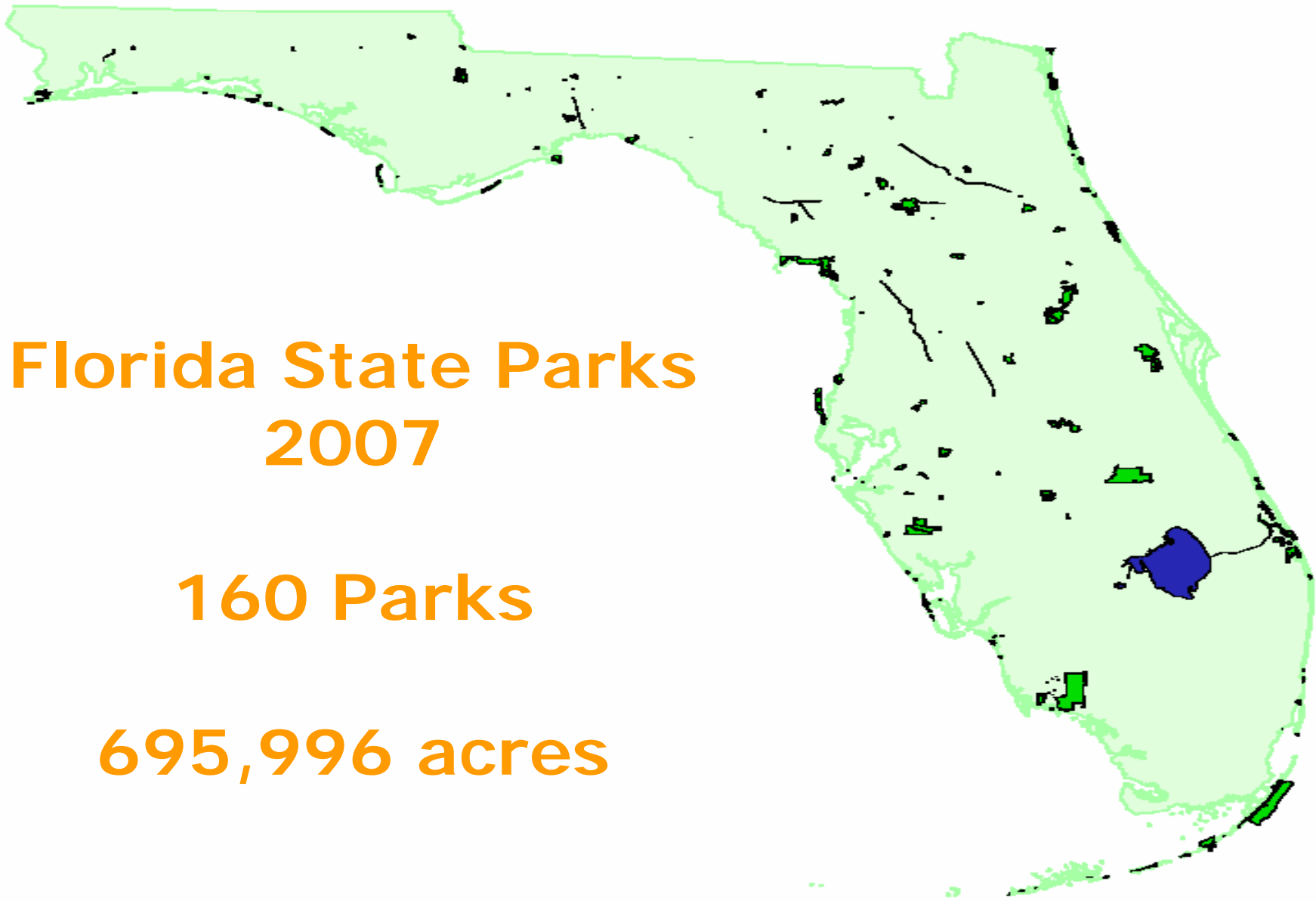


Tools for Prescribed Burning



Rosi Mulholland
Fire Coordinator





**Florida State Parks
2007**

160 Parks

695,996 acres

Florida State Parks



104 parks have fire-dependent acres

583, 447 upland acres

~263,000 acres are Fire-Dependent

FPS needs to burn 80,000 ac/yr

Ten year average 45,000 ac/yr



FPS Million Acre March

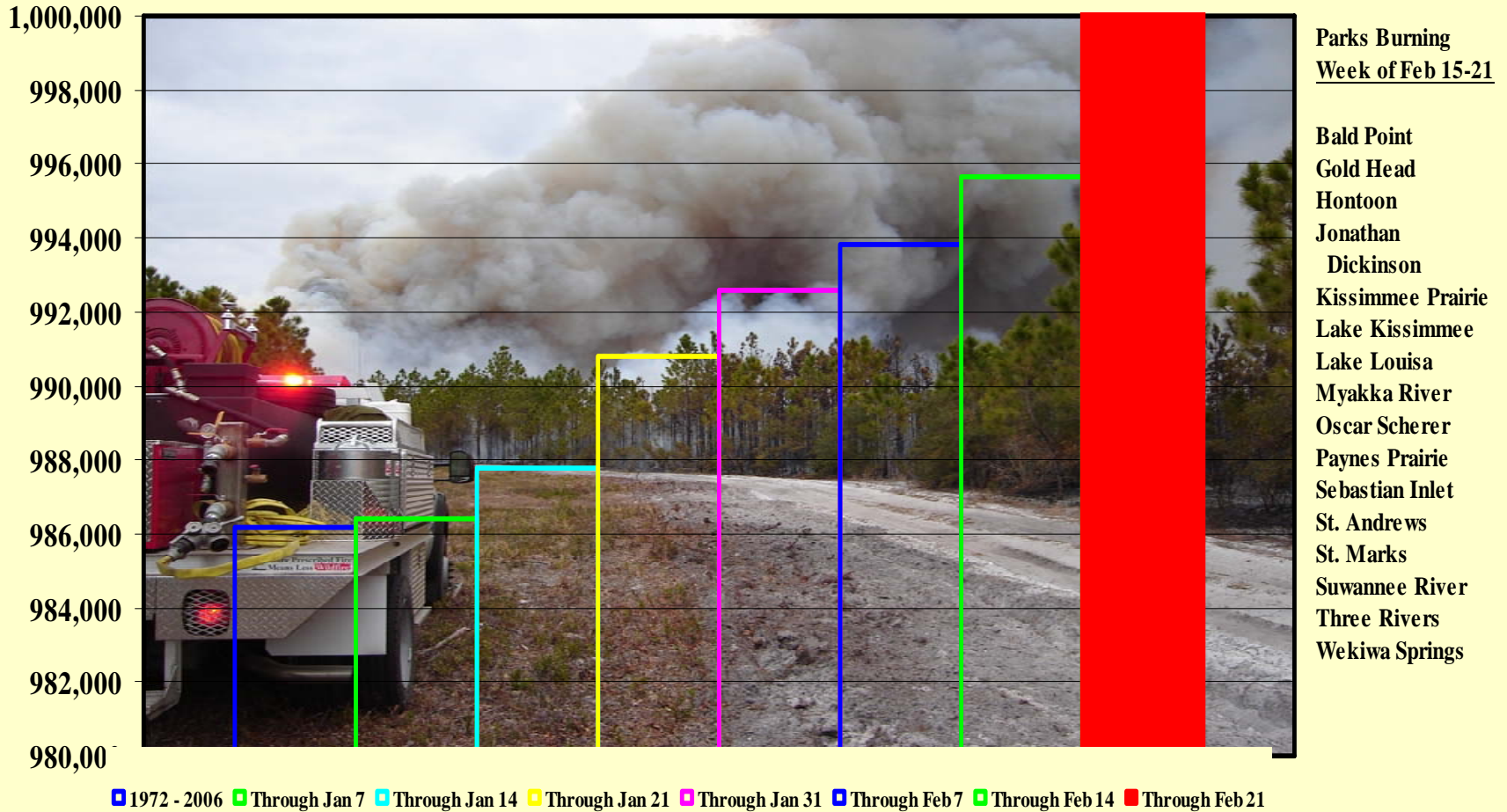
1972 - 2007

Congratulations FPS !!

You've come a long way . . .

February 21, 2007

1,000,866 acres



When you are in deep trouble, look straight ahead, keep your mouth shut, and say nothing.



Technical Advisors

- Sam McGee/Ray Mojica – photo points
- Ed Harris – XM weather
- Scott Goodrick – Goggle Earth smoke plotting
- Brendan Mulholland – IT
- Matt Corby – Interagency cooperation
- Steve Miller – web-based hydrological data
- Task Master – Doreen DiCarlo
- Neil Clineman & Bryan Kreiter – Polaris outfitting
- Rusty Boys – PyroShot
- Dragon Toys – Jeff Schardt
- Red Tape Burning – Boyd Blihovde
- Radio Technology – Laura Butterfield
- Stand-in Speaker – Deb Hanley

Brevard Co., DEP, Fla. Natl. Guard, SJRWMD, TNC, USFWS, DOF, East Ridge HS, Florida Atlantic Univ., Private

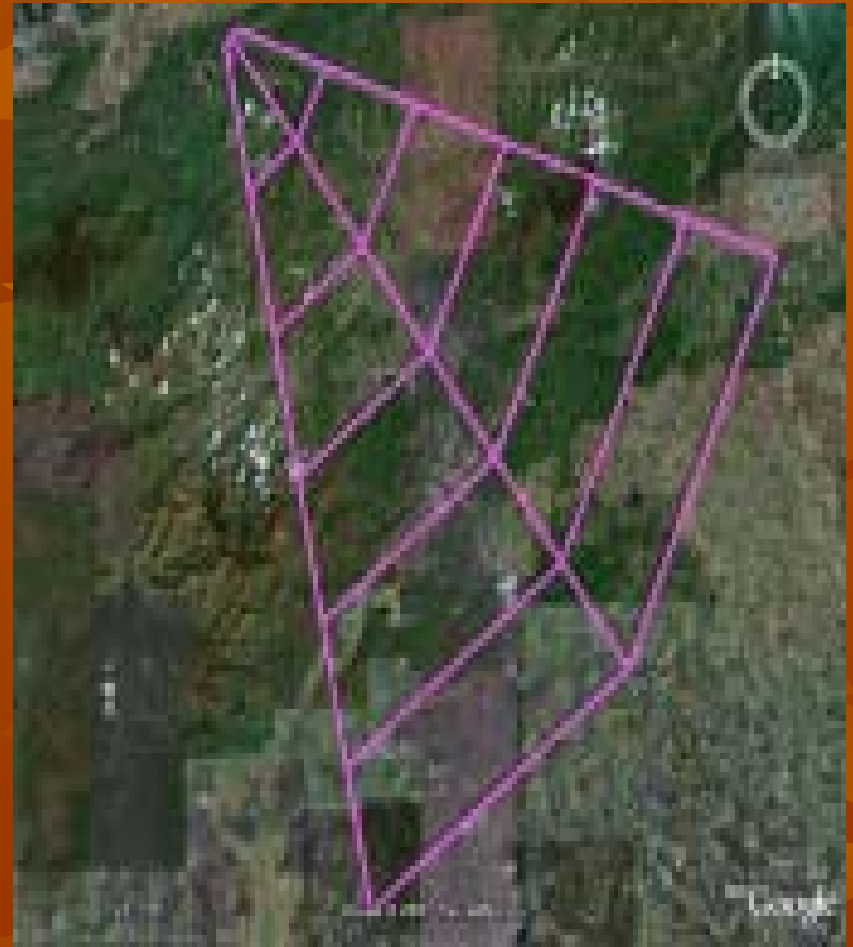
The Perfect Tool is Out There



Les avantages d'être syndiqué...

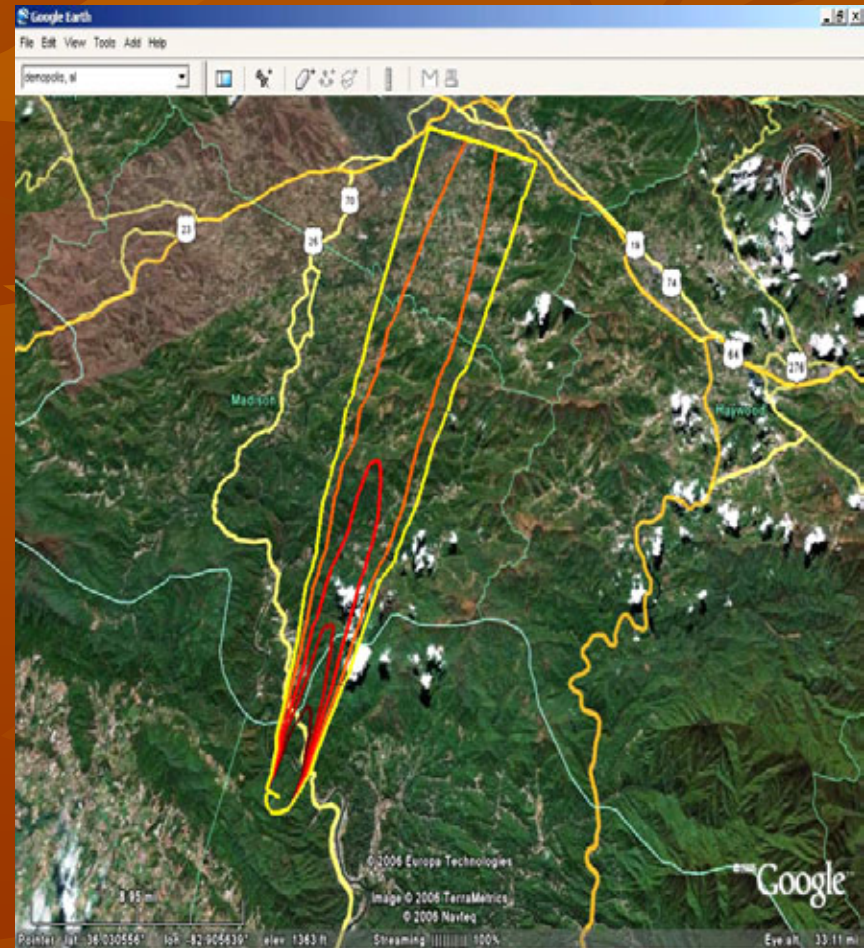
Google Earth and Smoke Screening

- Simple grid-based screening tool
- Replaces old plastic protractor
- Useful for planning



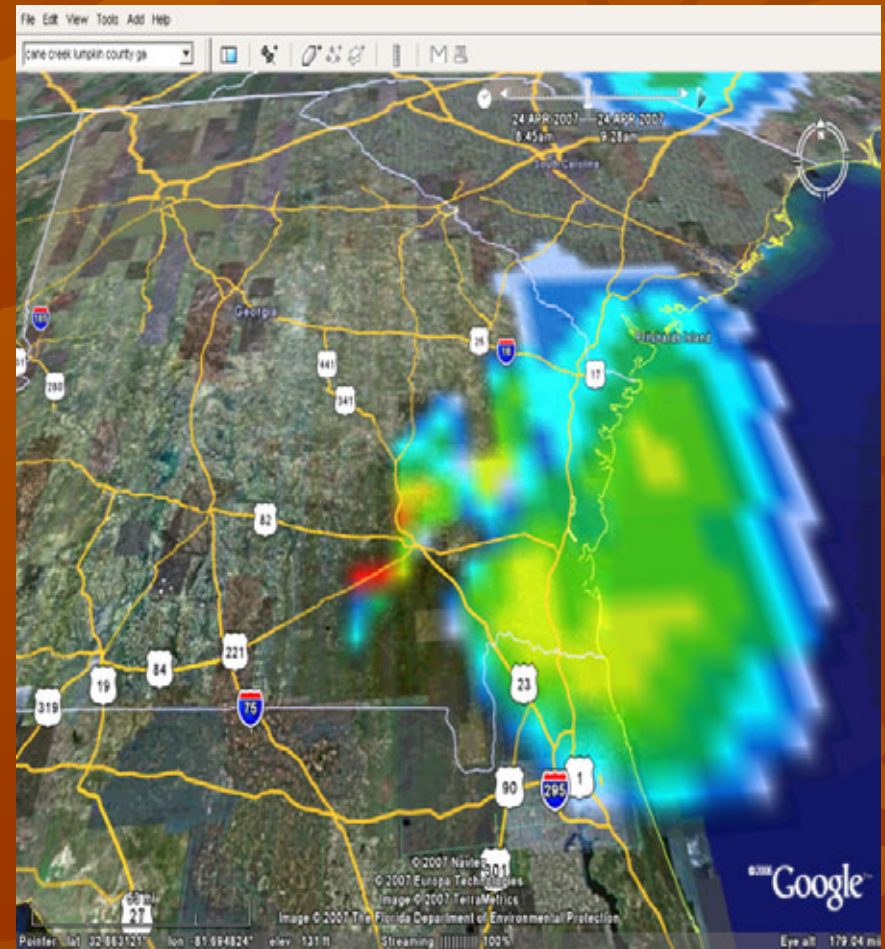
Google Earth and Vsmoke

- New implementation of standard VSmoke model
- Uses Google Earth as the GIS interface for displaying results
- Dramatically reduced learning curve compared to VSmoke-GIS



Google Earth and BlueSky

- Ingest smoke concentration forecasts from BlueSky and display in Google Earth
- Provides estimates of hourly surface particulate matter concentrations.





Navigate to County
- SELECT -

Navigate to Basin
- SELECT -

[Map Legend](#)

- Rain
- Water Level
- Discharge

Welcome! The hydrologic data collection program of the St. Johns River Water Management District collects, processes, manages, and disseminates hydrologic and meteorological data that are used for consumptive use permitting, water shortage management, establishment of minimum flows and levels, water supply planning and management, environmental protection and restoration projects, and operation of District flood control facilities. It is staffed and managed by the Division of Hydrologic Data Services (HDS). HDS operates and maintains over 1,000 monitoring stations throughout the District and processes data from approximately 200 additional sites collected by county and municipal agencies through mutual agreement or by the U.S. Geological Survey under contract to the District. Over sixteen million measurements are collected, verified, processed, and stored each year. These data are disseminated to District staff and the public upon request. HDS also compiles the District's Hydrologic Conditions Report, which is posted each month on the [District's Web site](#).



The goal of the hydrologic data collection program is "to support the District's hydrologic and meteorological data needs by providing quality assured data as requested."



Hydrologic Data



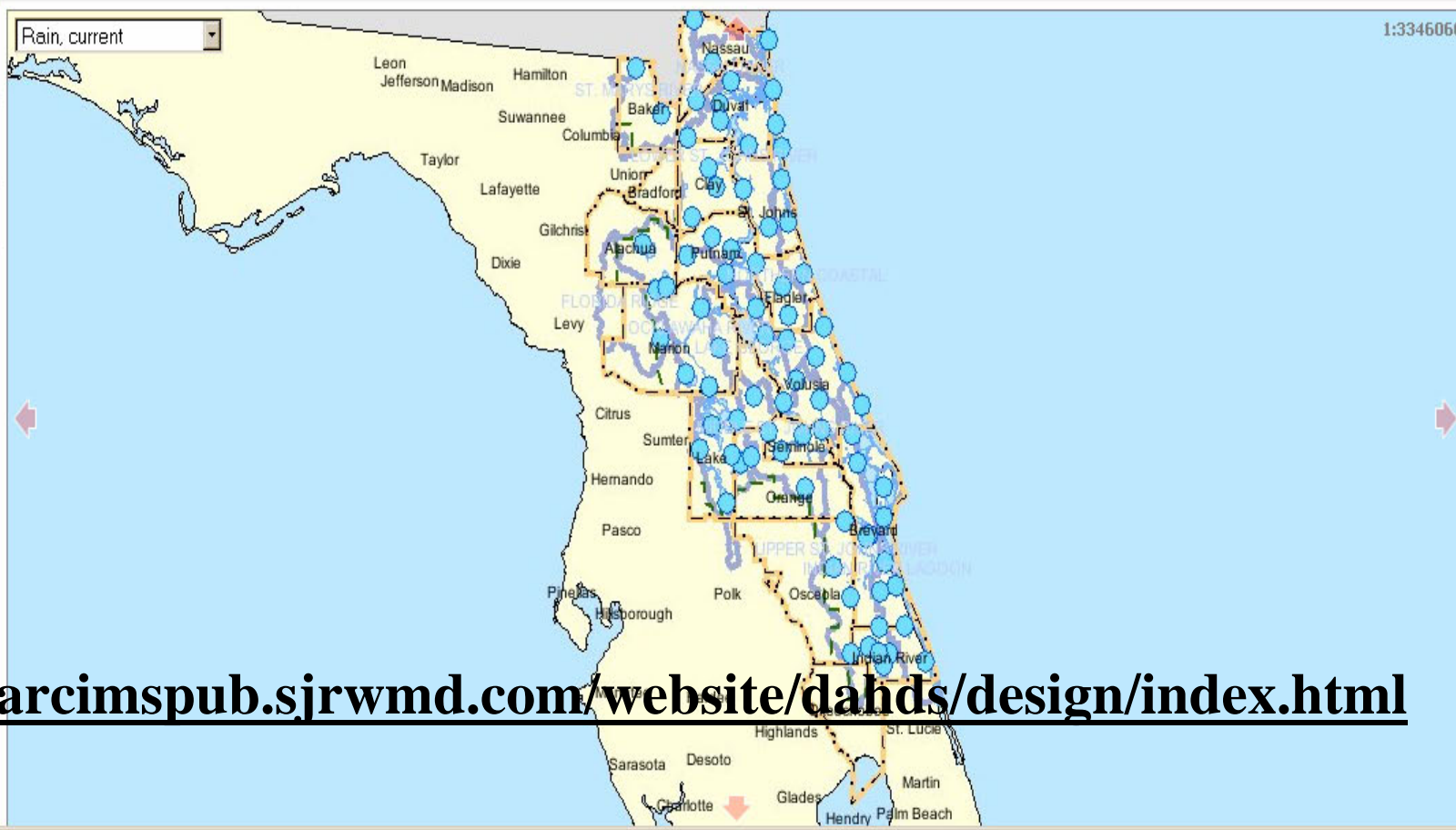
- Home
- FAQs
- Reports
- Map Help
- Disclaimer
- Other Agencies
- Contact Us

Navigate to County
Lake

Navigate to Basin
Ocklawaha River

Map Legend

- Rain
 - Current
 - Archived
- Water Level
- Discharge



<http://arcimspub.sjrwm.com/website/dahds/design/index.html>

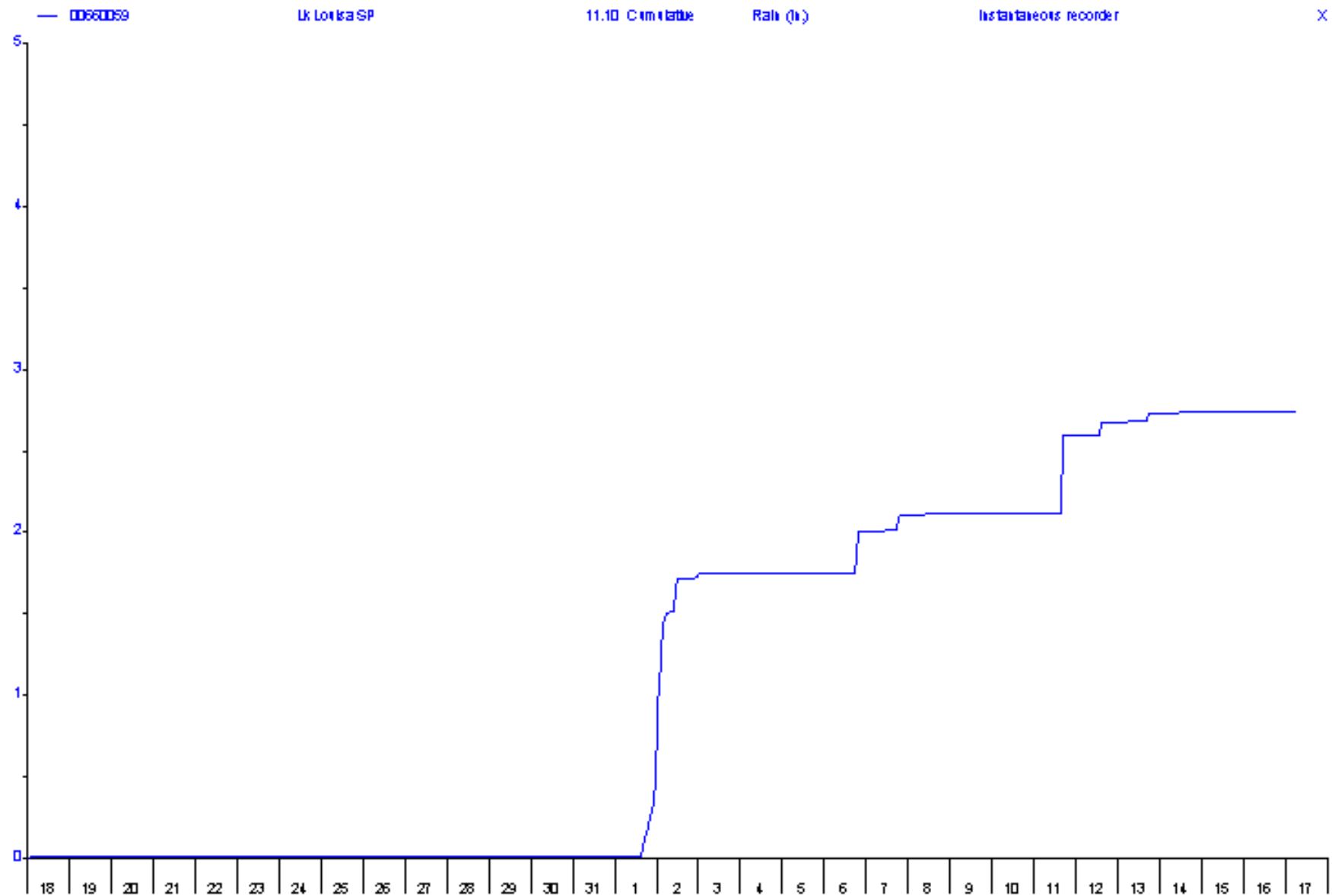
St Johns River Water Management District

HYPLOT V130 Output 06/17/2007

Period 31 Day PlotStart 0000_05/18/2007

2007

Interval 1 Hour PlotEnd 0000_05/18/2007



Basic Field Weather Instrumentation



WindMate ~ \$220

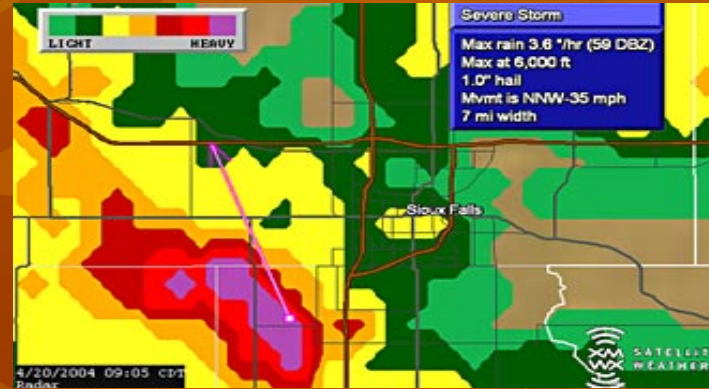


Kestrel 4500 ~ \$400



XM Weather

<http://www.xmradio.com/weather/overview.xmc>



DEP BIPM using with Garmin
GPSMap376C ~ \$1,000

Antenna ~ \$250, service
\$30/month/antenna



Near Real-time Weather Data

Enhanced GPS Technology

Topo layer, aerial photo layer, way points, collected data points, shape files



N 43°44.469' 254°T
W 70°13.372' Leg: 117.79 ft
Total: 117.79 ft



... 160 ft

Speed	Heading
--	--



Ricoh 500SE

GPS-ready Digital Camera

Capture Location Data with Your Images



WiFi Bluetooth

[Find Resellers](#)

[Download Brochure](#)

[View the Quicktour](#)

RICOH

www.ricohsolutions.com/geo

Cost: ~ \$1100



Sufficient Radio System to Maximize Communications Effectiveness



Mobile \$800

Portable \$750



www.Relm.com

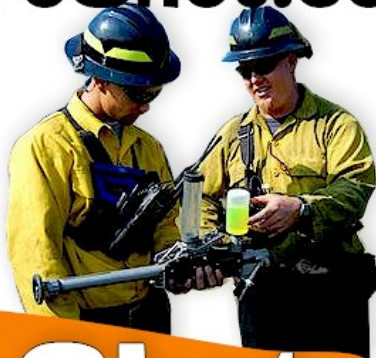
Forestry Professionals

ATTN: PRESCRIPTION BURNERS

<http://PyroShot.com>

Introductory Pricing

For complete information on PyroShot, Dragon Eggs combustable spheres, 150 shot magazines and ball bags please visit our website. For pricing and ordering please call (770) 454.1130



PyroShot™

HAND LAUNCHER FOR GROUND IGNITION
Covers a Lot of Ground

Not Your Grandfather's Drip Torch!!!



U.S. Patent Pending

Currently in use by:
U.S. Forest Service
USFS Missoula Technology and Development Center
US Fish and Wildlife Service
National Interagency Prescribed Fire School
Florida Division of Forestry
Florida Fish and Wildlife Conservation Comm.
as well as many others

Available Only From:

Field Support Services

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(770) 454-1130

<http://PyroShot.com>

Hand - Held Aerial Ignition Device Launcher - \$1895

Weight	6.5 lb.
Length	26 in.
Range	75 ft.





~ \$8600 free trial



Dragon eggs ~
\$217/1,000



Free



www.SEI-ind.com

POK Foam Technology



Silvex = \$13/gal

POK Nozzles:

\$150 - \$400 +

POK Sticks:

Mini - \$5.50+ ea

Large - \$16+ ea



POLARIS
RANGER
614

00.

2001-2-GAL
100% HDPE

2007



POLARIS
RANGER
XP





Water Distribution Manifold – simplifies plumbing by bringing water to central point and dispersing it to outlets



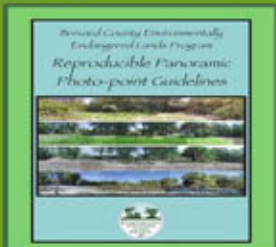
Reproducible photo-points for documenting habitat restoration

Raymond Mejica Jr. Land Manager Brevard County EEL Program, 91 East Drive, Melbourne, Florida 32904

Abstract: The Brevard County (Florida) Environmental Endangered Lands (EEL) Program has developed and implemented a technique to shoot reproducible photo-points to document restoration activities on its sanctuaries. The premise of this application is to control the X, Y and Z of the camera location while controlling other variables such as the camera's focal length and image size. By utilizing a panoramic camera mount attached to a leveling base, a series of 18 photos can be taken around any nodal location, either from a fixed base or from a tripod. Utilizing off the shelf software, the images can be "sewn" together into an interactive Quicktime VR movie that is easily distributed. Conversely, the images can be presented in a timeline view allowing for easier interpretation. This methodology has great value in monitoring habitat restoration projects and impacts from natural disasters. A number of organizations have adopted and adapted these techniques to meet the needs of a variety of habitat types and mission goals.

Methods

The EEL Program has developed a manual detailing methods for the construction of the photo-point on which the camera, panoramic head and leveling base are attached and the photo-point bases, which are buried at the desired location. To control image quality, photo-points are best taken during midday with an evenly overcast sky (reduced shadows) and with light winds (stabilizes lining up photos). Panoramic camera mount and leveling base obtained from www.saidan.com.



Manual

Request manual@mejica@brevardbarba.com



Base

Clevis pin controls depth of the staff, thumb screws prevent staff from spinning, hex bolt prevents base from spinning.



Base Installation

Base is installed, leveled and GPS'd.



Staff Installation

The staff is inserted into the base and the panoramic head is leveled in several directions.



Taking photos

Camera settings are confirmed and the 18 photos are taken.



Software

Several commercially available software solutions are available.



Settings

Set the preferences to reflect the camera lens settings and image size. This will be used to calculate image overlap.



Locate your images

An image archive, application and well thought-out organization of files is essential.



Acquire the images

The software will import the images (18 in this case) into the project.



Stitch the images

Though the software will come close, some fine tuning is often required.



Blend the images

This step removes the seams between photos.



Compress and Export

Compress and export the finished Quicktime VR movie.

Application

The EEL Program has nearly 30 photo-point stations within the south beach region. Several photo-points have been abandoned for a variety of reasons.



Example

The following images are the result of exporting the 18 photos that make up the panorama after they have been stitched and blended. The photo-point below is 036 (for Barrier Island 6) located on the Atlantic Ocean at the site of the Barrier Island Sanctuary Management & Education Center, currently under construction. The series stretches from Fall 2003 to Fall 2006 encompassing the demolition of an abandoned restaurant, the 2004 Hurricane season, subsequent dune restoration and construction of the Barrier Island Center.

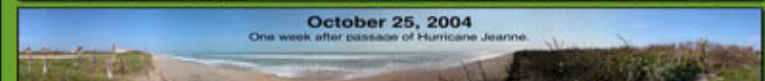


September 30, 2003



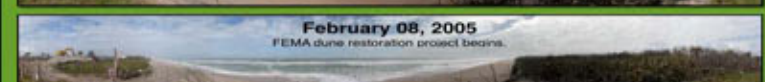
September 09, 2004

Two days after passage of Hurricane Frances.



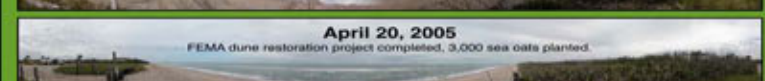
October 25, 2004

One week after passage of Hurricane Jeanne.



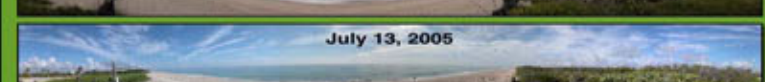
February 08, 2005

FEMA dune restoration project begins.

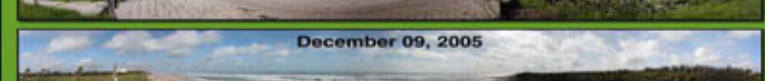


April 20, 2005

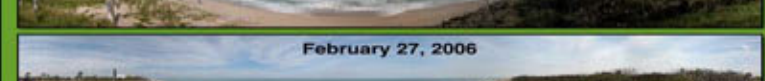
FEMA dune restoration project completed, 3,000 sea oats planted.



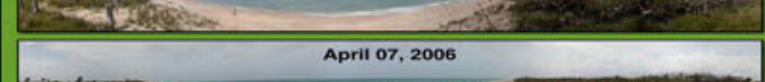
July 13, 2005



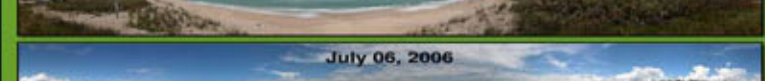
December 09, 2005



February 27, 2006



April 07, 2006



July 06, 2006



August 08, 2006



October 03, 2006



November 13, 2006

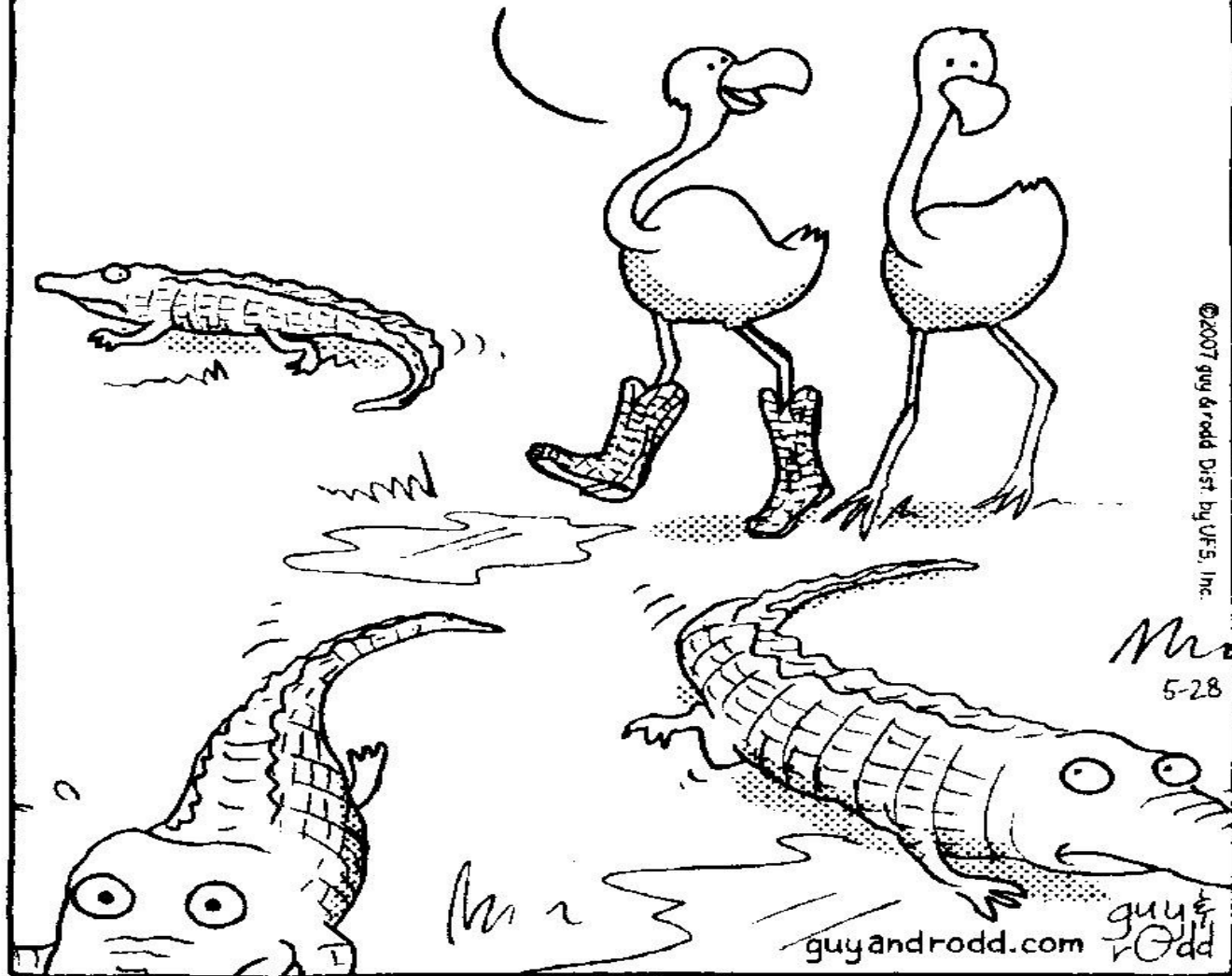


December 01, 2006

Barrier Island Center under construction

Brevity

\$600 MAY BE A LOT FOR A PAIR OF BOOTS, BUT THIS WAS THE BEST PURCHASE OF MY LIFE.













Questions?