

exceed recharge over a long term. This is a challenge with political as well as technical dimensions that remains to be resolved.

Interaction between surface water and groundwater poses several management issues. Groundwater withdrawals can adversely affect lake levels and streamflow in some areas. In other areas, such as over the Biscayne aquifer, surface water can be managed to recharge the aquifer during dry seasons if water is available from reservoirs such as Lake Okeechobee. Pollution of groundwater is of particular concern where surface water moves readily into groundwater aquifers--a condition common to most of the state due to permeable, sandy soils.

Water Use in Florida

Whether water is scarce or abundant depends not only upon available supplies, but also upon need or demand. The water management process must deal with the uneven distribution of water demand over time, over space, and by quality characteristics. Also, the amount of water used in some areas of Florida is increasing each year to the extent that the availability of water is sometimes suggested as a means of controlling growth.

In examining water use statistics it is important to distinguish between water "withdrawal" and "consumptive use" of water. Water consumed is that which is withdrawn from a freshwater source and is not returned to the same source or another useable source, thus being unavailable for re-use except by way of the hydrologic cycle. For water management purposes, consumptive use may be considered all of the water withdrawn from an important, allocated source even though a portion may be returned to another useable body of water. Examples of consumptive use are: household use where sewage is discharged to coastal waters, irrigation to meet evapotranspiration needs of a crop or landscaping, and industrial processes which evaporate water or incorporate it in a product. Examples of water withdrawn but not totally consumed are: municipal water converted to treated sewage used to recharge aquifers or to increase freshwater stream flow, irrigation water which is not used by the crop but remains in the shallow groundwater and surface water system from which it was withdrawn (common in seepage irrigation in south Florida), and turbo-electric cooling water which is returned to its source.

According to estimates compiled by the USGS, withdrawals of freshwater for all uses averaged 7.3 billion gallons per day in 1980, about double the withdrawals estimated for 1960 (Leach). Forty-one percent of this total was attributed to agricultural irrigation, 25.5 percent to thermoelectric