

Vital Sign: Invasive/Exotic Animals

[shortened name: Inv_Animals]

Parks Where Vital Sign will be Implemented:

BICY, BISC, BUIS, DRTO, EVER, SARI, VIIS – SFCN conducts limited monitoring in cooperation with park staff

Justification/Issues being addressed: Invasive/Exotic Animals ranked 12th among the 44 SFCN vital signs. Invasive fauna are a serious threat to maintaining ecosystem integrity, with at least 61 exotic species found within SFCN parks and many more throughout south Florida. Some of the most problematic species include pythons, hogs, rats, mice, mongoose, Mayan cichlid, Cuban treefrogs, free-roaming and feral livestock, Mexican weevil, lac lobate scale, and fire ants (for complete list see Appendix N). These species displace and prey upon native fauna and can alter foodwebs. Tracking the distribution and level of control of known invasive species is important to assessing the health of the ecosystem for supporting native species. Detecting new species with the potential to become invasive while they are still in small controllable populations and/or outside park boundaries is important to cost-effective management. Island food-webs are particularly susceptible to invasive species, but also offer opportunities for successful control as has been demonstrated by BUIS and VIIS exotic control programs. Executive Order 13112 deals with the introduction, spread, control, and monitoring of invasive species on federal lands.

General Monitoring Questions to be Addressed by the Vital Sign:

- What exotic animal species are present in the parks and which ones are considered invasive or otherwise problematic? What is the distribution of the species? Where have new invasive/exotic species been detected in or near the parks?

Measures:

Invasive species present, distribution, vegetation types invaded, new species detected along common invasion points (e.g., canals)

Basic Approach:

SFCN will annually contact the major animal community monitoring programs and Park Resource Management personnel to develop and then update a list of exotic species within the parks and gather any new information regarding new exotic species detected and specific locations if possible (e.g., monitoring programs for fish, seagrass, amphibians, birds, coral, etc). This is intended to be a very basic list and specificity of locations may vary widely. This will be used to update the new web page being developed by the CISMA (Cooperative Invasive Species Management Area; www.evergladescisma.org) for exotic animal location reporting similar to their exotic plant page already in operation. This web page will also be queried to update the list. SFCN will immediately inform Park Resource Management and the Exotic Plant Management Specialist about new exotic species found within their parks. SFCN will also assist in getting the word out about this new web page and will maintain a link to

this web page from the SFCN web site. As CISMA becomes better known, SFCN may cease contacting major monitoring groups and instead pull new species from the CISMA.

Monitoring canals annually along the eastern border of Everglades which commonly overwash into the park plus canals nearby have been identified as a priority invasion hotspot for monitoring (L31W, L31N, C111). SFCN will work in cooperation with EVER park personnel (Jeff Kline) to use electrofishing and other sampling techniques (seine nets, dip nets, etc.) in these canals to detect new problematic fish species which can then be targeted for control by a multi-agency team that is scheduled to be developed soon. Some additional sites to monitor would be the L29 and L67 extension on the northern boundary of EVER, plus some canals in BICY (Tamiami canal, L-28, L31W, Loop road). Monitoring timing is preferably early and late dry season.

If there is sufficient SFCN and BISC staff time, the effort may be expanded to BISC canals which empty into Biscayne Bay.

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Development Schedule, Budget, and Expected Interim Products:

SFCN is developing an "Invasive/Exotic Fish in Canals" protocol that will be completed by 2009 and implemented jointly with EVER personnel in 2010. Cost of equipment for an electrofishing boat, trailer, engine, plus equipment and gear is estimated by park

personnel at \$83,500. Time per year would be 2.5-3 weeks in Everglades only for 1-2 SFCN personnel assuming other personnel contributed by the park. Estimates for Big Cypress would be another 2-3 weeks but may not be done every year (e.g., every 2 years). With regards to maintaining a list of species, SFCN will work to implement this by the end of 2008 and is expected to take at most 1 week/year for 1 intern once the initial list is compiled. Table indicates proposed SFCN workload upon full monitoring implementation.

Expected SFCN staff time requirements once program is fully implemented in 5 years:

SFCN Staff	Full Time Equivalent (FTE)
Coordinator	
Marine Ecologist	
Fisheries Biologist	
Marine Biologist Technician (So FL)	
Marine Biologist Technician (VI)	
Community Ecologist	0.08
Wildlife Technician (Wildlife)	0.08
Wildlife Technician (Vegetation)	
Quantitative Ecologist	
Data Manager	
GIS/Data Tech	0.06
Interns	
SFCN Total	0.22