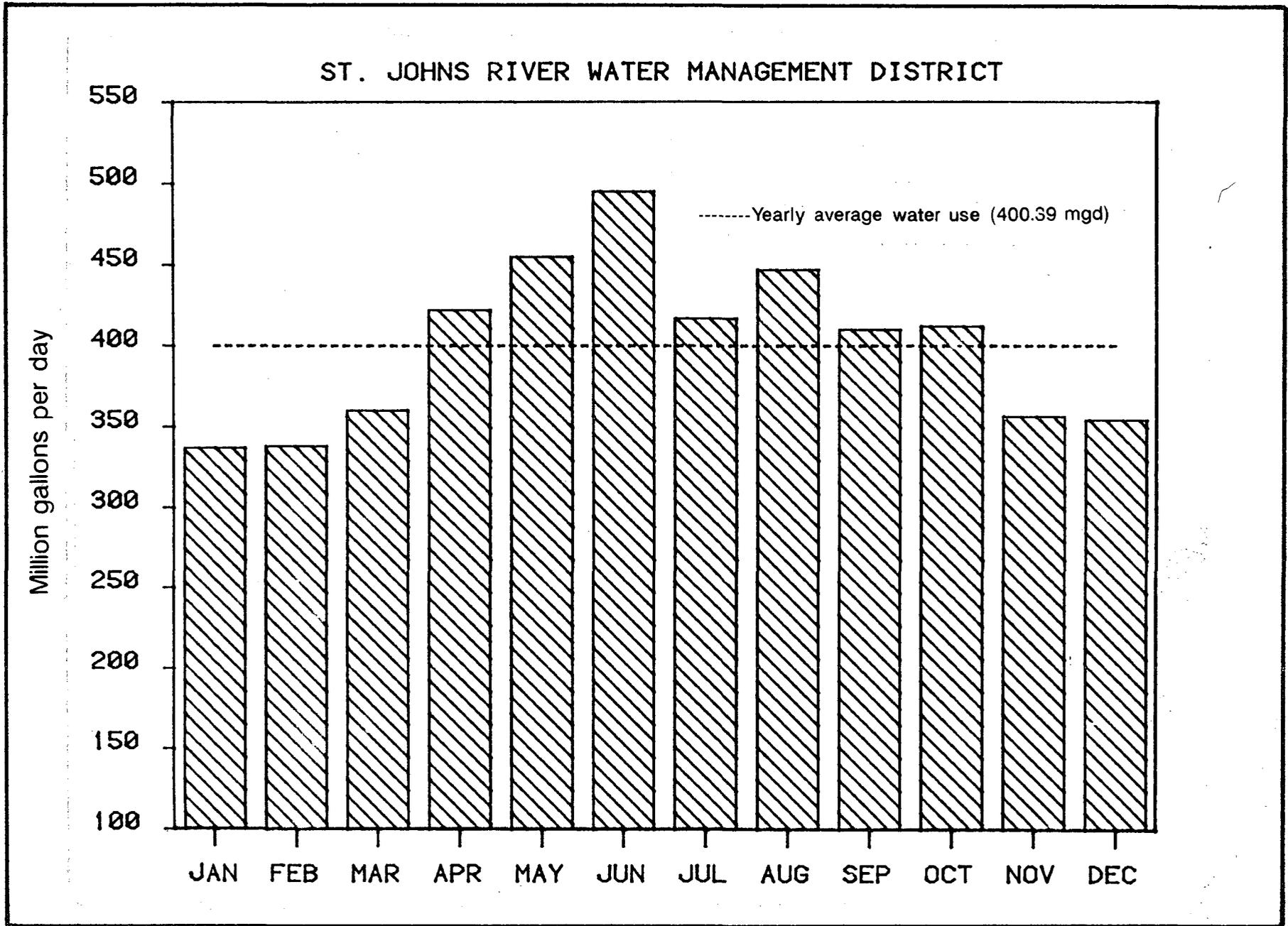


Figure 7. Monthly fresh water use for public supply, 1987

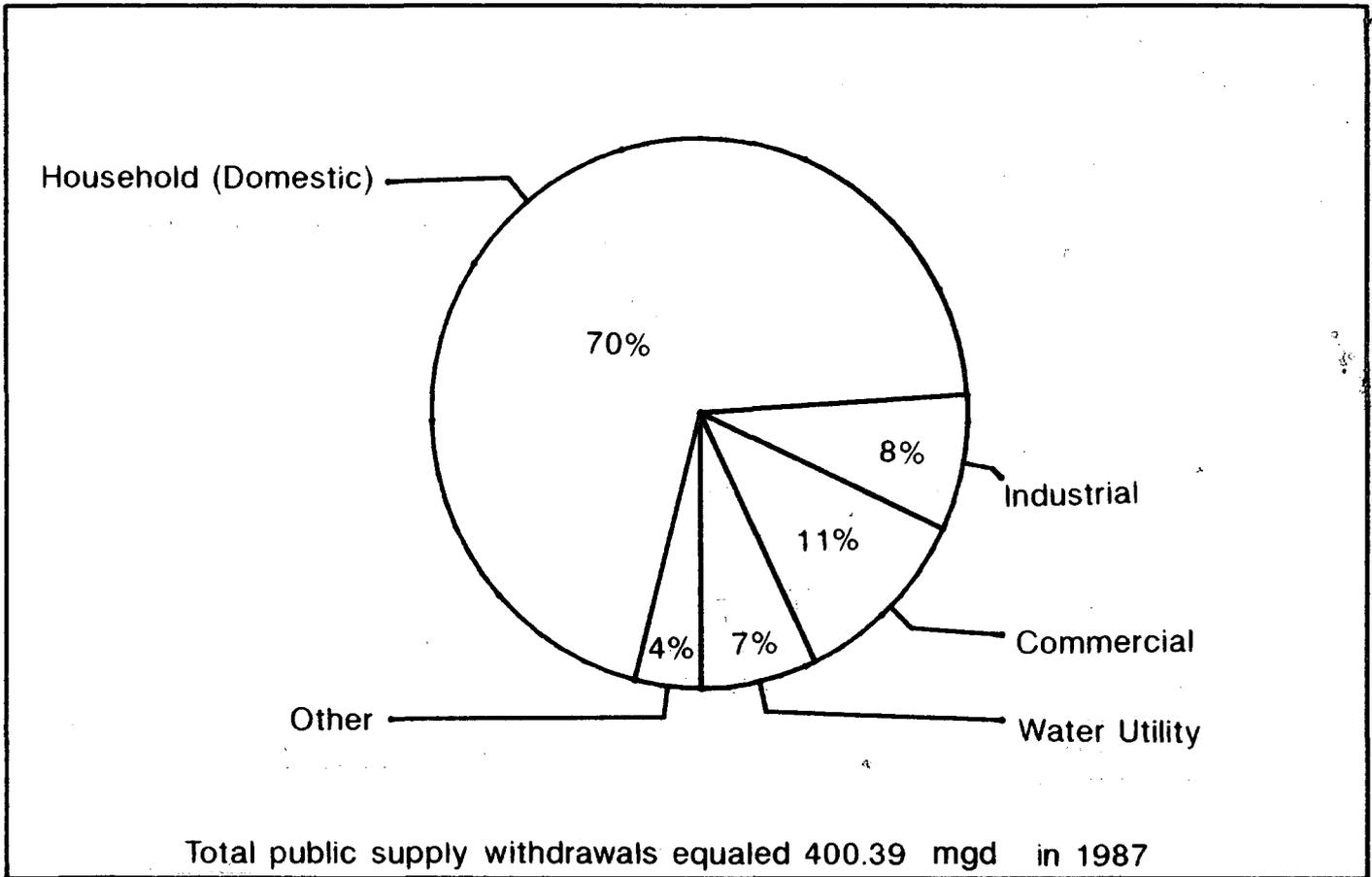


Figure 8. Estimated use of water withdrawn for public supply in 1987

Table 3

Public supply water use by county, St. Johns River Water Management District, 1987
(million gallons per day)

| | Fresh Water | | | Saline Water | | |
|------------------------|----------------|--------------|---------------|--------------|-------------|-------------|
| | Ground | Surface | Total | Ground | Surface | Total |
| Alachua | 20.16 | 0.00 | 20.16 | 0.00 | 0.00 | 0.00 |
| Baker | 0.63 | 0.00 | 0.63 | 0.00 | 0.00 | 0.00 |
| Bradford | 0.04 | 0.00 | 0.04 | 0.00 | 0.00 | 0.00 |
| Brevard | 10.07* | 15.61 | 25.68 | 0.00 | 0.00 | 0.00 |
| Clay | 9.92 | 0.00 | 9.92 | 0.00 | 0.00 | 0.00 |
| Duval | 94.28 | 0.00 | 94.28 | 0.00 | 0.00 | 0.00 |
| Flagler | 2.56 | 0.00 | 2.56 | 0.00 | 0.00 | 0.00 |
| Indian River | 11.98* | 0.00 | 11.98 | 0.00 | 0.00 | 0.00 |
| Lake | 17.66 | 0.00 | 17.66 | 0.00 | 0.00 | 0.00 |
| Marion | 10.90 | 0.00 | 10.90 | 0.00 | 0.00 | 0.00 |
| Nassau | 3.54 | 0.00 | 3.54 | 0.00 | 0.00 | 0.00 |
| Okeechobee | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Orange | 110.90 | 0.00 | 110.90 | 0.00 | 0.00 | 0.00 |
| Osceola | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Polk | 0.12 | 0.00 | 0.12 | 0.00 | 0.00 | 0.00 |
| Putnam | 3.28 | 0.00 | 3.28 | 0.00 | 0.00 | 0.00 |
| St. Johns | 7.61 | 0.00 | 7.61 | 0.00 | 0.00 | 0.00 |
| Seminole | 40.86 | 0.00 | 40.86 | 0.00 | 0.00 | 0.00 |
| Volusia | 40.27* | 0.00 | 40.27 | 0.00 | 0.00 | 0.00 |
| DISTRICT TOTALS | 384.78* | 15.61 | 400.39 | 0.00 | 0.00 | 0.00 |

* Includes slightly saline ground water (250 to 1,000 mg/l chlorides)

Note: 0.00 value means no pumpage was reported over 10,000 gallons per day

Table 4

Domestic self-supplied population and water use by county, St. Johns River
 Water Management District, 1987
 (millions gallons per day)

| County | Domestic Population | Gallons per capita | Uses | | Total |
|---------------|------------------------|-----------------------|--------------|-------------|--------------|
| | | | Ground | Surface | |
| Alachua | 11,279 | 167 | 1.88 | 0.00 | 1.88 |
| Baker | 13,131 | 146 | 1.90 | 0.00 | 1.90 |
| Bradford | 1,470 | 170 | 0.25 | 0.00 | 0.25 |
| Brevard | 41,217 | 149 | 6.14 | 0.00 | 6.14 |
| Clay | 25,638 | 142 | 3.64 | 0.00 | 3.64 |
| Duval | 102,787 | 168 | 17.27 | 0.00 | 17.27 |
| Flagler | 1,741 | 146 | 0.25 | 0.00 | 0.25 |
| Indian River | 34,308 | 243 | 8.33 | 0.00 | 8.33 |
| Lake | 44,274 | 193 | 8.56 | 0.00 | 8.56 |
| Marion | 73,977 | 160 | 11.84 | 0.00 | 11.84 |
| Nassau | 23,259 | 171 | 3.98 | 0.00 | 3.98 |
| Okeechobee | 420 | 143 | 0.06 | 0.00 | 0.06 |
| Orange | 14,785 | 198 | 2.93 | 0.00 | 2.93 |
| Osceola | 420 | 140 | 0.06 | 0.00 | 0.06 |
| Polk | 1,447 | 200 | 0.30 | 0.00 | 0.30 |
| Putnam | 41,645 | 157 | 6.54 | 0.00 | 6.54 |
| St. Johns | 17,001 | 131 | 2.23 | 0.00 | 2.23 |
| Seminole | 23,287 | 177 | 4.12 | 0.00 | 4.12 |
| Volusia | 39,945 | 138 | 5.43 | 0.00 | 5.43 |
| TOTALS | 512,031 | 167 | 85.71 | 0.00 | 85.71 |

Note: 0.00 value means no pumpage was reported over 10,000 gallons per day

dividing the public supply water use for each county by the population served. This per capita value includes public supply, commercial, and industrial water use as well as domestic (household/ residential) and utility water use (Figure 8).

Summary of Water Use

Total water use for domestic self-supply in 1987 was estimated at 87.71 mgd. This served an estimated population of 515,181 and was 100 percent from ground water sources. Domestic self-supply accounted for 8 percent of the total fresh ground water used in SJRWMD for 1987. The majority of the ground water used for domestic self-supply (69 percent) was estimated to be withdrawn from the shallow aquifers (the surficial and intermediate aquifer systems). In most of the district, these shallow aquifers can yield sufficient water for domestic uses. The remaining water is estimated to be from the Floridan aquifer.

The largest self-supplied population in SJRWMD (102,787) was in Duval County. Other counties with large self-supplied water use populations were Marion (75,898) and Lake (44,344). These three counties had the largest amount of domestic self-supplied use in 1987 (Table 4).

COMMERCIAL/INDUSTRIAL SELF-SUPPLY

Methods and Data Reliability

This category of use includes many types of self-supplied systems. Commercial self-supplied use includes institutional uses; i.e., government facilities, military installations, schools, prisons, hospitals, recreational facilities, and nonmanufacturing establishments. Industrial self-supplied use includes mining, processing, and manufacturing facilities. Self-supplied systems that withdrew more than 0.01 mgd were inventoried. Water use data were collected by the district using information from CUP files and personal contacts, or data contained in FDER monthly operating reports. In 1987, 39 self-supplied commercial users and 59 self-supplied industrial users were inventoried.

Summary of Water Use

Total water use by commercial-industrial self-supplied systems was 145.67 mgd, of which 97 percent was ground water. Fresh ground water use accounted for 141.67 mgd, and fresh surface water use totaled 4.0 mgd. An additional estimated 30 mgd and 44 mgd was supplied by public supply systems to industrial and commercial users, respectively (Figure 8).

Industrial use accounted for the majority (92 percent) of water use within this category. The pulp and paper industry was the largest single industrial water user in 1987 with a total of 100.10 mgd. Water use for mining (sand, limerock, etc.) totaled 19.34 mgd in 1987. Together, pulp and paper industries and mining accounted for 82 percent of the commercial/industrial self-supply in SJRWMD. In previous reports, water used to transport materials from the mine pit to the plant and water pumped for dewatering the pit was considered a surface water use. In this report it is considered a conveyance (see glossary) and therefore is not accounted for. Commercial/industrial self-supply accounted for 13.5 percent of the total fresh ground water use in SJRWMD.

The mining industry is scattered throughout the district, whereas the pulp and paper industry is located in the northeastern portion of the district. The largest amount by county of commercial/industrial self-supplied fresh water use for 1987 occurred in Putnam County (32 percent). Other counties with significant commercial/industrial self-supplied fresh water use in 1987 were Duval, Nassau, Lake, and Clay counties (Table 5). These four counties in addition to Putnam County accounted for 94 percent of the commercial/industrial self-supply. Duval County's total for 1987 reflects nearly a 15 mgd increase in ground water use over the previous year. The primary reason for this increase is that a large pulp and paper mill within Duval County, which was not in operation during 1986, resumed operation during early 1987.

Commercial/industrial self-supplied water use fluctuated very little during 1987 (Figure 9). It was highest in October (158 mgd) and lowest in January (131 mgd); total fluctuation between these two months was 27 mgd.

AGRICULTURAL IRRIGATION

Methods and Data Reliability

Agricultural irrigation includes water use for irrigation and other agricultural uses such as water used for livestock or lake augmentation for fish farming.

Water use was calculated for this category in two steps. First, the number of acres irrigated and method of irrigation was determined for each of the 29 crops inventoried within every county. In 1987, these data were supplied by IFAS. Other sources for acreage data included the district's CUP files and the Florida Department of Agriculture, Florida Crop and Livestock Reporting Service.

The second step was to determine the amount of supplemental irrigation water needed to grow each crop for 1987, as well as the water necessary to overcome the inefficiency of the irrigation system. A variety of methods and information services were used, including the

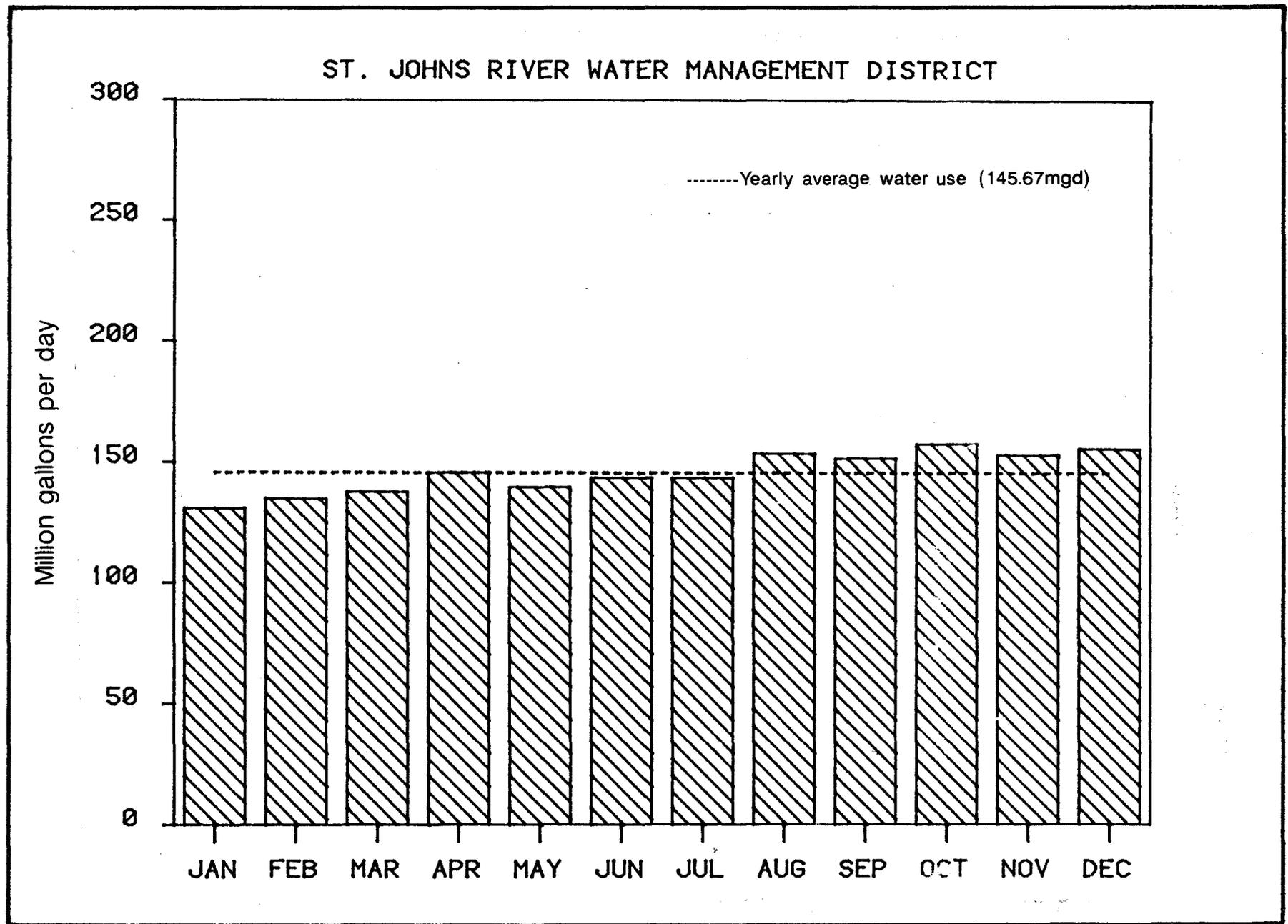


Figure 9. Monthly commercial/industrial self-supplied fresh water use, 1987

Table 5

Commercial/industrial self-supplied water use by county, St. Johns River Water Management District, 1987
(million gallons per day)

| | Fresh Water | | | Saline Water | | |
|-----------------|-------------|----------|--------|--------------|---------|-------|
| | Ground | Surface* | Total | Ground | Surface | Total |
| Alachua | 1.93 | 0.00 | 1.93 | 0.00 | 0.00 | 0.00 |
| Baker | 0.31 | 0.00 | 0.31 | 0.00 | 0.00 | 0.00 |
| Bradford | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Brevard | 0.21 | 0.00 | 0.21 | 0.00 | 0.00 | 0.00 |
| Clay | 6.98 | 0.00 | 6.98 | 0.00 | 0.00 | 0.00 |
| Duval | 37.75 | 0.00 | 37.75 | 0.00 | 39.66 | 39.66 |
| Flagler | 0.16 | 0.00 | 0.16 | 0.00 | 0.00 | 0.00 |
| Indian River | 0.26 | 0.00 | 0.26 | 0.00 | 0.00 | 0.00 |
| Lake | 11.68 | 0.00 | 11.68 | 0.00 | 0.00 | 0.00 |
| Marion | 0.83 | 0.00 | 0.83 | 0.00 | 0.00 | 0.00 |
| Nassau | 33.93 | 0.00 | 33.93 | 0.00 | 1.41 | 1.41 |
| Okeechobee | 0.06 | 0.00 | 0.06 | 0.00 | 0.00 | 0.00 |
| Orange | 3.10 | 0.00 | 3.10 | 0.00 | 0.00 | 0.00 |
| Osceola | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Polk | 0.01 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 |
| Putnam | 42.71 | 4.00 | 46.71 | 0.00 | 0.00 | 0.00 |
| St. Johns | 0.06 | 0.00 | 0.06 | 0.00 | 0.00 | 0.00 |
| Seminole | 0.62 | 0.00 | 0.62 | 0.00 | 0.00 | 0.00 |
| Volusia | 1.07 | 0.00 | 1.07 | 0.00 | 0.00 | 0.00 |
| DISTRICT TOTALS | 141.67 | 4.00* | 145.67 | 0.00 | 41.07 | 41.07 |

* Surface water values do not include water used in mining for dewatering and transport

Note: 0.00 value means no pumpage was reported over 10,000 gallons per day

modified Blaney-Criddle irrigation model (USDA 1970), the University of Florida AFSIRS computer model (Smajstrla 1986), the SCS (USDA 1982) and selected agricultural monitoring programs (i.e., the Benchmark Farms Program of SJRWMD) throughout the state. Once this supplemental irrigation requirement was determined, it was multiplied by the number of acres irrigated and a water use value was derived.

Summary of Water Use

Total water use equaled 581.24 mgd, of which 376.25 mgd was ground water and the remaining 204.99 mgd was surface water. An additional 12.40 mgd of reclaimed waste water was used for irrigation in 1987. The majority of the reclaimed water was used at the Conserve II project in Orange and Lake counties. Agricultural irrigation was the second largest user of fresh ground water in SJRWMD, using 35.5 percent of the total. The Floridan aquifer system was the primary source of ground water for agricultural irrigation in 1987, accounting for 94.0 percent of the total. Agricultural irrigation was the largest user of fresh water (both surface and ground water) in SJRWMD accounting for 41 percent of the total fresh water use in 1987.

Agricultural irrigation data were collected for 1987 for four crop categories: vegetables, fruit, field crops, and ornamentals and grasses. Within these four categories, 29 specific crops and 3 general crops were delineated (Appendix, Table A1). Of the four major crop categories, ornamentals and grasses were the largest users of water for irrigation in 1987, accounting for 37 percent of the agricultural water use. Of the specific crops, citrus accounted for the largest amount of irrigation water use (33.5 percent). Other crops using large amounts of irrigation water include improved pasture (18 percent), golf course turf grass (5.5 percent) and ferns (5.5 percent). Acreage and water use for the twenty-nine specific crops and the four major crop categories are shown in the Appendix (Table A1 and Figure A2).

The number of acres farmed (not including residential acres) within SJRWMD was estimated at 979 thousand acres. Eighty-one percent of this acreage, excluding improved pasture, is irrigated. The majority of acreage (69 percent) is irrigated by flood systems. The remainder is irrigated by sprinkler (19 percent) and low pressure/low volume systems (12 percent). The number of agricultural acres irrigated increased between 1986 and 1987. Specifically, citrus acreage increased nearly 9,000 acres between 1986 and 1987, mostly in Lake County as a result of replanting freeze damaged groves.

The largest amount of irrigation water use by county occurred in Indian River County (26 percent). Total water use in Indian River County equaled 149.61 mgd, of which 71 percent was surface water. The largest ground water use by county for irrigation occurred in Brevard County in 1987. Other counties that used over 50 mgd combined ground and surface water for irrigation were Orange and Lake counties (Table 6). These four counties accounted for more than 68 percent of the water used for irrigation in 1987.

Table 6

Agricultural water use by county, St. Johns River Water Management District, 1987
(million gallons per day)

| | Fresh Water | | | Saline Water | | | Reuse |
|-----------------|-------------|---------|--------|--------------|---------|-------|-------|
| | Ground | Surface | Total | Ground | Surface | Total | |
| Alachua | 5.24 | 0.16 | 5.40 | 0.00 | 0.00 | 0.00 | 0.00 |
| Baker | 2.94 | 2.23 | 5.17 | 0.00 | 0.00 | 0.00 | 0.00 |
| Bradford | 0.07 | 0.00 | 0.07 | 0.00 | 0.00 | 0.00 | 0.00 |
| Brevard | 92.98 | 11.60 | 104.58 | 0.00 | 0.00 | 0.00 | 0.48 |
| Clay | 2.87 | 0.38 | 3.25 | 0.00 | 0.00 | 0.00 | 0.00 |
| Duval | 14.16 | 0.98 | 15.14 | 0.00 | 0.00 | 0.00 | 1.74 |
| Flagler | 5.73 | 1.09 | 6.82 | 0.00 | 0.00 | 0.00 | 0.00 |
| Indian River | 43.33 | 106.28 | 149.61 | 0.00 | 0.00 | 0.00 | 0.00 |
| Lake | 51.56 | 12.70 | 64.26 | 0.00 | 0.00 | 0.00 | 3.07 |
| Marion | 7.07 | 1.42 | 8.49 | 0.00 | 0.00 | 0.00 | 0.24 |
| Nassau | 2.19 | 0.96 | 3.15 | 0.00 | 0.00 | 0.00 | 0.58 |
| Okeechobee | 7.16 | 0.25 | 7.41 | 0.00 | 0.00 | 0.00 | 0.00 |
| Orange | 29.53 | 47.79 | 77.32 | 0.00 | 0.00 | 0.00 | 5.37 |
| Osceola | 5.55 | 7.20 | 12.75 | 0.00 | 0.00 | 0.00 | 0.00 |
| Polk | 10.56 | 1.08 | 11.64 | 0.00 | 0.00 | 0.00 | 0.00 |
| Putnam | 15.80 | 1.04 | 16.84 | 0.00 | 0.00 | 0.00 | 0.00 |
| St. Johns | 27.29 | 1.08 | 28.37 | 0.00 | 0.00 | 0.00 | 0.40 |
| Seminole | 20.67 | 2.17 | 22.84 | 0.00 | 0.00 | 0.00 | 0.00 |
| Volusia | 31.55 | 6.58 | 38.13 | 0.00 | 0.00 | 0.00 | 0.52 |
| District Totals | 376.25 | 204.99 | 581.24 | 0.00 | 0.00 | 0.00 | 12.40 |

Note: 0.00 value means no pumpage was reported over 10,000 gallons per day

Agricultural irrigation displays the greatest seasonal variation in water use. During 1987, irrigation demand fluctuated from a high of 2,060 mgd in April to a low in November of 100 mgd (Figure 10). This fluctuation of more than 1,960 mgd is the result of increased irrigation requirements due to dry conditions during late spring (April and May).

THERMOELECTRIC POWER GENERATION SELF-SUPPLY

Methods and Data Reliability

In 1987, water use data were collected for 13 self-supplied thermoelectric power plants in SJRWMD. Data were collected by SJRWMD using information from CUP files, data supplied by the power plant, or FDER monthly operating reports. Data were collected for fresh and saline, ground and surface water use.

Summary of Water Use

Total water use for the 13 self-supplied power plants amounted to 1,408.10 mgd, but only 9.5 percent was fresh water. The majority of the fresh water was from surface water sources (primarily saline) and was used for cooling. This water is used for one-time cooling or recirculated several times before being returned to its surface source. Although a large quantity of water is withdrawn for thermoelectric power generation, an estimated 99.6 percent of this water is returned to its source. Only the remaining 0.4 percent is estimated to be consumed. This remaining 0.4 percent of water is primarily used for boiler condenser makeup or for domestic purposes in the plant. This water is usually from ground water sources or is purchased from a public water supply system.

The largest amount of saline water use by county occurred in Brevard County (71 percent). The largest amount of fresh water use by county occurred in Volusia County (88 percent). The majority (95 percent) of the ground water use for thermoelectric power generation was derived from the Floridan aquifer. Thermoelectric power generation accounted for less than 1 percent (0.5 percent) of the total ground water used in SJRWMD in 1987. Additionally, a new power plant located in East Orange County used an estimated 1.24 mgd of reclaimed waste water for cooling purposes (Table 7).

Water use for thermoelectric power generation fluctuated from 112 mgd in October to 182 mgd in June during 1987 (Figure 11). Monthly fluctuations such as these are often a result of power plant shutdowns for maintenance or increased power demands.

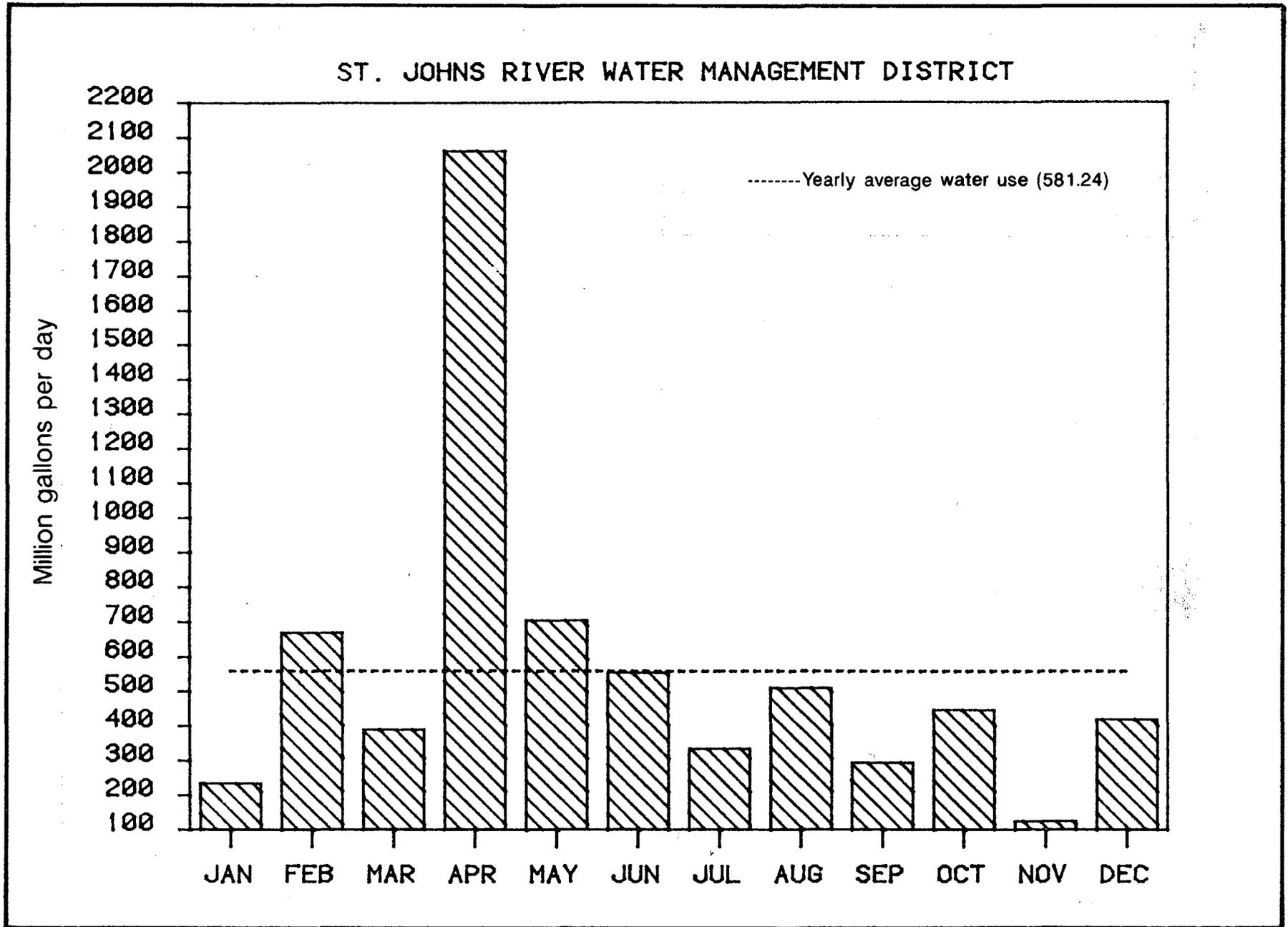


Figure 10. Monthly fresh water use for agricultural irrigation, 1987

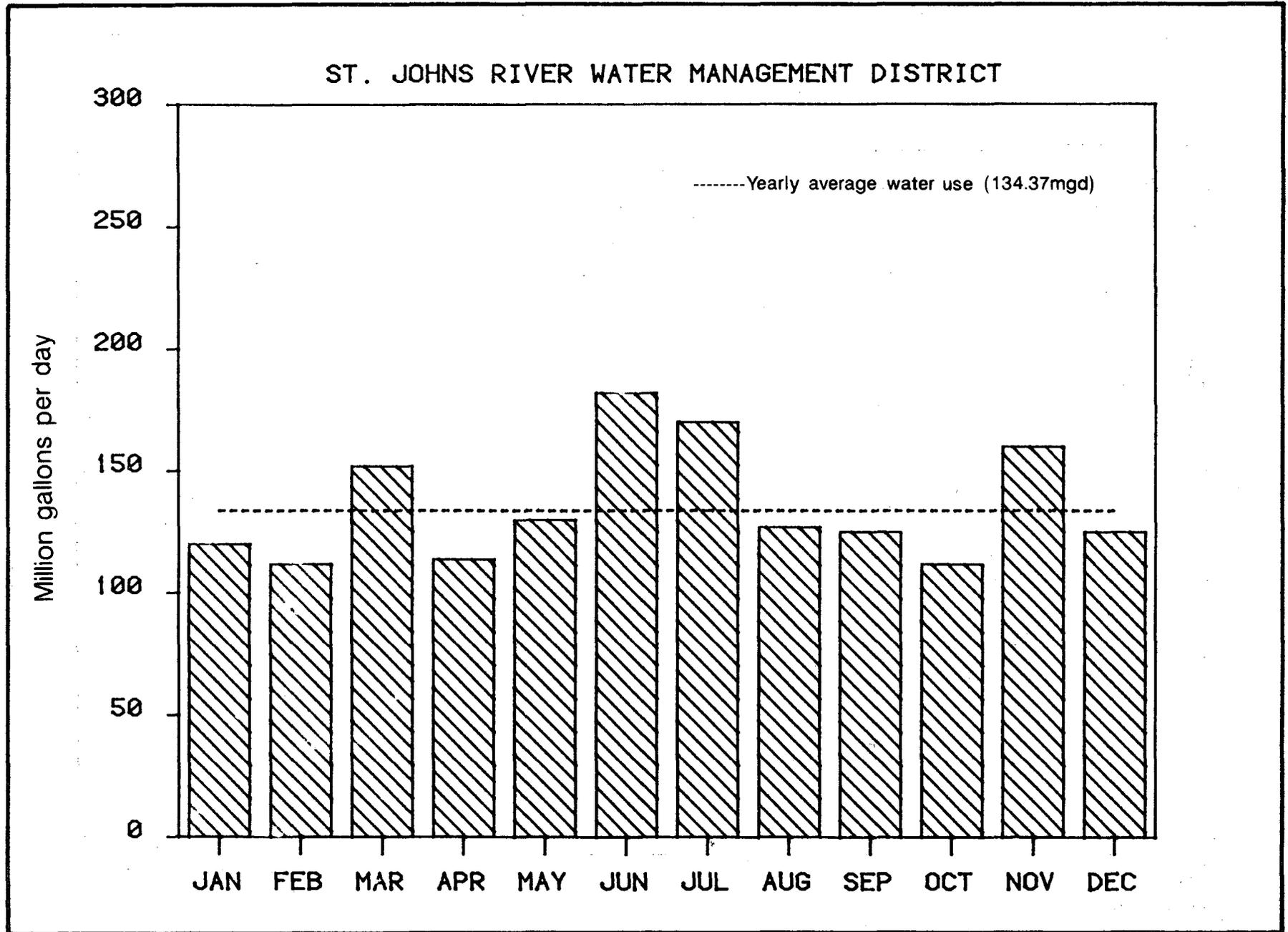


Figure 11. Monthly fresh water use for thermoelectric power generation, 1987

Table 7

Thermoelectric power generation water use by county, St. Johns River Water Management District, 1987
(million gallons per day)

| | Fresh Water | | | Saline Water | | | Reuse |
|-----------------|-------------|---------|--------|--------------|----------|----------|-------|
| | Ground | Surface | Total | Ground | Surface | Total | |
| Alachua | 0.12 | 0.00 | 0.12 | 0.00 | 0.00 | 0.00 | 0.00 |
| Baker | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Bradford | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Brevard | 0.27 | 0.00 | 0.27 | 0.00 | 1,004.27 | 1,004.27 | 0.00 |
| Clay | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Duval | 3.57 | 0.00 | 3.57 | 0.00 | 395.22 | 395.22 | 0.00 |
| Flagler | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Indian River | 0.25 | 0.00 | 0.25 | 0.00 | 8.61 | 8.61 | 0.00 |
| Lake | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Marion | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Nassau | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Okeechobee | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Orange | 0.41 | 0.00 | 0.41 | 0.00 | 0.00 | 0.00 | 1.24 |
| Osceola | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Polk | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Putnam | 0.52 | 11.62 | 12.14 | 0.00 | 0.00 | 0.00 | 0.00 |
| St. Johns | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Seminole | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Volusia | 0.36 | 117.25 | 117.61 | 0.00 | 0.00 | 0.00 | 0.00 |
| District Totals | 5.50 | 128.87 | 134.37 | 0.00 | 1,408.10 | 1,408.10 | 1.24 |

Note: 0.00 value means no pumpage was reported over 10,000 gallons per day.

MISCELLANEOUS SELF-SUPPLY

Methods and Data Reliability

Miscellaneous water uses in SJRWMD include residential lawn irrigation and residential heat pump/air conditioning that is not supplied by public systems. These are not included in other water use categories.

Residential lawn irrigation includes water (primarily from wells) used for the sole purpose of irrigating residential lawns with no other domestic use involved. This use is not included in the turf grass category of agricultural irrigation. Although residential lawn irrigation exists in all counties in SJRWMD, data were available only for Brevard County. Data for this use were taken from SJRWMD Technical Publication SJ 88-2 (Skipp 1988).

The miscellaneous self-supply category also includes water (from wells) for heat exchange for heating/air conditioning units. This also provides irrigation water when the unit is operating. Restrictions on this use now require return wells, but existing systems continue to discharge to the surface. Data for this use existed in only 4 out of the 19 counties in SJRWMD. The heat pump/air conditioning figures are calculated from the Brevard County well inventory list 1975-77, the Volusia County Vol-Data File (U. S. Geological Survey 11/20/80), conversations with Heating Ventilation Air Conditioner (HVAC) dealers in Putnam County, and the district CUP files (Skipp 1988).

Summary of Water Use

Miscellaneous use totaled 61.51 mgd, all of which was ground water. Miscellaneous use accounted for 4.5 percent of the fresh ground water use in SJRWMD. Inventoried discharge from free-flowing wells is included in this section. An estimated 5,590 unused flowing wells exist within SJRWMD (Healy 1978). Currently many of these wells are being plugged as a result of SJRWMD's Abandoned Artesian Well Plugging Program, and additional wells are being inventoried. To date, 350 wells have been inventoried and 171 wells plugged between 1977 and 1987 (Davis 1988). Total water use for this category may exceed the 61.51 mgd reported, because water from flowing wells is estimated to be about 341 mgd, although only 18 mgd has been inventoried.

Heat pump/air conditioning water use accounted for 38.80 mgd, free-flowing wells for 18.12 mgd, and residential lawn watering for 4.59 mgd (Skipp 1988). Although the quantities of water used are not delineated by aquifer in this report, the majority of heat pump/air conditioning wells and free-flowing wells are completed into the Floridan aquifer. Shallow aquifers are the primary source for residential lawn irrigation. Miscellaneous self-supplied data are presented for only 14 of the counties in SJRWMD (Table 8).

Table 8

Miscellaneous ground water use by county, St. Johns River Water Management District, 1987
(million gallons per day)

| County | Lawn Irrigation | Heat Pumps | Flowing Wells | Total Use |
|-----------------|-----------------|------------|---------------|-----------|
| Alachua | -- | 0.97 | -- | 0.97 |
| Baker | -- | -- | -- | -- |
| Bradford | -- | -- | -- | -- |
| Brevard | 4.59 | 22.75 | 10.15 | 37.49 |
| Clay | -- | -- | 0.36 | 0.36 |
| Duval | -- | 5.63 | 0.40 | 6.03 |
| Flagler | -- | -- | 0.01 | 0.01 |
| Indian River | -- | -- | 2.53 | 2.53 |
| Lake | -- | -- | 0.49 | 0.49 |
| Marion | -- | -- | 1.71 | 1.71 |
| Nassau | -- | -- | 0.01 | 0.01 |
| Okeechobee | -- | -- | -- | -- |
| Orange | -- | 0.82 | 0.02 | 0.84 |
| Osceola | -- | -- | -- | -- |
| Polk | -- | -- | -- | -- |
| Putnam | -- | 2.30 | 0.63 | 2.93 |
| St. Johns | -- | 0.10 | 0.53 | 0.63 |
| Seminole | -- | -- | 0.15 | 0.15 |
| Volusia | -- | 6.23 | 1.13 | 7.36 |
| District Totals | 4.59 | 38.80 | 18.12 | 61.51 |

Note: -- means there was no data available or inventoried for these counties.

GLOSSARY

Definitions of some of the terms used in this report are as follows:

Aquifer. A confined, semi-confined, or unconfined reservoir of ground water. In SJRWMD, there are three major aquifers present: the Floridan, the intermediate, and the surficial. In this report, data for the intermediate and surficial aquifers are combined.

Average Annual Water Use. The total quantity of water withdrawn during the year (in gallons) divided by 365 days.

Conveyance Use. Water used for transporting materials or products through a pipe canal, conduit, or ditch from one point to another. Materials may be either raw materials or waste products, and the water may be used only once, or reused many times.

Fresh Water. Water with a total dissolved solids concentration less than or equal to 1,000 mg/l. Fresh water contains both potable and non-potable water.

Potable Water. Water which meets the requirements of DER 17-3.091. Chloride and total dissolved solids concentrations in potable water are less than or equal to 250 and 500 milligrams per liter (mg/l) respectively.

Reclaimed Water. Wastewater treatment plant effluent that has been diverted or intercepted for use before it reaches a natural waterway or aquifer. Uses of reclaimed water may include irrigation of lawns, grass, or selected agricultural crops, or conveyance.

Reverse Osmosis (R/O). A process of desalination which removes chlorides or other dissolved solids from saline water to make it potable.

Saline Water. Water with a chloride concentration greater than 1,000 mg/l or a total dissolved solids concentration greater than 3,000 mg/l.

Slightly Saline Water. Water with a chloride concentration between 250 and 1,000 mg/l or a total dissolved solids concentration between 500 and 3,000 mg/l. This water is non-potable (see below) as chlorides generally fluctuate between 250 and 1,000 mg/l. Slightly saline water is either diluted with fresh water or treated by reverse osmosis (R/O) to potable standards for public supply. For other uses this water is generally not treated. In this survey, slightly saline water is included in the reported quantities of fresh water.

Supplemental Irrigation. The amount of water in addition to rainfall that is applied to produce a crop. This supplemental irrigation value (in inches) includes water required to compensate for irrigation system losses.

Water Use. Describes both the quantity of water withdrawn and how the water was used. Water use includes "withdrawals," as the term is used in the 1986 Annual Water Use Survey.

Water Withdrawals. Describes the amount of water withdrawn from a source (ground or surface, fresh, or saline). This is equivalent to "intake," "water diversion," or "pumpage," terms commonly associated with industrial, agricultural irrigation, and public supply use, respectively. Water withdrawals are considered water use for this report.

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Appendix

WATER USE DATA BY COUNTY

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STATE of FLORIDA DATA - 1987

TOTAL POPULATION 12,043,608
 TOTAL LAND AREA 58,560 SQ. MILES

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT'S PORTION :

POPULATION

TOTAL 2,919,028 (24.2 % of the state)
 PUBLIC SUPPLY 2,403,847 (1)(2)
 SELF-SUPPLIED 515,181
 PER CAPITA 167

LAND AREA (ACRES)

TOTAL AREA 7,900,060 12,344 SQ. MILES
 FARMED 979,235
 IRRIGATED 403,740

1987 WATER WITHDRAWALS (Mgal/d) by CATEGORY

| | FRESH WATER | | | SALINE WATER | | | REUSE |
|----------------------|-------------|----------|----------|--------------|----------|----------|-------|
| | GROUND | SURFACE | TOTALS | GROUND | SURFACE | TOTALS | |
| PUBLIC SUPPLY (3) | 384.78 | 15.61 | 400.39 | 0.00 | 0.00 | 0.00 | 0.00 |
| DOMESTIC SELF-SUPPLY | 85.71 | 0.00 | 85.71 | 0.00 | 0.00 | 0.00 | 0.00 |
| COM/IND. SELF-SUPPLY | 141.67 | 4.00 | 145.67 | 0.00 | 41.07 | 41.07 | 0.00 |
| AGRICULTURAL IRR. | 376.25 | 204.99 | 581.24 | 0.00 | 0.00 | 0.00 | 12.40 |
| POWER GENERATION S-S | 5.50 | 128.87 | 134.37 | 0.00 | 1,408.10 | 1,408.10 | 1.24 |
| MISCELLANEOUS | 61.51 | 0.00 | 61.51 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 1,055.42 | 353.47 | 1,408.89 | 0.00 | 1,449.17 | 1,449.17 | 13.64 |
| TOTAL GROUND | 1,055.42 | | | | | | |
| TOTAL SURFACE | | 1,802.64 | | | | | |
| DISTRICT TOTAL (4) | | 2,858.06 | | | | | |

- (1) DOES NOT INCLUDE 8,165 POPULATION SERVED BY PUBLIC SUPPLY IN THE SJRWMD WHO LIVE IN THE SRWMD.
- (2) INCLUDES 3,150 POPULATION SERVED BY PUBLIC SUPPLY IN THE SWFWMD WHO LIVE IN THE SJRWMD.
- (3) INCLUDES 3.21 Mgal/d of MARGINAL GROUND WATER USED IN R/O or DILUTED FOR PUBLIC SUPPLY USE.
- (4) REUSE AMOUNTS ARE NOT INCLUDED IN TOTALS.

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

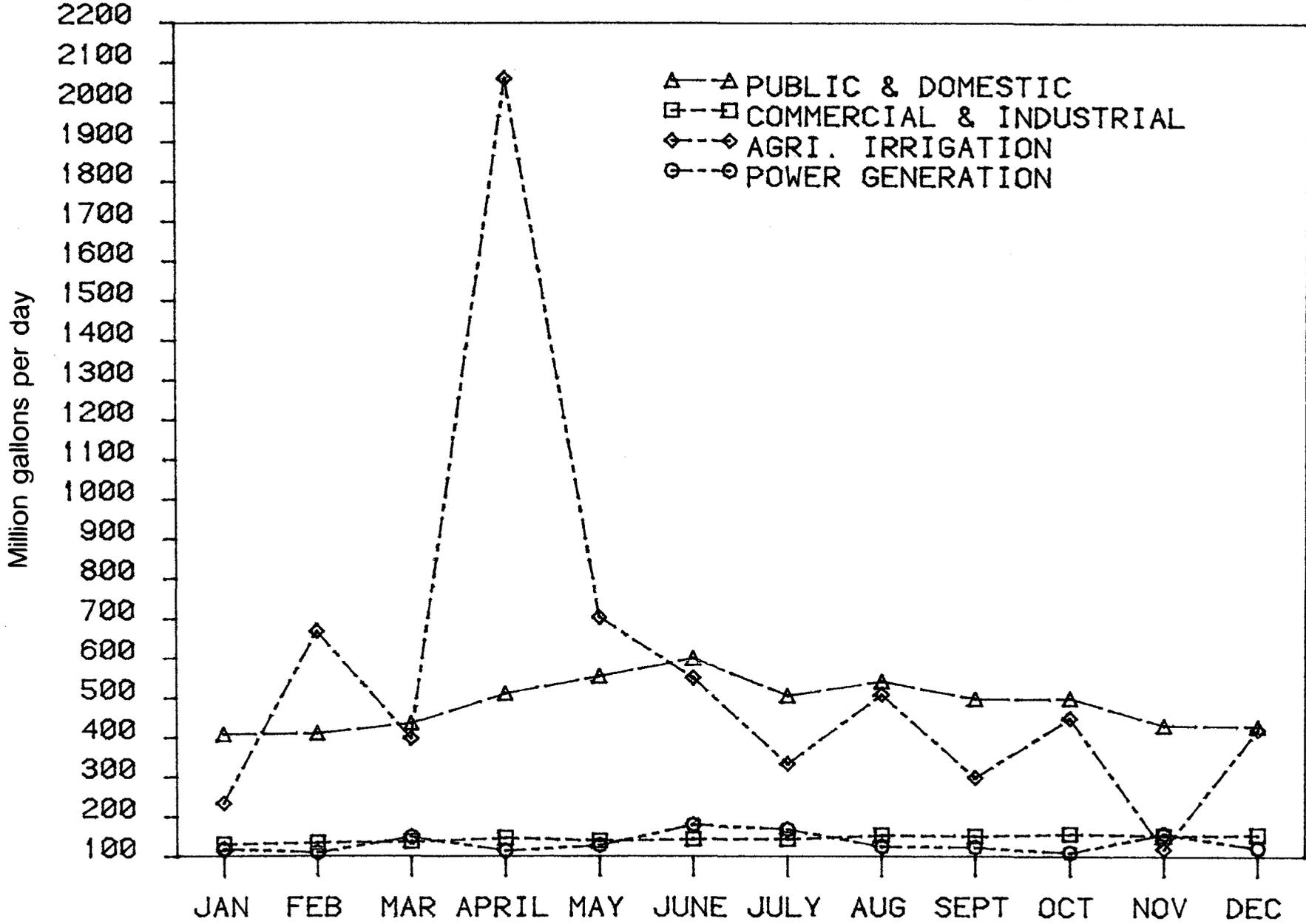


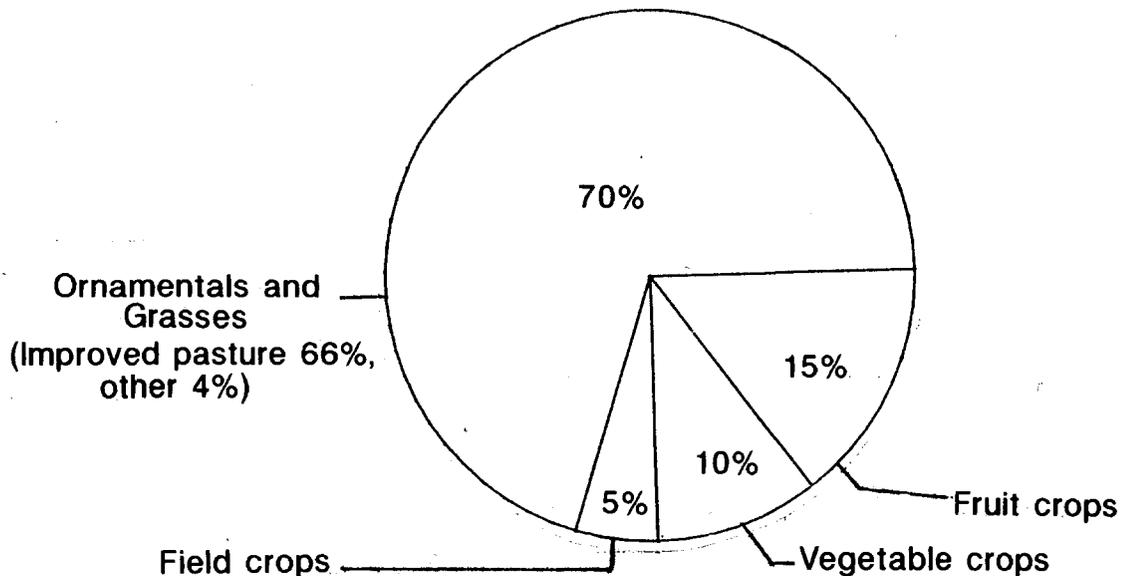
FIGURE A-1. MONTHLY FRESH WATER WITHDRAWALS by CATEGORY: 1987

TABLE A-1. ACREAGE AND WATER USE BY CROP FOR THE SJRWMD - 1987

| | TOTAL ACRES | | WATER USE IN MGD | | | TOTAL |
|------------------------|-------------|-----------|------------------|---------|-----------|--------|
| | FARMED | IRRIGATED | GROUND | SURFACE | RECLAIMED | |
| VEGETABLE CROPS | | | | | | |
| CABBAGE | 7,250 | 7,250 | 7.21 | 0.11 | 0.00 | 7.32 |
| CARROTS | 20,200 | 20,200 | 7.23 | 15.23 | 0.00 | 22.46 |
| CUCUMBERS | 2,040 | 1,840 | 1.85 | 0.10 | 0.00 | 1.95 |
| PEPPERS | 800 | 750 | 0.78 | 0.00 | 0.00 | 0.78 |
| POTATOES | 27,600 | 27,600 | 22.07 | 0.00 | 0.00 | 22.07 |
| TOMATOES | 85 | 85 | 0.05 | 0.00 | 0.00 | 0.05 |
| SWEET CORN | 20,015 | 19,890 | 6.96 | 19.20 | 0.00 | 26.16 |
| WATERCRESS | 300 | 300 | 9.48 | 0.00 | 0.00 | 9.48 |
| MISC. VEGETABLES | 23,402 | 21,800 | 7.83 | 15.83 | 0.00 | 23.66 |
| FRUIT CROPS | | | | | | |
| BLUEBERRIES | 755 | 653 | 0.72 | 0.00 | 0.00 | 0.72 |
| CITRUS | 138,126 | 124,242 | 102.26 | 93.45 | 5.96 | 195.71 |
| GRAPES | 235 | 222 | 0.27 | 0.00 | 0.00 | 0.27 |
| PEACHES | 100 | 95 | 0.16 | 0.00 | 0.00 | 0.16 |
| PECANS | 2,850 | 390 | 0.59 | 0.00 | 0.00 | 0.59 |
| STRAWBERRIES | 50 | 50 | 0.10 | 0.00 | 0.00 | 0.10 |
| WATERMELLONS | 3,740 | 3,210 | 2.10 | 0.04 | 0.00 | 2.14 |
| MISC. FRUIT | 190 | 180 | 0.15 | 0.00 | 0.00 | 0.15 |
| FIELD CROPS | | | | | | |
| FIELD CORN | 23,780 | 12,780 | 7.97 | 12.28 | 0.00 | 20.25 |
| PEANUTS | 2,250 | 254 | 0.19 | 0.00 | 0.00 | 0.19 |
| RICE | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SORGHUM | 7,500 | 3,150 | 3.70 | 0.20 | 0.00 | 3.90 |
| SOYBEANS | 4,800 | 200 | 0.13 | 0.13 | 0.00 | 0.26 |
| SUGAR CANE | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOBACCO | 185 | 120 | 0.04 | 0.07 | 0.00 | 0.11 |
| WHEAT | 200 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISC. GRAINS | 10,184 | 300 | 0.17 | 0.17 | 0.00 | 0.34 |
| ORNAMENTALS & GRASSES | | | | | | |
| FERNS | 7,085 | 6,980 | 26.55 | 5.23 | 0.00 | 31.78 |
| FLOWERS & FOLIAGE | 1,859 | 1,859 | 6.40 | 0.47 | 0.00 | 6.87 |
| WOODY ORNAMENTALS | 3,347 | 2,557 | 19.81 | 3.43 | 0.00 | 23.24 |
| IMPROVED PASTURE | 642,000 | 126,652 | 82.68 | 20.16 | 2.48 | 102.84 |
| SOD | 5,670 | 5,570 | 7.98 | 4.51 | 1.74 | 12.49 |
| TURF GRASS (GOLF) | 20,349 | 12,273 | 22.41 | 10.05 | 2.22 | 32.46 |
| TURF GRASS (OTHER) | 2,288 | 2,288 | 4.44 | 0.60 | 0.00 | 5.04 |
| MISC. AGRICULTURAL | | | | | | |
| LIVESTOCK | 0 | 0 | 9.44 | 3.73 | 0.00 | 13.17 |
| FISH FARMING/AESTHETIC | 0 | 0 | 14.53 | 0.00 | 0.00 | 14.53 |
| | 979,235 | 403,740 | 376.25 | 204.99 | 12.40 | 581.24 |
| SPRINKLER ACREAGE | 76,623 | 403,740 | | | | |
| LOW PRESSURE ACREAGE | 49,015 | | | | | |
| FLOOD ACREAGE | 278,102 | | | | | |

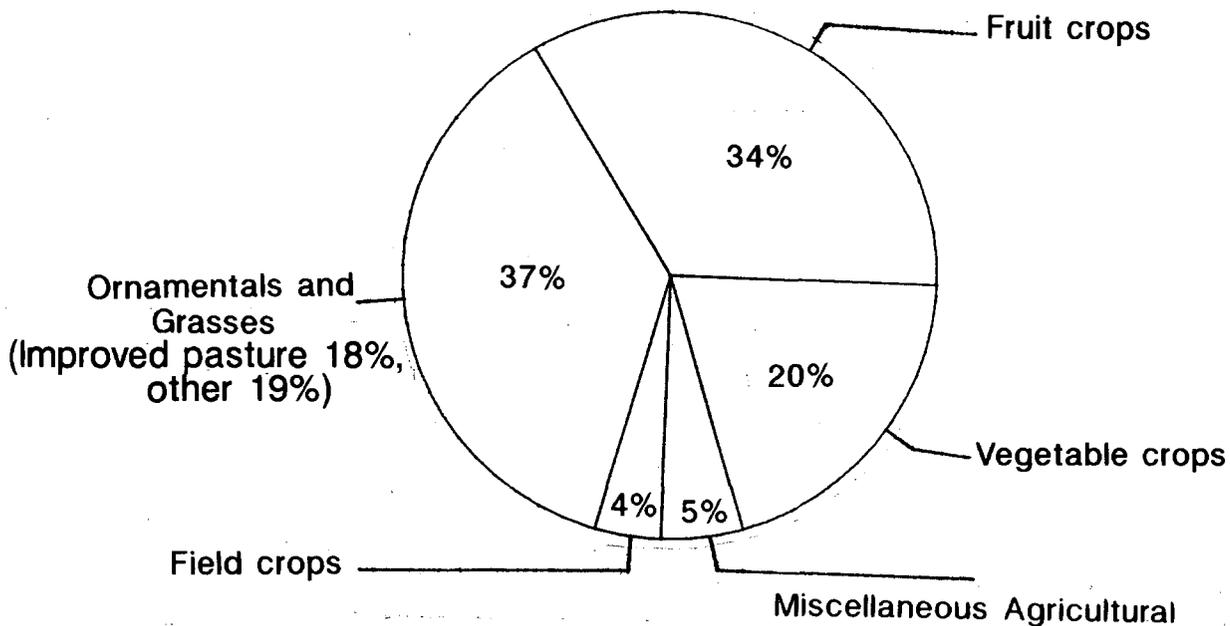
St. Johns River Water Management District

ACREAGE



Total irrigated acres equaled 403,740 in 1987

WATER USE



Total irrigation water use equaled 581.24 mgd in 1987

(includes 12.40 mgd of reclaimed water)

Figure A-2. Irrigation acreage and water use by crop type: 1987

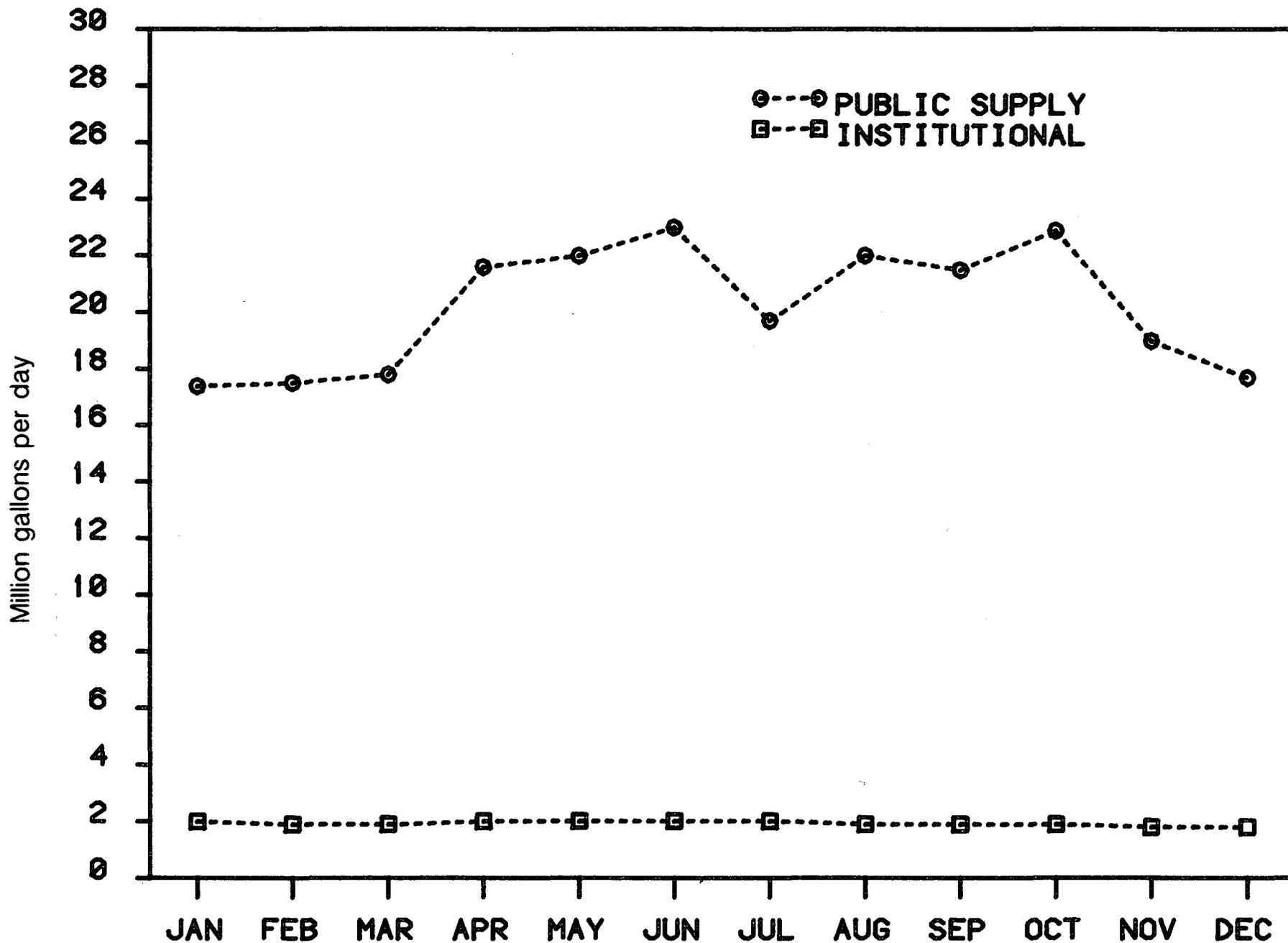
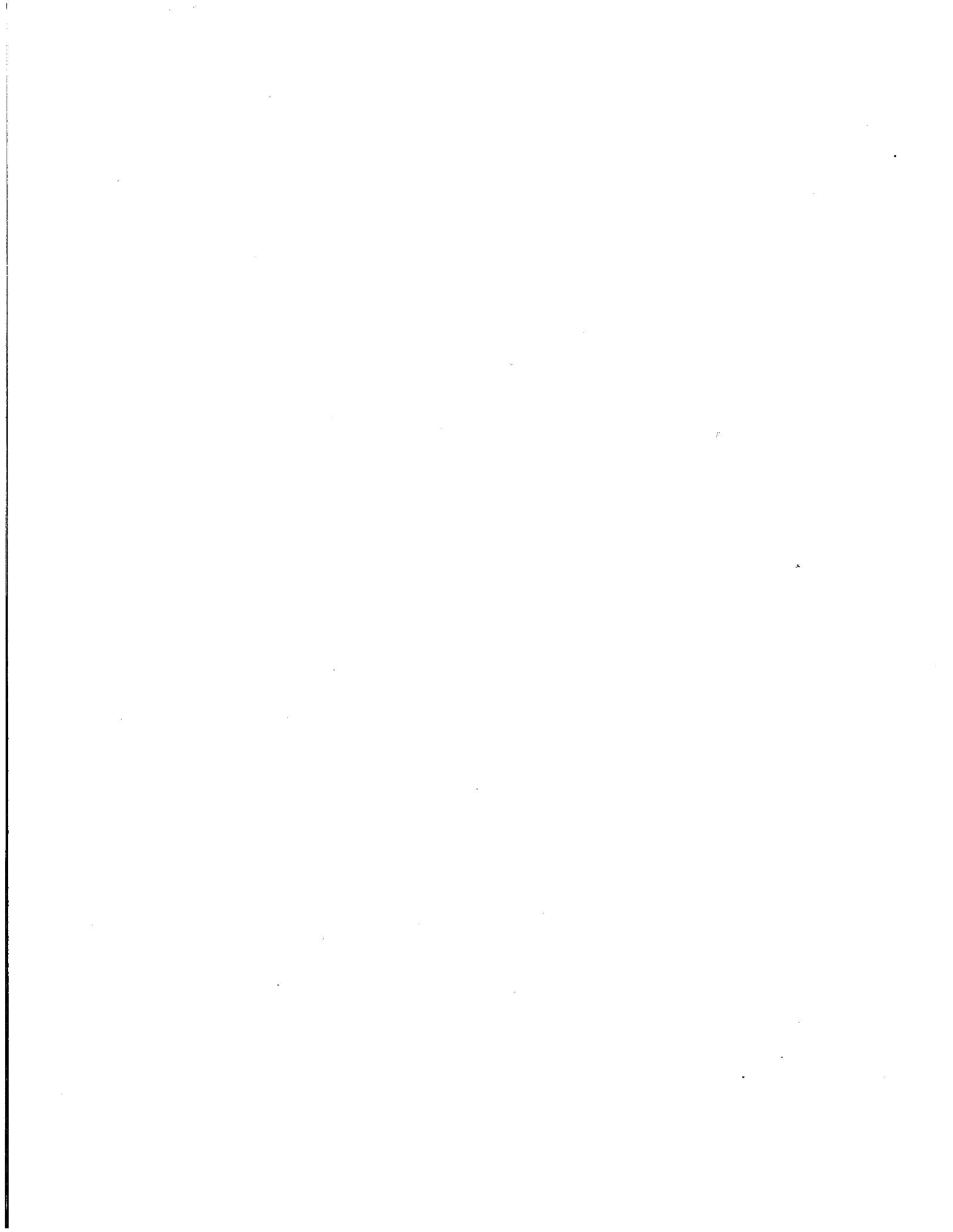


FIGURE A-3. MONTHLY FRESH WATER USE IN ALACHUA COUNTY: 1987



ALACHUA COUNTY DATA - 1987

TOTAL POPULATION 179,715
 TOTAL LAND AREA 961 SQ. MILES

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT'S PORTION :

 POPULATION
 TOTAL 124,005
 PUBLIC SUPPLY 112,726 (1)
 SELF-SUPPLIED 11,279
 PER CAPITA 167

LAND AREA (ACRES)
 TOTAL AREA 308,480 482 SQ. MILES
 FARMED 41,580
 IRRIGATED 4,018

1987 WATER WITHDRAWALS (Mgal/d) by CATEGORY

| | FRESH WATER | | | SALINE WATER | | | REUSE |
|----------------------|-------------|---------|--------|--------------|---------|--------|-------|
| | GROUND | SURFACE | TOTALS | GROUND | SURFACE | TOTALS | |
| PUBLIC SUPPLY | 20.16 | 0.00 | 20.16 | 0.00 | 0.00 | 0.00 | 0.00 |
| DOMESTIC SELF-SUPPLY | 1.88 | 0.00 | 1.88 | 0.00 | 0.00 | 0.00 | 0.00 |
| COM/IND. SELF-SUPPLY | 1.93 | 0.00 | 1.93 | 0.00 | 0.00 | 0.00 | 0.00 |
| AGRICULTURAL IRR. | 5.24 | 0.16 | 5.40 | 0.00 | 0.00 | 0.00 | 0.00 |
| POWER GENERATION S-S | 0.12 | 0.00 | 0.12 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISCELLANEOUS | 0.97 | 0.00 | 0.97 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 30.30 | 0.16 | 30.46 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOTAL GROUND | | 30.30 | | | | | |
| TOTAL SURFACE | | 0.16 | | | | | |
| COUNTY TOTAL | | 30.46 | | | | | |

(1) DOES NOT INCLUDE 8,165 POPULATION SERVED BY PUBLIC SUPPLY IN THE SJRWMD WHO LIVE IN THE SRWMD.

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

1987 INDIVIDUAL WATER USERS IN ALACHUA COUNTY

| USER UTILITY/FACILITY | USE TYPE | POPULATION SERVED | WITHDRAWAL(MGD) | | WITHDRAWAL SOURCE |
|--------------------------------|---------------|----------------------|-----------------|---------|----------------------|
| | | | GROUND | SURFACE | |
| ARREDONDO VILLAGE/ESTATES | PUBLIC SUPPLY | 1,180 | 0.072 | 0.000 | FLORIDAN AQF. |
| GAINESVILLE REGIONAL UTILITIES | PUBLIC SUPPLY | 116,650 | 19.688 | 0.000 | FLORIDAN AQF. |
| HAWTHORNE - CITY OF | PUBLIC SUPPLY | 1,279 | 0.219 | 0.000 | FLORIDAN AQF. |
| KINCAID HILLS S/D | PUBLIC SUPPLY | 1,000 | 0.114 | 0.000 | FLORIDAN AQF. |
| MICANOPY - TOWN OF | PUBLIC SUPPLY | 782 | 0.068 | 0.000 | FLORIDAN AQF. |
| GAINESVILLE REGIONAL UTILITIES | POWER GEN. | | 0.123 | 0.000 | FLORIDAN AQF. |
| SUNLAND CENTER | INSTITUTIONAL | | 0.231 | 0.000 | FLORIDAN AQF. |
| UNIVERSITY OF FLORIDA | INSTITUTIONAL | | 1.700 | 0.000 | FLORIDAN AQF. |

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

TABLE A-2. WATER USE BY CROP FOR ALACHUA COUNTY - 1987

| | TOTAL ACRES | | WATER USE IN MGD | | | TOTAL |
|-----------------------|-------------|-----------|------------------|---------|-----------|-------|
| | FARMED | IRRIGATED | GROUND | SURFACE | RECLAIMED | |
| VEGETABLE CROPS | | | | | | |
| CABBAGE | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| CARROTS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| CUCUMBERS | 300 | 200 | 0.15 | 0.00 | 0.00 | 0.15 |
| PEPPERS | 250 | 200 | 0.15 | 0.00 | 0.00 | 0.15 |
| POTATOES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOMATOES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SWEET CORN | 75 | 50 | 0.04 | 0.00 | 0.00 | 0.04 |
| WATERCRESS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISC. VEGETABLES | 680 | 680 | 0.52 | 0.00 | 0.00 | 0.52 |
| FRUIT CROPS | | | | | | |
| BLUEBERRIES | 385 | 350 | 0.39 | 0.00 | 0.00 | 0.39 |
| CITRUS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| GRAPES | 30 | 30 | 0.04 | 0.00 | 0.00 | 0.04 |
| PEACHES | 15 | 15 | 0.03 | 0.00 | 0.00 | 0.03 |
| PECANS | 2,600 | 300 | 0.44 | 0.00 | 0.00 | 0.44 |
| STRAWBERRIES | 5 | 5 | 0.01 | 0.00 | 0.00 | 0.01 |
| WATERMELLONS | 500 | 370 | 0.24 | 0.00 | 0.00 | 0.24 |
| MISC. FRUIT | 90 | 80 | 0.05 | 0.00 | 0.00 | 0.05 |
| FIELD CROPS | | | | | | |
| FIELD CORN | 1,200 | 100 | 0.12 | 0.00 | 0.00 | 0.12 |
| PEANUTS | 200 | 120 | 0.09 | 0.00 | 0.00 | 0.09 |
| RICE | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SORGHUM | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SOYBEANS | 4,000 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SUGAR CANE | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOBACCO | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| WHEAT | 200 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISC. GRAINS | 1,500 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| ORNAMENTALS & GRASSES | | | | | | |
| FERNS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| FLOWERS & FOLIAGE | 4 | 4 | 0.02 | 0.00 | 0.00 | 0.02 |
| WOODY ORNAMENTALS | 60 | 50 | 0.40 | 0.07 | 0.00 | 0.47 |
| IMPROVED PASTURE | 28,500 | 680 | 0.56 | 0.00 | 0.00 | 0.56 |
| SOD | 100 | 50 | 0.11 | 0.00 | 0.00 | 0.11 |
| TURF GRASS (GOLF) | 480 | 328 | 0.82 | 0.09 | 0.00 | 0.91 |
| TURF GRASS (OTHER) | 406 | 406 | 0.88 | 0.00 | 0.00 | 0.88 |
| MISC. AGRICULTURAL | | | | | | |
| LIVESTOCK | 0 | 0 | 0.16 | 0.00 | 0.00 | 0.16 |
| FISH FARMING | 0 | 0 | 0.02 | 0.00 | 0.00 | 0.02 |
| | 41,580 | 4,018 | 5.24 | 0.16 | 0.00 | 5.40 |
| SPRINKLER ACREAGE | 3,488 | 4,018 | | | | |
| LOW PRESSURE ACREAGE | 480 | | | | | |
| FLOOD ACREAGE | 50 | | | | | |



BAKER COUNTY DATA - 1987

TOTAL POPULATION 18,364
 TOTAL LAND AREA 588 SQ. MILES

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT'S PORTION :

POPULATION
 TOTAL 17,446
 PUBLIC SUPPLY 4,315
 SELF-SUPPLIED 13,131
 PER CAPITA 145

LAND AREA (ACRES)
 TOTAL AREA 343,040 536 SQ. MILES
 FARMED 14,000
 IRRIGATED 660

1987 WATER WITHDRAWALS (Mgal/d) by CATEGORY

| | FRESH WATER | | | SALINE WATER | | | REUSE |
|----------------------|-------------|---------|--------|--------------|---------|--------|-------|
| | GROUND | SURFACE | TOTALS | GROUND | SURFACE | TOTALS | |
| PUBLIC SUPPLY | 0.63 | 0.00 | 0.63 | 0.00 | 0.00 | 0.00 | 0.00 |
| DOMESTIC SELF-SUPPLY | 1.90 | 0.00 | 1.90 | 0.00 | 0.00 | 0.00 | 0.00 |
| COM/IND. SELF-SUPPLY | 0.31 | 0.00 | 0.31 | 0.00 | 0.00 | 0.00 | 0.00 |
| AGRICULTURAL IRR. | 2.94 | 2.23 | 5.17 | 0.00 | 0.00 | 0.00 | 0.00 |
| POWER GENERATION S-S | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISCELLANEOUS | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 5.78 | 2.23 | 8.01 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOTAL GROUND | | 5.78 | | | | | |
| TOTAL SURFACE | | 2.23 | | | | | |
| COUNTY TOTAL | | 8.01 | | | | | |

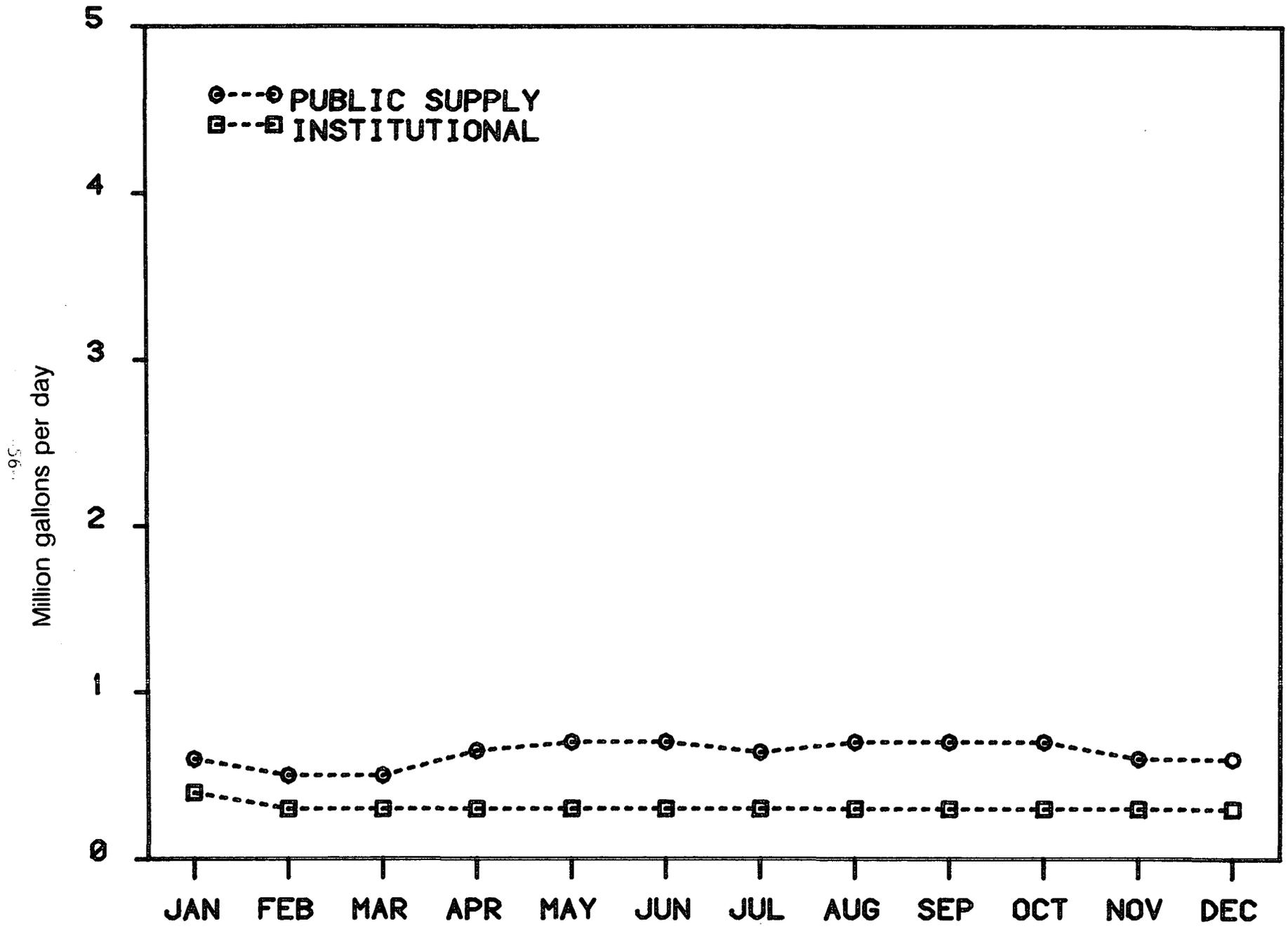


FIGURE A-4. MONTHLY FRESH WATER USE IN BAKER COUNTY: 1987

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
 1987 INDIVIDUAL WATER USERS IN BAKER COUNTY

| USER UTILITY/FACILITY | USE TYPE | POPULATION SERVED | WITHDRAWAL(MGD) | | WITHDRAWAL SOURCE |
|-------------------------------|---------------|----------------------|-----------------|---------|----------------------|
| | | | GROUND | SURFACE | |
| MACCLENNY - CITY OF | PUBLIC SUPPLY | 4,185 | 0.612 | 0.000 | FLORIDAN AQF. |
| MACCLENNY S/D | PUBLIC SUPPLY | 130 | 0.015 | 0.000 | FLORIDAN AQF. |
| NORTHEAST FLA. STATE HOSPITAL | INSTITUTIONAL | | 0.185 | 0.000 | FLORIDAN AQF. |
| WIREMILL INC. | INDUSTRIAL | | 0.130 | 0.000 | FLORIDAN AQF. |

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

TABLE A-3. WATER USE BY CROP FOR BAKER COUNTY - 1987

| | TOTAL ACRES | | WATER USE IN MGD | | | TOTAL |
|-----------------------|-------------|-----------|------------------|---------|-----------|-------|
| | FARMED | IRRIGATED | GROUND | SURFACE | RECLAIMED | |
| VEGETABLE CROPS | | | | | | |
| CABBAGE | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| CARROTS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| CUCUMBERS | 100 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| PEPPERS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| POTATOES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOMATOES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SWEET CORN | 100 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| WATERCRESS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISC. VEGETABLES | 522 | 100 | 0.08 | 0.00 | 0.00 | 0.08 |
| FRUIT CROPS | | | | | | |
| BLUEBERRIES | 25 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| CITRUS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| GRAPES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| PEACHES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| PECANS | 50 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STRAWBERRIES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| WATERMELLONS | 400 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISC. FRUIT | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| FIELD CROPS | | | | | | |
| FIELD CORN | 600 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| PEANUTS | 50 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| RICE | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SORGHUM | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SOYBEANS | 600 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SUGAR CANE | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOBACCO | 145 | 80 | 0.00 | 0.07 | 0.00 | 0.07 |
| WHEAT | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISC. GRAINS | 1,584 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| ORNAMENTALS & GRASSES | | | | | | |
| FERNS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| FLOWERS & FOLIAGE | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| WOODY ORNAMENTALS | 1,200 | 420 | 2.35 | 1.57 | 0.00 | 3.92 |
| IMPROVED PASTURE | 8,500 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SOD | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| TURF GRASS (GOLF) | 124 | 60 | 0.10 | 0.00 | 0.00 | 0.10 |
| TURF GRASS (OTHER) | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISC. AGRICULTURAL | | | | | | |
| LIVESTOCK | 0 | 0 | 0.41 | 0.59 | 0.00 | 1.00 |
| FISH FARMING | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 14,000 | 660 | 2.94 | 2.23 | 0.00 | 5.17 |
| SPRINKLER ACREAGE | 660 | 660 | | | | |
| LOW PRESSURE ACREAGE | 0 | | | | | |
| FLOOD ACREAGE | 0 | | | | | |

BRADFORD COUNTY DATA - 1987

TOTAL POPULATION 24,120
 TOTAL LAND AREA 305 SQ. MILES

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT'S PORTION :

POPULATION

TOTAL 1,810
 PUBLIC SUPPLY 340
 SELF-SUPPLIED 1,470
 PER CAPITA 170 (1)

LAND AREA (ACRES)

TOTAL AREA 3,840 6 SQ. MILES
 FARMED 48
 IRRIGATED 38

1987 WATER WITHDRAWALS (Mgal/d) by CATEGORY

| | FRESH WATER | | | SALINE WATER | | | REUSE |
|----------------------|-------------|---------|--------|--------------|---------|--------|-------|
| | GROUND | SURFACE | TOTALS | GROUND | SURFACE | TOTALS | |
| PUBLIC SUPPLY | 0.04 | 0.00 | 0.04 | 0.00 | 0.00 | 0.00 | 0.00 |
| DOMESTIC SELF-SUPPLY | 0.25 | 0.00 | 0.25 | 0.00 | 0.00 | 0.00 | 0.00 |
| COM/IND. SELF-SUPPLY | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| AGRICULTURAL IRR. | 0.07 | 0.00 | 0.07 | 0.00 | 0.00 | 0.00 | 0.00 |
| POWER GENERATION S-S | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISCELLANEOUS | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 0.36 | 0.00 | 0.36 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOTAL GROUND | | 0.36 | | | | | |
| TOTAL SURFACE | | 0.00 | | | | | |
| COUNTY TOTAL | | 0.36 | | | | | |

(1) USED THE 1985 TOTAL COUNTY'S PER CAPITA (MARELLA, 1988b).

THE PUBLIC SUPPLY PUMPAGE IN BRADFORD COUNTY
WITHIN THE ST. JOHNS RIVER WATER MANAGEMENT
DISTRICT FOR 1987 WAS TOO SMALL TO DEPICT.

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

1987 INDIVIDUAL WATER USERS IN BRADFORD COUNTY

| USER UTILITY/FACILITY | USE TYPE | POPULATION SERVED | WITHDRAWAL(MGD) | | WITHDRAWAL SOURCE |
|---------------------------|---------------|----------------------|-----------------|---------|----------------------|
| | | | GROUND | SURFACE | |
| SOUTHERN STATES UTILITIES | PUBLIC SUPPLY | 340 | 0.038 | 0.000 | FLORIDAN AQF. |

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

TABLE A-4. WATER USE BY CROP FOR BRADFORD COUNTY - 1987

| | TOTAL ACRES | | WATER USE IN MGD | | | |
|-----------------------|-------------|-----------|------------------|---------|-----------|-------|
| | FARMED | IRRIGATED | GROUND | SURFACE | RECLAIMED | TOTAL |
| VEGETABLE CROPS | | | | | | |
| CABBAGE | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| CARROTS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| CUCUMBERS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| PEPPERS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| POTATOES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOMATOES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SWEET CORN | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| WATERCRESS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISC. VEGETABLES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| FRUIT CROPS | | | | | | |
| BLUEBERRIES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| CITRUS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| GRAPES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| PEACHES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| PECANS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STRAWBERRIES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| WATERMELLONS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISC. FRUIT | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| FIELD CROPS | | | | | | |
| FIELD CORN | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| PEANUTS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| RICE | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SORGHUM | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SOYBEANS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SUGAR CANE | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOBACCO | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| WHEAT | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISC. GRAINS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| ORNAMENTALS & GRASSES | | | | | | |
| FERNS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| FLOWERS & FOLIAGE | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| WOODY ORNAMENTALS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| IMPROVED PASTURE | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SOD | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| TURF GRASS (GOLF) | 40 | 30 | 0.05 | 0.00 | 0.00 | 0.05 |
| TURF GRASS (OTHER) | 8 | 8 | 0.02 | 0.00 | 0.00 | 0.02 |
| MISC. AGRICULTURAL | | | | | | |
| LIVESTOCK | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| FISH FARMING | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 48 | 38 | 0.07 | 0.00 | 0.00 | 0.07 |
| SPRINKLER ACREAGE | 38 | 38 | | | | |
| LOW PRESSURE ACREAGE | 0 | | | | | |
| FLOOD ACREAGE | 0 | | | | | |

BREVARD COUNTY DATA - 1987

TOTAL POPULATION 371,735
 TOTAL LAND AREA 1,310 SQ. MILES

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT'S PORTION :

POPULATION
 TOTAL 371,735
 PUBLIC SUPPLY 330,518
 SELF-SUPPLIED 41,217
 PER CAPITA 149

LAND AREA (ACRES)
 TOTAL AREA 636,800 1,310 SQ. MILES
 FARMED 151,765
 IRRIGATED 104,436

1987 WATER WITHDRAWALS (Mgal/d) by CATEGORY

| | FRESH WATER | | | SALINE WATER | | | REUSE |
|----------------------|-------------|----------|--------|--------------|----------|----------|-------|
| | GROUND | SURFACE | TOTALS | GROUND | SURFACE | TOTALS | |
| PUBLIC SUPPLY (1)(2) | 10.07 | 15.61 | 25.68 | 0.00 | 0.00 | 0.00 | 0.00 |
| DOMESTIC SELF-SUPPLY | 6.14 | 0.00 | 6.14 | 0.00 | 0.00 | 0.00 | 0.00 |
| COM/IND. SELF-SUPPLY | 0.21 | 0.00 | 0.21 | 0.00 | 0.00 | 0.00 | 0.00 |
| AGRICULTURAL IRR. | 92.98 | 11.60 | 104.58 | 0.00 | 0.00 | 0.00 | 0.48 |
| POWER GENERATION S-S | 0.27 | 0.00 | 0.27 | 0.00 | 1,004.27 | 1,004.27 | 0.00 |
| MISCELLANEOUS | 37.49 | 0.00 | 37.49 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 147.16 | 27.21 | 174.37 | 0.00 | 1,004.27 | 1,004.27 | 0.48 |
| TOTAL GROUND | 147.16 | | | | | | |
| TOTAL SURFACE | | 1,031.48 | | | | | |
| COUNTY TOTAL (3) | | 1,178.64 | | | | | |

- (1) INCLUDES 0.12 Mgal/d of MARGINAL GROUND WATER USED IN R/O or DILUTED FOR PUBLIC SUPPLY USE.
- (2) DOES NOT INCLUDE 22.47 Mgal/d OF WATER WITHDRAWN IN ORANGE COUNTY FOR PUBLIC SUPPLY USE IN BREVARD COUNTY.
- (3) REUSE AMOUNTS ARE NOT INCLUDED IN TOTAL.

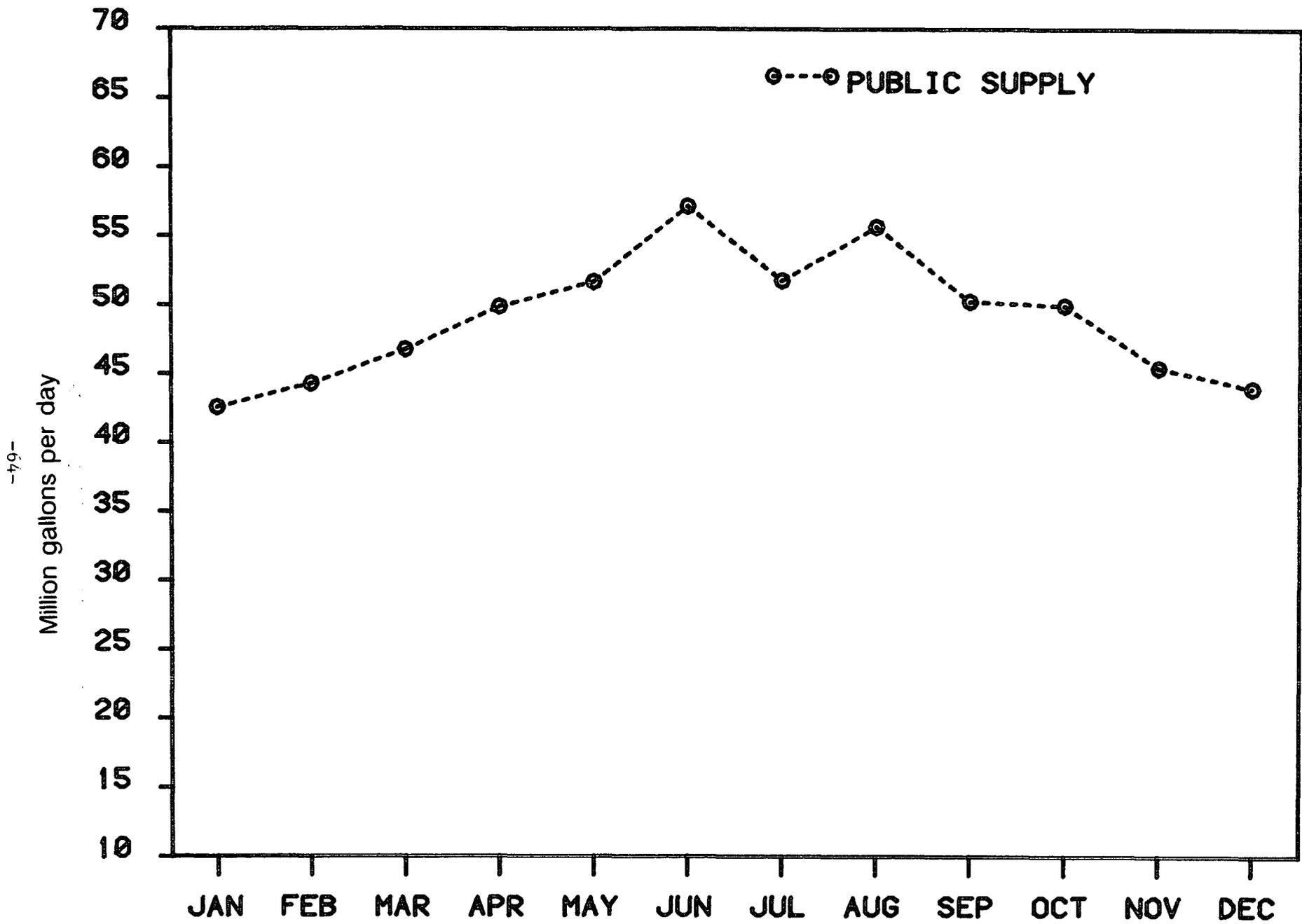


FIGURE A-5. MONTHLY FRESH WATER USE IN BREVARD COUNTY: 1987

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

1987 INDIVIDUAL WATER USERS IN BREVARD COUNTY

| USER UTILITY/FACILITY | USE TYPE | POPULATION SERVED | WITHDRAWAL(MGD) | | WITHDRAWAL SOURCE |
|----------------------------------|---------------|----------------------|-----------------|---------|-------------------------------|
| | | | GROUND | SURFACE | |
| AQUARINA UTILITIES | PUBLIC SUPPLY | 170 | 0.022 | 0.000 | FLORIDAN AQF. (R/O) |
| AVATAR (BAREFOOT BAY) UTILITY | PUBLIC SUPPLY | 5,477 | 0.571 | 0.000 | SURFICIAL AQF. |
| COCOA WATER UTILITIES | PUBLIC SUPPLY | 123,673 | 23.486 | 0.000 | FLORIDAN AQF. |
| GDU - PALM BAY | PUBLIC SUPPLY | 27,165 | 3.755 | 0.000 | SURFICIAL & FLORIDAN AQF. |
| MELBOURNE - CITY OF | PUBLIC SUPPLY | 126,890 | 0.000 | 15.612 | LAKE WASHINGTON |
| N. BREVARD UTILITIES (MIMS) | PUBLIC SUPPLY | 5,500 | 0.566 | 0.000 | SURFICIAL AQF. |
| S. BREVARD UTILITIES (SUNNYLAND) | PUBLIC SUPPLY | 430 | 0.037 | 0.000 | FLORIDAN AQF. (R/O) |
| TITUSVILLE - CITY OF | PUBLIC SUPPLY | 41,213 | 5.119 | 0.000 | FLORIDAN AQF. |
| FLORIDA DOT - I95 REST FAC. | INSTITUTIONAL | | 0.016 | 0.000 | SURFICIAL AQF. |
| FLORIDA POWER & LIGHT | POWER GEN. | | 0.182 | 614.597 | SURFICIAL AQF. & INDIAN RIVER |
| HARRIS CORP. | INDUSTRIAL | | 0.104 | 0.000 | SURFICIAL AQF. |
| ORLANDO UTILITIES COMMISSION | POWER GEN. | | 0.088 | 389.677 | SURFICIAL AQF. & INDIAN RIVER |
| UNION CARBIDE INC. | INDUSTRIAL | | 0.085 | 0.000 | SURFICIAL AQF. |

TABLE A-5. BREVARD COUNTY ACREAGE AND WATER USE BY CROP FOR 1987

| | TOTAL ACRES | | WATER USE IN MGD | | | |
|-----------------------|-------------|-----------|------------------|---------|-----------|--------|
| | FARMED | IRRIGATED | GROUND | SURFACE | RECLAIMED | TOTAL |
| VEGETABLE CROPS | | | | | | |
| CABBAGE | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| CARROTS | 4,000 | 4,000 | 4.02 | 0.00 | 0.00 | 4.02 |
| CUCUMBERS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| PEPPERS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| POTATOES | 300 | 300 | 0.24 | 0.00 | 0.00 | 0.24 |
| TOMATOES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SWEET CORN | 500 | 500 | 0.66 | 0.00 | 0.00 | 0.66 |
| WATERCRESS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISC. VEGETABLES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| FRUIT CROPS | | | | | | |
| BLUEBERRIES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| CITRUS | 18,000 | 10,880 | 12.72 | 5.03 | 0.00 | 17.75 |
| GRAPES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| PEACHES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| PECANS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STRAWBERRIES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| WATERMELLONS | 200 | 200 | 0.14 | 0.04 | 0.00 | 0.18 |
| MISC. FRUIT | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| FIELD CROPS | | | | | | |
| FIELD CORN | 2,000 | 2,000 | 3.26 | 0.00 | 0.00 | 3.26 |
| PEANUTS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| RICE | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SORGHUM | 1,800 | 1,800 | 2.05 | 0.00 | 0.00 | 2.05 |
| SOYBEANS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SUGAR CANE | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOBACCO | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| WHEAT | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISC. GRAINS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| ORNAMENTALS & GRASSES | | | | | | |
| FERNS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| FLOWERS & FOLIAGE | 10 | 10 | 0.04 | 0.00 | 0.00 | 0.04 |
| WOODY ORNAMENTALS | 190 | 190 | 1.77 | 0.00 | 0.00 | 1.77 |
| IMPROVED PASTURE | 121,700 | 81,860 | 63.97 | 3.02 | 0.00 | 66.99 |
| SOD | 1,000 | 1,000 | 1.15 | 1.73 | 0.00 | 2.88 |
| TURF GRASS (GOLF) | 1,692 | 1,323 | 1.06 | 1.76 | 0.48 | 2.82 |
| TURF GRASS (OTHER) | 373 | 373 | 0.79 | 0.02 | 0.00 | 0.81 |
| MISC. AGRICULTURAL | | | | | | |
| LIVESTOCK | 0 | 0 | 1.09 | 0.00 | 0.00 | 1.09 |
| FISH FARMING | 0 | 0 | 0.02 | 0.00 | 0.00 | 0.02 |
| | 151,765 | 104,436 | 92.98 | 11.60 | 0.48 | 104.58 |
| SPRINKLER ACREAGE | 6,596 | 104,436 | | | | |
| LOW PRESSURE ACREAGE | 880 | | | | | |
| FLOOD ACREAGE | 96,960 | | | | | |

CLAY COUNTY DATA - 1987

TOTAL POPULATION 95,325
 TOTAL LAND AREA 644 SQ. MILES

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT'S PORTION :

POPULATION
 TOTAL 95,325
 PUBLIC SUPPLY 69,687
 SELF-SUPPLIED 25,638
 PER CAPITA 142

LAND AREA (ACRES)
 TOTAL AREA 411,520 643 SQ. MILES
 FARMED 44,241
 IRRIGATED 749

1987 WATER WITHDRAWALS (Mgal/d) by CATEGORY

| | FRESH WATER | | | SALINE WATER | | | REUSE |
|----------------------|-------------|---------|--------|--------------|---------|--------|-------|
| | GROUND | SURFACE | TOTALS | GROUND | SURFACE | TOTALS | |
| PUBLIC SUPPLY | 9.92 | 0.00 | 9.92 | 0.00 | 0.00 | 0.00 | 0.00 |
| DOMESTIC SELF-SUPPLY | 3.64 | 0.00 | 3.64 | 0.00 | 0.00 | 0.00 | 0.00 |
| COM/IND. SELF-SUPPLY | 6.98 | 0.00 | 6.98 | 0.00 | 0.00 | 0.00 | 0.00 |
| AGRICULTURAL IRR. | 2.87 | 0.38 | 3.25 | 0.00 | 0.00 | 0.00 | 0.00 |
| POWER GENERATION S-S | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISCELLANEOUS | 0.36 | 0.00 | 0.36 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 23.77 | 0.38 | 24.15 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOTAL GROUND | | 23.77 | | | | | |
| TOTAL SURFACE | | 0.38 | | | | | |
| COUNTY TOTAL | | 24.15 | | | | | |

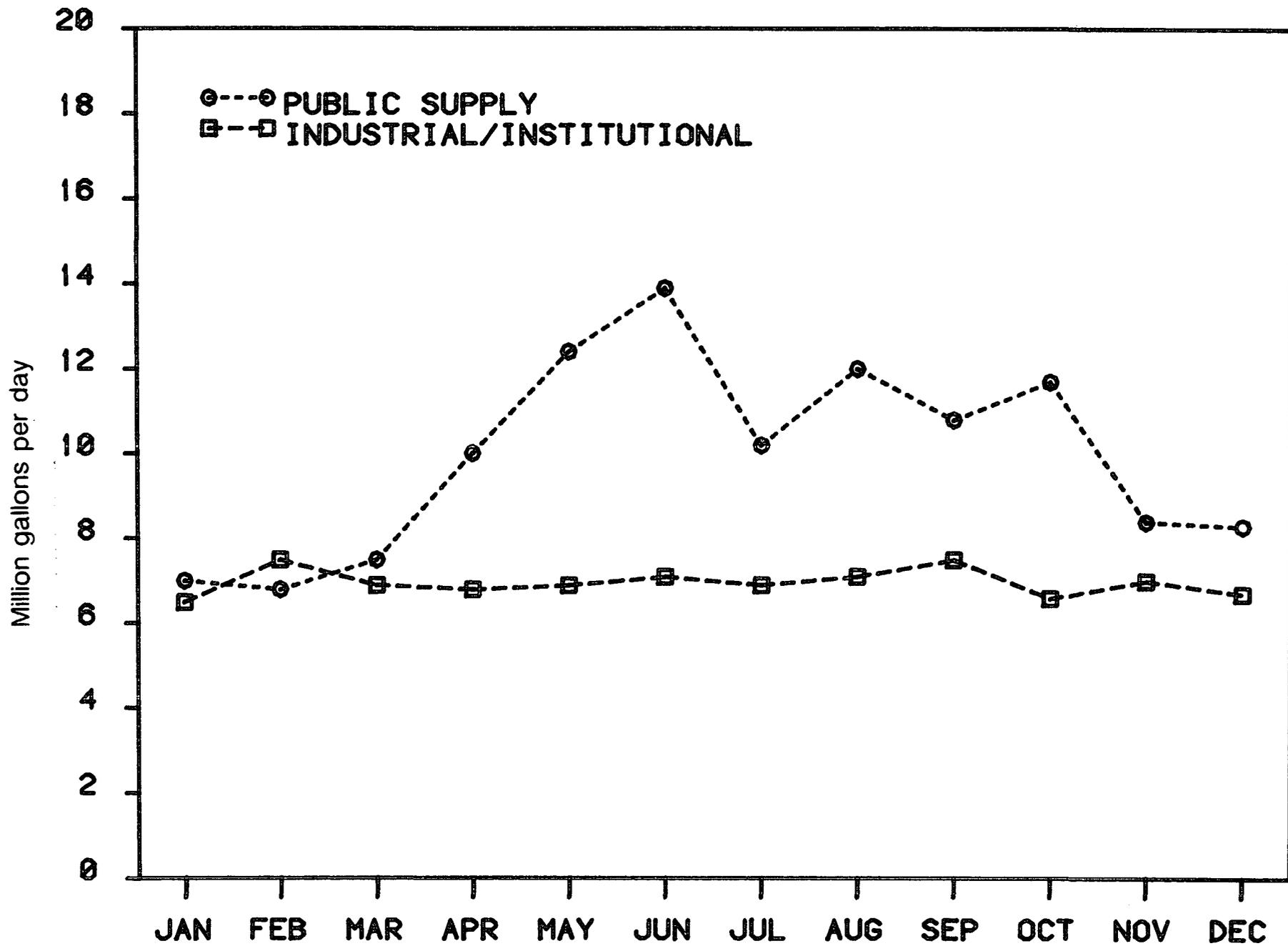


FIGURE A-6. MONTHLY FRESH WATER USE IN CLAY COUNTY: 1987

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

1987 INDIVIDUAL WATER USERS IN CLAY COUNTY

| USER UTILITY/FACILITY | USE TYPE | POPULATION SERVED | WITHDRAWAL (MGD) | | WITHDRAWAL SOURCE |
|----------------------------------|---------------|----------------------|------------------|---------|----------------------|
| | | | GROUND | SURFACE | |
| CLAY UTILITY CO. | PUBLIC SUPPLY | 6,500 | 0.696 | 0.000 | FLORIDAN AQF. |
| DUVAL UTILITY CO. | PUBLIC SUPPLY | 250 | 0.039 | 0.000 | FLORIDAN AQF. |
| GREEN COVE SPRINGS - CITY OF | PUBLIC SUPPLY | 4,432 | 0.706 | 0.000 | FLORIDAN AQF. |
| KEYSTONE HEIGHTS - CITY OF | PUBLIC SUPPLY | 2,640 | 0.394 | 0.000 | FLORIDAN AQF. |
| KINGSLEY SERVICE CO. | PUBLIC SUPPLY | 42,644 | 6.226 | 0.000 | FLORIDAN AQF. |
| LAKE ASBURY UTILITIES | PUBLIC SUPPLY | 1,566 | 0.151 | 0.000 | FLORIDAN AQF. |
| MAGNOLIA SPRINGS UTILITIES | PUBLIC SUPPLY | 800 | 0.081 | 0.000 | FLORIDAN AQF. |
| ORANGE PARK - TOWN OF | PUBLIC SUPPLY | 9,685 | 1.467 | 0.000 | FLORIDAN AQF. |
| PENNY RETIREMENT COM. | PUBLIC SUPPLY | 220 | 0.040 | 0.000 | FLORIDAN AQF. |
| PENNY FARMS - TOWN OF | PUBLIC SUPPLY | 450 | 0.093 | 0.000 | FLORIDAN AQF. |
| THE RAVINES VILLAGE & RESORT | PUBLIC SUPPLY | 500 | 0.028 | 0.000 | FLORIDAN AQF. |
| ASSOCIATED MINERALS | INDUSTRIAL | | 1.812 | 0.000 | FLORIDAN AQF. |
| CAMP BLANDING MILITARY BASE | INSTITUTIONAL | | 0.494 | 0.000 | FLORIDAN AQF. |
| E. I. DUPONT DE NEMOURS MINERALS | INDUSTRIAL | | 2.341 | 0.000 | FLORIDAN AQF. |
| FLORIDA ROCK - KEYSTONE MINE | INDUSTRIAL | | 1.939 | 0.000 | FLORIDAN AQF. |
| J-M MANUFACTURING CO. | INDUSTRIAL | | 0.106 | 0.000 | FLORIDAN AQF. |
| REYNOLDS INDUSTRIAL PARK | INDUSTRIAL | | 0.288 | 0.000 | FLORIDAN AQF. |

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

TABLE A-6. WATER USE BY CROP FOR CLAY COUNTY - 1987

| | TOTAL ACRES | | WATER USE IN MGD | | | |
|-----------------------|-------------|-----------|------------------|---------|-----------|-------|
| | FARMED | IRRIGATED | GROUND | SURFACE | RECLAIMED | TOTAL |
| VEGETABLE CROPS | | | | | | |
| CABBAGE | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| CARROTS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| CUCUMBERS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| PEPPERS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| POTATOES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOMATOES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SWEET CORN | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| WATERCRESS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISC. VEGETABLES | 200 | 60 | 0.05 | 0.00 | 0.00 | 0.05 |
| FRUIT CROPS | | | | | | |
| BLUEBERRIES | 15 | 13 | 0.02 | 0.00 | 0.00 | 0.02 |
| CITRUS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| GRAPES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| PEACHES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| PECANS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STRAWBERRIES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| WATERMELLONS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISC. FRUIT | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| FIELD CROPS | | | | | | |
| FIELD CORN | 500 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| PEANUTS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| RICE | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SORGHUM | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SOYBEANS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SUGAR CANE | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOBACCO | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| WHEAT | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISC. GRAINS | 2,800 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| ORNAMENTALS & GRASSES | | | | | | |
| FERNS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| FLOWERS & FOLIAGE | 50 | 50 | 0.20 | 0.00 | 0.00 | 0.20 |
| WOODY ORNAMENTALS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| IMPROVED PASTURE | 40,000 | 100 | 0.08 | 0.00 | 0.00 | 0.08 |
| SOD | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| TURF GRASS (GOLF) | 530 | 380 | 0.77 | 0.38 | 0.00 | 1.15 |
| TURF GRASS (OTHER) | 146 | 146 | 0.32 | 0.00 | 0.00 | 0.32 |
| MISC. AGRICULTURAL | | | | | | |
| LIVESTOCK | 0 | 0 | 1.43 | 0.00 | 0.00 | 1.43 |
| FISH FARMING | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| ===== | | | | | | |
| | 44,241 | 749 | 2.87 | 0.38 | 0.00 | 3.25 |
| ===== | | | | | | |
| SPRINKLER ACREAGE | 636 | 749 | | | | |
| LOW PRESSURE ACREAGE | 3 | | | | | |
| FLOOD ACREAGE | 110 | | | | | |

DUVAL COUNTY DATA - 1987

TOTAL POPULATION 664,132
 TOTAL LAND AREA 840 SQ. MILES

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT'S PORTION :

POPULATION
 TOTAL 664,132
 PUBLIC SUPPLY 561,345
 SELF-SUPPLIED 102,787
 PER CAPITA 168

LAND AREA (ACRES)
 TOTAL AREA 537,600 840 SQ. MILES
 FARMED 16,439
 IRRIGATED 2,965

1987 WATER WITHDRAWALS (Mgal/d) by CATEGORY

| | FRESH WATER | | | SALINE WATER | | | REUSE |
|----------------------|-------------|---------|--------|--------------|---------|--------|-------|
| | GROUND | SURFACE | TOTALS | GROUND | SURFACE | TOTALS | |
| PUBLIC SUPPLY | 94.28 | 0.00 | 94.28 | 0.00 | 0.00 | 0.00 | 0.00 |
| DOMESTIC SELF-SUPPLY | 17.27 | 0.00 | 17.27 | 0.00 | 0.00 | 0.00 | 0.00 |
| COM/IND. SELF-SUPPLY | 37.75 | 0.00 | 37.75 | 0.00 | 39.66 | 39.66 | 0.00 |
| AGRICULTURAL IRR. | 14.16 | 0.98 | 15.14 | 0.00 | 0.00 | 0.00 | 1.74 |
| POWER GENERATION S-S | 3.57 | 0.00 | 3.57 | 0.00 | 395.22 | 395.22 | 0.00 |
| MISCELLANEOUS | 6.03 | 0.00 | 6.03 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 173.06 | 0.98 | 174.04 | 0.00 | 434.88 | 434.88 | 1.74 |
| TOTAL GROUND | 173.06 | | | | | | |
| TOTAL SURFACE | | 435.86 | | | | | |
| COUNTY TOTAL (1) | | 608.92 | | | | | |

(1) REUSE AMOUNTS ARE NOT INCLUDED IN TOTAL.

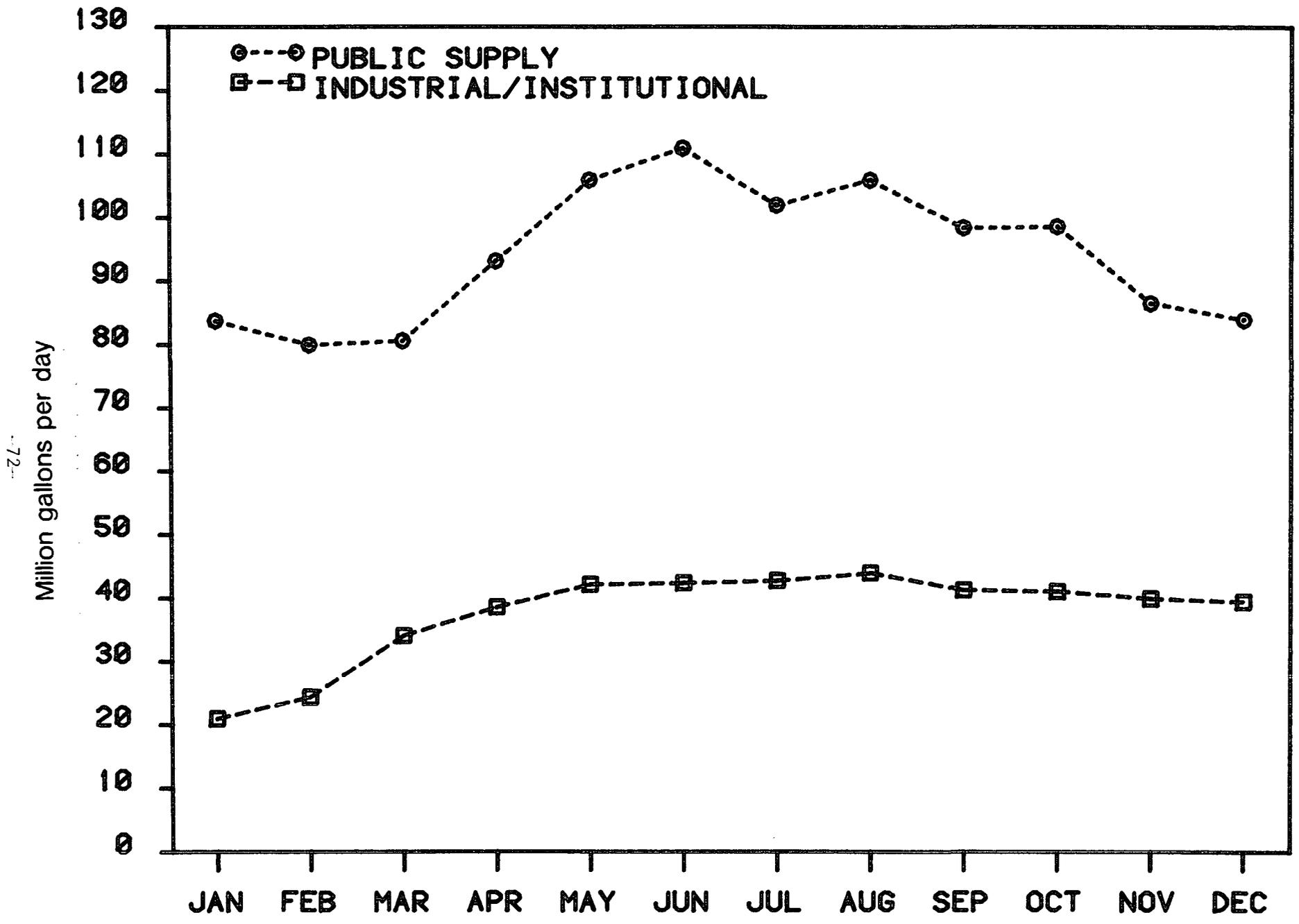


FIGURE A-7. MONTHLY FRESH WATER USE IN DUVAL COUNTY: 1987

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

1987 INDIVIDUAL WATER USERS IN DUVAL COUNTY

| USER UTILITY/FACILITY | USE TYPE | POPULATION SERVED | WITHDRAWAL (MGD) | | WITHDRAWAL SOURCE |
|---------------------------------|---------------|----------------------|------------------|---------|---------------------------------|
| | | | GROUND | SURFACE | |
| ATLANTIC BEACH - CITY OF | PUBLIC SUPPLY | 12,695 | 2.638 | 0.000 | FLORIDAN AQF. |
| BEAUCLERC UTILITIES | PUBLIC SUPPLY | 6,670 | 0.693 | 0.000 | FLORIDAN AQF. |
| BALDWIN - CITY OF | PUBLIC SUPPLY | 1,766 | 0.230 | 0.000 | FLORIDAN AQF. |
| CANAL UTILITIES | PUBLIC SUPPLY | 6,800 | 1.671 | 0.000 | FLORIDAN AQF. |
| COLONY MHP | PUBLIC SUPPLY | 962 | 0.100 | 0.000 | FLORIDAN AQF. |
| COMMERCIAL UTILITIES | PUBLIC SUPPLY | 1,200 | 0.113 | 0.000 | FLORIDAN AQF. |
| DULAY UTILITIES (ARGYLE F.) | PUBLIC SUPPLY | 3,065 | 0.349 | 0.000 | FLORIDAN AQF. |
| DUVAL UTILITY CO. | PUBLIC SUPPLY | 1,900 | 0.362 | 0.000 | FLORIDAN AQF. |
| HARBOR VIEW S/D | PUBLIC SUPPLY | 2,100 | 0.193 | 0.000 | FLORIDAN AQF. |
| JACKSONVILLE BEACH - CITY OF | PUBLIC SUPPLY | 18,849 | 3.633 | 0.000 | FLORIDAN AQF. |
| JACKSONVILLE - CITY OF | PUBLIC SUPPLY | 355,080 | 61.242 | 0.000 | FLORIDAN AQF. |
| JACKSONVILLE - CITY (MANDARIN) | PUBLIC SUPPLY | 33,862 | 4.991 | 0.000 | FLORIDAN AQF. |
| JACKSONVILLE SUBURBAN UTILITIES | PUBLIC SUPPLY | 73,872 | 10.463 | 0.000 | FLORIDAN AQF. |
| LAMPLIGHTER MHP | PUBLIC SUPPLY | 735 | 0.132 | 0.000 | FLORIDAN AQF. |
| LONDONTOWNE APARTMENTS | PUBLIC SUPPLY | 1,125 | 0.156 | 0.000 | FLORIDAN AQF. |
| MAYPORT WATER PLANT | PUBLIC SUPPLY | 400 | 0.081 | 0.000 | FLORIDAN AQF. |
| NEIGHBORHOOD UTILITIES | PUBLIC SUPPLY | 543 | 0.041 | 0.000 | FLORIDAN AQF. |
| NEPTUNE BEACH - CITY OF | PUBLIC SUPPLY | 6,425 | 1.241 | 0.000 | FLORIDAN AQF. |
| NORMANDY ESTATES MHP | PUBLIC SUPPLY | 500 | 0.101 | 0.000 | FLORIDAN AQF. |
| NORMANDY VILLAGE UTILITIES | PUBLIC SUPPLY | 2,912 | 0.403 | 0.000 | FLORIDAN AQF. |
| ORTEGA UTILITIES | PUBLIC SUPPLY | 4,423 | 0.900 | 0.000 | FLORIDAN AQF. |
| REGENCY UTILITIES | PUBLIC SUPPLY | 4,900 | 0.746 | 0.000 | FLORIDAN AQF. |
| SHADOWROCK UTILITIES | PUBLIC SUPPLY | 1,250 | 0.221 | 0.000 | FLORIDAN AQF. |
| SOUTHERN GULF UTILITIES | PUBLIC SUPPLY | 2,896 | 0.441 | 0.000 | FLORIDAN AQF. |
| SOUTHERN STATES UTILITIES | PUBLIC SUPPLY | 9,000 | 1.900 | 0.000 | FLORIDAN AQF. |
| SOUTHSIDE UTILITIES | PUBLIC SUPPLY | 6,640 | 1.109 | 0.000 | FLORIDAN AQF. |
| WONDERWOOD MHP | PUBLIC SUPPLY | 775 | 0.128 | 0.000 | FLORIDAN AQF. |
| CASTLETON BEVERAGE CO. | INDUSTRIAL | | 0.117 | 0.000 | FLORIDAN AQF. |
| CECIL FIELD NAS | INSTITUTIONAL | | 0.910 | 0.000 | FLORIDAN AQF. |
| CELOTEX GYPSUM CO. | INDUSTRIAL | | 0.078 | 0.000 | FLORIDAN AQF. |
| DUVAL CORRECTIONAL FAC. | INSTITUTIONAL | | 0.093 | 0.000 | FLORIDAN AQF. |
| EASTPORT POWER PLANT | POWER GEN. | | 2.038 | 0.000 | FLORIDAN AQF. & ST. JOHNS RIVER |
| FLORIDA DOT - I10 REST FAC. | INSTITUTIONAL | | 0.010 | 0.000 | FLORIDAN AQF. |
| FLORIDA WIRE & CABLE CO. | INDUSTRIAL | | 0.052 | 0.000 | FLORIDAN AQF. |
| GATE-MARINTIME INC. | INDUSTRIAL | | 0.041 | 0.000 | FLORIDAN AQF. |
| JACKSONVILLE ELECTIC AUTHORITY | POWER GEN. | | 1.530 | 395.215 | FLORIDAN AQF. & ST. JOHNS RIVER |
| JACKSONVILLE INT. AIRPORT | INSTITUTIONAL | | 0.187 | 0.000 | FLORIDAN AQF. |
| JACKSONVILLE KRAFT PAPER CO. | INDUSTRIAL | | 16.248 | 37.346 | FLORIDAN AQF. & ST. JOHNS RIVER |
| JACKSONVILLE NAS | INSTITUTIONAL | | 2.253 | 0.000 | FLORIDAN AQF. |
| JACKSONVILLE PORT AUTHORITY | INDUSTRIAL | | 0.070 | 0.000 | FLORIDAN AQF. |
| JACKSONVILLE SHIPYARD | INDUSTRIAL | | 0.249 | 2.318 | FLORIDAN AQF. & ST. JOHNS RIVER |
| JACKSONVILLE UNIVERSITY | INSTITUTIONAL | | 0.423 | 0.000 | FLORIDAN AQF. |
| JACKSONVILLE ZOO | INSTITUTIONAL | | 0.257 | 0.000 | FLORIDAN AQF. |
| JEFFERSON-SMURFIT INC. (ALTON) | INDUSTRIAL | | 7.304 | 0.000 | FLORIDAN AQF. |
| MAYPORT NAS | INSTITUTIONAL | | 3.082 | 0.000 | FLORIDAN AQF. |
| REICHHOLD CHEMICAL CO. | INDUSTRIAL | | 0.827 | 0.000 | FLORIDAN AQF. |
| SCM ORGANIC CHEMICAL CO. | INDUSTRIAL | | 2.305 | 0.000 | FLORIDAN AQF. |
| SIMPLEX MAN. CO. | INDUSTRIAL | | 0.067 | 0.000 | FLORIDAN AQF. |
| SWISHER & SON MAN. CO. | INDUSTRIAL | | 0.076 | 0.000 | FLORIDAN AQF. |
| UNION CAMP INC. | INDUSTRIAL | | 3.105 | 0.000 | FLORIDAN AQF. |

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

TABLE A-7. WATER USE BY CROP FOR DUVAL COUNTY - 1987

| | TOTAL ACRES | | WATER USE IN MGD | | | TOTAL |
|-----------------------|-------------|-----------|------------------|---------|-----------|-------|
| | FARMED | IRRIGATED | GROUND | SURFACE | RECLAIMED | |
| VEGETABLE CROPS | | | | | | |
| CABBAGE | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| CARROTS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| CUCUMBERS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| PEPPERS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| POTATOES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOMATOES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SWEET CORN | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| WATERCRESS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISC. VEGETABLES | 200 | 10 | 0.01 | 0.00 | 0.00 | 0.01 |
| FRUIT CROPS | | | | | | |
| BLUEBERRIES | 15 | 10 | 0.01 | 0.00 | 0.00 | 0.01 |
| CITRUS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| GRAPES | 10 | 7 | 0.01 | 0.00 | 0.00 | 0.01 |
| PEACHES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| PECANS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STRAWBERRIES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| WATERMELLONS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISC. FRUIT | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| FIELD CROPS | | | | | | |
| FIELD CORN | 200 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| PEANUTS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| RICE | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SORGHUM | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SOYBEANS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SUGAR CANE | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOBACCO | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| WHEAT | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISC. GRAINS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| ORNAMENTALS & GRASSES | | | | | | |
| FERNS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| FLOWERS & FOLIAGE | 15 | 15 | 0.05 | 0.00 | 0.00 | 0.05 |
| WOODY ORNAMENTALS | 57 | 60 | 0.54 | 0.00 | 0.00 | 0.54 |
| IMPROVED PASTURE | 12,000 | 500 | 0.34 | 0.07 | 0.00 | 0.41 |
| SOD | 800 | 800 | 0.31 | 0.05 | 1.74 | 0.36 |
| TURF GRASS (GOLF) | 2,992 | 1,413 | 3.42 | 0.86 | 0.00 | 4.28 |
| TURF GRASS (OTHER) | 150 | 150 | 0.33 | 0.00 | 0.00 | 0.33 |
| MISC. AGRICULTURAL | | | | | | |
| LIVESTOCK | 0 | 0 | 0.71 | 0.00 | 0.00 | 0.71 |
| AESTHETIC/WILDLIFE | 0 | 0 | 8.43 | 0.00 | 0.00 | 8.43 |
| ===== | | | | | | |
| | 16,439 | 2,965 | 14.16 | 0.98 | 1.74 | 15.14 |
| ===== | | | | | | |
| SPRINKLER ACREAGE | 2,891 | 2,965 | | | | |
| LOW PRESSURE ACREAGE | 34 | | | | | |
| FLOOD ACREAGE | 40 | | | | | |

FLAGLER COUNTY DATA - 1987

TOTAL POPULATION 19,243
 TOTAL LAND AREA 504 SQ. MILES

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT'S PORTION :

POPULATION
 TOTAL 19,243
 PUBLIC SUPPLY 17,502
 SELF-SUPPLIED 1,741
 PER CAPITA 146

LAND AREA (ACRES)
 TOTAL AREA 322,560 504 SQ. MILES
 FARMED 23,840
 IRRIGATED 6,485

1987 WATER WITHDRAWALS (Mgal/d) by CATEGORY

| | FRESH WATER | | | SALINE WATER | | | REUSE |
|----------------------|-------------|---------|--------|--------------|---------|--------|-------|
| | GROUND | SURFACE | TOTALS | GROUND | SURFACE | TOTALS | |
| PUBLIC SUPPLY | 2.56 | 0.00 | 2.56 | 0.00 | 0.00 | 0.00 | 0.00 |
| DOMESTIC SELF-SUPPLY | 0.25 | 0.00 | 0.25 | 0.00 | 0.00 | 0.00 | 0.00 |
| COM/IND. SELF-SUPPLY | 0.16 | 0.00 | 0.16 | 0.00 | 0.00 | 0.00 | 0.00 |
| AGRICULTURAL IRR. | 5.73 | 1.09 | 6.82 | 0.00 | 0.00 | 0.00 | 0.00 |
| POWER GENERATION S-S | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISCELLANEOUS | 0.01 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 8.71 | 1.09 | 9.80 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOTAL GROUND | 8.71 | | | | | | |
| TOTAL SURFACE | | 1.09 | | | | | |
| COUNTY TOTAL | | 9.80 | | | | | |

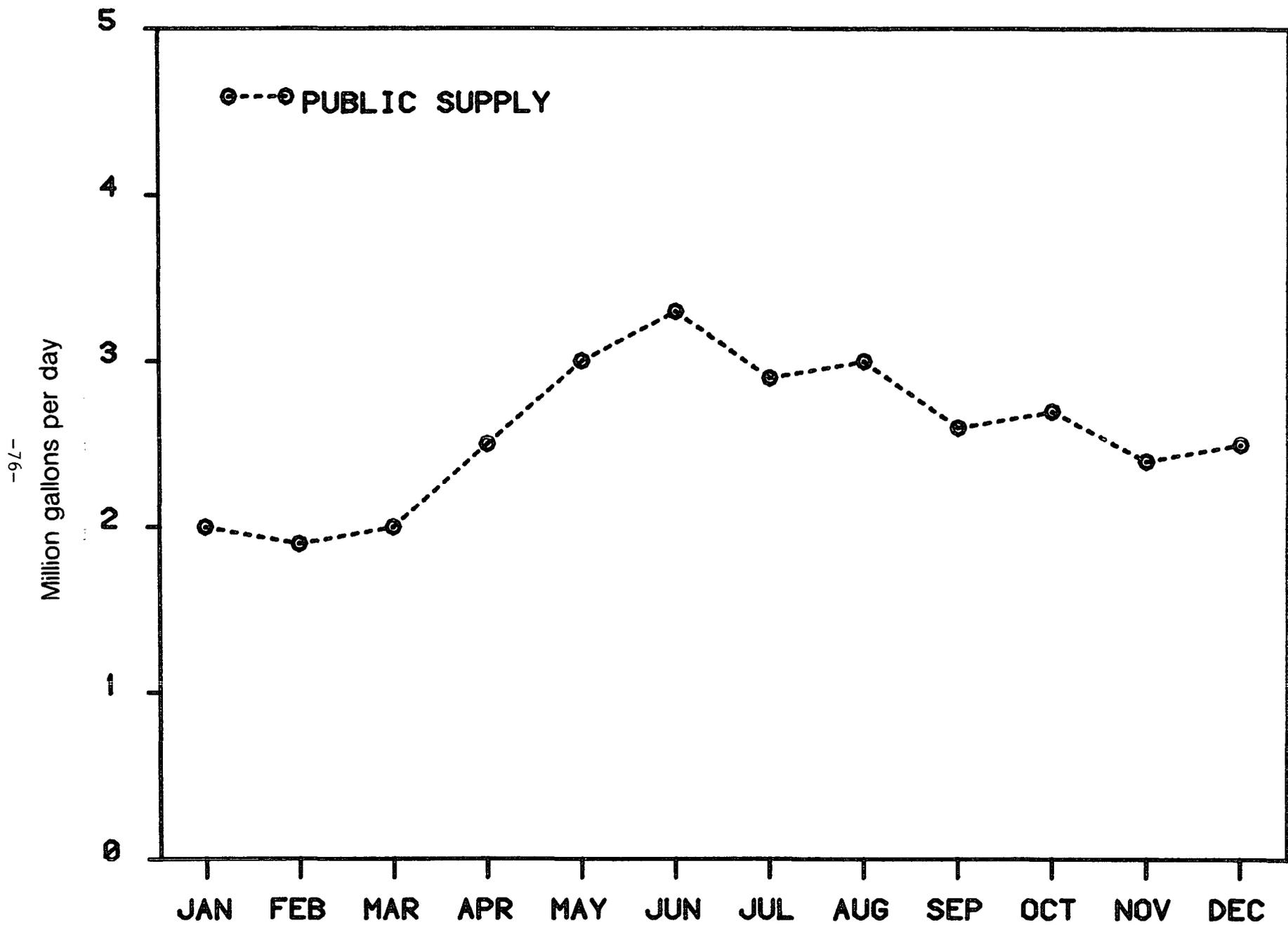


FIGURE A-8. MONTHLY FRESH WATER USE IN FLAGLER COUNTY: 1987

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
1987 INDIVIDUAL WATER USERS IN FLAGLER COUNTY

| USER UTILITY/FACILITY | USE TYPE | POPULATION SERVED | WITHDRAWAL (MGD) | | WITHDRAWAL SOURCE |
|--------------------------|---------------|----------------------|------------------|---------|----------------------|
| | | | GROUND | SURFACE | |
| BEVERLY BEACH UTILITY | PUBLIC SUPPLY | 411 | 0.033 | 0.000 | FLORIDAN AQF. |
| BUNNELL - CITY OF | PUBLIC SUPPLY | 2,104 | 0.286 | 0.000 | FLORIDAN AQF. |
| FLAGLER BEACH - CITY OF | PUBLIC SUPPLY | 3,246 | 0.458 | 0.000 | FLORIDAN AQF. |
| PALM COAST UTILITIES | PUBLIC SUPPLY | 11,500 | 1.742 | 0.000 | SURFICIAL AQF. |
| PLANTATION BAY | PUBLIC SUPPLY | 241 | 0.044 | 0.000 | FLORIDAN AQF. |
| BULOW KOA | INSTITUTIONAL | | 0.070 | 0.000 | FLORIDAN AQF. |
| HOLIDAY TRAVEL PARK | INSTITUTIONAL | | 0.018 | 0.000 | FLORIDAN AQF. |
| MARINELAND | INSTITUTIONAL | | 0.041 | 0.000 | FLORIDAN AQF. |
| RINKER CEMENT | INDUSTRIAL | | 0.032 | 0.000 | FLORIDAN AQF. |

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

TABLE A-8. WATER USE BY CROP FOR FLAGLER COUNTY - 1987

| | TOTAL ACRES | | WATER USE IN MGD | | | TOTAL |
|-----------------------|-------------|-----------|------------------|---------|-----------|-------|
| | FARMED | IRRIGATED | GROUND | SURFACE | RECLAIMED | |
| VEGETABLE CROPS | | | | | | |
| CABBAGE | 2,000 | 2,000 | 1.71 | 0.00 | 0.00 | 1.71 |
| CARROTS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| CUCUMBERS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| PEPPERS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| POTATOES | 1,700 | 1,700 | 1.36 | 0.00 | 0.00 | 1.36 |
| TOMATOES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SWEET CORN | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| WATERCRESS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISC. VEGETABLES | 1,000 | 1,000 | 0.95 | 0.00 | 0.00 | 0.95 |
| FRUIT CROPS | | | | | | |
| BLUEBERRIES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| CITRUS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| GRAPES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| PEACHES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| PECANS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STRAWBERRIES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| WATERMELLONS | 100 | 100 | 0.06 | 0.00 | 0.00 | 0.06 |
| MISC. FRUIT | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| FIELD CROPS | | | | | | |
| FIELD CORN | 400 | 400 | 0.58 | 0.00 | 0.00 | 0.58 |
| PEANUTS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| RICE | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SORGHUM | 1,500 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SOYBEANS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SUGAR CANE | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOBACCO | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| WHEAT | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISC. GRAINS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| ORNAMENTALS & GRASSES | | | | | | |
| FERNS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| FLOWERS & FOLIAGE | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| WOODY ORNAMENTALS | 5 | 5 | 0.05 | 0.00 | 0.00 | 0.05 |
| IMPROVED PASTURE | 16,500 | 695 | 0.57 | 0.00 | 0.00 | 0.57 |
| SOD | 200 | 150 | 0.30 | 0.00 | 0.00 | 0.30 |
| TURF GRASS (GOLF) | 362 | 362 | 0.13 | 0.93 | 0.00 | 1.06 |
| TURF GRASS (OTHER) | 73 | 73 | 0.01 | 0.15 | 0.00 | 0.16 |
| MISC. AGRICULTURAL | | | | | | |
| LIVESTOCK | 0 | 0 | 0.01 | 0.01 | 0.00 | 0.02 |
| FISH FARMING | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 23,840 | 6,485 | 5.73 | 1.09 | 0.00 | 6.82 |
| SPRINKLER ACREAGE | 2,485 | 6,485 | | | | |
| LOW PRESSURE ACREAGE | 0 | | | | | |
| FLOOD ACREAGE | 4,000 | | | | | |

INDIAN RIVER COUNTY DATA - 1987

TOTAL POPULATION 83,515
 TOTAL LAND AREA 549 SQ. MILES

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT'S PORTION :

POPULATION
 TOTAL 83,515
 PUBLIC SUPPLY 49,207
 SELF-SUPPLIED 34,308
 PER CAPITA 243

LAND AREA (ACRES)
 TOTAL AREA 351,360 549 SQ. MILES
 FARMED 139,241
 IRRIGATED 96,805

1987 WATER WITHDRAWALS (Mgal/d) by CATEGORY

| | FRESH WATER | | | SALINE WATER | | | REUSE |
|----------------------|-------------|---------|--------|--------------|---------|--------|-------|
| | GROUND | SURFACE | TOTALS | GROUND | SURFACE | TOTALS | |
| PUBLIC SUPPLY (1) | 11.98 | 0.00 | 11.98 | 0.00 | 0.00 | 0.00 | 0.00 |
| DOMESTIC SELF-SUPPLY | 8.33 | 0.00 | 8.33 | 0.00 | 0.00 | 0.00 | 0.00 |
| COM/IND. SELF-SUPPLY | 0.26 | 0.00 | 0.26 | 0.00 | 0.00 | 0.00 | 0.00 |
| AGRICULTURAL IRR. | 43.33 | 106.28 | 149.61 | 0.00 | 0.00 | 0.00 | 0.00 |
| POWER GENERATION S-S | 0.25 | 0.00 | 0.25 | 0.00 | 8.61 | 8.61 | 0.00 |
| MISCELLANEOUS | 2.53 | 0.00 | 2.53 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 66.68 | 106.28 | 172.96 | 0.00 | 8.61 | 8.61 | 0.00 |
| TOTAL GROUND | | 66.68 | | | | | |
| TOTAL SURFACE | | 114.89 | | | | | |
| COUNTY TOTAL | | 181.57 | | | | | |

(1) INCLUDES 3.05 Mgal/d of MARGINAL GROUND WATER USED IN R/O or DILUTED FOR PUBLIC SUPPLY USE.

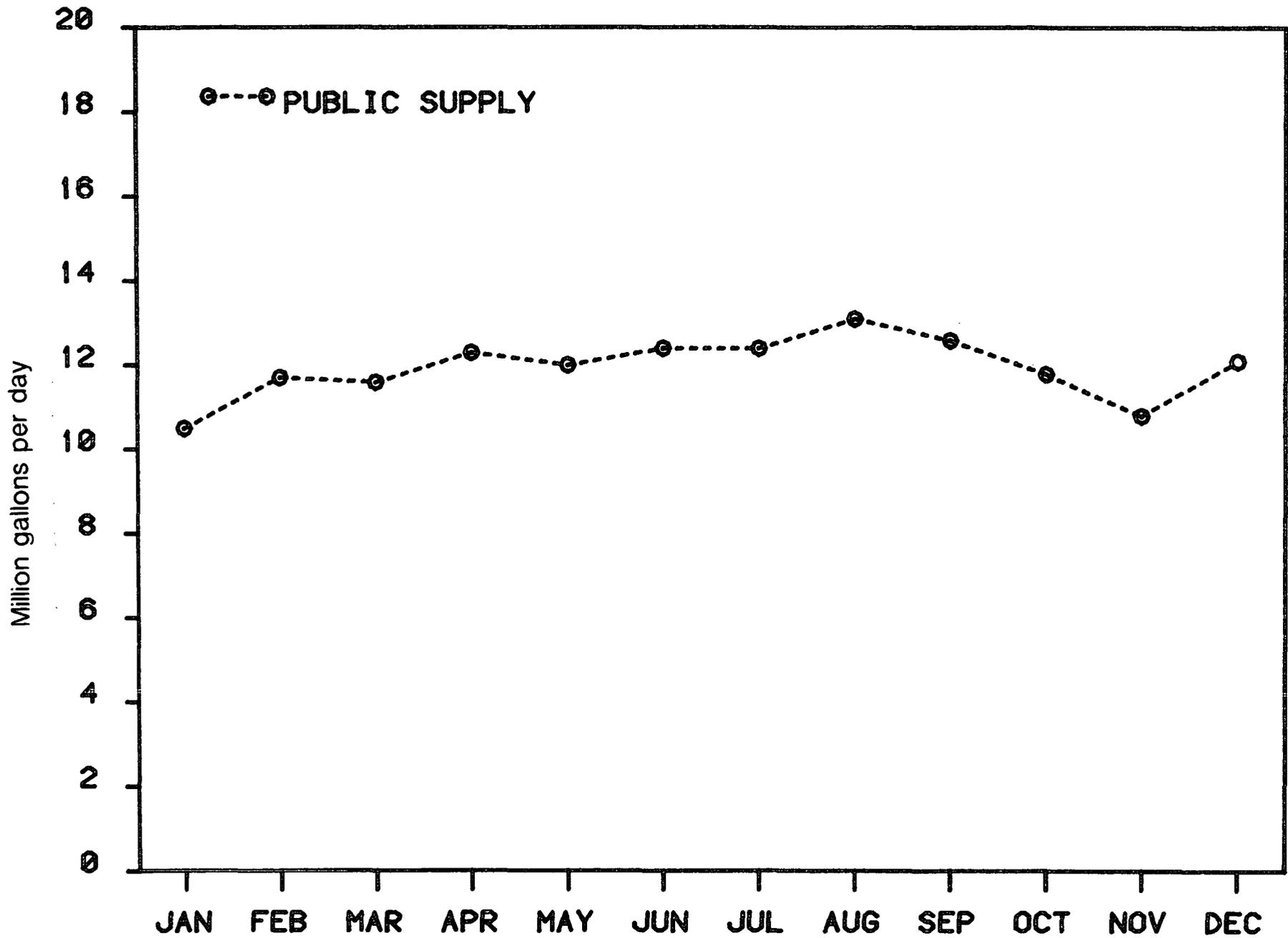


FIGURE A-9. MONTHLY FRESH WATER USE IN INDIAN R. COUNTY: 1987

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

1987 INDIVIDUAL WATER USERS IN INDIAN RIVER COUNTY

| USER UTILITY/FACILITY | USE TYPE | POPULATION SERVED | WITHDRAWAL(MGD) | | WITHDRAWAL SOURCE |
|--------------------------------|---------------|----------------------|-----------------|---------|------------------------------|
| | | | GROUND | SURFACE | |
| BENT PINES UTILITIES | PUBLIC SUPPLY | 400 | 0.029 | 0.000 | SURFICIAL AQF. |
| GDU - VERO HIGHLANDS/SHORES | PUBLIC SUPPLY | 2,328 | 0.000 | 0.000 | INDIAN RIVER CO. UTILITIES |
| GDU - SEBASTIAN HIGHLANDS | PUBLIC SUPPLY | 2,156 | 0.244 | 0.000 | FLORIDAN AQF. |
| HERITAGE VILLAGE | PUBLIC SUPPLY | 654 | 0.065 | 0.000 | FLORIDAN AQF. (R/O) |
| INDIAN RIVER COUNTY UTILITIES | PUBLIC SUPPLY | 15,500 | 1.613 | 0.000 | FLORIDAN AQF. (R/O) |
| LAKWOOD VILLAGE | PUBLIC SUPPLY | 1,095 | 0.106 | 0.000 | SURFICIAL AQF. |
| MARSH ISLAND UTILITIES | PUBLIC SUPPLY | 88 | 0.012 | 0.000 | FLORIDAN AQF. (R/O) |
| NORTH BEACH UTILITIES | PUBLIC SUPPLY | 984 | 0.270 | 0.000 | FLORIDAN AQF. (R/O) |
| PELICAN POINTE UTILITIES | PUBLIC SUPPLY | 370 | 0.032 | 0.000 | FLORIDAN AQF. |
| VERO BEACH - CITY OF | PUBLIC SUPPLY | 23,500 | 9.392 | 0.000 | SURFICIAL & FLORIDAN AQF. |
| VILLAGE GREEN MHP | PUBLIC SUPPLY | 1,432 | 0.172 | 0.000 | FLORIDAN AQF. (R/O) |
| WHISPERING PALMS MHP | PUBLIC SUPPLY | 700 | 0.042 | 0.000 | FLORIDAN AQF. (R/O) |
| HERCULES INC. | INDUSTRIAL | | 0.110 | 0.000 | SURFICIAL AQF. |
| INDIAN RIVER CORRECTIONAL FAC. | INSTITUTIONAL | | 0.033 | 0.000 | SURFICIAL AQF. |
| OCEAN SPRAY PROCESSING PLANT | INDUSTRIAL | | 0.089 | 0.000 | SURFICIAL & FLORIDAN AQF. |
| SEBASTIAN MEDICAL CENTER | INSTITUTIONAL | | 0.031 | 0.000 | SURFICIAL AQF. |
| VERO BEACH MUN. POWER PLANT | POWER GEN. | | 0.248 | 8.613 | FLORIDAN AQF. & INDIAN RIVER |

TABLE A-9. INDIAN RIVER COUNTY ACREAGE AND WATER USE BY CROP FOR 1987

| | TOTAL ACRES | | WATER USE IN MGD | | | |
|----------------------------------|-------------|-----------|------------------|---------|-----------|--------|
| | FARMED | IRRIGATED | GROUND | SURFACE | RECLAIMED | TOTAL |
| VEGETABLE CROPS | | | | | | |
| CABBAGE | 150 | 150 | 0.16 | 0.00 | 0.00 | 0.16 |
| CARROTS | 300 | 300 | 0.30 | 0.00 | 0.00 | 0.30 |
| CUCUMBERS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| PEPPERS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| POTATOES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOMATOES | 10 | 10 | 0.01 | 0.00 | 0.00 | 0.01 |
| SWEET CORN | 650 | 650 | 0.43 | 0.43 | 0.00 | 0.86 |
| WATERCRESS | 150 | 150 | 1.67 | 0.00 | 0.00 | 1.67 |
| MISC. VEGETABLES | 1,200 | 1,200 | 0.60 | 0.61 | 0.00 | 1.21 |
| FRUIT CROPS | | | | | | |
| BLUEBERRIES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| CITRUS | 64,302 | 61,688 | 26.83 | 81.02 | 0.00 | 107.85 |
| GRAPES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| PEACHES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| PECANS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STRAWBERRIES | 40 | 40 | 0.08 | 0.00 | 0.00 | 0.08 |
| WATERMELLONS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISC. FRUIT | 100 | 100 | 0.10 | 0.00 | 0.00 | 0.10 |
| FIELD CROPS | | | | | | |
| FIELD CORN | 7,100 | 7,100 | 0.00 | 11.58 | 0.00 | 11.58 |
| PEANUTS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| RICE | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SORGHUM | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SOYBEANS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SUGAR CANE | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOBACCO | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| WHEAT | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISC. GRAINS | 300 | 300 | 0.17 | 0.17 | 0.00 | 0.34 |
| ORNAMENTALS & GRASSES | | | | | | |
| FERNS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| FLOWERS & FOLIAGE | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| WOODY ORNAMENTALS | 40 | 40 | 0.00 | 0.37 | 0.00 | 0.37 |
| IMPROVED PASTURE | 62,208 | 22,747 | 9.30 | 9.31 | 0.00 | 18.61 |
| SOD | 1,000 | 1,000 | 1.15 | 1.73 | 0.00 | 2.88 |
| TURF GRASS (GOLF) | 1,637 | 1,276 | 2.13 | 1.05 | 0.00 | 3.18 |
| TURF GRASS (OTHER) | 54 | 54 | 0.11 | 0.01 | 0.00 | 0.12 |
| MISC. AGRICULTURAL | | | | | | |
| LIVESTOCK | 0 | 0 | 0.22 | 0.00 | 0.00 | 0.22 |
| FISH FARMING | 0 | 0 | 0.07 | 0.00 | 0.00 | 0.07 |
| | 139,241 | 96,805 | 43.33 | 106.28 | 0.00 | 149.61 |
| SPRINKLER ACREAGE | 2,085 | 96,805 | | | | |
| LOW PRESSURE ACREAGE | 26,110 | | | | | |
| FLOOD ACREAGE | 68,610 | | | | | |

LAKE COUNTY DATA - 1987

TOTAL POPULATION 137,138
 TOTAL LAND AREA 1,163 SQ. MILES

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT'S PORTION :

POPULATION

TOTAL 135,767 (1)
 PUBLIC SUPPLY 91,493
 SELF-SUPPLIED 44,274
 PER CAPITA 193

LAND AREA (ACRES)

TOTAL AREA 677,760 1,059 SQ. MILES
 FARMED 91,431
 IRRIGATED 40,845

1987 WATER WITHDRAWALS (Mgal/d) by CATEGORY

| | FRESH WATER | | | SALINE WATER | | | REUSE |
|----------------------|-------------|---------|--------|--------------|---------|--------|-------|
| | GROUND | SURFACE | TOTALS | GROUND | SURFACE | TOTALS | |
| PUBLIC SUPPLY | 17.66 | 0.00 | 17.66 | 0.00 | 0.00 | 0.00 | 0.00 |
| DOMESTIC SELF-SUPPLY | 8.56 | 0.00 | 8.56 | 0.00 | 0.00 | 0.00 | 0.00 |
| COM/IND. SELF-SUPPLY | 11.68 | 0.00 | 11.68 | 0.00 | 0.00 | 0.00 | 0.00 |
| AGRICULTURAL IRR. | 51.56 | 12.70 | 64.26 | 0.00 | 0.00 | 0.00 | 3.07 |
| POWER GENERATION S-S | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISCELLANEOUS | 0.49 | 0.00 | 0.49 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 89.95 | 12.70 | 102.65 | 0.00 | 0.00 | 0.00 | 3.07 |
| TOTAL GROUND | | 89.95 | | | | | |
| TOTAL SURFACE | | 12.70 | | | | | |
| COUNTY TOTAL (2) | | 102.65 | | | | | |

(1) ESTIMATED FROM STIEGLITZ and SORENSEN, 1988; TABLE 9.

(2) REUSE AMOUNTS ARE NOT INCLUDED IN TOTAL.

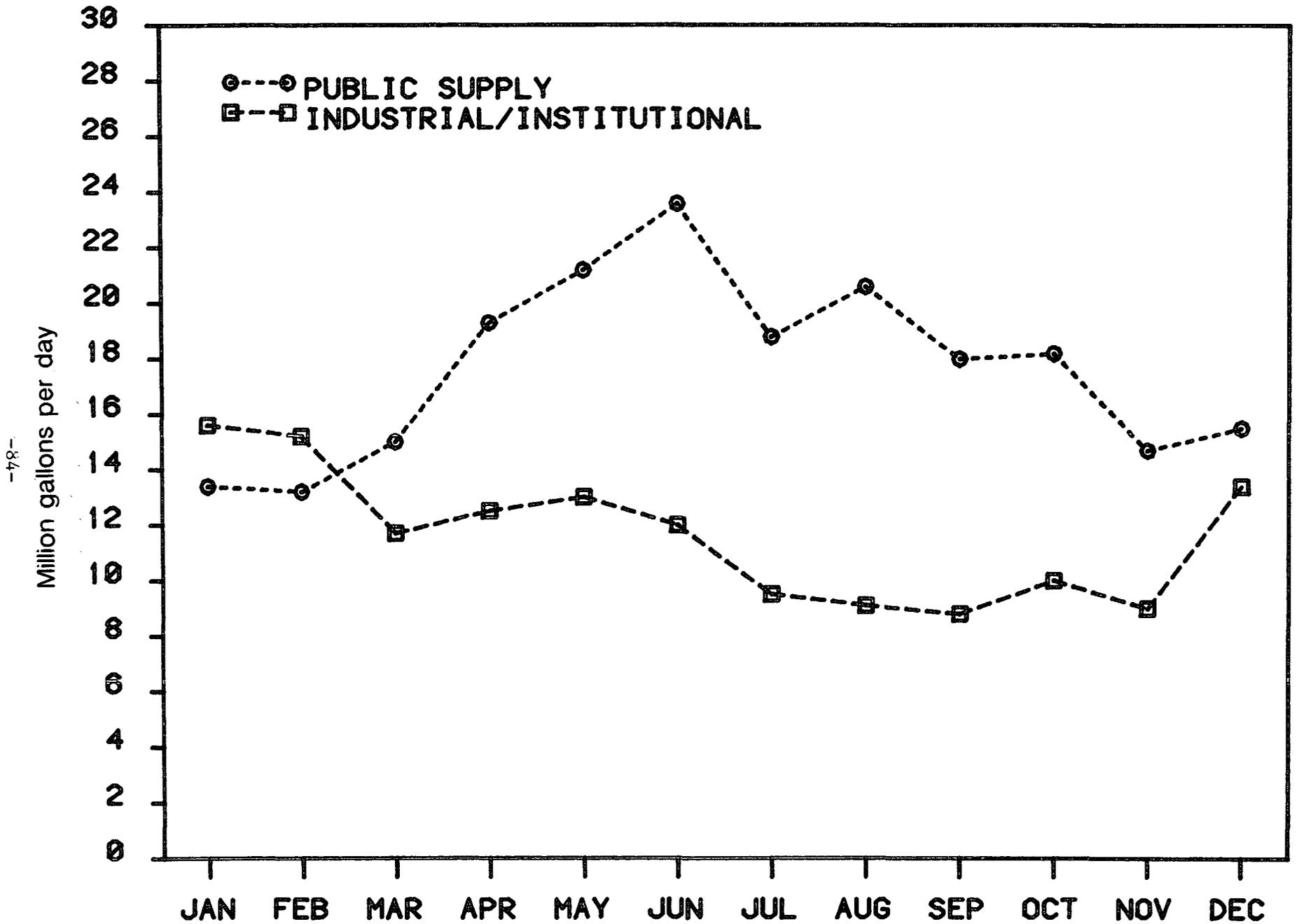


FIGURE A-10. MONTHLY FRESH WATER USE IN LAKE COUNTY: 1987

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

1987 INDIVIDUAL WATER USERS IN LAKE COUNTY

| USER UTILITY/FACILITY | USE TYPE | POPULATION SERVED | WITHDRAWAL(MGD) | | WITHDRAWAL SOURCE |
|---------------------------------|---------------|----------------------|-----------------|---------|----------------------|
| | | | GROUND | SURFACE | |
| ASTOR/ASTOR PARK WATER ASSOC. | PUBLIC SUPPLY | 3,000 | 0.243 | 0.000 | FLORIDAN AQF. |
| BRITTANY ESTATES | PUBLIC SUPPLY | 213 | 0.074 | 0.000 | FLORIDAN AQF. |
| CLERMONT - CITY OF | PUBLIC SUPPLY | 6,379 | 1.299 | 0.000 | FLORIDAN AQF. |
| DEANZA - MID FLORIDA LAKES | PUBLIC SUPPLY | 2,725 | 0.652 | 0.000 | FLORIDAN AQF. |
| EUSTIS - CITY OF | PUBLIC SUPPLY | 17,250 | 2.967 | 0.000 | FLORIDAN AQF. |
| FRUITLAND PARK - CITY OF | PUBLIC SUPPLY | 2,685 | 0.413 | 0.000 | FLORIDAN AQF. |
| GROVELAND - CITY OF | PUBLIC SUPPLY | 2,143 | 0.279 | 0.000 | FLORIDAN AQF. |
| HAWTHORNE S/D | PUBLIC SUPPLY | 2,780 | 0.430 | 0.000 | FLORIDAN AQF. |
| HOWEY-IN-THE-HILLS - TOWN OF | PUBLIC SUPPLY | 664 | 0.322 | 0.000 | FLORIDAN AQF. |
| LAKE COUNTY UTILITIES | PUBLIC SUPPLY | 550 | 0.091 | 0.000 | FLORIDAN AQF. |
| LAKEVIEW TERRACE CENTER | PUBLIC SUPPLY | 300 | 0.039 | 0.000 | FLORIDAN AQF. |
| LEESBURG - CITY OF | PUBLIC SUPPLY | 20,358 | 3.856 | 0.000 | FLORIDAN AQF. |
| MASCOTTE - TOWN OF | PUBLIC SUPPLY | 1,770 | 0.181 | 0.000 | FLORIDAN AQF. |
| MINNEOLA - CITY OF | PUBLIC SUPPLY | 1,232 | 0.183 | 0.000 | FLORIDAN AQF. |
| MOLAKAI PARK WATER SYSTEM | PUBLIC SUPPLY | 550 | 0.039 | 0.000 | FLORIDAN AQF. |
| MONTVERDE - TOWN OF | PUBLIC SUPPLY | 464 | 0.115 | 0.000 | FLORIDAN AQF. |
| MOUNT DORA - CITY OF | PUBLIC SUPPLY | 9,480 | 2.477 | 0.000 | FLORIDAN AQF. |
| ORANGE BLOSSOM GARDENS MHP | PUBLIC SUPPLY | 4,130 | 1.041 | 0.000 | FLORIDAN AQF. |
| SILVER LAKE ESTATES UTILITY | PUBLIC SUPPLY | 948 | 0.458 | 0.000 | FLORIDAN AQF. |
| SOUTH UMATILLA W.A. | PUBLIC SUPPLY | 375 | 0.056 | 0.000 | FLORIDAN AQF. |
| SOUTHERN STATES UTILITIES | PUBLIC SUPPLY | 2,343 | 0.216 | 0.000 | FLORIDAN AQF. |
| SUNLAKE ESTATES | PUBLIC SUPPLY | 593 | 0.322 | 0.000 | FLORIDAN AQF. |
| TRAVARES - CITY OF | PUBLIC SUPPLY | 7,137 | 1.149 | 0.000 | FLORIDAN AQF. |
| UMATILLA - CITY OF | PUBLIC SUPPLY | 2,405 | 0.482 | 0.000 | FLORIDAN AQF. |
| UTILITIES INC. OF FLORIDA | PUBLIC SUPPLY | 308 | 0.089 | 0.000 | FLORIDAN AQF. |
| WATER OAK ESTATES | PUBLIC SUPPLY | 711 | 0.183 | 0.000 | FLORIDAN AQF. |
| B & W CANNING - GROVELAND PLANT | INDUSTRIAL | | 0.618 | 0.000 | FLORIDAN AQF. |
| COCA COLA - LEESBURG PLANT | INDUSTRIAL | | 1.447 | 0.000 | FLORIDAN AQF. |
| EUSTIS SAND CO. | INDUSTRIAL | | 1.183 | 0.000 | FLORIDAN AQF. |
| FLORIDA CHRUSED STONE - TULLEY | INDUSTRIAL | | 2.804 | 0.000 | FLORIDAN AQF. |
| FLORIDA ROCK - LAKE CO. MINE | INDUSTRIAL | | 0.706 | 0.000 | FLORIDAN AQF. |
| GOLDEM GEM - UMATILLA PLANT | INDUSTRIAL | | 3.096 | 0.000 | FLORIDAN AQF. |
| GROVELAND ACADAMY | INSTITUTIONAL | | 0.010 | 0.000 | FLORIDAN AQF. |
| LAKE CORRECTION FAC. | INSTITUTIONAL | | 0.105 | 0.000 | FLORIDAN AQF. |
| SILVER SAND CO. - CLERMONT MINE | INDUSTRIAL | | 0.946 | 0.000 | FLORIDAN AQF. |
| SILVER SPRINGS CITRUS PLANT | INDUSTRIAL | | 0.606 | 0.000 | FLORIDAN AQF. |
| SUNDOR BRANDS PROC. CO. | INDUSTRIAL | | 0.160 | 0.000 | FLORIDAN AQF. |

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

TABLE A-10 WATER USE BY CROP FOR LAKE COUNTY - 1987

| | TOTAL ACRES | | WATER USE IN MGD | | | |
|----------------------------------|-------------|-----------|------------------|---------|-----------|-------|
| | FARMED | IRRIGATED | GROUND | SURFACE | RECLAIMED | TOTAL |
| VEGETABLE CROPS | | | | | | |
| CABBAGE | 200 | 200 | 0.10 | 0.11 | 0.00 | 0.21 |
| CARROTS | 2,400 | 2,400 | 1.37 | 1.37 | 0.00 | 2.74 |
| CUCUMBERS | 200 | 200 | 0.09 | 0.10 | 0.00 | 0.19 |
| PEPPERS | 50 | 50 | 0.06 | 0.00 | 0.00 | 0.06 |
| POTATOES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOMATOES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SWEET CORN | 5,000 | 5,000 | 3.95 | 2.64 | 0.00 | 6.59 |
| WATERCRESS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISC. VEGETABLES | 1,800 | 1,800 | 1.13 | 0.75 | 0.00 | 1.88 |
| FRUIT CROPS | | | | | | |
| BLUEBERRIES | 55 | 55 | 0.06 | 0.00 | 0.00 | 0.06 |
| CITRUS | 25,500 | 25,500 | 32.96 | 4.92 | 0.59 | 37.88 |
| GRAPES | 100 | 100 | 0.12 | 0.00 | 0.00 | 0.12 |
| PEACHES | 10 | 10 | 0.01 | 0.00 | 0.00 | 0.01 |
| PECANS | 80 | 80 | 0.13 | 0.00 | 0.00 | 0.13 |
| STRAWBERRIES | 5 | 5 | 0.01 | 0.00 | 0.00 | 0.01 |
| WATERMELLONS | 500 | 500 | 0.34 | 0.00 | 0.00 | 0.34 |
| MISC. FRUIT | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| FIELD CROPS | | | | | | |
| FIELD CORN | 2,000 | 500 | 0.39 | 0.39 | 0.00 | 0.78 |
| PEANUTS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| RICE | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SORGHUM | 300 | 150 | 0.07 | 0.07 | 0.00 | 0.14 |
| SOYBEANS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SUGAR CANE | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOBACCO | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| WHEAT | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISC. GRAINS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| ORNAMENTALS & GRASSES | | | | | | |
| FERNS | 500 | 500 | 2.17 | 0.11 | 0.00 | 2.28 |
| FLOWERS & FOLIAGE | 120 | 120 | 0.43 | 0.00 | 0.00 | 0.43 |
| WOODY ORNAMENTALS | 650 | 650 | 5.68 | 0.30 | 0.00 | 5.98 |
| IMPROVED PASTURE | 50,000 | 1,886 | 0.70 | 0.03 | 2.48 | 0.73 |
| SOD | 250 | 250 | 0.11 | 0.65 | 0.00 | 0.76 |
| TURF GRASS (GOLF) | 1,591 | 769 | 1.17 | 0.96 | 0.00 | 2.13 |
| TURF GRASS (OTHER) | 120 | 120 | 0.26 | 0.05 | 0.00 | 0.31 |
| MISC. AGRICULTURAL | | | | | | |
| LIVESTOCK | 0 | 0 | 0.25 | 0.25 | 0.00 | 0.50 |
| FISH FARMING | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOTAL | | | | | | |
| | 91,431 | 40,845 | 51.56 | 12.70 | 3.07 | 64.26 |
| SPRINKLER ACREAGE | | | | | | |
| | 18,280 | 40,845 | | | | |
| LOW PRESSURE ACREAGE | | | | | | |
| | 13,065 | | | | | |
| FLOOD ACREAGE | | | | | | |
| | 9,500 | | | | | |

MARION COUNTY DATA - 1987

TOTAL POPULATION 174,614
 TOTAL LAND AREA 1,652 SQ. MILES

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT'S PORTION :

POPULATION

TOTAL 143,707 (1)
 PUBLIC SUPPLY 69,730
 SELF-SUPPLIED 73,977
 PER CAPITA 160 (2)

LAND AREA (ACRES)

TOTAL AREA 764,160 1,194 SQ. MILES
 FARMED 72,084
 IRRIGATED 5,688

1987 WATER WITHDRAWALS (Mgal/d) by CATEGORY

| | FRESH WATER | | | SALINE WATER | | | REUSE |
|----------------------|-------------|---------|--------|--------------|---------|--------|-------|
| | GROUND | SURFACE | TOTALS | GROUND | SURFACE | TOTALS | |
| PUBLIC SUPPLY | 10.90 | 0.00 | 10.90 | 0.00 | 0.00 | 0.00 | 0.00 |
| DOMESTIC SELF-SUPPLY | 11.84 | 0.00 | 11.84 | 0.00 | 0.00 | 0.00 | 0.00 |
| COM/IND. SELF-SUPPLY | 0.83 | 0.00 | 0.83 | 0.00 | 0.00 | 0.00 | 0.00 |
| AGRICULTURAL IRR. | 7.07 | 1.42 | 8.49 | 0.00 | 0.00 | 0.00 | 0.24 |
| POWER GENERATION S-S | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISCELLANEOUS | 1.71 | 0.00 | 1.71 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 32.35 | 1.42 | 33.77 | 0.00 | 0.00 | 0.00 | 0.24 |
| TOTAL GROUND | 32.35 | | | | | | |
| TOTAL SURFACE | | 1.42 | | | | | |
| COUNTY TOTAL (3) | | 33.77 | | | | | |

- (1) ESTIMATED FROM STIEGLITZ and SORENSEN, 1988; TABLE 9.
- (2) ESTIMATED USING THE TOTAL PUBLIC SUPPLY PUMPAGE AND POPULATION SERVED FOR THE SJRWMD and SWFWMD PORTIONS COMBINED. THE SWFWMD PORTION INCLUDES 2.31 Mgal/d of PUBLIC SUPPLY PUMPAGE and 12,803 PUBLIC SUPPLY POPULATION SERVED IN 1987 (STIEGLITZ and SORENSEN, 1989).
- (3) REUSE AMOUNTS ARE NOT INCLUDED IN TOTAL.

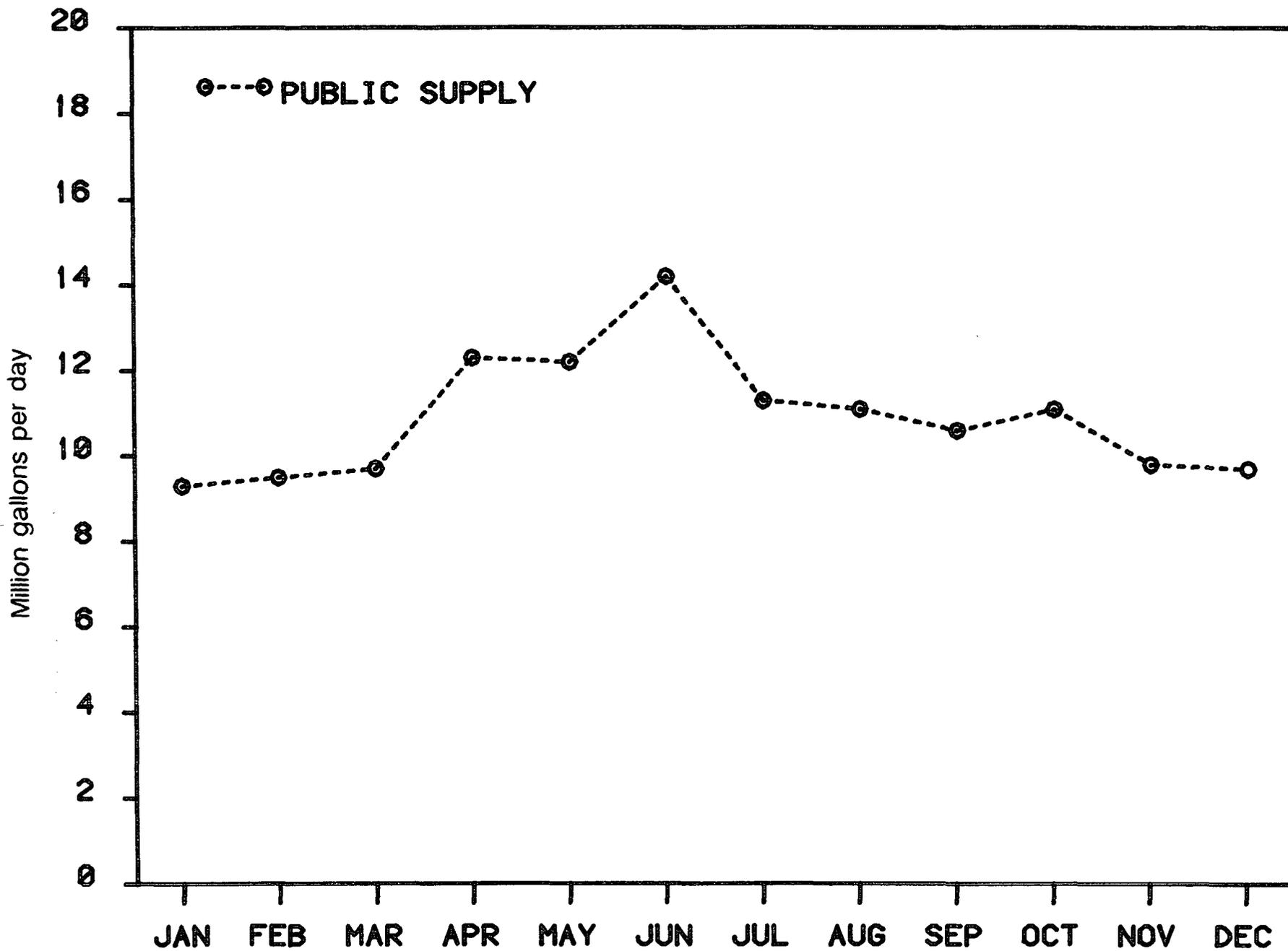


FIGURE A-11. MONTHLY FRESH WATER USE IN MARION COUNTY: 1987

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

1987 INDIVIDUAL WATER USERS IN MARION COUNTY

| USER UTILITY/FACILITY | USE TYPE | POPULATION SERVED | WITHDRAWAL (MGD) | | WITHDRAWAL SOURCE |
|--------------------------------|---------------|----------------------|------------------|---------|----------------------|
| | | | GROUND | SURFACE | |
| BELLEVIEW - CITY OF | PUBLIC SUPPLY | 4,536 | 0.630 | 0.000 | FLORIDAN AQF. |
| GDU - SILVER SPRINGS SHORES | PUBLIC SUPPLY | 9,405 | 1.361 | 0.000 | FLORIDAN AQF. |
| MACO DEVELOPMENT CO. | PUBLIC SUPPLY | 530 | 0.068 | 0.000 | FLORIDAN AQF. |
| MARION UTILITIES | PUBLIC SUPPLY | 2,968 | 0.310 | 0.000 | FLORIDAN AQF. |
| McINTOSH - CITY OF | PUBLIC SUPPLY | 509 | 0.072 | 0.000 | FLORIDAN AQF. |
| OCALA - CITY OF | PUBLIC SUPPLY | 44,267 | 7.583 | 0.000 | FLORIDAN AQF. |
| OCALA EAST VILLAS | PUBLIC SUPPLY | 580 | 0.096 | 0.000 | FLORIDAN AQF. |
| OCALA OAKS UTILITIES | PUBLIC SUPPLY | 1,790 | 0.225 | 0.000 | FLORIDAN AQF. |
| SUNSHINE UTILITIES | PUBLIC SUPPLY | 3,020 | 0.374 | 0.000 | FLORIDAN AQF. |
| SOUTHERN STATES UTILITIES | PUBLIC SUPPLY | 1,275 | 0.132 | 0.000 | FLORIDAN AQF. |
| TRADEWINDS UTILITIES | PUBLIC SUPPLY | 850 | 0.052 | 0.000 | FLORIDAN AQF. |
| CERTIFIED GROCERS INC. | INDUSTRIAL | | 0.038 | 0.000 | FLORIDAN AQF. |
| FLORIDA ROCK - MARION MINE | INDUSTRIAL | | 0.481 | 0.000 | FLORIDAN AQF. |
| GOLDEN FLAKE INC - OCALA PLANT | INDUSTRIAL | | N/A | 0.000 | FLORIDAN AQF. |
| HCA - GRANT CENTER HOSPITAL | INSTITUTIONAL | | 0.023 | 0.000 | FLORIDAN AQF. |
| H.S. CAMP & SONS INC. | INDUSTRIAL | | 0.005 | 0.000 | FLORIDAN AQF. |
| MARION CORRECTIONAL FAC. | INSTITUTIONAL | | 0.241 | 0.000 | FLORIDAN AQF. |
| SILVER SPRINGS INC. | INSTITUTIONAL | | 0.036 | 0.000 | FLORIDAN AQF. |

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

TABLE A-11. WATER USE BY CROP FOR MARION COUNTY - 1987

| | TOTAL ACRES | | WATER USE IN MGD | | | TOTAL |
|-----------------------|-------------|-----------|------------------|---------|-----------|-------|
| | FARMED | IRRIGATED | GROUND | SURFACE | RECLAIMED | |
| VEGETABLE CROPS | | | | | | |
| CABBAGE | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| CARROTS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| CUCUMBERS | 70 | 70 | 0.05 | 0.00 | 0.00 | 0.05 |
| PEPPERS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| POTATOES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOMATOES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SWEET CORN | 50 | 50 | 0.04 | 0.00 | 0.00 | 0.04 |
| WATERCRESS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISC. VEGETABLES | 1,700 | 940 | 0.71 | 0.00 | 0.00 | 0.71 |
| FRUIT CROPS | | | | | | |
| BLUEBERRIES | 60 | 60 | 0.07 | 0.00 | 0.00 | 0.07 |
| CITRUS | 310 | 310 | 0.45 | 0.03 | 0.00 | 0.48 |
| GRAPES | 70 | 60 | 0.07 | 0.00 | 0.00 | 0.07 |
| PEACHES | 5 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| PECANS | 10 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STRAWBERRIES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| WATERMELLONS | 1,450 | 1,450 | 0.93 | 0.00 | 0.00 | 0.93 |
| MISC. FRUIT | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| FIELD CROPS | | | | | | |
| FIELD CORN | 3,000 | 350 | 0.40 | 0.29 | 0.00 | 0.69 |
| PEANUTS | 2,000 | 134 | 0.10 | 0.00 | 0.00 | 0.10 |
| RICE | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SORGHUM | 300 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SOYBEANS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SUGAR CANE | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOBACCO | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| WHEAT | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISC. GRAINS | 1,500 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| ORNAMENTALS & GRASSES | | | | | | |
| FERNS | 20 | 15 | 0.05 | 0.02 | 0.00 | 0.07 |
| FLOWERS & FOLIAGE | 14 | 14 | 0.06 | 0.00 | 0.00 | 0.06 |
| WOODY ORNAMENTALS | 52 | 52 | 0.40 | 0.09 | 0.00 | 0.49 |
| IMPROVED PASTURE | 59,230 | 940 | 0.46 | 0.31 | 0.00 | 0.77 |
| SOD | 660 | 660 | 1.43 | 0.00 | 0.00 | 1.43 |
| TURF GRASS (GOLF) | 1,500 | 500 | 0.81 | 0.58 | 0.24 | 1.39 |
| TURF GRASS (OTHER) | 83 | 83 | 0.18 | 0.00 | 0.00 | 0.18 |
| MISC. AGRICULTURAL | | | | | | |
| LIVESTOCK | 0 | 0 | 0.86 | 0.10 | 0.00 | 0.96 |
| FISH FARMING | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 72,084 | 5,688 | 7.07 | 1.42 | 0.24 | 8.49 |
| SPRINKLER ACREAGE | 5,283 | 5,688 | | | | |
| LOW PRESSURE ACREAGE | 55 | | | | | |
| FLOOD ACREAGE | 350 | | | | | |

NASSAU COUNTY DATA - 1987

TOTAL POPULATION 43,994
 TOTAL LAND AREA 671 SQ. MILES

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT'S PORTION :

POPULATION
 TOTAL 43,994
 PUBLIC SUPPLY 20,735
 SELF-SUPPLIED 23,259
 PER CAPITA 171

LAND AREA (ACRES)
 TOTAL AREA 429,440 671 SQ. MILES
 FARMED 7,406
 IRRIGATED 808

1987 WATER WITHDRAWALS (Mgal/d) by CATEGORY

| | FRESH WATER | | | SALINE WATER | | | REUSE |
|----------------------|-------------|---------|--------|--------------|---------|--------|-------|
| | GROUND | SURFACE | TOTALS | GROUND | SURFACE | TOTALS | |
| PUBLIC SUPPLY | 3.54 | 0.00 | 3.54 | 0.00 | 0.00 | 0.00 | 0.00 |
| DOMESTIC SELF-SUPPLY | 3.98 | 0.00 | 3.98 | 0.00 | 0.00 | 0.00 | 0.00 |
| COM/IND. SELF-SUPPLY | 33.93 | 0.00 | 33.93 | 0.00 | 1.41 | 1.41 | 0.00 |
| AGRICULTURAL IRR. | 2.19 | 0.96 | 3.15 | 0.00 | 0.00 | 0.00 | 0.58 |
| POWER GENERATION S-S | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISCELLANEOUS | 0.01 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 43.65 | 0.96 | 44.61 | 0.00 | 1.41 | 1.41 | 0.58 |
| TOTAL GROUND | | 43.65 | | | | | |
| TOTAL SURFACE | | 2.37 | | | | | |
| COUNTY TOTAL (1) | | 46.02 | | | | | |

(1) REUSE AMOUNTS ARE NOT INCLUDED IN TOTAL.

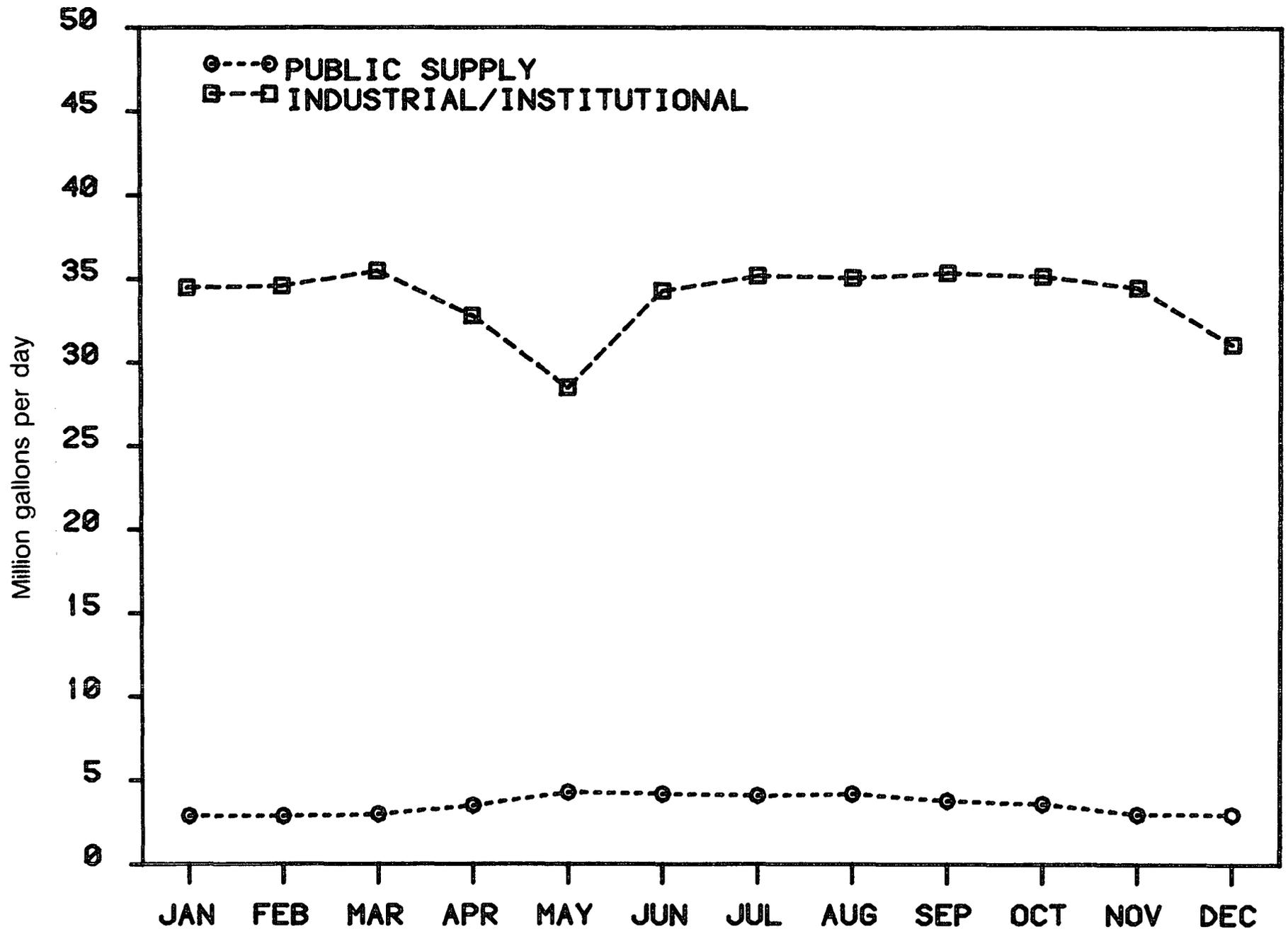


FIGURE A-12. MONTHLY FRESH WATER USE IN NASSAU COUNTY: 1987

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

1987 INDIVIDUAL WATER USERS IN NASSAU COUNTY

| USER UTILITY/FACILITY | USE TYPE | POPULATION SERVED | WITHDRAWAL(MGD) | | WITHDRAWAL SOURCE |
|----------------------------------|---------------|----------------------|-----------------|---------|------------------------------|
| | | | GROUND | SURFACE | |
| CALLAHAN - TOWN OF | PUBLIC SUPPLY | 1,136 | 0.184 | 0.000 | FLORIDAN AQF. |
| EASTWOOD OAKS | PUBLIC SUPPLY | 365 | 0.051 | 0.000 | FLORIDAN AQF. |
| FLA. PUBLIC UT.- FERNANDINA BCH. | PUBLIC SUPPLY | 11,928 | 2.572 | 0.000 | FLORIDAN AQF. |
| HILLIARD - TOWN OF | PUBLIC SUPPLY | 2,175 | 0.184 | 0.000 | FLORIDAN AQF. |
| MARSH COVE APT. | PUBLIC SUPPLY | 200 | 0.033 | 0.000 | FLORIDAN AQF. |
| SOUTHERN STATES UT.(AMELIA IS.) | PUBLIC SUPPLY | 4,931 | 0.517 | 0.000 | FLORIDAN AQF. |
| CONTAINER CORP. OF AMERICA | INDUSTRIAL | | 14.745 | 0.000 | FLORIDAN AQF. |
| FLORIDA DOT - I95 WELCOME CEN. | INSTITUTIONAL | | 0.030 | 0.000 | FLORIDAN AQF. |
| ITT RAYONIER INC. | INDUSTRIAL | | 19.137 | 1.411 | FLORIDAN AQF. & AMELIA RIVER |
| NASSAU CORRECTIONAL FAC. | INSTITUTIONAL | | 0.015 | 0.000 | FLORIDAN AQF. |
| TERMINAL PAPER CO. | INDUSTRIAL | | 0.006 | 0.000 | FLORIDAN AQF. |

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

TABLE A-12. WATER USE BY CROP FOR NASSAU COUNTY - 1987

| | TOTAL ACRES | | WATER USE IN MGD | | | TOTAL |
|-----------------------|-------------|-----------|------------------|---------|-----------|-------|
| | FARMED | IRRIGATED | GROUND | SURFACE | RECLAIMED | |
| VEGETABLE CROPS | | | | | | |
| CABBAGE | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| CARROTS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| CUCUMBERS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| PEPPERS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| POTATOES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOMATOES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SWEET CORN | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| WATERCRESS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISC. VEGETABLES | 100 | 50 | 0.04 | 0.00 | 0.00 | 0.04 |
| FRUIT CROPS | | | | | | |
| BLUEBERRIES | 30 | 15 | 0.02 | 0.00 | 0.00 | 0.02 |
| CITRUS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| GRAPES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| PEACHES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| PECANS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STRAWBERRIES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| WATERMELLONS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISC. FRUIT | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| FIELD CROPS | | | | | | |
| FIELD CORN | 500 | 50 | 0.06 | 0.00 | 0.00 | 0.06 |
| PEANUTS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| RICE | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SORGHUM | 1,000 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SOYBEANS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SUGAR CANE | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOBACCO | 40 | 40 | 0.04 | 0.00 | 0.00 | 0.04 |
| WHEAT | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISC. GRAINS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| ORNAMENTALS & GRASSES | | | | | | |
| FERNS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| FLOWERS & FOLIAGE | 20 | 20 | 0.08 | 0.00 | 0.00 | 0.08 |
| WOODY ORNAMENTALS | 3 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| IMPROVED PASTURE | 5,000 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SOD | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| TURF GRASS (GOLF) | 645 | 565 | 0.97 | 0.16 | 0.58 | 1.13 |
| TURF GRASS (OTHER) | 68 | 68 | 0.15 | 0.00 | 0.00 | 0.15 |
| MISC. AGRICULTURAL | | | | | | |
| LIVESTOCK | 0 | 0 | 0.81 | 0.80 | 0.00 | 1.61 |
| FISH FARMING | 0 | 0 | 0.02 | 0.00 | 0.00 | 0.02 |
| | 7,406 | 808 | 2.19 | 0.96 | 0.58 | 3.15 |
| SPRINKLER ACREAGE | 808 | 808 | | | | |
| LOW PRESSURE ACREAGE | 0 | | | | | |
| FLOOD ACREAGE | 0 | | | | | |

OKEECHOBEE COUNTY DATA - 1987

TOTAL POPULATION 27,754
 TOTAL LAND AREA 780 SQ. MILES

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT'S PORTION :

POPULATION

TOTAL 420
 PUBLIC SUPPLY 0
 SELF-SUPPLIED 420
 PER CAPITA 143 (1)

LAND AREA (ACRES)

TOTAL AREA 65,920 103 SQ. MILES
 FARMED 24,119
 IRRIGATED 6,901

1987 WATER WITHDRAWALS (Mgal/d) by CATEGORY

| | FRESH WATER | | | SALINE WATER | | | REUSE |
|----------------------|-------------|---------|--------|--------------|---------|--------|-------|
| | GROUND | SURFACE | TOTALS | GROUND | SURFACE | TOTALS | |
| PUBLIC SUPPLY | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| DOMESTIC SELF-SUPPLY | 0.06 | 0.00 | 0.06 | 0.00 | 0.00 | 0.00 | 0.00 |
| COM/IND. SELF-SUPPLY | 0.06 | 0.00 | 0.06 | 0.00 | 0.00 | 0.00 | 0.00 |
| AGRICULTURAL IRR. | 7.16 | 0.25 | 7.41 | 0.00 | 0.00 | 0.00 | 0.00 |
| POWER GENERATION S-S | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISCELLANEOUS | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 7.28 | 0.25 | 7.53 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOTAL GROUND | | 7.28 | | | | | |
| TOTAL SURFACE | | 0.25 | | | | | |
| COUNTY TOTAL | | 7.53 | | | | | |

(1) USED THE 1985 TOTAL COUNTY'S PER CAPITA (MARELLA, 1988b).

THE COMMERCIAL/INDUSTRIAL PUMPAGE IN
OKEECHOBEE COUNTY WITHIN THE
ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
FOR 1987 WAS TOO SMALL TO DEPICT.

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

1987 INDIVIDUAL WATER USERS IN OKEECHOBEE COUNTY

| USER UTILITY/FACILITY | USE TYPE | POPULATION SERVED | WITHDRAWAL(MGD) | | WITHDRAWAL SOURCE |
|---------------------------------|---------------|----------------------|-----------------|---------|----------------------|
| | | | GROUND | SURFACE | |
| FLORIDA DOT - FT.DRUM SER.PLAZA | INSTITUTIONAL | | 0.057 | 0.000 | FLORIDAN AQF. |

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

TABLE A-13. WATER USE BY CROP FOR OKEECHOBEE COUNTY - 1987

| | TOTAL ACRES | | WATER USE IN MGD | | | |
|-----------------------|-------------|-----------|------------------|---------|-----------|-------|
| | FARMED | IRRIGATED | GROUND | SURFACE | RECLAIMED | TOTAL |
| VEGETABLE CROPS | | | | | | |
| CABBAGE | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| CARROTS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| CUCUMBERS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| PEPPERS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| POTATOES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOMATOES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SWEET CORN | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| WATERCRESS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISC. VEGETABLES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| FRUIT CROPS | | | | | | |
| BLUEBERRIES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| CITRUS | 4,119 | 4,119 | 4.20 | 0.00 | 0.00 | 4.20 |
| GRAPES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| PEACHES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| PECANS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STRAWBERRIES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| WATERMELLONS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISC. FRUIT | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| FIELD CROPS | | | | | | |
| FIELD CORN | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| PEANUTS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| RICE | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SORGHUM | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SOYBEANS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SUGAR CANE | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOBACCO | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| WHEAT | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISC. GRAINS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| ORNAMENTALS & GRASSES | | | | | | |
| FERNS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| FLOWERS & FOLIAGE | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| WOODY ORNAMENTALS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| IMPROVED PASTURE | 20,000 | 2,782 | 2.28 | 0.00 | 0.00 | 2.28 |
| SOD | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| TURF GRASS (GOLF) | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| TURF GRASS (OTHER) | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISC. AGRICULTURAL | | | | | | |
| LIVESTOCK | 0 | 0 | 0.50 | 0.25 | 0.00 | 0.75 |
| FISH FARMING | 0 | 0 | 0.18 | 0.00 | 0.00 | 0.18 |
| | 24,119 | 6,901 | 7.16 | 0.25 | 0.00 | 7.41 |
| SPRINKLER ACREAGE | 0 | 6,901 | | | | |
| LOW PRESSURE ACREAGE | 4,119 | | | | | |
| FLOOD ACREAGE | 2,782 | | | | | |

ORANGE COUNTY DATA - 1987

TOTAL POPULATION 603,309
 TOTAL LAND AREA 1,003 SQ. MILES

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT'S PORTION :

POPULATION

TOTAL 488,677 (1)
 PUBLIC SUPPLY 473,892
 SELF-SUPPLIED 14,785
 PER CAPITA 198

LAND AREA (ACRES)

TOTAL AREA 476,160 744 SQ. MILES
 FARMED 78,168
 IRRIGATED 58,852

1987 WATER WITHDRAWALS (Mgal/d) by CATEGORY

| | FRESH WATER | | | SALINE WATER | | | REUSE |
|----------------------|-------------|---------|--------|--------------|---------|--------|-------|
| | GROUND | SURFACE | TOTALS | GROUND | SURFACE | TOTALS | |
| PUBLIC SUPPLY (2) | 110.90 | 0.00 | 110.90 | 0.00 | 0.00 | 0.00 | 0.00 |
| DOMESTIC SELF-SUPPLY | 2.93 | 0.00 | 2.93 | 0.00 | 0.00 | 0.00 | 0.00 |
| COM/IND. SELF-SUPPLY | 3.10 | 0.00 | 3.10 | 0.00 | 0.00 | 0.00 | 0.00 |
| AGRICULTURAL IRR. | 29.53 | 47.49 | 77.02 | 0.00 | 0.00 | 0.00 | 5.37 |
| POWER GENERATION S-S | 0.41 | 0.00 | 0.41 | 0.00 | 0.00 | 0.00 | 1.24 |
| MISCELLANEOUS | 0.84 | 0.00 | 0.84 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 147.71 | 47.49 | 195.20 | 0.00 | 0.00 | 0.00 | 6.61 |
| TOTAL GROUND | 147.71 | | | | | | |
| TOTAL SURFACE | | 47.49 | | | | | |
| COUNTY TOTAL (3) | | 195.20 | | | | | |

(1) ESTIMATED BY ORANGE COUNTY PLANNING DEPARTMENT IN 1985-86.

(2) INCLUDES 22.47 Mgal/d OF WATER WITHDRAWN IN ORANGE COUNTY FOR PUBLIC SUPPLY USE IN BREVARD COUNTY.

(3) REUSE AMOUNTS ARE NOT INCLUDED IN TOTAL.

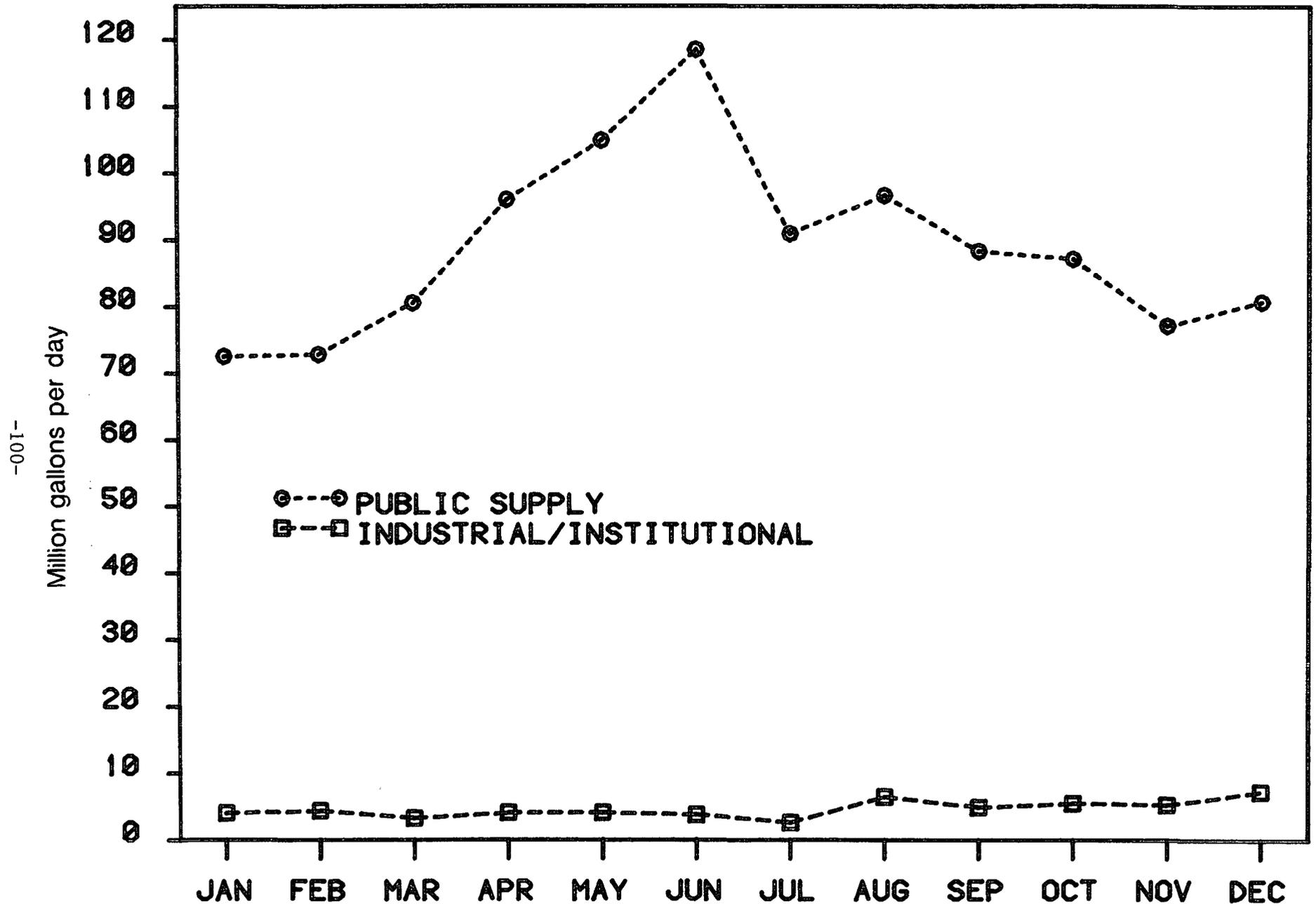


FIGURE A-13. MONTHLY FRESH WATER USE IN ORANGE COUNTY: 1987

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

1987 INDIVIDUAL WATER USERS IN ORANGE COUNTY

| USER UTILITY/FACILITY | USE TYPE | POPULATION SERVED | WITHDRAWAL(MGD) | | WITHDRAWAL SOURCE |
|---------------------------------|---------------|----------------------|-----------------|---------|--------------------------------|
| | | | GROUND | SURFACE | |
| ===== | | | | | |
| APOPKA - CITY OF | PUBLIC SUPPLY | 20,100 | 4.446 | 0.000 | FLORIDAN AQF. |
| EATONVILLE - TOWN OF | PUBLIC SUPPLY | 2,700 | 0.654 | 0.000 | FLORIDAN AQF. |
| ECON UTILITIES - WEDGEFIELD | PUBLIC SUPPLY | 854 | 0.116 | 0.000 | FLORIDAN AQF. |
| MAITLAND - CITY OF | PUBLIC SUPPLY | 9,945 | 3.188 | 0.000 | FLORIDAN AQF. |
| OAKLAND - TOWN OF | PUBLIC SUPPLY | 702 | 0.094 | 0.000 | FLORIDAN AQF. |
| OCOEE - CITY OF | PUBLIC SUPPLY | 11,552 | 2.271 | 0.000 | FLORIDAN AQF. |
| ORANGE COUNTY PUBLIC UTILITIES | PUBLIC SUPPLY | 84,463 | 17.683 | 0.000 | FLORIDAN AQF. |
| SJRWMD PORTION OF OCPU | | 69,175 | 11.909 | 0.000 | |
| ORLANDO UTILITIES COMMISSION | PUBLIC SUPPLY | 355,950 | 71.716 | 0.000 | FLORIDAN AQF. |
| SJRWMD PORTION OF OUC | | 260,252 | 48.795 | 0.000 | |
| ROCK SPRINGS MHP | PUBLIC SUPPLY | 1,240 | 0.221 | 0.000 | FLORIDAN AQF. |
| SHADOW HILLS MHP | PUBLIC SUPPLY | 1,280 | 0.169 | 0.000 | FLORIDAN AQF. |
| SOUTHERN STATES UTILITIES | PUBLIC SUPPLY | 5,959 | 0.684 | 0.000 | FLORIDAN AQF. |
| STARLIGHT RANCH MHP | PUBLIC SUPPLY | 1,560 | 0.189 | 0.000 | FLORIDAN AQF. |
| TANGERINE - TOWN OF | PUBLIC SUPPLY | 408 | 0.126 | 0.000 | FLORIDAN AQF. |
| UTILITIES INC. OF FLORIDA | PUBLIC SUPPLY | 955 | 0.113 | 0.000 | FLORIDAN AQF. |
| WINTER GARDEN - CITY OF | PUBLIC SUPPLY | 11,250 | 1.384 | 0.000 | FLORIDAN AQF. |
| WINTER PARK - CITY OF | PUBLIC SUPPLY | 73,500 | 12.338 | 0.000 | FLORIDAN AQF. |
| ZELLWOOD STATION UTILITIES | PUBLIC SUPPLY | 1,560 | 0.526 | 0.000 | FLORIDAN AQF. |
| ZELLWOOD WATER ASSOC. | PUBLIC SUPPLY | 900 | 0.188 | 0.000 | FLORIDAN AQF. |
| COCA COLA - PLYMOUTH PLANT | INDUSTRIAL | | 0.141 | 0.000 | FLORIDAN AQF. |
| LUST & LONG PRECOOLER CO. | INDUSTRIAL | | 0.091 | 0.000 | FLORIDAN AQF. |
| OUC - STANTON PLANT | POWER GEN. | | 0.409 | 1.236 | FLORIDAN AQF. & RETENTION POND |
| RALSTON PURINA - ZELLWOOD FARMS | INDUSTRIAL | | 0.163 | 0.000 | FLORIDAN AQF. |
| SOUTHERN FRUIT DISTRIBUTORS | INDUSTRIAL | | 0.194 | 0.000 | FLORIDAN AQF. |
| SUN RESORT INC. | INSTITUTIONAL | | 0.087 | 0.000 | FLORIDAN AQF. |
| UNIVERSITY OF CENTRAL FLORIDA | INSTITUTIONAL | | 0.638 | 0.000 | FLORIDAN AQF. |
| WINTER GARDEN CITRUS PLANT | INDUSTRIAL | | 1.788 | 0.000 | FLORIDAN AQF. |
| ===== | | | | | |

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

TABLE A-14. WATER USE BY CROP FOR ORANGE COUNTY - 1987

| | TOTAL ACRES | | WATER USE IN MGD | | | |
|-----------------------|-------------|-----------|------------------|---------|-----------|-------|
| | FARMED | IRRIGATED | GROUND | SURFACE | RECLAIMED | TOTAL |
| VEGETABLE CROPS | | | | | | |
| CABBAGE | 1,200 | 1,200 | 1.28 | 0.00 | 0.00 | 1.28 |
| CARROTS | 13,500 | 13,500 | 1.54 | 13.86 | 0.00 | 15.40 |
| CUCUMBERS | 1,020 | 1,020 | 1.16 | 0.00 | 0.00 | 1.16 |
| PEPPERS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| POTATOES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOMATOES | 75 | 75 | 0.04 | 0.00 | 0.00 | 0.04 |
| SWEET CORN | 13,600 | 13,600 | 1.79 | 16.13 | 0.00 | 17.92 |
| WATERCRESS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISC. VEGETABLES | 14,100 | 14,100 | 1.61 | 14.47 | 0.00 | 16.08 |
| FRUIT CROPS | | | | | | |
| BLUEBERRIES | 50 | 50 | 0.06 | 0.00 | 0.00 | 0.06 |
| CITRUS | 12,000 | 11,600 | 10.68 | 1.19 | 5.37 | 11.87 |
| GRAPES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| PEACHES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| PECANS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STRAWBERRIES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| WATERMELLONS | 150 | 150 | 0.10 | 0.00 | 0.00 | 0.10 |
| MISC. FRUIT | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| FIELD CROPS | | | | | | |
| FIELD CORN | 200 | 200 | 0.26 | 0.00 | 0.00 | 0.26 |
| PEANUTS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| RICE | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SORGHUM | 200 | 200 | 0.13 | 0.13 | 0.00 | 0.26 |
| SOYBEANS | 200 | 200 | 0.13 | 0.13 | 0.00 | 0.26 |
| SUGAR CANE | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOBACCO | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| WHEAT | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISC. GRAINS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| ORNAMENTALS & GRASSES | | | | | | |
| FERNS | 40 | 40 | 0.18 | 0.00 | 0.00 | 0.18 |
| FLOWERS & FOLIAGE | 581 | 581 | 1.88 | 0.47 | 0.00 | 2.35 |
| WOODY ORNAMENTALS | 576 | 576 | 4.78 | 0.53 | 0.00 | 5.31 |
| IMPROVED PASTURE | 18,562 | 240 | 0.19 | 0.00 | 0.00 | 0.19 |
| SOD | 200 | 200 | 0.30 | 0.35 | 0.00 | 0.65 |
| TURF GRASS (GOLF) | 1,533 | 939 | 2.23 | 0.40 | 0.00 | 2.63 |
| TURF GRASS (OTHER) | 381 | 381 | 0.70 | 0.13 | 0.00 | 0.83 |
| MISC. AGRICULTURAL | | | | | | |
| LIVESTOCK | 0 | 0 | 0.37 | 0.00 | 0.00 | 0.37 |
| FISH FARMING | 0 | 0 | 0.12 | 0.00 | 0.00 | 0.12 |
| | 78,168 | 58,852 | 29.53 | 47.79 | 5.37 | 77.32 |
| SPRINKLER ACREAGE | 8,917 | 58,852 | | | | |
| LOW PRESSURE ACREAGE | 5,915 | | | | | |
| FLOOD ACREAGE | 44,020 | | | | | |

OSCEOLA COUNTY DATA - 1987

TOTAL POPULATION 87,556
 TOTAL LAND AREA 1,467 SQ. MILES

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT'S PORTION :

POPULATION
 TOTAL 420
 PUBLIC SUPPLY 0
 SELF-SUPPLIED 420
 PER CAPITA 140 (1)

LAND AREA (ACRES)
 TOTAL AREA 346,880 542 SQ. MILES
 FARMED 126,950
 IRRIGATED 12,330

1987 WATER WITHDRAWALS (Mgal/d) by CATEGORY

| | FRESH WATER | | | SALINE WATER | | | REUSE |
|----------------------|-------------|---------|--------|--------------|---------|--------|-------|
| | GROUND | SURFACE | TOTALS | GROUND | SURFACE | TOTALS | |
| PUBLIC SUPPLY | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| DOMESTIC SELF-SUPPLY | 0.06 | 0.00 | 0.06 | 0.00 | 0.00 | 0.00 | 0.00 |
| COM/IND. SELF-SUPPLY | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| AGRICULTURAL IRR. | 5.55 | 7.20 | 12.75 | 0.00 | 0.00 | 0.00 | 0.00 |
| POWER GENERATION S-S | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISCELLANEOUS | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 5.61 | 7.20 | 12.81 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOTAL GROUND | | 5.61 | | | | | |
| TOTAL SURFACE | | 7.20 | | | | | |
| COUNTY TOTAL | | 12.81 | | | | | |

(1) USED THE 1985 TOTAL COUNTY'S PER CAPITA (MARELLA, 1988b).

NO PUBLIC SUPPLY OR COMMERCIAL/INDUSTRIAL
PUMPAGE IN OSCEOLA COUNTY WITHIN THE
ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
WAS INVENTORIED FOR 1987.

NO INDIVIDUAL WATER USERS WERE INVENTORIED
WITHIN THE ST.JOHNS RIVER WATER MANAGEMENT
DISTRICT PORTION OF OSCEOLA COUNTY FOR 1987.

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

TABLE A-15. WATER USE BY CROP FOR OSCEOLA COUNTY - 1987

| | TOTAL ACRES | | WATER USE IN MGD | | | |
|-----------------------|-------------|-----------|------------------|---------|-----------|-------|
| | FARMED | IRRIGATED | GROUND | SURFACE | RECLAIMED | TOTAL |
| VEGETABLE CROPS | | | | | | |
| CABBAGE | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| CARROTS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| CUCUMBERS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| PEPPERS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| POTATOES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOMATOES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SWEET CORN | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| WATERCRESS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISC. VEGETABLES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| FRUIT CROPS | | | | | | |
| BLUEBERRIES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| CITRUS | 1,150 | 1,150 | 1.74 | 0.00 | 0.00 | 1.74 |
| GRAPES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| PEACHES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| PECANS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STRAWBERRIES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| WATERMELLONS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISC. FRUIT | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| FIELD CROPS | | | | | | |
| FIELD CORN | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| PEANUTS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| RICE | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SORGHUM | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SOYBEANS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SUGAR CANE | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOBACCO | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| WHEAT | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISC. GRAINS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| ORNAMENTALS & GRASSES | | | | | | |
| FERNS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| FLOWERS & FOLIAGE | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| WOODY ORNAMENTALS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| IMPROVED PASTURE | 125,800 | 11,180 | 2.02 | 7.14 | 0.00 | 9.16 |
| SOD | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| TURF GRASS (GOLF) | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| TURF GRASS (OTHER) | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISC. AGRICULTURAL | | | | | | |
| LIVESTOCK | 0 | 0 | 1.79 | 0.06 | 0.00 | 1.85 |
| FISH FARMING | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 126,950 | 12,330 | 5.55 | 7.20 | 0.00 | 12.75 |
| SPRINKLER ACREAGE | 150 | 12,330 | | | | |
| LOW PRESSURE ACREAGE | 230 | | | | | |
| FLOOD ACREAGE | 11,950 | | | | | |

POLK COUNTY DATA - 1987

TOTAL POPULATION 389,056
 TOTAL LAND AREA 2,048 SQ. MILES

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT'S PORTION :

POPULATION

TOTAL 5,447 (1)
 PUBLIC SUPPLY 850 (2)
 SELF-SUPPLIED 1,447
 PER CAPITA 200 (3)

LAND AREA (ACRES)

TOTAL AREA 40,320 63 SQ. MILES
 FARMED 15,985
 IRRIGATED 7,335

1987 WATER WITHDRAWALS (Mgal/d) by CATEGORY

| | FRESH WATER | | | SALINE WATER | | | REUSE |
|----------------------|-------------|---------|--------|--------------|---------|--------|-------|
| | GROUND | SURFACE | TOTALS | GROUND | SURFACE | TOTALS | |
| PUBLIC SUPPLY | 0.12 | 0.00 | 0.12 | 0.00 | 0.00 | 0.00 | 0.00 |
| DOMESTIC SELF-SUPPLY | 0.30 | 0.00 | 0.30 | 0.00 | 0.00 | 0.00 | 0.00 |
| COM/IND. SELF-SUPPLY | 0.01 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 |
| AGRICULTURAL IRR. | 10.56 | 1.08 | 11.64 | 0.00 | 0.00 | 0.00 | 0.00 |
| POWER GENERATION S-S | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISCELLANEOUS | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 10.99 | 1.08 | 12.07 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOTAL GROUND | | 10.99 | | | | | |
| TOTAL SURFACE | | 1.08 | | | | | |
| COUNTY TOTAL | | 12.07 | | | | | |

- (1) ESTIMATED FROM STIEGLITZ and SORENSEN, 1988 ; TABLE 9.
- (2) DOES NOT INCLUDE 3,150 POPULATION SERVED BY A PUBLIC SUPPLY IN THE SWFWMD WHO LIVE IN THE SJRWMD.
- (3) USED THE 1985 TOTAL COUNTY'S PER CAPITA (MARELLA, 1988b).

THE PUBLIC SUPPLY AND COMMERCIAL/INDUSTRIAL
PUMPAGE IN POLK COUNTY WITHIN THE
ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
FOR 1987 WAS TOO SMALL TO DEPICT.

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

1987 INDIVIDUAL WATER USERS IN POLK COUNTY

| USER UTILITY/FACILITY | USE TYPE | POPULATION SERVED | WITHDRAWAL(MGD) | | WITHDRAWAL SOURCE |
|--------------------------------|---------------|----------------------|-----------------|---------|----------------------|
| | | | GROUND | SURFACE | |
| OAK HARBOR S/D | PUBLIC SUPPLY | 450 | 0.041 | 0.000 | FLORIDAN AQF. |
| POLK COUNTY UTILITIES | PUBLIC SUPPLY | 400 | 0.078 | 0.000 | FLORIDAN AQF. |
| B. C. COOK & SONS CITRUS PLANT | INDUSTRIAL | | 0.011 | 0.000 | FLORIDAN AQF. |

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

TABLE A-16. WATER USE BY CROP FOR POLK COUNTY - 1987

| | TOTAL ACRES | | WATER USE IN MGD | | | |
|-----------------------|-------------|-----------|------------------|---------|-----------|-------|
| | FARMED | IRRIGATED | GROUND | SURFACE | RECLAIMED | TOTAL |
| VEGETABLE CROPS | | | | | | |
| CABBAGE | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| CARROTS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| CUCUMBERS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| PEPPERS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| POTATOES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOMATOES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SWEET CORN | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| WATERCRESS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISC. VEGETABLES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| FRUIT CROPS | | | | | | |
| BLUEBERRIES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| CITRUS | 10,430 | 6,680 | 9.38 | 1.04 | 0.00 | 10.42 |
| GRAPES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| PEACHES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| PECANS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STRAWBERRIES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| WATERMELLONS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISC. FRUIT | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| FIELD CROPS | | | | | | |
| FIELD CORN | 1,000 | 500 | 0.65 | 0.00 | 0.00 | 0.65 |
| PEANUTS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| RICE | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SORGHUM | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SOYBEANS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SUGAR CANE | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOBACCO | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| WHEAT | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISC. GRAINS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| ORNAMENTALS & GRASSES | | | | | | |
| FERNS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| FLOWERS & FOLIAGE | 5 | 5 | 0.02 | 0.00 | 0.00 | 0.02 |
| WOODY ORNAMENTALS | 50 | 50 | 0.47 | 0.00 | 0.00 | 0.47 |
| IMPROVED PASTURE | 4,500 | 100 | 0.04 | 0.04 | 0.00 | 0.08 |
| SOD | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| TURF GRASS (GOLF) | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| TURF GRASS (OTHER) | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISC. AGRICULTURAL | | | | | | |
| LIVESTOCK | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| FISH FARMING | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 15,985 | 7,335 | 10.56 | 1.08 | 0.00 | 11.64 |
| SPRINKLER ACREAGE | 6,540 | 7,335 | | | | |
| LOW PRESSURE ACREAGE | 695 | | | | | |
| FLOOD ACREAGE | 100 | | | | | |

PUTNAM COUNTY DATA - 1987

TOTAL POPULATION 62,476
 TOTAL LAND AREA 879 SQ. MILES

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT'S PORTION :

POPULATION

TOTAL 62,476
 PUBLIC SUPPLY 20,831
 SELF-SUPPLIED 41,645
 PER CAPITA 157

LAND AREA (ACRES)

TOTAL AREA 652,460 (1) 879 SQ. MILES
 FARMED 52,465
 IRRIGATED 10,655

1987 WATER WITHDRAWALS (Mgal/d) by CATEGORY

| | FRESH WATER | | | SALINE WATER | | | REUSE |
|----------------------|-------------|---------|--------|--------------|---------|--------|-------|
| | GROUND | SURFACE | TOTALS | GROUND | SURFACE | TOTALS | |
| PUBLIC SUPPLY | 3.28 | 0.00 | 3.28 | 0.00 | 0.00 | 0.00 | 0.00 |
| DOMESTIC SELF-SUPPLY | 6.54 | 0.00 | 6.54 | 0.00 | 0.00 | 0.00 | 0.00 |
| COM/IND. SELF-SUPPLY | 42.71 | 4.00 | 46.71 | 0.00 | 0.00 | 0.00 | 0.00 |
| AGRICULTURAL IRR. | 15.80 | 1.04 | 16.84 | 0.00 | 0.00 | 0.00 | 0.00 |
| POWER GENERATION S-S | 0.52 | 11.62 | 12.14 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISCELLANEOUS | 2.93 | 0.00 | 2.93 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 71.78 | 16.66 | 88.44 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOTAL GROUND | 71.78 | | | | | | |
| TOTAL SURFACE | | 16.66 | | | | | |
| COUNTY TOTAL | | 88.44 | | | | | |

(1) APPROXIMATELY 100 ACRES OF PUTNAM COUNTY IS LOCATED IN THE SRWMD.

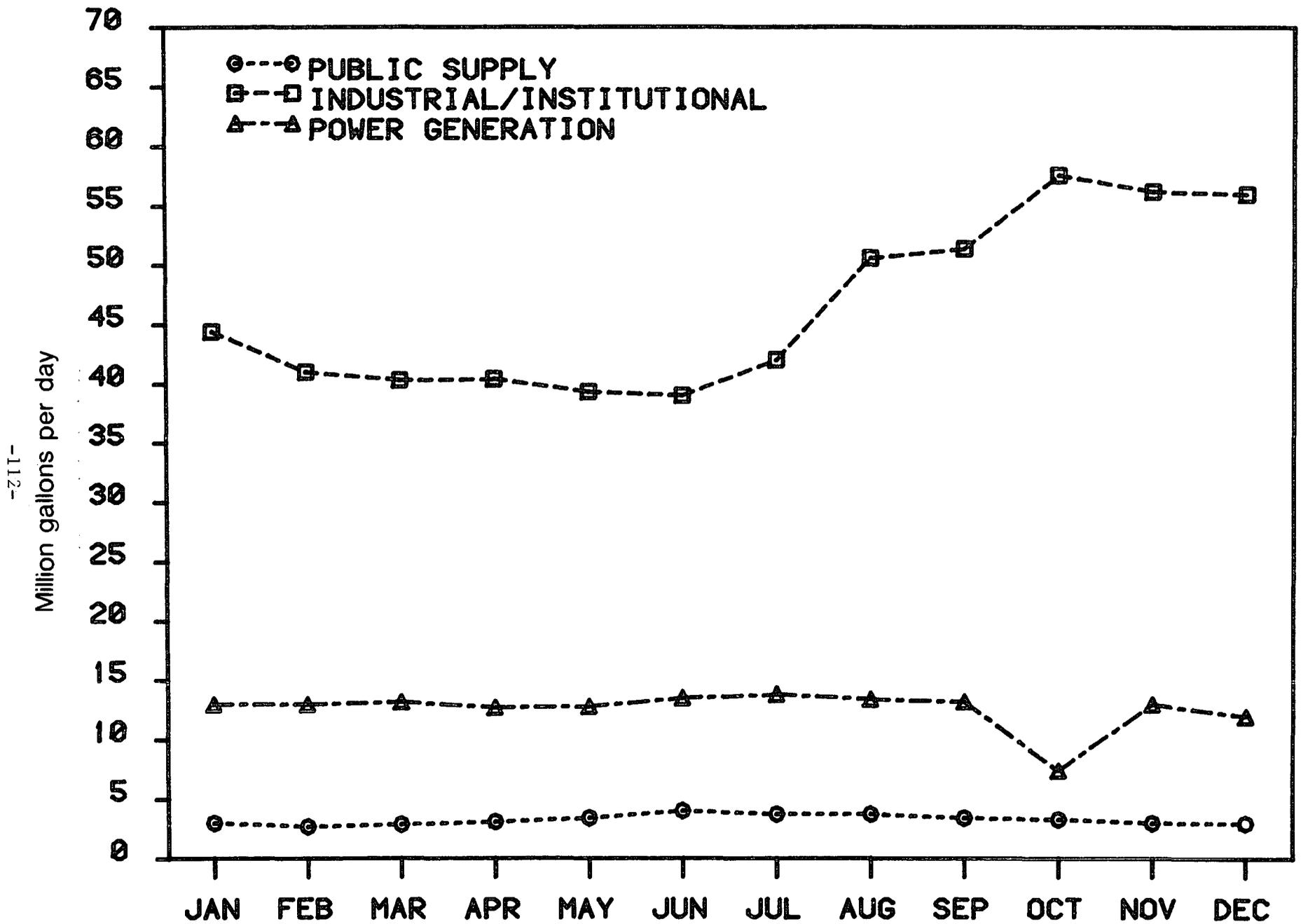


FIGURE A-14. MONTHLY FRESH WATER USE IN PUTNAM COUNTY: 1987

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

1987 INDIVIDUAL WATER USERS IN PUTNAM COUNTY

| USER UTILITY/FACILITY | USE TYPE | POPULATION SERVED | WITHDRAWAL(MGD) | | WITHDRAWAL SOURCE |
|----------------------------------|---------------|----------------------|-----------------|---------|------------------------------------|
| | | | GROUND | SURFACE | |
| CRESCENT - CITY OF | PUBLIC SUPPLY | 2,295 | 0.305 | 0.000 | FLORIDAN AQF. |
| INTERLACHEN - TOWN OF | PUBLIC SUPPLY | 1,054 | 0.120 | 0.000 | FLORIDAN AQF. |
| LAKE COMO WATER ASSOC. | PUBLIC SUPPLY | 310 | 0.015 | 0.000 | FLORIDAN AQF. |
| MELROSE WATER ASSOC. | PUBLIC SUPPLY | 705 | 0.067 | 0.000 | FLORIDAN AQF. |
| PALATKA - CITY OF | PUBLIC SUPPLY | 13,872 | 2.572 | 0.000 | FLORIDAN AQF. |
| SOUTHERN STATES UTILITIES | PUBLIC SUPPLY | 2,595 | 0.197 | 0.000 | FLORIDAN AQF. |
| FELDSPAR CORP.- EDGAR MINE | INDUSTRIAL | | 5.500 | 0.000 | FLORIDAN AQF. |
| FLORIDA POWER & LIGHT - PUTNAM | POWER GEN. | | 0.078 | 1.872 | FLORIDAN AQF. & ST.JOHNS RIVER |
| FLORIDA ROCK - GRANDIN MINE | INDUSTRIAL | | 0.780 | 0.000 | FLORIDAN AQF. |
| FLORIDA ROCK - KEUKA MINE | INDUSTRIAL | | 0.846 | 0.000 | FLORIDAN AQF. |
| GEORGIA PACIFIC - PALATKA PLANT | INDUSTRIAL | | 35.362 | 4.000 | FLORIDAN AQF. & SIMMS/ETONIA CREEK |
| GEORGIA PACIFIC - HAWTHORNE PLT. | INDUSTRIAL | | 0.190 | 0.000 | FLORIDAN AQF. |
| PUTNAM CORRECTIONAL FAC. (FDOC) | INSTITUTIONAL | | 0.035 | 0.000 | FLORIDAN AQF. |
| SEMINOLE ELECTRIC CORP. | POWER GEN. | | 0.442 | 9.749 | FLORIDAN AQF. & ST.JOHNS RIVER |

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

TABLE A-17. WATER USE BY CROP FOR PUTNAM COUNTY - 1987

| | TOTAL ACRES | | WATER USE IN MGD | | | |
|-----------------------|-------------|-----------|------------------|---------|-----------|-------|
| | FARMED | IRRIGATED | GROUND | SURFACE | RECLAIMED | TOTAL |
| VEGETABLE CROPS | | | | | | |
| CABBAGE | 1,600 | 1,600 | 1.71 | 0.00 | 0.00 | 1.71 |
| CARROTS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| CUCUMBERS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| PEPPERS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| POTATOES | 5,600 | 5,600 | 4.48 | 0.00 | 0.00 | 4.48 |
| TOMATOES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SWEET CORN | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| WATERCRESS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISC. VEGETABLES | 200 | 200 | 0.23 | 0.00 | 0.00 | 0.23 |
| FRUIT CROPS | | | | | | |
| BLUEBERRIES | 100 | 80 | 0.06 | 0.00 | 0.00 | 0.06 |
| CITRUS | 95 | 95 | 0.15 | 0.00 | 0.00 | 0.15 |
| GRAPES | 10 | 10 | 0.01 | 0.00 | 0.00 | 0.01 |
| PEACHES | 70 | 70 | 0.12 | 0.00 | 0.00 | 0.12 |
| PECANS | 100 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STRAWBERRIES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| WATERMELLONS | 200 | 200 | 0.13 | 0.00 | 0.00 | 0.13 |
| MISC. FRUIT | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| FIELD CROPS | | | | | | |
| FIELD CORN | 3,000 | 500 | 0.68 | 0.02 | 0.00 | 0.70 |
| PEANUTS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| RICE | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SORGHUM | 400 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SOYBEANS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SUGAR CANE | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOBACCO | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| WHEAT | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISC. GRAINS | 2,500 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| ORNAMENTALS & GRASSES | | | | | | |
| FERNS | 900 | 900 | 3.28 | 0.82 | 0.00 | 4.10 |
| FLOWERS & FOLIAGE | 220 | 220 | 0.39 | 0.00 | 0.00 | 0.39 |
| WOODY ORNAMENTALS | 29 | 29 | 0.11 | 0.00 | 0.00 | 0.11 |
| IMPROVED PASTURE | 37,000 | 830 | 0.64 | 0.04 | 0.00 | 0.68 |
| SOD | 220 | 220 | 0.44 | 0.00 | 0.00 | 0.44 |
| TURF GRASS (GOLF) | 196 | 76 | 0.21 | 0.00 | 0.00 | 0.21 |
| TURF GRASS (OTHER) | 25 | 25 | 0.05 | 0.00 | 0.00 | 0.05 |
| MISC. AGRICULTURAL | | | | | | |
| LIVESTOCK | 0 | 0 | 0.25 | 0.16 | 0.00 | 0.41 |
| FISH FARMING | 0 | 0 | 2.86 | 0.00 | 0.00 | 2.86 |
| | 52,465 | 10,655 | 15.80 | 1.04 | 0.00 | 16.84 |
| SPRINKLER ACREAGE | 2,426 | 10,655 | | | | |
| LOW PRESSURE ACREAGE | 109 | | | | | |
| FLOOD ACREAGE | 8,120 | | | | | |

ST. JOHNS COUNTY DATA - 1987

TOTAL POPULATION 75,133
 TOTAL LAND AREA 660 SQ. MILES

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT'S PORTION :

POPULATION

TOTAL 75,133
 PUBLIC SUPPLY 58,132
 SELF-SUPPLIED 17,001
 PER CAPITA 131

LAND AREA (ACRES)

TOTAL AREA 422,400 660 SQ. MILES
 FARMED 32,482
 IRRIGATED 25,801

1987 WATER WITHDRAWALS (Mgal/d) by CATEGORY

| | FRESH WATER | | | SALINE WATER | | | REUSE |
|----------------------|-------------|---------|--------|--------------|---------|--------|-------|
| | GROUND | SURFACE | TOTALS | GROUND | SURFACE | TOTALS | |
| PUBLIC SUPPLY | 7.61 | 0.00 | 7.61 | 0.00 | 0.00 | 0.00 | 0.00 |
| DOMESTIC SELF-SUPPLY | 2.23 | 0.00 | 2.23 | 0.00 | 0.00 | 0.00 | 0.00 |
| COM/IND. SELF-SUPPLY | 0.06 | 0.00 | 0.06 | 0.00 | 0.00 | 0.00 | 0.00 |
| AGRICULTURAL IRR. | 27.29 | 1.08 | 28.37 | 0.00 | 0.00 | 0.00 | 0.40 |
| POWER GENERATION S-S | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISCELLANEOUS | 0.63 | 0.00 | 0.63 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 37.82 | 1.08 | 38.90 | 0.00 | 0.00 | 0.00 | 0.40 |
| TOTAL GROUND | 37.82 | | | | | | |
| TOTAL SURFACE | | 1.08 | | | | | |
| COUNTY TOTAL (1) | | 38.90 | | | | | |

(1) REUSE AMOUNTS ARE NOT INCLUDED IN TOTAL.

ST. JOHNS

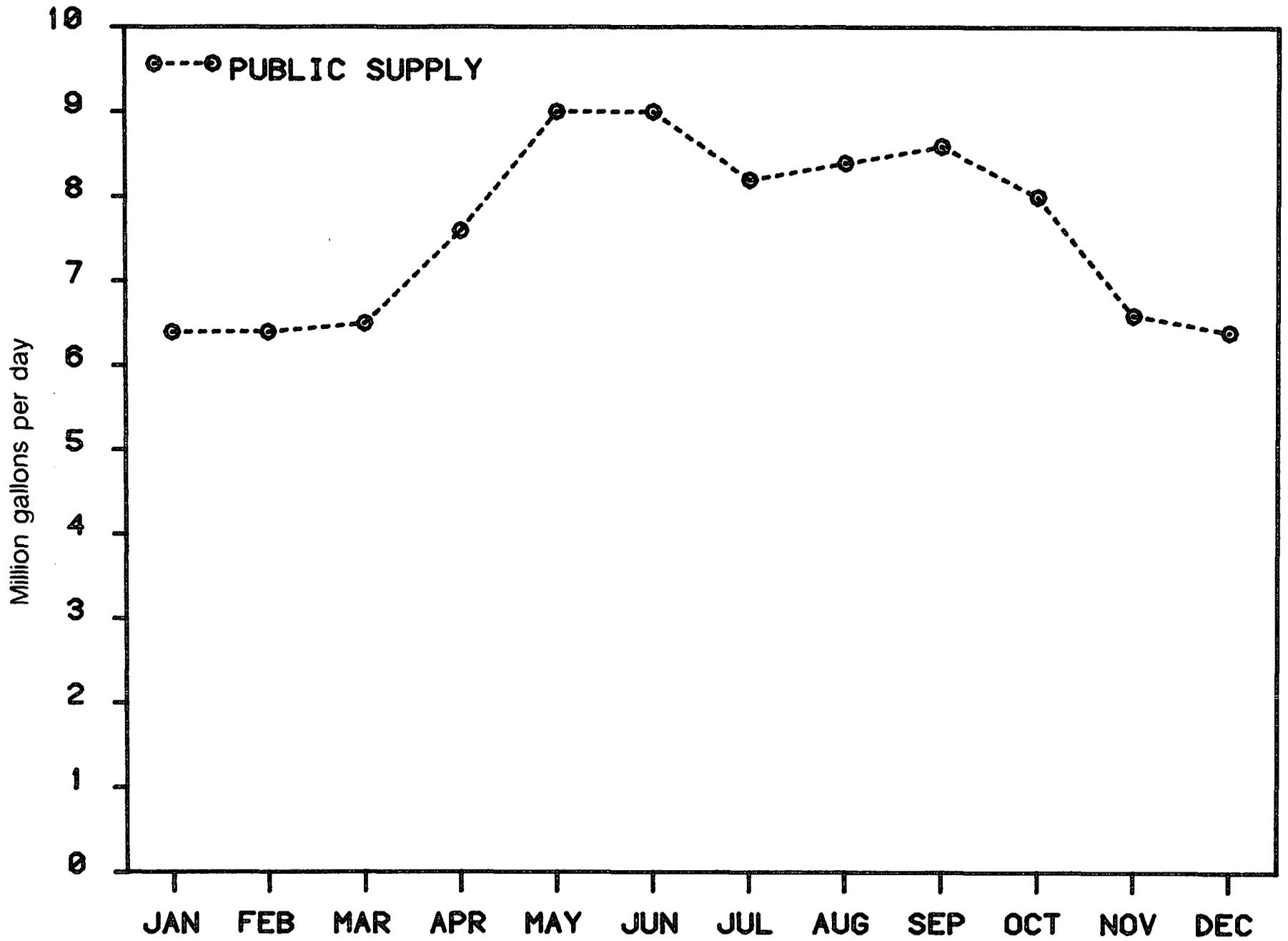


FIGURE A-15. MONTHLY FRESH WATER USE IN ST. JOHNS COUNTY: 1987

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

1987 INDIVIDUAL WATER USERS IN ST. JOHNS COUNTY

| USER UTILITY/FACILITY | USE TYPE | POPULATION SERVED | WITHDRAWAL (MGD) | | WITHDRAWAL SOURCE |
|----------------------------------|---------------|----------------------|------------------|---------|---------------------------|
| | | | GROUND | SURFACE | |
| ANASTAIA/MAINLAND WATER SYSTEM | PUBLIC SUPPLY | 16,350 | 2.097 | 0.000 | SURFICIAL & FLORIDAN AQF. |
| FOUNTAIN CONDOMINIUMS | PUBLIC SUPPLY | 392 | 0.039 | 0.000 | FLORIDAN AQF. |
| FRUIT COVE OAKS S/D | PUBLIC SUPPLY | 450 | 0.067 | 0.000 | FLORIDAN AQF. |
| GDU - JULINGTON CREEK S/D | PUBLIC SUPPLY | 110 | 0.023 | 0.000 | FLORIDAN AQF. |
| HASTINGS - CITY OF | PUBLIC SUPPLY | 595 | 0.084 | 0.000 | SURFICIAL & FLORIDAN AQF. |
| INTERCOASTAL UTILITIES | PUBLIC SUPPLY | 2,995 | 0.475 | 0.000 | FLORIDAN AQF. |
| NORTH BEACH WATER SYSTEM | PUBLIC SUPPLY | 876 | 0.158 | 0.000 | FLORIDAN AQF. |
| PALM VALLEY WATER SYSTEM | PUBLIC SUPPLY | 400 | 0.016 | 0.000 | FLORIDAN AQF. |
| PONCE DeLEON UT. - GOODWIN BEACH | PUBLIC SUPPLY | 240 | 0.015 | 0.000 | FLORIDAN AQF. |
| PONTE VEDRA UTILITIES | PUBLIC SUPPLY | 5,600 | 0.942 | 0.000 | FLORIDAN AQF. |
| S. PONTE VEDRA BEACH UTILITIES | PUBLIC SUPPLY | 700 | 0.102 | 0.000 | FLORIDAN AQF. |
| ST. AUGUSTINE - CITY OF | PUBLIC SUPPLY | 15,757 | 1.814 | 0.000 | SURFICIAL & FLORIDAN AQF. |
| ST. AUGUSTINE SHORES UTILITIES | PUBLIC SUPPLY | 5,452 | 0.495 | 0.000 | SURFICIAL AQF. |
| ST. JOHNS NORTH UTILITY | PUBLIC SUPPLY | 315 | 0.056 | 0.000 | FLORIDAN AQF. |
| ST. JOHNS SERVICE CO. | PUBLIC SUPPLY | 7,500 | 1.106 | 0.000 | FLORIDAN AQF. |
| WESLEY MANOR WATER SYSTEM | PUBLIC SUPPLY | 400 | 0.074 | 0.000 | FLORIDAN AQF. |
| BORDON/WISE POTATO CHIP PLANT | INDUSTRIAL | | 0.029 | 0.000 | FLORIDAN AQF. |
| FLORIDA DOT - 195 REST FAC. | INSTITUTIONAL | | 0.016 | 0.000 | FLORIDAN AQF. |
| G & M UNION 76 TRUCK STOP | COMMERCIAL | | 0.015 | 0.000 | FLORIDAN AQF. |

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

TABLE A-18. WATER USE BY CROP FOR ST. JOHNS COUNTY - 1987

| | TOTAL ACRES | | WATER USE IN MGD | | | |
|-----------------------|-------------|-----------|------------------|---------|-----------|-------|
| | FARMED | IRRIGATED | GROUND | SURFACE | RECLAIMED | TOTAL |
| VEGETABLE CROPS | | | | | | |
| CABBAGE | 1,000 | 1,000 | 1.07 | 0.00 | 0.00 | 1.07 |
| CARROTS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| CUCUMBERS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| PEPPERS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| POTATOES | 20,000 | 20,000 | 15.99 | 0.00 | 0.00 | 15.99 |
| TOMATOES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SWEET CORN | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| WATERCRESS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISC. VEGETABLES | 500 | 500 | 0.57 | 0.00 | 0.00 | 0.57 |
| FRUIT CROPS | | | | | | |
| BLUEBERRIES | 5 | 5 | 0.01 | 0.00 | 0.00 | 0.01 |
| CITRUS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| GRAPES | 5 | 5 | 0.01 | 0.00 | 0.00 | 0.01 |
| PEACHES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| PECANS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STRAWBERRIES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| WATERMELLONS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISC. FRUIT | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| FIELD CROPS | | | | | | |
| FIELD CORN | 2,000 | 1,000 | 1.45 | 0.00 | 0.00 | 1.45 |
| PEANUTS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| RICE | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SORGHUM | 2,000 | 1,000 | 1.45 | 0.00 | 0.00 | 1.45 |
| SOYBEANS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SUGAR CANE | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOBACCO | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| WHEAT | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISC. GRAINS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| ORNAMENTALS & GRASSES | | | | | | |
| FERNS | 5 | 5 | 0.02 | 0.00 | 0.00 | 0.02 |
| FLOWERS & FOLIAGE | 60 | 60 | 0.18 | 0.00 | 0.00 | 0.18 |
| WOODY ORNAMENTALS | 75 | 75 | 0.70 | 0.00 | 0.00 | 0.70 |
| IMPROVED PASTURE | 5,500 | 1,000 | 0.82 | 0.00 | 0.00 | 0.82 |
| SOD | 120 | 120 | 0.24 | 0.00 | 0.00 | 0.24 |
| TURF GRASS (GOLF) | 1,192 | 1,011 | 1.68 | 0.98 | 0.40 | 2.66 |
| TURF GRASS (OTHER) | 20 | 20 | 0.04 | 0.00 | 0.00 | 0.04 |
| MISC. AGRICULTURAL | | | | | | |
| LIVESTOCK | 0 | 0 | 0.25 | 0.10 | 0.00 | 0.35 |
| AESTHETIC/WILDLIFE | 0 | 0 | 2.81 | 0.00 | 0.00 | 2.81 |
| | 32,482 | 25,801 | 27.29 | 1.08 | 0.40 | 28.37 |
| SPRINKLER ACREAGE | 1,251 | 25,801 | | | | |
| LOW PRESSURE ACREAGE | 30 | | | | | |
| FLOOD ACREAGE | 24,520 | | | | | |

SEMINOLE COUNTY DATA - 1987

TOTAL POPULATION 254,837
 TOTAL LAND AREA 352 SQ. MILES

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT'S PORTION :

POPULATION

TOTAL 254,837
 PUBLIC SUPPLY 231,550
 SELF-SUPPLIED 23,287
 PER CAPITA 177

LAND AREA (ACRES)

TOTAL AREA 225,280 352 SQ. MILES
 FARMED 14,736
 IRRIGATED 6,989

1987 WATER WITHDRAWALS (Mgal/d) by CATEGORY

| | FRESH WATER | | | SALINE WATER | | | REUSE |
|----------------------|-------------|---------|--------|--------------|---------|--------|-------|
| | GROUND | SURFACE | TOTALS | GROUND | SURFACE | TOTALS | |
| PUBLIC SUPPLY | 40.86 | 0.00 | 40.86 | 0.00 | 0.00 | 0.00 | 0.00 |
| DOMESTIC SELF-SUPPLY | 4.12 | 0.00 | 4.12 | 0.00 | 0.00 | 0.00 | 0.00 |
| COM/IND. SELF-SUPPLY | 0.62 | 0.00 | 0.62 | 0.00 | 0.00 | 0.00 | 0.00 |
| AGRICULTURAL IRR. | 20.67 | 2.17 | 22.84 | 0.00 | 0.00 | 0.00 | 0.00 |
| POWER GENERATION S-S | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISCELLANEOUS | 0.15 | 0.00 | 0.15 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 66.42 | 2.17 | 68.59 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOTAL GROUND | 66.42 | | | | | | |
| TOTAL SURFACE | | 2.17 | | | | | |
| COUNTY TOTAL | | 68.59 | | | | | |

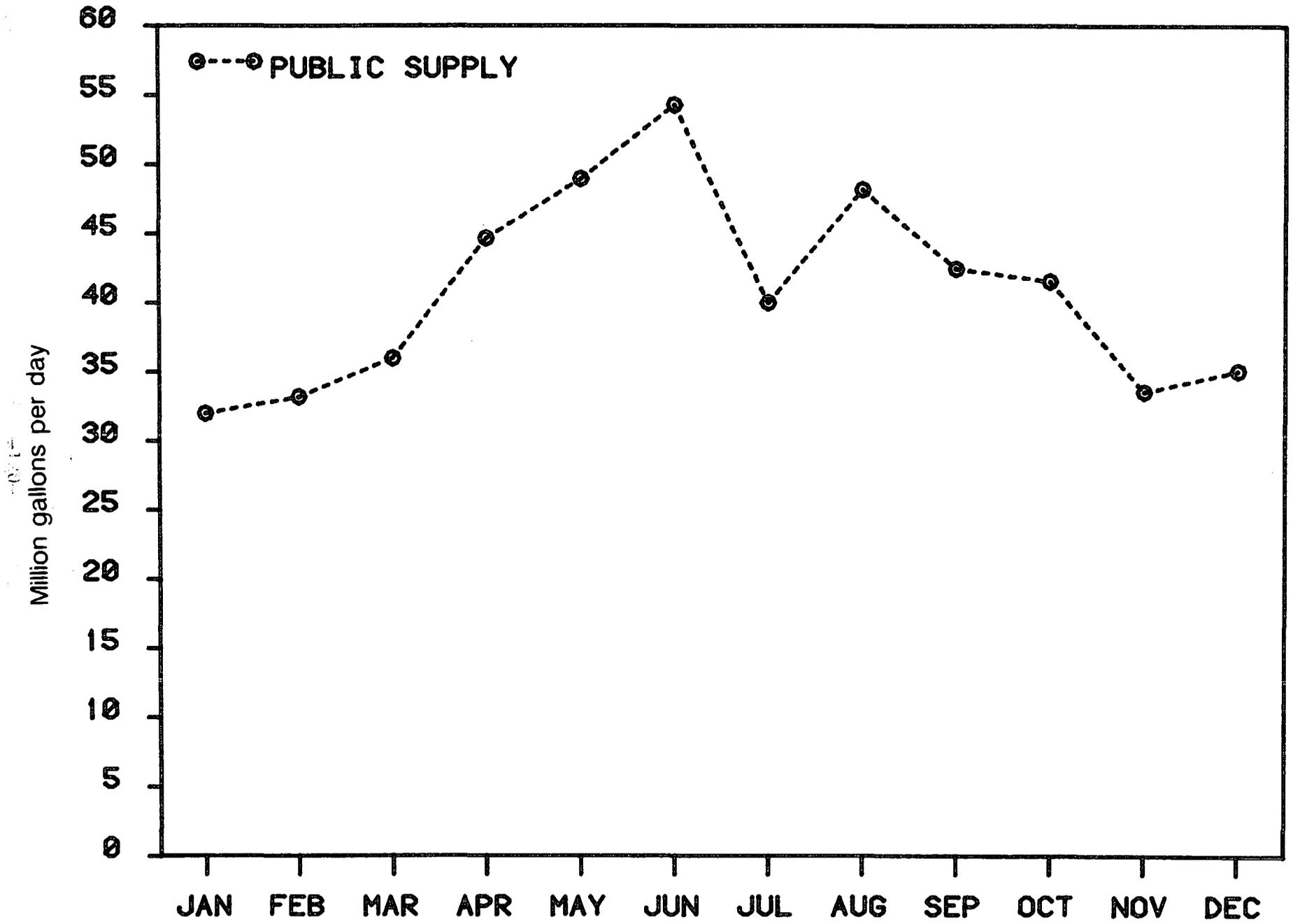


FIGURE A-16. MONTHLY FRESH WATER USE IN SEMINOLE COUNTY: 1987

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

1987 INDIVIDUAL WATER USERS IN SEMINOLE COUNTY

| USER UTILITY/FACILITY | USE TYPE | POPULATION SERVED | WITHDRAWAL(MGD) | | WITHDRAWAL SOURCE |
|----------------------------------|---------------|----------------------|-----------------|---------|--------------------------|
| | | | GROUND | SURFACE | |
| ALTAMONTE SPRINGS - CITY OF | PUBLIC SUPPLY | 33,156 | 7.728 | 0.000 | FLORIDAN AQF. |
| CASSELBERRY - CITY OF | PUBLIC SUPPLY | 35,100 | 4.843 | 0.000 | FLORIDAN AQF. |
| CENTRAL FIVE UTILITIES INC. | PUBLIC SUPPLY | 5,440 | 1.059 | 0.000 | FLORIDAN AQF. |
| INDIAN CREEK - SEMINOLE PINES | PUBLIC SUPPLY | 270 | 0.047 | 0.000 | FLORIDAN AQF. |
| LAKE HARNEY WATER ASSOC. | PUBLIC SUPPLY | 440 | 0.033 | 0.000 | FLORIDAN AQF. |
| LAKE MARY - CITY OF | PUBLIC SUPPLY | N/A | 0.000 | 0.000 | FLORIDAN AQF. |
| LONGWOOD - CITY OF | PUBLIC SUPPLY | 13,298 | 1.933 | 0.000 | FLORIDAN AQF. |
| LUTHERN HAVEN WATER SYSTEM | PUBLIC SUPPLY | 435 | 0.040 | 0.000 | FLORIDAN AQF. |
| MULLET LAKE WATER ASSOC. | PUBLIC SUPPLY | 550 | 0.034 | 0.000 | FLORIDAN AQF. |
| OVIEDO - CITY OF | PUBLIC SUPPLY | 6,696 | 1.031 | 0.000 | FLORIDAN AQF. |
| PALM VENTURES MHP | PUBLIC SUPPLY | 687 | 0.141 | 0.000 | FLORIDAN AQF. |
| SANFORD - CITY OF | PUBLIC SUPPLY | 30,344 | 5.208 | 0.000 | FLORIDAN AQF. |
| SANLANDO UTILITIES | PUBLIC SUPPLY | 32,849 | 8.403 | 0.000 | FLORIDAN AQF. |
| SEMINOLE COUNTY WATER & SEWER | PUBLIC SUPPLY | 34,074 | 5.424 | 0.000 | FLORIDAN AQF. |
| SEMINOLE UTILITIES INC. | PUBLIC SUPPLY | 8,520 | 1.581 | 0.000 | FLORIDAN AQF. |
| SOUTHERN STATES UTILITIES | PUBLIC SUPPLY | 8,643 | 1.250 | 0.000 | FLORIDAN AQF. |
| UTILITIES INC. OF FLORIDA | PUBLIC SUPPLY | 7,626 | 0.904 | 0.000 | FLORIDAN AQF. |
| WINTER SPRINGS - CITY OF | PUBLIC SUPPLY | 13,422 | 1.200 | 0.000 | FLORIDAN AQF. |
| COCA COLA - FOREST CITY PLANT | INDUSTRIAL | | 0.000 | 0.000 | PLANT PERMANENTLY CLOSED |
| DEEP SOUTH PROCESSING PLANT | INDUSTRIAL | | 0.406 | 0.000 | FLORIDAN AQF. |
| I-4 INDUSTRIAL PARK | INDUSTRIAL | | 0.138 | 0.000 | FLORIDAN AQF. |
| IRON BRIDGE FAC. | INSTITUTIONAL | | 0.014 | 0.000 | FLORIDAN AQF. |
| LAKE SYLVAN PARK - SCW&S | INSTITUTIONAL | | 0.033 | 0.000 | FLORIDAN AQF. |
| UNITED TECHNOLOGY INC(STROM/CAR) | INDUSTRIAL | | 0.032 | 0.000 | FLORIDAN AQF. |

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

TABLE A-19. WATER USE BY CROP FOR SEMINOLE COUNTY - 1987

| | TOTAL ACRES | | WATER USE IN MGD | | | |
|-----------------------|-------------|-----------|------------------|---------|-----------|-------|
| | FARMED | IRRIGATED | GROUND | SURFACE | RECLAIMED | TOTAL |
| VEGETABLE CROPS | | | | | | |
| CABBAGE | 700 | 700 | 0.75 | 0.00 | 0.00 | 0.75 |
| CARROTS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| CUCUMBERS | 150 | 150 | 0.17 | 0.00 | 0.00 | 0.17 |
| PEPPERS | 300 | 300 | 0.34 | 0.00 | 0.00 | 0.34 |
| POTATOES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOMATOES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SWEET CORN | 40 | 40 | 0.05 | 0.00 | 0.00 | 0.05 |
| WATERCRESS | 150 | 150 | 7.81 | 0.00 | 0.00 | 7.81 |
| MISC. VEGETABLES | 1,000 | 960 | 1.10 | 0.00 | 0.00 | 1.10 |
| FRUIT CROPS | | | | | | |
| BLUEBERRIES | 5 | 5 | 0.01 | 0.00 | 0.00 | 0.01 |
| CITRUS | 1,200 | 1,200 | 1.75 | 0.10 | 0.00 | 1.85 |
| GRAPES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| PEACHES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| PECANS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STRAWBERRIES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| WATERMELLONS | 40 | 40 | 0.03 | 0.00 | 0.00 | 0.03 |
| MISC. FRUIT | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| FIELD CROPS | | | | | | |
| FIELD CORN | 80 | 80 | 0.12 | 0.00 | 0.00 | 0.12 |
| PEANUTS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| RICE | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SORGHUM | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SOYBEANS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SUGAR CANE | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOBACCO | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| WHEAT | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISC. GRAINS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| ORNAMENTALS & GRASSES | | | | | | |
| FERNS | 20 | 20 | 0.09 | 0.00 | 0.00 | 0.09 |
| FLOWERS & FOLIAGE | 560 | 560 | 2.23 | 0.00 | 0.00 | 2.23 |
| WOODY ORNAMENTALS | 160 | 160 | 0.99 | 0.20 | 0.00 | 1.19 |
| IMPROVED PASTURE | 7,000 | 490 | 0.40 | 0.00 | 0.00 | 0.40 |
| SOD | 320 | 320 | 0.70 | 0.00 | 0.00 | 0.70 |
| TURF GRASS (GOLF) | 2,875 | 1,678 | 3.76 | 0.94 | 0.00 | 4.70 |
| TURF GRASS (OTHER) | 136 | 136 | 0.29 | 0.02 | 0.00 | 0.31 |
| MISC. AGRICULTURAL | | | | | | |
| LIVESTOCK | 0 | 0 | 0.08 | 0.91 | 0.00 | 0.99 |
| FISH FARMING | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 14,736 | 6,989 | 20.67 | 2.17 | 0.00 | 22.84 |
| SPRINKLER ACREAGE | 4,229 | 6,989 | | | | |
| LOW PRESSURE ACREAGE | 335 | | | | | |
| FLOOD ACREAGE | 2,425 | | | | | |

VOLUSIA COUNTY DATA - 1987

TOTAL POPULATION 330,939
 TOTAL LAND AREA 1,207 SQ. MILES

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT'S PORTION :

POPULATION

TOTAL 330,939
 PUBLIC SUPPLY 290,994
 SELF-SUPPLIED 39,945
 PER CAPITA 138

LAND AREA (ACRES)

TOTAL AREA 772,480 1,207 SQ. MILES
 FARMED 32,255
 IRRIGATED 11,380

1987 WATER WITHDRAWALS (Mgal/d) by CATEGORY

| | FRESH WATER | | | SALINE WATER | | | REUSE |
|----------------------|-------------|---------|--------|--------------|---------|--------|-------|
| | GROUND | SURFACE | TOTALS | GROUND | SURFACE | TOTALS | |
| PUBLIC SUPPLY (1) | 40.27 | 0.00 | 40.27 | 0.00 | 0.00 | 0.00 | 0.00 |
| DOMESTIC SELF-SUPPLY | 5.43 | 0.00 | 5.43 | 0.00 | 0.00 | 0.00 | 0.00 |
| COM/IND. SELF-SUPPLY | 1.07 | 0.00 | 1.07 | 0.00 | 0.00 | 0.00 | 0.00 |
| AGRICULTURAL IRR. | 31.55 | 6.58 | 38.13 | 0.00 | 0.00 | 0.00 | 0.52 |
| POWER GENERATION S-S | 0.36 | 117.25 | 117.61 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISCELLANEOUS | 7.36 | 0.00 | 7.36 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 86.04 | 123.83 | 209.87 | 0.00 | 0.00 | 0.00 | 0.52 |
| TOTAL GROUND | | 86.04 | | | | | |
| TOTAL SURFACE | | 123.83 | | | | | |
| COUNTY TOTAL | | 209.87 | | | | | |

(1) INCLUDES 0.04 Mgal/d of MARGINAL GROUND WATER USED IN R/O or DILUTED FOR PUBLIC SUPPLY USE.

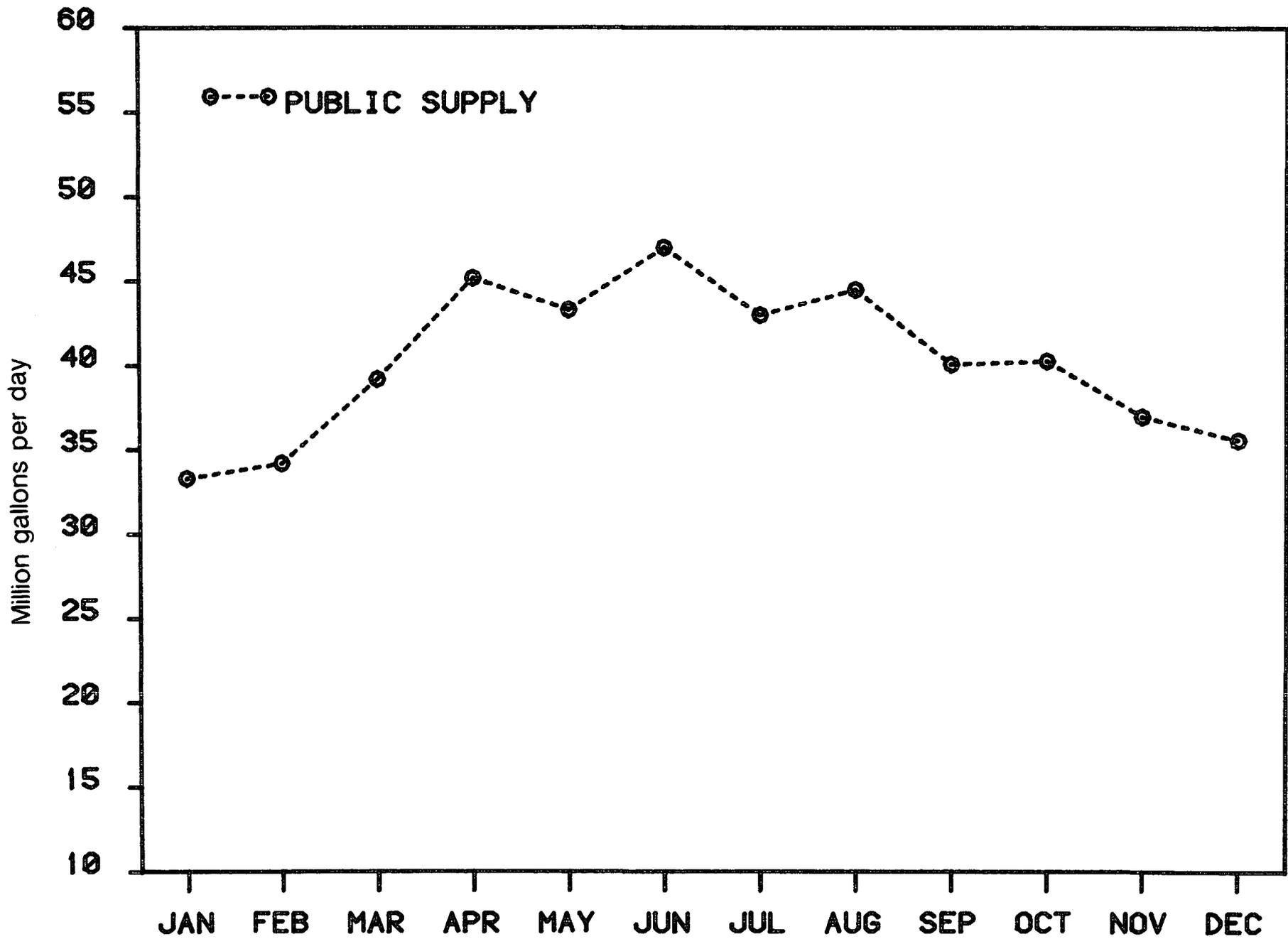


FIGURE A-17. MONTHLY FRESH WATER USE IN VOLUSIA COUNTY: 1987

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

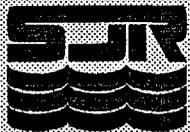
1987 INDIVIDUAL WATER USERS IN VOLUSIA COUNTY

| USER UTILITY/FACILITY | USE TYPE | POPULATION SERVED | WITHDRAWAL(MGD) | | WITHDRAWAL SOURCE |
|----------------------------------|---------------|----------------------|-----------------|---------|---------------------------------|
| | | | GROUND | SURFACE | |
| CASSADAGA WATER ASSOC. | PUBLIC SUPPLY | 270 | 0.025 | 0.000 | FLORIDAN AQF. |
| DAYTONA BEACH - CITY OF | PUBLIC SUPPLY | 80,436 | 12.079 | 0.000 | FLORIDAN AQF. |
| DELAND - CITY OF | PUBLIC SUPPLY | 31,610 | 5.108 | 0.000 | FLORIDAN AQF. |
| DELTONA UTILITIES | PUBLIC SUPPLY | 34,823 | 5.971 | 0.000 | FLORIDAN AQF. |
| EDGEWATER - CITY OF | PUBLIC SUPPLY | 11,718 | 1.343 | 0.000 | FLORIDAN AQF. |
| HIGHLAND COUNTRY ESTATES | PUBLIC SUPPLY | 515 | 0.055 | 0.000 | FLORIDAN AQF. |
| HOLLY HILL - CITY OF | PUBLIC SUPPLY | 12,248 | 1.136 | 0.000 | FLORIDAN AQF. |
| INDIAN HARBOR ESTATES | PUBLIC SUPPLY | N/A | 0.000 | 0.000 | VOLUSIA CO. WATER DEPT. (R/O) |
| JOHN KNOX VILLAGE | PUBLIC SUPPLY | 700 | 0.045 | 0.000 | FLORIDAN AQF. |
| KINGSTON SHORES WATER ASSOC. | PUBLIC SUPPLY | 250 | 0.021 | 0.000 | FLORIDAN AQF. (R/O) |
| LAKE BERESFORD WATER ASSOC. | PUBLIC SUPPLY | 893 | 0.182 | 0.000 | FLORIDAN AQF. |
| LAKE HELEN - CITY OF | PUBLIC SUPPLY | 2,407 | 0.224 | 0.000 | FLORIDAN AQF. |
| NEW SMYRNA BEACH - CITY OF | PUBLIC SUPPLY | 24,705 | 3.600 | 0.000 | FLORIDAN AQF. |
| ORANGE CITY COUNTRY VILLAGE | PUBLIC SUPPLY | 1,400 | 0.132 | 0.000 | FLORIDAN AQF. |
| ORANGE CITY | PUBLIC SUPPLY | 3,883 | 0.519 | 0.000 | FLORIDAN AQF. |
| ORMOND BEACH - CITY OF | PUBLIC SUPPLY | 39,125 | 4.546 | 0.000 | FLORIDAN AQF. |
| PORT ORANGE - CITY OF | PUBLIC SUPPLY | 37,727 | 4.130 | 0.000 | FLORIDAN AQF. |
| SPRUCE CREEK UTILITIES | PUBLIC SUPPLY | 1,435 | 0.234 | 0.000 | FLORIDAN AQF. |
| SOUTHERN STATES UTILITIES | PUBLIC SUPPLY | N/A | 0.000 | 0.000 | DELAND & VOLUSIA CO. WATER DEPT |
| TERRA MARIE VILLAGE W.A. | PUBLIC SUPPLY | 200 | 0.013 | 0.000 | FLORIDAN AQF. |
| TOMOKA WATER ASSOC. | PUBLIC SUPPLY | 300 | 0.039 | 0.000 | FLORIDAN AQF. |
| SUGAR MILL UTILITY CO. | PUBLIC SUPPLY | 1,097 | 0.094 | 0.000 | FLORIDAN AQF. |
| TYMBER CREEK UTILITIES | PUBLIC SUPPLY | 752 | 0.050 | 0.000 | FLORIDAN AQF. |
| VOLUSIA COUNTY WATER DEPT. | PUBLIC SUPPLY | 4,500 | 0.728 | 0.000 | FLORIDAN AQF. |
| WEST VOLUSIA UTILITY CO. | PUBLIC SUPPLY | N/A | 0.000 | 0.000 | DELAND & VOLUSIA CO. WATER DEPT |
| ARDMORE FARMS | INDUSTRIAL | | 0.015 | 0.000 | FLORIDAN AQF. |
| FLORIDA DNR - STATE PARK FAC. | INSTITUTIONAL | | 0.014 | 0.000 | FLORIDAN AQF. |
| FLORIDA DOT - 195 REST FAC. | INSTITUTIONAL | | 0.010 | 0.000 | FLORIDAN AQF. |
| FLORIDA POWER & LIGHT - SANFORD | POWER GEN. | | 0.268 | 1.250 | FLORIDAN AQF. & ST. JOHNS RIVER |
| FLORIDA POWER CORP. - LK. MONROE | POWER GEN. | | 0.090 | 116.000 | FLORIDAN AQF. & LAKE MONROE |
| HARMAC MANUFACTURING CO. | INDUSTRIAL | | 0.008 | 0.000 | FLORIDAN AQF. |
| KAMPERS KOVE KOA | INSTITUTIONAL | | 0.042 | 0.000 | FLORIDAN AQF. |
| ORANGE CITY INDUSTRIAL PARK | INDUSTRIAL | | 0.189 | 0.000 | FLORIDAN AQF. |
| SHERWOOD MEDICAL MAN. CO. | INDUSTRIAL | | 0.194 | 0.000 | FLORIDAN AQF. |
| T.G. LEE - LIFESTYLE DIV. | INDUSTRIAL | | 0.086 | 0.000 | FLORIDAN AQF. |
| TOMOKA STATE FACILITY (FDOC) | INSTITUTIONAL | | 0.193 | 0.000 | FLORIDAN AQF. |
| VOLUSIA COUNTY AGRICULTURAL CEN. | INSTITUTIONAL | | 0.010 | 0.000 | FLORIDAN AQF. |
| VOLUSIA COUNTY GOV. COMPLEX | INSTITUTIONAL | | 0.206 | 0.000 | FLORIDAN AQF. |

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

TABLE A-20. WATER USE BY CROP FOR VOLUSIA COUNTY - 1987

| | TOTAL ACRES | | WATER USE IN MGD | | | |
|-----------------------|-------------|-----------|------------------|---------|-----------|-------|
| | FARMED | IRRIGATED | GROUND | SURFACE | RECLAIMED | TOTAL |
| VEGETABLE CROPS | | | | | | |
| CABBAGE | 400 | 400 | 0.43 | 0.00 | 0.00 | 0.43 |
| CARROTS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| CUCUMBERS | 200 | 200 | 0.23 | 0.00 | 0.00 | 0.23 |
| PEPPERS | 200 | 200 | 0.23 | 0.00 | 0.00 | 0.23 |
| POTATOES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOMATOES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SWEET CORN | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| WATERCRESS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISC. VEGETABLES | 200 | 200 | 0.23 | 0.00 | 0.00 | 0.23 |
| FRUIT CROPS | | | | | | |
| BLUEBERRIES | 10 | 10 | 0.01 | 0.00 | 0.00 | 0.01 |
| CITRUS | 1,020 | 1,020 | 1.40 | 0.12 | 0.00 | 1.52 |
| GRAPES | 10 | 10 | 0.01 | 0.00 | 0.00 | 0.01 |
| PEACHES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| PECANS | 10 | 10 | 0.02 | 0.00 | 0.00 | 0.02 |
| STRAWBERRIES | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| WATERMELLONS | 200 | 200 | 0.13 | 0.00 | 0.00 | 0.13 |
| MISC. FRUIT | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| FIELD CROPS | | | | | | |
| FIELD CORN | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| PEANUTS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| RICE | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SORGHUM | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SOYBEANS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| SUGAR CANE | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOBACCO | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| WHEAT | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| MISC. GRAINS | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| ORNAMENTALS & GRASSES | | | | | | |
| FERNS | 5,600 | 5,500 | 20.76 | 4.28 | 0.00 | 25.04 |
| FLOWERS & FOLIAGE | 200 | 200 | 0.82 | 0.00 | 0.00 | 0.82 |
| WOODY ORNAMENTALS | 200 | 200 | 1.57 | 0.30 | 0.00 | 1.87 |
| IMPROVED PASTURE | 20,000 | 622 | 0.31 | 0.20 | 0.00 | 0.51 |
| SOD | 800 | 800 | 1.74 | 0.00 | 0.00 | 1.74 |
| TURF GRASS (GOLF) | 2,960 | 1,563 | 3.10 | 0.96 | 0.52 | 4.06 |
| TURF GRASS (OTHER) | 245 | 245 | 0.31 | 0.22 | 0.00 | 0.53 |
| MISC. AGRICULTURAL | | | | | | |
| LIVESTOCK | 0 | 0 | 0.25 | 0.50 | 0.00 | 0.75 |
| FISH FARMING | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 32,255 | 11,380 | 31.55 | 6.58 | 0.52 | 38.13 |
| SPRINKLER ACREAGE | 9,860 | 11,380 | | | | |
| LOW PRESSURE ACREAGE | 520 | | | | | |
| FLOOD ACREAGE | 1,000 | | | | | |



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