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DRAINAGE BASINS IN FLORIDA

By

W. E. Kenner, R. W. Pride, and C. S. Conover

A drainage basin is part of the surface of the earth which contributes overland runoff to a stream. A drainage basin is the area encompassed by a drainage divide and consists of a drainage system composed of a surface stream or a body of surface water together with all tributary surface streams and bodies of water. Simply, a drainage basin is an area that drains by gravity to a common point.

Drainage basins may encompass many square miles, such as the Suwannee River, or may encompass less than a square mile, such as a small tributary to a tributary to the Suwannee River. The delineation, designation, and size of drainage areas depend to a large extent upon the particular needs.

The major and sub-drainage basins in Florida are delineated on the map. The basin code numbers provide a basic system of cataloging and processing the accumulating large volume of hydrologic information for electronic data storage and retrieval. The basin designations and code numbers conform with minor exceptions to the nationwide system instituted by the Office of Water Data Coordination, U. S. Geological Survey, Washington, D. C.

The primary numerical designations of the drainage basins on the maps are the same as those of the Index of River Basin Maps of the United States issued by the Inter-Agency Committee on Water Resources[1] and also used by the Office of Water Data Coordination for the nationwide system. The area of each of the four maps of the Committee which cover Florida is indicated by colored shading on the basin map. Basin designations consist of a basin designation plus a numeral. In all, there are 29 major basins and areas and 17 sub-basins or parts thereof in the State. Further subdivisions to delineate the drainage basin of each small tributary stream may be made but this definition is not shown on the map.

The delineation of the drainage basin, or the drainage area, of a stream is a necessary prerequisite for evaluating the hydrology of a river basin or area. In particular, the drainage area is needed to determine the amount of runoff for water supply, for flood evaluation and forecasting, for design of various water control and drainage works, and for water management, regulation, and allocations.

Delineation of the drainage basin is usually accomplished by using topographic maps which show altitudes of the land surface. On such a map, a line is drawn along the ridge or drainage divide that separates adjacent stream valleys. If such a line is begun at the mouth of a stream and drawn along the drainage divide so as to completely encircle the stream, its tributaries, and the land drained by the system, the line is called the basin boundary and the land within it is the drainage basin.

In Florida, which for the most part has little topographic relief, drainage divides are difficult to delineate and frequently are not meaningful. Where the ridge between basins, such as the St. Johns River above the Oklawaha River and Lake Okeechobee and the Everglades, is indistinct and is low enough to be topped by floodwaters, it will function as a basin boundary only part of the time. During floods, water falling in one basin can move to an adjacent basin and run off through the stream system of the latter. Topographic relief in southern Florida is so low that drainage divides are indeterminate, particularly south of Lake Okeechobee. Artificial divides are formed when an area is effectively encircled by dikes and levees. The area confined within these barriers can be treated as a basin. Dikes and canals add greatly to the natural difficulties of delineating basins where the land surface is flat because the runoff from a large area can be diverted to another basin with relative ease. Basin and subbasin boundaries in southern Florida may not be permanent, are to a great extent artificial, and may be modified by drainage canal and dike systems.

Although a basin boundary indicates that surface water does not cross the boundary to add to or subtract from the flow of the stream system, it does not follow that all flow in the system originates in the basin. The ground-water system in Florida, as represented primarily by the Floridan aquifer, does not coincide with the surface drainage system. Accordingly, the flow of most streams in Florida is not consistently related to the size of the drainage basin. Additions to normal basin flow can come from springs whose source is outside the basin. Conversely, deficiencies in flow result from natural "non-contributing areas" in a basin and from man-made interbasin diversions. "Non-contributing areas", such as Paynes Prairie in the western part of the Oklawaha River basin, are small basins without surface outlets that lie within a larger basin. Water from such basins may flow to adjacent basins by means of the aquifer system.

The areal extent of the drainage basins which are fully enclosed, that is drain to a common point on a stream, are given in square miles in the table. The drainage areas include the areal extent of the drainage basins into adjacent states. Drainage basins that border the coast are not enclosed and their areal extent is indeterminate or is meaningless. For instance, the coastal area between Myakka River and Alafia River, drainage basin 10F, is indeterminate partly because of the offshore keys and islands, though it contains the Manatee River system. Also for example, the Suwannee River below the Withlacoochee River, subbasin 09J5, receives the runoff from the upper Suwannee River basin; the drainage area for this subbasin is therefore meaningless and is not given.

The areal extent of drainage basins is determined by using standard procedures outlined in Bulletin 4 of the Subcommittee on Hydrology, Federal Inter-Agency River Basin Committee. Drainage areas are revised periodically as new standard topographic maps become available in accordance with the responsibility given in 1950 to the Water Resources Division by the Subcommittee on Hydrology. Drainage areas given in the table represent summations of smaller drainage areas determined in fulfillment of this responsibility. Drainage areas contributing to streams at gaging stations are published annually by the Geological Survey in "Surface Water Records of Florida".

[1]The functions of this committee have been transferred to the Water Resources Council, Washington, D.C. (1967).

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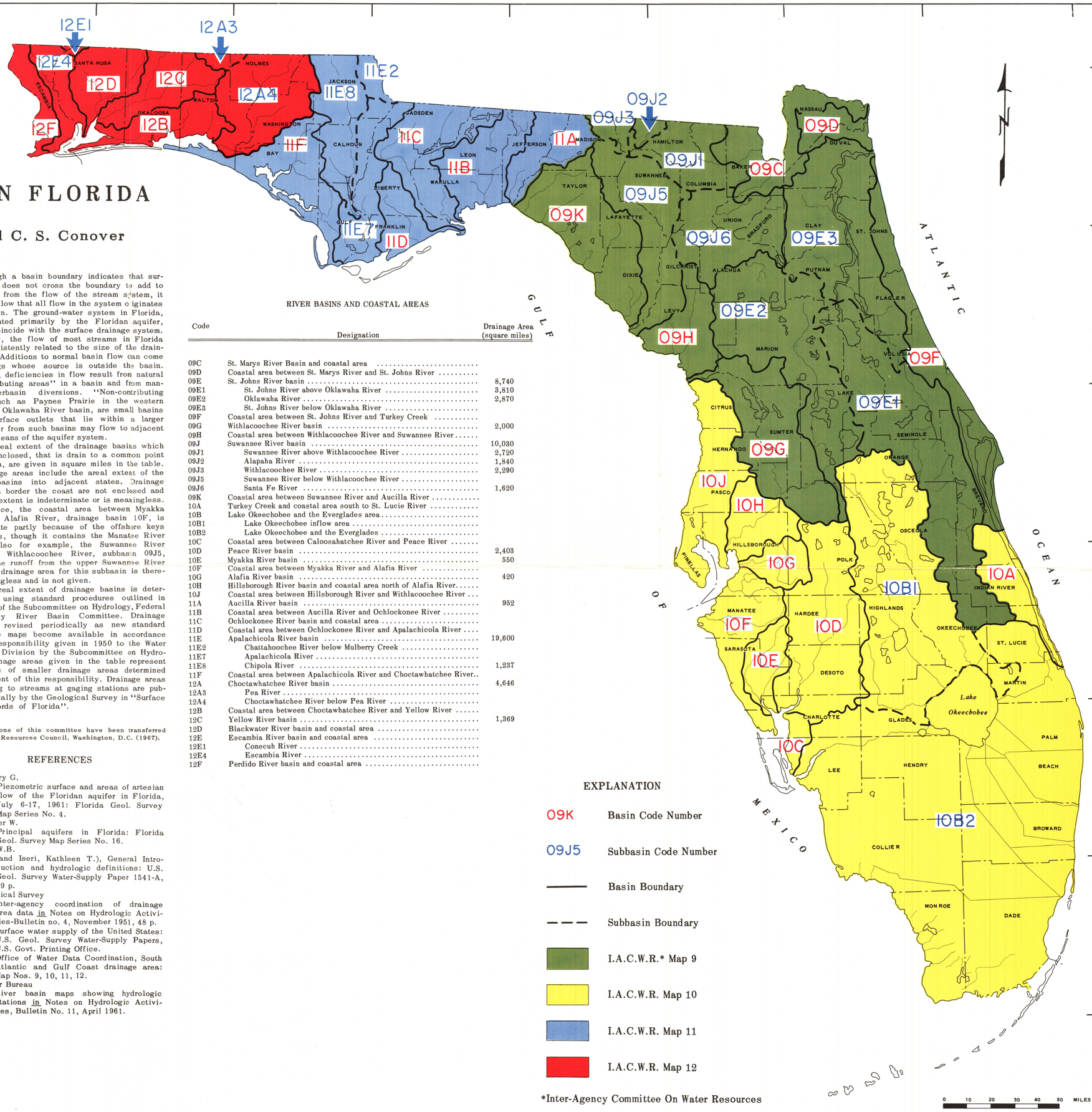

RIVER BASINS AND COASTAL AREAS

Code	Designation	Drainage Area (square miles)
09C	St. Marys River Basin and coastal area	
09D	Coastal area between St. Marys River and St. Johns River	
09E	St. Johns River basin	8,740
09E1	St. Johns River above Oklawaha River	3,810
09E2	Oklawaha River	2,870
09E3	St. Johns River below Oklawaha River	
09F	Coastal area between St. Johns River and Turkey Creek	
09G	Withlacoochee River basin	2,000
09H	Coastal area between Withlacoochee River and Suwannee River	
09J	Suwannee River basin	10,030
09J1	Suwannee River above Withlacoochee River	2,720
09J2	Alapaha River	1,840
09J3	Withlacoochee River	2,290
09J5	Suwannee River below Withlacoochee River	
09J6	Santa Fe River	1,620
09K	Coastal area between Suwannee River and Aucilla River	
10A	Turkey Creek and coastal area south to St. Lucie River	
10B	Lake Okeechobee and the Everglades area	
10B1	Lake Okeechobee inflow area	
10B2	Lake Okeechobee and the Everglades	
10C	Coastal area between Caloosahatchee River and Peace River	
10D	Peace River basin	2,403
10E	Myakka River basin	550
10F	Coastal area between Myakka River and Alafia River	
10G	Alafia River basin	420
10H	Hillsborough River basin and coastal area north of Alafia River	
10J	Coastal area between Hillsborough River and Withlacoochee River	
11A	Aucilla River basin	952
11B	Coastal area between Aucilla River and Ochlockonee River	
11C	Ochlockonee River basin and coastal area	
11D	Coastal area between Ochlockonee River and Apalachicola River	
11E	Apalachicola River basin	19,600
11E2	Chattahoochee River below Mulberry Creek	
11E7	Apalachicola River	
11E8	Chipola River	1,237
11F	Coastal area between Apalachicola River and Choctawhatchee River	
12A	Choctawhatchee River basin	4,646
12A3	Pea River	
12A4	Choctawhatchee River below Pea River	
12B	Coastal area between Choctawhatchee River and Yellow River	
12C	Yellow River basin	1,369
12D	Blackwater River basin and coastal area	
12E	Escambia River basin and coastal area	
12E1	Conecuh River	
12E4	Escambia River	
12F	Perdido River basin and coastal area	

EXPLANATION

09K Basin Code Number

09J5 Subbasin Code Number

Basin Boundary

Subbasin Boundary

I.A.C.W.R.* Map 9

I.A.C.W.R. Map 10

I.A.C.W.R. Map 11

I.A.C.W.R. Map 12

*Inter-Agency Committee On Water Resources