

# iPlover Training and Documentation

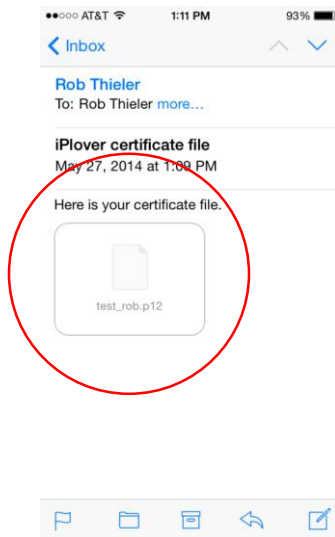
- A mobile web app to collect location and environmental attribute information about PIPL nests
- Observations can be fuzzy or uncertain
  - Our models account for that
  - There are alternative methods to help estimate some parameters
- Used to drive research models of habitat evolution and utilization
- Data and models used to inform land- and species-management decision making at local to regional scales

# Today's How-to's

- Set up the iPhone with the iPlover security certificate
- Access the iPlover URL
- Use the application
  - Collect data using draft field protocols
  - Upload data to USGS
- Get help
- Provide feedback
- Troubleshoot
  
- Q&A

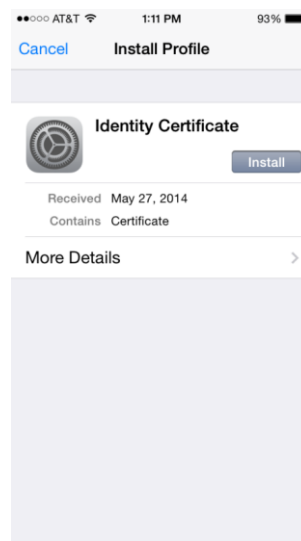
# Install and activate security certificate (1/2)

1



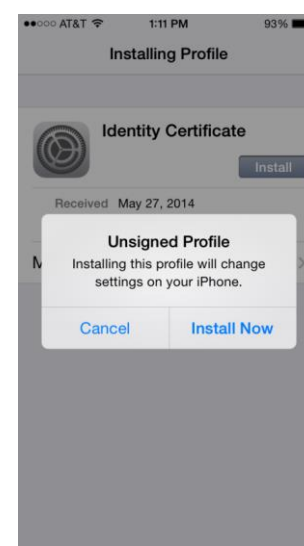
Open email with certificate file;  
tap file icon  
(can use the built-in mail app or the browser, e.g., to access mail.doi.gov)

2



Tap **Install**

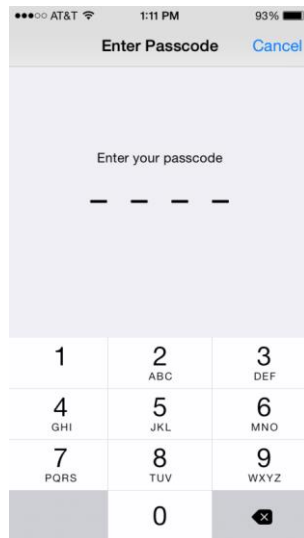
3



Tap **Install Now**  
("unsigned" means it is not signed by a recognized entity like Verisign or TRUSTe; it's locally generated and signed by USGS)

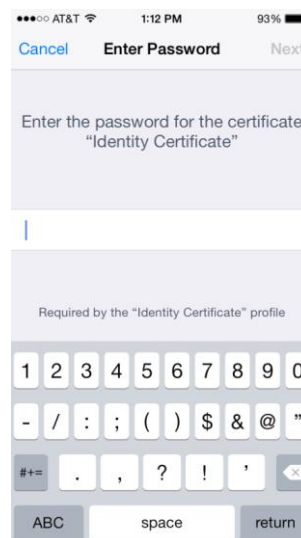
# Install and activate security certificate (2/2)

4



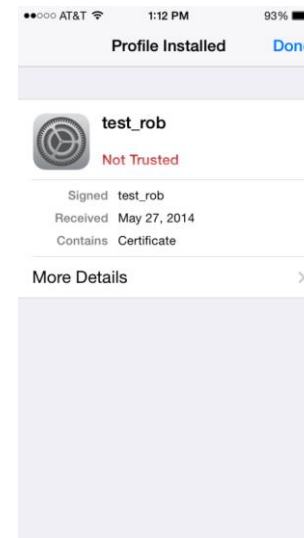
If your iPhone has a Passcode, enter it

5



Enter the certificate password (supplied verbally by iPlover dev team)

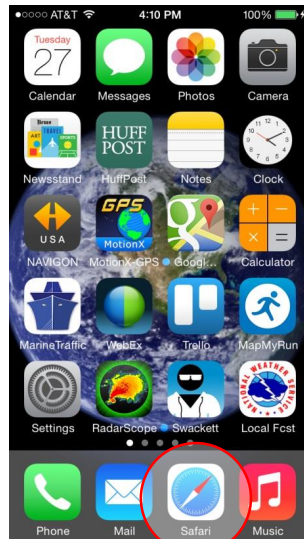
6



Tap **Done** ("Not Trusted" means it is not signed by a recognized entity like Verisign or TRUSTe; it's locally generated and signed by USGS)

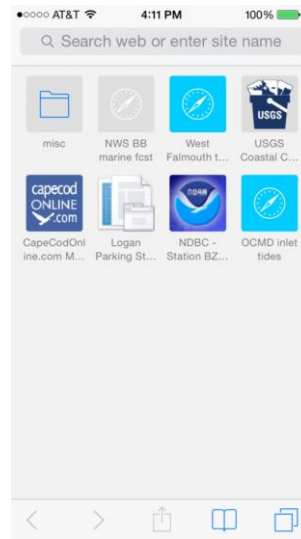
# Access the iPlover web app (1/3)

1



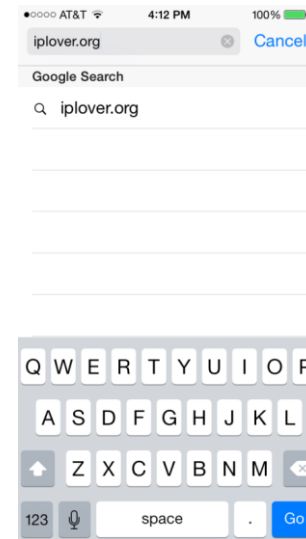
Tap **Safari** icon to start the browser

2



Get browser page (you may not have any bookmarks yet, as shown here)

3



Enter the URL, iplover.org; tap **Go**

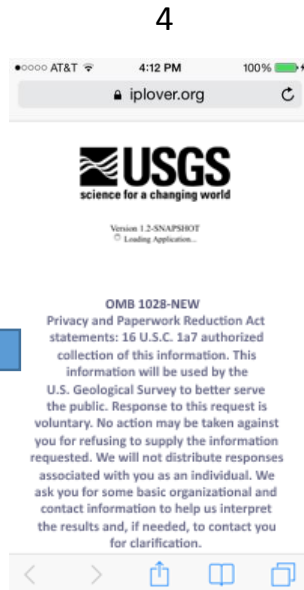
# Access the iPlover web app (2/3)

OMB 1028-NEW  
Privacy and Paperwork  
Reduction Act statements: 16  
U.S.C. 1a7 authorized  
collection of this information.  
This information will be used  
by the U.S. Geological Survey  
to better serve the public.  
Response to this request is  
voluntary. No action may be  
taken against you for refusing  
to supply the information  
requested. We will not  
distribute responses  
associated with you as an  
individual. We ask you for  
some basic organizational  
and contact information to  
help us interpret the results  
and, if needed, to contact you  
for clarification.

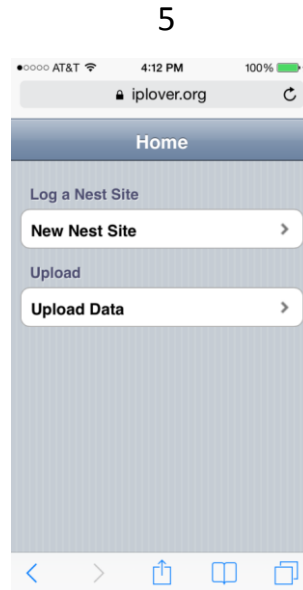


We estimate that it will take  
5 minutes for a user to  
capture and update their  
sighting.

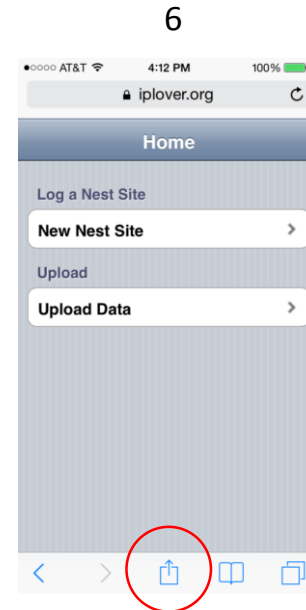
Comments on this collection  
should be sent to the  
Clearance Office at  
gs-info\_collections@usgs.gov



Splash screen  
shows USGS  
identifier, app  
name, version,  
OMB information  
(full text to left)



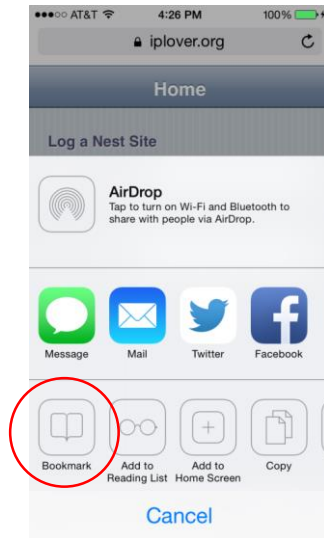
App Home page  
loads



Tap the **Share**  
icon  
(this will allow saving  
as a bookmark for  
later easy-to-find use)

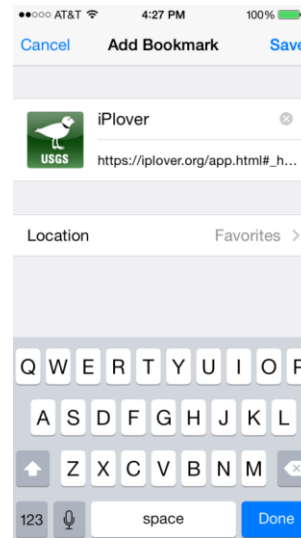
# Access the iPlover web app (3/3)

7



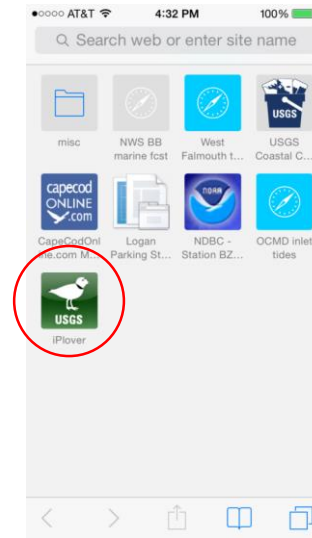
Tap **Bookmark**

8



Tap **Save**

9



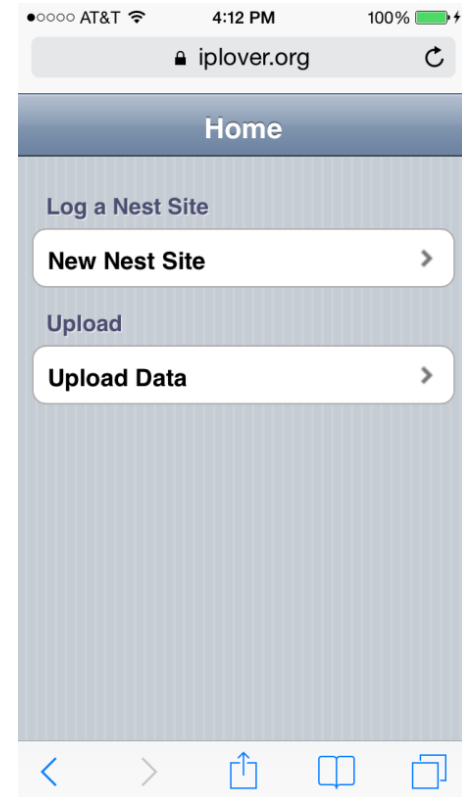
Bookmark now available whenever you access the browser

# When to Collect iPlover Data

## Preferences

Describe nest site in sync with vegetation phenology and geomorphology (i.e., near the time of nest initiation or full clutch)

Collect at the same time you are doing a close nest-approach for other reasons. (Biggest concern is unexclosed nests at locations with plover-focused avian predators. Lower priority concerns are weather and direct effects of disturbance.)

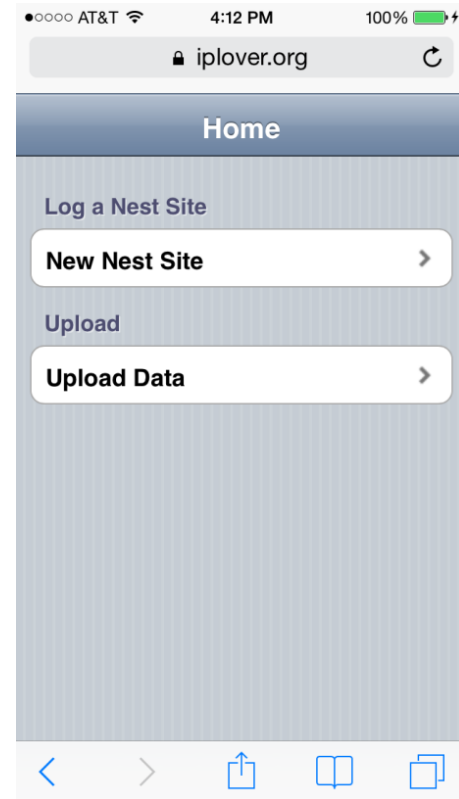




# Using iPlover

Two basic functions:

- 1) Collect
- 2) Submit



# Using iPlover – Collect Data

**Site ID**

**Picture**  no file selected

**Location** 41.53338, -70.65083  
Accuracy: 65 meters

at 12:48:52 PM [Show Map](#) [Lock Location](#)

## Site info

- 1) Site ID
- 2) Photo
- 3) Location

**Geomorphic Setting**

- Beach
- Upper Beach
- Low Dune/Foredune
- Dune
- Washover
- Barrier Interior
- Dune Blowout
- Beach Ridge/Swale

**Substrate Type**

- Wetland
- Forest/Shrub
- Sandy
- Unknown

## Geologic info

- 1) Setting
- 2) Substrate

**Vegetation Type**

- Herbaceous
- Woody/Shrub
- Water
- Shell Bed

**Vegetation Density**

- None
- Sparse <20%
- Moderate 20-90%
- Dense >90%

## Biologic info

- 1) Veg. type
- 2) Veg. density

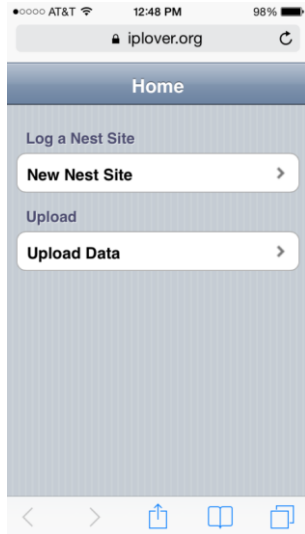
**Notes**

Space for notes

**SAVE!**

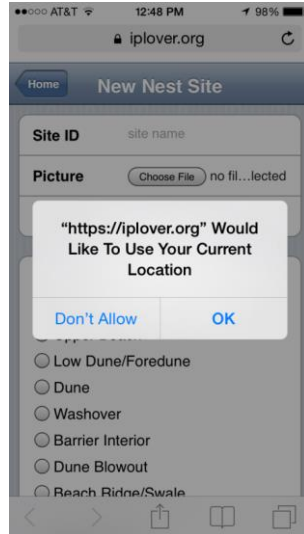
# Site info (ID, Photo, Location)

1



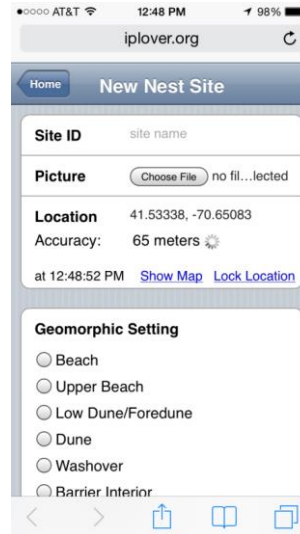
Tap **New Nest Site** to start data collection

2



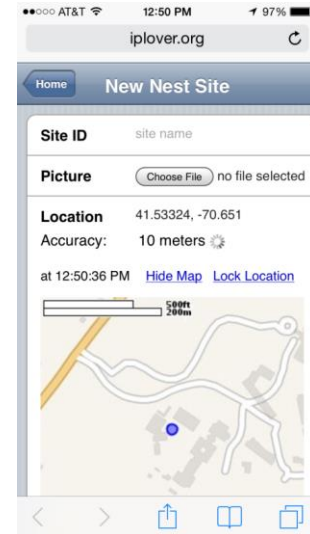
Apps must ask to use the GPS (only the first time); Tap **OK**

3



GPS starts computing location for 60 seconds; accuracy should improve with time

4



Tap **Show Map** to see map with Accuracy Ring (ring will get smaller as accuracy improves)

# Nest location

No

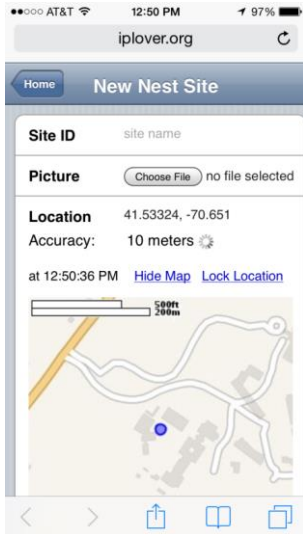


Yes



# Site info (ID, Photo, Location)

5

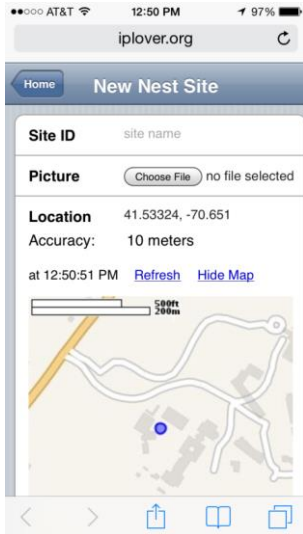


What if I get great accuracy (2-5 m) almost instantly?

Tap **Lock Location** to save the current GPS fix, and move on.

# Site info (ID, Photo, Location)

5

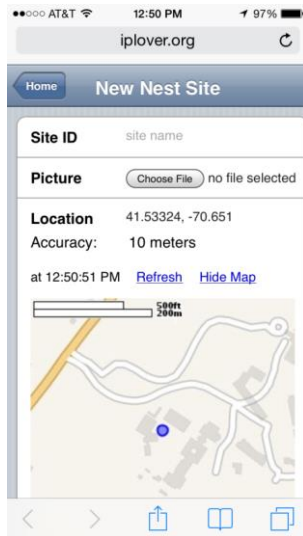


If my accuracy is poor (>-15-20 m), what should I do? When should I stop trying to get better data?

The GPS will stop automatically after 60 seconds. If accuracy is poor, tap **Refresh** to start another 60 second attempt. If accuracy improves, great. If not, move on.

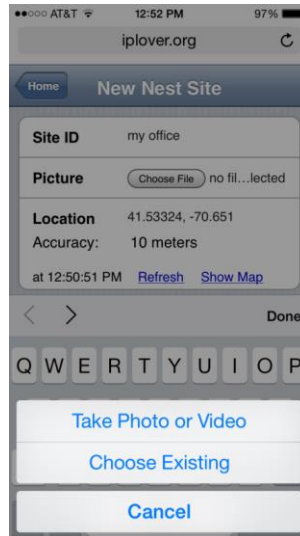
# Nest photo

1



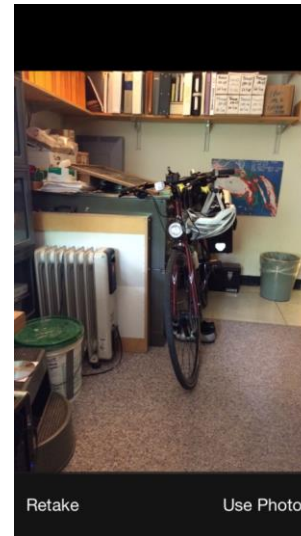
Tap **Choose File** attach a photo to the site

2



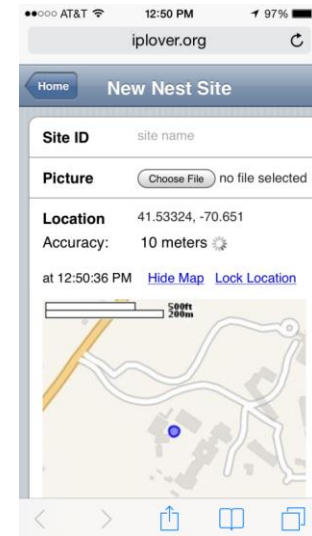
Choose from the options (**Take Photo** used here)

3



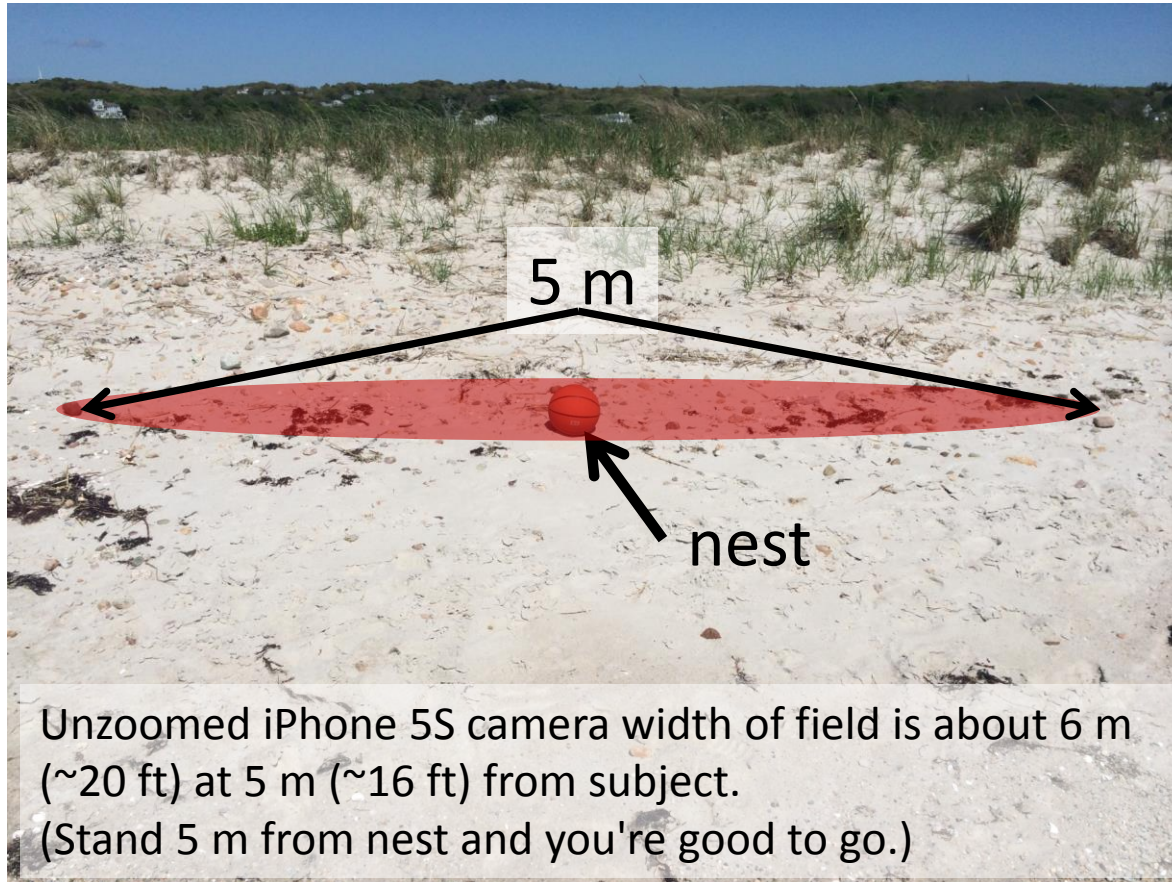
Take picture, tap **Use Photo** (or **Retake** if you want a do-over)

4



Tap **Show Map** to see map with Accuracy Ring (ring will get smaller as accuracy improves)

# Nest photo width of field





# Nest photo considerations



Stand about 5 m from nest.

Place nest in center of field of view.

Don't use zoom.

What direction you are facing doesn't matter. (But don't shoot into the sun.)

Avoid shadows if possible (yours, other people, trees, shrubs, etc.).

# Site ID considerations

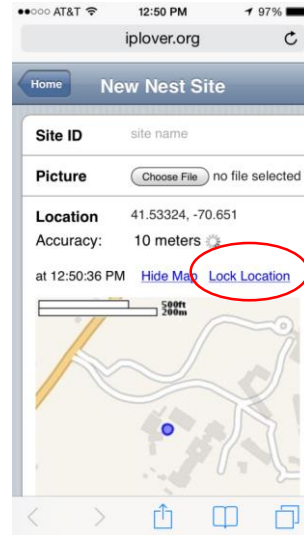
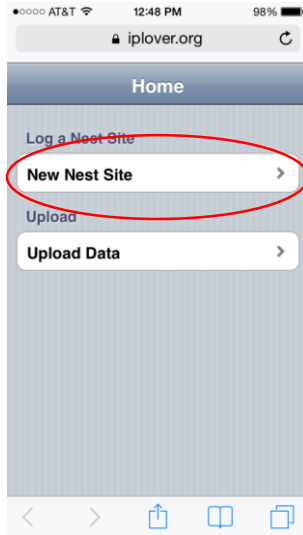
<b>Site ID</b>	site name
----------------	-----------

Use the same system that your Refuge or Park uses.

Be consistent.



# A suggested workflow...



- 1) Go to app Home page.
- 2) Approach nest and establish your position.
- 3) Tap **New Nest Site** to start the GPS.
- 4) Get good GPS fix. (If good accuracy is quick, tap **Lock Location**; otherwise wait and try **Refresh**.)
- 5) Move to 5 m from nest and take picture.
- 6) Move away from nest to complete Site ID and other data fields.

# Using iPlover – Collect Data

**Site ID** site name

**Picture**  no file selected

**Location** 41.53338, -70.65083  
Accuracy: 65 meters

at 12:48:52 PM [Show Map](#) [Lock Location](#)

## Site info

- 1) Site ID
- 2) Photo
- 3) Location

## Geomorphic Setting

- Beach
- Upper Beach
- Low Dune/Foredune
- Dune
- Washover
- Barrier Interior
- Dune Blowout
- Beach Ridge/Swale

## Substrate Type

- Wetland
- Forest/Shrub
- Sandy
- Unknown

## Geologic info

- 1) Setting
- 2) Substrate

## Vegetation Type

- Herbaceous
- Woody/Shrub
- Water
- Shell Bed

## Vegetation Density

- None
- Sparse <20%
- Moderate 20-90%
- Dense >90%

## Biologic info

- 1) Veg. type
- 2) Veg. density

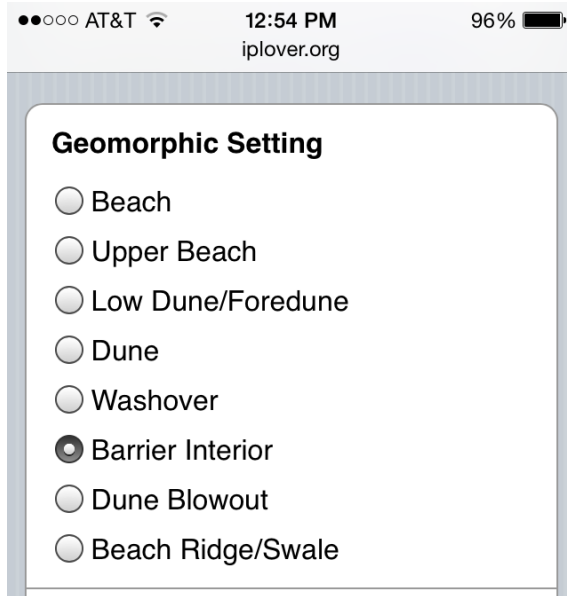
Notes

Space for notes

Save Nest Data

**SAVE!**

# Geomorphic Setting



These are "radio buttons".

You can only pick one.

Tap on the button or the text to select.

The selected button will darken.

# Geomorphic Setting description

Next slides



A wrack line as well as slight scarp separates upper beach from beach



Low dune/foredune.





Landward limit of upper beach

dune

Low dune/foredune.

Low dune/foredune.



Low dune/foredune.



Low dune/foredune.



Low dune/foredune.



Blow out



Dune.



Dune.



Washover/overwash

Break in dune crest and vegetation line

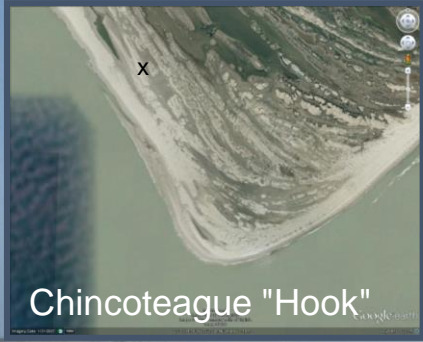
Subtle dune crest here

Edge of overwash fan





Barrier interior.

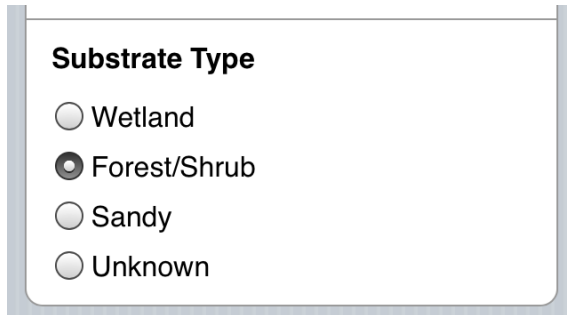


Chincoteague "Hook"



Beach ridge-swale.

# Substrate Type



**Substrate Type**

Wetland

Forest/Shrub

Sandy

Unknown

These are "radio buttons".

You can only pick one.

Tap on the button or the text to select.

The selected button will darken.

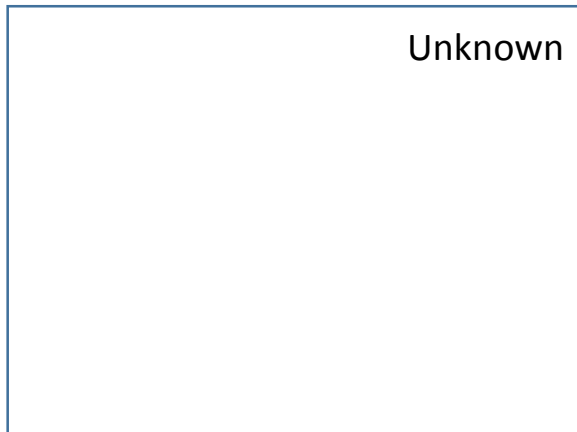
# Substrate Type description



Forest/Shrub



Wetland



Unknown



Sandy

# Using iPlover – Collect Data

**Site ID**

**Picture**  no file selected

**Location** 41.53338, -70.65083  
Accuracy: 65 meters

at 12:48:52 PM [Show Map](#) [Lock Location](#)

## Site info

- 1) Site ID
- 2) Photo
- 3) Location

**Geomorphic Setting**

- Beach
- Upper Beach
- Low Dune/Foredune
- Dune
- Washover
- Barrier Interior
- Dune Blowout
- Beach Ridge/Swale

**Substrate Type**

- Wetland
- Forest/Shrub
- Sandy
- Unknown

## Geologic info

- 1) Setting
- 2) Substrate

**Vegetation Type**

- Herbaceous
- Woody/Shrub
- Water
- Shell Bed

**Vegetation Density**

- None
- Sparse <20%
- Moderate 20-90%
- Dense >90%

## Biologic info

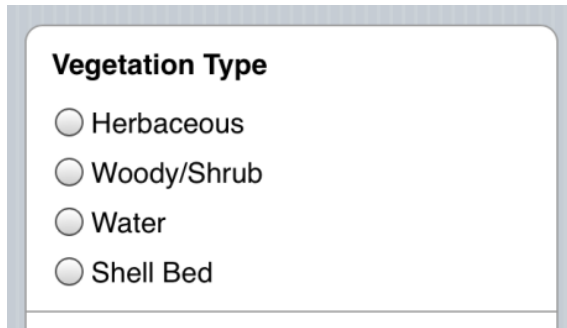
- 1) Veg. type
- 2) Veg. density

**Notes**

Space for notes

**SAVE!**

# Vegetation Type



**Vegetation Type**

Herbaceous

Woody/Shrub

Water

Shell Bed

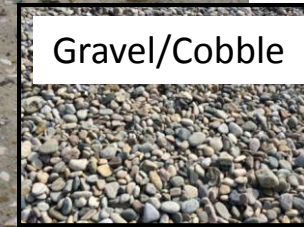
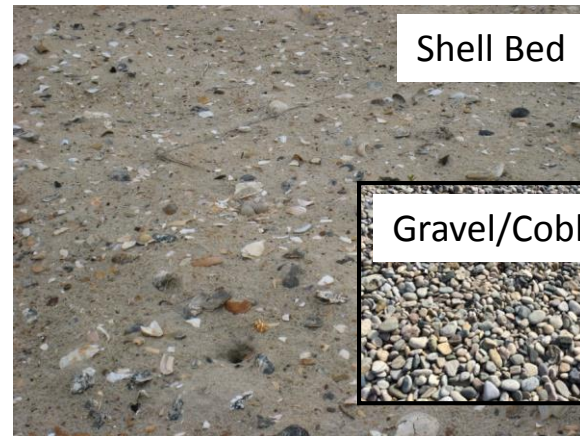
These are "radio buttons".

You can only pick one.

Tap on the button or the text to select.

The selected button will darken.

# Vegetation Type description



# Vegetation Density

**Vegetation Density**

None

Sparse <20%

Moderate 20-90%

Dense >90%

These are "radio buttons".

You can only pick one.

Tap on the button or the text to select.

The selected button will darken.



# Vegetation Density description

Next slides

No vegetation (bare surface)



Sparse <20%



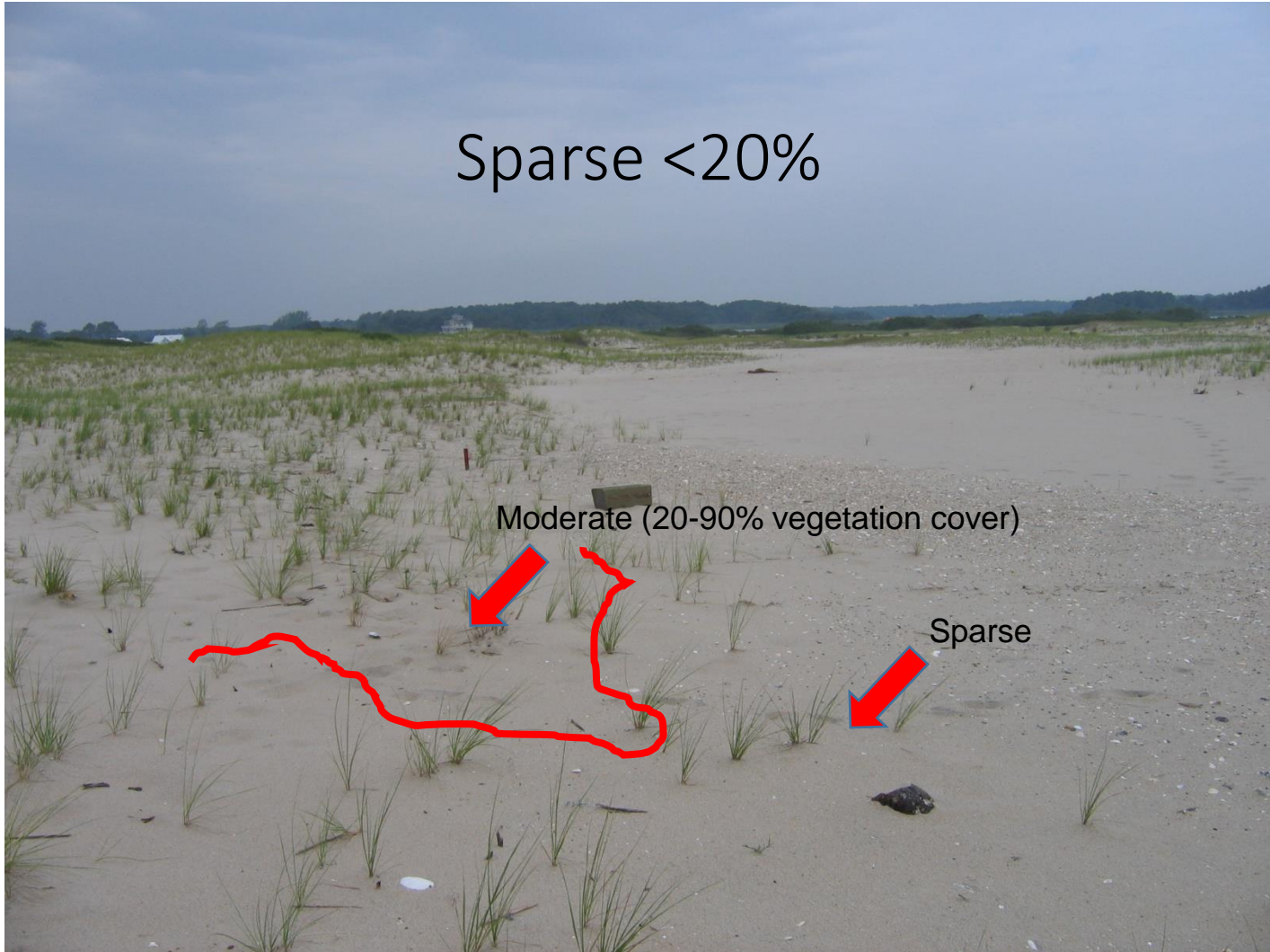
Sparse <20%



Sparse <20%

Moderate (20-90% vegetation cover)

Sparse





x

sparse <20%



Sparse veg.

moderate veg.

Moderate 20-90%





Moderate 20-90%

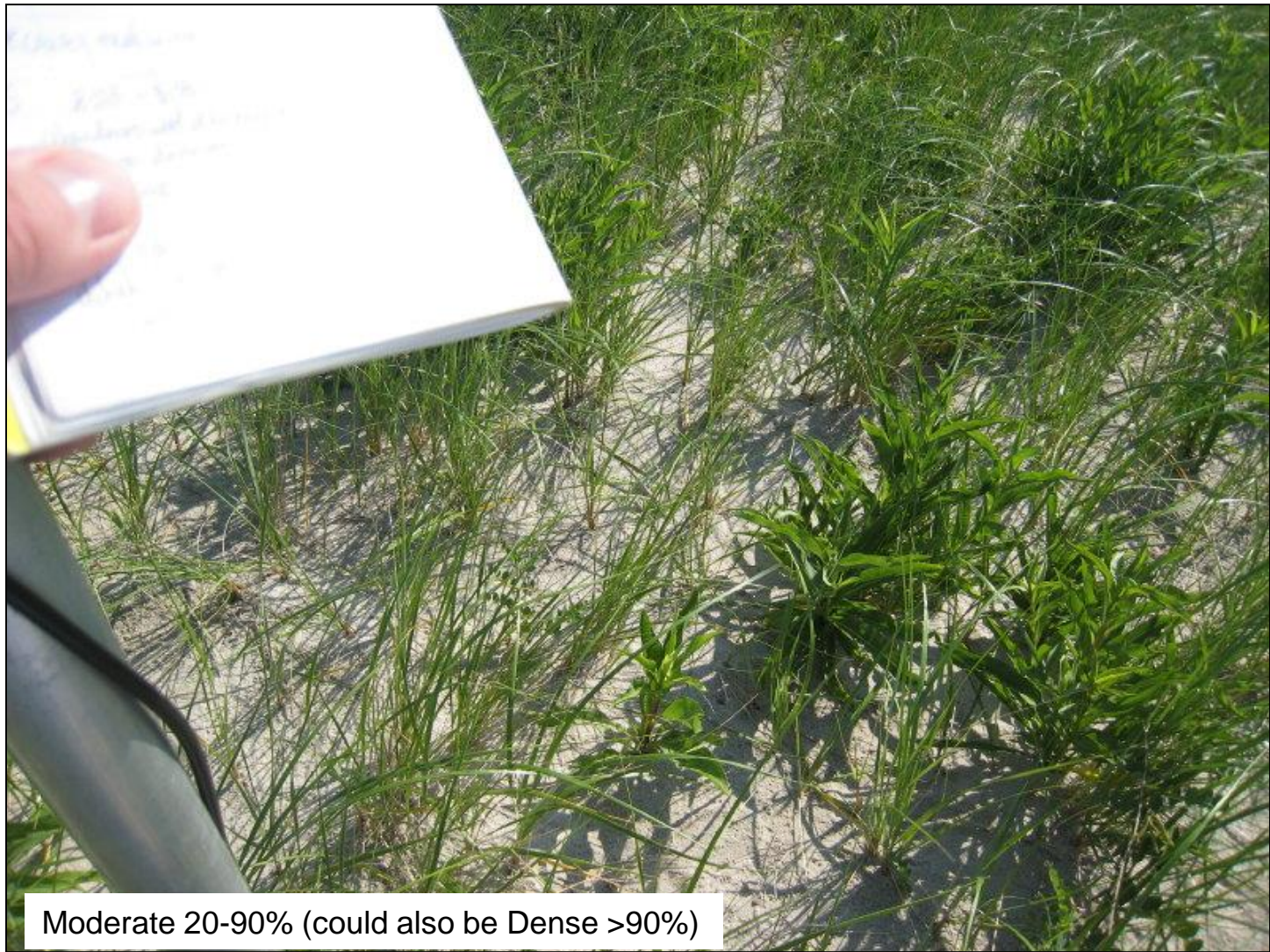


Moderate 20-90%



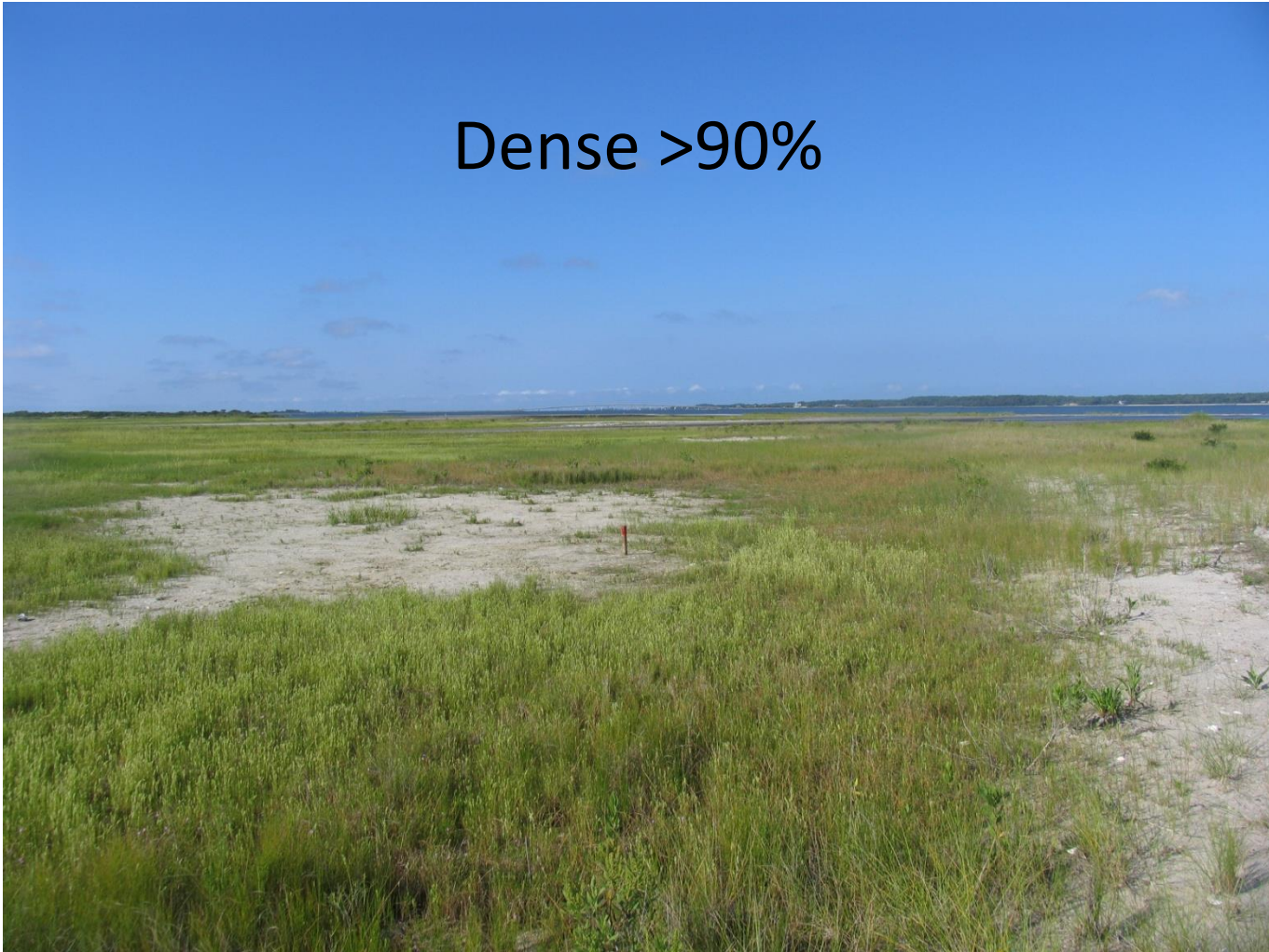


Moderate 20-90%



Moderate 20-90% (could also be Dense >90%)

Dense >90%





Dense >90%

# Using iPlover – Collect Data



Site ID

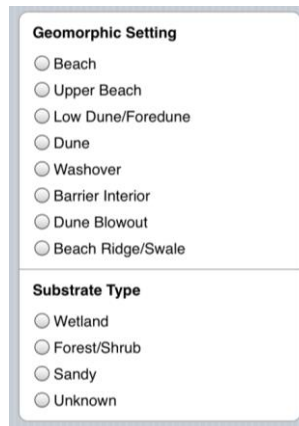
Picture  no file selected

Location 41.53338, -70.65083  
Accuracy: 65 meters

at 12:48:52 PM [Show Map](#) [Lock Location](#)

## Site info

- 1) Site ID
- 2) Photo
- 3) Location



**Geomorphic Setting**

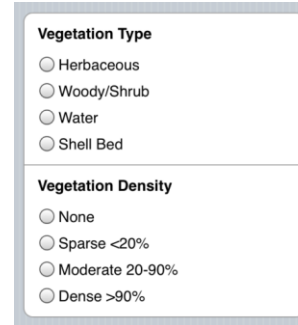
- Beach
- Upper Beach
- Low Dune/Foredune
- Dune
- Washover
- Barrier Interior
- Dune Blowout
- Beach Ridge/Swale

**Substrate Type**

- Wetland
- Forest/Shrub
- Sandy
- Unknown

## Geologic info

- 1) Setting
- 2) Substrate



**Vegetation Type**

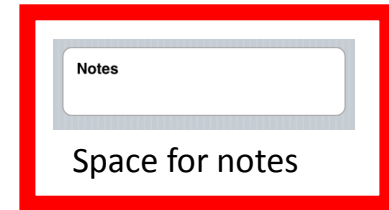
- Herbaceous
- Woody/Shrub
- Water
- Shell Bed

**Vegetation Density**

- None
- Sparse <20%
- Moderate 20-90%
- Dense >90%

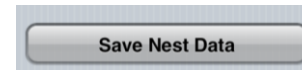
## Biologic info

- 1) Veg. type
- 2) Veg. density



Notes

Space for notes



Save Nest Data

**SAVE!**

# Notes



Notes

This is a free text entry field. It can handle up to XXXX characters.

Tap in the white area to bring up the keyboard.

Add any supplemental information you think is important, such as:

- ) nest status (active, failed, fledged)
- ) exclosed
- ) uncertainty of any observations



# Using iPlover – Collect Data



Site ID form with fields for site name, picture, location, and accuracy.

Site ID

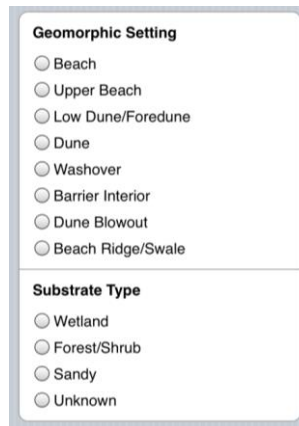
Picture  no file selected

Location 41.53338, -70.65083  
Accuracy: 65 meters

at 12:48:52 PM [Show Map](#) [Lock Location](#)

## Site info

- 1) Site ID
- 2) Photo
- 3) Location



Geomorphic Setting form with radio button options for Beach, Upper Beach, Low Dune/Foredune, Dune, Washover, Barrier Interior, Dune Blowout, Beach Ridge/Swale, Wetland, Forest/Shrub, Sandy, and Unknown.

**Geomorphic Setting**

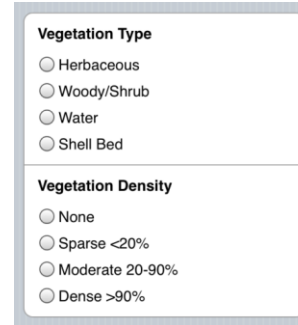
Beach  
 Upper Beach  
 Low Dune/Foredune  
 Dune  
 Washover  
 Barrier Interior  
 Dune Blowout  
 Beach Ridge/Swale

**Substrate Type**

Wetland  
 Forest/Shrub  
 Sandy  
 Unknown

## Geologic info

- 1) Setting
- 2) Substrate



Vegetation Type form with radio button options for Herbaceous, Woody/Shrub, Water, Shell Bed, and Vegetation Density (None, Sparse <20%, Moderate 20-90%, Dense >90%).

**Vegetation Type**

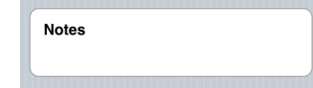
Herbaceous  
 Woody/Shrub  
 Water  
 Shell Bed

**Vegetation Density**

None  
 Sparse <20%  
 Moderate 20-90%  
 Dense >90%

## Biologic info

- 1) Veg. type
- 2) Veg. density



Notes form with a text input field.

Notes

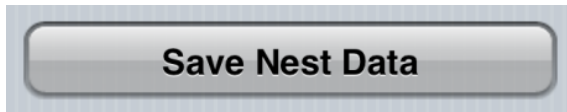
Space for notes



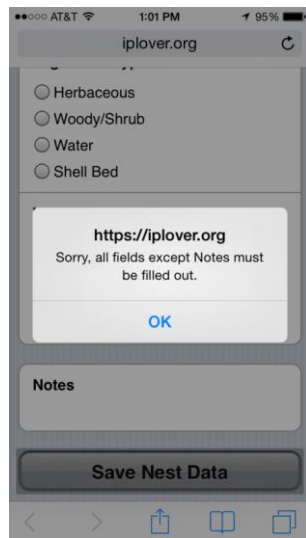
Save Nest Data button with a red border and the text SAVE!

**SAVE!**

# Saving Data



When you are finished entering data, tap the **Save Nest Data** button.



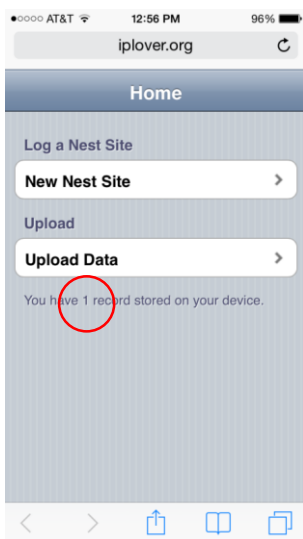
All data are saved locally on the iPhone.

The app checks to make sure you entered all the required data.

After saving, the app returns to the Home page.

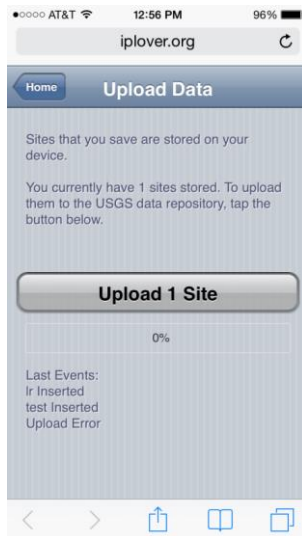
# Using iPlover – Submit Data (1/2)

1



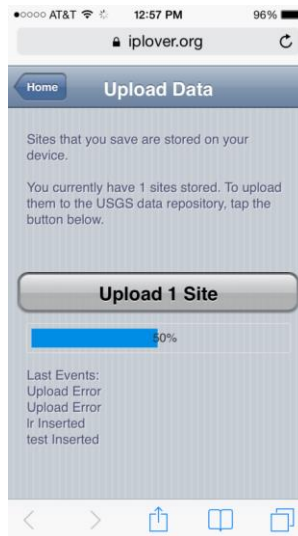
Tap **Upload Data**  
(a counter shows how many sites [records] you have stored on the phone)

2



Tap **Upload *n* Site(s)** to begin data submission to USGS database

3



Progress bar will move from 0-100% for each site (record) as it is uploaded

4



When complete, record count will update, button grays out (lower left shows success or error for each record)

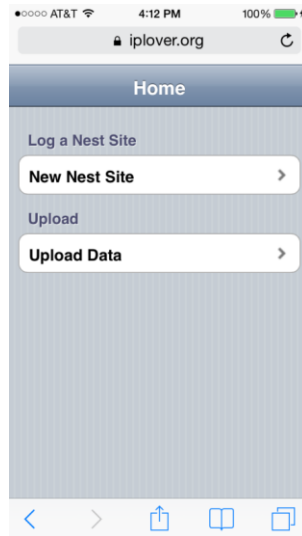
# Using iPlover – Submit Data (2/2)

5



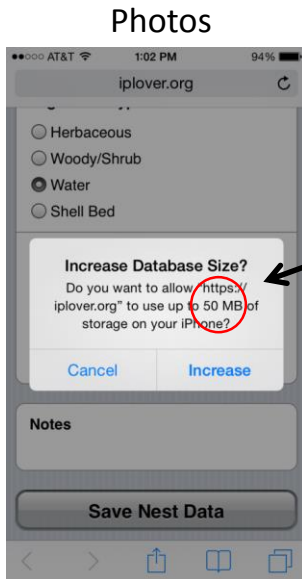
Tap **Home** to return to Home page

6



The app is ready to go again

# Some Quirks and Tips



This will initially be 10. Then 25. Then 50.

Depending on how often you restart the app, you may not see this message.

Apple is protective of your browser and photos. iOS will ask if you want to increase database size after a few sites are collected. Tap **Increase**.



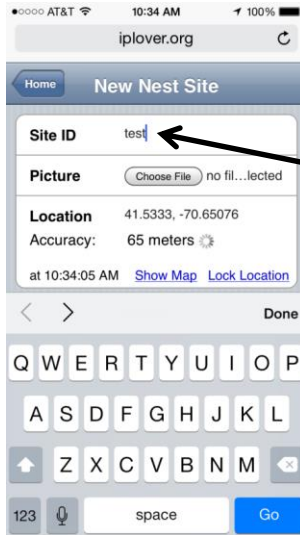
Use a wifi, LTE, or 4G connection.

Don't even try to upload on an EDGE connection.

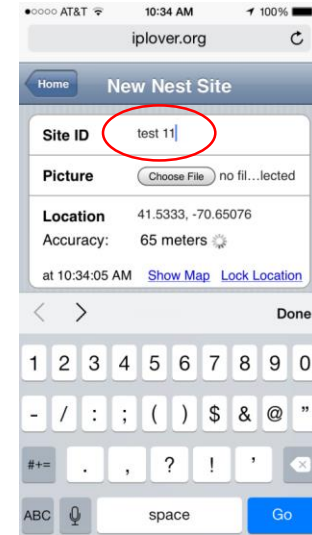
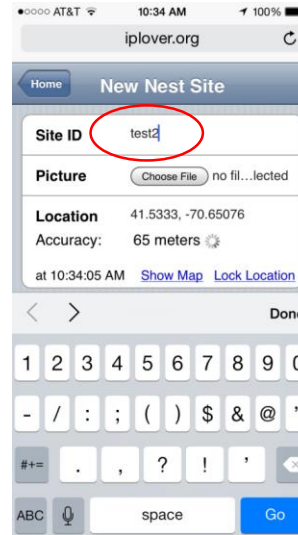
Data uploads will sometimes fail

# Some Quirks and Tips

## You can practice with the app!

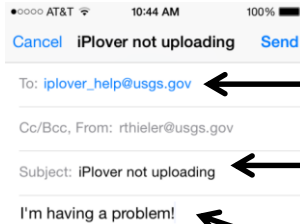


Any site that starts with the word "test" (and variants like those on the right) will not be used as real data.



# Getting Help

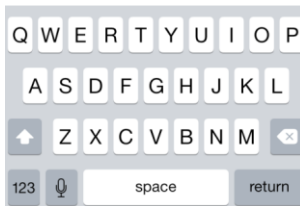
## email



iplover\_help@usgs.gov

put iPlover in subject

Describe problem, or  
ask for a phone call.  
Provide contact info.



Email to  
**iplover\_help** goes  
to 9 people on the  
team. We'll get  
back to you!

## telephone

Rob Thieler (USGS), 508-922-7108 (cell)

- any question or complaint
- before 17 June, 7a-9p EDT
- 17 June – 25 July, problematic (at sea)

Megan Hines (USGS), 608-821-3917 (office, Wisconsin)

- technical support questions
- 10a-6p EDT, M-F

Jordan Read (USGS), 608-821-3922 (office, Wisconsin)

- technical support questions
- 10a-6p EDT, M-F

Sarah Karpanty (Va Tech), 540-557-7432 (cell)

- science, field description questions
- call "anytime"

Anne Hecht (FWS), anne\_hecht@fws.gov

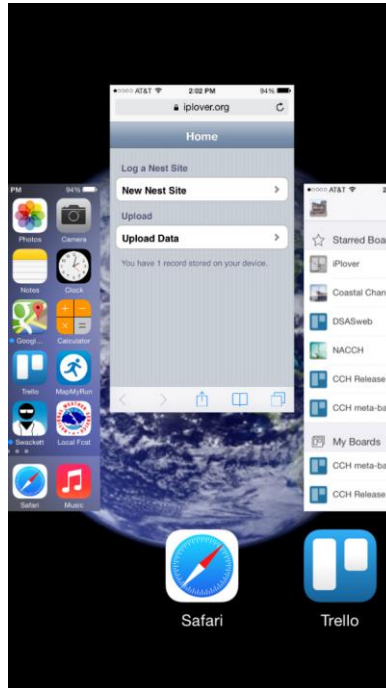
- or call 978-443-4325 (office)
- leave call-back number
- how to maximize the value of iPlover data collection while minimizing adverse effects on plover breeding activity

# If all else fails, try this... (method 1/2)

2

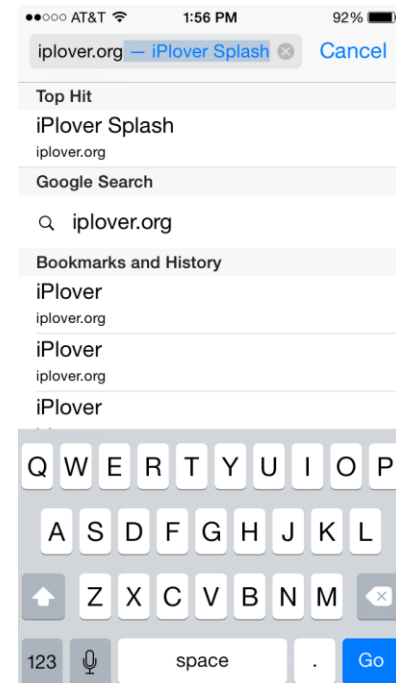


Press Home button twice; brings up running apps



Flick Safari up to make it quit

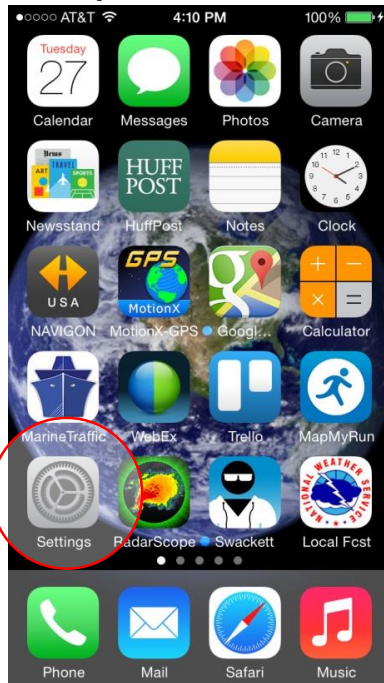
3



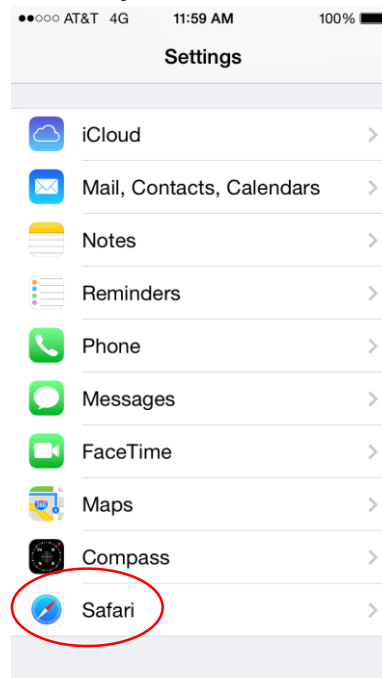
Enter iplover.org URL manually, then tap Go



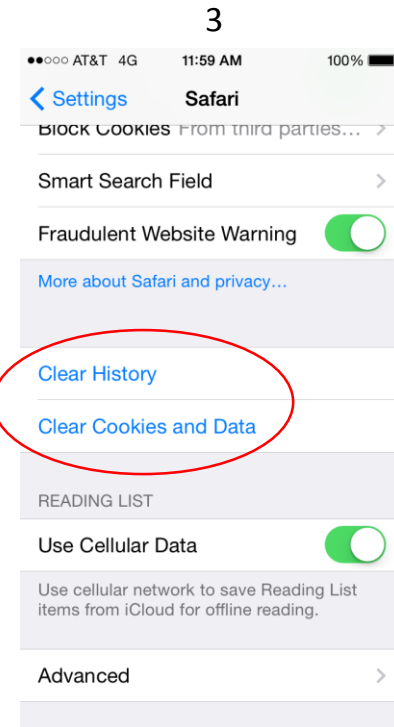
# If all else fails, try this... (method 2/2) <sup>2</sup>



Tap **Settings**



Scroll down and tap **Safari**



Tap **Clear History**, then tap **Clear Cookies and Data** (an "Are you sure?" prompt will appear for each)

# Give Us Feedback!

**This is a science project.** It can only succeed (and inform plover management) with your participation and feedback.

Please tell us what you think. Send feedback to `iplover_help` (put "iPlover feedback" in the subject line).

Changes to workflow? Layout of the screen? Describing nest site attributes? Too burdensome? Not collecting enough information? Problems with the iPhone? Problems with data/calling plan? Other?