Estimating Florida Statewide Agricultural Irrigation Demand (FSAID) using Economics and Engineering Models

Final Report

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I. Introduction

The Florida Department of Agriculture and Consumer Services (FDACS) is charged with developing agricultural water conservation and water supply planning programs[1]. Agricultural (Ag) irrigation comprises 40% of total water use in Florida (Marella, 2009). Florida law set forth requirements for data indicative of future agricultural water supply demands for a 20-year planning period, providing data by crop types or categories, by water management district, and including historic, current and future projections of irrigated acreage, spatially by county, and with methods and assumptions used. This report documents the results of the effort to produce statewide estimates in accordance with the Statute. The Florida Statewide Agricultural Irrigation Demand (FSAID) project, which produced this report, was funded by the Florida Department of Agriculture and Consumer Services (FDACS).

The current report represents the first year of FSAID development. The main focus of the first year was to assemble the data and develop preliminary estimates. It is anticipated that the second year will be more focused on refining the areas and water demand estimates with the help of state and local experts. Throughout this report, opportunities for future refinement activities are identified.

1.1 Background

According to the USDA Agricultural Census data for Florida, 50 years ago there were approximately 15.4 million acres of land in farms; 8% of this land was irrigated (NASS, 1999). Over time there has been a steady decline in the land in farms, yet the irrigated acreage has generally increased (see **Figure 1-1** and **Table A-1 of Appendix A**). As a result, the percentage of land in farms that is irrigated has roughly doubled.

Throughout this report, ***irrigated acreage*** refers to the physical area of land that is irrigated; i.e. if one acre of land is irrigated, regardless of how many crops may be grown on that acre during a year, the irrigation is estimated for the acre as an annual total, in inches or millions of gallons per day (mgd). Whenever irrigation intensity is mentioned, it is in relation to baseline inches per physical acre per year.

[1] Section 570.93, Florida Statutes

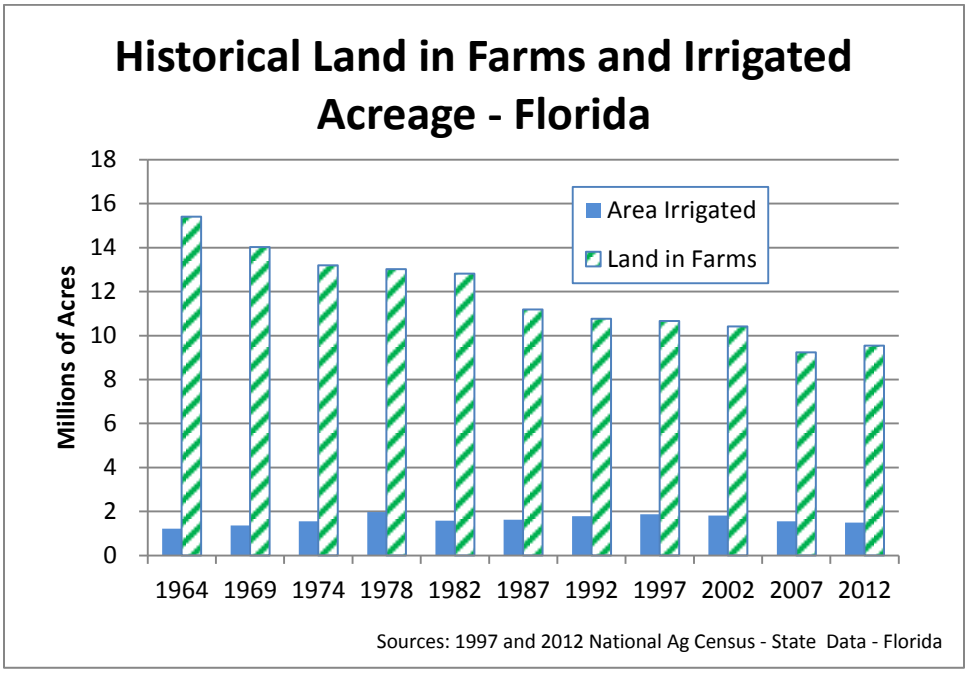

Figure 1-1. 2007 Ag Census Irrigated Areas by County

The Ag Census is not the sole source for estimates of irrigated acreage in Florida. Each year following the Census, similar information is collected in the Farm and Ranchland Irrigation Survey (FRIS). However, these results are available only at the state level.

Between the Census and FRIS years, the National Agricultural Statistics Service (NASS) also provide valuable - albeit less formal - information on crop production and other Ag statistics. The Ag Surveys provide data for the major crops grown in the state, but are not adequate for establishing the same comprehensive set of information that the Ag Census provides.

The USGS and Florida Water Management District (WMD) planners typically use estimates of irrigated acreage and water use per acre to calculate Ag water use. A subset of farms is represented in the WMDs' water metering programs.

In the end, all of these sources produce the same type of output: tabular estimates of water demand by County or Region. This format is of limited use for hydrologic modeling, an essential component of the planning process, because it does not locate the Ag water use/demands spatially. The use of geographic information systems (GIS) can bridge this spatial gap between expected demand and water resource planning. Developing a GIS layer of irrigated areas throughout the state improves the planning process in two ways:

1. The irrigated areas are identified physically and provide a basis for comparing one set of estimates to the next; and

2. The irrigated areas can be used to help compute recharge, and with careful joining of the irrigated areas to known locations of withdrawal points, the demands can be pinpointed to a particular X-Y (and Z, for wells) location.

1.2 Approach

The project builds on previous work as part of a St. Johns River Water Management District (SJRWMD) project (SJRWMD, 2013, Desmarais et Al. 2013). A baseline dataset for irrigated lands in a portion of the state was prepared, providing a starting point for this project. Since the Florida statutes require data "indicative of future agricultural water supply demands," an updated methodology was established that could be applied statewide. The technical approach was developed as three tasks:

1. Developing and Refining Existing Statewide Irrigated Lands Geodatabases;
2. Irrigation Estimates and Additional Ag-Related Water Requirements; and
3. Agricultural Acreage Projections and Associated Water Requirements.

II. Development of a Statewide Irrigated Lands Geodatabase

The first objective was to develop a parcel-level GIS coverage of Ag and Irrigated Lands for Florida. The benefit of developing a geodatabase with parcel-level polygons is that it can be utilized at any scale, facilitating future refinements and collaboration. In addition, parcel-level resolution is important for incorporating differences in input variables that affect crop irrigation requirements. Consistent GIS coverage for the entire state provides a foundation for uniform irrigation estimates.

2.1 Description of Previous Work

In the previous SJRWMD project, the geodatabase encompassed the entire State north of Lake Okeechobee, most of Georgia and South Carolina, and a small part of Alabama, based on the extent of the USGS Peninsular Florida groundwater model (the MegaModel), the North Florida South East Georgia (NFSEG) model, and their associated surface water basins (see **Figure 2-1**). The geodatabase was developed using four data sources:

1. **Irrigated areas polygon layers.** These layers are developed and maintained by the WMDs. This level of data is typically more detailed than Consumptive Use Permit (CUP) polygons. Available for SJRWMD and SWFWMD.
2. **Florida Land Use/Land Cover Classification System (FLUCCS).** Initially developed by the Florida Dept. of Transportation but updated by the FWC, DEP and the WMDs, FLUCCS consists of polygons that represent the different land uses throughout the state. For this project, the five WMD FLUCCS layers for 2010 (or the closest year to 2010, depending on availability by WMD) were merged together.
3. **National Agricultural Statistics Service (NASS) Crop Data Layer (CDL) for 2010**. Prepared by the USDA National Agricultural Statistics Service (NASS), this data source was developed using infra-red satellite imagery and is available for the entire State for 2008 and 2010.
4. **Consumptive Use Permit (CUP) polygons.** These layers are developed and maintained by the WMDs. Generally, the polygon area for this type of coverage represents the permittee's total site area, whether it is irrigated or not.

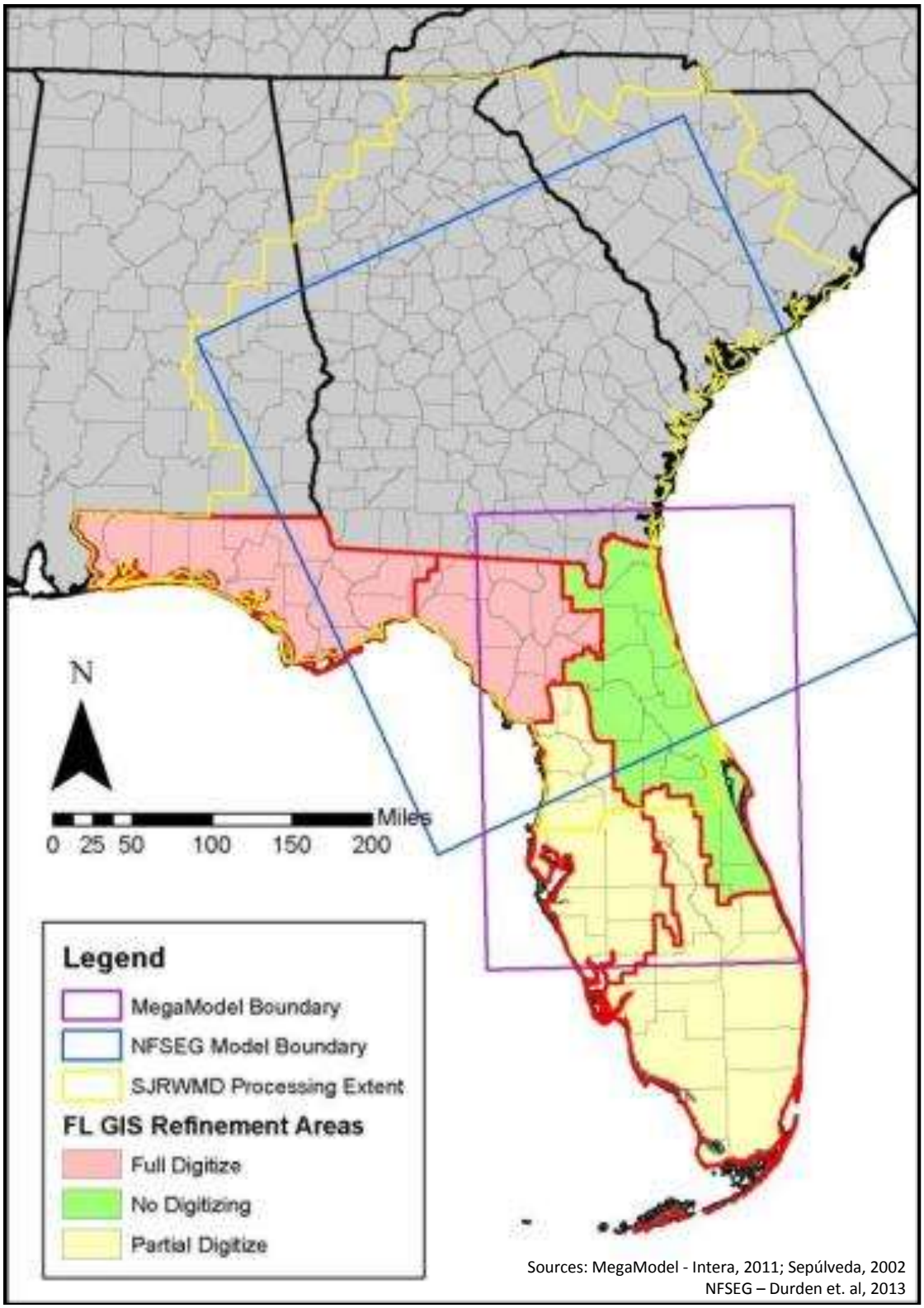

Figure 2-1. Extent of Previous Work for the MegaModel and NFSEG Groundwater Models

In the previous work, the above layers were overlaid, a coding system was developed so that the resulting polygons could be identified by their source, and a comprehensive Ag Land Geodatabase (ALG) was established. This ALG was used extensively for defining a subset of this data, the Irrigated Land Geodatabase (ILG). Since the quality and availability of the input data varied from one WMD to the next, different rules were established for each WMD and county that defined how the ALG would translate into the ILG. For example, the SJRWMD creates layers of irrigated areas every 5 years and does ground-truthing up to three times a year to capture annual crops, whereas NWFWMD and SRWMD do not have any comparable district-wide layers of irrigated areas. In SJRWMD, the irrigated areas were taken as-is, but in NWFWMD and SRWMD, irrigated areas were defined based on the intersection of the FLUCCS and CDL layers. As a check, crop area adjustment factors were used to scale the acreage of a particular crop in a particular county to roughly agree with the 2007 Ag Census. In essence, the crop area adjustment factors reduce the size of each polygon so that the county total irrigated areas matched. The crop area adjustment factors were used extensively in NWFWMD and SRWMD where available input was limited, moderately for SWFWMD and SFWMD (mainly for pasture and citrus crops), and not all for SJRWMD.

For FSAID, several refinements were made to both the ALG and the ILG development process, as described in the next section.

2.2 Revised Approach for ILG development

For FSAID, the ILG was refined to improve the linework integrity for areas that previously utilized CDL polygons and to eliminate the need for crop area adjustment factors. Using FLUCCS, CUP polygons, and Irrigated Areas as a starting point, the irrigated areas were refined manually using the best available information. The refinement process was tailored to the availability of data in each WMD:

- NWFWMD and SRWMD had the least information, and required the most refinement.
- SFWMD and SWFWMD had CUP polygons, which were 'cleaned up'. SWFWMD does maintain an Irrigated Areas layer, but this layer is updated only periodically by permit review staff during compliance reviews and other CUP activity.
- SJRWMD has a detailed Irrigated Areas layer (no refinement).

2.2.1 NWFWMD and SRWMD ILG Refinement Procedure

Substantial effort was made to refine the ILG for NWFWMD and SRWMD. For both WMDs, an irrigated areas layer does not exist. The CUP polygon layers, which are understood to be works in progress and potentially incomplete, typically cover property boundaries. Considering the small percentage of land in farms that is actually irrigated in the region, and the number of small operations that fall below CUP thresholds, the CUP polygons were only used as a focal point for making refinements.

NWFWMD and SRWMD ILG Refinement - First Step

The first step in the NWFWMD and SRWMD refinement procedure was to identify the FLUCCS land use codes that were likely to be irrigated. This started with filtering the land use codes to remove non-irrigated land uses such as 'Unimproved Pasture', 'Woodland Pasture', 'Abandoned Groves', and animal feeding operations. In FLUCCS, the sprayfields associated with animal feeding operations are typically

classified as Hay or Pasture. Next, the remaining FLUCCS areas were reviewed relative to the time-variable imagery service available in Google Earth (2007-2013 was the targeted time period, subject to availability of aerial imagery). A grid system was used to track progress. Using two computer monitors, the potentially irrigated FLUCCS polygons were assessed on the basis of whether the parcel is actively in Ag or not (See **Figure 2-2**). This step was helpful in filtering out fields that were converted to another land use or consistently inactive. At the end of the first step, the acreage of the remaining irrigated polygons was usually several times larger than the 2007 Ag Census (differences varied by county). The second step, as described below, would address this situation.

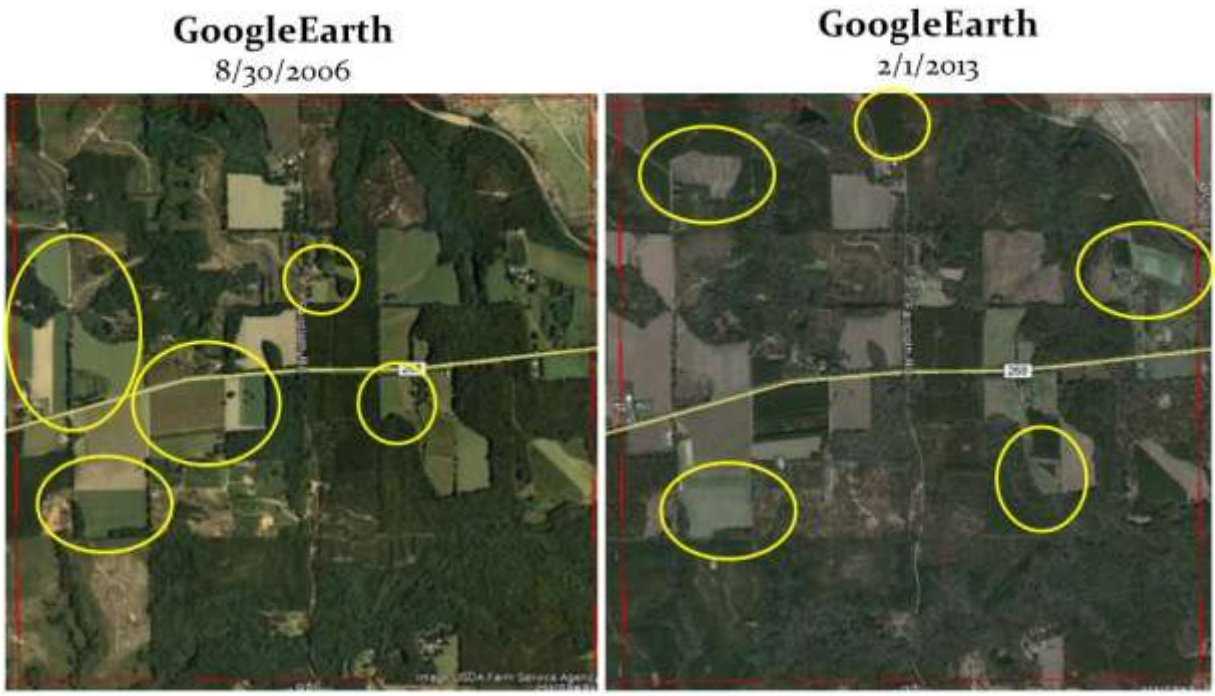

Figure 2-2. Examples of Active Ag as Defined by Time-Variable Imagery

NWFWMD and SRWMD ILG Refinement - Second Step

The second step in the NWFWMD and SRWMD refinement procedure incorporated point data of withdrawal locations (both groundwater wells and surface water pumps), well completion reports (NWFWMD only), and a preliminary spatial coverage of irrigated areas in Jackson County (provided by the NWFWMD). Using the same grid tracking system used in the first step, a second pass' of manual refinement proceeded, one county at a time, matching up the potentially irrigated areas to known withdrawal locations.

Information available from the point data was utilized to the fullest extent possible. The well completion report data downloaded from the NWFWMD website required geo-referencing. In some cases, latitude and longitude were available to place the point on a map. However, some of the older points included only the Section-Township-Range (STR) identifier; these points were placed in the centroid of the STR. The same was true for many of the SRWMD CUP points, although these points were already available in

a GIS format. When associating areas to a particular point, consideration was given to the well diameter (i.e., acres irrigated and well diameters were checked for consistency).

Figure 2-3 shows an example of the vector-based overlays (CUP polygons, withdrawal points, and well completion reports) that were used in the second pass of refinement. In this pass, the previously identified 'potential' irrigated areas were designated as "Yes", "No", or "Maybe" depending on if there was a well nearby; judgment was exercised regarding wells located at the STR centroid. Determination was prioritized by center pivot fields, nursery and other special crops, and to fields within a CUP polygon.

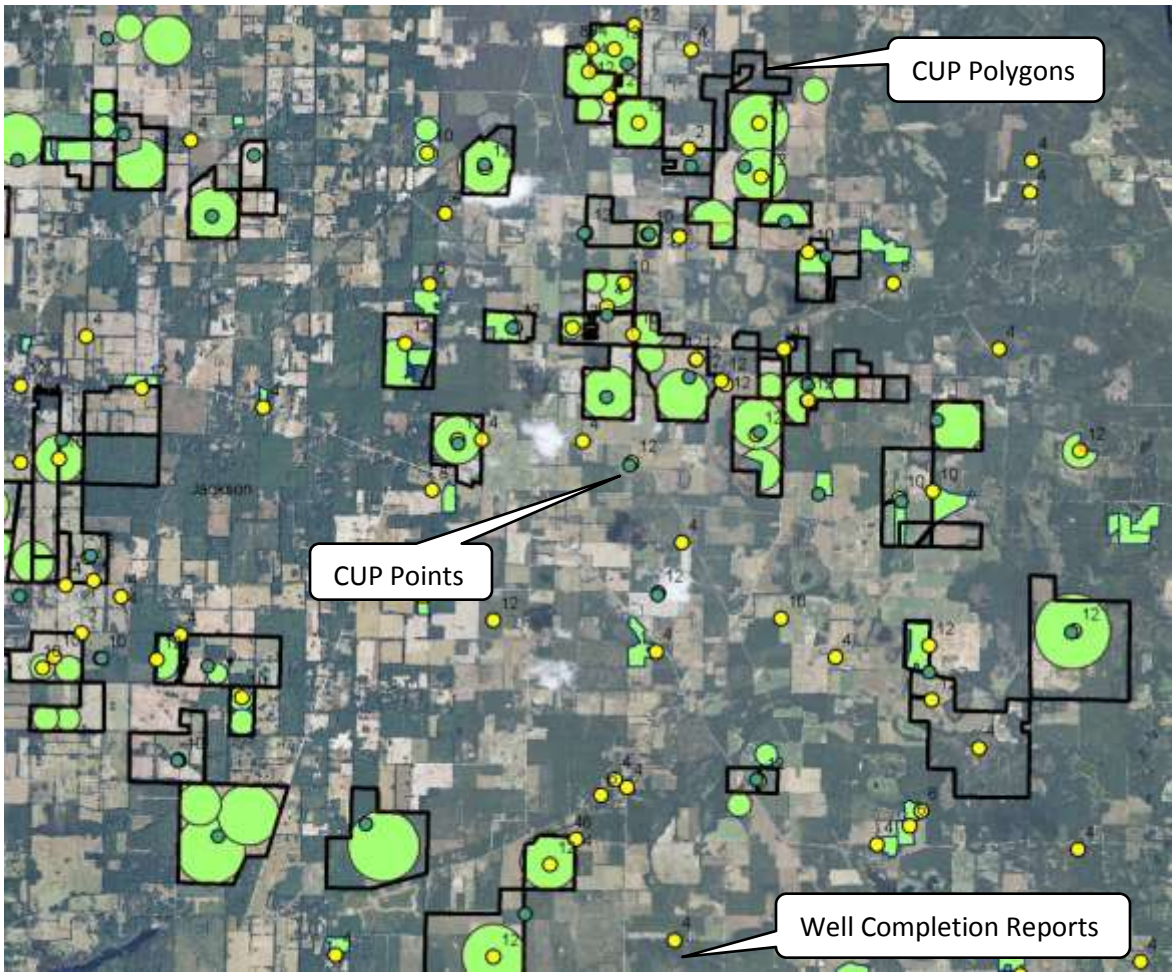

Figure 2-3. Step 2 Refinements for NWFWMD & SRWMD – Vector-Based Overlays

In situations where the normal aerial imagery and vector-based overlays were not adequate to define irrigated areas for a region, the National Agriculture Imagery Program (NAIP) imagery was enhanced to provide better contrast between fields. Specifically, NAIP imagery was processed statewide to display the Normalized Difference Vegetation Index (NDVI) to improve the contrast between fields. The NDVI is a graphical indicator that can be created from 4-band aerial imagery (red, green, blue, and near-infrared band). Live green vegetative surfaces strongly absorb visible light (from 0.4 to 0.7 µm) for

photosynthesis. On the other hand, live green vegetation strongly reflects near-infrared light (from 0.7 to 1.1 µm) to prevent overheating. **Figure 2-4** shows an example of the improved contrast that is gained from displaying the NDVI.

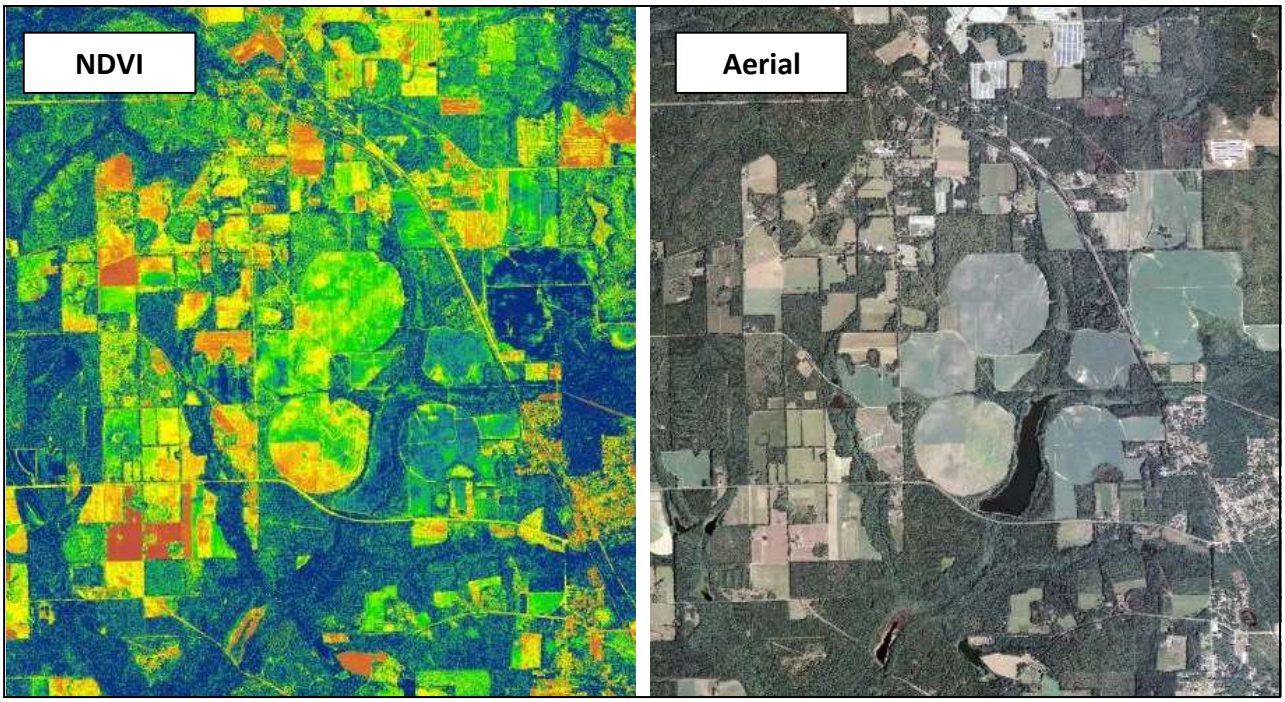

Figure 2-4. Step 2 Refinements for NWFWMD & SRWMD – NDVI

Once the second pass was completed, preliminary Jackson County irrigated lands polygons provided by the NWFWMD were merged and duplicates were removed. At the end of this step, which essentially represents areas with the infrastructure to irrigate, the sum of the irrigated areas was still considerably greater than what was reported by the Census data.

NWFWMD and SRWMD ILG Refinement - Third Step

The third refinement step utilized county-level crop acreage estimates from the 2007 Ag Census and recent estimates from USGS for 2010 (Marella, 2014). These estimates helped determine which areas were irrigated in 2010 by establishing a target values. Again, proceeding one county at a time, the decision rules for designating a polygon as irrigated were revised, with particular attention to the Field Crops and Pasture land uses.

NWFWMD and SRWMD ILG Refinement - Fourth Step

The fourth step specified a crop and irrigation system type to each of the irrigated areas polygons. Since a cross-walk from permit ID to crop and irrigation system was not available, the 2007 Census and USGS tables were used as a guide for translating the FLUCCS designation to a specific crop. To capture difference in vague descriptions such as “Field Crops,”, the FLUCCS-to-crop translations were carried out for each county separately. Irrigation system was inferred based on the assumed crop type and aerial imagery (e.g., field geometry, and visual confirmation by zooming in).

Figure 2-5 shows an example of the irrigated areas for NWFWMD and SRWMD, before and after the aforementioned refinement steps.

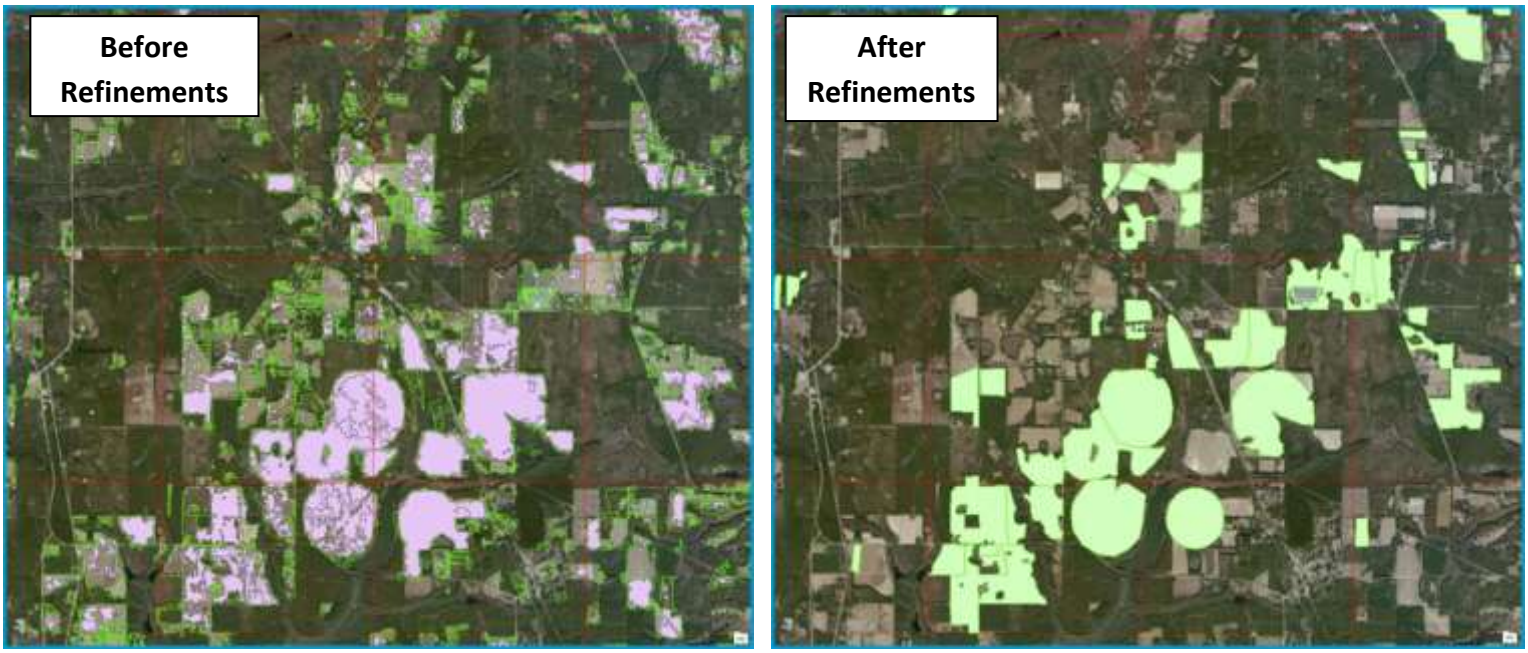

Figure 2-5. Step 2 Refinements for NWFWMD & SRWMD – Vector-Based Overlays

2.2.2 SFWMD and SWFWMD ILG Refinement Procedure

Moderate refinement effort was made for refining SFWMD and SWFWMD data. For most of the SFWMD, irrigated areas follow property boundaries, with the exception of wetlands, processing areas, and the large expansive ranches generally located in the central portion of the state north of Lake Okeechobee. For SWFWMD, an irrigated areas layer exists that has good precision for some permits. For other permits, the area is the same as the property boundary. This is indicative of SWFWMD's strategy for developing and maintaining this layer; when permit staff review a permit during a compliance renewal or modification, the irrigated areas layer is updated.

The first step of the refinement procedure was to overlay (GIS union) the Irrigated Areas (SWFWMD) or CUP polygons (SFWMD) with FLUCCS Agricultural uses. This procedure isolates all of the wetlands and non-cropped areas with the detailed FLUCCS linework and makes them easily selectable. Next, wetlands and other non-cropped areas were manually removed based on confirmation with aerial imagery. Following this step, tables relating permit ID to crop and irrigation system were used to specify the crop(s) and irrigation system based on the predominant crop(s) and irrigation system for each permit.

Once this first step of refinement was complete and all polygons were assigned a crop and irrigation system, the acreage for each crop type in each County was compared against the 2007 Census and the USGS tables to identify areas for further investigation. There were significant discrepancies for pasture, citrus, and a few other crops that varied from county to county. Similar to the third pass of refinement

for the NWFWMD and SRWMD areas, these discrepancies were resolved by considering the proximity to withdrawal points and the NDVI (see **Figure 2-6**). Inactive and abandoned citrus areas typically have multiple wells nearby because, at one point in time, they were irrigated. The refinement for inactive citrus areas was based solely on the NDVI (see **Figure 2-7**) and the time-variable imagery service in Google Earth. For a particular citrus area to be excluded from the irrigated areas layer, the imagery data had to consistently show inactivity. This was done to prevent newly planted areas from being removed unintentionally.

Figure 2-6. SFWMD & SWFWMD Refinements – FLUCCS-based and Proximity to Withdrawal Location

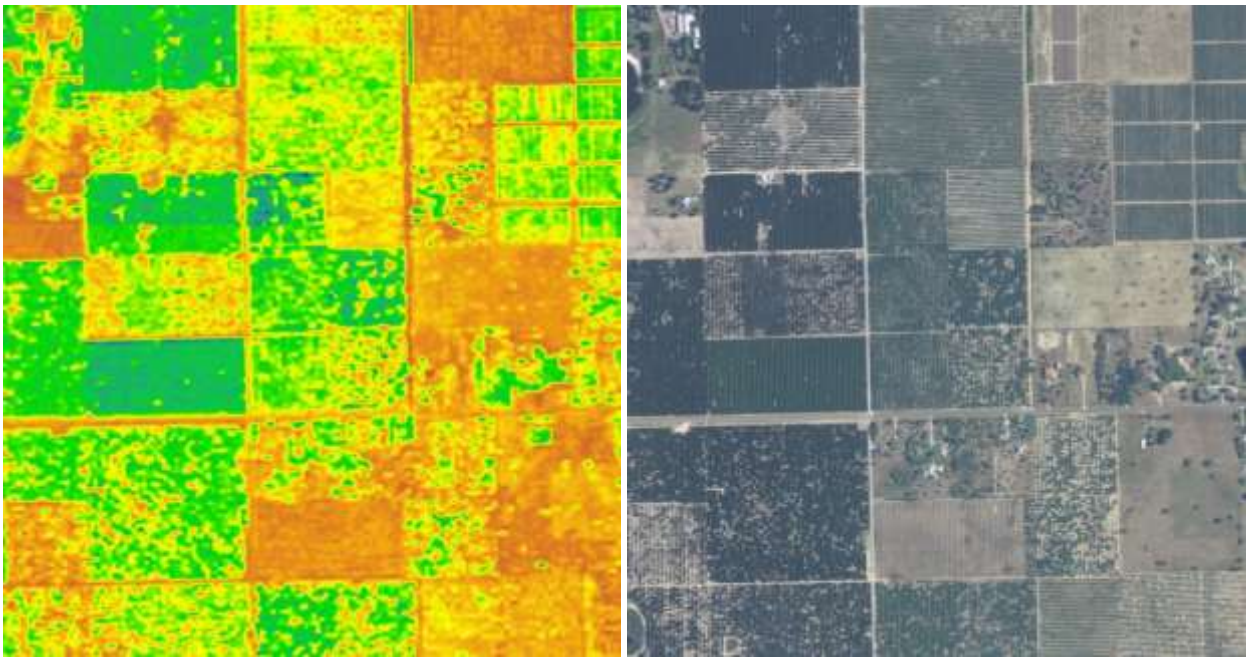

Figure 2-7. SFWMD & SWFWMD Refinements – NDVI Visualization for Inactive Citrus

2.2.3 SJRWMD Refinements

The SJRWMD conducts a district-wide field investigation to map irrigated areas every five years. This information is collected based on field reconnaissance and up to three follow up visits that year and includes the crop type and irrigation system. CUP information and property boundaries are not considered when this layer is created. The irrigated areas layer for 2010 was taken without modification, with one exception: this layer was intersected with the CUP polygons to split the irrigated areas polygons that were digitized across CUP boundaries.

2.2.4 Final Assembly and ILG development

After all irrigated areas were refined, the individual files (by WMD) were merged together to create the statewide ILG. The database schema was designed to retain basic information that could be used to quickly access other information (e.g., permit ID and web links) and for moving the data into the crop water requirements modeling (discussed in the next section). In addition, a unique ID ("ILG_ID") was assigned to each polygon to help with further parameterization efforts.

2.3 Revised Approach for ALG development

The process of creating the ALG was also modified by removing the CDL from the overlay process. The CDL was removed because this layer is 'patchy,' and frequently excludes portions of contiguous fields and including remote forested areas. Integrating the line work from the CDL, which is in a raster (grid) format, sacrifices the integrity of detailed linework that the other layers provide. Consequently, the remaining three layers were overlaid, and grid statistics of the CDL were computed for each of the polygons in the ALG. This approach retains the detailed crop type information from the CDL without sacrificing the integrity of the linework.

While a preliminary copy of the ALG was developed early in this project to help formulate the best approach for ILG refinement, the Final ALG was created after the ILG was completed. The three input data sources (ILG, FLUCCS, CUP polygons) were overlaid as described above and codes were assigned to distinguish the source from which the ALG polygon originated. **Table 2-1** provides a breakdown of the source codes and their descriptions.

Table 2-1. ALG Source Code Descriptions

Source Code	Source Code Description
1000	ALG polygon is coincident with the ILG only
1001	ALG polygon is coincident with the ILG and CUP polygons
1010	ALG polygon is coincident with the ILG and FLUCCS
1011	ALG polygon is coincident with the ILG, FLUCCS, and CUP polygons
10	ALG polygon is coincident with FLUCCS only
11	ALG polygon is coincident with FLUCCS and CUP polygons
1	ALG polygon is coincident with CUP polygons only
0	Indicates a manual refinement to the ALG

2.4 Acreage Comparisons with Other Sources

Except for the Ag Census Land in Farms estimate, there is no meaningful source of data with which to compare the ALG acreages. While the ALG is essentially a companion dataset to the ILG, and does not directly affect Ag water demands, a check with the Ag Census was made to determine if there was reasonable agreement. As shown in **Table 2-2** below, the total acreage from the ALG is within 10% of the Ag Census Data.

Table 2-2. Statewide 2010 ALG Acreage Comparison to the Ag Census, 2007-12

Total Land in Farms, Ag Census 2007 =	9,231,570 acres
FSAID ALG 2010 =	8,613,770 acres
Total Land in Farms, Ag Census 2012 =	9,548,342 acres

The final total ***irrigated acreage*** for the FSAID 2010 dataset is **1,738,961 acres**. Several sources of information are available to make comparisons with the ILG, including the Ag Census, the FRIS, the USGS, and District estimates. **Figure 2-8** compares overall statewide irrigated acreage estimates from these sources, and **Table 2-3** compares the irrigated acreage for District estimates.

Figure 2-8 suggests a discrepancy between the Ag Census irrigated acres and the FRIS irrigated acres estimate, which is also collected by survey and typically one year following the Ag Census. Going back as far as 1978, it can be shown that the irrigated acreage from the FRIS data is 6 to 20% lower than the Ag Census. The discrepancy may be related to the response rate of the survey. The FSAID irrigated acreage is higher than AgCensus for 2007 and 2012, but about 5% lower than the District estimates. Both the FSAID and District estimates were made prior to the release of the 2012 Census results.

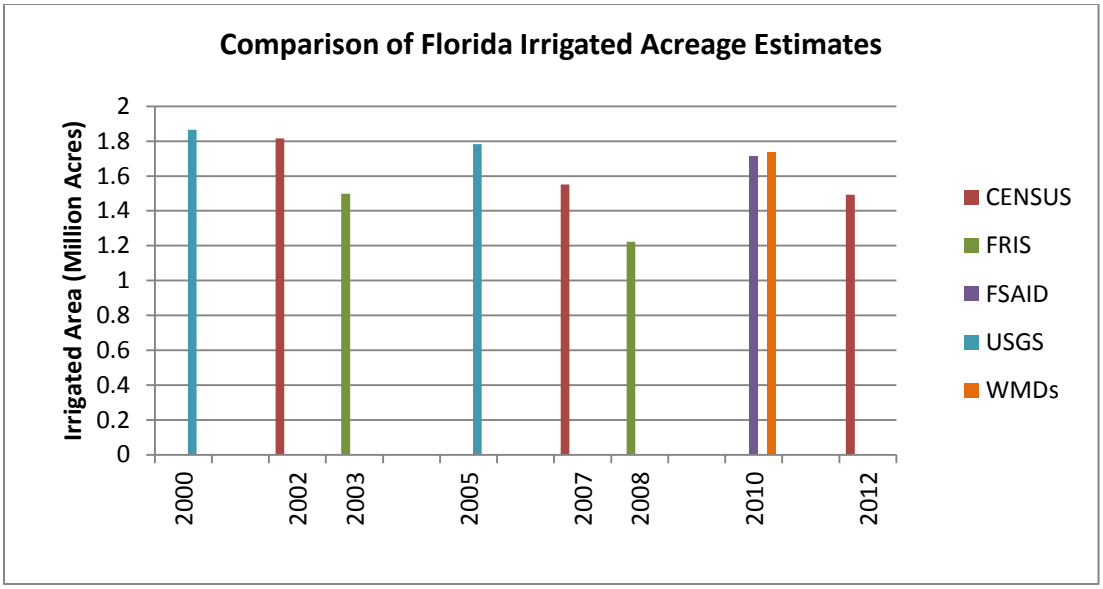

Figure 2-8. Comparison of Statewide Irrigated Areas Estimates

In **Table 2-3**, there is good agreement between the FSAID irrigated acreage and those in the various District estimates. Large discrepancies are seen in SRWMD, which will be addressed in the next phase of the FSAID project.

Table 2-3. Irrigated Acreage Comparison by District

District	2007 Census[1]	2012 Census[1]	District Estimate[2]	FSAID 2010	District – FSAID Percent Difference
District-Wide Comparisons					
NWFWMD	36,029	40,058	47,783	50,539	6%
SRWMD	68,764	95,491	64,596	87,210	35%
SJRWMD	161,844	138,177	202,169	201,638	0%
SWFWMD	334,841	288,165	359,678	368,513	2%
SFWMD	949,516	930,326	1,060,498	1,031,061	-3%
Total	1,550,994	1,492,217	1,734,724	1,738,961	0%

[1]The Ag Census provides acreage estimates in tabular form by County. For counties shared by WMDs, the flow was divided according to the distribution of irrigated acreage from the FSAID ILG.

[2]Irrigated acreage provided by the respective Water Management Districts.

2.5 ILG and ALG Summary

Figure 2-9 shows the FSAID 2010 statewide ALG and ILG. The ALG is a companion dataset to the ILG, and is used later for projecting future acreage and irrigation demand.

One of the final steps performed in developing the ILG was to incorporate the detailed irrigated areas coverage for Osceola County that is currently being developed by USGS. The information taken was based on the Fall Crops layer. This layer was used without modification (removing and replacing all other polygons in Osceola County) with the exception of two fields that were put into production after 2010.

The ILG was paired to consumptive use permit withdrawal points using a permit-specific and proximity-based join procedure that was developed to support the SJRWMD Megamodel and NFSEG groundwater modeling efforts. The join procedure first seeks to join the ILG polygons to the nearest point and later removes any joins that have mismatching permit IDs. A second procedure sets up a separate proximity join for each unique permit ID. Joins greater than 1000 feet are removed. A straight proximity join is then made with the remaining unjoined polygons and points, applying a tighter proximity threshold of 500 feet. Last, any unjoined ILG polygons are given a point located at their geometric centroid. Joining the ILG polygons to the CUP points is not related to the current project objectives, but this association creates future opportunities for linking to other information (e.g., source type, capacity, meter readings) and applications (groundwater modeling input).

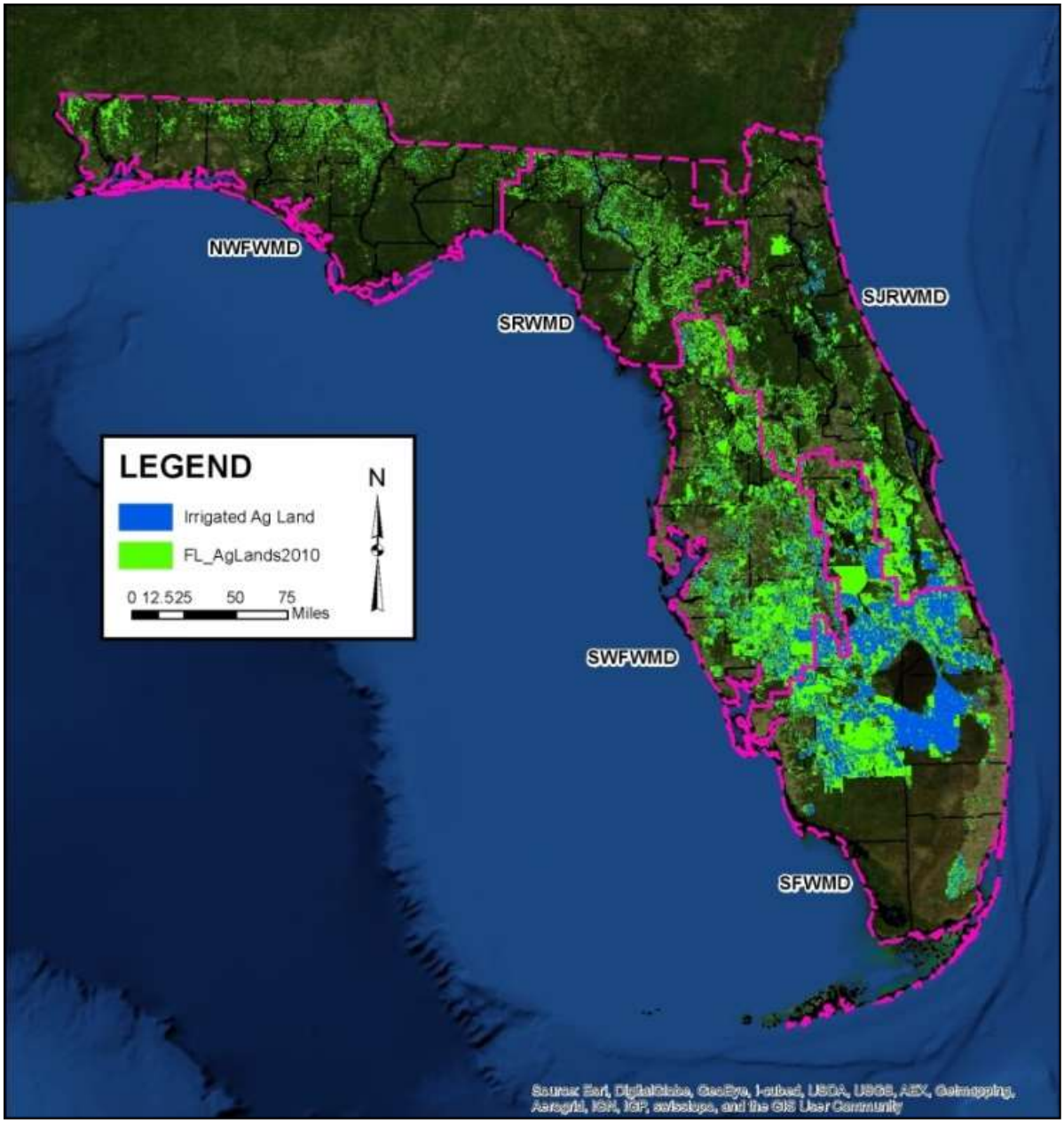

Figure 2-9. Final FSAID ALG and ILG

III. Irrigation Estimates and Additional Ag-Related Water Requirements

Once the irrigated acreage has been established, the second part to estimating Ag irrigation demand is to determine the appropriate irrigation intensity. Estimates are typically derived from crop water demand models, expressed in inches per year.

This section discusses the approach and factors used to determine irrigation intensity for each ILG polygon. Additionally, this section addresses the water requirements for frost protection, livestock, and aquaculture, which cannot be estimated with a crop water demand model.

3.1 Crop Water Demand Model Selection

There are two methods for computing crop irrigation requirements commonly used in Florida: the Blaney-Criddle (B-C) method and Agricultural Field-Scale Irrigation Requirements Simulation (AFSIRS) model. While there are variations between the water management districts, the B-C model is used for permitting purposes by SWFWMD, SFWMD, and SJRWMD. The SJRWMD CUP Handbook references the Blaney-Criddle (B-C) method, but SJRWMD encourages the use of their online GIS-Based Water Resources and Agricultural Permitting and Planning System (GWRAPPS) program, which is essentially a user interface for AFSIRS.

The B-C method is a monthly analysis developed by the Soil Conservation Service (SCS, 1970). The procedure is provided in Appendix A of the Part 623 of the National Engineering Handbook (NRCS, 1997). The application of the B-C method, which varies by WMD, is discussed briefly in the Basis of Review for CUP Applications for each WMD. The main advantages of the B-C method are the relatively simple approach, extensive documentation, and low input data requirements.

AFSIRS was developed in 1990 by the University of Florida and later updated in 2008 (Smajstrla, 1990; Smajstrla and Zazueta, 1995; Jacobs and Dukes, 2007). The AFSIRS model simulates a daily soil water balance and attempts to predict the timing and magnitude of irrigation events based on soil moisture conditions and an irrigation water management (IWM) strategy. While the AFSIRS model is more cumbersome and data-intensive than the B-C method, the integration of the GWRAPPS user interface makes this model intuitive and easy to use.

AFSIRS was selected as the model used to estimate crop irrigation demands. One advantage of AFSIRS over the B-C model is the time step. Because AFSIRS uses daily time steps, it is better suited to mimic the relationship between weather conditions and irrigation application. The B-C model only considers monthly rainfall totals and makes no distinction for day-to-day weather patterns (e.g., a month with 30 days with 0.5 inches of rain per day would be treated the same as a month with only one 15-inch rain event).

3.2 AFSIRS Input Parameters

AFSIRS requires many inputs to estimate each crop's consumptive water use and the corresponding irrigation requirements necessary to prevent crop moisture stress. The following is the list of the AFSIRS input parameters and assumptions used for this project.

3.2.1 Crop Type

The crop type associated with the ILG is very specific and was designed to capture multiple-cropped systems. As such, these values are not readily input into AFSIRS and must be converted to crop types recognized by AFSIRS. An AFSIRS pre-processing routine was created to translate the ILG crop type into AFSIRS-ready crop types. For multiple-cropped systems, multiple AFSIRS runs were set up because the model will only run one crop at a time. The ILG consists of 252 different entries for crop type, most of which are simply combinations of the same crop (e.g., Potatoes_Sorghum). Every individual crop was translated into one of the 60 crop types supported by AFSIRS.

3.2.2 Irrigation System Type

Irrigation system types were included in the ILG development. Similar to crop type, the irrigation system as coded into the ILG is more specific than AFSIRS can support. Each of the 42 different types of irrigation systems was translated into one of the nine irrigation types supported by AFSIRS. Irrigation efficiency (used to scale Net Irrigation demand to Gross Irrigation demand) was factored into the water demand estimates outside of the AFSIRS model to allow for adjustments to irrigation efficiency based on the more detailed irrigation system description provided in the ILG. This approach allows for applying different efficiencies for seepage and seepage systems with tailwater recovery. Irrigation efficiency is discussed in Section 3.3.

3.2.3 Evapotranspiration (ET)

A daily time series of evapotranspiration (ET) is required to simulate the daily crop water usage. There are a number of ways ET can be estimated (ASCE Penman-Monteith, Penman FAO-24, Priestly-Taylor, Thornthwaite, Hargreaves, Blaney-Criddle, and more), and much debate has been focused as to the correct time series to use. The term potential ET (PET) is used to describe the evaporation potential for water and the term reference ET (RET) corresponds to the evapotranspiration potential for a representative crop (typically alfalfa or grass). The ASCE Penman-Monteith RET method is widely considered to most accurately reflect Florida's conditions. It modifies the United Nations Food and Agriculture Organization (FAO) equation to allow for an hourly time step. However, in AFSIRS, PET or RET is scaled by a series of crop coefficients to estimate the daily water used by the crop. In the original development of AFSIRS, these crop coefficients were taken from older studies and established in the model on the basis of the Penman PET equation. The original AFSIRS model included only nine stations in Florida and the period of record of these data is no longer sufficient or relevant. An analysis was conducted using different ET sources to help shed some light. The final values used in this study are based on the ASCE Penman-Monteith RET because this method has been the industry standard since at least 2005 and will facilitate future potential refinements to the AFRSIRS crop coefficients based on more recent studies.

3.2.4 Rainfall

A daily time series for rainfall is required to run AFSIRS. A number of available data sources were considered – including gage data, GWRAPPS (GIS-Based Water Resources and Agricultural Permitting and Planning System), NEXRAD (Next-Generation Radar), AHPS (NOAA Advanced Hydrologic Prediction Service), and the NLDAS (NASA Land Data Assimilation Systems) data set used in the previous project. One of the issues with gridded rainfall data (i.e., anything except the rain gage data) is the effect of daily spatial interpolations. In a spatial interpolation, the value at one location midway between three stations is the average of the three stations. The problem that arises from this is that if only one of the three stations detects rainfall, the interpolated station will be assigned to 1/3 of this value. A 10-inch rain event at only one station would equate to a 3.3 inch rain event at the interpolated location. In the end, the artificial creation of many small rainfall days reduces the calculated irrigation demand**.**

Rain gage data was used as the applicable statewide dataset. In this regard, the availability of ET data dictates the period of record simulated in AFSRIS. Seventeen years' data was available for both ET and rainfall; during this time period, some areas of the state experienced multiple droughts, and others experienced numerous hurricanes. As weather is unpredictable, the variation within this time period was considered sufficient to capture reasonably representative fluctuations in weather conditions without extensive climate modeling.

3.2.5 Soil Type

The AFSIRS model was originally set up with 766 of the major soil types in Florida. The number of NRCS Soil Survey Geodatabase (SSURGO) soil types in the ILG greatly exceeds this number, and thus a new set of soil databases was developed. This is an improvement over the previous model, which simply translated the SSURGO soil type to most similar soil in the original AFSIRS database. The predominant soil type from each ILG polygon was computed and used in this analysis.

3.2.6 Growing Season

AFSIRS simulates crops as either perennials (year-round irrigation season) or annuals (seasonal). For the annuals, AFSIRS requires user-defined planting and harvesting dates. For this input, each county in the study area was designated as either in the North, Central or South Zone (UF/IFAS, 2013) because growing seasons vary by location (see **Figure C-1** of **Appendix C**). **Tables E-1a to E-1c** of **Appendix E** show the assumptions used for this project to define growing season for each of the three crop production zones. Since crop planting dates and duration of the growing season data are presented as ranges, midpoint values were selected. Multiple simulations were executed for double-and triple cropped systems, with one model run per crop. In general, if the crop growing dates in the literature suggest the ability for a second or third rotation in one year, a second or third rotation was assumed to occur. In reality, there are a multitude of crop/planting data combinations that change from year to year based on market prices, weather, and other factors.

3.2.7 Irrigation Management Option

AFSIRS determines the timing and magnitude of irrigation events based on a daily soil water balance and an assumed management option. The model has three irrigation management options:

1. **Normal Irrigation** – An irrigation event occurs if soil storage reaches the maximum allowable depletion (MAD) for the crop. The soil is irrigated to field capacity for each event.
2. **Fixed Depth** - An irrigation event occurs if soil storage reaches the maximum allowable depletion (MAD) for the crop. A fixed amount of water is applied for each irrigation event.
3. **Deficit Irrigation -** An irrigation event occurs if soil storage reaches the maximum allowable depletion (MAD) for the crop. The soil is irrigated to only a fraction of field capacity.

An informal sensitivity analysis on the Irrigation Management Option discussed above was carried out using Osceola County data. In these runs, the Normal Irrigation option was compared to three variations of Deficit Irrigation option: irrigated to 95% of field capacity; 75% of field capacity; and 50% of field capacity. The real-life analog to the Deficit Irrigation option can be described as the farmer not watering his crops completely with the hope that the next day will bring rain. The results of this analysis show that irrigation demands can decrease by 3%, 5%, and 8% by deficit irrigating to 95%, 75%, and 50% of the soil field capacity, respectively. For the current project, the Normal Irrigation option was used.

3.2.8 Depth to Water Table

AFSIRS uses the depth to water table value as a lower bound for defining the soil storage volume. This essentially implies that the plant roots will not extend beyond this depth. This value is static throughout the simulation period, but in reality this is a fluctuating value and can be affected by the farmer via drainage features. In the previous work, SJRWMD provided a detailed grid of depth to water throughout their District. To maintain consistency throughout the state, a default value of 3 feet was used. This depth is deep enough to not affect most crops, and for those crops with roots that can extend beyond 3 feet, the effect is typically minor.

It is recognized that the assumption of a depth to water (dtw) of 3 feet does not apply to all parts of the State. A global assumption was used because statewide estimates of dtw are not currently available. In AFSIRS, a dtw of greater than 3 feet will only affect the crops whose root zones are deeper than 3 feet. These are perennial crops: alfalfa, avocado, citrus, grapes, pasture, peaches, and pecans. A coarse sensitivity analysis was performed by changing the global dtw assumption to 99 feet. Actual dtw changes over time, as such the sensitivity analysis was performed to identify whether confidence intervals around the 3 ft value were wide. The results of this analysis showed an 8.8% increase in irrigation water use (statewide) when the deeper water table assumption is used.

3.2.9 Soil AWC Mode

The AFSIRS soil database provides a low and high estimate of the soil Available Water Content (AWC) for each soil and each soil horizon (up to six horizons per soil). This is how data are presented in the county-level (SSURGO) soil survey tables. The soil AWC profile is used by AFSIRS to compute the amount of soil water storage available for a given root depth (which varies with time for annual crops). In AFSIRS, the user specifies whether to use the low, high, or average AWC value. Since it is common practice to use the average (of the high and low values) unless site-specific data are available, the average soil AWC option was used for this project.

3.3 Irrigation Efficiency

AFSIRS was run in net irrigation mode to facilitate the conversion of net irrigation demand (water needed by the crop) to gross irrigation demand. The gross irrigation demand is the amount of water that is needed meet the crop demand, including inefficiency losses related to a number of potential factors such as transmission losses (leaks), storage losses (e.g., evaporation from reservoirs), and irrigation application losses (wind drift, seepage beyond the plant's soil moisture extraction zone, non-uniform field conditions, etc.).

In a previous SJRWMD study,[2] irrigation efficiency was determined following the NRCS Farm Irrigation Rating Method (FIRM) because the goal was to estimate actual water use as much as possible (NRCS, 2003). A set of four irrigation efficiency classes were defined (New, Proactive, Reactive, and Deferred) based on varying assumptions for several management factors (maintenance condition of the system, measuring devices, irrigation scheduling, and irrigation operator qualifications). The "New" efficiencies were applied for purposes of FSAID as a starting point. Several changes to the previous methodology were made for this study. First, the irrigation systems of the previous study were cross-walked to match the irrigation system types of the FSAID ILG (See **Table 3-1**).

Table 3-1. Irrigation Efficiencies for the New Class, by Major Irrigation System Types

Irrigation System	Irrigation Efficiency
Center Pivot / Lateral Move	0.85
Container Nursery	0.50
Crown Flood (citrus)	0.60
Drip	0.90
Gravity Systems[1]	0.70
Gravity Systems with tailwater recovery[1]	0.86
Impact Sprinkler	0.75
Micro Spray[2]	0.85
Overhead	0.75
Traveling Gun	0.70

[1]Gravity systems include ditch seepage, surface flooding, pipeline seepage, and other similar systems.
[2]Includes undertree systems for Citrus

Currently the WMDs use a range of irrigation efficiencies, which by definition will not exactly match a statewide estimate.

[2] SJRWMD, 2010. The water demand projection and distribution methodology of the St. Johns River Water Management District for the 2008 District Water Supply Assessment and the 2010 District Water Supply Plan Update. SJRWMD Special Publication SJ2010-SP1

An additional irrigation efficiency type was developed for seepage and flood systems that utilize tailwater recovery. This efficiency type was applied to all polygons explicitly specified as having tailwater recovery and the Everglades Agricultural Area (EAA). The adjustment for tailwater recovery was determined by taking the 'New' system efficiency for gravity systems (0.70) and back-calculating the implied tailwater loss using the FIRM; this yielded an implied tailwater loss of 25%. Next, assuming that a tailwater recovery system could reuse approximately 75% of the tailwater loss, the new FIRM-calculated efficiency was 0.86. In practice, the tailwater loss and percent that could be re-used with tailwater recovery will vary drastically from site to site.

3.4 Preliminary Model Testing – Rainfall and ET

A more thorough and statewide analysis was conducted using different rainfall and ET data sets as input. For every set of rainfall and ET data, each ILG polygon was assigned the nearest station (or grid cell). Different combinations of ET and rainfall data sets were utilized to create 10 separate statewide sensitivity runs.

The AFSIRS model simulation period depends on the available period of record for the rainfall and ET data. It is desirable to have as many years as possible to capture a wide range of hydrologic conditions that a grower may experience. The need for an adequate simulation period bore a heavy influence on the final selection of which ET and rainfall data sets would be used (particularly rainfall data).

3.4.1 Description of Available Rainfall Data Input

The rainfall data sets evaluated for this project included:

AHPS Rain - Gage-corrected daily radar rainfall gridded data published by the NOAA Advanced Hydrologic Prediction Service. This set of data is provided in the form of daily point shapefiles for the entire continental USA and Puerto Rico. Within Florida, there are 12,656 points spaced approximately 3.5 to 4 km apart (point spacing decreases from north to south). Each of these points was converted into an AFSIRS daily time series. The period of record for this data set is 2005 to 2013.

NLDAS Rain – Satellite-based rainfall from the NASA Land Data Assimilation Systems program. This set of data was used in the previous project for SJRWMD[3] Since this time; the spatial interpolation effect has been demonstrated with these data as well as the SJRWMD GWRAPPS data. Within Florida, there are 980 points spaced approximately 12 km apart. One advantage of using the NLDAS rain data is that an ET time series is available in the same format and indexed to the same point locations. The period of record for these data is 1992-2012.

Gage Rain – The NOAA National Climatic Data Center (NCDC) has daily rainfall data for over 1600 locations throughout Florida. These gages all have different periods of record and the

[3] The data were provided by SJRWMD in the netCDF file format.

number of gages available depends on the period of record selected. Additionally, many of these time series have issues such as missing (blank) values and skipped dates. A station was qualified so long as no more than 2.5% of the daily values input was errors or skipped dates. Two subsets of the gage rainfall data were created: one set includes 54 gages with a period of record from 1996 to 2013, and the second set includes 124 stations with a period of record from 2005 to 2013 that was used for comparative analysis. Each of these stations was converted to an AFSIRS time series.

Figures C-2a to C-2h of **Appendix C** show the statewide annual rainfall totals from these three sources for 2005 to 2012. The locations of the rainfall gages were converted to Theissen polygons to illustrate the geographic area associated with each gage. The gage data layers are characterized by sharp differences at the edges of the polygons. The AHPS layer shows a similar distribution of rainfall to the rain gage data, but with a gradient effect that is not expected for this high resolution dataset. The NLDAS layer has a coarser resolution, but the range of rainfall values is compressed; the NLDAS extreme high and low annual rain totals do not agree with those of the AHPS or the gage datasets.

Comparisons of the differences between the datasets from a daily perspective reveal a similar observation. A test comparison was made by computing daily rainfall totals for nine days between June 1 and June 9, 2005. **Figure 3-1** shows the daily rainfall totals for June 9, 2005 as an example. According to the rain gages, this day was "hit or miss;" some gages detected rainfall and some did not. The AHPS layer is in agreement with this, showing various bands and clusters of rain, similar to the typical wet season rainfall pattern for Florida. The NLDAS rainfall, however, shows numerous large areas of trace amounts of rainfall (0.01-0.05 inches), and no area received more than 1 inch of rainfall, whereas the gage and AHPS data show locations with 2-3 inches of rainfall. This difference is likely due to spatial averaging and the resolution at which the data were collected or provided. Fundamentally, any grid-based rainfall data will have some amount of spatial averaging (unless there is a gage in every grid cell). Gage data are collected at a discrete point and thus have no spatial averaging, but the tradeoff is that the resolution is dictated by the distribution and data quality of the gages.

Other sources of rainfall data options explored included raw NEXRAD rainfall files and GWRAPPS. In general, NEXRAD is not particularly suited for analysis of long periods of records over wide areas. Daily estimates would need to be summed together from hourly data. Carrying out these computations statewide for a long period of record is beyond the scope of the current work. As the spatial interpolation effect has been demonstrated with the GWRAPPS data as well, and annual totals are reasonably similar to the NLDAS data, this data set was not included in the current analysis. Ultimately rain gage data was used for FSAID.

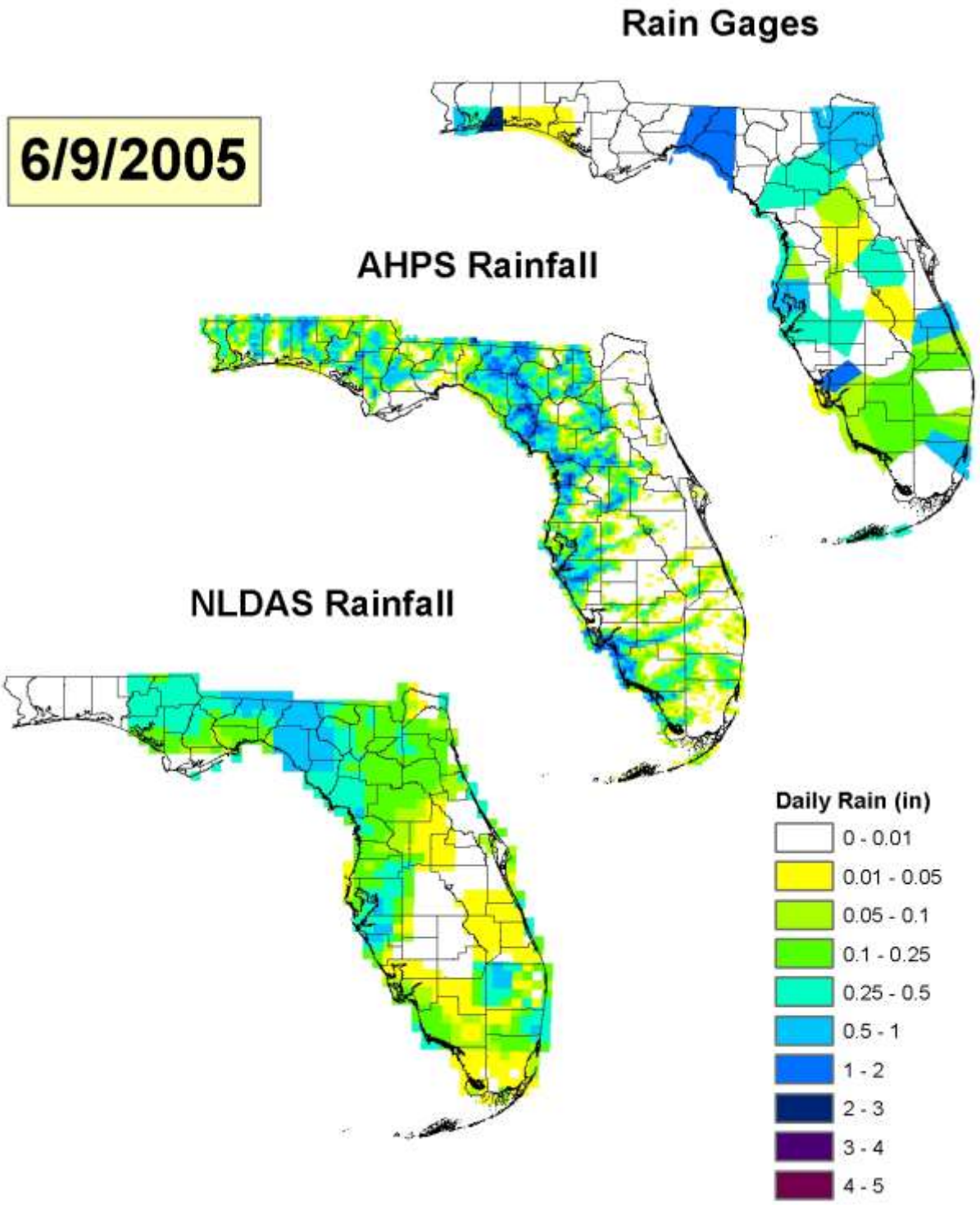

Figure 3-1. Comparison of Daily Rainfall Distribution

3.4.2 Description of Available Evapotranspiration Data Input

The evapotranspiration data sets evaluated for this project included:

USGS GOES DCS – This data is made available by the USGS for all of Florida, and originates from the Geostationary Operational Environmental Satellite Data Collection System (GOES DCS). The data are provided as text files, and include values for RET, PET, Solar Radiation, Max/Min Relative Humidity, Max/Min Temperature, and Wind Speed. RET is calculated using the ASCE Penman-Monteith equation and PET is calculated using the Priestly-Taylor equation. The entire dataset consists of 39,168 points with 2-km spacing. Each of these points was converted to an AFSRIS time series. The period of record for both PET and RET data sets is 1996 to 2012.

NLDAS ET – This is the analog to the NLDAS rainfall data used in the previous SJRWMD project. This data had been calibrated by SJRWMD to better match the USGS GOES PET estimates. Additionally, due to erratic data near the coastline, all ET points within 25 km of the coastline were removed following the recommendation of SJRWMD. The period of record for this set of data is 1992-2012.

Figures C-3a to C-3h of **Appendix C** show the statewide annual evapotranspiration totals from these three sources, for 2005 to 2012. The USGS RET data are consistently higher than its PET counterpart. The USGS RET also includes several small patches of localized lower ET values that appear in the same place every year. The cause of this phenomenon is unknown. The USGS PET values appear much more stable, with high PET values consistently observed at major water bodies. The NLDAS PET data, which was modified to exclude values near the coastline, are typically lower than both the USGS RET and PET datasets. The NLDAS predicts low PET values for major water bodies (Lake Okeechobee is clearly visible), the opposite of the USGS PET data.

3.4.3 Test Setup and Results

Table 3-2 lists the details of each test run that was performed for 2005-2012, which was dictated by the available AHPS Rainfall Data.

Table 3-2. Model Run Descriptions

Run Name	Period of Record	Rain Data Source	ET Data Source	Statewide Irrigation Demand (mgd)	Statewide Irrigation Demand (in/yr)
Run1	2005-2012	AHPS Rain	USGS RET	2670.9	21.0
Run2	2005-2012	AHPS Rain	USGS PET	2295.9	18.0
Run3	2005-2012	AHPS Rain	NLDAS PET	2117.6	16.6
Run4	2005-2012	NLDAS Rain	NLDAS PET	1779.2	14.0
Run5	1996-2012	NLDAS Rain	NLDAS PET	1547.9	12.1
Run6	2005-2012	GAGE05	USGS RET	2674.5	21.0
Run7	2005-2012	GAGE96	USGS RET	2678.7	21.0
Run8	1996-2012	GAGE96	USGS RET	2427.1	19.0

The above sensitivity runs can be arranged and compared in various ways to discern the effects of using one dataset versus another.

- Run1, Run2, and Run3 isolate the effect of the three different ET sources using the AHPS Rainfall dataset. The USGS RET source (ASCE Penman-Monteith equation) yields higher irrigation demand than do the USGS PET (Priestly-Taylor equation) and the NLDAS PET data.
- Run3 and Run4 compare the use of the NLDAS rain and the AHPS rainfall with the NLDAS PET data. The NLDAS rainfall data yields lower irrigation demand than does the AHPS data set. This suggests that the spatial interpolation effect is not present with the AHPS rainfall data.
- Run1, Run6, and Run7 compare the AHPS, Gage05 and Gage96 rainfall input using the USGS RET dataset. All three data sets produce similar results from a statewide perspective. This supports the claim that the AHPS data are "gage-corrected". Also, this conclusion suggests that reducing the number of gages from 124 to 54 (the Gage05 dataset to the Gage96 dataset) has little impact on the overall demand.
- Comparing Run4 and Run7 versus Run5 and Run8 isolates the effect of expanding the simulation period from 2005-2012 to 1996-2012. In both cases, the statewide demand decreases by about 2 inches per year as a result of incorporating the larger simulation period.

The conclusion from this analysis was to use 'Run8' as the final setup for the FSAID estimates. The simulation period for Run8 is 1996-2012, using the USGS RET data and the Gage96 rain dataset. As more data become available, the Gage96 rainfall may be replaced by the AHPS dataset to improve the spatial resolution of the rainfall input.

3.5 Summary of AFSIRS Results

A summary of the AFSIRS-based irrigation demand for each of the major crop categories is depicted in **Figure 3-2**. The highest per-acre water use is for Greenhouse/Nursery and Sod, while the lowest per-acre water use is for Vegetables/Melons/Berries, Field Crops, and Miscellaneous. When this information is presented graphically**,** the effect of the per-acre water use on the overall irrigation demand is apparent. Even though the irrigated acreage for Greenhouse/Nursery and for Sod are roughly one-half that of Pasture and Field Crops, the overall irrigation demand is twice as much. The higher per-acre water uses for these categories seems reasonable; both are engaged in growing plants in their younger and more drought-vulnerable stages.

The average irrigation intensity statewide is 19.0 in/yr (per irrigated acre). This compares well to the FRIS data, which is the only existing statewide estimate of irrigated acreage by crop: in the seven FRIS surveys conducted since 1979[4], the range is 14.8 to 23 in/yr, with an average of 19.0 in/yr.

[4] US Dept of Commerce, 1982. 1979 Farm and Ranch Irrigation Survey

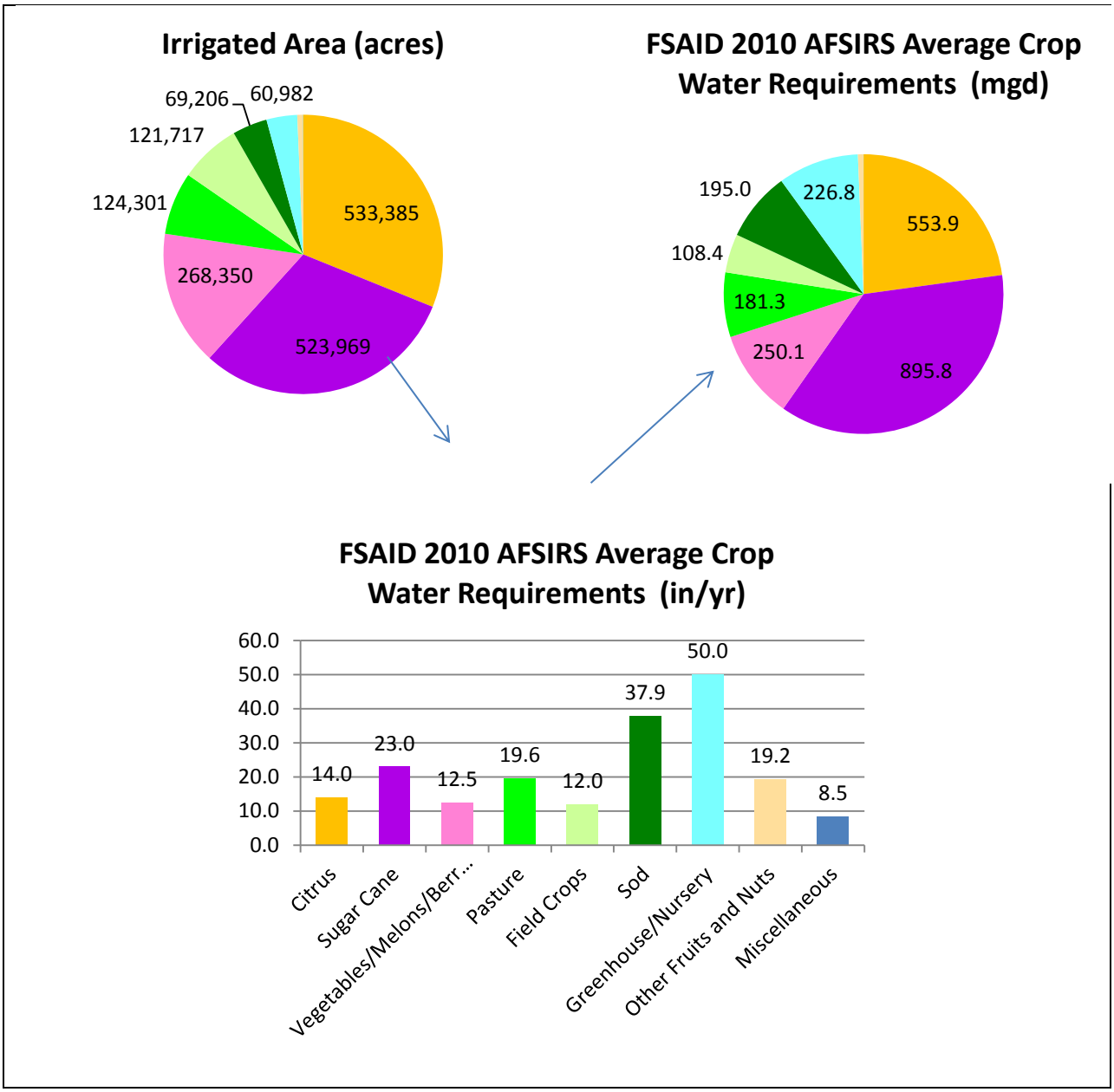

Figure 3-2. Summary of AFSIRS Results – Annual Averages

3.5.1 Comparison to Other Crop Water Requirements Models

There are numerous fundamental differences between the FSAID methodology and the methodologies used by the WMDs for other estimates. These differences include different models (e.g. Blaney-Criddle), different rainfall and ET datasets, different simulation periods, use of aggregated estimates versus individual polygons (such as by FSAID), different crop mixes, and different growing periods. Overall, there is a tendency for the FSAID estimates to be lower than WMD estimates for citrus and higher than WMD estimates for Greenhouse/Nursery and Sod. The differences between estimates will be explored with the help of the WMDs in the next phase of FSAID.

3.6 Other Ag Water Demands

Frost projection, livestock watering, and aquaculture are other Ag water demands included in FSAID estimates. These water uses are not included in a traditional crop water demand model. Consideration was given to the water demand related to crop establishment, fertigation, and chemigation, but these were not included. The assumption is that growers absorb these demands within their designated allocation; several WMDs specifically include these uses in calculating a water allocation.

3.6.1 Frost Protection

Frost protection is used on a variety of crops in areas such as Central Florida, where freezes occur regularly (but not every year). Citrus, strawberries, blueberries and ferns are examples of crops commonly protected from freezes. While strategies vary by crop and the capabilities of particular irrigation systems, the most common method is to apply a constant high supply of water to the plant. As ice forms around the plant, the heat of fusion gained from the transition of a liquid to a solid) protects the plant. Published literature recommends that 0.20 to up to 0.40 inches per hour of water be applied so that the heat of fusion and heat of vaporization (liquid to water vapor) balance (Parsons and Boman, 2003; Crane, 2002; Williamson et al 2004). If too little water is applied, the practice can be more damaging than if no water were applied at all. For some farms, the capacity of the irrigation system limits frost protection to a portion of the field. The high water requirements from frost protection have led to short-term groundwater drawdown, and more farms are adding reuse ponds for this purpose. Another strategy used that offers less of a guarantee but at some measure of protection is to flood or moisten the ground before the freeze occurs to act as a heat buffer.

A frost protection algorithm was created to estimate this water use using the USGS GOES minimum daily temperature values. Frost protection was limited to the crops known to use freeze protection: strawberries, ornamentals, ferns, nurseries (excluding greenhouses), and perennial fruit trees and bushes (blueberries, citrus, etc.). Annual vegetables were assumed to not require frost protection under the assumption that growers would select their planting and harvesting dates to avoid freeze conditions.

A frost protection region was defined to exclude areas in the northern part of the state where freezing conditions are commonplace. In these areas, it is assumed that crops that would require frost protection are scheduled around the winter months. To define the frost protection region, the USGS GOES minimum daily temperature was analyzed at every available point and aggregated by county. If more than half the data points within a county experienced a freeze (triggered by 0 deg C) in each of the 17 year period of record, or if the average number of frost protection days exceeded 5 days per year, the county was assumed to be in the northern no freeze protection required zone. The results of this analysis were mapped, and exceptions were created for counties where freeze protection is known to occur (i.e., Volusia and Flagler). **Figure 3-3** shows the final frost protection zones.

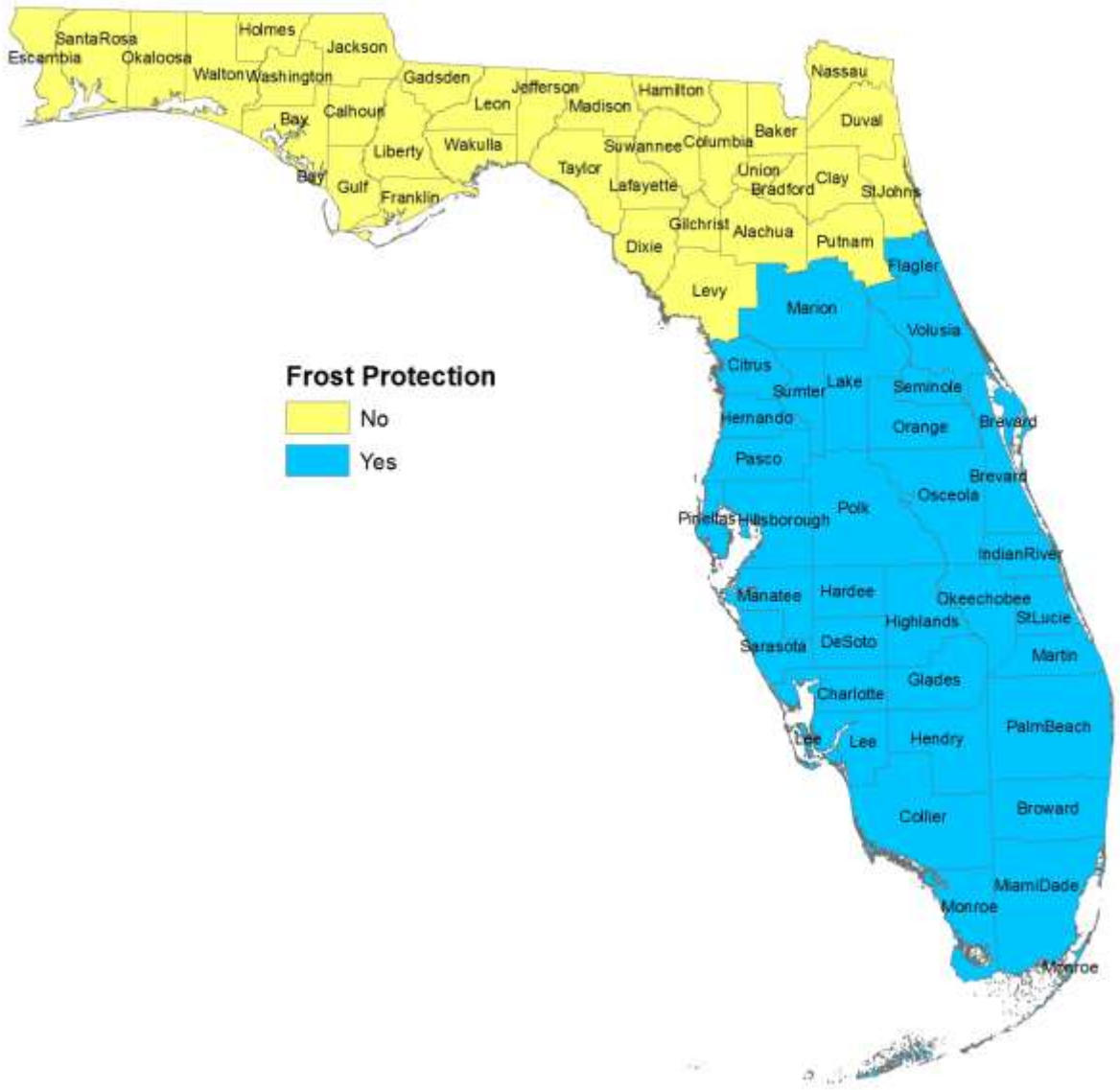

Figure 3-3. Frost Protection Zones

Irrigation system type was not used as a means to decide if a particular field is frost protected. Some systems are virtually useless *during* a freeze (drip, center pivots), but could be utilized *before* the freeze like with the case for center pivots. Further, many crops (e.g., strawberries) have two irrigation systems: overhead irrigation for seed establishment and/or frost protection, and drip irrigation during plant growth periods. This level of detail is not always available in the input data. Last, there are farms that use other methods of frost protection (e.g., flooding) that are unrelated to the irrigation system type. Based on the argument that a farmer would not grow a cold-sensitive crop during the winter without a backup plan it was decided that irrigation system type is an unreliable indicator of freeze protection potential.

The frost protection routine considers the daily minimum temperature for each day and for each polygon in the ILG. To calculate the volume used, a rate of 0.07 inches/hour for micro-spray systems and 0.2 inches/hour for all other irrigation systems was assumed, and the duration of the frost protection pumping was set to 12 hours (e.g., 7pm to 7am).

Of the 17 years of data, the average annual frost protection demand was 12,080 million gallons (MG), which equates to 33.11 mgd on an average annual daily flow (AADF) basis. The sum of the maximum annual frost protection quantities for each polygon is 54,250 MG, or 148.6 mgd AADF. **Table C-1** in **Appendix C** provides a breakdown of the maximum and average frost protection demand for each county in the frost protection zone.

These quantities of water are a relatively small percentage of the total statewide demand for normal irrigation (1.3% and 6.1% for average and max, respectively), and the withdrawals happen in a short time frame. Planning and/or mitigating for the potential impacts from this short-term water demand is necessary. The SWFWMD has already established a water use caution area specifically for this purpose in the Dover / Plant City area.

Frost protection demand should be considered a special situation of a short-term potential demand situation, similar to the "Max Daily" and "Max Monthly" permitting quantities. These demands are kept separate from the AFSIRS demands; otherwise there may be situations when pumping is double-counted because water is being used by both AFSIRS and in the frost protection routine. However, as the ability to predict freeze protection pumping improves, frost protection could be considered directly in a new version of AFSIRS or another model.

3.6.2 Livestock Demands

Livestock demands were determined based on the number of animals and the WMD's suggested allocation per animal. These numbers are relatively consistent among the WMDs. The Ag Census for both 2007 and 2012 were used to estimate the number of cattle (both dairy and beef), and the Ag Census for 2012 alone was used to define the number of other livestock.

Table 3-4 summarizes the livestock water demands. A breakdown of the livestock demands by county is presented in **Table C-3** of **Appendix C.**

Table 3-3. Statewide Livestock Water Demand Summary

Animal	Estimated Number of Animals	Water Use Per Animal (gpd/head)	Total Demand (mgd)
Dairy Cattle	121,200	150	18.18
Beef Cattle	1,575,531	12	18.91
Goats	57,613	2	0.12
Hogs	17,622	2	0.04
Sheep	11,763	2	0.02
Total	1,783,729		37.27

3.6.3 Aquaculture Demand

Aquaculture demands are difficult to estimate in an automated fashion because the water demand is based on a specific flow-through rate for the system. Based on a limited review of randomly selected aquaculture permits throughout the state, no specific set of guidelines were identified. Further, most of the WMDs do not single out aquaculture in any county summaries, except within the SFWMD Upper Kissimmee Basin RWSP, which provided aquaculture demands for four sub-areas: Western Osceola County, Eastern Polk County, Eastern Highlands County, and Western Okeechobee. Of these four areas, only Eastern Highlands and Western Okeechobee represent the majority of the County area.

Using the 2007 and 2012 Ag census data (Number of Aquaculture Operations, and Total Sales from Aquaculture Operations) the SFWMD aquaculture demands were divided by the total sales for Eastern Highlands and Western Okeechobee areas to obtain a ratio of demand to total sales. The average mgd/$ ratio for these two counties was 0.35 gpd/$, or $2.82/gpd. This ratio was then applied to the total aquaculture sales for each county reporting aquacultural activity to arrive at an estimate for aquaculture water use.

The statewide aquaculture demand was calculated to be 23.9 mgd, of 37% of which is focused in Hillsborough County. **Table C-4** in **Appendix C** gives a county-by-county breakdown of the calculated aquaculture demand.

3.7 Water Demand Summary and Comparisons to Other Studies

The total statewide Ag Water demand estimate for baseline (2010) conditions is 2649.6 mgd (**Table 3-4**). An additional 49.65 mgd may be required for Frost Protection in an "average" year.

Table 3-4. Statewide Summary of Ag Water Demands

Water Use Component	Average Annual Demand (mgd)
Crop Irrigation	2587.1
Livestock/Dairy	37.3
Aquaculture	25.2
Subtotal	**2649.6**
Frost Protection (avg)	49.65

IV. Agricultural Acreage Projections and Associated Water Requirements

4.1 Background

Projections of future agricultural acreage and associated water use are intended to support forecasts of future Ag water demand in five-year increments for 20 years. Data from NASS and other sources were analyzed in the context of trends in agriculture for the purposes of projecting future water needs (Moss et al, 2002; Seidel et al, 2011; Gollehon, 2014). Previous econometric modeling has identified spatially-

varying trends in irrigation behavior including irrigation intensity (water use per acre per year), increasingly water intensive crop mixes, and land use conversion (Geoghegan et al, 1996).

Agriculture is an inherently risky operation: weather events can dramatically affect output, market prices can shift, and labor supply can be variable. Ultimately, agriculture is a business, and economics underlie growers' decisions, driving irrigation demand. While AFSIRS was used to develop baseline estimates of water use (using the ILG as described in the first task) for each existing farm and crop in its current state, econometric modeling was used to replicate the AFSIRS results, and then simulate alternative scenarios for modeling future demand. For subsequent years, water use as represented through metered data will be used to model changes in variables; for the base year, AFSIRS estimates served as a proxy for water demand in the absence of widely available metered data.

Identifying the farm-level variables that best fit baseline AFSIRS estimates was the first task for drafting projections. AFSIRS sensitivity of farm-level attributes to irrigation estimates was tested using regression models that incorporated variables from both AFSIRS input and GIS data. AFSIRS Crops were aggregated into 12 broad crop categories, described below. Latitude and Longitude were identified for each farm or field. **Table 4-1** lists the input variables initially tested.

Table 4-1. Regression Variable Descriptions

Farm ID	Identification purposes only
Crop	Stratification variable; aggregated to 12 crop categories at the farm level
PointX	X coordinate
PointY	Y coordinate
WMD	Water Management District
CO	County
Rainfall	Wet, Average, Dry Rainfall (AFSIRS model)
ET	High, Average, Low ET (AFSIRS model)
RFET	Interactive variable for Rainfall x ET
Soil Type	Dummy variable; 9 categories (Base case is 9)
IrrQ	Annual Irrigation Quantity, inches per year (AFSIRS model)

Alternative models were evaluated; variable measures affecting irrigation estimates were identified using a combination of Irrigation Water Management factors (IWM, described above), rainfall (RF), evapotranspiration (ET) and an interaction variable for the two (RFET). Based on the variables that most accurately replicated AFSIRS estimates, current and potential future irrigation estimates were produced, using the assumptions described in the following sections. From a statewide perspective, the differences between the AFSIRS and regression model are very small (4%).

Crop categories are assigned differently by USGS, Water Management Districts, and USDA,[5] **Table A-3** in **Appendix A** contrast the crop category assignments used in FSAID with the categorizations used by

[5] In fact, the Water Management Districts assign crop categories differently between Districts. The categories shown as WMD categories throughout this report were developed during the Central Florida Water Initiative planning efforts, and were agreed by the Districts as a

various agencies. While there is general agreement among the agencies, specific crop assignments may vary based on the objective of the agency's mission, or the purpose for which the category is being assigned. For FSAID, crop categorization was assigned based on a combination of cultivation practice and commodity group.

Table 4-2 summarizes the predicted statewide irrigation demand by crop category. The geodatabase provided with this report provides detail at the farm level.

Table 4-2. Predicted Annual Irrigation – Base Case Scenario by Crop Category

Crop	Irrigated Acres	Predicted Average Annual Irrigation (Base Case)		Predicted Dry Year Annual Irrigation (Base Case)	
		mgd	Inches/yr	mgd	Inches/yr
Citrus	533,385	635.8	16.0	695.1	17.5
Field Crops	121,248	117.2	13.0	153.1	17.0
Greenhouse/Nursery	60,973	244.3	53.9	253.3	55.8
Miscellaneous	1,122	1.4	16.7	1.7	19.9
Other Fruits and Nuts	10,448	10.4	13.4	11.1	14.2
Pasture	124,415	156.5	16.9	181.3	19.6
Sod	70,033	197.9	38.0	213.4	41.0
Sugar Cane	549,761	981.4	24.0	1,076.6	26.3
Vegetables/Melons/Berries	267,576	242.7	12.2	279.3	14.0
Total	**1,738,961**	**2,587.60**	**20.0**	**2,864.70**	**22.1**

reasonable representation of crop categories broadly for purposes of this report, but are not uniformly applied across the state for all water use reporting.

4.2 Changes in Irrigation Management Practices

Adjusted management factors were used to generate potential bounds of aggregate use under different management practices, or different intensities of irrigation (NRCS 2003). The justification for assuming future potential changes in irrigation behavior is supported by the recent shifts in citrus production due to greening; more frequent irrigation and nutrient application has been adopted by some citrus farmers to combat greening. This practice may or may not have the desired impact, but represents an important shift in practice that is helpful for forecasting; five years from now, similar efforts may be researched for an as-yet unidentified pestilence, increasing irrigation quantity – hence, the need to estimate potential upper bounds. At the same time, conservation programs and various economic factors may suppress irrigation demand cyclically, introducing the need for lower bounds.

Mobile Irrigation Labs (MIL) are deployed upon request and will audit an irrigation system to identify potential upgrades, changes in practice, or other actions that a farmer might employ to improve system efficiency. Use of the MIL is required for farmers seeking cost-share funds for equipment upgrades such as through EQIP (Environmental Quality Incentives Plan) and otherwise voluntary (NRCS, 2014).

Of the total farmers seeking MIL assistance, 26% had leakage issues and 22% of farms had inefficiencies such as worn parts, malfunctioning equipment or poor spacing. For some percentage of farms, a well-functioning system could lapse into a less efficient system or e left unattended at any given time. Accordingly, 25% of farms were chosen randomly and assigned the lower efficiency factor; water use under dry and normal year conditions for this group was calculated and projected for each 5 year increment.

Improved management practices are treated similarly; farmers seeking MIL assistance are seeking improvements in efficiency that are likely to reflect some conservation measures. The MIL records reflect that farmers sought assistance in like proportion to the predominant crop for their area. Areas with high citrus acreage reported primarily citrus farmer requests; areas with high peanut acreage reported a high percentage of peanut farmer requests. Accordingly, the distribution of farmers likely to adopt improved management practices, or conservation measures, was considered proportionate to farmers overall, and 25% of farms were randomly selected to show a switch from average to high water management activity. Dry and normal demand was recalculated for all farmers with the 25% improved management practice farmers included.

AFSIRS estimates for required irrigation include an assumed “average” water management level meaning for the irrigation system in place, the specific farmer applies an average amount of effort to ensuring maximum system efficiency. Two other levels were defined: high, representing those operators who may, for example, employ full-time water managers and otherwise constantly monitor water use; and low, representing operators who expend little to no effort maintaining their system, identifying waste or leakage, or taking other action to address system efficiency. To estimate demand based on potential shifts in irrigation behavior, water management factors were adjusted using FIRM (*Farm*

Irrigation Rating method[6]) to identify low, medium and high management effects on water use. **Table 4-7** shows the low, medium (status quo), and high irrigation efficiencies that are assigned to various systems for purposes of this step[7]. The Deferred Management Practices scenario represents a decline in efficiency; the Improved Management Practices scenario represents improved efficiencies.

Table 4-3. Management Practices Scenario - Deferred by WMD

Total Average Annual Irrigation (mgd)	2010	2015	2020	2025	2030	2035
NWFWMD	46.7	47.2	47.2	47.1	47.2	47.1
SFWMD	1,710.4	1,728.2	1,727.8	1,728.2	1,730.0	1,729.1
SJRWMD	301.6	304.2	304.5	304.5	304.7	304.7
SRWMD	106.6	107.6	107.7	107.6	107.7	107.5
SWFWMD	484.7	489.5	489.9	490.0	489.8	490.0
Statewide Total	2,587.6	2,614.3	2,614.5	2,614.9	2,616.9	2,616.0

Table 4-4. Management Practices Scenario - Deferred Statewide

Year	Acres	Average Annual Crop Irrigation (mgd)	Dry Year Annual Crop Irrigation (mgd)	Other Water Demand (Livestock & Aquaculture) (mgd)	Total Average Annual Irrigation(mgd)	Total Dry Year Annual Irrigation(mgd)
2015	1,738,961	2,615.6	2,895.7	62.5	2,678.1	2,958.2
2020	1,738,961	2,645.7	2,929.1	62.5	2,708.2	2,991.6
2025	1,738,961	2,672.6	2,959.1	62.5	2,735.1	3,021.5
2030	1,738,961	2,701.4	2,991.1	62.5	2,736.9	3,053.6
2035	1,738,961	2,729.4	3,022.1	62.5	2,791.9	3,084.6

Table 4- 5. Management Practices Scenario - Increased by WMD

Total Average Annual Irrigation (mgd)	2010	2015	2020	2025	2030	2035
NWFWMD	46.7	46.0	46.0	46.0	46.0	46.1
SFWMD	1,710.4	1,686.4	1,687.0	1,686.4	1,684.0	1,685.2
SJRWMD	301.6	298.2	297.8	297.8	297.5	297.5
SRWMD	106.6	105.3	105.2	105.2	105.1	105.3
SWFWMD	484.7	478.2	477.8	477.6	477.8	477.5
Statewide Total	2,587.6	2,551.5	2,551.3	2,550.6	2,548.0	2,549.2

[6] NRCS, 2003. *Florida Supplement to National Engineering Handbook Part 652 Irrigation Guide: FL652.1501 Farm Irrigation Rating method, FIRM*. United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) publication 210-vi-NEH, FL Amendment, FL-11, September 2003 (FL652.0904).

[7] A separate Technical Memorandum was prepared which details specific calculations.

Table 4- 6. Management Practices Scenario - Increased Statewide

Year	Acres	Average Annual Crop Irrigation (mgd)	Dry Year Annual Crop Irrigation (mgd)	Other Water Demand (Livestock & Aquaculture) (mgd)	Total Average Annual Irrigation(mgd)	Total Dry Year Annual Irrigation(mgd)
2015	1,738,961	2,550.4	2,823.4	62.5	2,612.9	2,885.9
2020	1,738,961	2,509.9	2,778.2	62.5	2,572.4	2,840.7
2025	1,738,961	2,472.3	2,736.6	62.5	2,534.8	2,799.1
2030	1,738,961	2,548.0	2,692.8	62.5	2,495.3	2,755.2
2035	1,738,961	2,549.2	2,646.4	62.5	2,453.5	2,708.9

Table 4-7. Water Management Efficiency Factors

Irrigation System	Low	Medium	High
Center Pivot	0.79	0.85	0.90
Container Nursery	0.46	0.50	0.53
Crown Flooding	0.56	0.60	0.63
Drip	0.83	0.90	0.95
EAA/Flood/Seepage*	0.80	0.86	0.91
Flood/Seepage	0.65	0.70	0.74
Impact Sprinkler	0.69	0.75	0.79
Linear	0.79	0.85	0.90
Micro Spray	0.79	0.85	0.90
Pipeline Seepage	0.65	0.70	0.74
Sprayhead Sprinkler	0.69	0.75	0.79
Stationary Gun	0.69	0.75	0.79
Traveling Gun	0.65	0.70	0.74
Wheel Roll	0.65	0.70	0.74
***For systems utilizing tailwater recovery.**			

4.3 Economic Margins Scenario

Changes in irrigated crop mix based were estimated using baseline ILG acreage. The crop mix has shifted quickly in recent years as growers respond to subsidies, market shifts (such as increased blueberry consumption), and structural agronomic changes (greening). In each case, optimization of revenue has been a driving factor.

Crop mix change is a pressing scenario for Florida growers managing the 520,000 acres currently in citrus. Those with marginal soils are considered most vulnerable to losses from greening; growers with good soils are believed to have five years or more of additional production capacity. One hypothetical scenario of crop mix change includes multiple growers exiting citrus in an area, jeopardizing regional packinghouses, which face substantial fixed costs. In the worst case scenario, the domino effect of fewer citrus growers, spatially concentrated, will likely reduce the availability of packinghouses and processors, accelerating local crop change. This scenario can shift irrigation requirements in each time increment, with marginal soils acreage exiting first.

While no crystal ball exists to predict exactly which crops will be grown on which fields five or ten years from now, crop feasibility by soil type and climate zone provides a reasonably narrow list of options. Over 1,800 combinations of crop, irrigation system, and soil capability were considered. An example is

provided in **Table 4-8** (full table available as **Table D-72 of Appendix D**). From an optimization perspective, growers who switch crops can be expected to choose the highest margin crop that their land and capital will support, all else being equal. This may represent a potential increase in irrigation due to change in crop mix; however, a reduction in irrigation could also occur if alternatives require less irrigation. The crop mix optimization of existing ILG acreage was used to generate upper and lower bounds based on potential changes.

Table 4-8. Crop Mix Selection

Crop Name	WMD	Crop (Detailed)	Irrigation System	Moves up to:
Fruits	SFWMD	Avocados	Low Volume	Tree Nuts
Fruits	SWFWMD	CucumbersFall_Strawberries_ CucumbersSpring	DripOPSprinkler	Greenhouse, nursery, and floriculture
Fruits	SFWMD	Papaya	SprayheadSprinkler	Tree Nuts
Greenhouse, Nursery, and Floriculture	SFWMD	Sod	Seepage	All other crops
Tree Nuts	SJRWMD	Chestnuts	MicroJet	All other crops

For long-term projections, FAPRI (Food and Agricultural Policy Institute) publishes price projections for of the U.S. agricultural sector and international markets that affect American agricultural outputs; FAPRI estimates were used to generate long-term price trends for indicative crops in each crop category. On the cost side, IFAS, NRCS and certain trade groups publish estimates of average yield and grower returns expectations for each crop; at the aggregate level, cost profiles can be compared to expected prices for an indication of relative margins over time. Chemical costs represent a component of agriculture that varies by crop but is universally expected to increase at a pace faster than inflation in the future, based on financial industry analyst outlooks. For each five year increment, comparison of indicator crops for each category with chemical costs helped estimate effects on margin. Commoditized crops that have no futures contracts mechanisms in place are considered highest risk for growers because of competition from other countries with lower labor costs and higher volume. Spot price specialty crops, which are sold directly to retailers, are similar in risk but promise potentially higher margins – albeit generally on a smaller scale. For existing crops, the alternative crop categories that are feasible substitutes given existing soil, climate and capital/equipment were identified. The mean water use in inches per acre for the substitute crop was applied to the existing acreage by farm for remaining five year increments.

Table 4-9 shows the water use forecast tied to crop mix changes by WMD by five year increment; **Table 4-10** shows the acreage affected in each District by each change.

Table 4-9. Economic Margins Scenario by WMD

Total Average Annual Irrigation (mgd)	2010	2015	2020	2025	2030	2035
NWFWMD	46.7	46.7	44.3	37.5	37.5	37.5
SFWMD	1,710.4	1,752.3	1,752.3	1,743.4	1,743.4	1,543.4
SJRWMD	301.6	302.8	302.4	255.5	255.5	255.5
SRWMD	106.6	106.6	106.6	70.6	70.6	70.6
SWFWMD	484.7	508.4	510.9	518.5	518.5	518.5
Statewide Total	2,587.6	2,654.3	2,654.0	2,562.9	2,562.9	2,363.0

Table 4-10. Economic Margins Scenario Statewide

Year	Acres	Average Annual Crop Irrigation (mgd)	Dry Year Annual Crop Irrigation (mgd)	Other Water Demand (Livestock & Aquaculture) (mgd)	Total Average Annual Irrigation(mgd)	Total Dry Year Annual Irrigation(mgd)
2015	1,738,961	2,654.3	2,880.5	62.5	2,716.8	2,943.0
2020	1,738,961	2,654.0	2,875.1	62.5	2,716.5	2,937.6
2025	1,738,961	2,562.9	2,699.0	62.5	2,625.4	2,761.5
2030	1,738,961	2,562.9	2,699.0	62.5	2,625.4	2,761.5
2035	1,738,961	2,363.0	2,406.2	62.5	2,425.5	2,468.7

4.4 Urban Area Expansion Scenario

Finally, land use conversion affecting irrigated lands was considered. Literature on land use conversion has proliferated since 2000 due to greater availability of GIS data. The original technical approach envisioned assigning the probability of change over the time horizons, using coefficients supported by published literature and calibrated to farm-specific characteristics. As the project progressed, further analysis determined that the bulk of Florida agricultural acreage is sufficiently remote from urban development to preclude the use of literature based coefficients for identifying acreage likely to convert.

An alternative scenario considers all land to be urban/developed, natural, or agricultural; this is true in Florida, where most remaining undeveloped land is either in preservation or agricultural use. Under this approach, if urban land increases, by definition natural land or Ag land decreases. Florida's geographic constraints and diverse density patterns vary across the state, but trends can be identified. In viewing Florida's ten largest metropolitan areas over the past twenty years, estimates of the increased land area consumed by urbanization can be calculated based on data provided by U.S. Census for urban clusters. Using GIS and treating past patterns as indicative of future patterns, the calculated demand for future additional urban development was converted into acreage requirements for a buffer beyond the existing urban boundaries.

The Ag land within the radius or buffer of metro areas likely to face increasing development pressure was identified for each five year increment. Each buffer was subjected to a two-step process: acreage

within the first five-year buffer was considered lost from Ag, while acreage in the next five year buffer was considered likely to switch from unirrigated to irrigated, if a permit exists which has unused irrigable acreage within its boundary. The latter step may increase irrigated acreage, even if overall agricultural acreage declines, or offset declines in irrigation from acreage lost to urbanization. This is consistent with results from the literature over the past two decades (Gollehon, 2014; Seidel et al, 2011). The process was repeated for each five-year increment, drawing a new buffer each time. In practical terms, the amount of Ag acreage within the buffers was immaterial compared to the overall Ag acreage in the state, and the effect on water demand even less material; only 20% of Florida Ag land is irrigated today.

Important for the current analysis, no crop mix change was considered in this task. Future refinements of the model will incorporate a more realistic scenario that considers effects of simultaneous conversion of acreage and changes to crop mix on the remaining or additional land. For the current analysis, both additional land brought into irrigation under existing permits and land lost from irrigation due to urbanization, are included in the GIS analysis.

Table 4-11 shows predicted statewide annual irrigation for each scenario by five-year increment. Aquaculture and Livestock water demand are held constant through all of the planning horizons and scenarios. **Table 4-12** is a summary of the resulting predicted Ag Water demand when aquaculture and livestock are included.

Table 4-11. Predicted Annual Irrigation – Changes by Five-Year Increments

Total Average Annual Irrigation (mgd)	2010	2015	2020	2025	2030	2035
NWFWMD	46.7	46.6	46.7	46.7	46.7	46.8
SFWMD	1,710.4	1,686.7	1,716.5	1,723.2	1,718.6	1,706.6
SJRWMD	301.6	304.0	302.7	302.0	306.7	299.3
SRWMD	106.6	106.6	106.6	106.6	106.6	106.6
SWFWMD	484.7	479.8	487.7	489.1	485.7	485.8
Statewide Total	2,587.6	2,561.4	2,597.6	2,605.2	2,601.9	2,582.5
*Each year includes 62.5 mgd of Other Water Demand (Livestock & Aquaculture)						

4.5 Summary of Projections

The FSAID projections evaluated three different scenarios independently: changes in irrigated acreage due to urbanization; changes in irrigation quantities in the absence of acreage changes, due to crop mix change; and changes in irrigation management practices that occur without a change in crop or acreage. The average and dry year estimates prepared for each scenario offer upper and lower bounds.

Statewide, the increased efficiency offers the lowest lower bound estimate of crop irrigation for all time periods (ranging from 2,433 mgd to 2,550 mgd) except the last, 2035, during which the economic margins scenario is slightly lower (2,363 versus 2,391 mgd). The highest upper bound of statewide crop irrigation is captured by the economic margins scenario during the first two five-year intervals (2,654 mgd for both, roughly) and by deferred management practices for the remaining three (ranging from

2,672 to 2,729 mgd). When non-crop water use is factored in, the results are the same, by ordinal ranking.

For each Water Management District, the highest upper bound and lowest lower bound vary, as shown in **Tables D-2** through **D-6** in **Appendix D**. Lower bounds for NWFWMD, SRWMD and SFWMD are driven by economic margin scenarios after the early time periods (until the final five year time period for SFWMD when urban expansion drives the lower bound); while lower bounds are driven entirely by management practices scenarios for SJRWMD and SWFWMD. Upper bounds are driven by economic margins for SFWMD and SWFWMD, while management practices set the upper bar for the remaining Districts. FSAID estimates are provided herein for consideration in District projections of Ag water demand.

Table 4-12. Predicted Annual Irrigation – Inclusion of Aquaculture and Livestock

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Irrigation	Total Dry Year Annual Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	1,738,961	2,587.6	2,864.7	62.5	2,650.1	2,927.2
2015						
Management Practices Scenario - Deferred	1,738,961	2,615.6	2,895.7	62.5	2,678.1	2,958.2
Management Practices Scenario - Increased	1,738,961	2,550.4	2,823.4	62.5	2,612.9	2,885.9
Economic Margins Scenario	1,738,961	2,654.3	2,880.5	62.5	2,716.8	2,943.0
Urban Area Expansion Scenario	1,721,146	2,561.4	2,837.2	62.5	2,623.9	2,899.7
2020						
Management Practices Scenario - Deferred	1,738,961	2,645.7	2,929.1	62.5	2,708.2	2,991.6
Management Practices Scenario - Increased	1,738,961	2,509.9	2,778.2	62.5	2,572.4	2,840.7
Economic Margins Scenario	1,738,961	2,654.0	2,875.1	62.5	2,716.5	2,937.6
Urban Area Expansion Scenario	1,742,841	2,597.6	2,874.8	62.5	2,660.1	2,937.3
2025						
Management Practices Scenario - Deferred	1,738,961	2,672.6	2,959.1	62.5	2,735.1	3,021.5
Management Practices Scenario - Increased	1,738,961	2,472.3	2,736.6	62.5	2,534.8	2,799.1
Economic Margins Scenario	1,738,961	2,562.9	2,699.0	62.5	2,625.4	2,761.5
Urban Area Expansion Scenario	1,749,486	2,605.2	2,882.7	62.5	2,667.7	2,945.2
2030						
Management Practices Scenario - Deferred	1,738,961	2,701.4	2,991.1	62.5	2,763.9	3,053.6
Management Practices Scenario - Increased	1,738,961	2,432.8	2,692.8	62.5	2,495.3	2,755.2
Economic Margins Scenario	1,738,961	2,562.9	2,699.0	62.5	2,625.4	2,761.5
Urban Area Expansion Scenario	1,741,674	2,601.9	2,878.6	62.5	2,664.4	2,941.1
2035						
Management Practices Scenario - Deferred	1,738,961	2,729.4	3,022.1	62.5	2,791.9	3,084.6
Management Practices Scenario - Increased	1,738,961	2,391.0	2,646.4	62.5	2,453.5	2,708.9
Economic Margins Scenario	1,738,961	2,363.0	2,406.2	62.5	2,425.5	2,468.7
Urban Area Expansion Scenario	1,736,894	2,582.5	2,859.8	62.5	2,645.0	2,922.3

4.6 Use of FSAID Data; Suggestions for Future Refinements

All of the data generated throughout the project was maintained in a geodatabase, with farm-level observations, allowing the water management districts to manipulate the data and projections for their needs. A separate document entitled "FSAID GIS Projection Guide," detailing steps to extract water use estimates by different categories, time periods or geographical regions, was prepared and distributed to

the Water Management Districts. Refinements have been identified that will accommodate future estimates

1. Agricultural acreage has already undergone significant change since 2010, and District Planners need more current data; acreage data will be updated to 2014/2015 will allow for testing of baseline data against historical data and refinement of the information produced in this phase.

2. The dynamics of land use change and crop mix change are unlikely to occur independently. While the initial estimates prepared herein treat these evolutionary events as separate, a refinement of long-term projections should take into account the relationship between the two, and how that is likely to shape future water demand.

3. Given that economic reasons drive crop decisions and water demand, analysis of actual water use is likely to uncover factors that are not captured in the current estimates. Actual agricultural irrigation practice reflects reactions to changes in weather, market prices, irrigation technology and administrative regimes, and urbanization pressures. Using metered data output in place of AFSIRS estimates is expected to further refine water use estimates. Use of metered data will be mindful of recent changes in Consumptive Use Permitting rules that raised the thresholds for metering requirements, curtailing the quantity of metered data that will be available in future.

4. AFSIRS calculations used for baseline estimates incorporate a number of globalized assumptions; refinement of these assumptions is worthy of consideration given broad use of this tool. For example, greenhouses and crops grown under plastic were not handled differently than traditional crops; in reality the water balance in these situations is quite different.

5. AFSIRS calculations used for baseline estimates incorporate a number of globalized assumptions; refinement of these assumptions is worthy of consideration given broad use of this tool. An example is reflected in the soil type incorporated into AFSIRS calculations; detailed soil data defaulted to a predominant soil type by county rather than by farm in certain instances. Refinement of this assumption would have affected statewide estimates by less than 1%, but could affect subcounty area estimates by more than 20%.

6. Forestry as an industry has reflected macroeconomic conditions in North Florida in recent years, but silviculture was not included within the scope of this project. Future land use change affecting agricultural water needs is likely to be influenced by lands currently in silviculture, and should be incorporated in future estimates.

The resulting database allows for a number of applications: use by water management districts and/or FDACS for demand projections, spatial identification of concentrations of agricultural water use or potential areas of future changes in agricultural water use, use in evaluation of groundwater recharge analysis or salt water intrusion predictions, to name a few. As evidenced in the various District-prepared reports outlining water resources, meeting Florida's growing water demands will require a variety of alternative water supply projects, resource optimization strategies, and conservation measures. The

parcel-level detail provided in this model may add additional information to planning efforts along these lines.

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Appendix A. Florida Ag Statistics Summary

Table A-1 Florida - Historical Land in Farms and Irrigated Acreage

Year	Area Irrigated (acres)	Land in Farms (acres)	Percent Irrigated
1964	1,218,192	15,411,181	7.9%
1969	1,365,206	14,031,988	9.7%
1974	1,558,735	13,199,365	11.8%
1978	1,979,814	13,016,288	15.2%
1982	1,585,080	12,814,216	12.4%
1987	1,622,750	11,194,090	14.5%
1992	1,782,680	10,766,077	16.6%
1997	1,873,823	10,659,777	17.6%
2002	1,815,174	10,414,877	17.4%
2007	1,552,118	9,231,570	16.8%
2012	1,493,320	9,548,342	15.6%

Sources: 1997 and 2012 National Ag Census - State Data - Florida

Appendix A. Florida Ag Statistics Summary

Table A-2 Florida - Historical Land in Farms and Irrigated Acreage by County, 2007 & 2012

County	2007 Census			2012 Census		
	Land in Farms	Irrigated Land	Percent Irrigated	Land in Farms	Irrigated Land	Percent Irrigated
	acres	acres		acres	acres	
Alachua	172,843	13,387	7.7%	187985	10,708	5.7%
Baker	26,723	699	2.6%	32919	303	0.9%
Bay	12,470	-	na	10490	-	na
Bradford	29,621	156	0.5%	35076	696	2.0%
Brevard	167,059	20,486	12.3%	146470	13,414	9.2%
Broward	8,737	1,651	18.9%	14497	1,828	12.6%
Calhoun	39,102	1,455	3.7%	42850	1,647	3.8%
Charlotte	166,045	19,965	12.0%	217222	13,716	6.3%
Citrus	40,017	1,375	3.4%	40541	669	1.7%
Clay	41,537	913	2.2%	51581	579	1.1%
Collier	109,934	31,361	28.5%	123608	26,412	21.4%
Columbia	85,952	2,693	3.1%	101451	6,070	6.0%
DeSoto	260,277	56,162	21.6%	302869	47,695	15.7%
Dixie	42,016	2,957	7.0%	45189	3,439	7.6%
Duval	26,774	2,024	7.6%	28275	1,115	3.9%
Escambia	81,977	2,552	3.1%	74584	4,628	6.2%
Flagler	58,396	6,812	11.7%	43598	3,936	9.0%
Franklin	510	-	na	1793	-	na
Gadsden	47,090	2,209	4.7%	50805	2,650	5.2%
Gilchrist	71,098	7,808	11.0%	83904	12,563	15.0%
Glades	402,478	46,726	11.6%	442750	88,509	20.0%
Gulf	4,742	-	na	4595	-	na
Hamilton	64,781	5,518	8.5%	71884	9,548	13.3%
Hardee	279,887	44,141	15.8%	273916	36,038	13.2%
Hendry	465,063	188,817	40.6%	495734	193,073	38.9%
Hernando	56,237	1,488	2.6%	61942	2,669	4.3%
Highlands	476,256	73,713	15.5%	489912	61,785	12.6%
Hillsborough	219,800	29,923	13.6%	214940	26,096	12.1%
Holmes	151,812	2,033	1.3%	105535	1,100	1.0%
IndianRiver	157,196	66,866	42.5%	162458	57,627	35.5%
Jackson	311,398	20,275	6.5%	262312	21,508	8.2%
Jefferson	147,432	2,148	1.5%	129520	2,388	1.8%
Lafayette	81,277	7,426	9.1%	91283	10,658	11.7%
Lake	121,422	15,013	12.4%	152145	15,163	10.0%
Lee	85,7422	14,612	17.0%	87125	13,585	15.6%
Leon	90,732	1,467	1.6%	81311	2,010	2.5%
Levy	174,222	14,488	8.3%	167359	13,661	8.2%
Liberty	23,619	-	na	14182	-	na

Appendix A. Florida Ag Statistics Summary

Table A-2 Florida - Historical Land in Farms and Irrigated Acreage by County, 2007 & 2012 (con't)

County	2007 Census			2012 Census		
	Land in Farms	Irrigated Land	Percent Irrigated	Land in Farms	Irrigated Land	Percent Irrigated
	acres	acres		acres	acres	
Madison	149,029	3,119	2.1%	143008	8,067	5.6%
Manatee	225,101	50,791	22.6%	186380	50,108	26.9%
Marion	266,571	9,666	3.6%	321474	13,214	4.1%
Martin	129,391	48,521	37.5%	139310	34,806	25.0%
MiamiDade	67,050	38,954	58.1%	81303	45,236	55.6%
Monroe	187	30	16.0%	476	37	7.8%
Nassau	31,277	270	0.9%	39335	112	0.3%
Okaloosa	65,874	421	0.6%	61484	161	0.3%
Okeechobee	338,357	20,545	6.1%	441824	19,443	4.4%
Orange	136,088	11,870	8.7%	132480	9,478	7.2%
Osceola	646,290	31,420	4.9%	547058	29,153	5.3%
PalmBeach	525,658	387,755	73.8%	513943	362,748	70.6%
Pasco	149,963	10,599	7.1%	171119	6,594	3.9%
Pinellas	1,455	189	13.0%	1479	120	8.1%
Polk	549,071	98,404	17.9%	520899	79,869	15.3%
Putnam	74,482	4,620	6.2%	70352	5,487	7.8%
StJohns	33,546	14,359	42.8%	33632	11,650	34.6%
StLucie	153,486	69,302	45.2%	195155	59,245	30.4%
SantaRosa	70,179	2,562	3.7%	97636	2,443	2.5%
Sarasota	61,033	2,348	3.8%	80143	2,023	2.5%
Seminole	35,542	1,829	5.1%	21697	1,180	5.4%
Sumter	159,789	2,013	1.3%	183246	3,093	1.7%
Suwannee	167,493	20,096	12.0%	193451	27,808	14.4%
Taylor	33,534	-	na	37447	-	na
Union	46,560	1,036	2.2%	46238	1,046	2.3%
Volusia	83,274	9,068	10.9%	106042	8,996	8.5%
Wakulla	28,339	282	1.0%	30906	162	0.5%
Walton	126,841	718	0.6%	147937	1,316	0.9%
Washington	73,836	888	1.2%	58278	1,136	1.9%

Appendix A. Florida Ag Statistics Summary

Table A-3 Crop Category Assignment Comparison

ILG Detailed Crop	WMD Category	USGS Category	FAARM Category	USDA ERS Category used for FSAID
Alfalfa	Vegetables, Melons, and Berries	Ornamentals/ Grasses	Pasture and Forage	Vegetables and melons
AsparagusFern	Greenhouse/Nursery	Ornamentals/ Grasses	Greenhouse & Shadehouse	Greenhouse, nursery, and floriculture
Aspidistra	Greenhouse/Nursery	Ornamentals/ Grasses	Greenhouse & Shadehouse	Greenhouse, nursery, and floriculture
Avocados	Other Fruits and Nuts	Fruit Crops	Large Tree Fruit and Nut	Fruits
Blueberries	Vegetables, Melons, and Berries	Fruit Crops	Fruit & Nut Bushes	Fruits
Blueberries_Peanuts	Vegetables, Melons, and Berries	Fruit Crops	Fruit & Nut Bushes	Fruits
Broccoli	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Broccoli_Cabbage_Cabbage	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Broccoli_Corn	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Corn
Broccoli_Corn_Broccoli	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Corn
Broccoli_Corn_Cabbage	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Corn
Broccoli_Melon_Broccoli	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Broccoli_Peas	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Broccoli_Sorghum_Broccoli	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Broccoli_Sorghum_Greens	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons

Table A-3 Crop Category Assignment Comparison Continued

ILG Detailed Crop	WMD Category	USGS Category	FAARM Category	USDA ERS Category used for FSAID
Broccoli_Vegetables	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Cabbage	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Cabbage_Cabbage	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Cabbage_Corn	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Corn
Cabbage_Corn_Cabbage	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Corn
Cabbage_Corn_Greens	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Corn
Cabbage_Greens	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Cabbage_Hay	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Cabbage_Melon	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Cabbage_Sod	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Cabbage_Sorghum	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Cabbage_Sorghum_Cabbage	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Cabbage_Sorghum_Radished	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Cabbage_Sorghum_Sorghum	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons

Table A-3 Crop Category Assignment Comparison Continued

ILG Detailed Crop	WMD Category	USGS Category	FAARM Category	USDA ERS Category used for FSAID
Carambola	Other Fruits and Nuts	Fruit Crops	Medium & Small Fruit & Nut Trees	Fruits
Chestnuts	Other Fruits and Nuts	Fruit Crops	Medium & Small Fruit & Nut Trees	Fruits
Citruc	Citrus	Fruit Crops	Citrus	Fruits
Citrus	Citrus	Fruit Crops	Citrus	Fruits
CollardGreens_Corn	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Corn
Container Nursery	Greenhouse/Nursery	Ornamentals/Grasses	Container Plants	Greenhouse, nursery, and floriculture
CoontieFern	Greenhouse/Nursery	Ornamentals/Grasses	Greenhouse & Shadehouse	Greenhouse, nursery, and floriculture
Corn	Field Crops	Field Crops	Row Crops - Standard	Corn
Corn_Corn_Strawberries	Vegetables, Melons, and Berries	Fruit Crops	Row Crops - Delicate	Corn
Corn_Greens	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Corn
Corn_Sorghum_Cabbage	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Corn
Corn_Vegetables	Vegetables, Melons, and Berries	Vegetables	Row Crops - Standard	Corn
Cotton	Field Crops	Field Crops	Row Crops - High Value	Vegetables and melons
Cucumber	Vegetables, Melons, and Berries	Vegetables	Row Crops - Standard	Vegetables and melons
CucumbersFall	Vegetables, Melons, and Berries	Vegetables	Row Crops - Standard	Vegetables and melons
CucumbersFall_CucumbersSpring	Vegetables, Melons, and Berries	Vegetables	Row Crops - Standard	Vegetables and melons

Table A-3 Crop Category Assignment Comparison Continued

ILG Detailed Crop	WMD Category	USGS Category	FAARM Category	USDA ERS Category used for FSAID
CucumbersFall_Strawberries _CucumbersSpring	Vegetables, Melons, and Berries	Fruit Crops	Row Crops - Delicate	Vegetables and melons
CucumbersFall_Strawberries _Melons	Vegetables, Melons, and Berries	Fruit Crops	Row Crops - Delicate	Vegetables and melons
CucumbersFall_Strawberries _PeppersSpring	Vegetables, Melons, and Berries	Fruit Crops	Row Crops - Delicate	Vegetables and melons
CucumbersSpring	Vegetables, Melons, and Berries	Vegetables	Row Crops - Standard	Vegetables and melons
CucumbersSpring_Melons	Vegetables, Melons, and Berries	Fruit Crops	Row Crops - Melons	Vegetables and melons
CucumbersSpring_SmallVegSum_Strawberries	Vegetables, Melons, and Berries	Fruit Crops	Row Crops - Delicate	Vegetables and melons
CucumbersSpring_Strawberries	Vegetables, Melons, and Berries	Fruit Crops	Row Crops - Delicate	Vegetables and melons
DryBeans	Vegetables, Melons, and Berries	Vegetables	Row Crops - Standard	Vegetables and melons
DryBeans_Potatoes	Vegetables, Melons, and Berries	Vegetables	Row Crops - Standard	Vegetables and melons
DryBeans_Strawberries	Vegetables, Melons, and Berries	Fruit Crops	Row Crops - Delicate	Vegetables and melons
DryBeans_SweetCorn	Vegetables, Melons, and Berries	Vegetables	Row Crops - Standard	Corn
Eggplant_Zucchini	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
Fern	Greenhouse/Nursery	Ornamentals/Grasses	Greenhouse & Shadehouse	Greenhouse, nursery, and floriculture
Field Corn	Field Crops	Field Crops	Pasture and Forage	Corn
Field Corn _Grain	Field Crops	Field Crops	Pasture and Forage	Corn

Table A-3 Crop Category Assignment Comparison Continued

ILG Detailed Crop	WMD Category	USGS Category	FAARM Category	USDA ERS Category used for FSAID
Field Nursery	Greenhouse/Nursery	Ornamentals/Grasses	Greenhouse & Shadehouse	Greenhouse, nursery, and floriculture
FieldNursery	Greenhouse/Nursery	Ornamentals/Grasses	Greenhouse & Shadehouse	Greenhouse, nursery, and floriculture
FUTURE	future crop (as of 2010)	future crop (as of 2010)	future crop (as of 2010)	Farm
GrainCornSweetCornPotatoes	Vegetables, Melons, and Berries	Field Crops	Root Crops	Corn
Grains	Field Crops	Field Crops	Pasture and Forage	Other Grains
Grains_Sod	Field Crops	Field Crops	Sod	Other Grains
Grapes	Vegetables, Melons, and Berries	Fruit Crops	Vineyard Crops (Trellised)	Vegetables and melons
Green Beans	Vegetables, Melons, and Berries	Vegetables	Row Crops - Standard	Vegetables and melons
Greenhouse Nursery	Greenhouse/Nursery	Ornamentals/Grasses	Greenhouse & Shadehouse	Greenhouse, nursery, and floriculture
Greens	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Greens_Cabbage	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Greens_Corn	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Corn
Greens_Corn_Broccoli	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Corn
Greens_Corn_Cabbage	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Corn
Greens_Hay_CropPeas	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons

Table A-3 Crop Category Assignment Comparison Continued

ILG Detailed Crop	WMD Category	USGS Category	FAARM Category	USDA ERS Category used for FSAID
Greens_Sorghum	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Greens_Sorghum_Broccoli	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Greens_Sorghum_Cabbage	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Greens_Sorghum_Cauliflower	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Greens_Sorghum_Cucumber	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Greens_Sorghum_Greens	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Greens_Sorghum_Vegetables	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Greens_Sorghum_Zucchini	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Greens_Vegetables	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Greens_Zucchini	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Hay	Field Crops	Field Crops	Pasture and Forage	All other crops
Improved Pastures	Pasture	Ornamentals/Grasses	Pasture and Forage	All other crops
Leatherleaf	Greenhouse/Nursery	Ornamentals/Grasses	Greenhouse & Shadehouse	Greenhouse, nursery, and floriculture
Ligustrum	Greenhouse/Nursery	Ornamentals/Grasses	Greenhouse & Shadehouse	Greenhouse, nursery, and floriculture
Liriope	Greenhouse/Nursery	Ornamentals/Grasses	Greenhouse & Shadehouse	Greenhouse, nursery, and floriculture

Table A-3 Crop Category Assignment Comparison Continued

ILG Detailed Crop	WMD Category	USGS Category	FAARM Category	USDA ERS Category used for FSAID
Mangos	Other Fruits and Nuts	Fruit Crops	Large Tree Fruit and Nut	Fruits
Melons	Vegetables, Melons, and Berries	Vegetables	Row Crops - Melons	Vegetables and melons
Melons_Cucumber	Vegetables, Melons, and Berries	Vegetables	Row Crops - Melons	Vegetables and melons
Melons_CucumbersFall	Vegetables, Melons, and Berries	Vegetables	Row Crops - Melons	Vegetables and melons
Melons_Hay	Vegetables, Melons, and Berries	Vegetables	Row Crops - Melons	Vegetables and melons
Melons_PeppersFall	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
Melons_SmallVegSpring_SmallVegFall	Vegetables, Melons, and Berries	Vegetables	Row Crops - Melons	Vegetables and melons
Melons_Strawberries	Vegetables, Melons, and Berries	Fruit Crops	Row Crops - Delicate	Vegetables and melons
Melons_Strawberries_Peas	Vegetables, Melons, and Berries	Fruit Crops	Row Crops - Delicate	Vegetables and melons
Melons_TomatoesFall	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
Melons_TomatoesSpring	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
Melons_TomatoesSpring_TomatoesFall	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
Millet	Field Crops	Field Crops	Pasture and Forage	All other crops
Nursery	Greenhouse/Nursery	Ornamentals/Grasses	Greenhouse & Shadehouse	Greenhouse, nursery, and floriculture
Onions	Field Crops	Vegetables	Row Crops - High Value	Vegetables and melons
Onions_Corn	Field Crops	Vegetables	Row Crops - High Value	Corn

Table A-3 Crop Category Assignment Comparison Continued

ILG Detailed Crop	WMD Category	USGS Category	FAARM Category	USDA ERS Category used for FSAID
Onions_Corn_Vegetables	Vegetables, Melons, and Berries	Vegetables	Row Crops - High Value	Corn
Onions_Sorghum	Field Crops	Vegetables	Row Crops - High Value	Vegetables and melons
Onions_Sorghum_Vegetables	Vegetables, Melons, and Berries	Vegetables	Row Crops - High Value	Vegetables and melons
Onions_Vegetables	Vegetables, Melons, and Berries	Vegetables	Row Crops - High Value	Vegetables and melons
Onions_Vegetables_Cabbage	Vegetables, Melons, and Berries	Vegetables	Row Crops - High Value	Vegetables and melons
OrientalVegetables	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
OrientalVegetables_Corn	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Corn
OrientalVegetables_Corn_Radishes	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Corn
Ornamentals	Greenhouse/Nursery	Ornamentals/Grasses	Container Plants	Greenhouse, nursery, and floriculture
Papaya	Other Fruits and Nuts	Fruit Crops	Annual Fruit & Nut	Fruits
Pasture	Pasture	Ornamentals/Grasses	Pasture and Forage	All other crops
Peaches	Other Fruits and Nuts	Fruit Crops	Medium & Small Fruit & Nut Trees	Fruits
Peanuts	Field Crops	Field Crops	Row Crops - Standard	Vegetables and melons
Peanuts_Melons	Vegetables, Melons, and Berries	Vegetables	Row Crops - Melons	Vegetables and melons
PeanutsFall	Field Crops	Field Crops	Row Crops - Standard	Vegetables and melons
PeanutsSpring	Field Crops	Field Crops	Row Crops - Standard	Vegetables and melons
PeanutsSpring_Grains	Field Crops	Field Crops	Row Crops - Standard	Vegetables and melons
PeanutsSpring_PeanutsFall	Field Crops	Field Crops	Row Crops - Standard	Vegetables and melons

Table A-3 Crop Category Assignment Comparison Continued

ILG Detailed Crop	WMD Category	USGS Category	FAARM Category	USDA ERS Category used for FSAID
Peas	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
Pecans	Other Fruits and Nuts	Fruit Crops	Large Tree Fruit and Nut	Fruits
Peppers	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
Peppers_Spring	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
PeppersFall	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
PeppersFall_CucumbersSpring	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
PeppersFall_Melons	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
PeppersFall_PeppersSpring	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
PeppersFall_Zucchini	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
PeppersSpring_CucumbersSpring	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
PeppersSpring_PeppersFall	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
PeppersSpring_PeppersFall_CucumbersFall	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
PeppersSpring_Strawberries	Vegetables, Melons, and Berries	Fruit Crops	Row Crops - Delicate	Vegetables and melons
PeppersSpring_Zucchini	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
Persimmons	Other Fruits and Nuts	Fruit Crops	Medium & Small Fruit & Nut Trees	Fruits

Table A-3 Crop Category Assignment Comparison Continued

ILG Detailed Crop	WMD Category	USGS Category	FAARM Category	USDA ERS Category used for FSAID
Pine	Miscellaneous	Miscellaneous	Miscellaneous	All other crops
Pittosporum	Greenhouse/Nursery	Ornamentals/Grasses	Greenhouse & Shadehouse	Greenhouse, nursery, and floriculture
Potatoes	Vegetables, Melons, and Berries	Field Crops	Root Crops	Vegetables and melons
Potatoes_Cabbage	Vegetables, Melons, and Berries	Vegetables	Root Crops	Vegetables and melons
Potatoes_Cantaloupe_Watermelon	Vegetables, Melons, and Berries	Vegetables	Root Crops	Vegetables and melons
Potatoes_Corn	Vegetables, Melons, and Berries	Field Crops	Root Crops	Corn
Potatoes_Corn_Cabbage	Vegetables, Melons, and Berries	Vegetables	Root Crops	Corn
Potatoes_Corn_Cucumber	Vegetables, Melons, and Berries	Vegetables	Root Crops	Corn
Potatoes_Corn_Peas	Vegetables, Melons, and Berries	Vegetables	Root Crops	Corn
Potatoes_Corn_Vegetables	Vegetables, Melons, and Berries	Vegetables	Root Crops	Corn
Potatoes_Grapes_Eggplant	Vegetables, Melons, and Berries	Vegetables	Root Crops	Vegetables and melons
Potatoes_Hay	Vegetables, Melons, and Berries	Field Crops	Root Crops	Vegetables and melons
Potatoes_Pasture	Vegetables, Melons, and Berries	Field Crops	Root Crops	Vegetables and melons
Potatoes_Sod	Vegetables, Melons, and Berries	Field Crops	Root Crops	Vegetables and melons
Potatoes_Sorghum	Vegetables, Melons, and Berries	Field Crops	Root Crops	Vegetables and melons

Table A-3 Crop Category Assignment Comparison Continued

ILG Detailed Crop	WMD Category	USGS Category	FAARM Category	USDA ERS Category used for FSAID
Potatoes_Sorghum_Broccoli	Vegetables, Melons, and Berries	Vegetables	Root Crops	Vegetables and melons
Potatoes_Sorghum_Cabbage	Vegetables, Melons, and Berries	Vegetables	Root Crops	Vegetables and melons
Potatoes_Sorghum_Cucumber	Vegetables, Melons, and Berries	Vegetables	Root Crops	Vegetables and melons
Potatoes_Sorghum_Greencovercrop	Vegetables, Melons, and Berries	Field Crops	Root Crops	Vegetables and melons
Potatoes_Sorghum_Greens	Vegetables, Melons, and Berries	Vegetables	Root Crops	Vegetables and melons
Potatoes_Sorghum_Mustardgreens	Vegetables, Melons, and Berries	Vegetables	Root Crops	Vegetables and melons
Potatoes_Watermelon	Vegetables, Melons, and Berries	Vegetables	Root Crops	Vegetables and melons
Radishes_Sorghum	Vegetables, Melons, and Berries	Vegetables	Row Crops - Standard	Vegetables and melons
Rice	Field Crops	Field Crops	Aquatic or Flooded Crops	Rice
SmallVeg	Vegetables, Melons, and Berries	Vegetables	Row Crops - Standard	Vegetables and melons
SmallVegFall	Vegetables, Melons, and Berries	Vegetables	Row Crops - Standard	Vegetables and melons
SmallVegFall_Melons	Vegetables, Melons, and Berries	Vegetables	Row Crops - Melons	Vegetables and melons
SmallVegFall_PeppersSpring	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
SmallVegFall_SmallVegSpring	Vegetables, Melons, and Berries	Vegetables	Row Crops - Standard	Vegetables and melons
SmallVegFall_SmallVegSpring_SmallVegSum	Vegetables, Melons, and Berries	Vegetables	Row Crops - Standard	Vegetables and melons

Table A-3 Crop Category Assignment Comparison Continued

ILG Detailed Crop	WMD Category	USGS Category	FAARM Category	USDA ERS Category used for FSAID
SmallVegFall_SmallVegSum	Vegetables, Melons, and Berries	Vegetables	Row Crops - Standard	Vegetables and melons
SmallVegFall_Strawberries	Vegetables, Melons, and Berries	Fruit Crops	Row Crops - Delicate	Vegetables and melons
SmallVegFall_TomatoesSpring	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
SmallVegSpring	Vegetables, Melons, and Berries	Vegetables	Row Crops - Standard	Vegetables and melons
SmallVegSpring_Strawberries	Vegetables, Melons, and Berries	Fruit Crops	Row Crops - Delicate	Vegetables and melons
SmallVegSpring_TomatoesSpring	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
SmallVegSum	Vegetables, Melons, and Berries	Vegetables	Row Crops - Standard	Vegetables and melons
SmallVegSum_Strawberries	Vegetables, Melons, and Berries	Fruit Crops	Row Crops - Delicate	Vegetables and melons
Sod	Sod	Ornamentals/Grasses	Sod	Greenhouse, nursery, and floriculture
Sod Farms	Sod	Ornamentals/Grasses	Sod	Greenhouse, nursery, and floriculture
Sod_Corn	Field Crops	Field Crops	Row Crops - Standard	Corn
Sod_Corn_Sod	Field Crops	Field Crops	Row Crops - Standard	Corn
Sod_Greens	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Sod_PeanutsSpring	Field Crops	Field Crops	Row Crops - Standard	Vegetables and melons
Sod_Potato	Vegetables, Melons, and Berries	Ornamentals/Grasses	Root Crops	Vegetables and melons
Sod_Sorghum	Field Crops	Ornamentals/Grasses	Row Crops - Standard	Vegetables and melons

Table A-3 Crop Category Assignment Comparison Continued

ILG Detailed Crop	WMD Category	USGS Category	FAARM Category	USDA ERS Category used for FSAID
Sorghum	Field Crops	Field Crops	Row Crops - Standard	Vegetables and melons
Sorghum_Cabbage	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Sorghum_Corn_Cabbage	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Corn
Sorghum_Greens	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Sorghum_MixedVegetables	Vegetables, Melons, and Berries	Vegetables	Row Crops - Standard	Vegetables and melons
Sorghum_Sorghum_Broccoli	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Sorghum_Sorghum_Cabbage	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Sorghum_Sorghum_Greens	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Sorghum_Turnips	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Soybeans	Field Crops	Field Crops	Row Crops - Standard	Soybeans
Specialty Farms	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
Spinach_Corn	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Corn
Spinach_RedPeppers_Collard Greens	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
Squash	Vegetables, Melons, and Berries	Vegetables	Row Crops - Standard	Vegetables and melons
Squash_Vegetables	Vegetables, Melons, and Berries	Vegetables	Row Crops - Standard	Vegetables and melons

Table A-3 Crop Category Assignment Comparison Continued

ILG Detailed Crop	WMD Category	USGS Category	FAARM Category	USDA ERS Category used for FSAID
Strawberries	Vegetables, Melons, and Berries	Fruit Crops	Row Crops - Delicate	Vegetables and melons
Strawberries_Corn	Vegetables, Melons, and Berries	Fruit Crops	Row Crops - Delicate	Corn
Strawberries_CucumbersFall	Vegetables, Melons, and Berries	Fruit Crops	Row Crops - Delicate	Vegetables and melons
Strawberries_CucumbersSpring	Vegetables, Melons, and Berries	Fruit Crops	Row Crops - Delicate	Vegetables and melons
Strawberries_Eggplant	Vegetables, Melons, and Berries	Fruit Crops	Row Crops - Delicate	Vegetables and melons
Strawberries_GreenBeans	Vegetables, Melons, and Berries	Fruit Crops	Row Crops - Delicate	Vegetables and melons
Strawberries_Melons	Vegetables, Melons, and Berries	Fruit Crops	Row Crops - Delicate	Vegetables and melons
Strawberries_Peas	Vegetables, Melons, and Berries	Fruit Crops	Row Crops - Delicate	Vegetables and melons
Strawberries_Peppers	Vegetables, Melons, and Berries	Fruit Crops	Row Crops - Delicate	Vegetables and melons
Strawberries_PeppersFall	Vegetables, Melons, and Berries	Fruit Crops	Row Crops - Delicate	Vegetables and melons
Strawberries_PeppersSpring	Vegetables, Melons, and Berries	Fruit Crops	Row Crops - Delicate	Vegetables and melons
Strawberries_SmallVegSpring	Vegetables, Melons, and Berries	Fruit Crops	Row Crops - Delicate	Vegetables and melons
Strawberries_Sorghum_Strawberries	Vegetables, Melons, and Berries	Fruit Crops	Row Crops - Delicate	Vegetables and melons
Strawberries_TomatoesFall	Vegetables, Melons, and Berries	Fruit Crops	Row Crops - Delicate	Vegetables and melons

Table A-3 Crop Category Assignment Comparison Continued

ILG Detailed Crop	WMD Category	USGS Category	FAARM Category	USDA ERS Category used for FSAID
Strawberries_TomatoesSpring_PeppersFall	Vegetables, Melons, and Berries	Fruit Crops	Row Crops - Delicate	Vegetables and melons
Strawberries_Zucchini	Vegetables, Melons, and Berries	Fruit Crops	Row Crops - Delicate	Vegetables and melons
Sugar Cane	Field Crops	Field Crops	Cane Crops	Sugarcane and sugar beets
Sweet Corn	Vegetables, Melons, and Berries	Vegetables	Row Crops - Standard	Corn
Sweet Corn_PeanutsFall	Vegetables, Melons, and Berries	Vegetables	Row Crops - Standard	Corn
Tomatoes	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
TomatoesFall	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
TomatoesFall_Melons	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
TomatoesFall_Strawberries	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
TomatoesFall_TomatoesSpring	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
TomatoesFall_TomatoesSpring_PeanutsSpring	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
TomatoesSpring	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
TomatoesSpring_CucumbersFall	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
TomatoesSpring_DryBeans	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
TomatoesSpring_Melons	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons

Table A-3 Crop Category Assignment Comparison Continued

ILG Detailed Crop	WMD Category	USGS Category	FAARM Category	USDA ERS Category used for FSAID
TomatoesSpring_PeppersFall	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
TomatoesSpring_Strawberries	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
Turf	Sod	Sod	Sod	Greenhouse, nursery, and floriculture
Unspecified	Miscellaneous	Miscellaneous	Miscellaneous	All other crops
Unspecified Field Crop	Miscellaneous	Miscellaneous	Miscellaneous	All other crops
Unspecified Row Crop	Miscellaneous	Miscellaneous	Miscellaneous	All other crops
Unspecified Tree Crop	Miscellaneous	Miscellaneous	Miscellaneous	All other crops
Unspeficied Tree Crop	Miscellaneous	Miscellaneous	Miscellaneous	All other crops
Vegetables	Vegetables, Melons, and Berries	Vegetables	Row Crops - Standard	Vegetables and melons
Vegetables_Cabbage	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Vegetables_Corn_Vegetables	Vegetables, Melons, and Berries	Vegetables	Row Crops - Standard	Corn
Vegetables_Greens	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Vegetables_Radishes	Vegetables, Melons, and Berries	Vegetables	Root Crops	Vegetables and melons
Vegetables_Sorghum	Vegetables, Melons, and Berries	Vegetables	Row Crops - Standard	Vegetables and melons
Watermelon	Vegetables, Melons, and Berries	Vegetables	Row Crops - Melons	Vegetables and melons
Watermelon_MixedVegetables	Vegetables, Melons, and Berries	Vegetables	Row Crops - Melons	Vegetables and melons

Table A-3 Crop Category Assignment Comparison Continued

ILG Detailed Crop	WMD Category	USGS Category	FAARM Category	USDA ERS Category used for FSAID
Watermelon_MixedVegetables_Cucumber	Vegetables, Melons, and Berries	Vegetables	Row Crops - Melons	Vegetables and melons
Watermelon_MixedVegetables_Watermelon	Vegetables, Melons, and Berries	Vegetables	Row Crops - Melons	Vegetables and melons
Watermelon_Pumpkin	Vegetables, Melons, and Berries	Vegetables	Row Crops - Melons	Vegetables and melons
Watermelon_Sod_Potato	Vegetables, Melons, and Berries	Vegetables	Row Crops - Standard	Vegetables and melons
Zucchini	Vegetables, Melons, and Berries	Vegetables	Row Crops - Standard	Vegetables and melons
Zucchini_DryBeans_PeppersSpring	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
Zucchini_Eggplant	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
Zucchini_GreenBeans_Melons	Vegetables, Melons, and Berries	Vegetables	Row Crops - Melons	Vegetables and melons
Zucchini_Melons	Vegetables, Melons, and Berries	Vegetables	Row Crops - Melons	Vegetables and melons
Zucchini_Peas	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
Zucchini_PeppersFall	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
Zucchini_Sweet Corn	Vegetables, Melons, and Berries	Vegetables	Row Crops - Standard	Corn
Zucchini_TomatoesSpring	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
Hay_AFO	Field Crops	Field Crops	Pasture and Forage	All other crops
Other_Groves	Other Fruits and Nuts	Fruit Crops	Medium & Small Fruit & Nut Trees	Fruits

Table A-3 Crop Category Assignment Comparison Continued

ILG Detailed Crop	WMD Category	USGS Category	FAARM Category	USDA ERS Category used for FSAID
Specialty_Farms	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
Tobacco	Miscellaneous	Miscellaneous	Row Crops - High Value	All other crops
TomatoesMelonsTomatoes	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
TomatoesSweetCorn	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
TomatoesSmVegTomatoes	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
TomatoesSmVeg	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
TomatoesMelons	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
MelonsSmVeg	Vegetables, Melons, and Berries	Vegetables	Row Crops - Melons	Vegetables and melons
PotatoesSmallVeg	Vegetables, Melons, and Berries	Vegetables	Root Crops	Vegetables and melons
PotatoesSwCornFldCorn	Vegetables, Melons, and Berries	Vegetables	Root Crops	Corn
PotatoesFieldCornSmVeg	Vegetables, Melons, and Berries	Vegetables	Root Crops	Corn
PotatoesFieldCornSweetCorn	Vegetables, Melons, and Berries	Vegetables	Root Crops	Corn
PotatoesSwCorn	Vegetables, Melons, and Berries	Vegetables	Root Crops	Corn

Appendix B. Detailed Irrigated Acreage by County

Table B-1 Irrigated Acreage Comparison by County, RWSP, and Crop Category

County	Census 2007 ACRES	Census 2012 ACRES	WMD 2010 ACRES	FSAID 2010 ACRES
Alachua	13,387	10,708	9,731	11,426
Baker	699	303	277	277
Bay	-	-	1,356	923
Bradford	156	696	175	717
Brevard	20,486	13,414	21,421	21,421
Broward	1,651	1,828	1,198	2,881
Calhoun	1,455	1,647	2,765	2,801
Charlotte	19,965	13,716	28,927	21,794
Citrus	1,375	669	1,125	2,094
Clay	913	579	1,360	1,360
Collier	31,361	26,412	89,317	78,858
Columbia	2,693	6,070	2,648	3,778
De Soto	56,162	47,695	71,299	67,541
Dixie	2,957	3,439	2,216	3,115
Duval	2,024	1,115	1,299	1,299
Escambia	2,552	4,628	3,221	3,666
Flagler	6,812	3,936	9,968	9,968
Franklin	-	-	-	-
Gadsden	2,209	2,650	4,822	4,281
Gilchrist	7,808	12,563	6,113	8,235
Glades	46,726	88,509	86,106	60,673
Gulf	-	-	-	96
Hamilton	5,518	9,548	8,465	8,272
Hardee	44,141	36,038	54,075	42,686
Hendry	188,817	193,073	128,158	194,344
Hernando	1,488	2,669	1,721	2,740
Highlands	73,713	61,785	55,103	71,855
Hillsborough	29,923	26,096	29,958	34,942
Holmes	2,033	1,100	2,270	2,266
Indian River	66,866	57,627	76,782	76,782
Jackson	20,275	21,508	27,815	25,328
Jefferson	2,148	2,388	1,562	3,976
Lafayette	7,426	10,658	5,045	9,237
Lake	15,013	15,163	19,165	18,573
Lee	14,612	13,585	23,887	23,367
Leon	1,467	2,010	334	509
Levy	14,488	13,661	9,507	15,256
Liberty	-	-	-	106
Madison	3,119	8,067	9,119	11,293

Appendix B. Detailed Irrigated Acreage Info

Table B-1 Irrigated Acreage Comparison by County, RWSP, and Crop Category (con't)

County	Census	Census	WMD	FSAID
	2007 ACRES	2012 ACRES	2010 ACRES	2010 ACRES
Manatee	50,791	50,108	48,455	59,585
Marion	9,666	13,214	12,667	15,391
Martin	48,521	34,806	32,245	40,071
Miami Dade	38,954	45,236	47,805	37,356
Monroe	30	37	20	-
Nassau	270	112	670	883
Okaloosa	421	161	421	1,185
Okeechobee	20,545	19,443	90,423	26,764
Orange	11,870	9,478	9,489	8,076
Osceola	31,420	29,153	23,561	23,199
Palm Beach	387,755	362,748	445,799	419,113
Pasco	10,599	6,594	10,182	12,777
Pinellas	189	120	38	17
Polk	98,404	79,869	88,614	90,336
Putnam	4,620	5,487	11,729	11,729
St Johns	14,359	11,650	24,889	24,889
St Lucie	69,302	59,245	47,165	61,702
Santa Rosa	2,562	2,443	1,272	4,277
Sarasota	2,348	2,023	2,881	7,358
Seminole	1,829	1,180	3,278	3,278
Sumter	2,013	3,093	3,731	3,831
Suwannee	20,096	27,808	16,507	23,629
Taylor	-	-	76	144
Union	1,036	1,046	950	1,207
Volusia	9,068	8,996	10,501	10,501
Wakulla	282	162	52	162
Walton	718	1,316	1,671	1,393
Washington	888	1,136	1,323	1,373
Statewide	1,550,994	1,492,217	1,734,724	1,738,961

Appendix C. Detailed Baseline Irrigation Estimates (AFSIRS)

Figure C-1 Crop Growing Regions

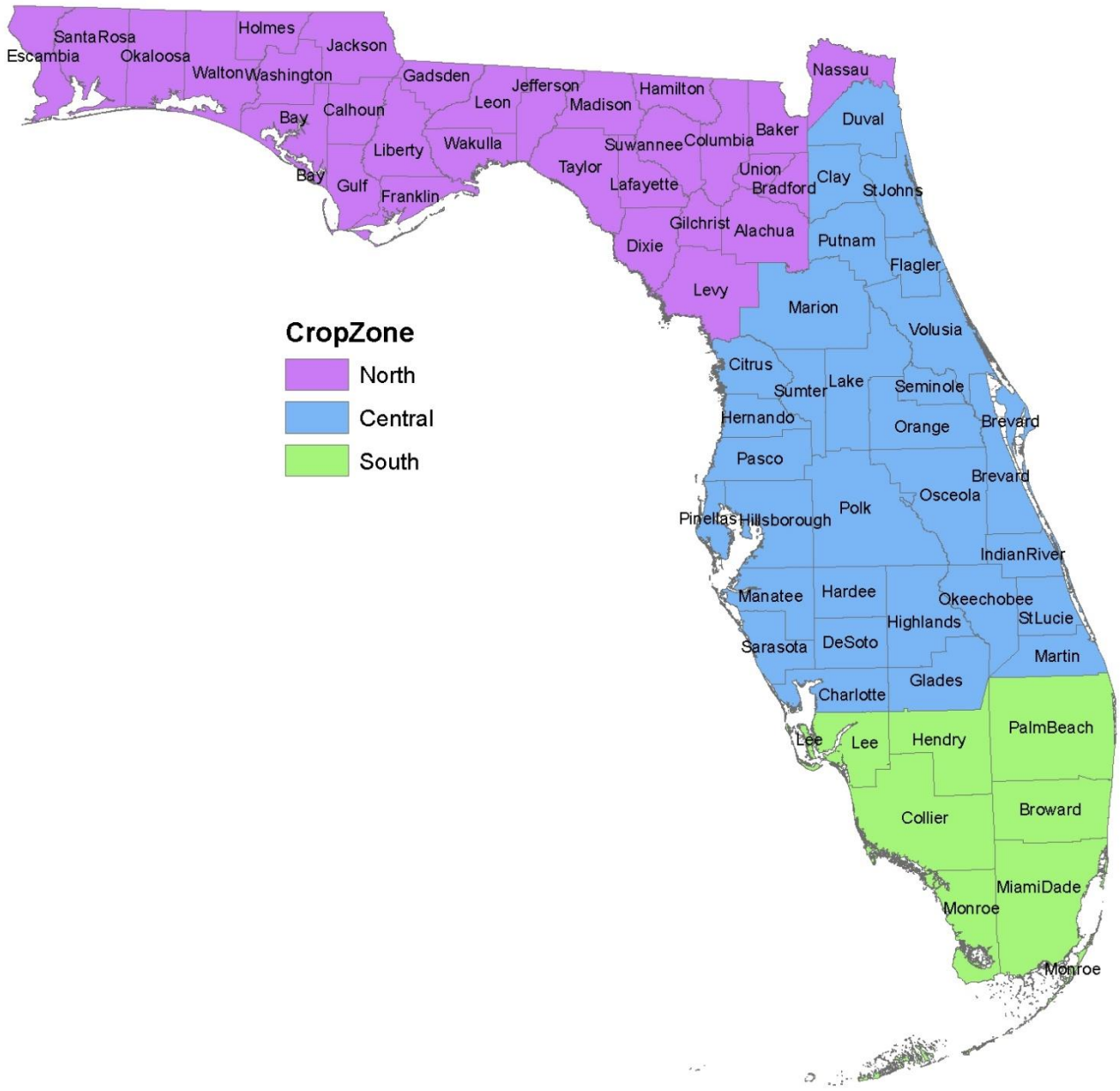


Figure C-2a Annual Precipitation Comparison - 2005

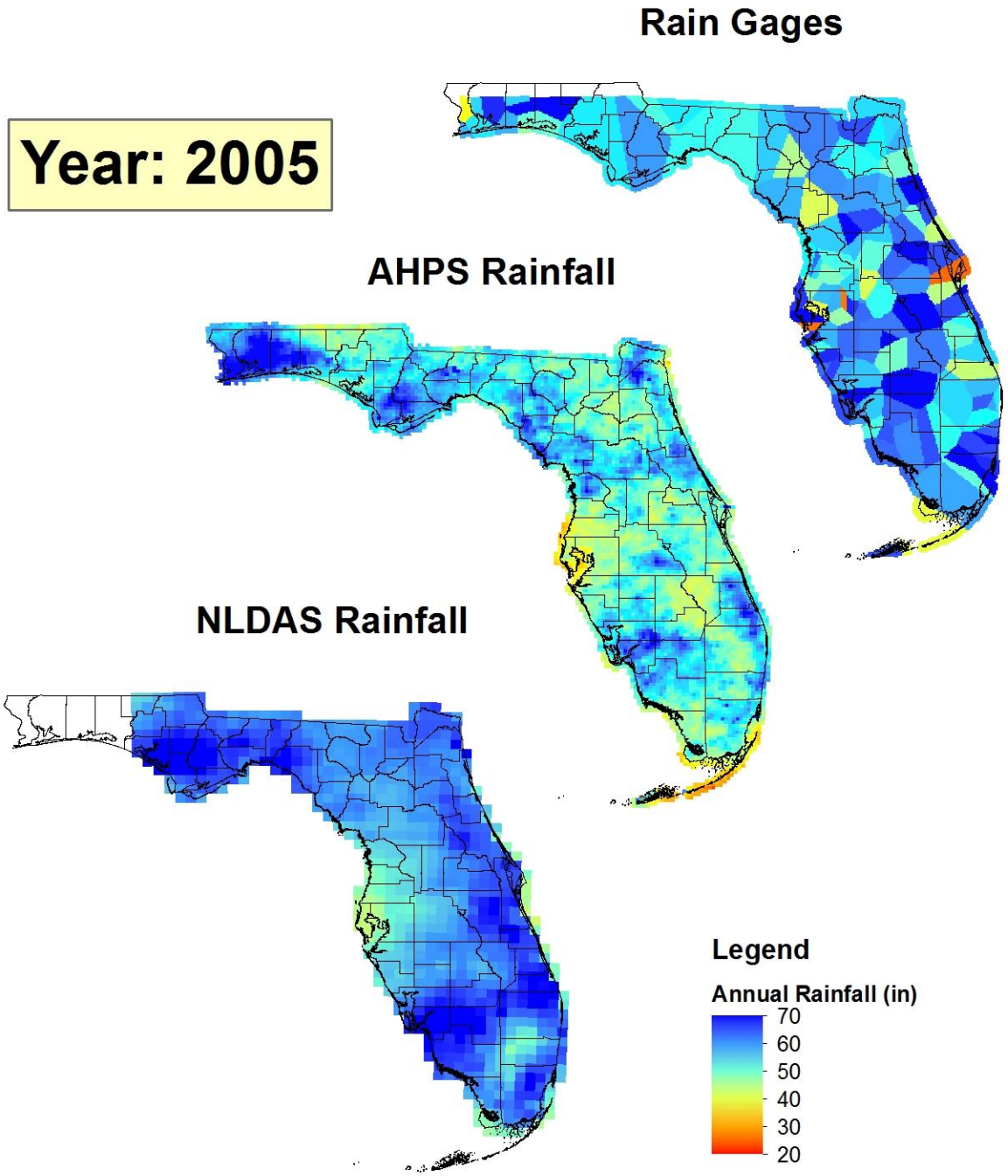


Figure C-2b Annual Precipitation Comparison - 2006

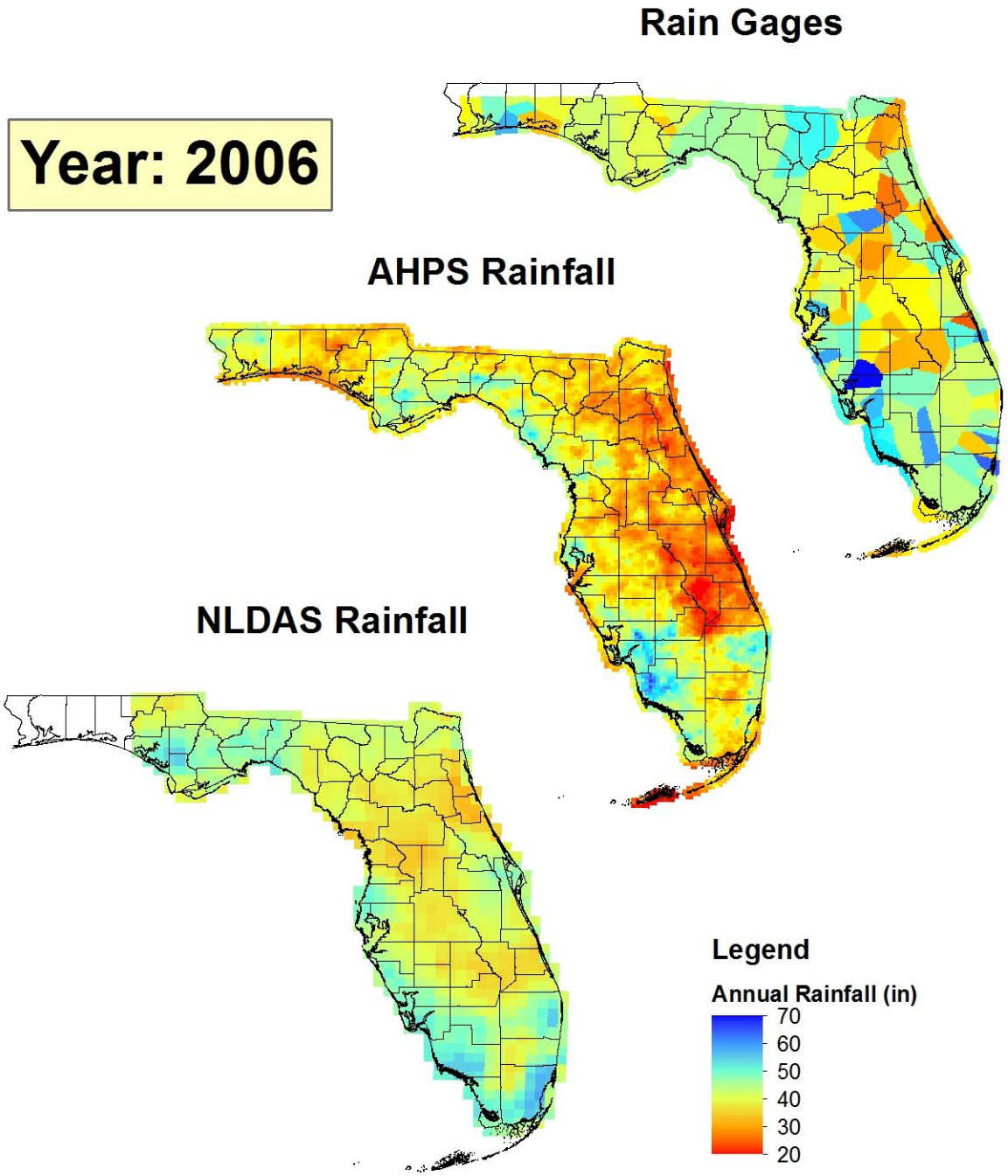


Figure C-2c Annual Precipitation Comparison - 2007

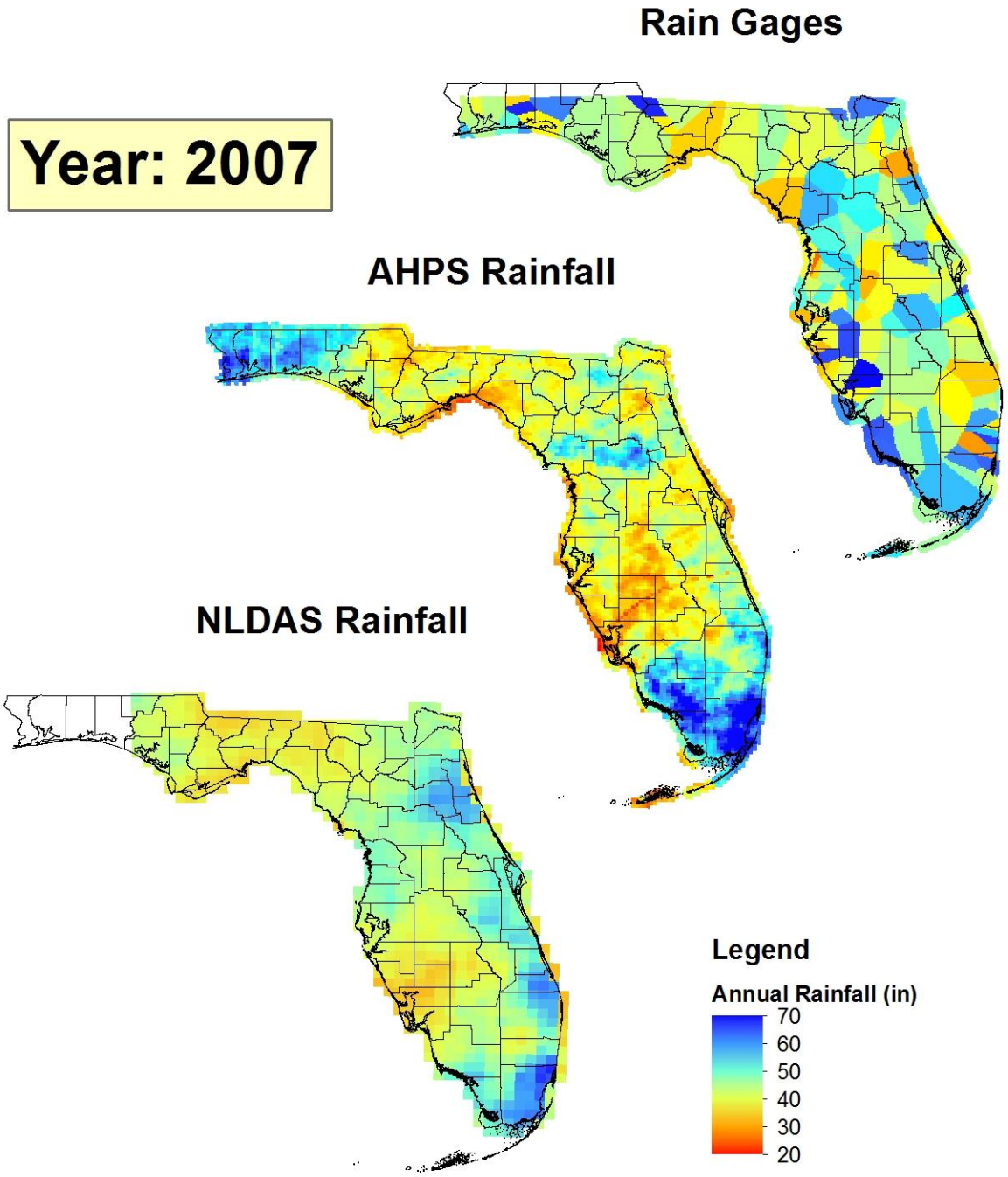


Figure C-2d Annual Precipitation Comparison - 2008

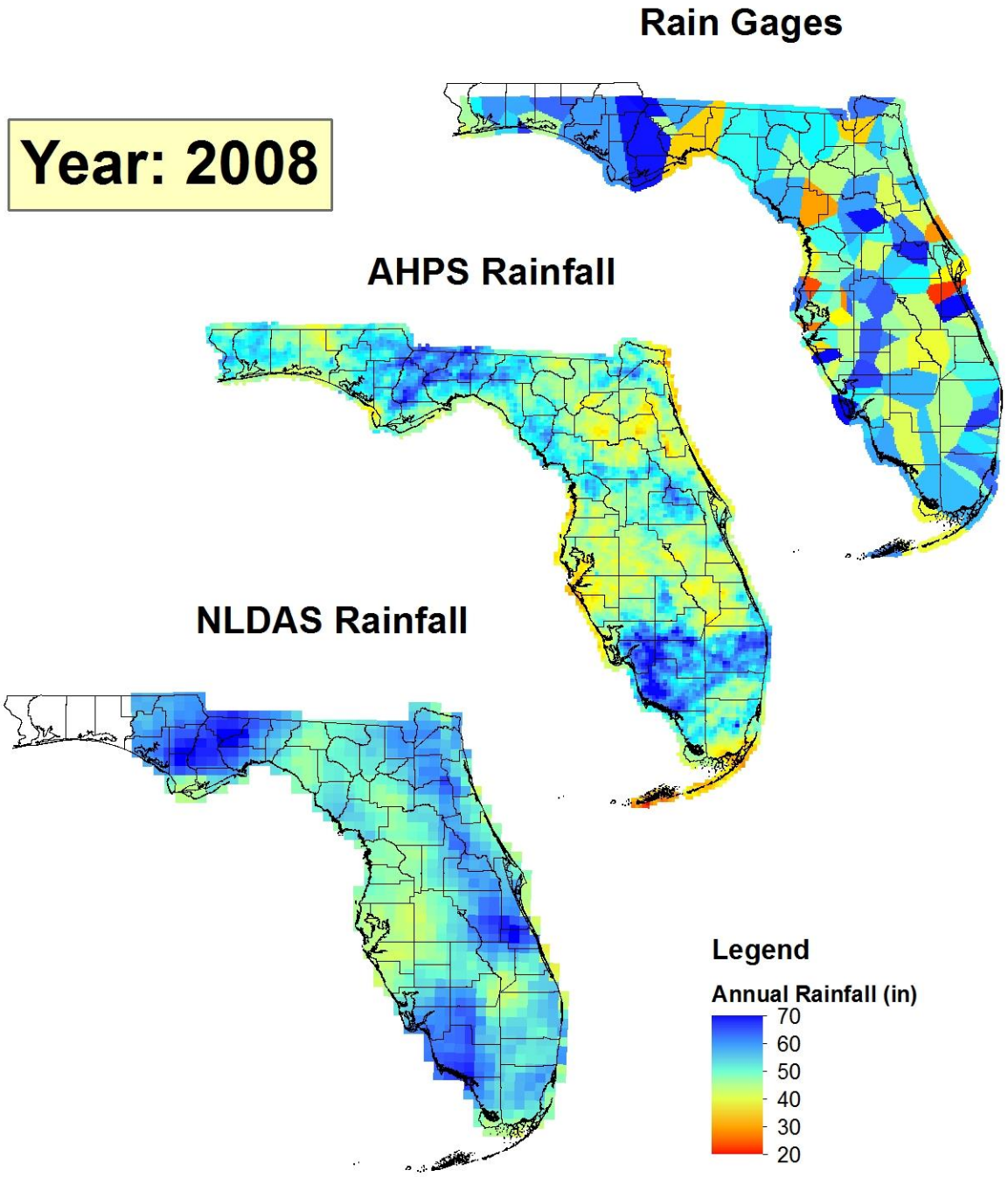


Figure C-2e Annual Precipitation Comparison - 2009

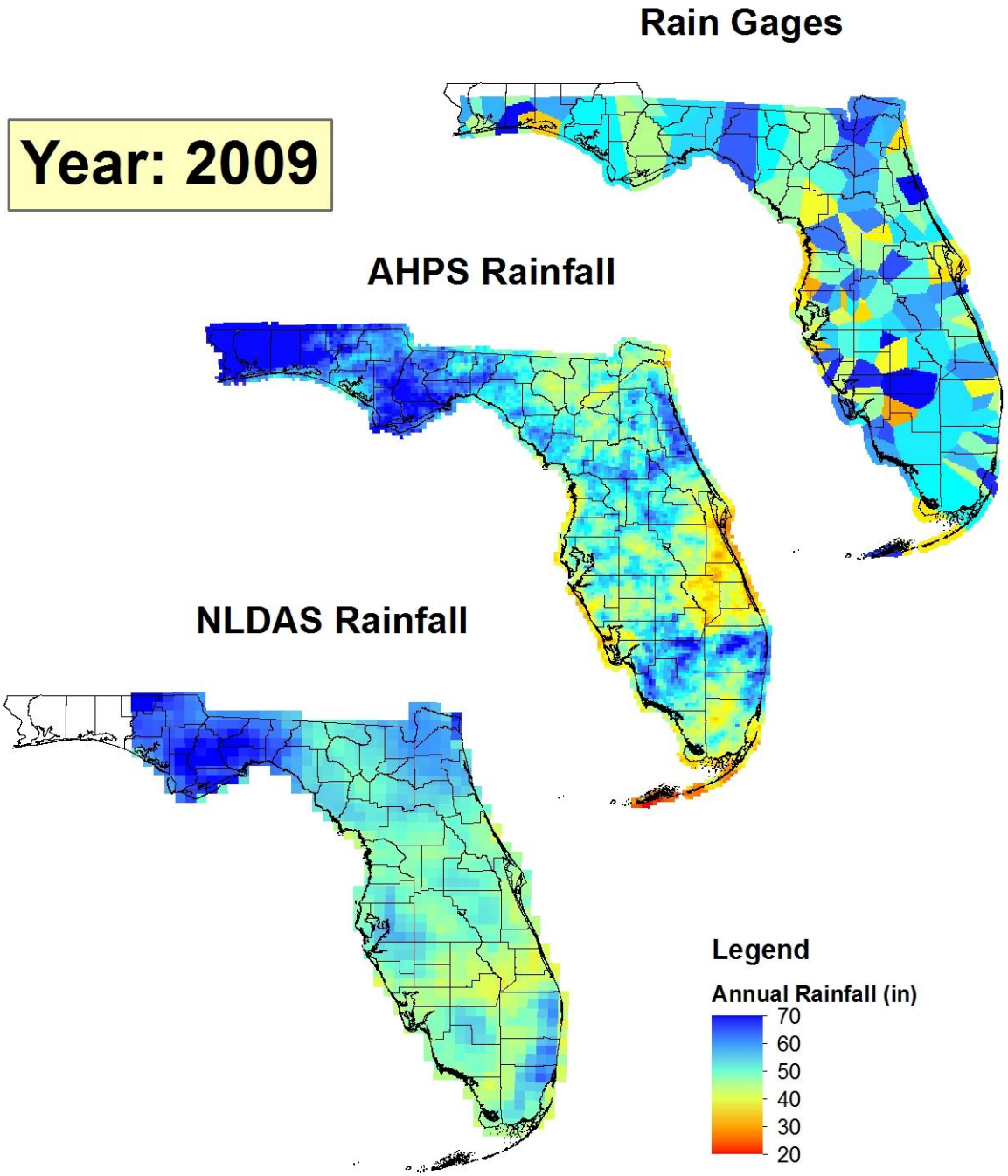


Figure C-2f Annual Precipitation Comparison - 2010

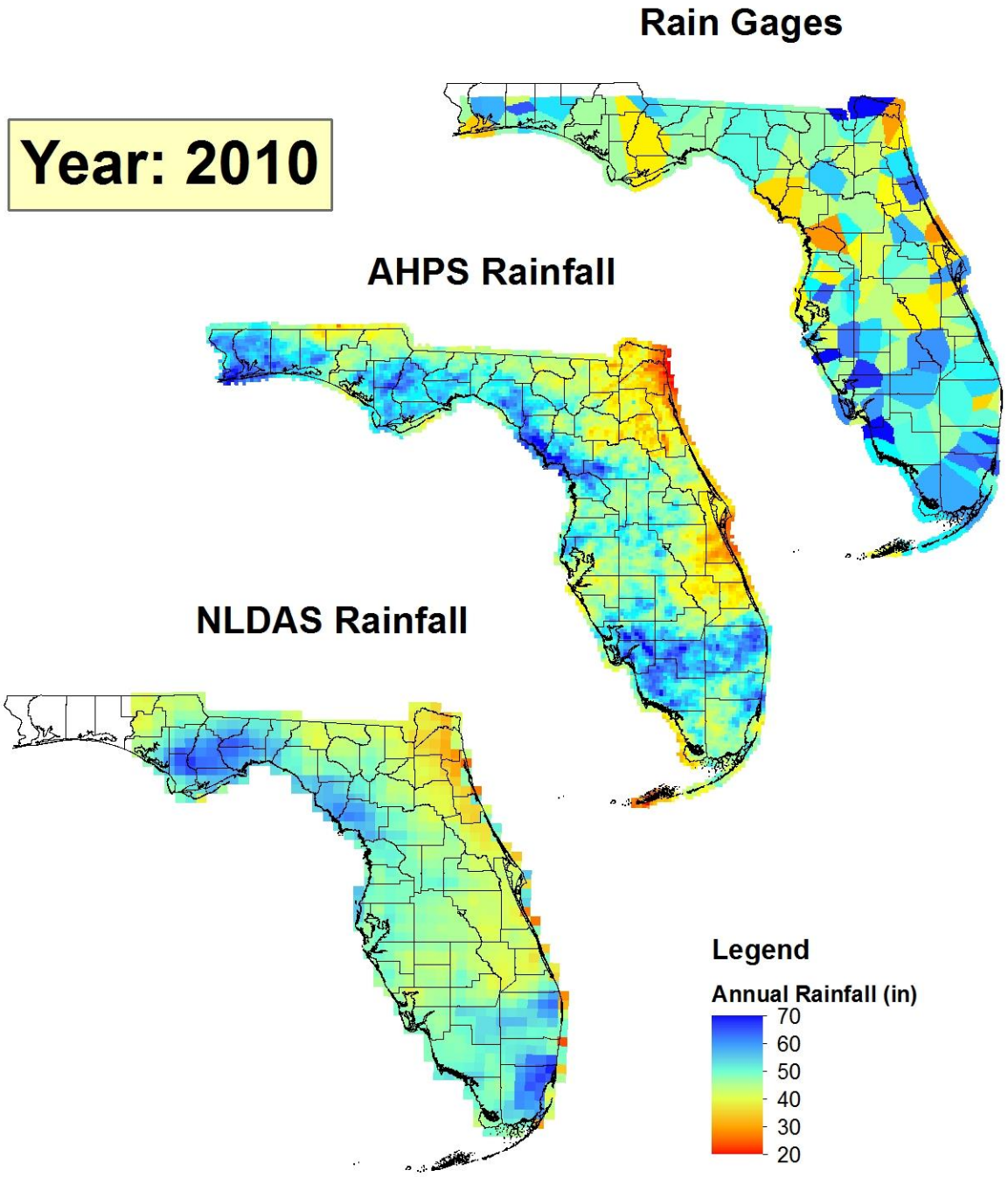


Figure C-2g Annual Precipitation Comparison - 2011

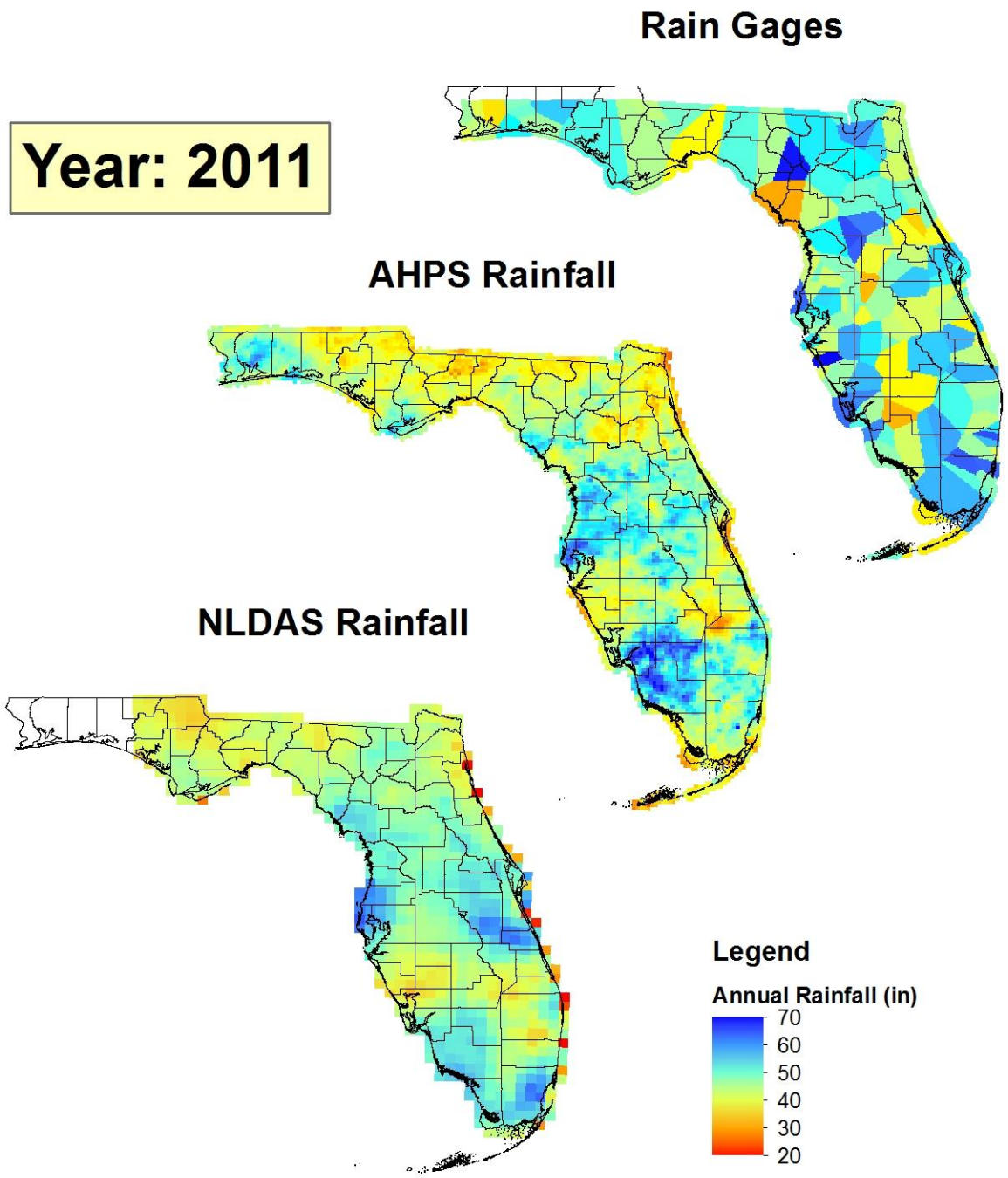


Figure C-2h Annual Precipitation Comparison - 2012

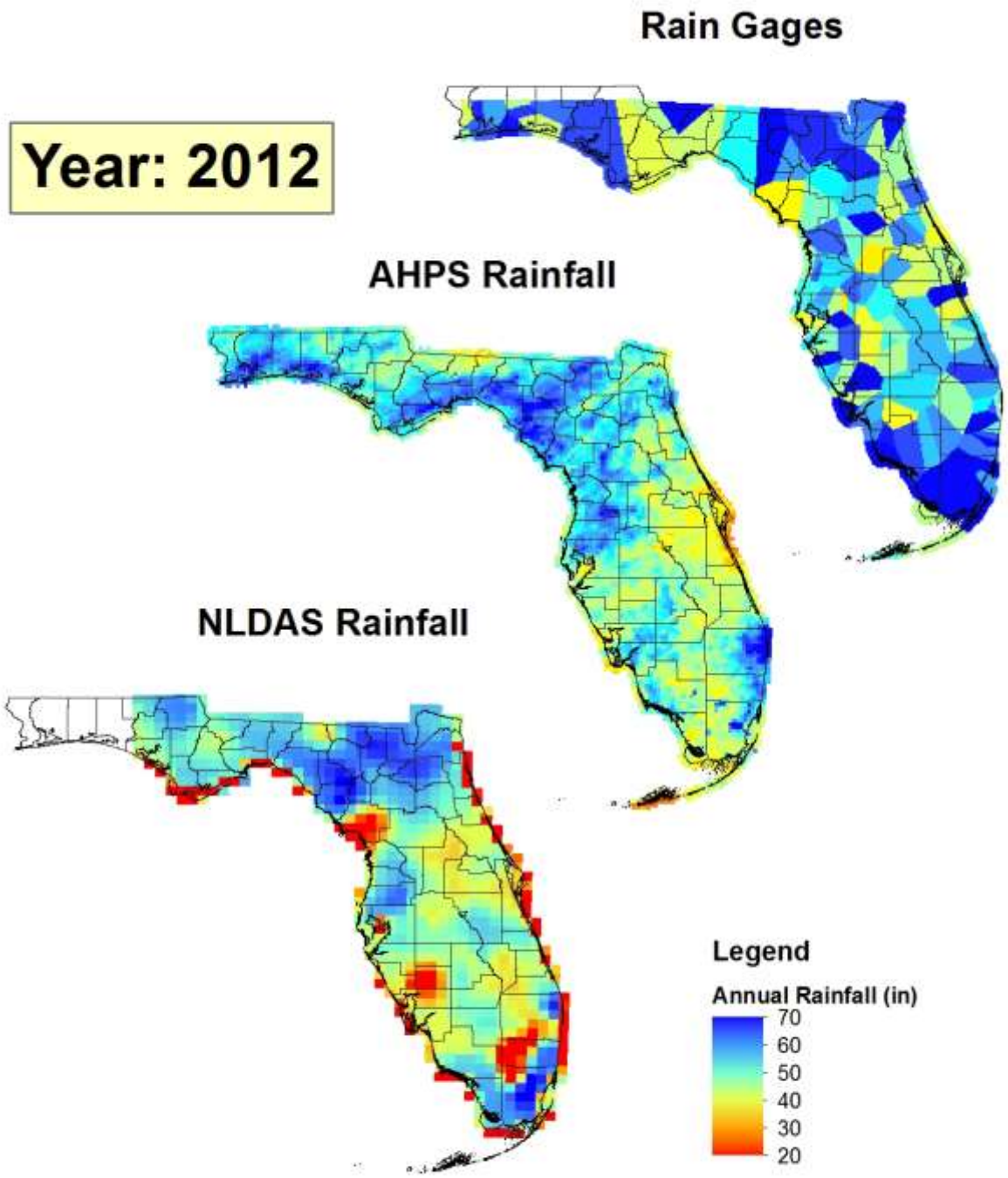


Figure C-3a Annual Evapotranspiration Comparison - 2005

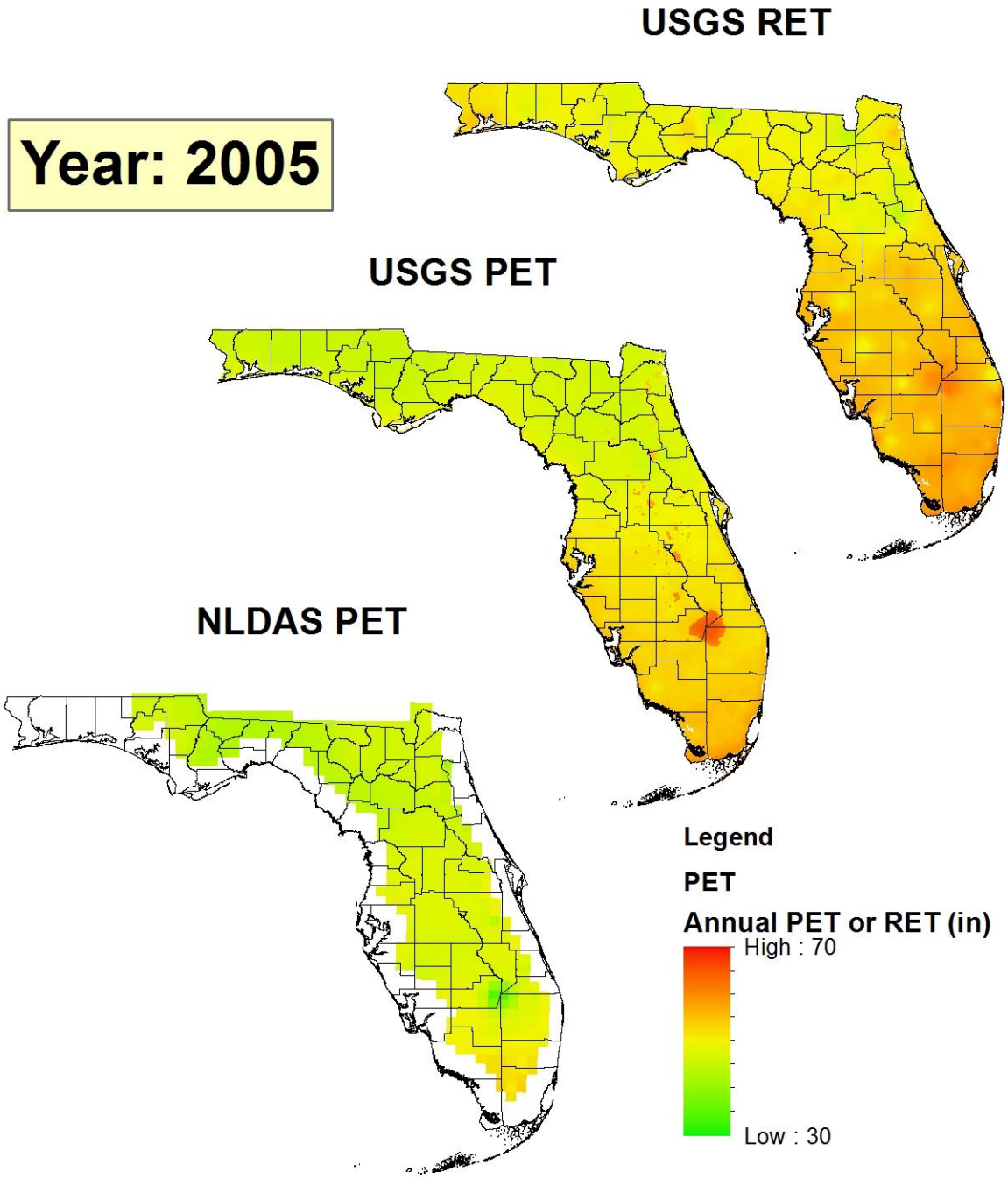


Figure C-3b Annual Evapotranspiration Comparison - 2006

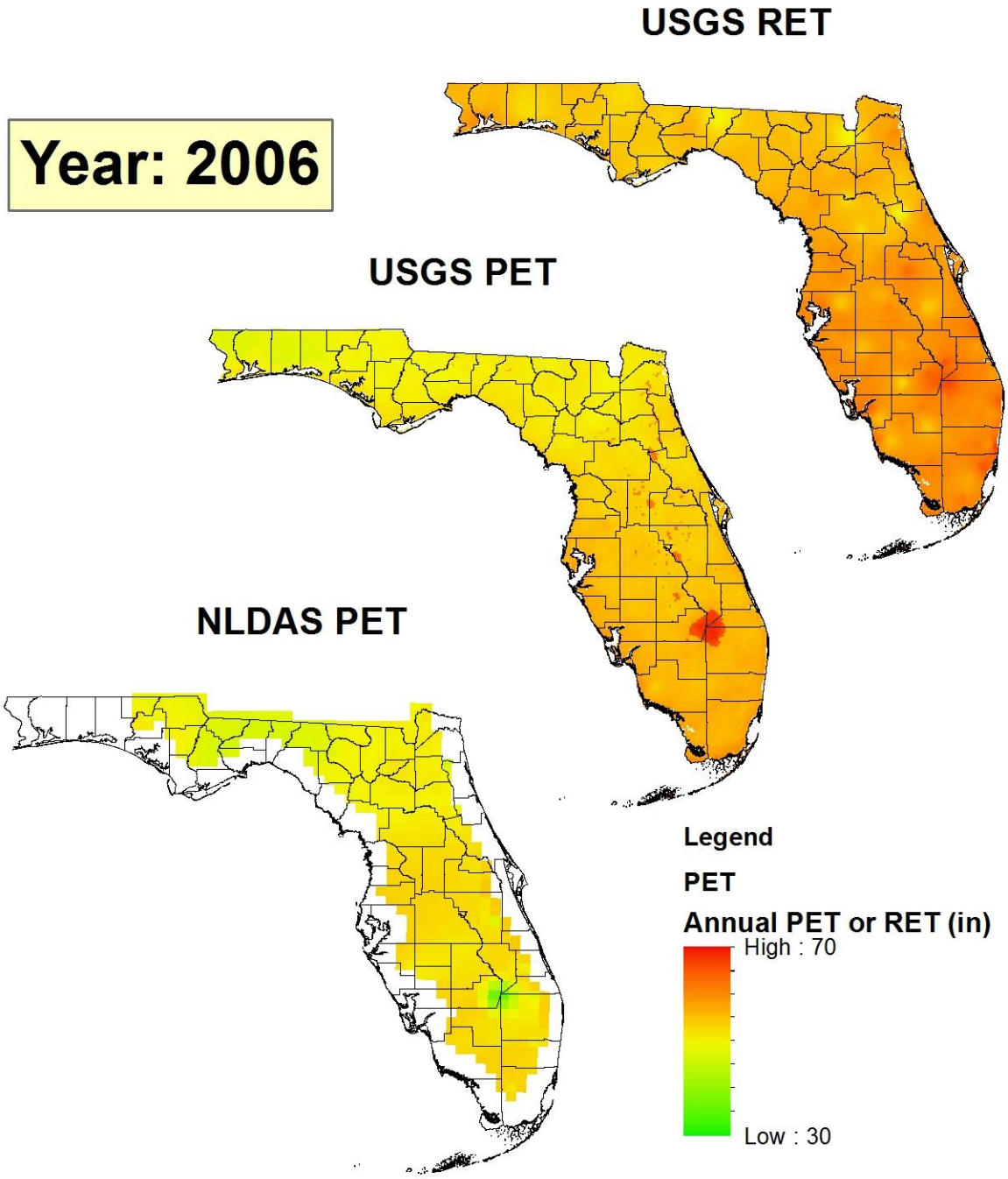


Figure C-3c Annual Evapotranspiration Comparison - 2007

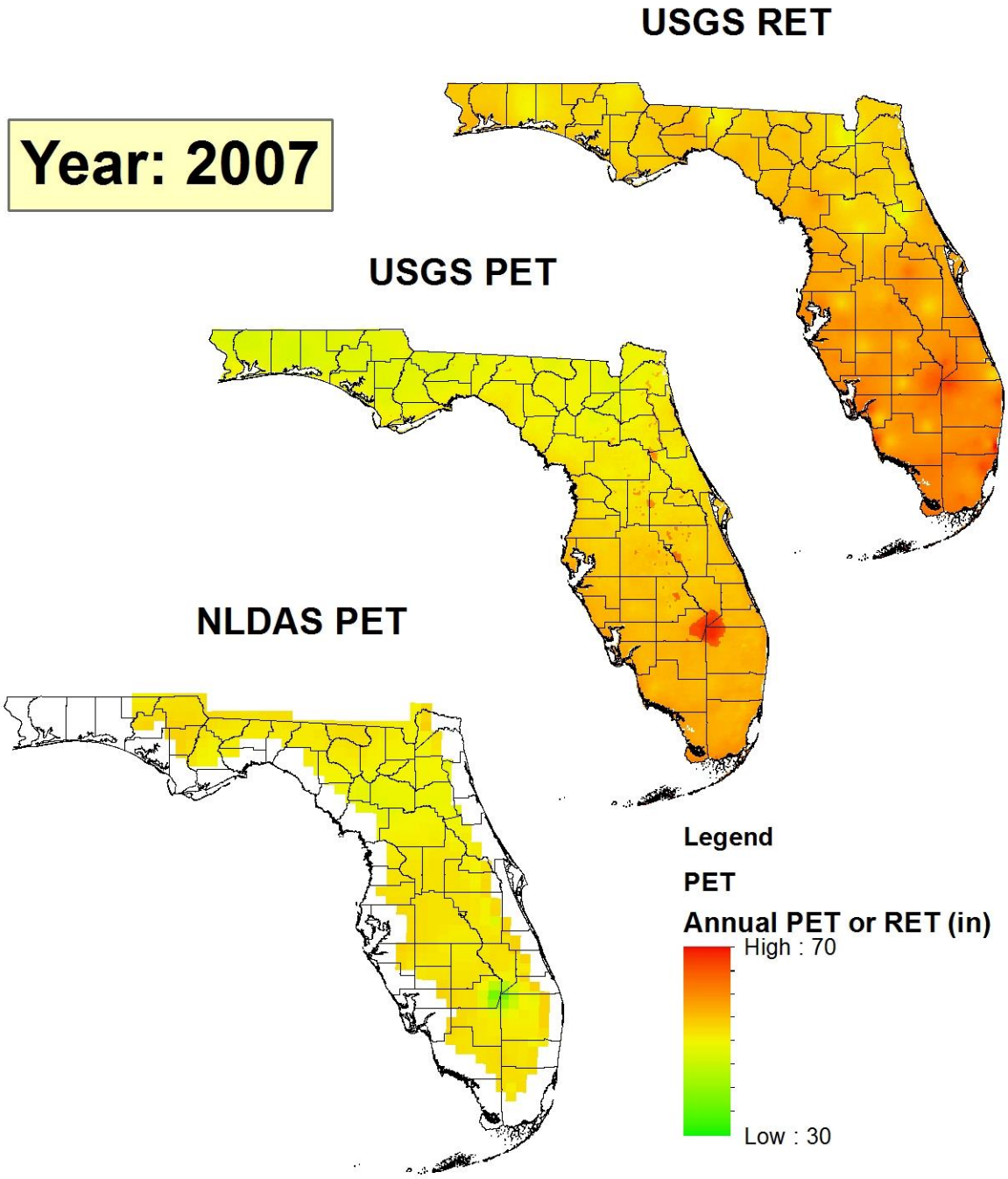


Figure C-3d Annual Evapotranspiration Comparison - 2008

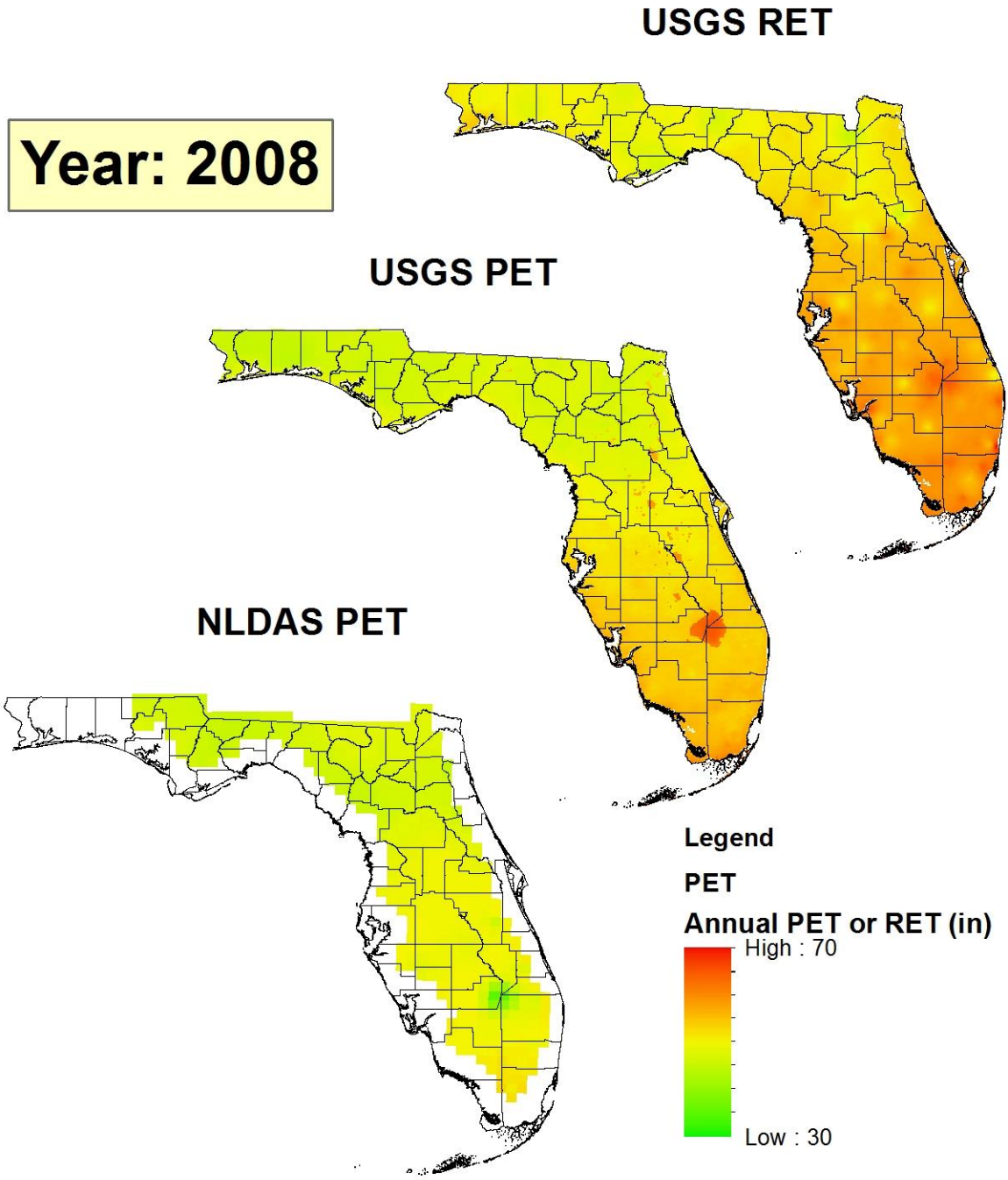


Figure C-3e Annual Evapotranspiration Comparison - 2009

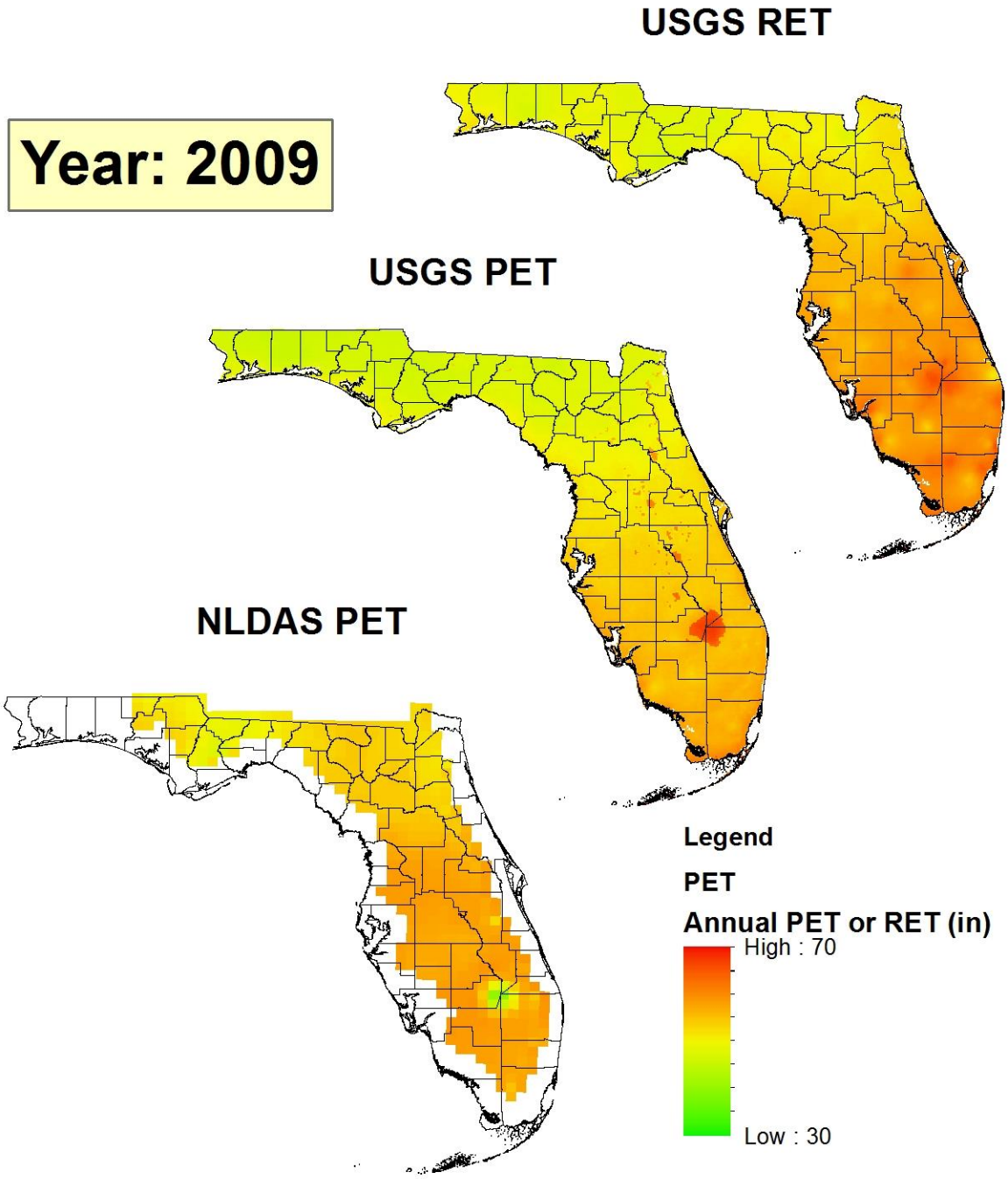


Figure C-3f Annual Evapotranspiration Comparison - 2010

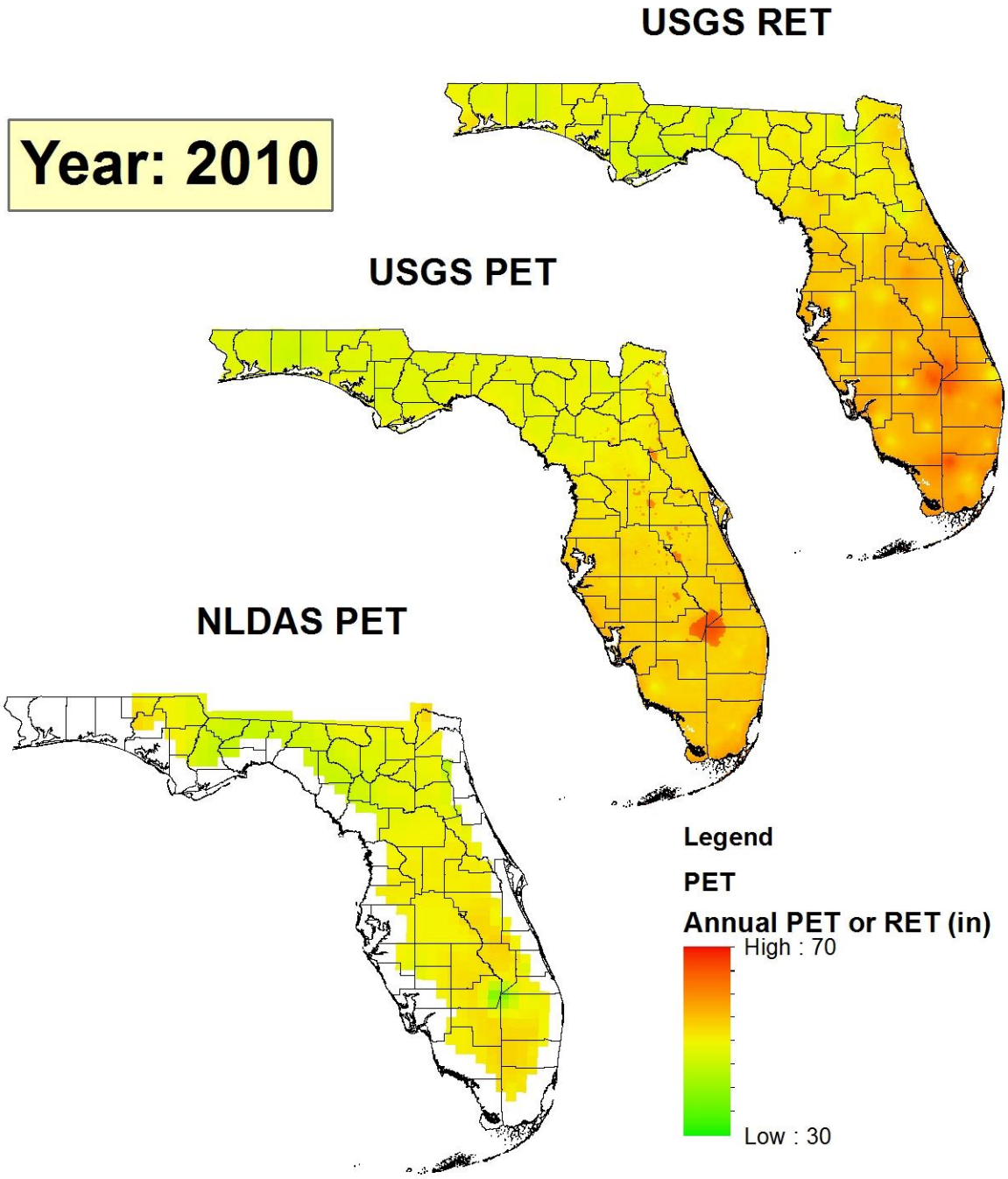


Figure C-3g Annual Evapotranspiration Comparison - 2011

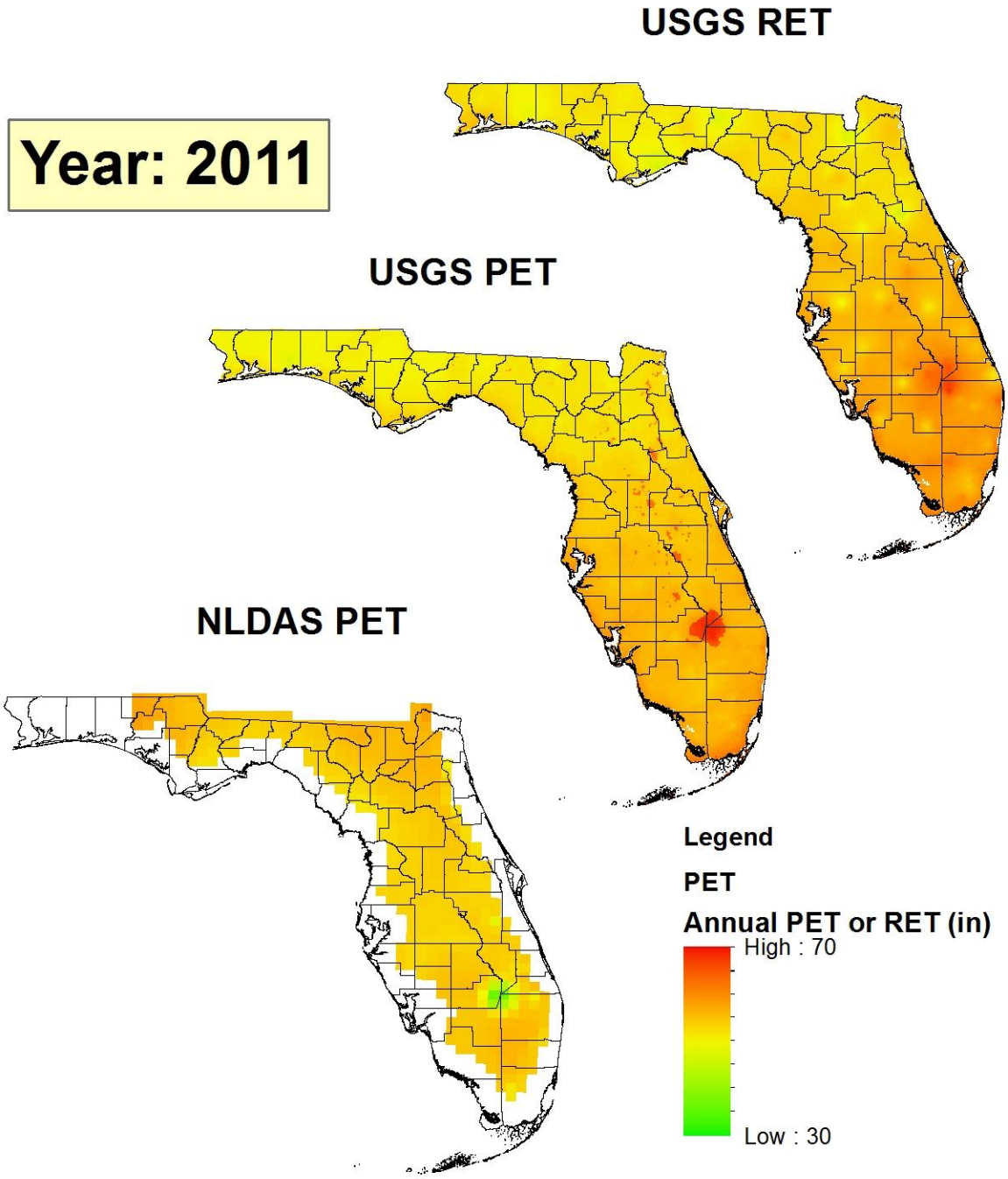
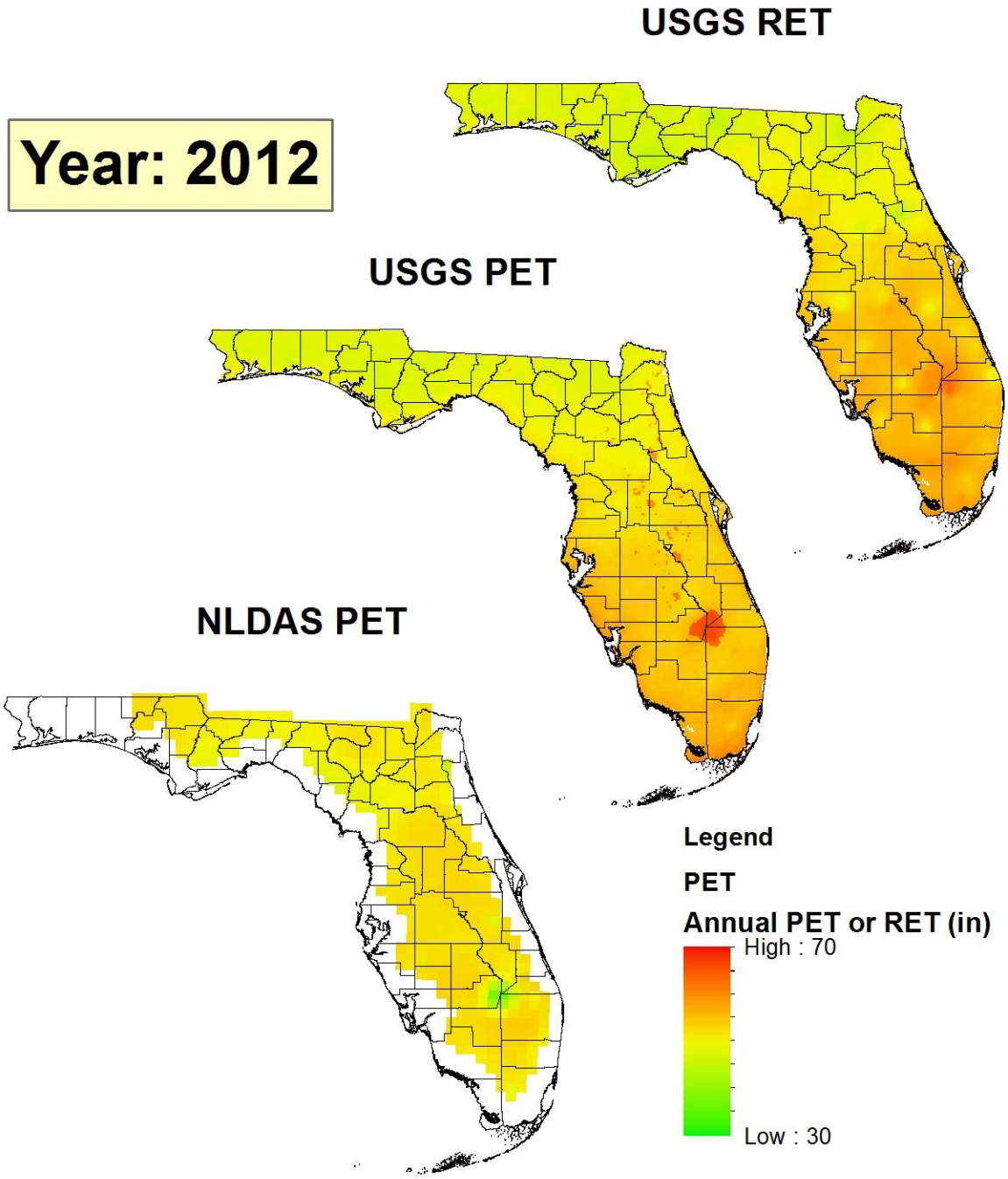


Figure C-3h Annual Evapotranspiration Comparison - 2012



Appendix C. Detailed Baseline Irrigation Estimates (AFSIRS)

Table C-1 Frost Protection Demand by County

County	Average		Max Annual	
	MG	mgd (AADF)	MG	mgd (AADF)
Alachua	659.99	1.81	1918.27	5.26
Bradford	58.08	0.16	141.25	0.39
Brevard	40.12	0.11	211.37	0.58
Broward	0.22	0.00	3.72	0.01
Citrus	76.25	0.21	329.29	0.90
Collier	53.85	0.15	320.56	0.88
De Soto	265.48	0.73	1155.13	3.16
Escambia	12.09	0.03	38.10	0.10
Flagler	1515.32	4.15	4054.80	11.11
Glades	105.64	0.29	674.41	1.85
Hardee	564.78	1.55	2532.29	6.94
Hendry	26.29	0.07	189.09	0.52
Hernando	177.02	0.48	852.06	2.33
Highlands	810.16	2.22	3003.68	8.23
Hillsborough	2272.70	6.23	11263.64	30.86
Indian River	207.01	0.57	943.40	2.58
Lake	1312.12	3.59	5077.72	13.91
Lee	321.10	0.88	1782.09	4.88
Levy	25.56	0.07	70.64	0.19
Manatee	642.16	1.76	2905.80	7.96
Marion	306.73	0.84	1110.50	3.04
Martin	98.19	0.27	546.47	1.50
Miami Dade	148.80	0.41	1910.15	5.23
Okaloosa	0.04	0.00	0.69	0.00
Okeechobee	1050.29	2.88	3197.49	8.76
Orange	291.91	0.80	1314.61	3.60
Osceola	1595.65	4.37	4968.31	13.61
Palm Beach	300.64	0.82	1514.41	4.15
Pasco	126.63	0.35	653.25	1.79
Pinellas	3.92	0.01	17.40	0.05
Polk	394.26	1.08	2176.55	5.96
Putnam	58.39	0.16	209.39	0.57
Sarasota	79.28	0.22	158.41	0.43
Seminole	285.25	0.78	836.76	2.29
St Lucie	625.63	1.71	2389.89	6.55
Sumter	124.50	0.34	701.99	1.92
Volusia	3485.09	9.55	10716.69	29.36

Appendix C. Detailed Baseline Irrigation Estimates (AFSIRS)

Table C-2 Estimated Other Water Demand for 2010

County	Other Ag Water Demand (mgd)			
	Dairy	Livestock	Aquaculture	Total
Alachua	0.252	0.512	0.006	0.770
Baker	0.029	0.066	0.000	0.095
Bay	0.000	0.011	0.000	0.011
Bradford	0.099	0.106	0.000	0.205
Brevard	0.030	0.296	0.220	0.546
Broward	0.001	0.023	0.008	0.032
Calhoun	0.028	0.051	0.360	0.439
Charlotte	0.002	0.314	0.023	0.338
Citrus	0.143	0.081	0.104	0.328
Clay	0.156	0.063	0.000	0.220
Collier	0.001	0.132	0.023	0.156
Columbia	0.002	0.320	0.000	0.322
De Soto	0.520	0.783	0.000	1.303
Dixie	0.066	0.080	0.000	0.146
Duval	0.037	0.071	0.001	0.109
Escambia	0.033	0.073	0.258	0.364
Flagler	0.000	0.043	0.000	0.043
Franklin	0.000	0.000	0.156	0.156
Gadsden	0.014	0.066	0.010	0.090
Gilchrist	1.951	0.280	0.000	2.231
Glades	0.068	0.697	0.000	0.765
Gulf	0.014	0.004	0.140	0.158
Hamilton	0.028	0.098	0.000	0.127
Hardee	1.902	0.799	0.000	2.702
Hendry	0.051	0.729	0.541	1.322
Hernando	0.219	0.172	0.000	0.392
Highlands	1.105	1.301	0.081	2.487
Hillsborough	0.142	0.652	8.857	9.652
Holmes	0.142	0.325	0.002	0.468
Indian River	0.000	0.239	0.780	1.019
Jackson	0.142	0.602	0.370	1.114
Jefferson	0.131	0.164	0.000	0.295
Lafayette	2.180	0.184	0.000	2.364
Lake	0.005	0.268	0.000	0.272
Lee	0.003	0.145	0.287	0.436
Leon	0.012	0.029	0.000	0.041
Levy	0.094	0.377	4.281	4.751

Table C-2 Estimated Other Water Demand for 2010 (Continued)

County	Other Ag Water Demand (mgd)			
	Dairy	Livestock	Aquaculture	Total
Liberty	0.000	0.011	0.000	0.011
Madison	0.380	0.425	0.000	0.805
Manatee	0.570	0.361	0.412	1.343
Marion	0.006	0.579	0.011	0.596
Martin	0.037	0.349	0.023	0.409
Miami Dade	0.005	0.047	1.533	1.585
Monroe	0.000	0.000	2.309	2.309
Nassau	0.232	0.060	0.000	0.292
Okaloosa	0.002	0.057	0.002	0.061
Okeechobee	4.523	1.523	0.805	6.850
Orange	0.028	0.170	0.107	0.305
Osceola	0.001	1.197	0.000	1.198
Palm Beach	0.030	0.074	0.161	0.264
Pasco	0.246	0.373	0.130	0.749
Pinellas	0.000	0.002	0.035	0.037
Polk	0.179	1.156	2.094	3.428
Putnam	0.101	0.095	0.331	0.526
Santa Rosa	0.000	0.081	0.490	0.571
Sarasota	0.336	0.171	0.000	0.507
Seminole	0.015	0.058	0.006	0.078
St Johns	0.000	0.028	0.021	0.049
St Lucie	0.026	0.339	0.000	0.365
Sumter	0.283	0.459	0.130	0.872
Suwannee	1.303	0.600	0.000	1.903
Taylor	0.000	0.045	0.000	0.045
Union	0.000	0.112	0.000	0.112
Volusia	0.201	0.134	0.125	0.459
Wakulla	0.000	0.014	0.000	0.014
Walton	0.012	0.302	0.002	0.316
Washington	0.063	0.104	0.000	0.168
Total	18.180	19.080	**25.236**	62.496

Appendix C. Detailed Baseline Irrigation Estimates (AFSIRS)

Table C-3 Total Ag Water Demand for 2010

County	Irrigation Demand (mgd)	Dairy	Livestock	Aquaculture	Total
Alachua	13.53	0.25	0.51	0.01	14.30
Baker	0.56	0.03	0.07	0.00	0.65
Bay	1.07	0.00	0.01	0.00	1.08
Bradford	0.79	0.10	0.11	0.00	0.99
Brevard	34.71	0.03	0.30	0.22	35.25
Broward	5.06	0.00	0.02	0.01	5.09
Calhoun	2.01	0.03	0.05	0.36	2.45
Charlotte	28.27	0.00	0.31	0.02	28.61
Citrus	3.16	0.14	0.08	0.10	3.48
Clay	2.55	0.16	0.06	0.00	2.77
Collier	65.83	0.00	0.13	0.02	65.99
Columbia	4.12	0.00	0.32	0.00	4.44
De Soto	81.82	0.52	0.78	0.00	83.12
Dixie	2.23	0.07	0.08	0.00	2.38
Duval	3.46	0.04	0.07	0.00	3.57
Escambia	2.42	0.03	0.07	0.26	2.78
Flagler	13.43	0.00	0.04	0.00	13.47
Franklin	-	0.00	0.00	0.16	0.16
Gadsden	6.67	0.01	0.07	0.01	6.76
Gilchrist	10.14	1.95	0.28	0.00	12.37
Glades	150.58	0.07	0.70	0.00	151.34
Gulf	0.21	0.01	0.00	0.14	0.37
Hamilton	8.14	0.03	0.10	0.00	8.27
Hardee	45.15	1.90	0.80	0.00	47.85
Hendry	354.51	0.05	0.73	0.54	355.83
Hernando	5.86	0.22	0.17	0.00	6.26
Highlands	119.87	1.11	1.30	0.08	122.36
Hillsborough	37.44	0.14	0.65	8.86	47.09
Holmes	1.05	0.14	0.32	0.00	1.52
Indian River	97.78	0.00	0.24	0.78	98.80
Jackson	23.16	0.14	0.60	0.37	24.27
Jefferson	4.81	0.13	0.16	0.00	5.11
Lafayette	9.25	2.18	0.18	0.00	11.61
Lake	30.12	0.00	0.27	0.00	30.39
Lee	31.47	0.00	0.14	0.29	31.91
Leon	0.74	0.01	0.03	0.00	0.78
Levy	21.07	0.09	0.38	4.28	25.82

Appendix C. Detailed Baseline Irrigation Estimates (AFSIRS)

Table C-3 Total Ag Water Demand for 2010 (Continued)

County	Irrigation Demand (mgd)	Dairy	Livestock	Aquaculture	Total
Liberty	0.31	0.00	0.01	0.00	0.32
Madison	10.28	0.38	0.42	0.00	11.09
Manatee	59.93	0.57	0.36	0.41	61.27
Marion	18.30	0.01	0.58	0.01	18.89
Martin	88.06	0.04	0.35	0.02	88.46
Miami Dade	72.41	0.00	0.05	1.53	73.99
Monroe	-	0.00	0.00	2.31	2.31
Nassau	0.62	0.23	0.06	0.00	0.91
Okaloosa	0.74	0.00	0.06	0.00	0.80
Okeechobee	52.01	4.52	1.52	0.80	58.86
Orange	12.86	0.03	0.17	0.11	13.16
Osceola	33.06	0.00	1.20	0.00	34.26
Palm Beach	598.53	0.03	0.07	0.16	598.79
Pasco	16.16	0.25	0.37	0.13	16.91
Pinellas	0.08	0.00	0.00	0.04	0.11
Polk	106.05	0.18	1.16	2.09	109.48
Putnam	14.86	0.10	0.09	0.33	15.39
St Johns	27.68	0.00	0.03	0.02	27.73
St Lucie	79.35	0.03	0.34	0.00	79.71
Santa Rosa	5.06	0.00	0.08	0.49	5.63
Sarasota	12.27	0.34	0.17	0.00	12.78
Seminole	7.74	0.02	0.06	0.01	7.82
Sumter	7.40	0.28	0.46	0.13	8.28
Suwannee	24.30	1.30	0.60	0.00	26.21
Taylor	0.41	0.00	0.05	0.00	0.45
Union	0.69	0.00	0.11	0.00	0.80
Volusia	27.77	0.20	0.13	0.12	28.23
Wakulla	0.26	0.00	0.01	0.00	0.27
Walton	0.61	0.01	0.30	0.00	0.93
Washington	1.02	0.06	0.10	0.00	1.18
Statewide	2501.83	18.18	19.08	25.24	2564.33

Appendix C. Detailed Baseline Irrigation Estimates (AFSIRS)

Table C-4 Breakdown of Calculated Aquaculture Demand

County	Other Ag Water Demand (mgd)			
	Aquaculture	Livestock	Dairy	Total
Alachua	0.252	0.512	0.006	0.770
Baker	0.029	0.066	0.000	0.095
Bay	0.000	0.011	0.000	0.011
Bradford	0.099	0.106	0.000	0.205
Brevard	0.030	0.296	0.220	0.546
Broward	0.001	0.023	0.008	0.032
Calhoun	0.028	0.051	0.360	0.439
Charlotte	0.002	0.314	0.023	0.338
Citrus	0.143	0.081	0.104	0.328
Clay	0.156	0.063	0.000	0.220
Collier	0.001	0.132	0.023	0.156
Columbia	0.002	0.320	0.000	0.322
De Soto	0.520	0.783	0.000	1.303
Dixie	0.066	0.080	0.000	0.146
Duval	0.037	0.071	0.001	0.109
Escambia	0.033	0.073	0.258	0.364
Flagler	0.000	0.043	0.000	0.043
Franklin	0.000	0.000	0.156	0.156
Gadsden	0.014	0.066	0.010	0.090
Gilchrist	1.951	0.280	0.000	2.231
Glades	0.068	0.697	0.000	0.765
Gulf	0.014	0.004	0.140	0.158
Hamilton	0.028	0.098	0.000	0.127
Hardee	1.902	0.799	0.000	2.702
Hendry	0.051	0.729	0.541	1.322
Hernando	0.219	0.172	0.000	0.392
Highlands	1.105	1.301	0.081	2.487
Hillsborough	0.142	0.652	8.857	9.652
Holmes	0.142	0.325	0.002	0.468
Indian River	0.000	0.239	0.780	1.019
Jackson	0.142	0.602	0.370	1.114
Jefferson	0.131	0.164	0.000	0.295
Lafayette	2.180	0.184	0.000	2.364
Lake	0.005	0.268	0.000	0.272
Lee	0.003	0.145	0.287	0.436
Leon	0.012	0.029	0.000	0.041
Levy	0.094	0.377	4.281	4.751

Table C-4 Breakdown of Calculated Aquaculture Demand (con't)

County	Other Ag Water Demand (mgd)			
	Aquaculture	Livestock	Dairy	Total
Liberty	0.000	0.011	0.000	0.011
Madison	0.380	0.425	0.000	0.805
Manatee	0.570	0.361	0.412	1.343
Marion	0.006	0.579	0.011	0.596
Martin	0.037	0.349	0.023	0.409
Miami Dade	0.005	0.047	1.533	1.585
Monroe	0.000	0.000	2.309	2.309
Nassau	0.232	0.060	0.000	0.292
Okaloosa	0.002	0.057	0.002	0.061
Okeechobee	4.523	1.523	0.805	6.850
Orange	0.028	0.170	0.107	0.305
Osceola	0.001	1.197	0.000	1.198
Palm Beach	0.030	0.074	0.161	0.264
Pasco	0.246	0.373	0.130	0.749
Pinellas	0.000	0.002	0.035	0.037
Polk	0.179	1.156	2.094	3.428
Putnam	0.101	0.095	0.331	0.526
Santa Rosa	0.000	0.081	0.490	0.571
Sarasota	0.336	0.171	0.000	0.507
Seminole	0.015	0.058	0.006	0.078
St Johns	0.000	0.028	0.021	0.049
St Lucie	0.026	0.339	0.000	0.365
Sumter	0.283	0.459	0.130	0.872
Suwannee	1.303	0.600	0.000	1.903
Taylor	0.000	0.045	0.000	0.045
Union	0.000	0.112	0.000	0.112
Volusia	0.201	0.134	0.125	0.459
Wakulla	0.000	0.014	0.000	0.014
Walton	0.012	0.302	0.002	0.316
Washington	0.063	0.104	0.000	0.168

Appendix D- Statewide Tables

Table D-1 Statewide Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Irrigation	Total Dry Year Annual Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	1,738,961	2,587.6	2,864.7	62.5	2,650.1	2,927.2
2015						
Management Practices Scenario - Deferred	1,738,961	2,615.6	2,895.7	62.5	2,678.1	2,958.2
Management Practices Scenario - Increased	1,738,961	2,550.4	2,823.4	62.5	2,612.9	2,885.9
Economic Margins Scenario	1,738,961	2,654.3	2,880.5	62.5	2,716.8	2,943.0
Urban Area Expansion Scenario	1,721,146	2,561.4	2,837.2	62.5	2,623.9	2,899.7
2020						
Management Practices Scenario - Deferred	1,738,961	2,645.7	2,929.1	62.5	2,708.2	2,991.6
Management Practices Scenario - Increased	1,738,961	2,509.9	2,778.2	62.5	2,572.4	2,840.7
Economic Margins Scenario	1,738,961	2,654.0	2,875.1	62.5	2,716.5	2,937.6
Urban Area Expansion Scenario	1,742,841	2,597.6	2,874.8	62.5	2,660.1	2,937.3
2025						
Management Practices Scenario - Deferred	1,738,961	2,672.6	2,959.1	62.5	2,735.1	3,021.5
Management Practices Scenario - Increased	1,738,961	2,472.3	2,736.6	62.5	2,534.8	2,799.1
Economic Margins Scenario	1,738,961	2,562.9	2,699.0	62.5	2,625.4	2,761.5
Urban Area Expansion Scenario	1,749,486	2,605.2	2,882.7	62.5	2,667.7	2,945.2
2030						
Management Practices Scenario - Deferred	1,738,961	2,701.4	2,991.1	62.5	2,763.9	3,053.6
Management Practices Scenario - Increased	1,738,961	2,432.8	2,692.8	62.5	2,495.3	2,755.2
Economic Margins Scenario	1,738,961	2,562.9	2,699.0	62.5	2,625.4	2,761.5
Urban Area Expansion Scenario	1,741,674	2,601.9	2,878.6	62.5	2,664.4	2,941.1
2035						
Management Practices Scenario - Deferred	1,738,961	2,729.4	3,022.1	62.5	2,791.9	3,084.6
Management Practices Scenario - Increased	1,738,961	2,391.0	2,646.4	62.5	2,453.5	2,708.9
Economic Margins Scenario	1,738,961	2,363.0	2,406.2	62.5	2,425.5	2,468.7
Urban Area Expansion Scenario	1,736,894	2,582.5	2,859.8	62.5	2,645.0	2,922.3

Table D-2 NWFWMD Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Irrigation	Total Dry Year Annual Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	50,539	42.6	64.4	4.1	46.7	68.5
2015						
Management Practices Scenario - Deferred	50,539	43.0	65.1	4.1	47.1	69.2
Management Practices Scenario - Increased	50,539	42.0	63.5	4.1	46.1	67.6
Economic Margins Scenario	50,539	42.6	64.4	4.1	46.7	68.5
Urban Area Expansion Scenario	50,520	42.5	64.4	4.1	46.6	68.5
2020						
Management Practices Scenario - Deferred	50,539	43.4	65.7	4.1	47.5	69.8
Management Practices Scenario - Increased	50,539	41.4	62.7	4.1	45.6	66.8
Economic Margins Scenario	50,539	40.2	57.7	4.1	44.3	61.8
Urban Area Expansion Scenario	50,546	42.6	64.4	4.1	46.7	68.5
2025						
Management Practices Scenario - Deferred	50,539	43.8	66.4	4.1	47.9	70.5
Management Practices Scenario - Increased	50,539	40.8	61.8	4.1	44.9	65.9
Economic Margins Scenario	50,539	33.4	37.1	4.1	37.5	41.2
Urban Area Expansion Scenario	50,528	42.6	64.4	4.1	46.7	68.6
2030						
Management Practices Scenario - Deferred	50,539	44.2	67.0	4.1	48.4	71.2
Management Practices Scenario - Increased	50,539	40.2	60.8	4.1	44.3	64.9
Economic Margins Scenario	50,539	33.4	37.1	4.1	37.5	41.2
Urban Area Expansion Scenario	50,548	42.6	64.5	4.1	46.7	68.6
2035						
Management Practices Scenario - Deferred	50,539	44.7	67.7	4.1	48.8	71.8
Management Practices Scenario - Increased	50,539	39.5	59.7	4.1	43.6	63.8
Economic Margins Scenario	50,539	33.3	36.9	4.1	37.5	41.0
Urban Area Expansion Scenario	50,625	42.7	64.6	4.1	46.8	68.7

Table D-3 SFWMD Irrigation Demand

Scenario	Acres	Predicted Average Annual Irrigation	Predicted Dry Year Annual Irrigation	Other Water Demand (Livestock & Aquaculture)	Predicted Average Annual Irrigation	Predicted Dry Year Annual Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	1,031,061	1,692.3	1,853.2	18.2	1,710.4	1,871.4
2015						
Management Practices Scenario - Deferred	1,031,061	1,710.8	1,873.5	18.2	1,729.0	1,891.7
Management Practices Scenario - Increased	1,031,061	1,667.2	1,825.7	18.2	1,685.4	1,843.8
Economic Margins Scenario	1,031,061	1,734.2	1,860.8	18.2	1,752.3	1,879.0
Urban Area Expansion Scenario	1,017,700	1,668.5	1,829.2	18.2	1,686.7	1,847.3
2020						
Management Practices Scenario - Deferred	1,031,061	1,731.6	1,896.3	18.2	1,749.8	1,914.5
Management Practices Scenario - Increased	1,031,061	1,639.3	1,794.9	18.2	1,657.5	1,813.1
Economic Margins Scenario	1,031,061	1,734.2	1,860.8	18.2	1,752.3	1,879.0
Urban Area Expansion Scenario	1,033,099	1,698.3	1,859.3	18.2	1,716.5	1,877.4
2025						
Management Practices Scenario - Deferred	1,031,061	1,749.9	1,916.4	18.2	1,768.0	1,934.6
Management Practices Scenario - Increased	1,031,061	1,615.0	1,768.2	18.2	1,633.2	1,786.4
Economic Margins Scenario	1,031,061	1,725.2	1,827.7	18.2	1,743.4	1,845.9
Urban Area Expansion Scenario	1,038,867	1,705.0	1,866.6	18.2	1,723.2	1,884.8
2030						
Management Practices Scenario - Deferred	1,031,061	1,769.2	1,937.7	18.2	1,787.4	1,955.8
Management Practices Scenario - Increased	1,031,061	1,588.7	1,739.3	18.2	1,606.8	1,757.5
Economic Margins Scenario	1,031,061	1,725.2	1,827.7	18.2	1,743.4	1,845.9
Urban Area Expansion Scenario	1,032,539	1,700.5	1,861.0	18.2	1,718.6	1,879.2
2035						
Management Practices Scenario - Deferred	1,031,061	1,787.8	1,958.1	18.2	1,806.0	1,976.3
Management Practices Scenario - Increased	1,031,061	1,560.1	1,707.9	18.2	1,578.3	1,726.1
Economic Margins Scenario	1,031,061	1,525.3	1,535.1	18.2	1,543.4	1,553.3
Urban Area Expansion Scenario	1,028,810	1,688.4	1,849.3	18.2	1,706.6	1,867.5

Table D-4 SJRWMD Irrigation Demand

Scenario	Acres	Predicted Average Annual Irrigation	Predicted Dry Year Annual Irrigation	Other Water Demand (Livestock & Aquaculture)	Predicted Average Annual Irrigation	Predicted Dry Year Annual Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	201,638	296.0	330.5	5.6	301.6	336.1
2015						
Management Practices Scenario - Deferred	201,638	299.1	333.9	5.6	304.7	339.6
Management Practices Scenario - Increased	201,638	292.5	326.5	5.6	298.1	332.1
Economic Margins Scenario	201,638	297.2	325.4	5.6	302.8	331.1
Urban Area Expansion Scenario	201,495	298.4	332.5	5.6	304.0	338.1
2020						
Management Practices Scenario - Deferred	201,638	301.7	336.9	5.6	307.3	342.6
Management Practices Scenario - Increased	201,638	288.5	322.0	5.6	294.2	327.6
Economic Margins Scenario	201,638	296.8	324.7	5.6	302.4	330.4
Urban Area Expansion Scenario	202,592	297.0	331.7	5.6	302.7	337.4
2025						
Management Practices Scenario - Deferred	201,638	304.2	339.8	5.6	309.9	345.4
Management Practices Scenario - Increased	201,638	283.9	316.9	5.6	289.5	322.5
Economic Margins Scenario	201,638	249.8	264.2	5.6	255.5	269.8
Urban Area Expansion Scenario	201,602	296.4	330.7	5.6	302.0	336.3
2030						
Management Practices Scenario - Deferred	201,638	307.3	343.3	5.6	313.0	348.9
Management Practices Scenario - Increased	201,638	279.5	311.9	5.6	285.1	317.5
Economic Margins Scenario	201,638	249.8	264.2	5.6	255.5	269.8
Urban Area Expansion Scenario	203,051	301.1	335.6	5.6	306.7	341.2
2035						
Management Practices Scenario - Deferred	201,638	309.9	346.3	5.6	315.6	351.9
Management Practices Scenario - Increased	201,638	275.4	307.4	5.6	281.1	313.0
Economic Margins Scenario	201,638	249.8	264.2	5.6	255.5	269.8
Urban Area Expansion Scenario	201,013	293.6	328.2	5.6	299.3	333.8

Table D-5 SRWMD Irrigation Demand

Scenario	Acres	Predicted Average Annual Irrigation	Predicted Dry Year Annual Irrigation	Other Water Demand (Livestock & Aquaculture)	Predicted Average Annual Irrigation	Predicted Dry Year Annual Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	87,210	97.2	122.2	9.4	106.6	131.6
2015						
Management Practices Scenario - Deferred	87,210	98.1	123.4	9.4	107.6	132.9
Management Practices Scenario - Increased	87,210	95.8	120.5	9.4	105.3	129.9
Economic Margins Scenario	87,210	97.2	122.2	9.4	106.6	131.6
Urban Area Expansion Scenario	87,210	97.2	122.2	9.4	106.6	131.6
2020						
Management Practices Scenario - Deferred	87,210	99.1	124.7	9.4	108.5	134.1
Management Practices Scenario - Increased	87,210	94.5	118.8	9.4	103.9	128.2
Economic Margins Scenario	87,210	97.2	122.2	9.4	106.6	131.6
Urban Area Expansion Scenario	87,210	97.2	122.2	9.4	106.6	131.6
2025						
Management Practices Scenario - Deferred	87,210	100.1	126.0	9.4	109.6	135.4
Management Practices Scenario - Increased	87,210	93.1	117.1	9.4	102.6	126.5
Economic Margins Scenario	87,210	61.2	64.1	9.4	70.6	73.5
Urban Area Expansion Scenario	87,210	97.2	122.2	9.4	106.6	131.6
2030						
Management Practices Scenario - Deferred	87,210	101.2	127.3	9.4	110.6	136.7
Management Practices Scenario - Increased	87,210	91.8	115.4	9.4	101.2	124.8
Economic Margins Scenario	87,210	61.2	64.1	9.4	70.6	73.5
Urban Area Expansion Scenario	87,210	97.2	122.2	9.4	106.6	131.6
2035						
Management Practices Scenario - Deferred	87,210	102.2	128.6	9.4	111.6	138.0
Management Practices Scenario - Increased	87,210	90.5	113.7	9.4	99.9	123.1
Economic Margins Scenario	87,210	61.2	64.1	9.4	70.6	73.5
Urban Area Expansion Scenario	87,210	97.2	122.2	9.4	106.6	131.6

Table D-6 SWFWMD Irrigation Demand

Scenario	Acres	Predicted Average Annual Irrigation	Predicted Dry Year Annual Irrigation	Other Water Demand (Livestock & Aquaculture)	Predicted Average Annual Irrigation	Predicted Dry Year Annual Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	368,513	459.6	494.4	25.1	484.7	519.5
2015						
Management Practices Scenario - Deferred	368,513	464.6	499.8	25.1	489.7	524.9
Management Practices Scenario - Increased	368,513	452.9	487.2	25.1	478.1	512.3
Economic Margins Scenario	368,513	483.2	507.7	25.1	508.4	532.8
Urban Area Expansion Scenario	364,221	454.7	489.0	25.1	479.8	514.1
2020						
Management Practices Scenario - Deferred	368,513	469.9	505.4	25.1	495.0	530.6
Management Practices Scenario - Increased	368,513	446.1	479.9	25.1	471.2	505.0
Economic Margins Scenario	368,513	485.7	509.7	25.1	510.9	534.8
Urban Area Expansion Scenario	369,394	462.5	497.2	25.1	487.7	522.3
2025						
Management Practices Scenario - Deferred	368,513	474.6	510.5	25.1	499.7	535.7
Management Practices Scenario - Increased	368,513	439.5	472.7	25.1	464.6	497.9
Economic Margins Scenario	368,513	493.4	505.9	25.1	518.5	531.1
Urban Area Expansion Scenario	371,279	464.0	498.8	25.1	489.1	524.0
2030						
Management Practices Scenario - Deferred	368,513	479.5	515.8	25.1	504.6	540.9
Management Practices Scenario - Increased	368,513	432.7	465.3	25.1	457.8	490.5
Economic Margins Scenario	368,513	493.4	505.9	25.1	518.5	531.1
Urban Area Expansion Scenario	368,325	460.6	495.4	25.1	485.7	520.5
2035						
Management Practices Scenario - Deferred	368,513	484.7	521.5	25.1	509.9	546.6
Management Practices Scenario - Increased	368,513	425.6	457.7	25.1	450.7	482.9
Economic Margins Scenario	368,513	493.4	505.9	25.1	518.5	531.1
Urban Area Expansion Scenario	369,235	460.6	495.5	25.1	485.8	520.6

Table D-7 Alachua Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	11,426	15.1	19.4	0.8	15.9	20.2
2015						
Management Practices Scenario - Deferred	11,426	15.3	19.6	0.8	16.0	20.3
Management Practices Scenario - Increased	11,426	14.9	19.1	0.8	15.7	19.9
Economic Margins Scenario	11,426	15.1	19.4	0.8	15.9	20.2
Urban Area Expansion Scenario	11,426	15.1	19.4	0.8	15.9	20.2
2020						
Management Practices Scenario - Deferred	11,426	15.4	19.7	0.8	16.1	20.5
Management Practices Scenario - Increased	11,426	14.7	18.8	0.8	15.4	19.6
Economic Margins Scenario	11,426	15.1	19.4	0.8	15.9	20.2
Urban Area Expansion Scenario	11,426	15.1	19.4	0.8	15.9	20.2
2025						
Management Practices Scenario - Deferred	11,426	15.5	19.9	0.8	16.3	20.7
Management Practices Scenario - Increased	11,426	14.5	18.5	0.8	15.2	19.3
Economic Margins Scenario	11,426	9.3	10.2	0.8	10.1	11.0
Urban Area Expansion Scenario	11,426	15.1	19.4	0.8	15.9	20.2
2030						
Management Practices Scenario - Deferred	11,426	15.7	20.1	0.8	16.4	20.9
Management Practices Scenario - Increased	11,426	14.3	18.3	0.8	15.0	19.1
Economic Margins Scenario	11,426	9.3	10.2	0.8	10.1	11.0
Urban Area Expansion Scenario	11,426	15.1	19.4	0.8	15.9	20.2
2035						
Management Practices Scenario - Deferred	11,426	15.8	20.3	0.8	16.6	21.1
Management Practices Scenario - Increased	11,426	14.0	17.9	0.8	14.8	18.7
Economic Margins Scenario	11,426	9.3	10.2	0.8	10.1	11.0
Urban Area Expansion Scenario	11,426	15.1	19.4	0.8	15.9	20.2

Table D-8 Baker Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	277	0.7	0.7	0.1	0.8	0.8
2015						
Management Practices Scenario - Deferred	277	0.7	0.7	0.1	0.8	0.8
Management Practices Scenario - Increased	277	0.7	0.7	0.1	0.8	0.8
Economic Margins Scenario	277	0.7	0.7	0.1	0.8	0.8
Urban Area Expansion Scenario	277	0.7	0.7	0.1	0.8	0.8
2020						
Management Practices Scenario - Deferred	277	0.7	0.7	0.1	0.8	0.8
Management Practices Scenario - Increased	277	0.7	0.7	0.1	0.8	0.8
Economic Margins Scenario	277	0.7	0.7	0.1	0.8	0.8
Urban Area Expansion Scenario	277	0.7	0.7	0.1	0.8	0.8
2025						
Management Practices Scenario - Deferred	277	0.7	0.7	0.1	0.8	0.8
Management Practices Scenario - Increased	277	0.7	0.7	0.1	0.8	0.8
Economic Margins Scenario	277	0.7	0.7	0.1	0.8	0.8
Urban Area Expansion Scenario	277	0.7	0.7	0.1	0.8	0.8
2030						
Management Practices Scenario - Deferred	277	0.7	0.7	0.1	0.8	0.8
Management Practices Scenario - Increased	277	0.7	0.7	0.1	0.8	0.7
Economic Margins Scenario	277	0.7	0.7	0.1	0.8	0.8
Urban Area Expansion Scenario	277	0.7	0.7	0.1	0.8	0.8
2035						
Management Practices Scenario - Deferred	277	0.0	0.0	0.1	0.1	0.1
Management Practices Scenario - Increased	277	0.0	0.0	0.1	0.1	0.1
Economic Margins Scenario	277	0.7	0.7	0.1	0.8	0.8
Urban Area Expansion Scenario	277	0.7	0.7	0.1	0.8	0.8

Table D-9 Bay Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	923	0.9	1.3	0.0	0.9	1.4
2015						
Management Practices Scenario - Deferred	923	0.9	1.4	0.0	0.9	1.4
Management Practices Scenario - Increased	923	0.9	1.3	0.0	0.9	1.3
Economic Margins Scenario	923	0.9	1.3	0.0	0.9	1.4
Urban Area Expansion Scenario	923	0.9	1.3	0.0	0.9	1.4
2020						
Management Practices Scenario - Deferred	923	0.9	1.4	0.0	0.9	1.4
Management Practices Scenario - Increased	923	0.9	1.3	0.0	0.9	1.3
Economic Margins Scenario	923	0.9	1.3	0.0	0.9	1.4
Urban Area Expansion Scenario	923	0.9	1.3	0.0	0.9	1.4
2025						
Management Practices Scenario - Deferred	923	0.9	1.4	0.0	0.9	1.4
Management Practices Scenario - Increased	923	0.9	1.3	0.0	0.9	1.3
Economic Margins Scenario	923	0.7	0.9	0.0	0.7	0.9
Urban Area Expansion Scenario	923	0.9	1.3	0.0	0.9	1.4
2030						
Management Practices Scenario - Deferred	923	0.9	1.4	0.0	0.9	1.4
Management Practices Scenario - Increased	923	0.9	1.3	0.0	0.9	1.3
Economic Margins Scenario	923	0.7	0.9	0.0	0.7	0.9
Urban Area Expansion Scenario	923	0.9	1.3	0.0	0.9	1.4
2035						
Management Practices Scenario - Deferred	923	0.9	1.4	0.0	0.9	1.4
Management Practices Scenario - Increased	923	0.8	1.3	0.0	0.9	1.3
Economic Margins Scenario	923	0.7	0.9	0.0	0.7	0.9
Urban Area Expansion Scenario	923	0.9	1.3	0.0	0.9	1.4

Table D-10 Bradford Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	717	0.6	0.9	0.2	0.8	1.1
2015						
Management Practices Scenario - Deferred	717	0.6	0.9	0.2	0.9	1.1
Management Practices Scenario - Increased	717	0.6	0.9	0.2	0.8	1.1
Economic Margins Scenario	717	0.6	0.9	0.2	0.8	1.1
Urban Area Expansion Scenario	717	0.6	0.9	0.2	0.8	1.1
2020						
Management Practices Scenario - Deferred	717	0.7	0.9	0.2	0.9	1.2
Management Practices Scenario - Increased	717	0.6	0.9	0.2	0.8	1.1
Economic Margins Scenario	717	0.6	0.9	0.2	0.8	1.1
Urban Area Expansion Scenario	717	0.6	0.9	0.2	0.8	1.1
2025						
Management Practices Scenario - Deferred	717	0.7	1.0	0.2	0.9	1.2
Management Practices Scenario - Increased	717	0.6	0.9	0.2	0.8	1.1
Economic Margins Scenario	717	0.4	0.5	0.2	0.6	0.7
Urban Area Expansion Scenario	717	0.6	0.9	0.2	0.8	1.1
2030						
Management Practices Scenario - Deferred	717	0.7	1.0	0.2	0.9	1.2
Management Practices Scenario - Increased	717	0.6	0.9	0.2	0.8	1.1
Economic Margins Scenario	717	0.4	0.5	0.2	0.6	0.7
Urban Area Expansion Scenario	717	0.6	0.9	0.2	0.8	1.1
2035						
Management Practices Scenario - Deferred	717	0.7	1.0	0.2	0.9	1.2
Management Practices Scenario - Increased	717	0.6	0.9	0.2	0.8	1.1
Economic Margins Scenario	717	0.4	0.5	0.2	0.6	0.7
Urban Area Expansion Scenario	717	0.6	0.9	0.2	0.8	1.1

Table D-11 Brevard Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	21,421	28.3	33.4	0.5	28.8	34.0
2015						
Management Practices Scenario - Deferred	21,421	28.5	33.7	0.5	29.1	34.3
Management Practices Scenario - Increased	21,421	27.6	32.6	0.5	28.1	33.1
Economic Margins Scenario	21,421	28.5	32.8	0.5	29.1	33.3
Urban Area Expansion Scenario	21,421	28.3	33.4	0.5	28.8	34.0
2020						
Management Practices Scenario - Deferred	21,421	28.8	34.1	0.5	29.3	34.6
Management Practices Scenario - Increased	21,421	26.9	31.8	0.5	27.5	32.4
Economic Margins Scenario	21,421	28.5	32.8	0.5	29.1	33.3
Urban Area Expansion Scenario	21,421	28.3	33.4	0.5	28.8	34.0
2025						
Management Practices Scenario - Deferred	21,421	29.0	34.3	0.5	29.5	34.8
Management Practices Scenario - Increased	21,421	26.6	31.5	0.5	27.2	32.0
Economic Margins Scenario	21,421	19.1	20.2	0.5	19.6	20.7
Urban Area Expansion Scenario	21,421	28.3	33.4	0.5	28.8	34.0
2030						
Management Practices Scenario - Deferred	21,421	29.5	35.0	0.5	30.1	35.5
Management Practices Scenario - Increased	21,421	25.9	30.6	0.5	26.4	31.2
Economic Margins Scenario	21,421	19.1	20.2	0.5	19.6	20.7
Urban Area Expansion Scenario	21,421	28.3	33.4	0.5	28.8	34.0
2035						
Management Practices Scenario - Deferred	21,421	29.8	35.3	0.5	30.3	35.8
Management Practices Scenario - Increased	21,421	25.3	30.0	0.5	25.9	30.5
Economic Margins Scenario	21,421	19.1	20.2	0.5	19.6	20.7
Urban Area Expansion Scenario	21,421	28.3	33.4	0.5	28.8	34.0

Table D-12 Broward Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	2,881	5.9	6.4	0.0	5.9	6.5
2015						
Management Practices Scenario - Deferred	2,881	6.0	6.5	0.0	6.0	6.5
Management Practices Scenario - Increased	2,881	5.9	6.4	0.0	5.9	6.4
Economic Margins Scenario	2,881	5.9	6.4	0.0	5.9	6.5
Urban Area Expansion Scenario	2,809	5.6	6.1	0.0	5.6	6.2
2020						
Management Practices Scenario - Deferred	2,881	6.0	6.5	0.0	6.0	6.6
Management Practices Scenario - Increased	2,881	5.7	6.2	0.0	5.7	6.3
Economic Margins Scenario	2,881	5.9	6.4	0.0	5.9	6.5
Urban Area Expansion Scenario	2,881	5.9	6.4	0.0	5.9	6.5
2025						
Management Practices Scenario - Deferred	2,881	6.0	6.6	0.0	6.1	6.6
Management Practices Scenario - Increased	2,881	5.6	6.1	0.0	5.6	6.1
Economic Margins Scenario	2,881	5.8	6.1	0.0	5.9	6.1
Urban Area Expansion Scenario	2,881	5.9	6.4	0.0	5.9	6.5
2030						
Management Practices Scenario - Deferred	2,881	6.1	6.7	0.0	6.2	6.7
Management Practices Scenario - Increased	2,881	5.5	6.0	0.0	5.5	6.0
Economic Margins Scenario	2,881	5.8	6.1	0.0	5.9	6.1
Urban Area Expansion Scenario	2,881	5.9	6.4	0.0	5.9	6.5
2035						
Management Practices Scenario - Deferred	2,881	6.2	6.7	0.0	6.2	6.8
Management Practices Scenario - Increased	2,881	5.5	5.9	0.0	5.5	6.0
Economic Margins Scenario	2,881	5.8	6.1	0.0	5.9	6.1
Urban Area Expansion Scenario	2,881	5.9	6.4	0.0	5.9	6.5

Table D-13 Calhoun Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	2,801	2.8	4.1	0.4	3.2	4.5
2015						
Management Practices Scenario - Deferred	2,801	2.8	4.1	0.4	3.2	4.5
Management Practices Scenario - Increased	2,801	2.7	4.0	0.4	3.1	4.4
Economic Margins Scenario	2,801	2.8	4.1	0.4	3.2	4.5
Urban Area Expansion Scenario	2,801	2.8	4.1	0.4	3.2	4.5
2020						
Management Practices Scenario - Deferred	2,801	2.8	4.1	0.4	3.2	4.6
Management Practices Scenario - Increased	2,801	2.7	3.9	0.4	3.1	4.3
Economic Margins Scenario	2,801	2.5	3.5	0.4	3.0	3.9
Urban Area Expansion Scenario	2,801	2.8	4.1	0.4	3.2	4.5
2025						
Management Practices Scenario - Deferred	2,801	2.8	4.1	0.4	3.3	4.6
Management Practices Scenario - Increased	2,801	2.6	3.8	0.4	3.0	4.2
Economic Margins Scenario	2,801	2.2	2.5	0.4	2.7	3.0
Urban Area Expansion Scenario	2,801	2.8	4.1	0.4	3.2	4.5
2030						
Management Practices Scenario - Deferred	2,801	2.9	4.2	0.4	3.3	4.6
Management Practices Scenario - Increased	2,801	2.5	3.7	0.4	3.0	4.2
Economic Margins Scenario	2,801	2.2	2.5	0.4	2.7	3.0
Urban Area Expansion Scenario	2,801	2.8	4.1	0.4	3.2	4.5
2035						
Management Practices Scenario - Deferred	2,801	2.9	4.2	0.4	3.3	4.7
Management Practices Scenario - Increased	2,801	2.5	3.6	0.4	2.9	4.1
Economic Margins Scenario	2,801	2.2	2.5	0.4	2.7	3.0
Urban Area Expansion Scenario	2,801	2.8	4.1	0.4	3.2	4.5

Table D-14 Charlotte Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	21,794	26.2	30.8	0.3	26.5	31.2
2015						
Management Practices Scenario - Deferred	21,794	26.5	31.2	0.3	26.9	31.5
Management Practices Scenario - Increased	21,794	25.8	30.4	0.3	26.2	30.7
Economic Margins Scenario	21,794	26.9	30.0	0.3	27.2	30.3
Urban Area Expansion Scenario	21,795	26.2	30.8	0.3	26.5	31.2
2020						
Management Practices Scenario - Deferred	21,794	26.8	31.6	0.3	27.2	31.9
Management Practices Scenario - Increased	21,794	25.5	30.0	0.3	25.8	30.3
Economic Margins Scenario	21,794	26.9	30.0	0.3	27.2	30.3
Urban Area Expansion Scenario	21,794	26.2	30.8	0.3	26.5	31.2
2025						
Management Practices Scenario - Deferred	21,794	27.1	31.8	0.3	27.4	32.2
Management Practices Scenario - Increased	21,794	25.2	29.6	0.3	25.5	29.9
Economic Margins Scenario	21,794	26.2	26.3	0.3	26.6	26.6
Urban Area Expansion Scenario	22,531	27.5	32.1	0.3	27.8	32.5
2030						
Management Practices Scenario - Deferred	21,794	27.3	32.1	0.3	27.6	32.4
Management Practices Scenario - Increased	21,794	24.7	29.1	0.3	25.1	29.4
Economic Margins Scenario	21,794	26.2	26.3	0.3	26.6	26.6
Urban Area Expansion Scenario	21,871	26.3	31.0	0.3	26.7	31.3
2035						
Management Practices Scenario - Deferred	21,794	27.5	32.3	0.3	27.8	32.7
Management Practices Scenario - Increased	21,794	24.2	28.5	0.3	24.6	28.9
Economic Margins Scenario	21,794	26.2	26.3	0.3	26.6	26.6
Urban Area Expansion Scenario	21,794	26.2	30.8	0.3	26.5	31.2

Table D-15 Citrus Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	2,094	2.7	3.5	0.3	3.0	3.8
2015						
Management Practices Scenario - Deferred	2,094	2.7	3.5	0.3	3.0	3.9
Management Practices Scenario - Increased	2,094	2.6	3.4	0.3	3.0	3.8
Economic Margins Scenario	2,094	2.8	3.5	0.3	3.1	3.8
Urban Area Expansion Scenario	2,094	2.7	3.5	0.3	3.0	3.8
2020						
Management Practices Scenario - Deferred	2,094	2.7	3.6	0.3	3.1	3.9
Management Practices Scenario - Increased	2,094	2.6	3.4	0.3	2.9	3.7
Economic Margins Scenario	2,094	2.8	3.5	0.3	3.1	3.8
Urban Area Expansion Scenario	2,094	2.7	3.5	0.3	3.0	3.8
2025						
Management Practices Scenario - Deferred	2,094	2.8	3.6	0.3	3.1	3.9
Management Practices Scenario - Increased	2,094	2.5	3.3	0.3	2.9	3.6
Economic Margins Scenario	2,094	2.0	2.3	0.3	2.3	2.7
Urban Area Expansion Scenario	2,094	2.7	3.5	0.3	3.0	3.8
2030						
Management Practices Scenario - Deferred	2,094	2.8	3.6	0.3	3.1	3.9
Management Practices Scenario - Increased	2,094	2.5	3.2	0.3	2.8	3.6
Economic Margins Scenario	2,094	2.0	2.3	0.3	2.3	2.7
Urban Area Expansion Scenario	2,094	2.7	3.5	0.3	3.0	3.8
2035						
Management Practices Scenario - Deferred	2,094	2.8	3.7	0.3	3.1	4.0
Management Practices Scenario - Increased	2,094	2.5	3.2	0.3	2.8	3.5
Economic Margins Scenario	2,094	2.0	2.3	0.3	2.3	2.7
Urban Area Expansion Scenario	2,094	2.7	3.5	0.3	3.0	3.8

Table D-16 Clay Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	1,360	2.9	3.6	0.2	3.2	3.8
2015						
Management Practices Scenario - Deferred	1,360	3.0	3.7	0.2	3.2	3.9
Management Practices Scenario - Increased	1,360	2.9	3.6	0.2	3.1	3.8
Economic Margins Scenario	1,360	2.9	3.6	0.2	3.2	3.8
Urban Area Expansion Scenario	2,005	4.0	4.7	0.2	4.3	4.9
2020						
Management Practices Scenario - Deferred	1,360	3.0	3.7	0.2	3.2	3.9
Management Practices Scenario - Increased	1,360	2.9	3.5	0.2	3.1	3.7
Economic Margins Scenario	1,360	2.9	3.6	0.2	3.2	3.8
Urban Area Expansion Scenario	1,877	3.7	4.6	0.2	3.9	4.8
2025						
Management Practices Scenario - Deferred	1,360	3.0	3.7	0.2	3.2	3.9
Management Practices Scenario - Increased	1,360	2.8	3.5	0.2	3.1	3.7
Economic Margins Scenario	1,360	2.3	2.5	0.2	2.5	2.8
Urban Area Expansion Scenario	1,224	2.8	3.4	0.2	3.1	3.7
2030						
Management Practices Scenario - Deferred	1,360	3.0	3.7	0.2	3.3	4.0
Management Practices Scenario - Increased	1,360	2.8	3.4	0.2	3.0	3.7
Economic Margins Scenario	1,360	2.3	2.5	0.2	2.5	2.8
Urban Area Expansion Scenario	1,577	3.4	4.0	0.2	3.6	4.2
2035						
Management Practices Scenario - Deferred	1,360	3.1	3.8	0.2	3.3	4.0
Management Practices Scenario - Increased	1,360	2.8	3.4	0.2	3.0	3.6
Economic Margins Scenario	1,360	2.3	2.5	0.2	2.5	2.8
Urban Area Expansion Scenario	1,413	3.0	3.7	0.2	3.2	3.9

Table D-17 Collier Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	78,858	88	99	0.16	88	99
2015						
Management Practices Scenario - Deferred	78,858	89	100	0.16	89	101
Management Practices Scenario - Increased	78,858	87	98	0.16	87	98
Economic Margins Scenario	78,858	94	101	0.16	94	101
Urban Area Expansion Scenario	79,453	89	100	0.16	89	100
2020						
Management Practices Scenario - Deferred	78,858	90	101	0.16	90	102
Management Practices Scenario - Increased	78,858	86	97	0.16	86	97
Economic Margins Scenario	78,858	94	101	0.16	94	101
Urban Area Expansion Scenario	78,052	87	98	0.16	87	98
2025						
Management Practices Scenario - Deferred	78,858	91	102	0.16	91	102
Management Practices Scenario - Increased	78,858	85	95	0.16	85	95
Economic Margins Scenario	78,858	105	105	0.16	105	105
Urban Area Expansion Scenario	79,260	89	100	0.16	89	100
2030						
Management Practices Scenario - Deferred	78,858	92	103	0.16	92	103
Management Practices Scenario - Increased	78,858	83	94	0.16	84	94
Economic Margins Scenario	78,858	105	105	0.16	105	105
Urban Area Expansion Scenario	79,221	89	100	0.16	89	100
2035						
Management Practices Scenario - Deferred	78,858	92.5	104.2	0.16	93	104
Management Practices Scenario - Increased	78,858	82.1	92.5	0.16	82	93
Economic Margins Scenario	78,858	104.7	104.9	0.16	105	105
Urban Area Expansion Scenario	78,404	87.7	98.7	0.16	88	99

Table D-18 Columbia Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	3,778	5	6	0.32	5	6
2015						
Management Practices Scenario - Deferred	3,778	5	6	0.32	5	6
Management Practices Scenario - Increased	3,778	5	6	0.32	5	6
Economic Margins Scenario	3,778	5	6	0.32	5	6
Urban Area Expansion Scenario	3,778	5	6	0.32	5	6
2020						
Management Practices Scenario - Deferred	3,778	5	6	0.32	5	6
Management Practices Scenario - Increased	3,778	4	6	0.32	5	6
Economic Margins Scenario	3,778	5	6	0.32	5	6
Urban Area Expansion Scenario	3,778	5	6	0.32	5	6
2025						
Management Practices Scenario - Deferred	3,778	5	6	0.32	5	6
Management Practices Scenario - Increased	3,778	4	6	0.32	5	6
Economic Margins Scenario	3,778	3	3	0.32	3	3
Urban Area Expansion Scenario	3,778	5	6	0.32	5	6
2030						
Management Practices Scenario - Deferred	3,778	5	6	0.32	5	6
Management Practices Scenario - Increased	3,778	4	6	0.32	5	6
Economic Margins Scenario	3,778	3	3	0.32	3	3
Urban Area Expansion Scenario	3,778	5	6	0.32	5	6
2035						
Management Practices Scenario - Deferred	3,778	0.0	0.0	0.32	0	0
Management Practices Scenario - Increased	3,778	0.0	0.0	0.32	0	0
Economic Margins Scenario	3,778	2.7	2.8	0.32	3	3
Urban Area Expansion Scenario	3,778	4.6	5.9	0.32	5	6

Table D-19 DeSoto Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	67,541	89	92	1.30	90	93
2015						
Management Practices Scenario - Deferred	67,541	90	93	1.30	91	94
Management Practices Scenario - Increased	67,541	88	90	1.30	89	92
Economic Margins Scenario	67,541	91	92	1.30	92	93
Urban Area Expansion Scenario	67,541	89	92	1.30	90	93
2020						
Management Practices Scenario - Deferred	67,541	91	94	1.30	92	95
Management Practices Scenario - Increased	67,541	86	89	1.30	87	90
Economic Margins Scenario	67,541	91	92	1.30	92	93
Urban Area Expansion Scenario	67,541	89	92	1.30	90	93
2025						
Management Practices Scenario - Deferred	67,541	92	94	1.30	93	96
Management Practices Scenario - Increased	67,541	85	88	1.30	86	89
Economic Margins Scenario	67,541	90	91	1.30	92	92
Urban Area Expansion Scenario	67,541	89	92	1.30	90	93
2030						
Management Practices Scenario - Deferred	67,541	92	95	1.30	94	97
Management Practices Scenario - Increased	67,541	84	86	1.30	85	88
Economic Margins Scenario	67,541	90	91	1.30	92	92
Urban Area Expansion Scenario	67,541	89	92	1.30	90	93
2035						
Management Practices Scenario - Deferred	67,541	93.7	96.5	1.30	95	98
Management Practices Scenario - Increased	67,541	82.3	84.7	1.30	84	86
Economic Margins Scenario	67,541	90.5	90.9	1.30	92	92
Urban Area Expansion Scenario	67,541	88.9	91.6	1.30	90	93

Table D-20 Dixie Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	3,115	3	4	0.15	3	4
2015						
Management Practices Scenario - Deferred	3,115	3	4	0.15	4	4
Management Practices Scenario - Increased	3,115	3	4	0.15	3	4
Economic Margins Scenario	3,115	3	4	0.15	3	4
Urban Area Expansion Scenario	3,115	3	4	0.15	3	4
2020						
Management Practices Scenario - Deferred	3,115	3	4	0.15	4	4
Management Practices Scenario - Increased	3,115	3	4	0.15	3	4
Economic Margins Scenario	3,115	3	4	0.15	3	4
Urban Area Expansion Scenario	3,115	3	4	0.15	3	4
2025						
Management Practices Scenario - Deferred	3,115	3	4	0.15	4	4
Management Practices Scenario - Increased	3,115	3	4	0.15	3	4
Economic Margins Scenario	3,115	2	2	0.15	2	2
Urban Area Expansion Scenario	3,115	3	4	0.15	3	4
2030						
Management Practices Scenario - Deferred	3,115	3	4	0.15	4	4
Management Practices Scenario - Increased	3,115	3	4	0.15	3	4
Economic Margins Scenario	3,115	2	2	0.15	2	2
Urban Area Expansion Scenario	3,115	3	4	0.15	3	4
2035						
Management Practices Scenario - Deferred	3,115	3.5	4.3	0.15	4	4
Management Practices Scenario - Increased	3,115	3.1	3.8	0.15	3	4
Economic Margins Scenario	3,115	1.5	1.5	0.15	2	2
Urban Area Expansion Scenario	3,115	3.3	4.1	0.15	3	4

Table D-21 Duval Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	1,299	4	4	0.11	4	4
2015						
Management Practices Scenario - Deferred	1,299	4	4	0.11	4	4
Management Practices Scenario - Increased	1,299	4	4	0.11	4	4
Economic Margins Scenario	1,299	4	4	0.11	4	4
Urban Area Expansion Scenario	1,293	4	4	0.11	4	4
2020						
Management Practices Scenario - Deferred	1,299	4	4	0.11	4	4
Management Practices Scenario - Increased	1,299	4	4	0.11	4	4
Economic Margins Scenario	1,299	4	4	0.11	4	4
Urban Area Expansion Scenario	1,299	4	4	0.11	4	4
2025						
Management Practices Scenario - Deferred	1,299	4	4	0.11	4	4
Management Practices Scenario - Increased	1,299	4	4	0.11	4	4
Economic Margins Scenario	1,299	4	4	0.11	4	4
Urban Area Expansion Scenario	1,309	4	4	0.11	4	4
2030						
Management Practices Scenario - Deferred	1,299	4	4	0.11	4	5
Management Practices Scenario - Increased	1,299	4	4	0.11	4	4
Economic Margins Scenario	1,299	4	4	0.11	4	4
Urban Area Expansion Scenario	1,437	5	5	0.11	5	5
2035						
Management Practices Scenario - Deferred	1,299	4.1	4.4	0.11	4	5
Management Practices Scenario - Increased	1,299	3.7	3.9	0.11	4	4
Economic Margins Scenario	1,299	3.9	4.2	0.11	4	4
Urban Area Expansion Scenario	1,151	3.2	3.5	0.11	3	4

Table D-22 Escambia Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	3,666	2	4	0.36	3	5
2015						
Management Practices Scenario - Deferred	3,666	3	4	0.36	3	5
Management Practices Scenario - Increased	3,666	2	4	0.36	3	5
Economic Margins Scenario	3,666	2	4	0.36	3	5
Urban Area Expansion Scenario	3,666	2	4	0.36	3	5
2020						
Management Practices Scenario - Deferred	3,666	3	4	0.36	3	5
Management Practices Scenario - Increased	3,666	2	4	0.36	3	5
Economic Margins Scenario	3,666	2	4	0.36	3	4
Urban Area Expansion Scenario	3,666	2	4	0.36	3	5
2025						
Management Practices Scenario - Deferred	3,666	3	4	0.36	3	5
Management Practices Scenario - Increased	3,666	2	4	0.36	3	4
Economic Margins Scenario	3,666	2	2	0.36	2	3
Urban Area Expansion Scenario	3,666	2	4	0.36	3	5
2030						
Management Practices Scenario - Deferred	3,666	3	4	0.36	3	5
Management Practices Scenario - Increased	3,666	2	4	0.36	3	4
Economic Margins Scenario	3,666	2	2	0.36	2	3
Urban Area Expansion Scenario	3,666	2	4	0.36	3	5
2035						
Management Practices Scenario - Deferred	3,666	2.6	4.4	0.36	3	5
Management Practices Scenario - Increased	3,666	2.3	3.9	0.36	3	4
Economic Margins Scenario	3,666	2.1	2.3	0.36	3	3
Urban Area Expansion Scenario	3,680	2.5	4.2	0.36	3	5

Table D-23 Flagler Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	9,968	14	16	0.04	14	16
2015						
Management Practices Scenario - Deferred	9,968	14	16	0.04	14	16
Management Practices Scenario - Increased	9,968	13	16	0.04	13	16
Economic Margins Scenario	9,968	14	16	0.04	14	16
Urban Area Expansion Scenario	9,951	13	16	0.04	14	16
2020						
Management Practices Scenario - Deferred	9,968	14	16	0.04	14	16
Management Practices Scenario - Increased	9,968	13	16	0.04	13	16
Economic Margins Scenario	9,968	14	16	0.04	14	16
Urban Area Expansion Scenario	10,233	14	17	0.04	14	17
2025						
Management Practices Scenario - Deferred	9,968	14	17	0.04	14	17
Management Practices Scenario - Increased	9,968	13	16	0.04	13	16
Economic Margins Scenario	9,968	13	14	0.04	13	14
Urban Area Expansion Scenario	9,742	13	15	0.04	13	16
2030						
Management Practices Scenario - Deferred	9,968	14	17	0.04	14	17
Management Practices Scenario - Increased	9,968	13	15	0.04	13	15
Economic Margins Scenario	9,968	13	14	0.04	13	14
Urban Area Expansion Scenario	9,968	14	16	0.04	14	16
2035						
Management Practices Scenario - Deferred	9,968	14.2	16.9	0.04	14	17
Management Practices Scenario - Increased	9,968	12.8	15.1	0.04	13	15
Economic Margins Scenario	9,968	12.9	13.7	0.04	13	14
Urban Area Expansion Scenario	9,968	13.6	16.1	0.04	14	16

Table D-24 Gadsden Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	4,281	5	7	0.09	5	7
2015						
Management Practices Scenario - Deferred	4,281	5	7	0.09	5	8
Management Practices Scenario - Increased	4,281	5	7	0.09	5	7
Economic Margins Scenario	4,281	5	7	0.09	5	7
Urban Area Expansion Scenario	4,281	5	7	0.09	5	7
2020						
Management Practices Scenario - Deferred	4,281	5	7	0.09	6	8
Management Practices Scenario - Increased	4,281	5	7	0.09	5	7
Economic Margins Scenario	4,281	5	7	0.09	5	7
Urban Area Expansion Scenario	4,295	5	7	0.09	5	7
2025						
Management Practices Scenario - Deferred	4,281	5	8	0.09	6	8
Management Practices Scenario - Increased	4,281	5	7	0.09	5	7
Economic Margins Scenario	4,281	5	6	0.09	5	6
Urban Area Expansion Scenario	4,267	5	7	0.09	5	7
2030						
Management Practices Scenario - Deferred	4,281	5	8	0.09	6	8
Management Practices Scenario - Increased	4,281	5	7	0.09	5	7
Economic Margins Scenario	4,281	5	6	0.09	5	6
Urban Area Expansion Scenario	4,294	5	7	0.09	5	8
2035						
Management Practices Scenario - Deferred	4,281	5.5	7.7	0.09	6	8
Management Practices Scenario - Increased	4,281	5.1	7.0	0.09	5	7
Economic Margins Scenario	4,281	5.0	6.0	0.09	5	6
Urban Area Expansion Scenario	4,268	5.3	7.3	0.09	5	7

Table D-25 Gilchrist Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	8,235	9.2	12.1	2.2	11.4	14.3
2015						
Management Practices Scenario - Deferred	8,235	9.3	12.2	2.2	11.5	14.5
Management Practices Scenario - Increased	8,235	9.1	11.9	2.2	11.3	14.2
Economic Margins Scenario	8,235	9.2	12.1	2.2	11.4	14.3
Urban Area Expansion Scenario	8,235	9.2	12.1	2.2	11.4	14.3
2020						
Management Practices Scenario - Deferred	8,235	9.4	12.4	2.2	11.7	14.6
Management Practices Scenario - Increased	8,235	9.0	11.8	2.2	11.2	14.0
Economic Margins Scenario	8,235	9.2	12.1	2.2	11.4	14.3
Urban Area Expansion Scenario	8,235	9.2	12.1	2.2	11.4	14.3
2025						
Management Practices Scenario - Deferred	8,235	9.5	12.5	2.2	11.8	14.8
Management Practices Scenario - Increased	8,235	8.9	11.6	2.2	11.1	13.9
Economic Margins Scenario	8,235	4.6	4.8	2.2	6.8	7.0
Urban Area Expansion Scenario	8,235	9.2	12.1	2.2	11.4	14.3
2030						
Management Practices Scenario - Deferred	8,235	9.7	12.7	2.2	11.9	14.9
Management Practices Scenario - Increased	8,235	8.7	11.4	2.2	10.9	13.7
Economic Margins Scenario	8,235	4.6	4.8	2.2	6.8	7.0
Urban Area Expansion Scenario	8,235	9.2	12.1	2.2	11.4	14.3
2035						
Management Practices Scenario - Deferred	8,235	9.8	12.9	2.2	12.0	15.1
Management Practices Scenario - Increased	8,235	8.6	11.3	2.2	10.8	13.5
Economic Margins Scenario	8,235	4.6	4.8	2.2	6.8	7.0
Urban Area Expansion Scenario	8,235	9.2	12.1	2.2	11.4	14.3

Table D-26 Glades Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	60,673	126.1	136.4	0.8	126.9	137.2
2015						
Management Practices Scenario - Deferred	60,673	127.2	137.6	0.8	128.0	138.3
Management Practices Scenario - Increased	60,673	124.1	134.2	0.8	124.9	135.0
Economic Margins Scenario	60,673	127.7	136.3	0.8	128.5	137.1
Urban Area Expansion Scenario	60,673	126.1	136.4	0.8	126.9	137.2
2020						
Management Practices Scenario - Deferred	60,673	128.5	139.0	0.8	129.3	139.8
Management Practices Scenario - Increased	60,673	122.1	132.0	0.8	122.8	132.8
Economic Margins Scenario	60,673	127.7	136.3	0.8	128.5	137.1
Urban Area Expansion Scenario	60,673	126.1	136.4	0.8	126.9	137.2
2025						
Management Practices Scenario - Deferred	60,673	129.7	140.3	0.8	130.5	141.1
Management Practices Scenario - Increased	60,673	120.9	130.7	0.8	121.6	131.5
Economic Margins Scenario	60,673	126.3	134.0	0.8	127.0	134.8
Urban Area Expansion Scenario	60,673	126.1	136.4	0.8	126.9	137.2
2030						
Management Practices Scenario - Deferred	60,673	130.7	141.4	0.8	131.5	142.2
Management Practices Scenario - Increased	60,673	119.4	129.1	0.8	120.2	129.9
Economic Margins Scenario	60,673	126.3	134.0	0.8	127.0	134.8
Urban Area Expansion Scenario	60,673	126.1	136.4	0.8	126.9	137.2
2035						
Management Practices Scenario - Deferred	60,673	132.0	142.8	0.8	132.8	143.6
Management Practices Scenario - Increased	60,673	117.3	126.8	0.8	118.1	127.6
Economic Margins Scenario	60,673	91.1	92.7	0.8	91.8	93.4
Urban Area Expansion Scenario	60,673	126.1	136.4	0.8	126.9	137.2

Table D-27 Gulf Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	96	0.22	0.27	0.16	0.37	0.42
2015						
Management Practices Scenario - Deferred	96	0.22	0.27	0.16	0.38	0.43
Management Practices Scenario - Increased	96	0.22	0.27	0.16	0.37	0.42
Economic Margins Scenario	96	0.22	0.27	0.16	0.37	0.42
Urban Area Expansion Scenario	96	0.22	0.27	0.16	0.37	0.42
2020						
Management Practices Scenario - Deferred	96	0.22	0.28	0.16	0.38	0.43
Management Practices Scenario - Increased	96	0.21	0.26	0.16	0.37	0.42
Economic Margins Scenario	96	0.22	0.27	0.16	0.37	0.42
Urban Area Expansion Scenario	96	0.22	0.27	0.16	0.37	0.42
2025						
Management Practices Scenario - Deferred	96	0.23	0.28	0.16	0.38	0.44
Management Practices Scenario - Increased	96	0.20	0.25	0.16	0.36	0.41
Economic Margins Scenario	96	0.22	0.27	0.16	0.37	0.42
Urban Area Expansion Scenario	96	0.22	0.27	0.16	0.37	0.42
2030						
Management Practices Scenario - Deferred	96	0.23	0.28	0.16	0.39	0.44
Management Practices Scenario - Increased	96	0.20	0.25	0.16	0.36	0.40
Economic Margins Scenario	96	0.22	0.27	0.16	0.37	0.42
Urban Area Expansion Scenario	96	0.22	0.27	0.16	0.37	0.42
2035						
Management Practices Scenario - Deferred	96	0.2	0.3	0.16	0.39	0.44
Management Practices Scenario - Increased	96	0.2	0.2	0.16	0.36	0.40
Economic Margins Scenario	96	0.2	0.3	0.16	0.37	0.42
Urban Area Expansion Scenario	96	0.2	0.3	0.16	0.37	0.42

Table D-28 Hamilton Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	8,272	8	10	0.13	8	10
2015						
Management Practices Scenario - Deferred	8,272	8	10	0.13	8	10
Management Practices Scenario - Increased	8,272	8	10	0.13	8	10
Economic Margins Scenario	8,272	8	10	0.13	8	10
Urban Area Expansion Scenario	8,272	8	10	0.13	8	10
2020						
Management Practices Scenario - Deferred	8,272	8	10	0.13	8	11
Management Practices Scenario - Increased	8,272	8	10	0.13	8	10
Economic Margins Scenario	8,272	8	10	0.13	8	10
Urban Area Expansion Scenario	8,272	8	10	0.13	8	10
2025						
Management Practices Scenario - Deferred	8,272	8	11	0.13	8	11
Management Practices Scenario - Increased	8,272	8	10	0.13	8	10
Economic Margins Scenario	8,272	6	7	0.13	6	7
Urban Area Expansion Scenario	8,272	8	10	0.13	8	10
2030						
Management Practices Scenario - Deferred	8,272	8	11	0.13	9	11
Management Practices Scenario - Increased	8,272	8	9	0.13	8	10
Economic Margins Scenario	8,272	6	7	0.13	6	7
Urban Area Expansion Scenario	8,272	8	10	0.13	8	10
2035						
Management Practices Scenario - Deferred	8,272	0.0	0.0	0.13	0	0
Management Practices Scenario - Increased	8,272	0.0	0.0	0.13	0	0
Economic Margins Scenario	8,272	6.1	6.6	0.13	6	7
Urban Area Expansion Scenario	8,272	8.1	10.2	0.13	8	10

Table D-29 Hardee Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	42,686	50	49	2.70	53	52
2015						
Management Practices Scenario - Deferred	42,686	50	49	2.70	53	52
Management Practices Scenario - Increased	42,686	49	48	2.70	52	51
Economic Margins Scenario	42,686	55	55	2.70	58	58
Urban Area Expansion Scenario	42,686	50	49	2.70	53	52
2020						
Management Practices Scenario - Deferred	42,686	51	50	2.70	54	53
Management Practices Scenario - Increased	42,686	48	47	2.70	51	50
Economic Margins Scenario	42,686	55	55	2.70	58	58
Urban Area Expansion Scenario	42,686	50	49	2.70	53	52
2025						
Management Practices Scenario - Deferred	42,686	51	51	2.70	54	53
Management Practices Scenario - Increased	42,686	47	47	2.70	50	49
Economic Margins Scenario	42,686	55	55	2.70	58	58
Urban Area Expansion Scenario	42,686	50	49	2.70	53	52
2030						
Management Practices Scenario - Deferred	42,686	52	51	2.70	55	54
Management Practices Scenario - Increased	42,686	47	46	2.70	50	49
Economic Margins Scenario	42,686	55	55	2.70	58	58
Urban Area Expansion Scenario	42,686	50	49	2.70	53	52
2035						
Management Practices Scenario - Deferred	42,686	52.7	51.7	2.70	55	54
Management Practices Scenario - Increased	42,686	46.0	45.2	2.70	49	48
Economic Margins Scenario	42,686	55.4	55.4	2.70	58	58
Urban Area Expansion Scenario	42,686	49.8	48.9	2.70	53	52

Table D-30 Hendry Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	194,344	294	326	1.32	295	327
2015						
Management Practices Scenario - Deferred	194,344	298	330	1.32	299	331
Management Practices Scenario - Increased	194,344	290	321	1.32	291	322
Economic Margins Scenario	194,344	314	337	1.32	315	338
Urban Area Expansion Scenario	192,978	292	324	1.32	294	325
2020						
Management Practices Scenario - Deferred	194,344	301	334	1.32	303	335
Management Practices Scenario - Increased	194,344	285	315	1.32	286	317
Economic Margins Scenario	194,344	314	337	1.32	315	338
Urban Area Expansion Scenario	194,816	295	327	1.32	296	328
2025						
Management Practices Scenario - Deferred	194,344	304	337	1.32	306	339
Management Practices Scenario - Increased	194,344	280	310	1.32	281	311
Economic Margins Scenario	194,344	320	339	1.32	322	340
Urban Area Expansion Scenario	198,320	299	331	1.32	300	333
2030						
Management Practices Scenario - Deferred	194,344	308	341	1.32	309	342
Management Practices Scenario - Increased	194,344	276	306	1.32	277	307
Economic Margins Scenario	194,344	320	339	1.32	322	340
Urban Area Expansion Scenario	193,344	295	326	1.32	296	328
2035						
Management Practices Scenario - Deferred	194,344	310.8	344.4	1.32	312	346
Management Practices Scenario - Increased	194,344	271.5	300.9	1.32	273	302
Economic Margins Scenario	194,344	270.8	273.5	1.32	272	275
Urban Area Expansion Scenario	193,726	293.4	325.1	1.32	295	326

Table D-31 Hernando Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	2,740	6	6	0.39	6	7
2015						
Management Practices Scenario - Deferred	2,740	6	6	0.39	6	7
Management Practices Scenario - Increased	2,740	6	6	0.39	6	6
Economic Margins Scenario	2,740	6	6	0.39	6	7
Urban Area Expansion Scenario	2,816	6	6	0.39	6	7
2020						
Management Practices Scenario - Deferred	2,740	6	6	0.39	6	7
Management Practices Scenario - Increased	2,740	6	6	0.39	6	6
Economic Margins Scenario	2,740	6	6	0.39	6	7
Urban Area Expansion Scenario	2,888	6	7	0.39	7	7
2025						
Management Practices Scenario - Deferred	2,740	6	6	0.39	6	7
Management Practices Scenario - Increased	2,740	6	6	0.39	6	6
Economic Margins Scenario	2,740	6	6	0.39	6	7
Urban Area Expansion Scenario	3,010	6	6	0.39	6	7
2030						
Management Practices Scenario - Deferred	2,740	6	6	0.39	6	7
Management Practices Scenario - Increased	2,740	5	6	0.39	6	6
Economic Margins Scenario	2,740	6	6	0.39	6	7
Urban Area Expansion Scenario	2,972	7	7	0.39	7	7
2035						
Management Practices Scenario - Deferred	2,740	6.0	6.4	0.39	6	7
Management Practices Scenario - Increased	2,740	5.4	5.8	0.39	6	6
Economic Margins Scenario	2,740	6.1	6.4	0.39	6	7
Urban Area Expansion Scenario	3,083	6.0	6.5	0.39	6	7

Table D-32 Highlands Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	71,855	113	127	2.49	115	129
2015						
Management Practices Scenario - Deferred	71,855	114	128	2.49	116	131
Management Practices Scenario - Increased	71,855	111	125	2.49	114	128
Economic Margins Scenario	71,855	113	123	2.49	116	125
Urban Area Expansion Scenario	71,855	113	127	2.49	115	129
2020						
Management Practices Scenario - Deferred	71,855	115	129	2.49	118	132
Management Practices Scenario - Increased	71,855	110	124	2.49	112	126
Economic Margins Scenario	71,855	113	123	2.49	116	125
Urban Area Expansion Scenario	71,855	113	127	2.49	115	129
2025						
Management Practices Scenario - Deferred	71,855	116	131	2.49	119	133
Management Practices Scenario - Increased	71,855	108	122	2.49	111	124
Economic Margins Scenario	71,855	100	104	2.49	102	106
Urban Area Expansion Scenario	71,855	113	127	2.49	115	129
2030						
Management Practices Scenario - Deferred	71,855	118	132	2.49	120	135
Management Practices Scenario - Increased	71,855	107	120	2.49	109	123
Economic Margins Scenario	71,855	100	104	2.49	102	106
Urban Area Expansion Scenario	71,855	113	127	2.49	115	129
2035						
Management Practices Scenario - Deferred	71,855	119.3	134.2	2.49	122	137
Management Practices Scenario - Increased	71,855	104.8	117.9	2.49	107	120
Economic Margins Scenario	71,855	99.4	103.0	2.49	102	105
Urban Area Expansion Scenario	71,855	112.8	126.9	2.49	115	129

Table D-33 Hillsborough Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	34,942	41	46	9.65	51	56
2015						
Management Practices Scenario - Deferred	34,942	41	46	9.65	51	56
Management Practices Scenario - Increased	34,942	40	45	9.65	50	55
Economic Margins Scenario	34,942	43	47	9.65	53	57
Urban Area Expansion Scenario	32,389	39	43	9.65	48	53
2020						
Management Practices Scenario - Deferred	34,942	42	47	9.65	51	57
Management Practices Scenario - Increased	34,942	40	45	9.65	49	54
Economic Margins Scenario	34,942	43	47	9.65	53	57
Urban Area Expansion Scenario	35,766	43	48	9.65	53	58
2025						
Management Practices Scenario - Deferred	34,942	42	47	9.65	52	57
Management Practices Scenario - Increased	34,942	39	44	9.65	49	54
Economic Margins Scenario	34,942	47	48	9.65	56	58
Urban Area Expansion Scenario	35,744	42	47	9.65	52	57
2030						
Management Practices Scenario - Deferred	34,942	43	48	9.65	52	58
Management Practices Scenario - Increased	34,942	39	43	9.65	48	53
Economic Margins Scenario	34,942	47	48	9.65	56	58
Urban Area Expansion Scenario	34,470	41	46	9.65	51	55
2035						
Management Practices Scenario - Deferred	34,942	43.2	48.4	9.65	53	58
Management Practices Scenario - Increased	34,942	38.1	42.7	9.65	48	52
Economic Margins Scenario	34,942	46.6	48.5	9.65	56	58
Urban Area Expansion Scenario	36,120	42.8	47.9	9.65	52	58

Table D-34 Holmes Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	2,266	1	2	0.47	2	3
2015						
Management Practices Scenario - Deferred	2,266	1	2	0.47	2	3
Management Practices Scenario - Increased	2,266	1	2	0.47	2	3
Economic Margins Scenario	2,266	1	2	0.47	2	3
Urban Area Expansion Scenario	2,266	1	2	0.47	2	3
2020						
Management Practices Scenario - Deferred	2,266	1	2	0.47	2	3
Management Practices Scenario - Increased	2,266	1	2	0.47	2	3
Economic Margins Scenario	2,266	1	2	0.47	2	3
Urban Area Expansion Scenario	2,266	1	2	0.47	2	3
2025						
Management Practices Scenario - Deferred	2,266	1	2	0.47	2	3
Management Practices Scenario - Increased	2,266	1	2	0.47	2	3
Economic Margins Scenario	2,266	1	1	0.47	2	2
Urban Area Expansion Scenario	2,266	1	2	0.47	2	3
2030						
Management Practices Scenario - Deferred	2,266	1	2	0.47	2	3
Management Practices Scenario - Increased	2,266	1	2	0.47	2	3
Economic Margins Scenario	2,266	1	1	0.47	2	2
Urban Area Expansion Scenario	2,266	1	2	0.47	2	3
2035						
Management Practices Scenario - Deferred	2,266	1.5	2.5	0.47	2	3
Management Practices Scenario - Increased	2,266	1.3	2.2	0.47	2	3
Economic Margins Scenario	2,266	1.1	1.2	0.47	2	2
Urban Area Expansion Scenario	2,266	1.4	2.4	0.47	2	3

Table D-35 Indian River Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	76,782	109.7	111.8	1.0	110.7	112.8
2015						
Management Practices Scenario - Deferred	76,782	111.0	113.1	1.0	112.0	114.2
Management Practices Scenario - Increased	76,782	108.6	110.7	1.0	109.6	111.7
Economic Margins Scenario	76,782	107.2	108.3	1.0	108.2	109.3
Urban Area Expansion Scenario	76,782	109.7	111.8	1.0	110.7	112.8
2020						
Management Practices Scenario - Deferred	76,782	111.8	113.9	1.0	112.8	114.9
Management Practices Scenario - Increased	76,782	107.4	109.4	1.0	108.4	110.4
Economic Margins Scenario	76,782	107.2	108.3	1.0	108.2	109.3
Urban Area Expansion Scenario	76,782	109.7	111.8	1.0	110.7	112.8
2025						
Management Practices Scenario - Deferred	76,782	112.6	114.7	1.0	113.6	115.8
Management Practices Scenario - Increased	76,782	105.4	107.4	1.0	106.4	108.4
Economic Margins Scenario	76,782	83.9	84.4	1.0	84.9	85.4
Urban Area Expansion Scenario	76,782	109.7	111.8	1.0	110.7	112.8
2030						
Management Practices Scenario - Deferred	76,782	113.6	115.7	1.0	114.6	116.7
Management Practices Scenario - Increased	76,782	103.6	105.6	1.0	104.6	106.6
Economic Margins Scenario	76,782	83.9	84.4	1.0	84.9	85.4
Urban Area Expansion Scenario	76,782	109.7	111.8	1.0	110.7	112.8
2035						
Management Practices Scenario - Deferred	76,782	114.4	116.6	1.0	115.4	117.6
Management Practices Scenario - Increased	76,782	102.1	104.1	1.0	103.2	105.1
Economic Margins Scenario	76,782	83.9	84.4	1.0	84.9	85.4
Urban Area Expansion Scenario	76,782	109.7	111.8	1.0	110.7	112.8

Table D-36 Jackson Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	25,328	19.2	30.4	1.1	20.3	31.5
2015						
Management Practices Scenario - Deferred	25,328	19.4	30.7	1.1	20.5	31.8
Management Practices Scenario - Increased	25,328	18.9	29.9	1.1	20.0	31.0
Economic Margins Scenario	25,328	19.2	30.4	1.1	20.3	31.5
Urban Area Expansion Scenario	25,328	19.2	30.4	1.1	20.3	31.5
2020						
Management Practices Scenario - Deferred	25,328	19.6	31.1	1.1	20.7	32.2
Management Practices Scenario - Increased	25,328	18.6	29.5	1.1	19.7	30.6
Economic Margins Scenario	25,328	17.6	26.1	1.1	18.7	27.2
Urban Area Expansion Scenario	25,328	19.2	30.4	1.1	20.3	31.5
2025						
Management Practices Scenario - Deferred	25,328	19.8	31.4	1.1	20.9	32.5
Management Practices Scenario - Increased	25,328	18.4	29.1	1.1	19.5	30.2
Economic Margins Scenario	25,328	12.8	13.5	1.1	14.0	14.6
Urban Area Expansion Scenario	25,328	19.2	30.4	1.1	20.3	31.5
2030						
Management Practices Scenario - Deferred	25,328	20.0	31.7	1.1	21.1	32.8
Management Practices Scenario - Increased	25,328	18.1	28.6	1.1	19.2	29.7
Economic Margins Scenario	25,328	12.8	13.5	1.1	14.0	14.6
Urban Area Expansion Scenario	25,328	19.2	30.4	1.1	20.3	31.5
2035						
Management Practices Scenario - Deferred	25,328	20.2	32.0	1.1	21.3	33.1
Management Practices Scenario - Increased	25,328	17.7	28.0	1.1	18.8	29.1
Economic Margins Scenario	25,328	12.8	13.3	1.1	13.9	14.5
Urban Area Expansion Scenario	25,328	19.2	30.4	1.1	20.3	31.5

Table D-37 Jefferson Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	3,976	4.7	5.8	0.3	5.0	6.1
2015						
Management Practices Scenario - Deferred	3,976	4.8	5.9	0.3	5.1	6.2
Management Practices Scenario - Increased	3,976	4.7	5.8	0.3	5.0	6.1
Economic Margins Scenario	3,976	4.7	5.8	0.3	5.0	6.1
Urban Area Expansion Scenario	3,976	4.7	5.8	0.3	5.0	6.1
2020						
Management Practices Scenario - Deferred	3,976	4.8	5.9	0.3	5.1	6.2
Management Practices Scenario - Increased	3,976	4.6	5.7	0.3	4.9	5.9
Economic Margins Scenario	3,976	4.7	5.8	0.3	5.0	6.1
Urban Area Expansion Scenario	3,976	4.7	5.8	0.3	5.0	6.1
2025						
Management Practices Scenario - Deferred	3,976	4.8	6.0	0.3	5.1	6.3
Management Practices Scenario - Increased	3,976	4.5	5.5	0.3	4.8	5.8
Economic Margins Scenario	3,976	4.1	4.6	0.3	4.4	4.9
Urban Area Expansion Scenario	3,976	4.7	5.8	0.3	5.0	6.1
2030						
Management Practices Scenario - Deferred	3,976	4.9	6.1	0.3	5.2	6.4
Management Practices Scenario - Increased	3,976	4.4	5.5	0.3	4.7	5.8
Economic Margins Scenario	3,976	4.1	4.6	0.3	4.4	4.9
Urban Area Expansion Scenario	3,976	4.7	5.8	0.3	5.0	6.1
2035						
Management Practices Scenario - Deferred	3,976	5.0	6.1	0.3	5.2	6.4
Management Practices Scenario - Increased	3,976	4.4	5.5	0.3	4.7	5.8
Economic Margins Scenario	3,976	4.1	4.6	0.3	4.4	4.9
Urban Area Expansion Scenario	3,976	4.7	5.8	0.3	5.0	6.1

Table D-38 Lafayette Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	9,237	9.3	11.5	2.4	11.7	13.8
2015						
Management Practices Scenario - Deferred	9,237	9.4	11.6	2.4	11.8	14.0
Management Practices Scenario - Increased	9,237	9.2	11.3	2.4	11.5	13.7
Economic Margins Scenario	9,237	9.3	11.5	2.4	11.7	13.8
Urban Area Expansion Scenario	9,237	9.3	11.5	2.4	11.7	13.8
2020						
Management Practices Scenario - Deferred	9,237	9.5	11.7	2.4	11.9	14.1
Management Practices Scenario - Increased	9,237	9.0	11.1	2.4	11.4	13.5
Economic Margins Scenario	9,237	9.3	11.5	2.4	11.7	13.8
Urban Area Expansion Scenario	9,237	9.3	11.5	2.4	11.7	13.8
2025						
Management Practices Scenario - Deferred	9,237	9.6	11.9	2.4	12.0	14.2
Management Practices Scenario - Increased	9,237	8.9	11.0	2.4	11.3	13.3
Economic Margins Scenario	9,237	5.1	5.2	2.4	7.4	7.6
Urban Area Expansion Scenario	9,237	9.3	11.5	2.4	11.7	13.8
2030						
Management Practices Scenario - Deferred	9,237	9.7	12.0	2.4	12.1	14.3
Management Practices Scenario - Increased	9,237	8.8	10.8	2.4	11.1	13.2
Economic Margins Scenario	9,237	5.1	5.2	2.4	7.4	7.6
Urban Area Expansion Scenario	9,237	9.3	11.5	2.4	11.7	13.8
2035						
Management Practices Scenario - Deferred	9,237	0.0	0.0	2.4	2.4	2.4
Management Practices Scenario - Increased	9,237	0.0	0.0	2.4	2.4	2.4
Economic Margins Scenario	9,237	5.1	5.2	2.4	7.4	7.6
Urban Area Expansion Scenario	9,237	9.3	11.5	2.4	11.7	13.8

Table D-39 Lake Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	18,573	32.0	36.5	0.3	32.2	36.8
2015						
Management Practices Scenario - Deferred	18,573	32.2	36.8	0.3	32.5	37.1
Management Practices Scenario - Increased	18,573	31.6	36.1	0.3	31.9	36.4
Economic Margins Scenario	18,573	33.6	35.6	0.3	33.9	35.9
Urban Area Expansion Scenario	19,230	34.9	39.5	0.3	35.2	39.7
2020						
Management Practices Scenario - Deferred	18,573	32.4	37.1	0.3	32.7	37.3
Management Practices Scenario - Increased	18,573	31.3	35.6	0.3	31.5	35.9
Economic Margins Scenario	18,573	33.7	35.6	0.3	34.0	35.9
Urban Area Expansion Scenario	18,735	31.0	35.5	0.3	31.3	35.8
2025						
Management Practices Scenario - Deferred	18,573	32.8	37.4	0.3	33.0	37.7
Management Practices Scenario - Increased	18,573	30.7	35.0	0.3	31.0	35.3
Economic Margins Scenario	18,573	31.9	33.3	0.3	32.2	33.6
Urban Area Expansion Scenario	18,411	31.9	36.4	0.3	32.2	36.6
2030						
Management Practices Scenario - Deferred	18,573	33.1	37.8	0.3	33.3	38.1
Management Practices Scenario - Increased	18,573	30.2	34.4	0.3	30.5	34.7
Economic Margins Scenario	18,573	31.9	33.3	0.3	32.2	33.6
Urban Area Expansion Scenario	19,376	34.7	39.2	0.3	35.0	39.5
2035						
Management Practices Scenario - Deferred	18,573	33.3	38.1	0.3	33.6	38.3
Management Practices Scenario - Increased	18,573	29.8	34.0	0.3	30.1	34.3
Economic Margins Scenario	18,573	31.9	33.3	0.3	32.2	33.6
Urban Area Expansion Scenario	18,156	30.3	34.8	0.3	30.5	35.1

Table D-40 Lee Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	23,367	35.9	40.6	0.4	36.3	41.0
2015						
Management Practices Scenario - Deferred	23,367	36.3	41.1	0.4	36.8	41.5
Management Practices Scenario - Increased	23,367	35.5	40.1	0.4	35.9	40.5
Economic Margins Scenario	23,367	38.5	41.1	0.4	38.9	41.5
Urban Area Expansion Scenario	21,926	33.4	37.7	0.4	33.8	38.2
2020						
Management Practices Scenario - Deferred	23,367	36.8	41.6	0.4	37.2	42.0
Management Practices Scenario - Increased	23,367	35.0	39.5	0.4	35.4	40.0
Economic Margins Scenario	23,367	38.5	41.1	0.4	38.9	41.5
Urban Area Expansion Scenario	23,664	36.6	41.4	0.4	37.1	41.9
2025						
Management Practices Scenario - Deferred	23,367	37.1	41.9	0.4	37.5	42.4
Management Practices Scenario - Increased	23,367	34.5	39.0	0.4	34.9	39.4
Economic Margins Scenario	23,367	40.2	40.8	0.4	40.6	41.2
Urban Area Expansion Scenario	23,919	36.7	41.4	0.4	37.1	41.8
2030						
Management Practices Scenario - Deferred	23,367	37.4	42.3	0.4	37.9	42.8
Management Practices Scenario - Increased	23,367	34.0	38.4	0.4	34.4	38.8
Economic Margins Scenario	23,367	40.2	40.8	0.4	40.6	41.2
Urban Area Expansion Scenario	24,638	38.2	42.9	0.4	38.6	43.4
2035						
Management Practices Scenario - Deferred	23,367	37.8	42.7	0.4	38.2	43.2
Management Practices Scenario - Increased	23,367	33.6	37.9	0.4	34.0	38.4
Economic Margins Scenario	23,367	40.2	40.8	0.4	40.6	41.2
Urban Area Expansion Scenario	24,024	37.4	42.0	0.4	37.8	42.4

Table D-41 Leon Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	509	0.7	0.9	0.0	0.7	1.0
2015						
Management Practices Scenario - Deferred	509	0.7	0.9	0.0	0.7	1.0
Management Practices Scenario - Increased	509	0.7	0.9	0.0	0.7	0.9
Economic Margins Scenario	509	0.7	0.9	0.0	0.7	1.0
Urban Area Expansion Scenario	509	0.7	0.9	0.0	0.7	1.0
2020						
Management Practices Scenario - Deferred	509	0.7	0.9	0.0	0.7	1.0
Management Practices Scenario - Increased	509	0.7	0.9	0.0	0.7	0.9
Economic Margins Scenario	509	0.7	0.9	0.0	0.7	1.0
Urban Area Expansion Scenario	509	0.7	0.9	0.0	0.7	1.0
2025						
Management Practices Scenario - Deferred	509	0.7	0.9	0.0	0.7	1.0
Management Practices Scenario - Increased	509	0.7	0.9	0.0	0.7	0.9
Economic Margins Scenario	509	0.6	0.8	0.0	0.7	0.9
Urban Area Expansion Scenario	513	0.7	0.9	0.0	0.7	1.0
2030						
Management Practices Scenario - Deferred	509	0.7	0.9	0.0	0.7	1.0
Management Practices Scenario - Increased	509	0.6	0.9	0.0	0.7	0.9
Economic Margins Scenario	509	0.6	0.8	0.0	0.7	0.9
Urban Area Expansion Scenario	506	0.7	0.9	0.0	0.7	0.9
2035						
Management Practices Scenario - Deferred	509	0.7	1.0	0.0	0.8	1.0
Management Practices Scenario - Increased	509	0.6	0.9	0.0	0.7	0.9
Economic Margins Scenario	509	0.6	0.8	0.0	0.7	0.9
Urban Area Expansion Scenario	594	0.8	1.1	0.0	0.9	1.2

Table D-42 Levy Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	15,256	22.5	25.4	4.8	27.3	30.2
2015						
Management Practices Scenario - Deferred	15,256	22.7	25.6	4.8	27.5	30.4
Management Practices Scenario - Increased	15,256	22.2	25.1	4.8	27.0	29.8
Economic Margins Scenario	15,256	22.5	25.4	4.8	27.3	30.2
Urban Area Expansion Scenario	15,256	22.5	25.4	4.8	27.3	30.2
2020						
Management Practices Scenario - Deferred	15,256	23.0	26.0	4.8	27.8	30.7
Management Practices Scenario - Increased	15,256	21.9	24.7	4.8	26.6	29.4
Economic Margins Scenario	15,256	22.9	25.8	4.8	27.7	30.6
Urban Area Expansion Scenario	15,256	22.5	25.4	4.8	27.3	30.2
2025						
Management Practices Scenario - Deferred	15,256	23.2	26.2	4.8	27.9	30.9
Management Practices Scenario - Increased	15,256	21.5	24.3	4.8	26.3	29.0
Economic Margins Scenario	15,256	17.2	17.5	4.8	22.0	22.3
Urban Area Expansion Scenario	15,256	22.5	25.4	4.8	27.3	30.2
2030						
Management Practices Scenario - Deferred	15,256	23.5	26.5	4.8	28.2	31.3
Management Practices Scenario - Increased	15,256	21.2	23.9	4.8	26.0	28.7
Economic Margins Scenario	15,256	17.2	17.5	4.8	22.0	22.3
Urban Area Expansion Scenario	15,256	22.5	25.4	4.8	27.3	30.2
2035						
Management Practices Scenario - Deferred	15,256	23.7	26.7	4.8	28.4	31.5
Management Practices Scenario - Increased	15,256	21.0	23.6	4.8	25.7	28.4
Economic Margins Scenario	15,256	17.2	17.5	4.8	22.0	22.3
Urban Area Expansion Scenario	15,256	22.5	25.4	4.8	27.3	30.2

Table D-43 Liberty Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	106	0.31	0.37	0.01	0.32	0.38
2015						
Management Practices Scenario - Deferred	106	0.31	0.37	0.01	0.32	0.38
Management Practices Scenario - Increased	106	0.31	0.37	0.01	0.32	0.38
Economic Margins Scenario	106	0.31	0.37	0.01	0.32	0.38
Urban Area Expansion Scenario	106	0.31	0.37	0.01	0.32	0.38
2020						
Management Practices Scenario - Deferred	106	0.31	0.37	0.01	0.32	0.38
Management Practices Scenario - Increased	106	0.31	0.37	0.01	0.32	0.38
Economic Margins Scenario	106	0.31	0.37	0.01	0.32	0.38
Urban Area Expansion Scenario	106	0.31	0.37	0.01	0.32	0.38
2025						
Management Practices Scenario - Deferred	106	0.32	0.38	0.01	0.33	0.39
Management Practices Scenario - Increased	106	0.31	0.37	0.01	0.32	0.38
Economic Margins Scenario	106	0.30	0.35	0.01	0.31	0.36
Urban Area Expansion Scenario	106	0.31	0.37	0.01	0.32	0.38
2030						
Management Practices Scenario - Deferred	106	0.32	0.38	0.01	0.33	0.39
Management Practices Scenario - Increased	106	0.31	0.37	0.01	0.32	0.38
Economic Margins Scenario	106	0.30	0.35	0.01	0.31	0.36
Urban Area Expansion Scenario	106	0.31	0.37	0.01	0.32	0.38
2035						
Management Practices Scenario - Deferred	106	0.3	0.4	0.01	0.34	0.40
Management Practices Scenario - Increased	106	0.3	0.4	0.01	0.32	0.37
Economic Margins Scenario	106	0.3	0.3	0.01	0.31	0.36
Urban Area Expansion Scenario	106	0.3	0.4	0.01	0.32	0.38

Table D-44 Madison Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	11,293	10.6	13.6	0.8	11.4	14.4
2015						
Management Practices Scenario - Deferred	11,293	10.7	13.7	0.8	11.5	14.5
Management Practices Scenario - Increased	11,293	10.5	13.4	0.8	11.3	14.2
Economic Margins Scenario	11,293	10.6	13.6	0.8	11.4	14.4
Urban Area Expansion Scenario	11,293	10.6	13.6	0.8	11.4	14.4
2020						
Management Practices Scenario - Deferred	11,293	10.8	13.9	0.8	11.6	14.7
Management Practices Scenario - Increased	11,293	10.3	13.2	0.8	11.1	14.0
Economic Margins Scenario	11,293	10.6	13.6	0.8	11.4	14.4
Urban Area Expansion Scenario	11,293	10.6	13.6	0.8	11.4	14.4
2025						
Management Practices Scenario - Deferred	11,293	11.0	14.0	0.8	11.8	14.8
Management Practices Scenario - Increased	11,293	10.2	13.0	0.8	11.0	13.8
Economic Margins Scenario	11,293	6.7	7.0	0.8	7.5	7.9
Urban Area Expansion Scenario	11,293	10.6	13.6	0.8	11.4	14.4
2030						
Management Practices Scenario - Deferred	11,293	11.1	14.2	0.8	11.9	15.0
Management Practices Scenario - Increased	11,293	10.0	12.9	0.8	10.9	13.7
Economic Margins Scenario	11,293	6.7	7.0	0.8	7.5	7.9
Urban Area Expansion Scenario	11,293	10.6	13.6	0.8	11.4	14.4
2035						
Management Practices Scenario - Deferred	11,293	11.2	14.4	0.8	12.0	15.2
Management Practices Scenario - Increased	11,293	9.9	12.7	0.8	10.7	13.5
Economic Margins Scenario	11,293	6.7	7.0	0.8	7.5	7.9
Urban Area Expansion Scenario	11,293	10.6	13.6	0.8	11.4	14.4

Table D-45 Manatee Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	59,585	62.3	71.6	1.3	63.6	73.0
2015						
Management Practices Scenario - Deferred	59,585	63.0	72.5	1.3	64.4	73.9
Management Practices Scenario - Increased	59,585	61.4	70.7	1.3	62.8	72.0
Economic Margins Scenario	59,585	65.3	73.0	1.3	66.6	74.4
Urban Area Expansion Scenario	59,550	62.2	71.6	1.3	63.6	72.9
2020						
Management Practices Scenario - Deferred	59,585	63.7	73.3	1.3	65.1	74.7
Management Practices Scenario - Increased	59,585	60.5	69.6	1.3	61.8	70.9
Economic Margins Scenario	59,585	65.3	73.0	1.3	66.6	74.4
Urban Area Expansion Scenario	59,585	62.3	71.6	1.3	63.6	73.0
2025						
Management Practices Scenario - Deferred	59,585	64.3	74.0	1.3	65.7	75.3
Management Practices Scenario - Increased	59,585	59.6	68.6	1.3	61.0	69.9
Economic Margins Scenario	59,585	75.7	77.6	1.3	77.0	79.0
Urban Area Expansion Scenario	59,664	62.3	71.7	1.3	63.7	73.1
2030						
Management Practices Scenario - Deferred	59,585	65.1	74.9	1.3	66.4	76.2
Management Practices Scenario - Increased	59,585	58.7	67.5	1.3	60.0	68.8
Economic Margins Scenario	59,585	75.7	77.6	1.3	77.0	79.0
Urban Area Expansion Scenario	59,511	62.2	71.6	1.3	63.5	72.9
2035						
Management Practices Scenario - Deferred	59,585	65.8	75.7	1.3	67.2	77.1
Management Practices Scenario - Increased	59,585	57.7	66.4	1.3	59.1	67.7
Economic Margins Scenario	59,585	75.7	77.6	1.3	77.0	79.0
Urban Area Expansion Scenario	59,590	62.3	71.6	1.3	63.6	73.0

Table D-46 Marion Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	15,391	18.6	22.0	0.6	19.2	22.6
2015						
Management Practices Scenario - Deferred	15,391	18.8	22.3	0.6	19.4	22.9
Management Practices Scenario - Increased	15,391	18.4	21.8	0.6	19.0	22.4
Economic Margins Scenario	15,391	19.7	22.7	0.6	20.3	23.3
Urban Area Expansion Scenario	14,000	17.2	20.5	0.6	17.7	21.1
2020						
Management Practices Scenario - Deferred	15,391	18.9	22.4	0.6	19.5	23.0
Management Practices Scenario - Increased	15,391	18.1	21.5	0.6	18.7	22.1
Economic Margins Scenario	15,391	20.2	22.9	0.6	20.8	23.5
Urban Area Expansion Scenario	15,386	18.6	22.1	0.6	19.2	22.7
2025						
Management Practices Scenario - Deferred	15,391	19.2	22.7	0.6	19.7	23.3
Management Practices Scenario - Increased	15,391	17.9	21.2	0.6	18.5	21.8
Economic Margins Scenario	15,391	15.6	16.6	0.6	16.2	17.2
Urban Area Expansion Scenario	15,638	19.0	22.4	0.6	19.6	23.0
2030						
Management Practices Scenario - Deferred	15,391	19.3	22.9	0.6	19.9	23.5
Management Practices Scenario - Increased	15,391	17.7	21.0	0.6	18.3	21.6
Economic Margins Scenario	15,391	15.6	16.6	0.6	16.2	17.2
Urban Area Expansion Scenario	15,330	18.6	22.0	0.6	19.1	22.6
2035						
Management Practices Scenario - Deferred	15,391	19.5	23.2	0.6	20.1	23.7
Management Practices Scenario - Increased	15,391	17.5	20.7	0.6	18.1	21.3
Economic Margins Scenario	15,391	15.6	16.6	0.6	16.2	17.2
Urban Area Expansion Scenario	15,868	19.4	22.9	0.6	20.0	23.5

Table D-47 Martin Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	40,071	71.9	74.7	0.4	72.3	75.1
2015						
Management Practices Scenario - Deferred	40,071	72.6	75.4	0.4	73.0	75.8
Management Practices Scenario - Increased	40,071	70.7	73.4	0.4	71.2	73.8
Economic Margins Scenario	40,071	73.1	74.8	0.4	73.5	75.2
Urban Area Expansion Scenario	39,381	69.4	72.1	0.4	69.8	72.5
2020						
Management Practices Scenario - Deferred	40,071	73.4	76.2	0.4	73.8	76.6
Management Practices Scenario - Increased	40,071	70.1	72.8	0.4	70.5	73.2
Economic Margins Scenario	40,071	73.1	74.8	0.4	73.5	75.2
Urban Area Expansion Scenario	40,962	73.0	75.9	0.4	73.4	76.3
2025						
Management Practices Scenario - Deferred	40,071	74.3	77.2	0.4	74.8	77.6
Management Practices Scenario - Increased	40,071	68.9	71.6	0.4	69.4	72.0
Economic Margins Scenario	40,071	72.7	73.8	0.4	73.1	74.2
Urban Area Expansion Scenario	38,895	71.0	73.6	0.4	71.4	74.0
2030						
Management Practices Scenario - Deferred	40,071	75.1	78.0	0.4	75.5	78.4
Management Practices Scenario - Increased	40,071	67.7	70.2	0.4	68.1	70.6
Economic Margins Scenario	40,071	72.7	73.8	0.4	73.1	74.2
Urban Area Expansion Scenario	40,034	71.8	74.5	0.4	72.2	74.9
2035						
Management Practices Scenario - Deferred	40,071	75.6	78.5	0.4	76.0	78.9
Management Practices Scenario - Increased	40,071	66.4	68.9	0.4	66.8	69.4
Economic Margins Scenario	40,071	67.7	68.7	0.4	68.1	69.1
Urban Area Expansion Scenario	40,233	72.2	74.9	0.4	72.6	75.3

Table D-48 Miami-Dade Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	37,356	73.7	67.9	1.6	75.3	69.5
2015						
Management Practices Scenario - Deferred	37,356	74.3	68.5	1.6	75.9	70.1
Management Practices Scenario - Increased	37,356	72.8	67.2	1.6	74.4	68.8
Economic Margins Scenario	37,356	73.7	68.0	1.6	75.3	69.5
Urban Area Expansion Scenario	30,378	61.2	56.5	1.6	62.8	58.1
2020						
Management Practices Scenario - Deferred	37,356	74.9	69.1	1.6	76.5	70.7
Management Practices Scenario - Increased	37,356	72.0	66.4	1.6	73.6	68.0
Economic Margins Scenario	37,356	73.7	68.0	1.6	75.3	69.5
Urban Area Expansion Scenario	37,738	76.1	70.3	1.6	77.7	71.8
2025						
Management Practices Scenario - Deferred	37,356	75.6	69.7	1.6	77.2	71.3
Management Practices Scenario - Increased	37,356	71.1	65.6	1.6	72.7	67.2
Economic Margins Scenario	37,356	74.7	69.6	1.6	76.2	71.2
Urban Area Expansion Scenario	37,510	74.0	68.2	1.6	75.6	69.8
2030						
Management Practices Scenario - Deferred	37,356	76.3	70.3	1.6	77.9	71.9
Management Practices Scenario - Increased	37,356	70.3	64.8	1.6	71.8	66.4
Economic Margins Scenario	37,356	74.7	69.6	1.6	76.2	71.2
Urban Area Expansion Scenario	37,713	76.6	70.6	1.6	78.2	72.2
2035						
Management Practices Scenario - Deferred	37,356	0.0	0.0	1.6	1.6	1.6
Management Practices Scenario - Increased	37,356	0.0	0.0	1.6	1.6	1.6
Economic Margins Scenario	37,356	74.7	69.6	1.6	76.2	71.2
Urban Area Expansion Scenario	35,662	69.9	64.4	1.6	71.4	66.0

Table D-49 Nassau Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	883	1.2	1.5	0.3	1.5	1.8
2015						
Management Practices Scenario - Deferred	883	1.2	1.5	0.3	1.5	1.8
Management Practices Scenario - Increased	883	1.2	1.5	0.3	1.5	1.8
Economic Margins Scenario	883	1.2	1.5	0.3	1.5	1.8
Urban Area Expansion Scenario	883	1.2	1.5	0.3	1.5	1.8
2020						
Management Practices Scenario - Deferred	883	1.2	1.5	0.3	1.5	1.8
Management Practices Scenario - Increased	883	1.2	1.4	0.3	1.5	1.7
Economic Margins Scenario	883	0.7	0.8	0.3	1.0	1.1
Urban Area Expansion Scenario	883	1.2	1.5	0.3	1.5	1.8
2025						
Management Practices Scenario - Deferred	883	1.2	1.5	0.3	1.5	1.8
Management Practices Scenario - Increased	883	1.2	1.4	0.3	1.5	1.7
Economic Margins Scenario	883	0.8	0.8	0.3	1.1	1.1
Urban Area Expansion Scenario	883	1.2	1.5	0.3	1.5	1.8
2030						
Management Practices Scenario - Deferred	883	1.2	1.5	0.3	1.5	1.8
Management Practices Scenario - Increased	883	1.1	1.4	0.3	1.4	1.7
Economic Margins Scenario	883	0.8	0.8	0.3	1.1	1.1
Urban Area Expansion Scenario	883	1.2	1.5	0.3	1.5	1.8
2035						
Management Practices Scenario - Deferred	883	1.3	1.5	0.3	1.5	1.8
Management Practices Scenario - Increased	883	1.1	1.4	0.3	1.4	1.7
Economic Margins Scenario	883	0.8	0.8	0.3	1.1	1.1
Urban Area Expansion Scenario	883	1.2	1.5	0.3	1.5	1.8

Table D-50 Okaloosa Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	1,185	0.6	1.0	0.1	0.7	1.1
2015						
Management Practices Scenario - Deferred	1,185	0.6	1.0	0.1	0.7	1.1
Management Practices Scenario - Increased	1,185	0.6	1.0	0.1	0.7	1.1
Economic Margins Scenario	1,185	0.6	1.0	0.1	0.7	1.1
Urban Area Expansion Scenario	1,185	0.6	1.0	0.1	0.7	1.1
2020						
Management Practices Scenario - Deferred	1,185	0.6	1.0	0.1	0.7	1.1
Management Practices Scenario - Increased	1,185	0.6	1.0	0.1	0.7	1.0
Economic Margins Scenario	1,185	0.6	0.9	0.1	0.7	0.9
Urban Area Expansion Scenario	1,185	0.6	1.0	0.1	0.7	1.1
2025						
Management Practices Scenario - Deferred	1,185	0.6	1.0	0.1	0.7	1.1
Management Practices Scenario - Increased	1,185	0.6	1.0	0.1	0.7	1.0
Economic Margins Scenario	1,185	0.6	0.7	0.1	0.6	0.7
Urban Area Expansion Scenario	1,185	0.6	1.0	0.1	0.7	1.1
2030						
Management Practices Scenario - Deferred	1,185	0.6	1.1	0.1	0.7	1.1
Management Practices Scenario - Increased	1,185	0.6	0.9	0.1	0.6	1.0
Economic Margins Scenario	1,185	0.6	0.7	0.1	0.6	0.7
Urban Area Expansion Scenario	1,185	0.6	1.0	0.1	0.7	1.1
2035						
Management Practices Scenario - Deferred	1,185	0.6	1.1	0.1	0.7	1.1
Management Practices Scenario - Increased	1,185	0.6	0.9	0.1	0.6	1.0
Economic Margins Scenario	1,185	0.6	0.7	0.1	0.6	0.7
Urban Area Expansion Scenario	1,185	0.6	1.0	0.1	0.7	1.1

Table D-51 Okeechobee Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	26,764	52.5	55.3	6.9	59.3	62.2
2015						
Management Practices Scenario - Deferred	26,764	53.1	55.9	6.9	59.9	62.8
Management Practices Scenario - Increased	26,764	51.9	54.8	6.9	58.8	61.6
Economic Margins Scenario	26,764	52.9	54.7	6.9	59.8	61.5
Urban Area Expansion Scenario	26,764	52.5	55.3	6.9	59.3	62.2
2020						
Management Practices Scenario - Deferred	26,764	53.6	56.5	6.9	60.5	63.4
Management Practices Scenario - Increased	26,764	51.0	53.8	6.9	57.9	60.6
Economic Margins Scenario	26,764	52.9	54.7	6.9	59.8	61.5
Urban Area Expansion Scenario	26,764	52.5	55.3	6.9	59.3	62.2
2025						
Management Practices Scenario - Deferred	26,764	54.3	57.3	6.9	61.1	64.1
Management Practices Scenario - Increased	26,764	50.3	53.0	6.9	57.2	59.9
Economic Margins Scenario	26,764	45.0	45.8	6.9	51.8	52.7
Urban Area Expansion Scenario	26,764	52.5	55.3	6.9	59.3	62.2
2030						
Management Practices Scenario - Deferred	26,764	54.6	57.6	6.9	61.4	64.4
Management Practices Scenario - Increased	26,764	49.6	52.3	6.9	56.5	59.1
Economic Margins Scenario	26,764	45.0	45.8	6.9	51.8	52.7
Urban Area Expansion Scenario	26,764	52.5	55.3	6.9	59.3	62.2
2035						
Management Practices Scenario - Deferred	26,764	55.0	58.0	6.9	61.9	64.9
Management Practices Scenario - Increased	26,764	49.1	51.7	6.9	56.0	58.6
Economic Margins Scenario	26,764	45.0	45.8	6.9	51.8	52.7
Urban Area Expansion Scenario	26,764	52.5	55.3	6.9	59.3	62.2

Table D-52 Orange Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	8,076	14.8	17.6	0.3	15.1	17.9
2015						
Management Practices Scenario - Deferred	8,076	15.0	17.7	0.3	15.3	18.0
Management Practices Scenario - Increased	8,076	14.7	17.4	0.3	15.0	17.7
Economic Margins Scenario	8,076	15.4	17.2	0.3	15.7	17.5
Urban Area Expansion Scenario	8,260	14.9	17.5	0.3	15.2	17.8
2020						
Management Practices Scenario - Deferred	8,076	15.1	17.9	0.3	15.4	18.2
Management Practices Scenario - Increased	8,076	14.5	17.2	0.3	14.9	17.5
Economic Margins Scenario	8,076	15.4	17.2	0.3	15.7	17.5
Urban Area Expansion Scenario	7,898	14.6	17.3	0.3	14.9	17.6
2025						
Management Practices Scenario - Deferred	8,076	15.2	18.1	0.3	15.5	18.4
Management Practices Scenario - Increased	8,076	14.4	17.0	0.3	14.7	17.3
Economic Margins Scenario	8,076	13.6	14.6	0.3	13.9	14.9
Urban Area Expansion Scenario	8,319	15.2	18.0	0.3	15.5	18.3
2030						
Management Practices Scenario - Deferred	8,076	15.4	18.2	0.3	15.7	18.5
Management Practices Scenario - Increased	8,076	14.2	16.8	0.3	14.5	17.1
Economic Margins Scenario	8,076	13.6	14.6	0.3	13.9	14.9
Urban Area Expansion Scenario	8,230	15.5	18.3	0.3	15.8	18.6
2035						
Management Practices Scenario - Deferred	8,076	15.5	18.4	0.3	15.8	18.7
Management Practices Scenario - Increased	8,076	14.0	16.5	0.3	14.3	16.8
Economic Margins Scenario	8,076	13.6	14.6	0.3	13.9	14.9
Urban Area Expansion Scenario	7,749	14.4	17.0	0.3	14.7	17.3

Table D-53 Osceola Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	23,199	33.8	36.9	1.2	35.0	38.1
2015						
Management Practices Scenario - Deferred	23,199	34.3	37.4	1.2	35.5	38.6
Management Practices Scenario - Increased	23,199	33.5	36.5	1.2	34.7	37.7
Economic Margins Scenario	23,199	36.4	37.5	1.2	37.6	38.7
Urban Area Expansion Scenario	22,557	33.1	35.9	1.2	34.3	37.1
2020						
Management Practices Scenario - Deferred	23,199	35.2	38.4	1.2	36.4	39.6
Management Practices Scenario - Increased	23,199	32.6	35.6	1.2	33.8	36.8
Economic Margins Scenario	23,199	36.4	37.5	1.2	37.6	38.7
Urban Area Expansion Scenario	23,533	34.3	37.5	1.2	35.5	38.7
2025						
Management Practices Scenario - Deferred	23,199	35.8	39.0	1.2	37.0	40.2
Management Practices Scenario - Increased	23,199	32.5	35.4	1.2	33.7	36.6
Economic Margins Scenario	23,199	35.8	36.5	1.2	37.0	37.7
Urban Area Expansion Scenario	24,404	36.0	39.1	1.2	37.2	40.3
2030						
Management Practices Scenario - Deferred	23,199	36.3	39.6	1.2	37.5	40.8
Management Practices Scenario - Increased	23,199	31.6	34.4	1.2	32.8	35.6
Economic Margins Scenario	23,199	35.8	36.5	1.2	37.0	37.7
Urban Area Expansion Scenario	23,279	34.0	37.1	1.2	35.2	38.2
2035						
Management Practices Scenario - Deferred	23,199	36.4	39.7	1.2	37.6	40.9
Management Practices Scenario - Increased	23,199	30.8	33.6	1.2	32.0	34.8
Economic Margins Scenario	23,199	35.8	36.5	1.2	37.0	37.7
Urban Area Expansion Scenario	23,136	33.8	36.8	1.2	34.9	38.0

Table D-54 Palm Beach Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	419,113	721.5	795.3	0.3	721.8	795.6
2015						
Management Practices Scenario - Deferred	419,113	729.8	804.4	0.3	730.1	804.7
Management Practices Scenario - Increased	419,113	710.4	783.0	0.3	710.6	783.3
Economic Margins Scenario	419,113	721.5	795.1	0.3	721.8	795.4
Urban Area Expansion Scenario	416,741	717.3	790.6	0.3	717.5	790.9
2020						
Management Practices Scenario - Deferred	419,113	739.4	814.9	0.3	739.6	815.2
Management Practices Scenario - Increased	419,113	697.3	768.6	0.3	697.6	768.8
Economic Margins Scenario	419,113	721.5	795.1	0.3	721.8	795.4
Urban Area Expansion Scenario	419,529	722.5	796.4	0.3	722.8	796.7
2025						
Management Practices Scenario - Deferred	419,113	747.2	823.6	0.3	747.5	823.9
Management Practices Scenario - Increased	419,113	686.5	756.6	0.3	686.7	756.9
Economic Margins Scenario	419,113	720.8	794.5	0.3	721.0	794.8
Urban Area Expansion Scenario	420,427	724.1	798.0	0.3	724.3	798.2
2030						
Management Practices Scenario - Deferred	419,113	756.7	834.1	0.3	757.0	834.4
Management Practices Scenario - Increased	419,113	673.5	742.3	0.3	673.8	742.6
Economic Margins Scenario	419,113	720.8	794.5	0.3	721.0	794.8
Urban Area Expansion Scenario	419,128	722.2	796.0	0.3	722.4	796.3
2035						
Management Practices Scenario - Deferred	419,113	765.6	843.9	0.3	765.9	844.1
Management Practices Scenario - Increased	419,113	659.7	727.1	0.3	660.0	727.3
Economic Margins Scenario	419,113	611.3	614.6	0.3	611.5	614.9
Urban Area Expansion Scenario	418,955	721.1	794.9	0.3	721.4	795.1

Table D-55 Pasco Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	12,777	16.8	17.8	0.7	17.6	18.5
2015						
Management Practices Scenario - Deferred	12,777	17.0	17.9	0.7	17.7	18.7
Management Practices Scenario - Increased	12,777	16.5	17.5	0.7	17.3	18.2
Economic Margins Scenario	12,777	18.8	19.4	0.7	19.5	20.1
Urban Area Expansion Scenario	11,535	15.1	16.0	0.7	15.9	16.7
2020						
Management Practices Scenario - Deferred	12,777	17.2	18.1	0.7	17.9	18.9
Management Practices Scenario - Increased	12,777	16.3	17.2	0.7	17.0	17.9
Economic Margins Scenario	12,777	19.4	19.9	0.7	20.1	20.7
Urban Area Expansion Scenario	12,627	16.7	17.6	0.7	17.4	18.3
2025						
Management Practices Scenario - Deferred	12,777	17.4	18.3	0.7	18.1	19.1
Management Practices Scenario - Increased	12,777	16.1	17.0	0.7	16.8	17.7
Economic Margins Scenario	12,777	18.6	18.9	0.7	19.3	19.7
Urban Area Expansion Scenario	14,041	19.0	20.0	0.7	19.7	20.7
2030						
Management Practices Scenario - Deferred	12,777	17.5	18.4	0.7	18.2	19.2
Management Practices Scenario - Increased	12,777	15.9	16.8	0.7	16.7	17.5
Economic Margins Scenario	12,777	18.6	18.9	0.7	19.3	19.7
Urban Area Expansion Scenario	12,825	17.0	17.9	0.7	17.7	18.6
2035						
Management Practices Scenario - Deferred	12,777	17.6	18.6	0.7	18.4	19.3
Management Practices Scenario - Increased	12,777	15.6	16.5	0.7	16.4	17.2
Economic Margins Scenario	12,777	18.6	18.9	0.7	19.3	19.7
Urban Area Expansion Scenario	13,714	18.6	19.5	0.7	19.4	20.2

Table D-56 Pinellas Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	17	0.07	0.08	0.04	0.11	0.11
2015						
Management Practices Scenario - Deferred	17	0.07	0.08	0.04	0.11	0.11
Management Practices Scenario - Increased	17	0.07	0.08	0.04	0.11	0.11
Economic Margins Scenario	17	0.07	0.08	0.04	0.11	0.11
Urban Area Expansion Scenario	17	0.07	0.08	0.04	0.11	0.11
2020						
Management Practices Scenario - Deferred	17	0.07	0.08	0.04	0.11	0.11
Management Practices Scenario - Increased	17	0.07	0.07	0.04	0.11	0.11
Economic Margins Scenario	17	0.07	0.08	0.04	0.11	0.11
Urban Area Expansion Scenario	17	0.07	0.08	0.04	0.11	0.11
2025						
Management Practices Scenario - Deferred	17	0.07	0.08	0.04	0.11	0.12
Management Practices Scenario - Increased	17	0.07	0.07	0.04	0.11	0.11
Economic Margins Scenario	17	0.07	0.08	0.04	0.11	0.11
Urban Area Expansion Scenario	17	0.07	0.08	0.04	0.11	0.11
2030						
Management Practices Scenario - Deferred	17	0.07	0.08	0.04	0.11	0.12
Management Practices Scenario - Increased	17	0.07	0.07	0.04	0.10	0.11
Economic Margins Scenario	17	0.07	0.08	0.04	0.11	0.11
Urban Area Expansion Scenario	17	0.07	0.08	0.04	0.11	0.11
2035						
Management Practices Scenario - Deferred	17	0.1	0.1	0.04	0.11	0.12
Management Practices Scenario - Increased	17	0.1	0.1	0.04	0.10	0.11
Economic Margins Scenario	17	0.1	0.1	0.04	0.11	0.11
Urban Area Expansion Scenario	17	0.1	0.1	0.04	0.11	0.11

Table D-57 Polk Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	90,336	115.8	127.4	3.4	119.2	130.8
2015						
Management Practices Scenario - Deferred	90,336	117.0	128.7	3.4	120.5	132.1
Management Practices Scenario - Increased	90,336	114.1	125.4	3.4	117.5	128.9
Economic Margins Scenario	90,336	124.4	130.1	3.4	127.8	133.6
Urban Area Expansion Scenario	89,838	114.7	126.2	3.4	118.2	129.6
2020						
Management Practices Scenario - Deferred	90,336	118.5	130.3	3.4	121.9	133.7
Management Practices Scenario - Increased	90,336	112.4	123.6	3.4	115.8	127.0
Economic Margins Scenario	90,336	124.5	130.3	3.4	128.0	133.7
Urban Area Expansion Scenario	90,365	116.2	127.7	3.4	119.6	131.1
2025						
Management Practices Scenario - Deferred	90,336	119.8	131.8	3.4	123.2	135.2
Management Practices Scenario - Increased	90,336	110.7	121.7	3.4	114.1	125.1
Economic Margins Scenario	90,336	123.6	129.1	3.4	127.1	132.5
Urban Area Expansion Scenario	90,644	116.2	127.8	3.4	119.6	131.2
2030						
Management Practices Scenario - Deferred	90,336	121.1	133.2	3.4	124.5	136.6
Management Practices Scenario - Increased	90,336	108.7	119.6	3.4	112.1	123.0
Economic Margins Scenario	90,336	123.6	129.1	3.4	127.1	132.5
Urban Area Expansion Scenario	90,313	115.8	127.4	3.4	119.3	130.8
2035						
Management Practices Scenario - Deferred	90,336	122.5	134.8	3.4	126.0	138.2
Management Practices Scenario - Increased	90,336	106.9	117.6	3.4	110.3	121.0
Economic Margins Scenario	90,336	123.6	129.1	3.4	127.1	132.5
Urban Area Expansion Scenario	90,254	115.8	127.3	3.4	119.2	130.8

Table D-58 Putnam Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	11,729	14.8	19.4	0.5	15.3	19.9
2015						
Management Practices Scenario - Deferred	11,729	14.9	19.6	0.5	15.4	20.1
Management Practices Scenario - Increased	11,729	14.6	19.1	0.5	15.1	19.7
Economic Margins Scenario	11,729	14.9	19.4	0.5	15.4	20.0
Urban Area Expansion Scenario	11,729	14.8	19.4	0.5	15.3	19.9
2020						
Management Practices Scenario - Deferred	11,729	15.1	19.8	0.5	15.6	20.3
Management Practices Scenario - Increased	11,729	14.4	18.9	0.5	14.9	19.4
Economic Margins Scenario	11,729	14.9	19.4	0.5	15.4	20.0
Urban Area Expansion Scenario	11,729	14.8	19.4	0.5	15.3	19.9
2025						
Management Practices Scenario - Deferred	11,729	15.2	20.0	0.5	15.7	20.5
Management Practices Scenario - Increased	11,729	14.2	18.6	0.5	14.7	19.2
Economic Margins Scenario	11,729	13.6	16.0	0.5	14.1	16.5
Urban Area Expansion Scenario	11,729	14.8	19.4	0.5	15.3	19.9
2030						
Management Practices Scenario - Deferred	11,729	15.3	20.1	0.5	15.9	20.7
Management Practices Scenario - Increased	11,729	14.0	18.4	0.5	14.5	18.9
Economic Margins Scenario	11,729	13.6	16.0	0.5	14.1	16.5
Urban Area Expansion Scenario	11,729	14.8	19.4	0.5	15.3	19.9
2035						
Management Practices Scenario - Deferred	11,729	0.0	0.0	0.5	0.5	0.5
Management Practices Scenario - Increased	11,729	0.0	0.0	0.5	0.5	0.5
Economic Margins Scenario	11,729	13.6	16.0	0.5	14.1	16.5
Urban Area Expansion Scenario	11,729	14.8	19.4	0.5	15.3	19.9

Table D-59 Santa Rosa Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	4,277	4.6	6.4	0.6	5.2	6.9
2015						
Management Practices Scenario - Deferred	4,277	4.7	6.4	0.6	5.3	7.0
Management Practices Scenario - Increased	4,277	4.6	6.3	0.6	5.1	6.8
Economic Margins Scenario	4,277	4.6	6.4	0.6	5.2	6.9
Urban Area Expansion Scenario	4,258	4.6	6.3	0.6	5.2	6.9
2020						
Management Practices Scenario - Deferred	4,277	4.8	6.5	0.6	5.3	7.1
Management Practices Scenario - Increased	4,277	4.5	6.2	0.6	5.1	6.8
Economic Margins Scenario	4,277	4.6	6.1	0.6	5.2	6.7
Urban Area Expansion Scenario	4,270	4.6	6.3	0.6	5.2	6.9
2025						
Management Practices Scenario - Deferred	4,277	4.8	6.6	0.6	5.4	7.1
Management Practices Scenario - Increased	4,277	4.5	6.1	0.6	5.1	6.7
Economic Margins Scenario	4,277	4.4	5.1	0.6	5.0	5.7
Urban Area Expansion Scenario	4,277	4.6	6.4	0.6	5.2	6.9
2030						
Management Practices Scenario - Deferred	4,277	4.9	6.7	0.6	5.4	7.2
Management Practices Scenario - Increased	4,277	4.4	6.0	0.6	5.0	6.6
Economic Margins Scenario	4,277	4.4	5.1	0.6	5.0	5.7
Urban Area Expansion Scenario	4,277	4.6	6.4	0.6	5.2	6.9
2035						
Management Practices Scenario - Deferred	4,277	4.9	6.7	0.6	5.5	7.3
Management Practices Scenario - Increased	4,277	4.3	5.9	0.6	4.9	6.5
Economic Margins Scenario	4,277	4.4	5.1	0.6	5.0	5.7
Urban Area Expansion Scenario	4,277	4.6	6.4	0.6	5.2	6.9

Table D-60 Sarasota Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	7,358	12.0	12.9	0.5	12.5	13.4
2015						
Management Practices Scenario - Deferred	7,358	12.2	13.0	0.5	12.7	13.5
Management Practices Scenario - Increased	7,358	11.9	12.7	0.5	12.4	13.2
Economic Margins Scenario	7,358	12.1	12.9	0.5	12.6	13.4
Urban Area Expansion Scenario	7,358	12.0	12.9	0.5	12.5	13.4
2020						
Management Practices Scenario - Deferred	7,358	12.2	13.1	0.5	12.8	13.6
Management Practices Scenario - Increased	7,358	11.7	12.5	0.5	12.2	13.0
Economic Margins Scenario	7,358	12.1	12.9	0.5	12.6	13.4
Urban Area Expansion Scenario	7,358	12.0	12.9	0.5	12.5	13.4
2025						
Management Practices Scenario - Deferred	7,358	12.3	13.1	0.5	12.8	13.6
Management Practices Scenario - Increased	7,358	11.5	12.3	0.5	12.0	12.8
Economic Margins Scenario	7,358	13.1	13.5	0.5	13.6	14.0
Urban Area Expansion Scenario	7,358	12.0	12.9	0.5	12.5	13.4
2030						
Management Practices Scenario - Deferred	7,358	12.4	13.2	0.5	12.9	13.7
Management Practices Scenario - Increased	7,358	11.3	12.1	0.5	11.8	12.6
Economic Margins Scenario	7,358	13.1	13.5	0.5	13.6	14.0
Urban Area Expansion Scenario	7,358	12.0	12.9	0.5	12.5	13.4
2035						
Management Practices Scenario - Deferred	7,358	12.4	13.3	0.5	12.9	13.8
Management Practices Scenario - Increased	7,358	11.2	12.0	0.5	11.7	12.5
Economic Margins Scenario	7,358	13.1	13.5	0.5	13.6	14.0
Urban Area Expansion Scenario	7,358	12.0	12.9	0.5	12.5	13.4

Table D-61 Seminole Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	3,278	6.9	7.9	0.1	7.0	8.0
2015						
Management Practices Scenario - Deferred	3,278	7.0	8.0	0.1	7.0	8.1
Management Practices Scenario - Increased	3,278	6.9	7.9	0.1	7.0	8.0
Economic Margins Scenario	3,278	7.0	7.8	0.1	7.1	7.9
Urban Area Expansion Scenario	3,226	7.1	8.1	0.1	7.2	8.2
2020						
Management Practices Scenario - Deferred	3,278	7.1	8.1	0.1	7.2	8.2
Management Practices Scenario - Increased	3,278	6.8	7.7	0.1	6.8	7.8
Economic Margins Scenario	3,278	7.0	7.8	0.1	7.1	7.9
Urban Area Expansion Scenario	3,255	7.0	8.0	0.1	7.1	8.1
2025						
Management Practices Scenario - Deferred	3,278	7.2	8.3	0.1	7.3	8.3
Management Practices Scenario - Increased	3,278	6.7	7.6	0.1	6.7	7.7
Economic Margins Scenario	3,278	6.1	6.4	0.1	6.2	6.5
Urban Area Expansion Scenario	3,335	7.3	8.3	0.1	7.3	8.3
2030						
Management Practices Scenario - Deferred	3,278	7.3	8.3	0.1	7.3	8.4
Management Practices Scenario - Increased	3,278	6.6	7.6	0.1	6.7	7.7
Economic Margins Scenario	3,278	6.1	6.4	0.1	6.2	6.5
Urban Area Expansion Scenario	3,339	7.3	8.3	0.1	7.4	8.4
2035						
Management Practices Scenario - Deferred	3,278	7.3	8.4	0.1	7.4	8.4
Management Practices Scenario - Increased	3,278	6.6	7.5	0.1	6.7	7.6
Economic Margins Scenario	3,278	6.1	6.4	0.1	6.2	6.5
Urban Area Expansion Scenario	3,180	6.5	7.5	0.1	6.6	7.6

Table D-62 St. Johns Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	24,889	24.9	29.3	0.0	25.0	29.3
2015						
Management Practices Scenario - Deferred	24,889	25.1	29.5	0.0	25.2	29.6
Management Practices Scenario - Increased	24,889	24.6	28.9	0.0	24.7	29.0
Economic Margins Scenario	24,889	24.9	29.3	0.0	25.0	29.3
Urban Area Expansion Scenario	24,889	24.9	29.3	0.0	25.0	29.3
2020						
Management Practices Scenario - Deferred	24,889	25.4	29.8	0.0	25.4	29.8
Management Practices Scenario - Increased	24,889	24.3	28.6	0.0	24.4	28.6
Economic Margins Scenario	24,889	24.9	29.3	0.0	25.0	29.3
Urban Area Expansion Scenario	24,889	24.9	29.3	0.0	25.0	29.3
2025						
Management Practices Scenario - Deferred	24,889	25.6	30.0	0.0	25.6	30.1
Management Practices Scenario - Increased	24,889	23.9	28.1	0.0	24.0	28.2
Economic Margins Scenario	24,889	21.8	24.2	0.0	21.9	24.2
Urban Area Expansion Scenario	24,998	25.1	29.5	0.0	25.1	29.5
2030						
Management Practices Scenario - Deferred	24,889	25.8	30.3	0.0	25.8	30.3
Management Practices Scenario - Increased	24,889	23.6	27.7	0.0	23.6	27.7
Economic Margins Scenario	24,889	21.8	24.2	0.0	21.9	24.2
Urban Area Expansion Scenario	24,959	25.0	29.4	0.0	25.0	29.4
2035						
Management Practices Scenario - Deferred	24,889	26.1	30.6	0.0	26.1	30.7
Management Practices Scenario - Increased	24,889	23.2	27.2	0.0	23.2	27.3
Economic Margins Scenario	24,889	21.8	24.2	0.0	21.9	24.2
Urban Area Expansion Scenario	25,705	26.4	30.9	0.0	26.5	30.9

Table D-63 St. Lucie Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	61,702	89.3	97.0	0.4	89.7	97.4
2015						
Management Practices Scenario - Deferred	61,702	90.3	98.1	0.4	90.6	98.4
Management Practices Scenario - Increased	61,702	87.9	95.5	0.4	88.3	95.8
Economic Margins Scenario	61,702	95.5	96.3	0.4	95.8	96.7
Urban Area Expansion Scenario	61,548	89.7	97.3	0.4	90.0	97.7
2020						
Management Practices Scenario - Deferred	61,702	91.2	99.1	0.4	91.6	99.5
Management Practices Scenario - Increased	61,702	86.5	93.9	0.4	86.8	94.2
Economic Margins Scenario	61,702	95.5	96.3	0.4	95.8	96.7
Urban Area Expansion Scenario	61,809	89.6	97.3	0.4	89.9	97.6
2025						
Management Practices Scenario - Deferred	61,702	92.2	100.2	0.4	92.6	100.5
Management Practices Scenario - Increased	61,702	85.0	92.2	0.4	85.4	92.6
Economic Margins Scenario	61,702	92.0	92.3	0.4	92.4	92.7
Urban Area Expansion Scenario	62,199	90.2	97.9	0.4	90.6	98.3
2030						
Management Practices Scenario - Deferred	61,702	93.1	101.2	0.4	93.5	101.6
Management Practices Scenario - Increased	61,702	83.8	90.9	0.4	84.1	91.3
Economic Margins Scenario	61,702	92.0	92.3	0.4	92.4	92.7
Urban Area Expansion Scenario	62,232	90.3	98.0	0.4	90.6	98.3
2035						
Management Practices Scenario - Deferred	61,702	94.1	102.3	0.4	94.5	102.7
Management Practices Scenario - Increased	61,702	82.3	89.3	0.4	82.6	89.6
Economic Margins Scenario	61,702	92.0	92.3	0.4	92.4	92.7
Urban Area Expansion Scenario	62,295	90.3	98.0	0.4	90.6	98.4

Table D-64 Sumter Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	3,831	7.5	8.5	0.9	8.3	9.4
2015						
Management Practices Scenario - Deferred	3,831	7.5	8.6	0.9	8.4	9.4
Management Practices Scenario - Increased	3,831	7.4	8.4	0.9	8.2	9.3
Economic Margins Scenario	3,831	7.5	8.5	0.9	8.3	9.4
Urban Area Expansion Scenario	3,731	7.4	8.4	0.9	8.3	9.3
2020						
Management Practices Scenario - Deferred	3,831	7.6	8.7	0.9	8.5	9.5
Management Practices Scenario - Increased	3,831	7.3	8.3	0.9	8.2	9.2
Economic Margins Scenario	3,831	7.6	8.6	0.9	8.5	9.5
Urban Area Expansion Scenario	3,879	7.5	8.6	0.9	8.4	9.4
2025						
Management Practices Scenario - Deferred	3,831	7.7	8.7	0.9	8.5	9.6
Management Practices Scenario - Increased	3,831	7.2	8.2	0.9	8.1	9.1
Economic Margins Scenario	3,831	7.5	8.0	0.9	8.4	8.9
Urban Area Expansion Scenario	3,891	7.6	8.6	0.9	8.4	9.5
2030						
Management Practices Scenario - Deferred	3,831	7.7	8.8	0.9	8.6	9.7
Management Practices Scenario - Increased	3,831	7.1	8.1	0.9	8.0	9.0
Economic Margins Scenario	3,831	7.5	8.0	0.9	8.4	8.9
Urban Area Expansion Scenario	3,880	7.5	8.6	0.9	8.4	9.5
2035						
Management Practices Scenario - Deferred	3,831	7.8	8.9	0.9	8.6	9.7
Management Practices Scenario - Increased	3,831	7.0	8.0	0.9	7.9	8.8
Economic Margins Scenario	3,831	7.5	8.0	0.9	8.4	8.9
Urban Area Expansion Scenario	4,034	7.9	8.9	0.9	8.7	9.8

Table D-65 Suwannee Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	23,629	23.7	29.5	1.9	25.6	31.4
2015						
Management Practices Scenario - Deferred	23,629	23.9	29.8	1.9	25.8	31.7
Management Practices Scenario - Increased	23,629	23.4	29.1	1.9	25.3	31.0
Economic Margins Scenario	23,629	23.7	29.5	1.9	25.6	31.4
Urban Area Expansion Scenario	23,629	23.7	29.5	1.9	25.6	31.4
2020						
Management Practices Scenario - Deferred	23,629	24.2	30.1	1.9	26.1	32.0
Management Practices Scenario - Increased	23,629	23.1	28.8	1.9	25.0	30.7
Economic Margins Scenario	23,629	23.7	29.5	1.9	25.6	31.4
Urban Area Expansion Scenario	23,629	23.7	29.5	1.9	25.6	31.4
2025						
Management Practices Scenario - Deferred	23,629	24.4	30.5	1.9	26.3	32.4
Management Practices Scenario - Increased	23,629	22.8	28.4	1.9	24.7	30.3
Economic Margins Scenario	23,629	15.3	15.8	1.9	17.2	17.7
Urban Area Expansion Scenario	23,629	23.7	29.5	1.9	25.6	31.4
2030						
Management Practices Scenario - Deferred	23,629	24.7	30.8	1.9	26.6	32.7
Management Practices Scenario - Increased	23,629	22.5	28.0	1.9	24.4	29.9
Economic Margins Scenario	23,629	15.3	15.8	1.9	17.2	17.7
Urban Area Expansion Scenario	23,629	23.7	29.5	1.9	25.6	31.4
2035						
Management Practices Scenario - Deferred	23,629	24.9	31.1	1.9	26.8	33.0
Management Practices Scenario - Increased	23,629	22.1	27.6	1.9	24.0	29.5
Economic Margins Scenario	23,629	15.3	15.8	1.9	17.2	17.7
Urban Area Expansion Scenario	23,629	23.7	29.5	1.9	25.6	31.4

Table D-66 Taylor Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	144	0.32	0.35	0.05	0.37	0.40
2015						
Management Practices Scenario - Deferred	144	0.32	0.35	0.05	0.37	0.40
Management Practices Scenario - Increased	144	0.31	0.35	0.05	0.36	0.39
Economic Margins Scenario	144	0.32	0.35	0.05	0.37	0.40
Urban Area Expansion Scenario	144	0.32	0.35	0.05	0.37	0.40
2020						
Management Practices Scenario - Deferred	144	0.33	0.36	0.05	0.37	0.41
Management Practices Scenario - Increased	144	0.30	0.33	0.05	0.35	0.38
Economic Margins Scenario	144	0.32	0.35	0.05	0.37	0.40
Urban Area Expansion Scenario	144	0.32	0.35	0.05	0.37	0.40
2025						
Management Practices Scenario - Deferred	144	0.33	0.36	0.05	0.38	0.41
Management Practices Scenario - Increased	144	0.30	0.33	0.05	0.35	0.38
Economic Margins Scenario	144	0.32	0.35	0.05	0.37	0.40
Urban Area Expansion Scenario	144	0.32	0.35	0.05	0.37	0.40
2030						
Management Practices Scenario - Deferred	144	0.33	0.37	0.05	0.38	0.41
Management Practices Scenario - Increased	144	0.29	0.32	0.05	0.34	0.37
Economic Margins Scenario	144	0.32	0.35	0.05	0.37	0.40
Urban Area Expansion Scenario	144	0.32	0.35	0.05	0.37	0.40
2035						
Management Practices Scenario - Deferred	144	0.3	0.4	0.05	0.38	0.42
Management Practices Scenario - Increased	144	0.3	0.3	0.05	0.34	0.37
Economic Margins Scenario	144	0.3	0.4	0.05	0.37	0.40
Urban Area Expansion Scenario	144	0.3	0.4	0.05	0.37	0.40

Table D-67 Union Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	1,207	0.9	1.3	0.1	1.0	1.4
2015						
Management Practices Scenario - Deferred	1,207	0.9	1.3	0.1	1.0	1.4
Management Practices Scenario - Increased	1,207	0.9	1.3	0.1	1.0	1.4
Economic Margins Scenario	1,207	0.9	1.3	0.1	1.0	1.4
Urban Area Expansion Scenario	1,207	0.9	1.3	0.1	1.0	1.4
2020						
Management Practices Scenario - Deferred	1,207	0.9	1.4	0.1	1.0	1.5
Management Practices Scenario - Increased	1,207	0.9	1.3	0.1	1.0	1.4
Economic Margins Scenario	1,207	0.9	1.3	0.1	1.0	1.4
Urban Area Expansion Scenario	1,207	0.9	1.3	0.1	1.0	1.4
2025						
Management Practices Scenario - Deferred	1,207	0.9	1.4	0.1	1.0	1.5
Management Practices Scenario - Increased	1,207	0.9	1.3	0.1	1.0	1.4
Economic Margins Scenario	1,207	0.8	0.8	0.1	0.9	0.9
Urban Area Expansion Scenario	1,207	0.9	1.3	0.1	1.0	1.4
2030						
Management Practices Scenario - Deferred	1,207	0.9	1.4	0.1	1.0	1.5
Management Practices Scenario - Increased	1,207	0.8	1.2	0.1	1.0	1.4
Economic Margins Scenario	1,207	0.8	0.8	0.1	0.9	0.9
Urban Area Expansion Scenario	1,207	0.9	1.3	0.1	1.0	1.4
2035						
Management Practices Scenario - Deferred	1,207	0.9	1.4	0.1	1.1	1.5
Management Practices Scenario - Increased	1,207	0.8	1.2	0.1	0.9	1.3
Economic Margins Scenario	1,207	0.8	0.8	0.1	0.9	0.9
Urban Area Expansion Scenario	1,207	0.9	1.3	0.1	1.0	1.4

Table D-68 Volusia Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	10,501	27.3	30.9	0.5	27.7	31.3
2015						
Management Practices Scenario - Deferred	10,501	27.5	31.2	0.5	28.0	31.7
Management Practices Scenario - Increased	10,501	26.9	30.5	0.5	27.4	30.9
Economic Margins Scenario	10,501	27.4	30.8	0.5	27.9	31.3
Urban Area Expansion Scenario	10,155	26.3	29.8	0.5	26.8	30.2
2020						
Management Practices Scenario - Deferred	10,501	27.9	31.7	0.5	28.4	32.1
Management Practices Scenario - Increased	10,501	26.6	30.1	0.5	27.0	30.6
Economic Margins Scenario	10,501	27.4	30.8	0.5	27.9	31.3
Urban Area Expansion Scenario	10,645	27.7	31.5	0.5	28.2	31.9
2025						
Management Practices Scenario - Deferred	10,501	28.2	31.9	0.5	28.6	32.4
Management Practices Scenario - Increased	10,501	26.1	29.5	0.5	26.5	30.0
Economic Margins Scenario	10,501	26.9	30.0	0.5	27.4	30.5
Urban Area Expansion Scenario	10,450	27.2	30.8	0.5	27.6	31.2
2030						
Management Practices Scenario - Deferred	10,501	28.4	32.2	0.5	28.9	32.7
Management Practices Scenario - Increased	10,501	25.7	29.2	0.5	26.2	29.6
Economic Margins Scenario	10,501	26.9	30.0	0.5	27.4	30.5
Urban Area Expansion Scenario	10,409	27.0	30.6	0.5	27.5	31.0
2035						
Management Practices Scenario - Deferred	10,501	0.0	0.0	0.5	0.5	0.5
Management Practices Scenario - Increased	10,501	0.0	0.0	0.5	0.5	0.5
Economic Margins Scenario	10,501	26.9	30.0	0.5	27.4	30.5
Urban Area Expansion Scenario	10,615	27.6	31.3	0.5	28.1	31.8

Table D-69 Wakulla Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	162	0.3	0.4	0.0	0.3	0.4
2015						
Management Practices Scenario - Deferred	162	0.3	0.4	0.0	0.3	0.4
Management Practices Scenario - Increased	162	0.3	0.3	0.0	0.3	0.4
Economic Margins Scenario	162	0.3	0.4	0.0	0.3	0.4
Urban Area Expansion Scenario	162	0.3	0.4	0.0	0.3	0.4
2020						
Management Practices Scenario - Deferred	162	0.3	0.4	0.0	0.3	0.4
Management Practices Scenario - Increased	162	0.3	0.3	0.0	0.3	0.4
Economic Margins Scenario	162	0.3	0.4	0.0	0.3	0.4
Urban Area Expansion Scenario	162	0.3	0.4	0.0	0.3	0.4
2025						
Management Practices Scenario - Deferred	162	0.3	0.4	0.0	0.3	0.4
Management Practices Scenario - Increased	162	0.3	0.3	0.0	0.3	0.3
Economic Margins Scenario	162	0.3	0.3	0.0	0.3	0.3
Urban Area Expansion Scenario	162	0.3	0.4	0.0	0.3	0.4
2030						
Management Practices Scenario - Deferred	162	0.3	0.4	0.0	0.3	0.4
Management Practices Scenario - Increased	162	0.3	0.3	0.0	0.3	0.3
Economic Margins Scenario	162	0.3	0.3	0.0	0.3	0.3
Urban Area Expansion Scenario	162	0.3	0.4	0.0	0.3	0.4
2035						
Management Practices Scenario - Deferred	162	0.3	0.4	0.0	0.3	0.4
Management Practices Scenario - Increased	162	0.3	0.3	0.0	0.3	0.3
Economic Margins Scenario	162	0.3	0.3	0.0	0.3	0.3
Urban Area Expansion Scenario	162	0.3	0.4	0.0	0.3	0.4

Table D-70 Walton Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	1,393	0.8	1.3	0.3	1.1	1.6
2015						
Management Practices Scenario - Deferred	1,393	0.8	1.4	0.3	1.2	1.7
Management Practices Scenario - Increased	1,393	0.8	1.3	0.3	1.1	1.6
Economic Margins Scenario	1,393	0.8	1.3	0.3	1.1	1.6
Urban Area Expansion Scenario	1,393	0.8	1.3	0.3	1.1	1.6
2020						
Management Practices Scenario - Deferred	1,393	0.8	1.4	0.3	1.2	1.7
Management Practices Scenario - Increased	1,393	0.8	1.3	0.3	1.1	1.6
Economic Margins Scenario	1,393	0.8	1.2	0.3	1.1	1.6
Urban Area Expansion Scenario	1,393	0.8	1.3	0.3	1.1	1.6
2025						
Management Practices Scenario - Deferred	1,393	0.9	1.4	0.3	1.2	1.7
Management Practices Scenario - Increased	1,393	0.8	1.3	0.3	1.1	1.6
Economic Margins Scenario	1,393	0.7	0.7	0.3	1.0	1.0
Urban Area Expansion Scenario	1,393	0.8	1.3	0.3	1.1	1.6
2030						
Management Practices Scenario - Deferred	1,393	0.9	1.4	0.3	1.2	1.7
Management Practices Scenario - Increased	1,393	0.8	1.3	0.3	1.1	1.6
Economic Margins Scenario	1,393	0.7	0.7	0.3	1.0	1.0
Urban Area Expansion Scenario	1,393	0.8	1.3	0.3	1.1	1.6
2035						
Management Practices Scenario - Deferred	1,393	0.9	1.4	0.3	1.2	1.7
Management Practices Scenario - Increased	1,393	0.8	1.2	0.3	1.1	1.6
Economic Margins Scenario	1,393	0.7	0.7	0.3	1.0	1.0
Urban Area Expansion Scenario	1,393	0.8	1.3	0.3	1.1	1.6

Table D-71 Washington Irrigation Demand

Scenario	Acres	Average Annual Crop Irrigation	Dry Year Annual Crop Irrigation	Other Water Demand (Livestock & Aquaculture)	Total Average Annual Crop Irrigation	Total Dry Year Annual Crop Irrigation
		mgd	mgd	mgd	mgd	mgd
2010						
Base Case	1,373	1.0	1.6	0.2	1.1	1.8
2015						
Management Practices Scenario - Deferred	1,373	1.0	1.6	0.2	1.1	1.8
Management Practices Scenario - Increased	1,373	1.0	1.6	0.2	1.1	1.8
Economic Margins Scenario	1,373	1.0	1.6	0.2	1.1	1.8
Urban Area Expansion Scenario	1,373	1.0	1.6	0.2	1.1	1.8
2020						
Management Practices Scenario - Deferred	1,373	1.0	1.6	0.2	1.2	1.8
Management Practices Scenario - Increased	1,373	1.0	1.6	0.2	1.1	1.8
Economic Margins Scenario	1,373	1.0	1.6	0.2	1.1	1.8
Urban Area Expansion Scenario	1,373	1.0	1.6	0.2	1.1	1.8
2025						
Management Practices Scenario - Deferred	1,373	1.0	1.7	0.2	1.2	1.8
Management Practices Scenario - Increased	1,373	0.9	1.6	0.2	1.1	1.7
Economic Margins Scenario	1,373	0.7	0.8	0.2	0.9	0.9
Urban Area Expansion Scenario	1,373	1.0	1.6	0.2	1.1	1.8
2030						
Management Practices Scenario - Deferred	1,373	1.0	1.7	0.2	1.2	1.9
Management Practices Scenario - Increased	1,373	0.9	1.5	0.2	1.1	1.7
Economic Margins Scenario	1,373	0.7	0.8	0.2	0.9	0.9
Urban Area Expansion Scenario	1,373	1.0	1.6	0.2	1.1	1.8
2035						
Management Practices Scenario - Deferred	1,373	1.0	1.7	0.2	1.2	1.9
Management Practices Scenario - Increased	1,373	0.9	1.5	0.2	1.1	1.7
Economic Margins Scenario	1,373	0.7	0.8	0.2	0.9	0.9
Urban Area Expansion Scenario	1,373	1.0	1.6	0.2	1.1	1.8

Appendix D - Full Crop Mix Table

Table D-72 - Crop Category Table

ILG Detailed Crop	WMD Category	USGS Category	FAARM Category	USDA ERS Category used for FSAID
Alfalfa	Vegetables, Melons, and Berries	Ornamentals/Grasses	Pasture and Forage	Vegetables and melons
AsparagusFern	Greenhouse/Nursery	Ornamentals/Grasses	Greenhouse & Shadehouse	Greenhouse, nursery, and floriculture
Aspidistra	Greenhouse/Nursery	Ornamentals/Grasses	Greenhouse & Shadehouse	Greenhouse, nursery, and floriculture
Avocados	Other Fruits and Nuts	Fruit Crops	Large Tree Fruit and Nut	Fruits
Blueberries	Vegetables, Melons, and Berries	Fruit Crops	Fruit & Nut Bushes	Fruits
Blueberries_Peanuts	Vegetables, Melons, and Berries	Fruit Crops	Fruit & Nut Bushes	Fruits
Broccoli	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Broccoli_Cabbage_Cabbage	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Broccoli_Corn	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Corn
Broccoli_Corn_Broccoli	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Corn
Broccoli_Corn_Cabbage	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Corn
Broccoli_Melon_Broccoli	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Broccoli_Peas	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Broccoli_Sorghum_Broccoli	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Broccoli_Sorghum_Greens	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Broccoli_Vegetables	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Cabbage	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Cabbage_Cabbage	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Cabbage_Corn	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Corn
Cabbage_Corn_Cabbage	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Corn
Cabbage_Corn_Greens	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Corn
Cabbage_Greens	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Cabbage_Hay	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Cabbage_Melon	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Cabbage_Sod	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Cabbage_Sorghum	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Cabbage_Sorghum_Cabbage	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Cabbage_Sorghum_Radished	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Cabbage_Sorghum_Sorghum	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Carambola	Other Fruits and Nuts	Fruit Crops	Medium & Small Fruit & Nut Trees	Fruits
Chestnuts	Other Fruits and Nuts	Fruit Crops	Medium & Small Fruit & Nut Trees	Fruits
Citruc	Citrus	Fruit Crops	Citrus	Fruits
Citrus	Citrus	Fruit Crops	Citrus	Fruits
CollardGreens_Corn	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Corn
Container Nursery	Greenhouse/Nursery	Ornamentals/Grasses	Container Plants	Greenhouse, nursery, and floriculture
CoontieFern	Greenhouse/Nursery	Ornamentals/Grasses	Greenhouse & Shadehouse	Greenhouse, nursery, and floriculture
Corn	Field Crops	Field Crops	Row Crops - Standard	Corn
Corn_Corn_Strawberries	Vegetables, Melons, and Berries	Fruit Crops	Row Crops - Delicate	Corn
Corn_Greens	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Corn
Corn_Sorghum_Cabbage	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Corn
Corn_Vegetables	Vegetables, Melons, and Berries	Vegetables	Row Crops - Standard	Corn
Cotton	Field Crops	Field Crops	Row Crops - High Value	Vegetables and melons
Cucumber	Vegetables, Melons, and Berries	Vegetables	Row Crops - Standard	Vegetables and melons
CucumbersFall	Vegetables, Melons, and Berries	Vegetables	Row Crops - Standard	Vegetables and melons

Appendix D - Full Crop Mix Table

Table D-72 - Crop Category Table

ILG Detailed Crop	WMD Category	USGS Category	FAARM Category	USDA ERS Category used for FSAID
CucumbersFall_CucumbersSpring	Vegetables, Melons, and Berries	Vegetables	Row Crops - Standard	Vegetables and melons
CucumbersFall_Strawberries_CucumbersSpring	Vegetables, Melons, and Berries	Fruit Crops	Row Crops - Delicate	Vegetables and melons
CucumbersFall_Strawberries_Melons	Vegetables, Melons, and Berries	Fruit Crops	Row Crops - Delicate	Vegetables and melons
CucumbersFall_Strawberries_PeppersSpring	Vegetables, Melons, and Berries	Fruit Crops	Row Crops - Delicate	Vegetables and melons
CucumbersSpring	Vegetables, Melons, and Berries	Vegetables	Row Crops - Standard	Vegetables and melons
CucumbersSpring_Melons	Vegetables, Melons, and Berries	Fruit Crops	Row Crops - Melons	Vegetables and melons
CucumbersSpring_SmallVegSum_Strawberries	Vegetables, Melons, and Berries	Fruit Crops	Row Crops - Delicate	Vegetables and melons
CucumbersSpring_Strawberries	Vegetables, Melons, and Berries	Fruit Crops	Row Crops - Delicate	Vegetables and melons
DryBeans	Vegetables, Melons, and Berries	Vegetables	Row Crops - Standard	Vegetables and melons
DryBeans_Potatoes	Vegetables, Melons, and Berries	Vegetables	Row Crops - Standard	Vegetables and melons
DryBeans_Strawberries	Vegetables, Melons, and Berries	Fruit Crops	Row Crops - Delicate	Vegetables and melons
DryBeans_SweetCorn	Vegetables, Melons, and Berries	Vegetables	Row Crops - Standard	Corn
Eggplant_Zucchini	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
Fern	Greenhouse/Nursery	Ornamentals/Grasses	Greenhouse & Shadehouse	Greenhouse, nursery, and floriculture
Field Corn	Field Crops	Field Crops	Pasture and Forage	Corn
Field Corn _Grain	Field Crops	Field Crops	Pasture and Forage	Corn
Field Nursery	Greenhouse/Nursery	Ornamentals/Grasses	Greenhouse & Shadehouse	Greenhouse, nursery, and floriculture
FieldNursery	Greenhouse/Nursery	Ornamentals/Grasses	Greenhouse & Shadehouse	Greenhouse, nursery, and floriculture
FUTURE	future crop (as of 2010)	future crop (as of 2010)	future crop (as of 2010)	Farm
GrainCornSweetCornPotatoes	Vegetables, Melons, and Berries	Field Crops	Root Crops	Corn
Grains	Field Crops	Field Crops	Pasture and Forage	Other Grains
Grains_Sod	Field Crops	Field Crops	Sod	Other Grains
Grapes	Vegetables, Melons, and Berries	Fruit Crops	Vineyard Crops (Trellised)	Vegetables and melons
Green Beans	Vegetables, Melons, and Berries	Vegetables	Row Crops - Standard	Vegetables and melons
Greenhouse Nursery	Greenhouse/Nursery	Ornamentals/Grasses	Greenhouse & Shadehouse	Greenhouse, nursery, and floriculture
Greens	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Greens_Cabbage	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Greens_Corn	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Corn
Greens_Corn_Broccoli	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Corn
Greens_Corn_Cabbage	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Corn
Greens_Hay_CropPeas	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
Greens_Sorghum	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Greens_Sorghum_Broccoli	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Greens_Sorghum_Cabbage	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Greens_Sorghum_Cauliflower	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Greens_Sorghum_Cucumber	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Greens_Sorghum_Greens	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Greens_Sorghum_Vegetables	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Greens_Sorghum_Zucchini	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Greens_Vegetables	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Greens_Zucchini	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
Hay	Field Crops	Field Crops	Pasture and Forage	All other crops
Improved Pastures	Pasture	Ornamentals/Grasses	Pasture and Forage	All other crops
Leatherleaf	Greenhouse/Nursery	Ornamentals/Grasses	Greenhouse & Shadehouse	Greenhouse, nursery, and floriculture

Appendix D - Full Crop Mix Table

Table D-72 - Crop Category Table

ILG Detailed Crop	WMD Category	USGS Category	FAARM Category	USDA ERS Category used for FSAID
Ligustrum	Greenhouse/Nursery	Ornamentals/Grasses	Greenhouse & Shadehouse	Greenhouse, nursery, and floriculture
Liriope	Greenhouse/Nursery	Ornamentals/Grasses	Greenhouse & Shadehouse	Greenhouse, nursery, and floriculture
Mangos	Other Fruits and Nuts	Fruit Crops	Large Tree Fruit and Nut	Fruits
Melons	Vegetables, Melons, and Berries	Vegetables	Row Crops - Melons	Vegetables and melons
Melons_Cucumber	Vegetables, Melons, and Berries	Vegetables	Row Crops - Melons	Vegetables and melons
Melons_CucumbersFall	Vegetables, Melons, and Berries	Vegetables	Row Crops - Melons	Vegetables and melons
Melons_Hay	Vegetables, Melons, and Berries	Vegetables	Row Crops - Melons	Vegetables and melons
Melons_PeppersFall	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
Melons_SmallVegSpring_SmallVegFall	Vegetables, Melons, and Berries	Vegetables	Row Crops - Melons	Vegetables and melons
Melons_Strawberries	Vegetables, Melons, and Berries	Fruit Crops	Row Crops - Delicate	Vegetables and melons
Melons_Strawberries_Peas	Vegetables, Melons, and Berries	Fruit Crops	Row Crops - Delicate	Vegetables and melons
Melons_TomatoesFall	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
Melons_TomatoesSpring	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
Melons_TomatoesSpring_TomatoesFall	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
Millet	Field Crops	Field Crops	Pasture and Forage	All other crops
Nursery	Greenhouse/Nursery	Ornamentals/Grasses	Greenhouse & Shadehouse	Greenhouse, nursery, and floriculture
Onions	Field Crops	Vegetables	Row Crops - High Value	Vegetables and melons
Onions_Corn	Field Crops	Vegetables	Row Crops - High Value	Corn
Onions_Corn_Vegetables	Vegetables, Melons, and Berries	Vegetables	Row Crops - High Value	Corn
Onions_Sorghum	Field Crops	Vegetables	Row Crops - High Value	Vegetables and melons
Onions_Sorghum_Vegetables	Vegetables, Melons, and Berries	Vegetables	Row Crops - High Value	Vegetables and melons
Onions_Vegetables	Vegetables, Melons, and Berries	Vegetables	Row Crops - High Value	Vegetables and melons
Onions_Vegetables_Cabbage	Vegetables, Melons, and Berries	Vegetables	Row Crops - High Value	Vegetables and melons
OrientalVegetables	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Vegetables and melons
OrientalVegetables_Corn	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Corn
OrientalVegetables_Corn_Radishes	Vegetables, Melons, and Berries	Vegetables	Row Crops - Leafy Greens & Spices	Corn
Ornamentals	Greenhouse/Nursery	Ornamentals/Grasses	Container Plants	Greenhouse, nursery, and floriculture
Papaya	Other Fruits and Nuts	Fruit Crops	Annual Fruit & Nut	Fruits
Pasture	Pasture	Ornamentals/Grasses	Pasture and Forage	All other crops
Peaches	Other Fruits and Nuts	Fruit Crops	Medium & Small Fruit & Nut Trees	Fruits
Peanuts	Field Crops	Field Crops	Row Crops - Standard	Vegetables and melons
Peanuts_Melons	Vegetables, Melons, and Berries	Vegetables	Row Crops - Melons	Vegetables and melons
PeanutsFall	Field Crops	Field Crops	Row Crops - Standard	Vegetables and melons
PeanutsSpring	Field Crops	Field Crops	Row Crops - Standard	Vegetables and melons
PeanutsSpring_Grains	Field Crops	Field Crops	Row Crops - Standard	Vegetables and melons
PeanutsSpring_PeanutsFall	Field Crops	Field Crops	Row Crops - Standard	Vegetables and melons
Peas	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
Pecans	Other Fruits and Nuts	Fruit Crops	Large Tree Fruit and Nut	Fruits
Peppers	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
Peppers_Spring	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
PeppersFall	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
PeppersFall_CucumbersSpring	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
PeppersFall_Melons	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
PeppersFall_PeppersSpring	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons

Appendix D - Full Crop Mix Table

Table D-72 - Crop Category Table

ILG Detailed Crop	WMD Category	USGS Category	FAARM Category	USDA ERS Category used for FSAID
PeppersFall_Zucchini	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
PeppersSpring_CucumbersSpring	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
PeppersSpring_PeppersFall	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
PeppersSpring_PeppersFall_CucumbersFall	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
PeppersSpring_Strawberries	Vegetables, Melons, and Berries	Fruit Crops	Row Crops - Delicate	Vegetables and melons
PeppersSpring_Zucchini	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
Persimmons	Other Fruits and Nuts	Fruit Crops	Medium & Small Fruit & Nut Trees	Fruits
Pine	Miscellaneous	Miscellaneous	Miscellaneous	All other crops
Pittosporum	Greenhouse/Nursery	Ornamentals/Grasses	Greenhouse & Shadehouse	Greenhouse, nursery, and floriculture
Potatoes	Vegetables, Melons, and Berries	Field Crops	Root Crops	Vegetables and melons
Potatoes_Cabbage	Vegetables, Melons, and Berries	Vegetables	Root Crops	Vegetables and melons
Potatoes_Cantaloupe_Watermelon	Vegetables, Melons, and Berries	Vegetables	Root Crops	Vegetables and melons
Potatoes_Corn	Vegetables, Melons, and Berries	Field Crops	Root Crops	Corn
Potatoes_Corn_Cabbage	Vegetables, Melons, and Berries	Vegetables	Root Crops	Corn
Potatoes_Corn_Cucumber	Vegetables, Melons, and Berries	Vegetables	Root Crops	Corn
Potatoes_Corn_Peas	Vegetables, Melons, and Berries	Vegetables	Root Crops	Corn
Potatoes_Corn_Vegetables	Vegetables, Melons, and Berries	Vegetables	Root Crops	Corn
Potatoes_Grapes_Eggplant	Vegetables, Melons, and Berries	Vegetables	Root Crops	Vegetables and melons
Potatoes_Hay	Vegetables, Melons, and Berries	Field Crops	Root Crops	Vegetables and melons
Potatoes_Pasture	Vegetables, Melons, and Berries	Field Crops	Root Crops	Vegetables and melons
Potatoes_Sod	Vegetables, Melons, and Berries	Field Crops	Root Crops	Vegetables and melons
Potatoes_Sorghum	Vegetables, Melons, and Berries	Field Crops	Root Crops	Vegetables and melons
Potatoes_Sorghum_Broccoli	Vegetables, Melons, and Berries	Vegetables	Root Crops	Vegetables and melons
Potatoes_Sorghum_Cabbage	Vegetables, Melons, and Berries	Vegetables	Root Crops	Vegetables and melons
Potatoes_Sorghum_Cucumber	Vegetables, Melons, and Berries	Vegetables	Root Crops	Vegetables and melons
Potatoes_Sorghum_Greencovercrop	Vegetables, Melons, and Berries	Field Crops	Root Crops	Vegetables and melons
Potatoes_Sorghum_Greens	Vegetables, Melons, and Berries	Vegetables	Root Crops	Vegetables and melons
Potatoes_Sorghum_Mustardgreens	Vegetables, Melons, and Berries	Vegetables	Root Crops	Vegetables and melons
Potatoes_Watermelon	Vegetables, Melons, and Berries	Vegetables	Root Crops	Vegetables and melons
Radishes_Sorghum	Vegetables, Melons, and Berries	Vegetables	Row Crops - Standard	Vegetables and melons
Rice	Field Crops	Field Crops	Aquatic or Flooded Crops	Rice
SmallVeg	Vegetables, Melons, and Berries	Vegetables	Row Crops - Standard	Vegetables and melons
SmallVegFall	Vegetables, Melons, and Berries	Vegetables	Row Crops - Standard	Vegetables and melons
SmallVegFall_Melons	Vegetables, Melons, and Berries	Vegetables	Row Crops - Melons	Vegetables and melons
SmallVegFall_PeppersSpring	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
SmallVegFall_SmallVegSpring	Vegetables, Melons, and Berries	Vegetables	Row Crops - Standard	Vegetables and melons
SmallVegFall_SmallVegSpring_SmallVegSum	Vegetables, Melons, and Berries	Vegetables	Row Crops - Standard	Vegetables and melons
SmallVegFall_SmallVegSum	Vegetables, Melons, and Berries	Vegetables	Row Crops - Standard	Vegetables and melons
SmallVegFall_Strawberries	Vegetables, Melons, and Berries	Fruit Crops	Row Crops - Delicate	Vegetables and melons
SmallVegFall_TomatoesSpring	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
SmallVegSpring	Vegetables, Melons, and Berries	Vegetables	Row Crops - Standard	Vegetables and melons
SmallVegSpring_Strawberries	Vegetables, Melons, and Berries	Fruit Crops	Row Crops - Delicate	Vegetables and melons
SmallVegSpring_TomatoesSpring	Vegetables, Melons, and Berries	Vegetables	Row Crops - Delicate	Vegetables and melons
SmallVegSum	Vegetables, Melons, and Berries	Vegetables	Row Crops - Standard	Vegetables and melons

Appendix E. Crop Planting and Harvesting Assumptions

Table E-1a North Zone Crop Planting and Harvesting Assumptions

North Growing Region	Crop1							Crop2							Crop3							Source[1]
Crop	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	
Alfalfa	1	p	p	1	1	12	31															perennial
AsparagusFern	5	p	p	1	1	12	31															perennial
Aspidistra	8	p	p	1	1	12	31															perennial
Avocados	2	p	p	1	1	12	31															perennial
Blueberries	3	p	p	1	1	12	31															perennial
Blueberries_Peanuts	3	p	p	1	1	12	31															perennial
Broccoli	21	1-Aug	82	8	1	10	22	21	1-Dec	82	12	1	2	21								1
Broccoli_Cabbage_Cabbage	21	1-Aug	82	8	1	10	22	23	1-Dec	97	12	1	3	8								1
Broccoli_Corn	21	1-Aug	82	8	1	10	22	21	1-Dec	82	12	1	2	21	29	1-Mar	77	3	1	5	17	1,2
Broccoli_Corn_Broccoli	21	1-Aug	82	8	1	10	22	21	1-Dec	82	12	1	2	21	29	1-Mar	77	3	1	5	17	1,2
Broccoli_Corn_Cabbage	23	1-Aug	97	8	1	11	6	23	1-Dec	82	12	1	2	21	29	1-Mar	77	3	1	5	17	1,2
Broccoli_Melon_Broccoli	21	1-Aug	82	8	1	10	22	21	1-Dec	82	12	1	2	21	37	15-Mar	90	3	15	6	13	1,3
Broccoli_Peas	21	1-Aug	82	8	1	10	22	21	1-Dec	82	12	1	2	21	44	15-Apr	85	4	15	7	9	1,4
Broccoli_Sorghum_Broccoli	21	1-Sep	82	9	1	11	22	21	1-Dec	82	12	1	2	21	51	1-Mar	150	3	1	7	29	1,5,6
Broccoli_Sorghum_Greens	21	1-Sep	82	9	1	11	22	35	1-Dec	80	12	1	2	19	51	1-Mar	150	3	1	7	29	1,5,6
Broccoli_Vegetables	21	1-Aug	82	8	1	10	22	33	1-Dec	97	12	1	3	8								1
Cabbage	23	1-Aug	97	8	1	11	6	23	1-Dec	97	12	1	3	8								1
Cabbage_Cabbage	23	1-Aug	97	8	1	11	6	23	1-Dec	97	12	1	3	8								1
Cabbage_Corn	23	1-Aug	97	8	1	11	6	29	1-Mar	77	3	1	5	17								1,2
Cabbage_Corn_Cabbage	23	1-Aug	97	8	1	11	6	23	1-Dec	97	12	1	3	8	29	15-Mar	77	3	15	5	31	1,2
Cabbage_Corn_Greens	23	1-Aug	97	8	1	11	6	23	1-Dec	80	12	1	2	19	29	1-Mar	77	3	1	5	17	1,2
Cabbage_Greens	23	1-Aug	97	8	1	11	6	23	1-Dec	80	12	1	2	19								1
Cabbage_Hay	23	1-Aug	97	8	1	11	6	60	15-Nov	90	11	15	2	13								1,5,6
Cabbage_Melon	23	1-Aug	97	8	1	11	6	23	1-Dec	97	12	1	3	8	37	15-Mar	90	3	15	6	13	1,3
Cabbage_Sod	13	p	p	1	1	12	31															perennial
Cabbage_Sorghum	23	1-Dec	97	12	1	3	8	51	1-Apr	180	4	1	9	28								1,5,6
Cabbage_Sorghum_Cabbage	23	1-Aug	97	8	1	11	6	23	15-Nov	97	11	15	2	20	51	1-Mar	135	3	1	7	14	1,5,6
Cabbage_Sorghum_Radished	23	1-Sep	97	9	1	12	7	47	1-Jan	30	1	1	1	31	51	1-Mar	150	3	1	7	29	1,5,6,7
Cabbage_Sorghum_Sorghum	23	1-Dec	97	12	1	3	8	51	1-Apr	180	4	1	9	28								1,5,6
Carambola	4	p	p	1	1	12	31															perennial
Chestnuts	12	p	p	1	1	12	31															perennial
Citrus	4	p	p	1	1	12	31															perennial
CollardGreens_Corn	23	1-Aug	80	8	1	10	20	23	1-Dec	80	12	1	2	19	29	1-Mar	77	3	1	5	17	1,2
Container Nursery	8	p	p	1	1	12	31															perennial
CoontieFern	5	p	p	1	1	12	31															perennial
Corn	29	1-Mar	77	3	1	5	17															2

Appendix E. Crop Planting and Harvesting Assumptions

Table E-1a North Zone Crop Planting and Harvesting Assumptions (con't)

North Growing Region	Crop1							Crop2							Crop3							Source[1]
Crop	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	
Corn_Corn_Strawberries	55	15-Oct	240	10	15	6	12															2,8, 9
Corn_Greens	29	1-Mar	77	3	1	5	17	23	1-Aug	80	8	1	10	20	23	1-Dec	80	12	1	2	19	2,1
Corn_Sorghum_Cabbage	29	14-Feb	77	2	14	5	2	51	15-May	150	5	15	10	12	23	1-Nov	97	11	1	2	6	2,5,6,1
Corn_Vegetables	29	1-Mar	77	3	1	5	17	33	1-Aug	97	8	1	11	6								2,1
Cotton	30	1-May	167	5	1	10	15															10
Cucumber	31	1-Mar	52	3	1	4	22	31	1-Aug	52	8	1	9	22								3
CucumbersFall	31	1-Jul	52	7	1	8	22	31	31-Aug	52	8	31	10	22								3
CucumbersFall_CucumbersSpring	31	1-Mar	52	3	1	4	22	31	1-Aug	52	8	1	9	22								3
CucumbersFall_Strawberries_CucumbersSpring	31	1-Aug	52	8	1	9	22	55	15-Oct	240	10	15	6	12								3,9,8
CucumbersFall_Strawberries_Melons	31	1-Aug	52	8	1	9	22	55	15-Oct	240	10	15	6	12								3,9,8
CucumbersFall_Strawberries_PeppersSpring	31	1-Aug	52	8	1	9	22	55	15-Oct	240	10	15	6	12								3,9,8,11
CucumbersSpring	31	15-Feb	52	2	15	4	8	31	15-Apr	52	4	15	6	6								3
CucumbersSpring_Melons	31	15-Feb	52	2	15	4	8	37	15-Apr	90	4	15	7	14								3
CucumbersSpring_SmallVegSum_Strawberries	55	15-Oct	240	10	15	6	12															3,9,8
CucumbersSpring_Strawberries	55	15-Oct	240	10	15	6	12															3,9,8
DryBeans	19	1-Apr	70	4	1	6	10	19	15-Aug	70	8	15	10	24								3,9,8
DryBeans_Potatoes	19	15-Aug	70	8	15	10	24	46	15-Jan	97	1	15	4	22								4,12
DryBeans_Strawberries	19	15-Aug	70	8	15	10	24	55	1-Nov	240	11	1	6	29								4,9,8
DryBeans_SweetCorn	19	15-Aug	70	8	15	10	24	29	1-Mar	77	3	1	5	17								4,2
Eggplant_Zucchini	32	15-Aug	100	8	15	11	23	54	1-Mar	45	3	1	4	15								13,3
Fern	5	p	p	1	1	12	31															perennial
Field Corn	28	1-Apr	135	4	1	8	14															14,10
Field Corn _Grain	28	1-Apr	135	4	1	8	14	49	15-Nov	90	11	15	2	13								14,10,5,6
Field Nursery	9	p	p	1	1	12	31															perennial
GrainCornSweetCornPotatoes	28	8-May	120	5	8	9	5	29	12-Sep	90	9	12	12	11	46	1-Jan	120	1	1	5	1	14,10
Grains	49	15-Nov	90	11	15	2	13															5,6
Grains_Sod	13	p	p	1	1	12	31															perennial
Grapes	7	p	p	1	1	12	31															perennial
Green Beans	18	15-Mar	60	3	15	5	14	18	15-Aug	60	8	15	10	14								4
Greenhouse Nursery	8	p	p	1	1	12	31															perennial
Greens	35	1-Aug	80	8	1	10	20	35	1-Dec	80	12	1	2	19								1
Greens_Cabbage	23	1-Aug	97	8	1	11	6	23	1-Dec	80	12	1	2	19								1
Greens_Corn	29	1-Mar	77	3	1	5	17	23	1-Aug	80	8	1	10	20	23	1-Dec	80	12	1	2	19	1,2
Greens_Corn_Broccoli	23	1-Aug	80	8	1	10	20	21	1-Dec	82	12	1	2	21	29	1-Mar	77	3	1	5	17	1,2
Greens_Corn_Cabbage	23	1-Aug	80	8	1	10	20	23	1-Nov	97	11	1	2	6	29	1-Mar	77	3	1	5	17	1,2
Greens_Hay_CropPeas	23	1-Aug	80	8	1	10	20	60	15-Nov	90	11	15	2	13	44	15-Apr	85	4	15	7	9	1,5,6,4

Appendix E. Crop Planting and Harvesting Assumptions

Table E-1a North Zone Crop Planting and Harvesting Assumptions (con't)

North Growing Region	Crop1							Crop2							Crop3							Source[1]
Crop	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	
Greens_Sorghum	23	1-Dec	80	12	1	2	19	51	1-Apr	180	4	1	9	28								1,5,6
Greens_Sorghum_Broccoli	23	1-Aug	80	8	1	10	20	21	1-Dec	82	12	1	2	21	51	1-Mar	135	3	1	7	14	1,5,6
Greens_Sorghum_Cabbage	23	15-Aug	80	8	15	11	3	23	1-Dec	97	12	1	3	8	51	15-Mar	135	3	15	7	28	1,5,6
Greens_Sorghum_Cauliflower	23	1-Aug	80	8	1	10	20	25	15-Nov	82	11	15	2	5	51	1-Mar	135	3	1	7	14	1,5,6
Greens_Sorghum_Cucumber	31	1-Aug	52	8	1	9	22	23	1-Dec	80	12	1	2	19	51	1-Mar	135	3	1	7	14	1,5,6,3
Greens_Sorghum_Greens	23	1-Aug	80	8	1	10	20	23	1-Dec	80	12	1	2	19	51	1-Mar	135	3	1	7	14	1,5,6
Greens_Sorghum_Vegetables	33	1-Aug	97	8	1	11	6	23	1-Dec	80	12	1	2	19	51	1-Mar	135	3	1	7	14	1,5,6
Greens_Sorghum_Zucchini	54	1-Aug	45	8	1	9	15	23	1-Dec	80	12	1	2	19	51	1-Mar	135	3	1	7	14	1,5,6,3
Greens_Zucchini	54	1-Aug	45	8	1	9	15	23	1-Dec	80	12	1	2	19	54	1-Mar	45	3	1	4	15	1,3
Hay	10	p	p	1	1	12	31															perennial
Hay_AFO	10	p	p	1	1	12	31															perennial
Improved Pastures	10	p	p	1	1	12	31															perennial
Leatherleaf	5	p	p	1	1	12	31															perennial
Ligustrum	8	p	p	1	1	12	31															perennial
Liriope	8	p	p	1	1	12	31															perennial
Mangos	11	p	p	1	1	12	31															perennial
Melons	37	15-Mar	90	3	15	6	13															3
Melons_Cucumber	31	15-Feb	52	2	15	4	8	37	15-Apr	90	4	15	7	14								3
Melons_CucumbersFall	37	15-Mar	90	3	15	6	13	31	1-Aug	52	8	1	9	22								3
Melons_Hay	37	15-Mar	90	3	15	6	13	60	15-Nov	90	11	15	2	13								3,5,6
Melons_PeppersFall	37	15-Mar	90	3	15	6	13	45	1-Sep	70	9	1	11	10								3,11
Melons_SmallVegSpring_SmallVegFall	37	15-Mar	90	3	15	6	13	33	1-Aug	97	8	1	11	6	33	1-Dec	97	12	1	3	8	3,1
Melons_Strawberries	55	15-Oct	240	10	15	6	12															3,9,8
Melons_Strawberries_Peas	55	15-Oct	240	10	15	6	12															3,9,8,4
Melons_TomatoesFall	37	15-Mar	90	3	15	6	13	59	15-Jul	80	7	15	10	3								3,15
Melons_TomatoesSpring	37	15-Mar	90	3	15	6	13	59	15-Jul	80	7	15	10	3								3,15
Melons_TomatoesSpring_TomatoesFall	37	15-Mar	90	3	15	6	13	59	15-Jul	80	7	15	10	3								3,15
Millet	39	1-Mar	180	3	1	8	28															5,6
Nursery	9	p	p	1	1	12	31															perennial
Onions	41	15-Oct	115	10	15	2	7															16
Onions_Corn	41	15-Oct	115	10	15	2	7	29	1-Mar	77	3	1	5	17								16,2
Onions_Corn_Vegetables	41	15-Nov	115	11	15	3	10	29	1-Apr	77	4	1	6	17	33	1-Aug	97	8	1	11	6	16,2,1
Onions_Sorghum	41	15-Oct	115	10	15	2	7	51	1-Apr	180	4	1	9	28								2,5,6
Onions_Sorghum_Vegetables	41	15-Oct	115	10	15	2	7	51	1-Apr	180	4	1	9	28								2,5,6,1
Onions_Vegetables	41	1-Nov	115	11	1	2	24	33	15-Jul	97	7	15	10	20								16,1
Onions_Vegetables_Cabbage	41	1-Nov	115	11	1	2	24	33	15-Jul	97	7	15	10	20								16,1

Appendix E. Crop Planting and Harvesting Assumptions

Table E-1a North Zone Crop Planting and Harvesting Assumptions (con't)

North Growing Region	Crop1							Crop2							Crop3							Source[1]
Crop	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	
OrientalVegetables	23	1-Aug	97	8	1	11	6	23	1-Dec	97	12	1	3	8								1
OrientalVegetables_Corn	23	1-Aug	97	8	1	11	6	29	1-Mar	77	3	1	5	17								1,2
OrientalVegetables_Corn_Radishes	23	1-Aug	97	8	1	11	6	47	15-Nov	30	11	15	12	15	29	1-Mar	77	3	1	5	17	1,2,7
Ornamentals	9	p	p	1	1	12	31															perennial
Other_Groves	4	p	p	1	1	12	31															perennial
Papaya	4	p	p	1	1	12	31															perennial
Pasture	10	p	p	1	1	12	31															perennial
Peaches	11	p	p	1	1	12	31															perennial
Peanuts	43	22-Apr	155	4	22	9	24															10,17,18
Peanuts_Melons	43	22-Apr	155	4	22	9	24															10,17,18,3
PeanutsFall	43	22-Apr	155	4	22	9	24															10,17,18
PeanutsSpring	43	22-Apr	155	4	22	9	24															10,17,18
PeanutsSpring_Grains	43	22-Apr	155	4	22	9	24	49	15-Nov	90	11	15	2	13								10,17,18,5,6
PeanutsSpring_PeanutsFall	43	22-Apr	155	4	22	9	24															10,17,18
Peas	44	1-Jan	70	1	1	3	12	44	15-Apr	85	4	15	7	9								4
Pecans	12	p	p	1	1	12	31															perennial
Peppers	45	1-Sep	70	9	1	11	10	45	15-Feb	70	2	15	4	26								11
Peppers_Spring	45	15-Feb	70	2	15	4	26															11
PeppersFall	45	1-Sep	70	9	1	11	10															11
PeppersFall_CucumbersSpring	45	1-Sep	70	9	1	11	10	31	1-Mar	52	3	1	4	22								11,3
PeppersFall_Melons	45	1-Sep	70	9	1	11	10	37	15-Mar	90	3	15	6	13								11,3
PeppersFall_PeppersSpring	45	1-Sep	70	9	1	11	10	45	15-Feb	70	2	15	4	26								11
PeppersFall_Zucchini	45	1-Sep	70	9	1	11	10	54	1-Mar	45	3	1	4	15								11,3
PeppersSpring_CucumbersSpring	45	15-Feb	70	2	15	4	26	31	1-Aug	52	8	1	9	22								11,3
PeppersSpring_PeppersFall	45	15-Feb	70	2	15	4	26	45	1-Sep	70	9	1	11	10								11
PeppersSpring_PeppersFall_CucumbersFall	45	15-Feb	70	2	15	4	26	45	1-Sep	70	9	1	11	10								11,3
PeppersSpring_Strawberries	55	1-Nov	240	11	1	6	29	45	15-Aug	70	8	15	10	24								11,9,8
PeppersSpring_Zucchini	45	15-Feb	70	2	15	4	26	54	1-Aug	45	8	1	9	15								11,3
Persimmons	11	p	p	1	1	12	31															perennial
Pine	12	p	p	1	1	12	31															perennial
Pittosporum	8	p	p	1	1	12	31															perennial
Potatoes	46	15-Jan	97	1	15	4	22															12
Potatoes_Cabbage	46	15-Jan	97	1	15	4	22	23	1-Aug	97	8	1	11	6								12,1
Potatoes_Cantaloupe_Watermelon	46	1-Jan	97	1	1	4	8	37	15-Apr	90	4	15	7	14								12,3
Potatoes_Corn	46	1-Jan	97	1	1	4	8	29	15-Apr	77	4	15	7	1								12,2
Potatoes_Corn_Cabbage	46	15-Jan	97	1	15	4	22	23	1-Aug	97	8	1	11	6								12,2,1

Appendix E. Crop Planting and Harvesting Assumptions

Table E-1a North Zone Crop Planting and Harvesting Assumptions (con't)

North Growing Region	Crop1							Crop2							Crop3							Source[1]
Crop	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	
Potatoes_Corn_Cucumber	46	15-Jan	97	1	15	4	22	31	1-Aug	52	8	1	9	22								12,2,3
Potatoes_Corn_Peas	46	1-Jan	97	1	1	4	8	44	15-Apr	85	4	15	7	9								12,2,4
Potatoes_Corn_Vegetables	46	15-Jan	97	1	15	4	22	33	1-Aug	97	8	1	11	6								12,2,1
Potatoes_Grapes_Eggplant	46	15-Jan	97	1	15	4	22	32	15-Aug	100	8	15	11	23								12,13
Potatoes_Hay	46	15-Jan	97	1	15	4	22	60	1-Oct	90	10	1	12	30								12,5,6
Potatoes_Pasture	10	p	p	1	1	12	31															perennial
Potatoes_Sod	13	p	p	1	1	12	31															perennial
Potatoes_Sorghum	46	1-Jan	97	1	1	4	8	51	15-Apr	150	4	15	9	12								12,5,6
Potatoes_Sorghum_Broccoli	46	1-Jan	97	1	1	4	8	51	15-Apr	150	4	15	9	12	21	1-Oct	82	10	1	12	22	12,5,6,1
Potatoes_Sorghum_Cabbage	46	1-Jan	97	1	1	4	8	51	15-Apr	135	4	15	8	28	23	15-Sep	97	9	15	12	21	12,5,6,1
Potatoes_Sorghum_Cucumber	46	1-Jan	97	1	1	4	8	51	15-Apr	150	4	15	9	12								12,5,6,3
Potatoes_Sorghum_Greencovercrop	46	1-Jan	97	1	1	4	8	51	15-Apr	150	4	15	9	12								12,5,6
Potatoes_Sorghum_Greens	46	1-Jan	97	1	1	4	8	51	15-Apr	135	4	15	8	28	23	15-Sep	80	9	15	12	4	12,5,6,1
Potatoes_Sorghum_Mustardgreens	46	1-Jan	97	1	1	4	8	51	15-Apr	135	4	15	8	28	23	15-Sep	80	9	15	12	4	12,5,6,1
Potatoes_Watermelon	46	1-Jan	97	1	1	4	8	37	15-Apr	90	4	15	7	14								12,3
Radishes_Sorghum	47	1-Feb	30	2	1	3	3	51	1-Apr	180	4	1	9	28	47	15-Nov	30	11	15	12	15	7,5,6
Rice	48	15-Apr	125	4	15	8	18															10
SmallVeg	33	1-Aug	97	8	1	11	6	33	1-Dec	97	12	1	3	8								1
SmallVegFall	33	1-Aug	97	8	1	11	6	33	1-Dec	97	12	1	3	8								1
SmallVegFall_Melons	33	1-Aug	97	8	1	11	6	33	1-Dec	97	12	1	3	8	37	15-Mar	90	3	15	6	13	1,3
SmallVegFall_PeppersSpring	33	1-Aug	97	8	1	11	6	45	15-Feb	70	2	15	4	26								1,11
SmallVegFall_SmallVegSpring	33	1-Aug	97	8	1	11	6	33	1-Dec	97	12	1	3	8								1
SmallVegFall_SmallVegSpring_SmallVegSum	33	1-Aug	97	8	1	11	6	33	1-Dec	97	12	1	3	8								1
SmallVegFall_SmallVegSum	33	1-Aug	97	8	1	11	6	33	1-Dec	97	12	1	3	8								1
SmallVegFall_Strawberries	33	15-Jul	97	7	15	10	20	55	1-Nov	240	11	1	6	29								1,9,8
SmallVegFall_TomatoesSpring	33	1-Aug	97	8	1	11	6	33	1-Dec	97	12	1	3	8	59	15-Mar	80	3	15	6	3	1,15
SmallVegSpring	33	1-Aug	97	8	1	11	6	33	1-Dec	97	12	1	3	8								1
SmallVegSpring_Strawberries	33	15-Jul	97	7	15	10	20	55	1-Nov	240	11	1	6	29								1,9,8
SmallVegSpring_TomatoesSpring	33	1-Aug	97	8	1	11	6	33	1-Dec	97	12	1	3	8	59	15-Mar	80	3	15	6	3	1,15
SmallVegSum	33	1-Aug	97	8	1	11	6	33	1-Dec	97	12	1	3	8								1
SmallVegSum_Strawberries	33	15-Jul	97	7	15	10	20	55	1-Nov	240	11	1	6	29								1,9,8
Sod	13	p	p	1	1	12	31															perennial
Sod Farms	13	p	p	1	1	12	31															perennial
Sod_Corn	13	p	p	1	1	12	31															perennial
Sod_Corn_Sod	13	p	p	1	1	12	31															perennial
Sod_Greens	13	p	p	1	1	12	31															perennial

Appendix E. Crop Planting and Harvesting Assumptions

Table E-1a North Zone Crop Planting and Harvesting Assumptions (con't)

North Growing Region	Crop1							Crop2							Crop3							Source[1]
Crop	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	
Sod_PeanutsSpring	13	p	p	1	1	12	31															perennial
Sod_Potato	13	p	p	1	1	12	31															perennial
Sod_Sorghum	13	p	p	1	1	12	31															perennial
Sorghum	51	1-Apr	180	4	1	9	28															5,6
Sorghum_Cabbage	23	1-Dec	97	12	1	3	8	51	1-Apr	180	4	1	9	28								5,6,1
Sorghum_Corn_Cabbage	23	1-Dec	97	12	1	3	8	51	1-Apr	180	4	1	9	28								5,6,2,1
Sorghum_Greens	23	1-Dec	80	12	1	2	19	51	1-Apr	180	4	1	9	28								5,6,1
Sorghum_MixedVegetables	33	1-Dec	97	12	1	3	8	51	1-Apr	150	4	1	8	29								5,6,1
Sorghum_Sorghum_Broccoli	21	1-Sep	82	9	1	11	22	21	1-Dec	82	12	1	2	21	51	1-Mar	150	3	1	7	29	5,6,1
Sorghum_Sorghum_Cabbage	23	1-Dec	97	12	1	3	8	51	1-Apr	180	4	1	9	28								5,6,1
Sorghum_Sorghum_Greens	23	1-Dec	80	12	1	2	19	51	1-Apr	180	4	1	9	28								5,6,1
Sorghum_Turnips	50	1-Feb	50	2	1	3	23	51	1-Apr	180	4	1	9	28								5,6,1
Soybeans	52	15-May	140	5	15	10	2															19,6
Specialty Farms	50	1-Aug	97	8	1	11	6	50	1-Dec	97	12	1	3	8								1
Specialty_Farms	50	1-Aug	97	8	1	11	6	50	1-Dec	97	12	1	3	8								1
Spinach_Corn	53	15-Sep	55	9	15	11	9	53	1-Dec	55	12	1	1	25	29	1-Mar	77	3	1	5	17	16,2
Spinach_RedPeppers_CollardGreens	45	1-Sep	70	9	1	11	10	23	1-Dec	80	12	1	2	19	53	1-Mar	55	3	1	4	25	16,11,1
Squash	54	1-Mar	45	3	1	4	15	54	1-Aug	45	8	1	9	15								3
Squash_Vegetables	54	1-Mar	45	3	1	4	15	33	1-Aug	97	8	1	11	6								3,1
Strawberries	55	15-Oct	240	10	15	6	12															9,8
Strawberries_Corn	55	15-Oct	240	10	15	6	12															9,8,2
Strawberries_CucumbersFall	55	15-Oct	240	10	15	6	12	31	1-Aug	52	8	1	9	22								9,8,3
Strawberries_CucumbersSpring	55	15-Oct	240	10	15	6	12	31	1-Aug	52	8	1	9	22								9,8,3
Strawberries_Eggplant	55	15-Nov	240	11	15	7	13															9,8,13
Strawberries_GreenBeans	55	1-Nov	240	11	1	6	29	18	15-Aug	60	8	15	10	14								9,8,4
Strawberries_Melons	55	15-Oct	240	10	15	6	12															9,8,3
Strawberries_Peas	55	15-Oct	240	10	15	6	12															9,8,4
Strawberries_Peppers	55	1-Nov	240	11	1	6	29	45	15-Aug	70	8	15	10	24								9,8,11
Strawberries_PeppersFall	55	1-Nov	240	11	1	6	29	45	15-Aug	70	8	15	10	24								9,8,11
Strawberries_PeppersSpring	55	1-Nov	240	11	1	6	29	45	15-Aug	70	8	15	10	24								9,8,11
Strawberries_SmallVegSpring	55	15-Oct	240	10	15	6	12															9,8,1
Strawberries_Sorghum_Strawberries	55	15-Oct	240	10	15	6	12															9,8,5,6
Strawberries_TomatoesFall	55	15-Oct	240	10	15	6	12	59	15-Jul	80	7	15	10	3								9,8,15
Strawberries_TomatoesSpring_PeppersFall	55	1-Nov	240	11	1	6	29	45	15-Aug	70	8	15	10	24								9,8,15,11
Strawberries_Zucchini	55	15-Oct	240	10	15	6	12	54	1-Aug	45	8	1	9	15								9,8,3
Sugar Cane	14	p	p	1	1	12	31															perennial

Appendix E. Crop Planting and Harvesting Assumptions

Table E-1a North Zone Crop Planting and Harvesting Assumptions (con't)

North Growing Region	Crop1							Crop2							Crop3							Source[1]
Crop	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	
Sweet Corn	29	1-Mar	77	3	1	5	17															2
Sweet Corn_PeanutsFall	29	1-Mar	77	3	1	5	17	43	1-Jun	155	6	1	11	3								2,10,17,18
Tobacco	58	15-Feb	240	2	15	10	13															20
Tomatoes	59	15-Jul	80	7	15	10	3	59	1-Mar	80	3	1	5	20								15
TomatoesFall	59	15-Jul	80	7	15	10	3	59	1-Mar	80	3	1	5	20								15
TomatoesFall_Melons	59	15-Jul	80	7	15	10	3	37	15-Mar	90	3	15	6	13								15,3
TomatoesFall_Strawberries	59	15-Jul	80	7	15	10	3	55	15-Oct	240	10	15	6	12								15,9,8
TomatoesFall_TomatoesSpring	59	15-Jul	80	7	15	10	3	59	1-Mar	80	3	1	5	20								15
TomatoesFall_TomatoesSpring_PeanutsSpring	59	15-Jul	80	7	15	10	3	59	1-Mar	80	3	1	5	20								15,10,17,18
TomatoesSpring	59	15-Jul	80	7	15	10	3	59	1-Mar	80	3	1	5	20								15
TomatoesSpring_CucumbersFall	59	1-Mar	80	3	1	5	20	31	1-Aug	52	8	1	9	22								15,3
TomatoesSpring_DryBeans	59	1-Mar	80	3	1	5	20	19	15-Aug	70	8	15	10	24								15,4
TomatoesSpring_Melons	59	15-Jul	80	7	15	10	3	37	15-Mar	90	3	15	6	13								15,3
TomatoesSpring_PeppersFall	59	1-Mar	80	3	1	5	20	45	1-Sep	70	9	1	11	10								15,11
TomatoesSpring_Strawberries	59	15-Jul	80	7	15	10	3	55	15-Oct	240	10	15	6	12								15,9,8
Vegetables	33	1-Aug	97	8	1	11	6	23	1-Dec	97	12	1	3	8								1
Vegetables_Cabbage	33	1-Aug	97	8	1	11	6	23	1-Dec	97	12	1	3	8								1
Vegetables_Corn_Vegetables	29	1-Mar	77	3	1	5	17	33	1-Aug	97	8	1	11	6								1,2
Vegetables_Greens	33	1-Aug	97	8	1	11	6	23	1-Dec	80	12	1	2	19								1
Vegetables_Radishes	33	1-Aug	97	8	1	11	6	47	15-Nov	30	11	15	12	15	47	1-Feb	30	2	1	3	3	1,7
Vegetables_Sorghum	33	1-Dec	97	12	1	3	8	51	1-Apr	150	4	1	8	29								1,5,6
Watermelon	37	15-Mar	90	3	15	6	13															3
Watermelon_MixedVegetables	37	15-Mar	90	3	15	6	13	33	1-Aug	97	8	1	11	6	33	1-Dec	97	12	1	3	8	3,1
Watermelon_MixedVegetables_Cucumber	37	15-Mar	90	3	15	6	13	33	1-Aug	97	8	1	11	6	33	1-Dec	97	12	1	3	8	3,1
Watermelon_MixedVegetables_Watermelon	37	15-Mar	90	3	15	6	13	33	1-Aug	97	8	1	11	6	33	1-Dec	97	12	1	3	8	3,1
Watermelon_Pumpkin	37	15-Mar	90	3	15	6	13	54	1-Aug	45	8	1	9	15								3
Watermelon_Sod_Potato	13	p	p	1	1	12	31															perennial
Zucchini	54	1-Mar	45	3	1	4	15	54	1-Aug	45	8	1	9	15								3
Zucchini_DryBeans_PeppersSpring	54	1-Mar	45	3	1	4	15	19	15-Aug	70	8	15	10	24								3,4,11
Zucchini_Eggplant	54	1-Mar	45	3	1	4	15	32	15-Aug	100	8	15	11	23								3,13
Zucchini_GreenBeans_Melons	54	1-Mar	45	3	1	4	15	18	15-Aug	60	8	15	10	14								3,4
Zucchini_Melons	37	15-Mar	90	3	15	6	13	54	1-Aug	45	8	1	9	15								3
Zucchini_Peas	44	1-Jan	70	1	1	3	12	54	1-Apr	45	4	1	5	16								3,4
Zucchini_PeppersFall	54	1-Mar	45	3	1	4	15	45	1-Sep	70	9	1	11	10								3,11
Zucchini_Sweet Corn	54	1-Aug	45	8	1	9	15	29	1-Mar	77	3	1	5	17								3,2
Zucchini_TomatoesSpring	54	1-Aug	45	8	1	9	15	59	1-Mar	80	3	1	5	20								3,15

Table E-1a North Zone Crop Planting and Harvesting Assumptions (con't)

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Appendix E. Crop Planting and Harvesting Assumptions

Table E-1b Central Zone Crop Planting and Harvesting Assumptions

Central Growing Region	Crop1							Crop2							Crop3							
Crop	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	Source[1]
Alfalfa	1	p	p	1	1	12	31															perennial
AsparagusFern	5	p	p	1	1	12	31															perennial
Aspidistra	8	p	p	1	1	12	31															perennial
Avocados	2	p	p	1	1	12	31															perennial
Blueberries	3	p	p	1	1	12	31															perennial
Blueberries_Peanuts	3	p	p	1	1	12	31															perennial
Broccoli	21	1-Sep	82	9	1	11	22	21	1-Jan	82	1	1	3	24								1
Broccoli_Cabbage_Cabbage	21	1-Sep	82	9	1	11	22	23	1-Jan	97	1	1	4	8								1
Broccoli_Corn	21	1-Sep	82	9	1	11	22	29	1-Mar	77	3	1	5	17								1,2
Broccoli_Corn_Broccoli	21	1-Sep	82	9	1	11	22	29	1-Mar	77	3	1	5	17								1,2
Broccoli_Corn_Cabbage	21	1-Sep	82	9	1	11	22	29	1-Mar	77	3	1	5	17								1,2
Broccoli_Melon_Broccoli	21	1-Sep	82	9	1	11	22	37	15-Feb	90	2	15	5	16								1,3
Broccoli_Peas	21	1-Sep	82	9	1	11	22	44	1-Mar	85	3	1	5	25								1,4
Broccoli_Sorghum_Broccoli	21	1-Oct	82	10	1	12	22	21	1-Jan	82	1	1	3	24	51	1-Apr	150	4	1	8	29	1,5,6
Broccoli_Sorghum_Greens	21	1-Sep	82	9	1	11	22	35	1-Dec	80	12	1	2	19	51	15-Mar	150	3	15	8	12	1,5,6
Broccoli_Vegetables	21	1-Sep	82	9	1	11	22	33	1-Jan	97	1	1	4	8								1
Cabbage	23	1-Sep	97	9	1	12	7	23	1-Jan	97	1	1	4	8								1
Cabbage_Cabbage	23	1-Sep	97	9	1	12	7	23	1-Jan	97	1	1	4	8								1
Cabbage_Corn	23	1-Sep	97	9	1	12	7	29	1-Mar	77	3	1	5	17								1,2
Cabbage_Corn_Cabbage	23	1-Sep	97	9	1	12	7	29	1-Mar	77	3	1	5	17								1,2
Cabbage_Corn_Greens	23	1-Sep	97	9	1	12	7	23	15-Dec	80	12	15	3	5	29	15-Mar	77	3	15	5	31	1,2
Cabbage_Greens	23	1-Sep	97	9	1	12	7	23	1-Jan	80	1	1	3	22								1
Cabbage_Hay	23	1-Sep	97	9	1	12	7	60	1-Jan	90	1	1	4	1								1,5,6
Cabbage_Melon	23	1-Sep	97	9	1	12	7	37	15-Feb	90	2	15	5	16								1,3
Cabbage_Sod	13	p	p	1	1	12	31															perennial
Cabbage_Sorghum	23	1-Sep	97	9	1	12	7	51	1-Mar	165	3	1	8	13								1,5,6
Cabbage_Sorghum_Cabbage	23	1-Sep	97	9	1	12	7	51	1-Mar	165	3	1	8	13								1,5,6
Cabbage_Sorghum_Radished	23	1-Sep	97	9	1	12	7	47	1-Jan	30	1	1	1	31	51	1-Mar	165	3	1	8	13	1,5,6,7
Cabbage_Sorghum_Sorghum	23	1-Sep	97	9	1	12	7	51	1-Mar	165	3	1	8	13								1,5,6
Carambola	4	p	p	1	1	12	31															perennial
Chestnuts	12	p	p	1	1	12	31															perennial
Citrus	4	p	p	1	1	12	31															perennial
CollardGreens_Corn	23	1-Sep	80	9	1	11	20	23	1-Dec	80	12	1	2	19	29	1-Mar	77	3	1	5	17	1,2
Container Nursery	8	p	p	1	1	12	31															perennial

Appendix E. Crop Planting and Harvesting Assumptions

Table E-1b Central Zone Crop Planting and Harvesting Assumptions (con't)

Central Growing Region	Crop1							Crop2							Crop3							
Crop	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	Source[1]
CoontieFern	5	p	p	1	1	12	31															perennial
Corn	29	1-Mar	77	3	1	5	17															2
Corn_Corn_Strawberries	55	30-Sep	200	9	30	4	18															2,8, 9
Corn_Greens	29	1-Mar	77	3	1	5	17	23	1-Sep	80	9	1	11	20								2,1
Corn_Sorghum_Cabbage	29	15-Jan	77	1	15	4	2	51	15-Apr	150	4	15	9	12	23	1-Oct	97	10	1	1	6	2,5,6,1
Corn_Vegetables	29	1-Mar	77	3	1	5	17	33	1-Sep	97	9	1	12	7								2,1
Cotton	30	1-May	167	5	1	10	15															10
Cucumber	31	1-Feb	52	2	1	3	25	31	15-Sep	52	9	15	11	6								3
CucumbersFall	31	15-Sep	52	9	15	11	6															3
CucumbersFall_CucumbersSpring	31	15-Sep	52	9	15	11	6	31	1-Feb	52	2	1	3	25								3
CucumbersFall_Strawberries_CucumbersSpring	55	30-Sep	200	9	30	4	18															3,9,8
CucumbersFall_Strawberries_Melons	55	30-Sep	200	9	30	4	18															3,9,8
CucumbersFall_Strawberries_PeppersSpring	55	30-Sep	200	9	30	4	18															3,9,8,11
CucumbersSpring	31	15-Jan	52	1	15	3	8	31	15-Mar	52	3	15	5	6								3
CucumbersSpring_Melons	31	15-Jan	52	1	15	3	8	37	15-Mar	90	3	15	6	13								3
CucumbersSpring_SmallVegSum_Strawberries	55	30-Sep	200	9	30	4	18															3,9,8
CucumbersSpring_Strawberries	55	30-Sep	200	9	30	4	18															3,9,8
DryBeans	19	1-Mar	70	3	1	5	10	19	1-Sep	70	9	1	11	10								3,9,8
DryBeans_Potatoes	19	1-Sep	70	9	1	11	10	46	1-Jan	97	1	1	4	8								4,12
DryBeans_Strawberries	55	30-Sep	200	9	30	4	18															4,9,8
DryBeans_SweetCorn	19	1-Sep	70	9	1	11	10	29	1-Mar	77	3	1	5	17								4,2
Eggplant_Zucchini	32	15-Aug	100	8	15	11	23	54	1-Feb	45	2	1	3	18								13,3
Fern	5	p	p	1	1	12	31															perennial
Field Corn	28	1-Apr	135	4	1	8	14															14,10
Field Corn _Grain	28	1-Apr	135	4	1	8	14	49	15-Nov	90	11	15	2	13								14,10,5,6
Field Nursery	9	p	p	1	1	12	31															perennial
GrainCornSweetCornPotatoes	28	1-Apr	135	4	1	8	14	29	12-Sep	90	9	12	12	11	46	1-Jan	120	1	1	5	1	14,10
Grains	49	15-Nov	90	11	15	2	13															5,6
Grains_Sod	13	p	p	1	1	12	31															perennial
Grapes	7	p	p	1	1	12	31															perennial
Green Beans	18	1-Mar	60	3	1	4	30	18	15-Aug	60	8	15	10	14								4
Greenhouse Nursery	8	p	p	1	1	12	31															perennial
Greens	35	1-Sep	80	9	1	11	20	35	1-Jan	80	1	1	3	22								1
Greens_Cabbage	23	1-Sep	97	9	1	12	7	23	1-Jan	80	1	1	3	22								1
Greens_Corn	29	1-Mar	77	3	1	5	17	23	1-Sep	80	9	1	11	20								1,2
Greens_Corn_Broccoli	23	1-Sep	80	9	1	11	20	29	1-Mar	77	3	1	5	17								1,2

Appendix E. Crop Planting and Harvesting Assumptions

Table E-1b Central Zone Crop Planting and Harvesting Assumptions (con't)

Central Growing Region	Crop1							Crop2							Crop3							
Crop	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	Source[1]
Greens_Corn_Cabbage	23	1-Sep	80	9	1	11	20	29	1-Mar	77	3	1	5	17								1,2
Greens_Hay_CropPeas	23	1-Sep	80	9	1	11	20	60	1-Dec	90	12	1	3	1	44	15-Mar	85	3	15	6	8	1,5,6,4
Greens_Sorghum	23	1-Sep	80	9	1	11	20	51	1-Mar	165	3	1	8	13								1,5,6
Greens_Sorghum_Broccoli	23	1-Sep	80	9	1	11	20	21	15-Dec	82	12	15	3	7	51	1-Apr	135	4	1	8	14	1,5,6
Greens_Sorghum_Cabbage	23	15-Sep	80	9	15	12	4	51	1-Mar	180	3	1	8	28								1,5,6
Greens_Sorghum_Cauliflower	23	1-Sep	80	9	1	11	20	21	15-Dec	82	12	15	3	7	51	1-Apr	135	4	1	8	14	1,5,6
Greens_Sorghum_Cucumber	23	1-Sep	80	9	1	11	20	31	15-Jan	52	1	15	3	8	51	1-Apr	135	4	1	8	14	1,5,6,3
Greens_Sorghum_Greens	23	1-Sep	80	9	1	11	20	23	1-Jan	80	1	1	3	22	51	1-Apr	135	4	1	8	14	1,5,6
Greens_Sorghum_Vegetables	23	1-Sep	80	9	1	11	20	33	15-Dec	97	12	15	3	22	51	1-Apr	135	4	1	8	14	1,5,6
Greens_Sorghum_Zucchini	23	1-Sep	80	9	1	11	20	54	1-Feb	45	2	1	3	18	51	1-Apr	135	4	1	8	14	1,5,6,3
Greens_Zucchini	23	1-Sep	80	9	1	11	20	31	1-Feb	52	2	1	3	25								1,3
Hay	10	p	p	1	1	12	31															perennial
Hay_AFO	10	p	p	1	1	12	31															perennial
Improved Pastures	10	p	p	1	1	12	31															perennial
Leatherleaf	5	p	p	1	1	12	31															perennial
Ligustrum	8	p	p	1	1	12	31															perennial
Liriope	8	p	p	1	1	12	31															perennial
Mangos	8	p	p	1	1	12	31															perennial
Melons	37	15-Feb	90	2	15	5	16															3
Melons_Cucumber	37	15-Feb	90	2	15	5	16	31	15-Sep	52	9	15	11	6								3
Melons_CucumbersFall	37	15-Feb	90	2	15	5	16	31	15-Sep	52	9	15	11	6								3
Melons_Hay	37	15-Feb	90	2	15	5	16	60	1-Nov	90	11	1	1	30								3,5,6
Melons_PeppersFall	37	15-Feb	90	2	15	5	16	45	15-Aug	70	8	15	10	24	45	1-Nov	70	11	1	1	10	3,11
Melons_SmallVegSpring_SmallVegFall	37	15-Feb	90	2	15	5	16	33	1-Sep	97	9	1	12	7								3,1
Melons_Strawberries	55	30-Sep	200	9	30	4	18															3,9,8
Melons_Strawberries_Peas	55	30-Sep	200	9	30	4	18															3,9,8,4
Melons_TomatoesFall	37	15-Feb	90	2	15	5	16	59	15-Aug	80	8	15	11	3								3,15
Melons_TomatoesSpring	37	15-Feb	90	2	15	5	16	59	15-Aug	80	8	15	11	3								3,15
Melons_TomatoesSpring_TomatoesFall	37	15-Feb	90	2	15	5	16	59	15-Aug	80	8	15	11	3								3,15
Millet	39	15-Feb	180	2	15	8	14															5,6
Nursery	9	p	p	1	1	12	31															perennial
Onions	41	15-Oct	115	10	15	2	7															16
Onions_Corn	41	15-Oct	115	10	15	2	7	29	1-Mar	77	3	1	5	17								16,2
Onions_Corn_Vegetables	41	15-Oct	115	10	15	2	7	29	1-Mar	77	3	1	5	17								16,2,1
Onions_Sorghum	41	15-Oct	115	10	15	2	7	51	15-Mar	180	3	15	9	11								2,5,6

Appendix E. Crop Planting and Harvesting Assumptions

Table E-1b Central Zone Crop Planting and Harvesting Assumptions (con't)

Central Growing Region	Crop1							Crop2							Crop3							
Crop	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	Source[1]
Onions_Sorghum_Vegetables	41	15-Oct	115	10	15	2	7	51	15-Mar	180	3	15	9	11								2,5,6,1
Onions_Vegetables	41	1-Oct	115	10	1	1	24	33	1-Feb	97	2	1	5	9								16,1
Onions_Vegetables_Cabbage	41	1-Oct	115	10	1	1	24	33	1-Feb	97	2	1	5	9								16,1
OrientalVegetables	23	1-Sep	97	9	1	12	7	23	1-Jan	97	1	1	4	8								1
OrientalVegetables_Corn	23	1-Sep	97	9	1	12	7	29	1-Mar	77	3	1	5	17								1,2
OrientalVegetables_Corn_Radishes	23	1-Sep	97	9	1	12	7	47	15-Jan	30	1	15	2	14	29	1-Mar	77	3	1	5	17	1,2,7
Ornamentals	9	p	p	1	1	12	31															perennial
Other_Groves	4	p	p	1	1	12	31															perennial
Papaya	4	p	p	1	1	12	31															perennial
Pasture	10	p	p	1	1	12	31															perennial
Peaches	11	p	p	1	1	12	31															perennial
Peanuts	43	22-Apr	155	4	22	9	24															10,17,18
Peanuts_Melons	43	22-Apr	155	4	22	9	24	37	15-Jan	90	1	15	4	15								10,17,18,3
PeanutsFall	43	22-Apr	155	4	22	9	24															10,17,18
PeanutsSpring	43	22-Apr	155	4	22	9	24															10,17,18
PeanutsSpring_Grains	43	22-Apr	155	4	22	9	24	49	15-Nov	90	11	15	2	13								10,17,18,5,6
PeanutsSpring_PeanutsFall	43	22-Apr	155	4	22	9	24															10,17,18
Peas	44	15-Nov	70	11	15	1	24	44	1-Mar	85	3	1	5	25								4
Pecans	12	p	p	1	1	12	31															perennial
Peppers	45	15-Aug	70	8	15	10	24	45	1-Nov	70	11	1	1	10	45	15-Jan	70	1	15	3	26	11
Peppers_Spring	45	1-Nov	70	11	1	1	10	45	15-Jan	70	1	15	3	26								11
PeppersFall	45	15-Aug	70	8	15	10	24	45	1-Nov	70	11	1	1	10								11
PeppersFall_CucumbersSpring	45	15-Aug	70	8	15	10	24	45	1-Nov	70	11	1	1	10	31	1-Feb	52	2	1	3	25	11,3
PeppersFall_Melons	45	15-Aug	70	8	15	10	24	45	1-Nov	70	11	1	1	10	37	15-Feb	90	2	15	5	16	11,3
PeppersFall_PeppersSpring	45	15-Aug	70	8	15	10	24	45	1-Nov	70	11	1	1	10	45	15-Jan	70	1	15	3	26	11
PeppersFall_Zucchini	45	15-Aug	70	8	15	10	24	45	1-Nov	70	11	1	1	10	54	1-Feb	45	2	1	3	18	11,3
PeppersSpring_CucumbersSpring	45	1-Nov	70	11	1	1	10	45	15-Jan	70	1	15	3	26								11,3
PeppersSpring_PeppersFall	45	15-Aug	70	8	15	10	24	45	1-Nov	70	11	1	1	10	45	15-Jan	70	1	15	3	26	11
PeppersSpring_PeppersFall_CucumbersFall	45	15-Aug	70	8	15	10	24	45	1-Nov	70	11	1	1	10	45	15-Jan	70	1	15	3	26	11,3
PeppersSpring_Strawberries	55	30-Sep	200	9	30	4	18															11,9,8
PeppersSpring_Zucchini	45	1-Nov	70	11	1	1	10	45	15-Jan	70	1	15	3	26	54	22-Aug	45	8	22	10	6	11,3
Persimmons	11	p	p	1	1	12	31															perennial
Pine	12	p	p	1	1	12	31															perennial
Pittosporum	8	p	p	1	1	12	31															perennial
Potatoes	46	1-Jan	97	1	1	4	8															12
Potatoes_Cabbage	46	1-Jan	97	1	1	4	8	23	1-Aug	97	8	1	11	6								12,1

Appendix E. Crop Planting and Harvesting Assumptions

Table E-1b Central Zone Crop Planting and Harvesting Assumptions (con't)

Central Growing Region	Crop1							Crop2							Crop3							
Crop	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	Source[1]
Potatoes_Cantaloupe_Watermelon	46	1-Jan	97	1	1	4	8															12,3
Potatoes_Corn	46	1-Jan	97	1	1	4	8	29	15-Apr	77	4	15	7	1								12,2
Potatoes_Corn_Cabbage	46	1-Jan	97	1	1	4	8	29	15-Apr	77	4	15	7	1	23	1-Sep	97	9	1	12	7	12,2,1
Potatoes_Corn_Cucumber	46	1-Jan	97	1	1	4	8	29	15-Apr	77	4	15	7	1	31	15-Sep	52	9	15	11	6	12,2,3
Potatoes_Corn_Peas	46	1-Jan	97	1	1	4	8	29	15-Apr	77	4	15	7	1	44	15-Oct	70	10	15	12	24	12,2,4
Potatoes_Corn_Vegetables	46	1-Jan	97	1	1	4	8	29	15-Apr	77	4	15	7	1	33	1-Sep	97	9	1	12	7	12,2,1
Potatoes_Grapes_Eggplant	46	1-Jan	97	1	1	4	8	32	15-Aug	100	8	15	11	23								12,13
Potatoes_Hay	46	15-Jan	97	1	15	4	22	60	1-Oct	90	10	1	12	30								12,5,6
Potatoes_Pasture	10	p	p	1	1	12	31															perennial
Potatoes_Sod	13	p	p	1	1	12	31															perennial
Potatoes_Sorghum	46	1-Jan	97	1	1	4	8	51	15-Apr	150	4	15	9	12								12,5,6
Potatoes_Sorghum_Broccoli	46	1-Jan	97	1	1	4	8	51	15-Apr	150	4	15	9	12	21	1-Oct	82	10	1	12	22	12,5,6,1
Potatoes_Sorghum_Cabbage	46	1-Jan	97	1	1	4	8	51	15-Apr	135	4	15	8	28	23	15-Sep	97	9	15	12	21	12,5,6,1
Potatoes_Sorghum_Cucumber	46	1-Jan	97	1	1	4	8	51	15-Apr	150	4	15	9	12	31	1-Oct	52	10	1	11	22	12,5,6,3
Potatoes_Sorghum_Greencovercrop	46	1-Jan	97	1	1	4	8	51	15-Apr	150	4	15	9	12								12,5,6
Potatoes_Sorghum_Greens	46	1-Jan	97	1	1	4	8	51	15-Apr	150	4	15	9	12	23	1-Oct	80	10	1	12	20	12,5,6,1
Potatoes_Sorghum_Mustardgreens	46	1-Jan	97	1	1	4	8	51	15-Apr	150	4	15	9	12	23	1-Oct	80	10	1	12	20	12,5,6,1
Potatoes_Watermelon	46	1-Jan	97	1	1	4	8															12,3
Radishes_Sorghum	47	1-Sep	30	9	1	10	1	47	15-Nov	30	11	15	12	15	51	15-Mar	180	3	15	9	11	7,5,6
Rice	48	15-Apr	125	4	15	8	18															10
SmallVeg	33	1-Sep	97	9	1	12	7	33	1-Jan	97	1	1	4	8								1
SmallVegFall	33	1-Sep	97	9	1	12	7	33	1-Jan	97	1	1	4	8								1
SmallVegFall_Melons	33	1-Sep	97	9	1	12	7	37	15-Feb	90	2	15	5	16								1,3
SmallVegFall_PeppersSpring	33	1-Sep	97	9	1	12	7	45	15-Jan	70	1	15	3	26								1,11
SmallVegFall_SmallVegSpring	33	1-Sep	97	9	1	12	7	33	1-Jan	97	1	1	4	8								1
SmallVegFall_SmallVegSpring_SmallVegSum	33	1-Sep	97	9	1	12	7	33	1-Jan	97	1	1	4	8								1
SmallVegFall_SmallVegSum	33	1-Sep	97	9	1	12	7	33	1-Jan	97	1	1	4	8								1
SmallVegFall_Strawberries	55	30-Sep	200	9	30	4	18															1,9,8
SmallVegFall_TomatoesSpring	33	1-Sep	97	9	1	12	7	59	15-Jan	80	1	15	4	5								1,15
SmallVegSpring	33	1-Sep	97	9	1	12	7	33	1-Jan	97	1	1	4	8								1
SmallVegSpring_Strawberries	55	30-Sep	200	9	30	4	18															1,9,8
SmallVegSpring_TomatoesSpring	55	30-Sep	200	9	30	4	18	59	15-Jan	80	1	15	4	5								1,15
SmallVegSum	33	1-Sep	97	9	1	12	7	33	1-Jan	97	1	1	4	8								1
SmallVegSum_Strawberries	55	30-Sep	200	9	30	4	18															1,9,8
Sod	13	p	p	1	1	12	31															perennial
Sod Farms	13	p	p	1	1	12	31															perennial

Appendix E. Crop Planting and Harvesting Assumptions

Table E-1b Central Zone Crop Planting and Harvesting Assumptions (con't)

Central Growing Region	Crop1							Crop2							Crop3							
Crop	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	Source[1]
Sod_Corn	13	p	p	1	1	12	31															perennial
Sod_Corn_Sod	13	p	p	1	1	12	31															perennial
Sod_Greens	13	p	p	1	1	12	31															perennial
Sod_PeanutsSpring	13	p	p	1	1	12	31															perennial
Sod_Potato	13	p	p	1	1	12	31															perennial
Sod_Sorghum	13	p	p	1	1	12	31															perennial
Sorghum	51	15-Mar	180	3	15	9	11															5,6
Sorghum_Cabbage	23	1-Sep	97	9	1	12	7	51	1-Mar	165	3	1	8	13								5,6,1
Sorghum_Corn_Cabbage	23	1-Sep	97	9	1	12	7	51	1-Mar	165	3	1	8	13								5,6,2,1
Sorghum_Greens	23	1-Sep	80	9	1	11	20	51	1-Mar	165	3	1	8	13								5,6,1
Sorghum_MixedVegetables	33	1-Oct	97	10	1	1	6	51	15-Mar	180	3	15	9	11								5,6,1
Sorghum_Sorghum_Broccoli	21	1-Oct	82	10	1	12	22	21	1-Jan	82	1	1	3	24	51	1-Apr	150	4	1	8	29	5,6,1
Sorghum_Sorghum_Cabbage	23	1-Sep	97	9	1	12	7	51	1-Mar	165	3	1	8	13								5,6,1
Sorghum_Sorghum_Greens	23	1-Sep	80	9	1	11	20	51	1-Mar	165	3	1	8	13								5,6,1
Sorghum_Turnips	50	1-Feb	50	2	1	3	23	51	1-Apr	150	4	1	8	29	50	1-Oct	50	10	1	11	20	5,6,1
Soybeans	52	15-May	140	5	15	10	2															19,6
Specialty Farms	50	1-Sep	97	9	1	12	7	50	1-Jan	97	1	1	4	8								1
Specialty_Farms	50	1-Sep	97	9	1	12	7	50	1-Jan	97	1	1	4	8								1
Spinach_Corn	53	15-Sep	55	9	15	11	9	53	1-Dec	55	12	1	1	25	29	1-Mar	77	3	1	5	17	16,2
Spinach_RedPeppers_CollardGreens	45	15-Aug	70	8	15	10	24	23	15-Nov	80	11	15	2	3	53	15-Feb	55	2	15	4	11	16,11,1
Squash	54	1-Feb	45	2	1	3	18	54	22-Aug	45	8	22	10	6								3
Squash_Vegetables	54	1-Feb	45	2	1	3	18	33	1-Sep	97	9	1	12	7								3,1
Strawberries	55	30-Sep	200	9	30	4	18															9,8
Strawberries_Corn	55	30-Sep	200	9	30	4	18															9,8,2
Strawberries_CucumbersFall	55	30-Sep	200	9	30	4	18															9,8,3
Strawberries_CucumbersSpring	55	30-Sep	200	9	30	4	18															9,8,3
Strawberries_Eggplant	55	30-Sep	200	9	30	4	18															9,8,13
Strawberries_GreenBeans	55	30-Sep	200	9	30	4	18															9,8,4
Strawberries_Melons	55	30-Sep	200	9	30	4	18															9,8,3
Strawberries_Peas	55	30-Sep	200	9	30	4	18															9,8,4
Strawberries_Peppers	55	1-Nov	200	11	1	5	20	45	15-Aug	70	8	15	10	24								9,8,11
Strawberries_PeppersFall	55	1-Nov	200	11	1	5	20	45	15-Aug	70	8	15	10	24								9,8,11
Strawberries_PeppersSpring	55	1-Nov	200	11	1	5	20	45	15-Aug	70	8	15	10	24								9,8,11
Strawberries_SmallVegSpring	55	30-Sep	200	9	30	4	18															9,8,1
Strawberries_Sorghum_Strawberries	55	30-Sep	200	9	30	4	18															9,8,5,6
Strawberries_TomatoesFall	55	30-Sep	200	9	30	4	18															9,8,15

Appendix E. Crop Planting and Harvesting Assumptions

Table E-1b Central Zone Crop Planting and Harvesting Assumptions (con't)

Central Growing Region	Crop1							Crop2							Crop3							
Crop	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	Source[1]
Strawberries_TomatoesSpring_PeppersFall	55	30-Sep	200	9	30	4	18															9,8,15,11
Strawberries_Zucchini	55	15-Nov	200	11	15	6	3	31	15-Sep	52	9	15	11	6								9,8,3
Sugar Cane	14	p	p	1	1	12	31															perennial
Sweet Corn	29	1-Mar	77	3	1	5	17															2
Sweet Corn_PeanutsFall	29	1-Mar	77	3	1	5	17	43	1-Jun	155	6	1	11	3								2,10,17,18
Tobacco	56	15-Feb	240	2	15	10	13															20
Tomatoes	59	15-Aug	80	8	15	11	3	59	15-Jan	80	1	15	4	5								15
TomatoesFall	59	15-Aug	80	8	15	11	3	59	15-Jan	80	1	15	4	5								15
TomatoesFall_Melons	59	15-Aug	80	8	15	11	3	37	15-Feb	90	2	15	5	16								15,3
TomatoesFall_Strawberries	55	30-Sep	200	9	30	4	18															15,9,8
TomatoesFall_TomatoesSpring	59	15-Aug	80	8	15	11	3	59	15-Jan	80	1	15	4	5								15
TomatoesFall_TomatoesSpring_PeanutsSpring	59	15-Aug	80	8	15	11	3	59	15-Jan	80	1	15	4	5								15,10,17,18
TomatoesSpring	59	15-Aug	80	8	15	11	3	59	15-Jan	80	1	15	4	5								15
TomatoesSpring_CucumbersFall	59	15-Jan	80	1	15	4	5	31	15-Sep	52	9	15	11	6								15,3
TomatoesSpring_DryBeans	59	15-Jan	80	1	15	4	5	19	1-Sep	70	9	1	11	10								15,4
TomatoesSpring_Melons	59	15-Aug	80	8	15	11	3	37	15-Feb	90	2	15	5	16								15,3
TomatoesSpring_PeppersFall	59	15-Jan	80	1	15	4	5	45	15-Aug	70	8	15	10	24								15,11
TomatoesSpring_Strawberries	55	30-Sep	200	9	30	4	18															15,9,8
Vegetables	33	1-Sep	97	9	1	12	7	23	1-Jan	97	1	1	4	8								1
Vegetables_Cabbage	33	1-Sep	97	9	1	12	7	23	1-Jan	97	1	1	4	8								1
Vegetables_Corn_Vegetables	29	1-Mar	77	3	1	5	17	33	1-Sep	97	9	1	12	7								1,2
Vegetables_Greens	33	1-Sep	97	9	1	12	7	23	1-Jan	80	1	1	3	22								1
Vegetables_Radishes	33	1-Jan	97	1	1	4	8	47	1-Sep	30	9	1	10	1	47	15-Nov	30	11	15	12	15	1,7
Vegetables_Sorghum	33	1-Oct	97	10	1	1	6	51	15-Mar	180	3	15	9	11								1,5,6
Watermelon	37	15-Feb	90	2	15	5	16															21
Watermelon_MixedVegetables	37	15-Feb	90	2	15	5	16	33	1-Sep	97	9	1	12	7								3,1
Watermelon_MixedVegetables_Cucumber	37	15-Feb	90	2	15	5	16	33	1-Sep	97	9	1	12	7								3,1
Watermelon_MixedVegetables_Watermelon	37	15-Feb	90	2	15	5	16	33	1-Sep	97	9	1	12	7								3,1
Watermelon_Pumpkin	37	15-Feb	90	2	15	5	16	54	22-Aug	45	8	22	10	6								3
Watermelon_Sod_Potato	13	p	p	1	1	12	31															perennial
Zucchini	54	1-Feb	45	2	1	3	18	54	22-Aug	45	8	22	10	6								3
Zucchini_DryBeans_PeppersSpring	54	22-Aug	45	8	22	10	6	19	1-Apr	70	4	1	6	10	45	1-Jan	70	1	1	3	12	3,4,11
Zucchini_Eggplant	54	22-Aug	45	8	22	10	6	32	15-Jan	100	1	15	4	25								3,13
Zucchini_GreenBeans_Melons	54	22-Aug	45	8	22	10	6	18	1-Mar	60	3	1	4	30								3,4
Zucchini_Melons	54	22-Aug	45	8	22	10	6	37	15-Feb	90	2	15	5	16								3
Zucchini_Peas	54	22-Aug	45	8	22	10	6	44	15-Nov	70	11	15	1	24	44	1-Mar	85	3	1	5	25	3,4

Appendix E. Crop Planting and Harvesting Assumptions

Table E-1b Central Zone Crop Planting and Harvesting Assumptions (con't)

Central Growing Region	Crop1							Crop2							Crop3							
Crop	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	Source[1]
Zucchini_PeppersFall	54	1-Feb	45	2	1	3	18	45	15-Aug	70	8	15	10	24								3,11
Zucchini_Sweet Corn	54	22-Aug	45	8	22	10	6	29	1-Mar	77	3	1	5	17								3,2
Zucchini_TomatoesSpring	54	22-Aug	45	8	22	10	6	59	15-Jan	80	1	15	4	5								3,15

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Appendix E. Crop Planting and Harvesting Assumptions

Table E-1c South Zone Crop Planting and Harvesting Assumptions

South Growing Region	Crop1							Crop2							Crop3							
Crop	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	Source[1]
Alfalfa	1	p	p	1	1	12	31															perennial
AsparagusFern	5	p	p	1	1	12	31															perennial
Aspidistra	8	p	p	1	1	12	31															perennial
Avocados	2	p	p	1	1	12	31															perennial
Blueberries	3	p	p	1	1	12	31															perennial
Blueberries_Peanuts	3	p	p	1	1	12	31															perennial
Broccoli	21	1-Oct	82	10	1	12	22															1
Broccoli_Cabbage_Cabbage	21	1-Oct	82	10	1	12	22	23	1-Dec	85	12	1	2	24								1
Broccoli_Corn	21	1-Oct	82	10	1	12	22	29	1-Feb	80	2	1	4	22								1,2
Broccoli_Corn_Broccoli	21	1-Oct	82	10	1	12	22	29	1-Feb	80	2	1	4	22								1,2
Broccoli_Corn_Cabbage	21	1-Oct	82	10	1	12	22	29	1-Feb	80	2	1	4	22								1,2
Broccoli_Melon_Broccoli	21	1-Oct	82	10	1	12	22	37	1-Jan	80	1	1	3	22								1,3
Broccoli_Peas	21	1-Oct	82	10	1	12	22	44	15-Jan	82	1	15	4	7								1,4
Broccoli_Sorghum_Broccoli	21	1-Oct	82	10	1	12	22	51	15-Mar	180	3	15	9	11								1,5,6
Broccoli_Sorghum_Greens	21	1-Oct	82	10	1	12	22	51	15-Mar	180	3	15	9	11								1,5,6
Broccoli_Vegetables	21	1-Oct	82	10	1	12	22	33	1-Jan	97	1	1	4	8								1
Cabbage	23	1-Sep	85	9	1	11	25	23	1-Dec	85	12	1	2	24								1
Cabbage_Cabbage	23	1-Sep	85	9	1	11	25	23	1-Dec	85	12	1	2	24								1
Cabbage_Corn	23	1-Sep	85	9	1	11	25	29	1-Feb	80	2	1	4	22								1,2
Cabbage_Corn_Cabbage	23	1-Sep	85	9	1	11	25	23	1-Dec	85	12	1	2	24	29	1-Mar	80	3	1	5	20	1,2
Cabbage_Corn_Greens	23	1-Sep	85	9	1	11	25	23	1-Dec	80	12	1	2	19	29	1-Mar	80	3	1	5	20	1,2
Cabbage_Greens	23	1-Sep	85	9	1	11	25	23	15-Dec	80	12	15	3	5								1
Cabbage_Hay	23	1-Sep	85	9	1	11	25	60	1-Dec	90	12	1	3	1								1,5,6
Cabbage_Melon	23	1-Sep	85	9	1	11	25	37	1-Jan	80	1	1	3	22								1,3
Cabbage_Sod	13	p	p	1	1	12	31															perennial
Cabbage_Sorghum	23	1-Oct	85	10	1	12	25	51	15-Mar	180	3	15	9	11								1,5,6
Cabbage_Sorghum_Cabbage	23	1-Sep	85	9	1	11	25	23	1-Dec	85	12	1	2	24	51	15-Mar	150	3	15	8	12	1,5,6
Cabbage_Sorghum_Radished	23	1-Sep	85	9	1	11	25	47	15-Dec	30	12	15	1	14	51	15-Mar	150	3	15	8	12	1,5,6,7
Cabbage_Sorghum_Sorghum	23	1-Oct	85	10	1	12	25	51	15-Mar	180	3	15	9	11								1,5,6
Carambola	4	p	p	1	1	12	31															perennial
Chestnuts	12	p	p	1	1	12	31															perennial
Citrus	4	p	p	1	1	12	31															perennial
CollardGreens_Corn	23	1-Sep	80	9	1	11	20	29	1-Feb	80	2	1	4	22								1,2
Container Nursery	8	p	p	1	1	12	31															perennial
CoontieFern	5	p	p	1	1	12	31															perennial

Table E-1c South Zone Crop Planting and Harvesting Assumptions (con't)

South Growing Region	Crop1							Crop2							Crop3							
Crop	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	Source[1]
Corn	29	15-Oct	77	10	15	12	31	29	1-Feb	80	2	1	4	22								2
Corn_Corn_Strawberries	55	1-Nov	200	11	1	5	20															2,8, 9
Corn_Greens	23	1-Sep	80	9	1	11	20	29	1-Feb	80	2	1	4	22								2,1
Corn_Sorghum_Cabbage	29	15-Oct	77	10	15	12	31	23	15-Jan	85	1	15	4	10	51	1-May	150	5	1	9	28	2,5,6,1
Corn_Vegetables	33	1-Sep	90	9	1	11	30	29	1-Feb	80	2	1	4	22								2,1
Cotton	30	1-May	167	5	1	10	15															10
Cucumber	31	15-Sep	52	9	15	11	6	31	1-Dec	52	12	1	1	22								3
CucumbersFall	31	15-Sep	52	9	15	11	6	31	15-Nov	52	11	15	1	6	31	15-Jan	52	1	15	3	8	3
CucumbersFall_CucumbersSpring	31	15-Sep	52	9	15	11	6	31	15-Jan	52	1	15	3	8								3
CucumbersFall_Strawberries_CucumbersSpring	31	1-Sep	52	9	1	10	23	55	1-Nov	200	11	1	5	20								3,9,8
CucumbersFall_Strawberries_Melons	31	1-Sep	52	9	1	10	23	55	1-Nov	200	11	1	5	20								3,9,8
CucumbersFall_Strawberries_PeppersSpring	31	1-Sep	52	9	1	10	23	55	1-Nov	200	11	1	5	20								3,9,8,11
CucumbersSpring	31	15-Jan	52	1	15	3	8															3
CucumbersSpring_Melons	31	1-Jan	52	1	1	2	22	37	1-Mar	80	3	1	5	20								3
CucumbersSpring_SmallVegSum_Strawberries	55	1-Dec	200	12	1	6	19	33	15-Aug	90	8	15	11	13								3,9,8
CucumbersSpring_Strawberries	55	1-Nov	200	11	1	5	20															3,9,8
DryBeans	19	15-Sep	70	9	15	11	24	19	1-Dec	70	12	1	2	9	19	1-Mar	70	3	1	5	10	3,9,8
DryBeans_Potatoes	46	1-Nov	97	11	1	2	6	19	1-Mar	70	3	1	5	10								4,12
DryBeans_Strawberries	19	15-Sep	70	9	15	11	24	55	1-Dec	200	12	1	6	19								4,9,8
DryBeans_SweetCorn	19	15-Sep	70	9	15	11	24	29	1-Feb	80	2	1	4	22								4,2
Eggplant_Zucchini	32	15-Aug	100	8	15	11	23	54	15-Jan	45	1	15	3	1								13,3
Fern	5	p	p	1	1	12	31															perennial
Field Corn	28	1-Apr	135	4	1	8	14															14,10
Field Corn _Grain	28	1-Apr	135	4	1	8	14	49	1-Dec	90	12	1	3	1								14,10,5,6
Field Nursery	9	p	p	1	1	12	31															perennial
GrainCornSweetCornPotatoes	28	1-Apr	135	4	1	8	14	29	12-Sep	90	9	12	12	11	46	1-Jan	120	1	1	5	1	14,10
Grains	49	1-Dec	90	12	1	3	1															5,6
Grains_Sod	13	p	p	1	1	12	31															perennial
Grapes	7	p	p	1	1	12	31															perennial
Green Beans	18	15-Sep	60	9	15	11	14	18	15-Dec	60	12	15	2	13	18	1-Mar	60	3	1	4	30	4
Greenhouse Nursery	8	p	p	1	1	12	31															perennial
Greens	35	1-Sep	80	9	1	11	20	35	1-Dec	80	12	1	2	19								1
Greens_Cabbage	23	1-Sep	85	9	1	11	25	23	15-Dec	80	12	15	3	5								1
Greens_Corn	23	1-Sep	80	9	1	11	20	29	1-Feb	80	2	1	4	22								1,2
Greens_Corn_Broccoli	23	1-Sep	80	9	1	11	20	29	1-Feb	80	2	1	4	22								1,2
Greens_Corn_Cabbage	23	1-Sep	80	9	1	11	20	23	1-Dec	85	12	1	2	24	29	1-Mar	80	3	1	5	20	1,2

Table E-1c South Zone Crop Planting and Harvesting Assumptions (con't)

South Growing Region	Crop1							Crop2							Crop3							
Crop	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	Source[1]
Greens_Hay_CropPeas	23	1-Sep	80	9	1	11	20	60	1-Dec	90	12	1	3	1								1,5,6,4
Greens_Sorghum	23	1-Sep	80	9	1	11	20	23	15-Dec	80	12	15	3	5	51	15-Mar	150	3	15	8	12	1,5,6
Greens_Sorghum_Broccoli	21	15-Sep	82	9	15	12	6	23	15-Dec	80	12	15	3	5	51	15-Mar	150	3	15	8	12	1,5,6
Greens_Sorghum_Cabbage	23	1-Sep	80	9	1	11	20	23	1-Dec	85	12	1	2	24	51	15-Mar	150	3	15	8	12	1,5,6
Greens_Sorghum_Cauliflower	25	15-Sep	82	9	15	12	6	23	15-Dec	80	12	15	3	5	51	15-Mar	150	3	15	8	12	1,5,6
Greens_Sorghum_Cucumber	31	15-Sep	52	9	15	11	6	23	15-Dec	80	12	15	3	5	51	15-Mar	150	3	15	8	12	1,5,6,3
Greens_Sorghum_Greens	23	1-Sep	80	9	1	11	20	23	15-Dec	80	12	15	3	5	51	15-Mar	150	3	15	8	12	1,5,6
Greens_Sorghum_Vegetables	33	1-Sep	90	9	1	11	30	23	15-Dec	80	12	15	3	5	51	15-Mar	150	3	15	8	12	1,5,6
Greens_Sorghum_Zucchini	54	15-Sep	45	9	15	10	30	23	15-Dec	80	12	15	3	5	51	15-Mar	150	3	15	8	12	1,5,6,3
Greens_Zucchini	54	15-Aug	45	8	15	9	29	23	15-Oct	80	10	15	1	3	54	15-Jan	45	1	15	3	1	1,3
Hay	10	p	p	1	1	12	31															perennial
Hay_AFO	10	p	p	1	1	12	31															perennial
Improved Pastures	10	p	p	1	1	12	31															perennial
Leatherleaf	5	p	p	1	1	12	31															perennial
Ligustrum	8	p	p	1	1	12	31															perennial
Liriope	8	p	p	1	1	12	31															perennial
Mangos	8	p	p	1	1	12	31															perennial
Melons	37	1-Jan	80	1	1	3	22															3
Melons_Cucumber	37	1-Jan	80	1	1	3	22	31	15-Sep	52	9	15	11	6								3
Melons_CucumbersFall	37	1-Jan	80	1	1	3	22	31	15-Sep	52	9	15	11	6								3
Melons_Hay	37	1-Jan	80	1	1	3	22															3,5,6
Melons_PeppersFall	37	1-Jan	80	1	1	3	22	45	15-Aug	70	8	15	10	24								3,11
Melons_SmallVegSpring_SmallVegFall	37	1-Jan	80	1	1	3	22	33	1-Sep	90	9	1	11	30								3,1
Melons_Strawberries	55	1-Nov	200	11	1	5	20															3,9,8
Melons_Strawberries_Peas	55	1-Dec	200	12	1	6	19	44	1-Sep	82	9	1	11	22								3,9,8,4
Melons_TomatoesFall	37	1-Jan	80	1	1	3	22	59	15-Aug	80	8	15	11	3								3,15
Melons_TomatoesSpring	37	1-Jan	80	1	1	3	22	59	15-Aug	80	8	15	11	3								3,15
Melons_TomatoesSpring_TomatoesFall	37	1-Jan	80	1	1	3	22	59	15-Aug	80	8	15	11	3								3,15
Millet	39	15-Feb	180	2	15	8	14															5,6
Nursery	9	p	p	1	1	12	31															perennial
Onions	41	15-Oct	115	10	15	2	7															16
Onions_Corn	41	15-Oct	115	10	15	2	7	29	15-Feb	80	2	15	5	6								16,2
Onions_Corn_Vegetables	41	15-Oct	115	10	15	2	7	29	15-Feb	80	2	15	5	6								16,2,1
Onions_Sorghum	41	15-Oct	115	10	15	2	7	51	15-Mar	180	3	15	9	11								2,5,6
Onions_Sorghum_Vegetables	41	15-Oct	115	10	15	2	7	51	15-Mar	180	3	15	9	11								2,5,6,1
Onions_Vegetables	41	15-Oct	115	10	15	2	7															16,1

Table E-1c South Zone Crop Planting and Harvesting Assumptions (con't)

South Growing Region	Crop1							Crop2							Crop3							
Crop	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	Source[1]
Onions_Vegetables_Cabbage	41	15-Oct	115	10	15	2	7															16,1
OrientalVegetables	23	1-Sep	85	9	1	11	25	23	1-Dec	85	12	1	2	24								1
OrientalVegetables_Corn	23	1-Sep	85	9	1	11	25	29	1-Feb	80	2	1	4	22								1,2
OrientalVegetables_Corn_Radishes	23	1-Sep	85	9	1	11	25	47	15-Dec	30	12	15	1	14	29	1-Feb	80	2	1	4	22	1,2,7
Ornamentals	9	p	p	1	1	12	31															perennial
Other_Groves	4	p	p	1	1	12	31															perennial
Papaya	4	p	p	1	1	12	31															perennial
Pasture	10	p	p	1	1	12	31															perennial
Peaches	11	p	p	1	1	12	31															perennial
Peanuts	43	22-Apr	155	4	22	9	24															10,17,18
Peanuts_Melons	43	22-Apr	155	4	22	9	24	37	1-Jan	80	1	1	3	22								10,17,18,3
PeanutsFall	43	22-Apr	155	4	22	9	24															10,17,18
PeanutsSpring	43	22-Apr	155	4	22	9	24															10,17,18
PeanutsSpring_Grains	43	22-Apr	155	4	22	9	24	49	1-Dec	90	12	1	3	1								10,17,18,5,6
PeanutsSpring_PeanutsFall	43	22-Apr	155	4	22	9	24															10,17,18
Peas	44	15-Sep	82	9	15	12	6	44	15-Jan	82	1	15	4	7								4
Pecans	12	p	p	1	1	12	31															perennial
Peppers	45	15-Aug	70	8	15	10	24	45	15-Feb	70	2	15	4	26								11
Peppers_Spring	45	15-Feb	70	2	15	4	26															11
PeppersFall	45	15-Aug	70	8	15	10	24															11
PeppersFall_CucumbersSpring	45	15-Aug	70	8	15	10	24	31	1-Dec	52	12	1	1	22								11,3
PeppersFall_Melons	45	15-Aug	70	8	15	10	24	37	1-Jan	80	1	1	3	22								11,3
PeppersFall_PeppersSpring	45	15-Aug	70	8	15	10	24	45	15-Feb	70	2	15	4	26								11
PeppersFall_Zucchini	45	15-Aug	70	8	15	10	24	54	1-Nov	45	11	1	12	16	54	15-Jan	45	1	15	3	1	11,3
PeppersSpring_CucumbersSpring	45	15-Feb	70	2	15	4	26	31	15-Sep	52	9	15	11	6								11,3
PeppersSpring_PeppersFall	45	15-Aug	70	8	15	10	24	45	15-Feb	70	2	15	4	26								11
PeppersSpring_PeppersFall_CucumbersFall	45	15-Feb	70	2	15	4	26	55	1-Nov	200	11	1	5	20								11,3
PeppersSpring_Strawberries	55	1-Nov	200	11	1	5	20	45	15-Aug	70	8	15	10	24								11,9,8
PeppersSpring_Zucchini	45	15-Feb	70	2	15	4	26	54	15-Aug	45	8	15	9	29	54	1-Nov	45	11	1	12	16	11,3
Persimmons	11	p	p	1	1	12	31															perennial
Pine	12	p	p	1	1	12	31															perennial
Pittosporum	8	p	p	1	1	12	31															perennial
Potatoes	46	1-Nov	97	11	1	2	6															12
Potatoes_Cabbage	46	15-Dec	97	12	15	3	22	23	1-Sep	85	9	1	11	25								12,1
Potatoes_Cantaloupe_Watermelon	46	1-Nov	97	11	1	2	6	23	14-Feb	85	2	14	5	10								12,3
Potatoes_Corn	46	1-Nov	97	11	1	2	6	29	15-Feb	80	2	15	5	6								12,2

Table E-1c South Zone Crop Planting and Harvesting Assumptions (con't)

South Growing Region	Crop1							Crop2							Crop3							
Crop	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	Source[1]
Potatoes_Corn_Cabbage	46	1-Nov	97	11	1	2	6	29	15-Feb	80	2	15	5	6								12,2,1
Potatoes_Corn_Cucumber	46	1-Nov	97	11	1	2	6	29	15-Feb	80	2	15	5	6	31	1-Sep	52	9	1	10	23	12,2,3
Potatoes_Corn_Peas	46	1-Nov	97	11	1	2	6	29	15-Feb	80	2	15	5	6								12,2,4
Potatoes_Corn_Vegetables	46	1-Nov	97	11	1	2	6	29	15-Feb	80	2	15	5	6								12,2,1
Potatoes_Grapes_Eggplant	46	1-Nov	97	11	1	2	6	32	15-Feb	100	2	15	5	26								12,13
Potatoes_Hay	46	1-Nov	97	11	1	2	6	60	15-Feb	90	2	15	5	16								12,5,6
Potatoes_Pasture	10	p	p	1	1	12	31															perennial
Potatoes_Sod	13	p	p	1	1	12	31															perennial
Potatoes_Sorghum	46	1-Nov	97	11	1	2	6	51	15-Mar	180	3	15	9	11								12,5,6
Potatoes_Sorghum_Broccoli	46	1-Nov	97	11	1	2	6	51	15-Mar	180	3	15	9	11								12,5,6,1
Potatoes_Sorghum_Cabbage	46	1-Nov	97	11	1	2	6	51	15-Mar	180	3	15	9	11								12,5,6,1
Potatoes_Sorghum_Cucumber	46	1-Nov	97	11	1	2	6	51	15-Mar	180	3	15	9	11								12,5,6,3
Potatoes_Sorghum_Greencovercrop	46	1-Nov	97	11	1	2	6	51	15-Mar	180	3	15	9	11								12,5,6
Potatoes_Sorghum_Greens	46	1-Nov	97	11	1	2	6	51	15-Mar	180	3	15	9	11								12,5,6,1
Potatoes_Sorghum_Mustardgreens	46	1-Nov	97	11	1	2	6	51	15-Mar	180	3	15	9	11								12,5,6,1
Potatoes_Watermelon	46	1-Nov	97	11	1	2	6	37	15-Feb	80	2	15	5	6								12,3
Radishes_Sorghum	47	15-Oct	30	10	15	11	14	47	15-Dec	30	12	15	1	14	37	15-Feb	80	2	15	5	6	7,5,6
Rice	48	15-Apr	125	4	15	8	18															10
SmallVeg	33	1-Sep	90	9	1	11	30	33	15-Dec	97	12	15	3	22								1
SmallVegFall	33	1-Sep	90	9	1	11	30	33	15-Dec	97	12	15	3	22								1
SmallVegFall_Melons	33	1-Sep	90	9	1	11	30	37	1-Jan	80	1	1	3	22								1,3
SmallVegFall_PeppersSpring	33	1-Sep	90	9	1	11	30	33	15-Dec	97	12	15	3	22								1,11
SmallVegFall_SmallVegSpring	33	1-Sep	90	9	1	11	30	33	15-Dec	97	12	15	3	22								1
SmallVegFall_SmallVegSpring_SmallVegSum	33	1-Sep	90	9	1	11	30	33	15-Dec	97	12	15	3	22								1
SmallVegFall_SmallVegSum	33	1-Sep	90	9	1	11	30	33	15-Dec	97	12	15	3	22								1
SmallVegFall_Strawberries	55	1-Nov	200	11	1	5	20															1,9,8
SmallVegFall_TomatoesSpring	33	1-Sep	90	9	1	11	30	59	15-Jan	80	1	15	4	5								1,15
SmallVegSpring	33	1-Sep	90	9	1	11	30	33	15-Dec	97	12	15	3	22								1
SmallVegSpring_Strawberries	55	1-Nov	200	11	1	5	20															1,9,8
SmallVegSpring_TomatoesSpring	33	1-Sep	90	9	1	11	30	59	15-Jan	80	1	15	4	5								1,15
SmallVegSum	33	1-Sep	90	9	1	11	30	33	15-Dec	97	12	15	3	22								1
SmallVegSum_Strawberries	55	1-Nov	200	11	1	5	20															1,9,8
Sod	13	p	p	1	1	12	31															perennial
Sod Farms	13	p	p	1	1	12	31															perennial
Sod_Corn	13	p	p	1	1	12	31															perennial
Sod_Corn_Sod	13	p	p	1	1	12	31															perennial

Appendix E. Crop Planting and Harvesting Assumptions

Table E-1c South Zone Crop Planting and Harvesting Assumptions (con't)

South Growing Region	Crop1							Crop2							Crop3							
Crop	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	Source[1]
Sod_Greens	13	p	p	1	1	12	31															perennial
Sod_PeanutsSpring	13	p	p	1	1	12	31															perennial
Sod_Potato	13	p	p	1	1	12	31															perennial
Sod_Sorghum	13	p	p	1	1	12	31															perennial
Sorghum	51	15-Mar	180	3	15	9	11															5,6
Sorghum_Cabbage	23	1-Oct	85	10	1	12	25	51	15-Mar	180	3	15	9	11								5,6,1
Sorghum_Corn_Cabbage	23	1-Oct	85	10	1	12	25	51	15-Mar	180	3	15	9	11								5,6,2,1
Sorghum_Greens	23	1-Sep	80	9	1	11	20	23	15-Dec	80	12	15	3	5	51	15-Mar	150	3	15	8	12	5,6,1
Sorghum_MixedVegetables	33	1-Sep	90	9	1	11	30	51	15-Mar	150	3	15	8	12								5,6,1
Sorghum_Sorghum_Broccoli	21	1-Oct	82	10	1	12	22	51	15-Mar	180	3	15	9	11								5,6,1
Sorghum_Sorghum_Cabbage	23	1-Oct	85	10	1	12	25	51	15-Mar	180	3	15	9	11								5,6,1
Sorghum_Sorghum_Greens	23	1-Sep	80	9	1	11	20	23	15-Dec	80	12	15	3	5	51	15-Mar	150	3	15	8	12	5,6,1
Sorghum_Turnips	50	15-Oct	50	10	15	12	4	50	1-Jan	50	1	1	2	20	51	15-Mar	150	3	15	8	12	5,6,1
Soybeans	52	15-May	140	5	15	10	2															19,6
Specialty Farms	50	1-Sep	97	9	1	12	7	50	1-Jan	97	1	1	4	8								1
Specialty_Farms	50	1-Sep	97	9	1	12	7	50	1-Jan	97	1	1	4	8								1
Spinach_Corn	53	15-Oct	55	10	15	12	9	29	1-Feb	80	2	1	4	22								16,2
Spinach_RedPeppers_CollardGreens	45	15-Aug	70	8	15	10	24	53	1-Jan	55	1	1	2	25								16,11,1
Squash	54	15-Aug	45	8	15	9	29	54	1-Nov	45	11	1	12	16	54	15-Jan	45	1	15	3	1	3
Squash_Vegetables	54	15-Aug	45	8	15	9	29	33	15-Dec	97	12	15	3	22								3,1
Strawberries	55	1-Nov	200	11	1	5	20															9,8
Strawberries_Corn	55	1-Nov	200	11	1	5	20															9,8,2
Strawberries_CucumbersFall	55	15-Nov	200	11	15	6	3	31	15-Sep	52	9	15	11	6								9,8,3
Strawberries_CucumbersSpring	55	1-Nov	200	11	1	5	20	31	15-Sep	52	9	15	11	6								9,8,3
Strawberries_Eggplant	55	1-Dec	200	12	1	6	19	32	15-Aug	100	8	15	11	23								9,8,13
Strawberries_GreenBeans	55	1-Dec	200	12	1	6	19	18	15-Sep	60	9	15	11	14								9,8,4
Strawberries_Melons	55	1-Nov	200	11	1	5	20															9,8,3
Strawberries_Peas	55	1-Nov	200	11	1	5	20															9,8,4
Strawberries_Peppers	55	1-Nov	200	11	1	5	20	45	15-Aug	70	8	15	10	24								9,8,11
Strawberries_PeppersFall	55	1-Nov	200	11	1	5	20	45	15-Aug	70	8	15	10	24								9,8,11
Strawberries_PeppersSpring	55	1-Nov	200	11	1	5	20	45	15-Aug	70	8	15	10	24								9,8,11
Strawberries_SmallVegSpring	55	1-Nov	200	11	1	5	20															9,8,1
Strawberries_Sorghum_Strawberries	55	1-Nov	200	11	1	5	20															9,8,5,6
Strawberries_TomatoesFall	55	15-Nov	200	11	15	6	3	59	15-Aug	80	8	15	11	3								9,8,15
Strawberries_TomatoesSpring_PeppersFall	55	15-Nov	200	11	15	6	3	59	15-Aug	80	8	15	11	3								9,8,15,11
Strawberries_Zucchini	55	15-Nov	200	11	15	6	3	31	15-Sep	52	9	15	11	6								9,8,3

Appendix E. Crop Planting and Harvesting Assumptions

Table E-1c South Zone Crop Planting and Harvesting Assumptions (con't)

South Growing Region	Crop1							Crop2							Crop3							
Crop	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	Source[1]
Sugar Cane	14	p	p	1	1	12	31															perennial
Sweet Corn	29	15-Oct	77	10	15	12	31	29	1-Feb	80	2	1	4	22								2
Sweet Corn_PeanutsFall	29	15-Oct	77	10	15	12	31	43	22-Apr	155	4	22	9	24								2,10,17,18
Tobacco	56	15-Feb	240	2	15	10	13															20
Tomatoes	59	15-Aug	80	8	15	11	3															15
TomatoesFall	59	15-Aug	80	8	15	11	3	59	15-Jan	80	1	15	4	5								15
TomatoesFall_Melons	59	15-Aug	80	8	15	11	3	37	1-Jan	80	1	1	3	22								15,3
TomatoesFall_Strawberries	59	1-Aug	80	8	1	10	20	55	1-Nov	200	11	1	5	20								15,9,8
TomatoesFall_TomatoesSpring	59	15-Aug	80	8	15	11	3	59	15-Jan	80	1	15	4	5								15
TomatoesFall_TomatoesSpring_PeanutsSpring	59	15-Aug	80	8	15	11	3	59	15-Jan	80	1	15	4	5								15,10,17,18
TomatoesSpring	59	15-Aug	80	8	15	11	3	59	15-Jan	80	1	15	4	5								15
TomatoesSpring_CucumbersFall	59	15-Jan	80	1	15	4	5	31	15-Sep	52	9	15	11	6								15,3
TomatoesSpring_DryBeans	59	15-Jan	80	1	15	4	5	19	15-Sep	70	9	15	11	24								15,4
TomatoesSpring_Melons	59	15-Aug	80	8	15	11	3	37	1-Jan	80	1	1	3	22								15,3
TomatoesSpring_PeppersFall	59	15-Jan	80	1	15	4	5	45	15-Aug	70	8	15	10	24								15,11
TomatoesSpring_Strawberries	59	1-Aug	80	8	1	10	20	55	1-Nov	200	11	1	5	20								15,9,8
Vegetables	33	1-Sep	90	9	1	11	30	33	15-Dec	97	12	15	3	22								1
Vegetables_Cabbage	23	1-Sep	85	9	1	11	25	33	15-Dec	97	12	15	3	22								1
Vegetables_Corn_Vegetables	33	1-Sep	90	9	1	11	30	29	1-Feb	80	2	1	4	22								1,2
Vegetables_Greens	23	1-Sep	85	9	1	11	25	23	15-Dec	80	12	15	3	5								1
Vegetables_Radishes	23	1-Sep	85	9	1	11	25	47	15-Dec	30	12	15	1	14	47	15-Feb	30	2	15	3	17	1,7
Vegetables_Sorghum	33	1-Sep	90	9	1	11	30	51	15-Mar	150	3	15	8	12								1,5,6
Watermelon	37	1-Jan	80	1	1	3	22															21
Watermelon_MixedVegetables	37	1-Jan	80	1	1	3	22	33	1-Sep	90	9	1	11	30								3,1
Watermelon_MixedVegetables_Cucumber	37	1-Jan	80	1	1	3	22	33	1-Sep	90	9	1	11	30								3,1
Watermelon_MixedVegetables_Watermelon	37	1-Jan	80	1	1	3	22	33	1-Sep	90	9	1	11	30								3,1
Watermelon_Pumpkin	37	1-Jan	80	1	1	3	22	54	15-Aug	45	8	15	9	29	54	1-Nov	45	11	1	12	16	3
Watermelon_Sod_Potato	13	p	p	1	1	12	31															perennial
Zucchini	54	15-Aug	45	8	15	9	29	54	1-Nov	45	11	1	12	16	54	15-Jan	45	1	15	3	1	3
Zucchini_DryBeans_PeppersSpring	54	15-Aug	45	8	15	9	29	19	15-Oct	70	10	15	12	24	45	15-Feb	70	2	15	4	26	3,4,11
Zucchini_Eggplant	54	15-Aug	45	8	15	9	29	32	15-Jan	100	1	15	4	25								3,13
Zucchini_GreenBeans_Melons	54	15-Aug	45	8	15	9	29	18	15-Oct	60	10	15	12	14	37	1-Jan	80	1	1	3	22	3,4
Zucchini_Melons	54	15-Aug	45	8	15	9	29	54	1-Nov	45	11	1	12	16	37	1-Jan	80	1	1	3	22	3
Zucchini_Peas	54	15-Aug	45	8	15	9	29	44	15-Oct	82	10	15	1	5	44	1-Feb	82	2	1	4	24	3,4
Zucchini_PeppersFall	54	1-Nov	45	11	1	12	16	54	15-Jan	45	1	15	3	1	45	15-Aug	70	8	15	10	24	3,11
Zucchini_Sweet Corn	54	15-Jan	45	1	15	3	1	54	15-Aug	45	8	15	9	29	29	15-Oct	77	10	15	12	31	3,2

Appendix E. Crop Planting and Harvesting Assumptions

Table E-1c South Zone Crop Planting and Harvesting Assumptions (con't)

South Growing Region	Crop1							Crop2							Crop3							
Crop	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	AFSIRS Crop #	Begin Date	Season Length	Begin Mo	Begin Day	End Mo	End Day	Source[1]
Zucchini_TomatoesSpring	54	15-Aug	45	8	15	9	29	54	1-Nov	45	11	1	12	16	59	15-Jan	80	1	15	4	5	3,15

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