An iPhone Application for Collecting Fisheries Data with Visual Recognition

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Symposium on:

Fisheries Data Dissemination – Building Better Networks

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Purpose

To develop an app that collects recreational fisheries data for

Anglers

Scientists

MARINE RECREATIONAL INFORMATION PROGRAM

Managers

EVERGLADES NATIONAL PARK
UNITED STATES DEPT. OF INTERIOR

App Design Objectives

- Easy to use
- Directly applicable to management
- Engages IGFA's extensive angler network
- Build off existing IGFA App

Three Key Features

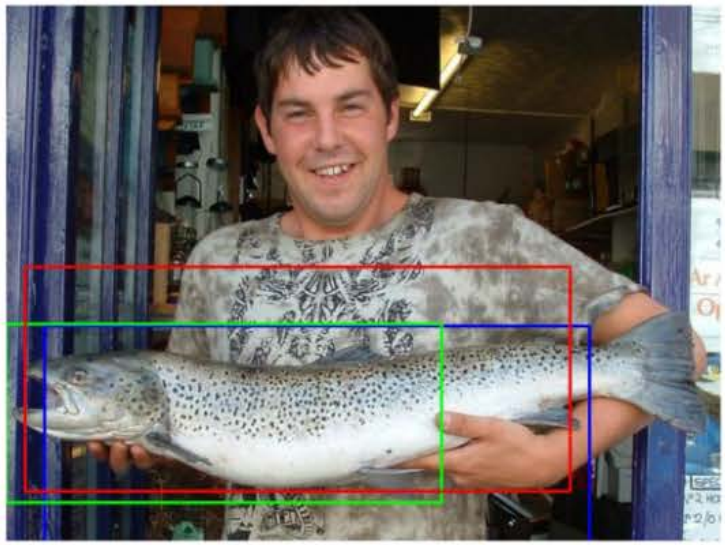
1. Visual recognition
2.
3.

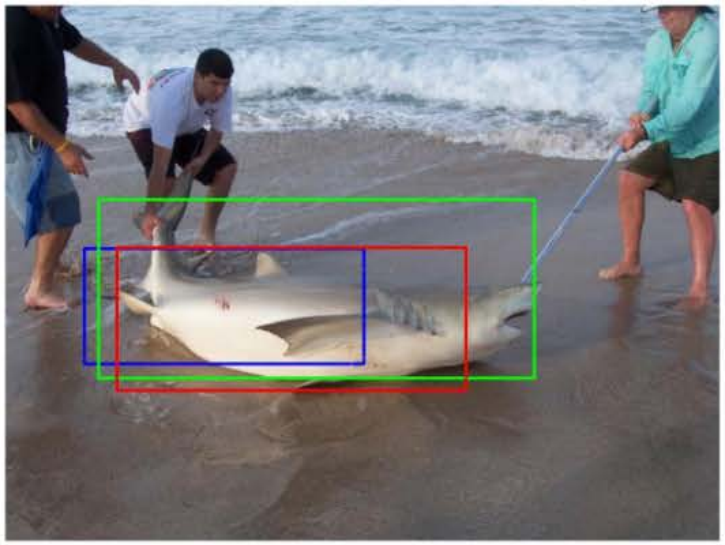
Visual Recognition Component

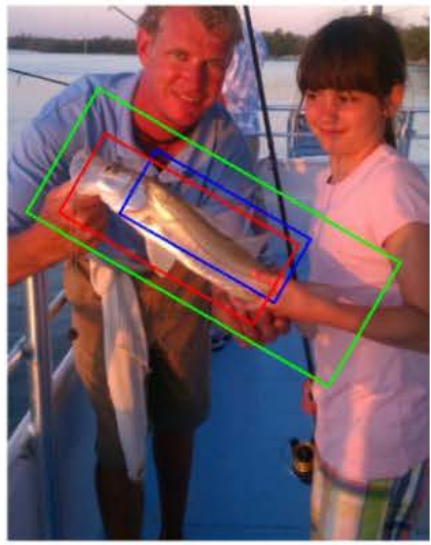
- > 50 images for each species
- Algorithms identify key morphometric differences

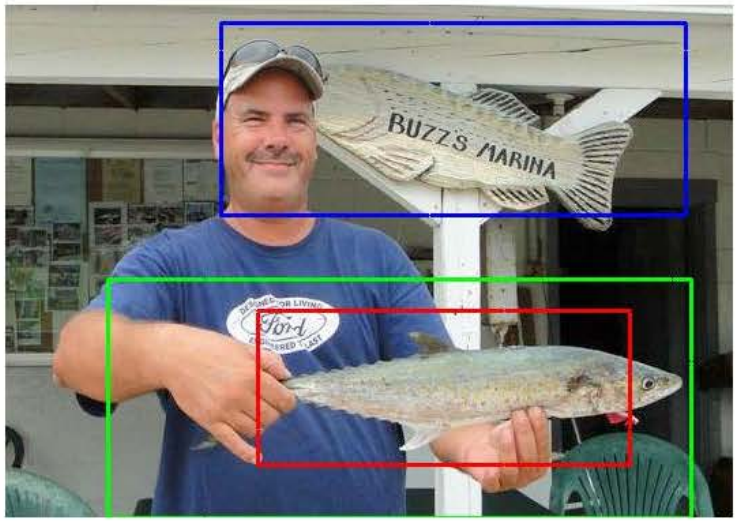
leafsnap

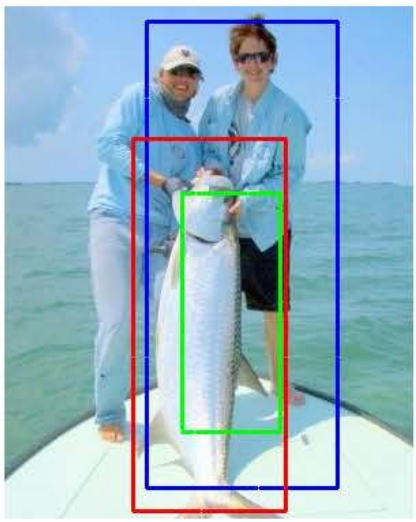
First : Fish Detection in Photos











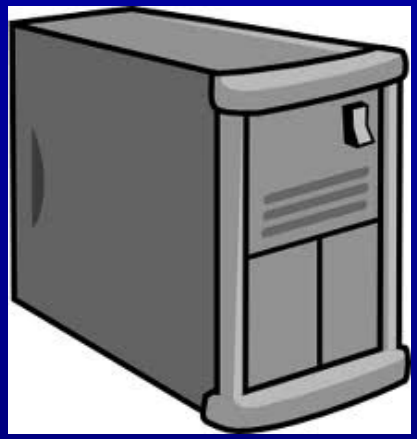
1st guess 2nd guess 3rd guess

Next: Labeled Parts

Fish API

request

respond



Client
(smart phone)

API

Visual
recognition
system

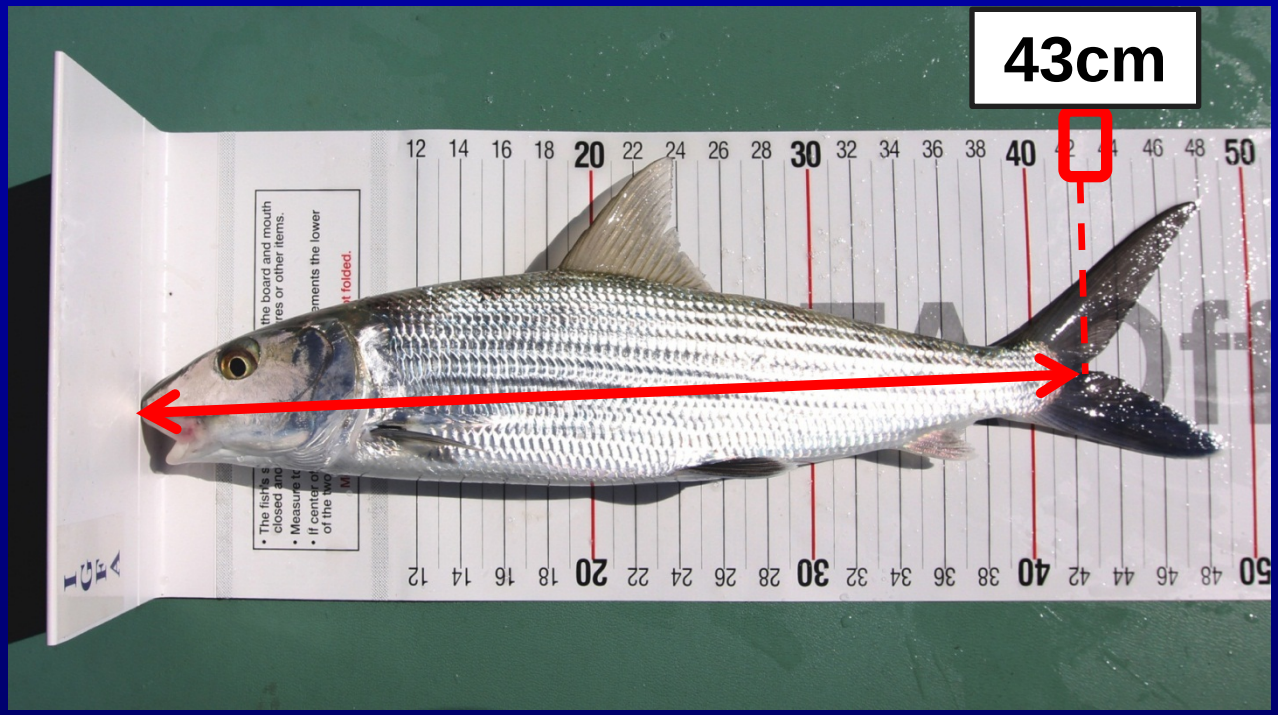
Key Features

1. Visual recognition

2. Collects species, length, date/time of catch, location, etc.

3.

Data Collection Component



One Click collects:

- species
- length
- location
- date & time

Can be synced with:

- weather data
- water temp
- tide charts
- solunar data

Quick details are entered

Is it one of these?

- Bonefish
- Cobia
- Black Drum
- Red Drum

- BAIT
- FLY
- ARTIFICIAL
- KEPT
- RELEASED ALIVE
- RELEASED DEAD

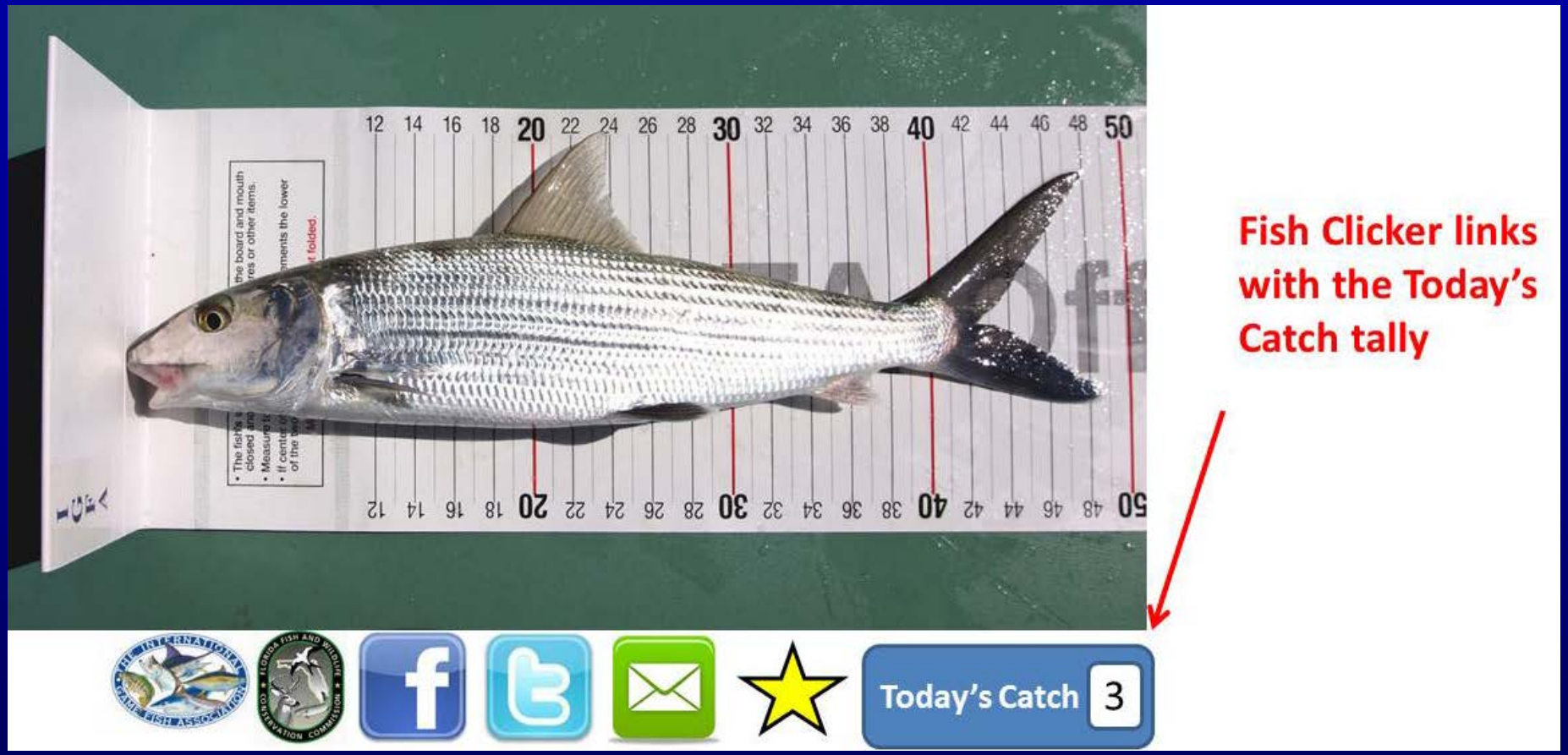
Not one of those? Manually enter your catch

Bonefish

Please enter the forklength: 42 cm

STORE CATCH

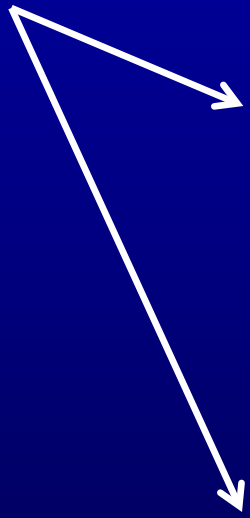
Fish Clicker



"Fish Clicker" allows for rapid counting

Estimating Effort

Time, date & location recorded



Start Trip

End Trip

User Input Variables

Enter catch info

LiveWell

My First Bonefish

Bonefish

April 12, 2012

0904

(Location name)

25° 8'26.23"N

80°52'14.01"W

SAVE

42 cm

13.6 lb

(Girth)

(Details)

Today's Catch 3

Key Features

1. Visual recognition
2. Collects species, length, date/time of catch, location, etc.
3. Online database for users to view their data

Catch History button

Select Catch Breakdown

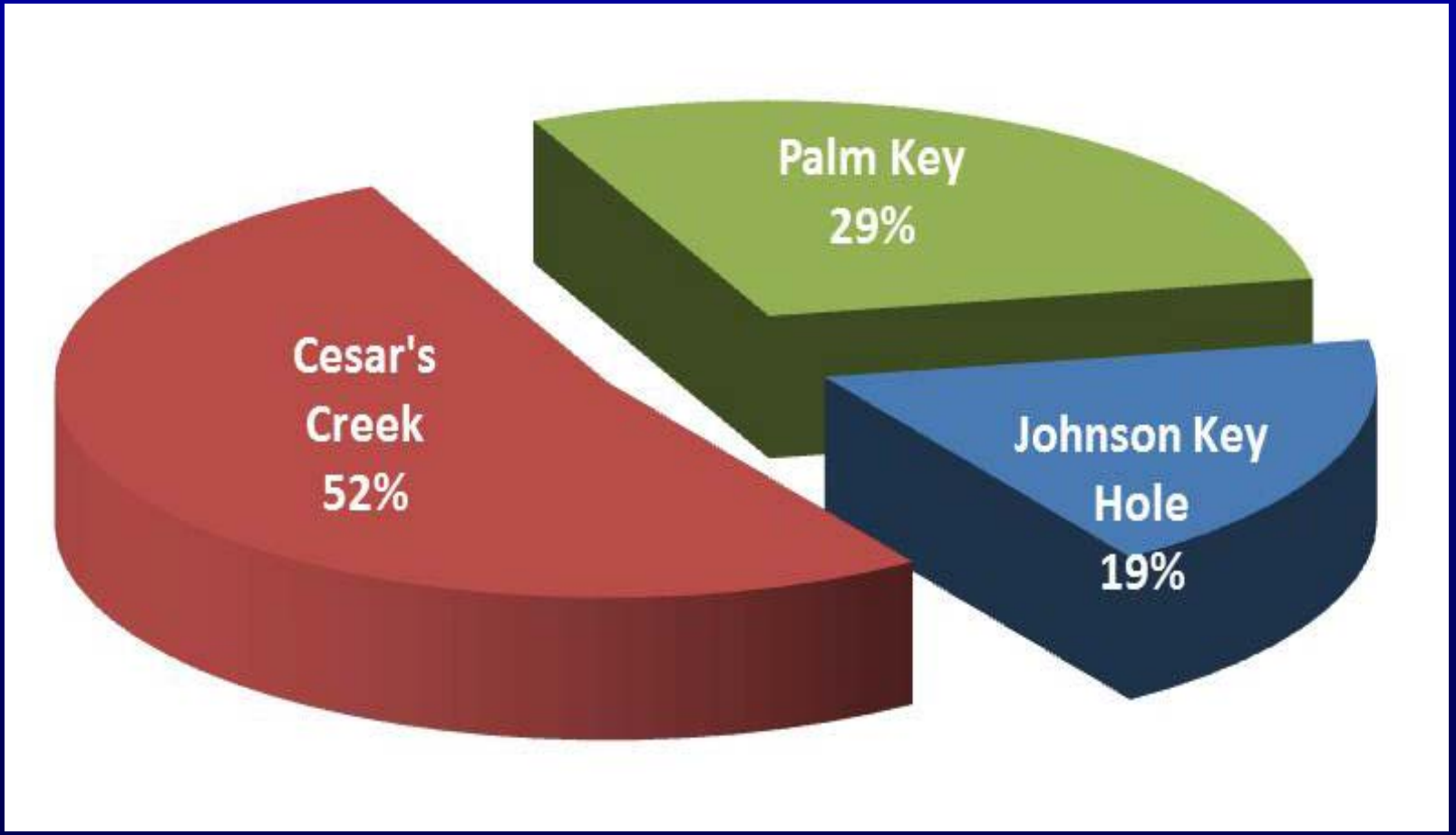
- By Species
- By Tackle
- By Season
- By Date
- By Time of Day
- By Moon Phase

Favorite Spots:

- Johnson Key hole
- Cesar's Creek
- Adams Key Dock
- Palm Key

SUBMIT

Favorite Spots Trends



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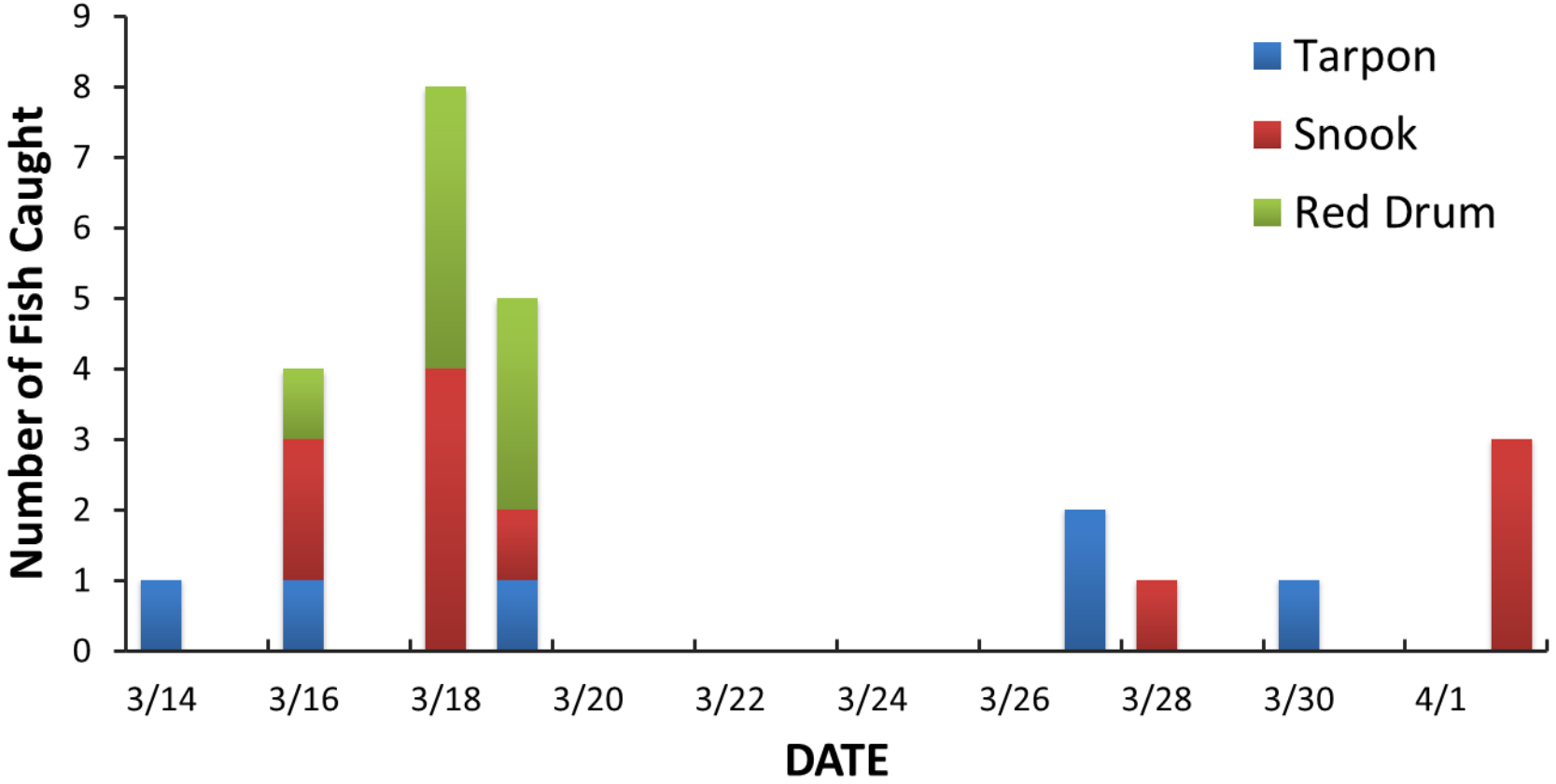
SUBMIT

Catch Stats


Catch by Species by Date at Palm Key
Number of Fish Caught
0
1
2
3
4
5
6
7
8
9
3/14
3/16
3/18
3/20
3/22
3/24
3/26
3/28
3/30
4/1
DATE
Tarpon
Snook
Red Drum

Brag Gallery




Date: 4/10/12 Time: 8:41 am Species: Blackfin Tuna
Length: 76 cm Lat: 25°41’37.84" N Lon: 80°03’50.79" W
Moon: Waning Water Temp: 74°F Wind: SW 5 knots

Date: 4/11/12 Time: 12:01pm Species: African Pompano
Length: 65 cm Lat: 25°41’04.81" N Lon: 80°03’51.90" W
Moon: Waning Water Temp: 71°F Wind: E 8 knots

Additional Features

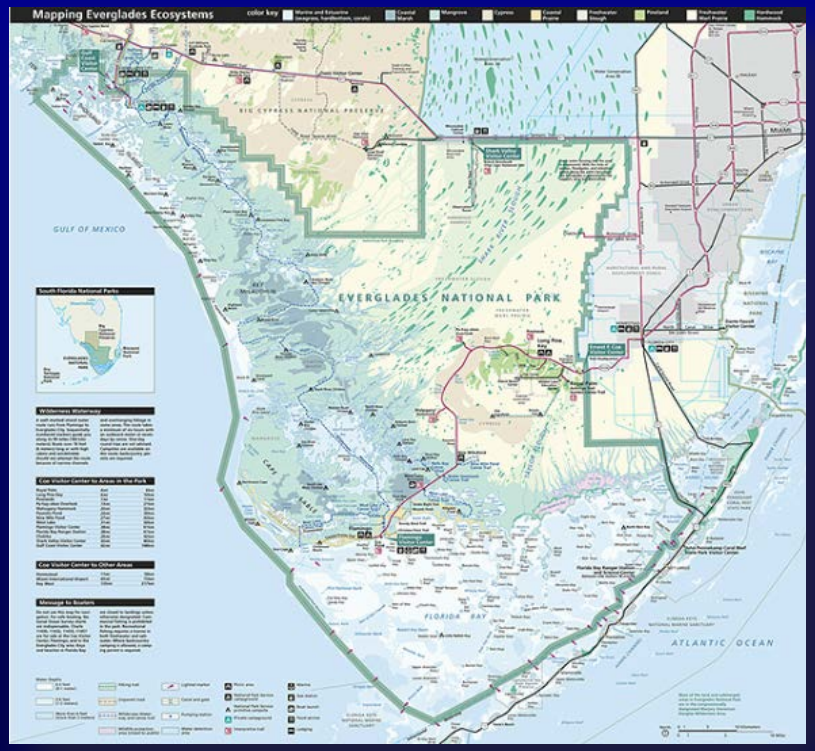
Access IGFA and FWC Rules

Upload to social media sites

Email pictures

Field trials

- Pilot in nearshore marine waters of Everglades National Park in mid 2013
- Agency support



Benefits

- Data access for scientists and agencies
- Continuity with existing programs
- Features geared for optimal use
- Will fill gaps in data collection programs

Questions?

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