ERCP - Kissimmee River & Chain of Lakes

Success Indicator:	1) Mean annual dry season density of long-legged wading birds (excluding cattle egrets) on the restored Kissimmee River floodplain ≥30.6 birds per square kilometer
Definition:	The number of wading birds sighted per square kilometer of the restored Kissimmee River/floodplain via monthly aerial surveys, averaged for the dry season
Data Source(s):	Annual South Florida Environmental Report
Reporting Period:	Dry season per Water Year (May 1 – April 30)
Reporting Frequency:	Annually on March 1
Aligned Strategy:	Reestablish ecological integrity to the Kissimmee River/floodplain ecosystem
Why Success Indicator Is Important:	Attaining expected wading bird densities is an indicator that floodplain wetland function is being restored. Wading birds require appropriate water depths for foraging and concentration of prey. Reintroducing fluctuating water levels and seasonal hydroperiods, and reconstructing the physical form of the Kissimmee River, is expected to lead to reestablished floodplain wetlands that will support increased wading bird densities through increased prey concentrations.
Example:	The annual mean density (three year running average 2006-2008) of long-legged wading birds for the dry season (December – May) in the Phase I restoration area floodplain was 49.3 birds per square kilometer.
Target(s):	Annual dry season density of long-legged wading birds [excluding cattle egrets (*Bubulcus ibis*)] on the restored floodplain of the Kissimmee River will be ≥ 30.6 birds per square kilometer.
Target definition source:	Defining Success: Expectations for Restoration of the Kissimmee River. Technical Publication ERA #433 (SFWMD, 2005)
Subject matter expert(s):	Michael Cheek

Success Indicator:	2) Mean annual relative abundance of fishes in the restored Kissimmee River channel ≤1% bowfin, ≤3% Florida gar, ≥16% redbreast sunfish, and ≥58% centrarchids (basses and sunfishes)
Definition:	The relative abundance of fish species and families collected annually in restored river channels via electro fishing
Data Source(s):	Annual South Florida Environmental Report
Reporting Period:	End of dry season per Water Year (May 1 – April 30)
Reporting Frequency:	Annually on March 1
Aligned Strategy:	Reestablish ecological integrity to the Kissimmee River/floodplain ecosystem
Why Success Indicator Is Important:	Attaining expected fish community structure is an indicator that river channel and floodplain habitat function is being restored. Reestablishing a fish community similar to the historic Kissimmee River system requires restoring riverine habitats with characteristics similar to those during historical conditions. Reestablishing the physical form of the river and reintroducing fluctuating water levels and seasonal hydroperiods is expected to propagate changes in ecosystem components required to meet the fish community success indicator. These include having a continuous discharge in the river channel, increasing dissolved oxygen levels, and restoring the hydrologic linkage between the river channel and floodplain.
Example:	In Water Year 2007, the mean annual relative abundance of indicator taxa in the restored river channel consisted of: 12% bowfin (*Amia calva*) 12% Florida gar (*Lepisosteus platyrhincus*) 0.2% redbreast sunfish (*Lepomis auritus*) and 65% centrachids (sunfish and bass family)
Target(s):	Mean annual relative abundance of fishes in the restored river channel will consist of: ≤1% bowfin (*Amia calva*) ≤3 % Florida gar (*Lepisosteus platyrhincus*) ≥16% redbreast sunfish (*Lepomis auritus*) and ≥58% centrachids (sunfish and bass family)
Target definition source:	Defining Success: Expectations for Restoration of the Kissimmee River. Technical Publication ERA #433 (SFWMD, 2005)
Subject matter expert(s):	Lawrence Glenn

Success Indicator:	3) Mean daytime concentration of dissolved oxygen (DO) in the Kissimmee River channel at 0.5 – 1.0 meter (m) depth of 3-6 milligrams/liter (mg/L) during the wet season and 5-7 mg/L during the dry season
Definition:	Mean daytime concentration of DO: Average DO concentration calculated from monthly readings at four stations in the restoration area
Data Source(s):	South Florida Water Management District DBHYDRO database; annual South Florida Environmental Report
Reporting Period:	Water Year (May 1 – April 30)
Reporting Frequency:	Annually on March 1
Aligned Strategy:	Reestablish ecological integrity to the Kissimmee River / floodplain ecosystem
Why Success Indicator Is Important:	Reestablishing DO regimes that are comparable to reference streams is vital for meeting the goal of ecological integrity. Adequate DO concentrations are essential for most aquatic organisms. DO concentration daytime targets are based on reference streams.
Example:	In Water Year 2009, the mean daytime DO concentrations were 3.3 milligrams per liter (mg/L) and 6.6 mg/L during the wet and dry seasons, respectively.
Target(s):	Mean daytime concentration of DO in the river channel at 0.5 – 1.0 m depth will increase from <2 milligrams/liter (mg/L) to 3-6 mg/L during the wet season (June–October) and from 2-4 mg/L to 5-7 mg/L during the dry season (December–May).
Target definition source:	Defining Success: Expectations for Restoration of the Kissimmee River. Technical Publication ERA #433 (SFWMD, 2005)
Subject matter expert(s):	David Colangelo

Success Indicator:	4) Mean daily DO concentrations greater than 2 mg/L 90% of the time. DO concentrations within 1 m of the Kissimmee River channel bottom >1 mg/L more than 50% of the time
Definition:	**Mean daily concentration of DO:** Average DO concentration calculated from daily (96 readings per day) readings at two stations in the restoration area **DO concentration within 1 m of the channel bottom:** Calculated from weekly in situ measurements at two stations in the restoration area.
Data Source(s):	South Florida Water Management District DBHYDRO database; annual South Florida Environmental Report
Reporting Period:	Water Year (May 1 – April 30)
Reporting Frequency:	Annually on March 1
Aligned Strategy:	Reestablish ecological integrity to the Kissimmee River/floodplain ecosystem
Why Success Indicator Is Important:	Reestablishing DO regimes that are comparable to reference streams is vital for meeting the goal of ecological integrity. Adequate DO concentrations are essential for most aquatic organisms. DO concentration daily targets are based on thresholds of concern for aquatic organisms.
Example:	In Water Year 2009, the mean daily DO concentrations were > 2 mg/L 80% of the time. DO concentrations within 1 m of the channel bottom were > 1 mg/L for more than 50% of the time
Target(s):	Mean daily DO concentrations greater than 2 mg/L 90% of the time. DO concentrations within 1 m of the channel bottom >1 mg/L more than 50% of the time
Target definition source:	Defining Success: Expectations for Restoration of the Kissimmee River. Technical Publication ERA #433 (SFWMD, 2005)
Subject matter expert(s):	David Colangelo

Success Indicator:	5) Water flows every day of the year from the restored channels of the Kissimmee River
Definition:	The number of days in a Water Year (May 1 – April 30) that flow in restored river channels is zero cubic feet per second (cfs)
Data Source(s):	South Florida Water Management District DBHYDRO database; annual South Florida Environmental Report
Reporting Period:	Water Year (May 1 – April 30)
Reporting Frequency:	Annually on March 1
Aligned Strategy:	Reestablish ecological integrity to the Kissimmee River / floodplain ecosystem
Why Success Indicator Is Important:	Reestablishment of hydrologic characteristics that mimic historic conditions is a primary driver for restoring ecological integrity to the Kissimmee River / floodplain ecosystem. Only one Water Year (WY1956) in the pre-channelization period of record (WY1935–WY1962) experienced zero flow for a six-day period due to extreme drought. Lack of flow directly affects specific physical, physio-chemical and biological attributes in the river channel which impedes the ability of associated biotic and abiotic ecosystem components to respond to restoration.
Example:	Discharge at Structure S-65 exceeded 0 cubic feet per second for only 289 days in WY2008 because of the drought and for 365 days in WY2009.
Target(s):	Water flows every day of the year from the restored channels of the Kissimmee River
Target definition source:	Defining Success: Expectations for Restoration of the Kissimmee River. Technical Publication ERA #433 (SFWMD, 2003)
Subject matter expert(s):	David Anderson

Success Indicator:	6) Annual prolonged recession events of the Kissimmee River reestablished with an average duration ≥173 days, and with peak stages in the wet season receding to a low stage in the dry season at a rate not to exceed 1.0 foot per 30 days
Definition:	**Duration/seasonality:** The number of days in a Water Year between maximum and minimum stage relative to either a wet or dry season **Recession rate:** Thirty-day recession rates will be calculated by the difference in maximum and minimum stages for each recession event divided by the total number of days water levels receded and multiplied by 30 days
Data Source(s):	South Florida Water Management District DBHYDRO database; annual South Florida Environmental Report
Reporting Period:	Water Year (May 1 – April 30)
Reporting Frequency:	Annually on March 1
Aligned Strategy:	Reestablish ecological integrity to the Kissimmee River/floodplain ecosystem
Why Success Indicator Is Important:	Reestablishing hydrologic characteristics that mimic historic conditions is a primary driver for restoring ecological integrity to the Kissimmee River/floodplain ecosystem. The duration of recession events at reference sites in the Kissimmee River for the pre-channelization period of record (1942–1959) averaged 173 days or greater, with only 20% of these events exceeding 1.0 foot per 30 days. Slow recession rates provide connectivity between the river channel and floodplain, which contributes to increased habitat diversity and functionality, and allows for the transfer of food resources.
Example:	Both Water Year 2008 and Water Year 2009 contained two recession events and only one of these met the targeted duration and recession rate.
Target(s):	Annual prolonged recession event will be reestablished with an average duration ≥173 days and with peak stages in the wet season, receding to a low stage in the dry season at a rate that will not exceed 1.0 foot per 30 days.
Target definition source:	Defining Success: Expectations for Restoration of the Kissimmee River. Technical Publication ERA #433 (SFWMD, 2005)
Subject matter expert(s):	David Anderson