

# New Insights to Animal Movement Using Satellite Telemetry & Web 2.0 - A Caspian Tern Case Study



*David P. Craig*

– Department of Biology, Willamette University, Salem, OR USA

# The Arrow Stork of Mecklenburg



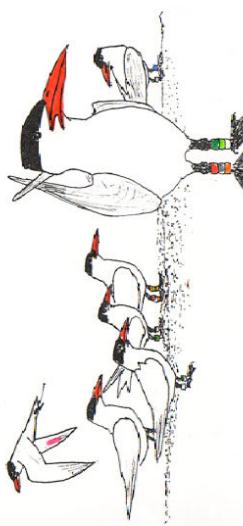
- Pfeilstorch
- May 21, 1822
- Bothmer Estate near Mecklenburg
- Zoological Collection of the University of Rostock
- 25 separate cases of pfeilstorches since 1822



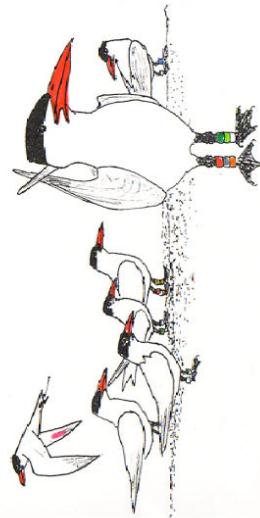
Contributions of field readable bands (i.e., observations to understand CATE connected)

## WANTED

OBSERVATIONS OF



## iSE BUSCA!



### CASPIAN TERNS WITH COLORED LEG BANDS

Help researchers track the movements of color-banded Caspian terns by noting the color-band combinations on the legs of terns, as well as the time, date, location, and activity of any banded terns. Color-banded items have been marked with up to 6 bands (up to 3 bands on each leg). The band colors used were red, orange, yellow, dark blue, light green, dark green, black, white, grey, and silver (metal). Please report the color band combination on each leg, reading the colors from top to bottom and while online view the banding location and resighting history for the individual you resighted.

white	light green	dark green	yellow	dark blue	light blue	grey	black	silver
white	light green	dark green	yellow	dark blue	light blue	grey	black	silver

Please report all sightings to the web page: [www.columbiabirdresearch.org](http://www.columbiabirdresearch.org) or contact Dr. David P. Craig at: Willamette University, Department of Biology, 900 State Street, Salem, OR 97301. Phone: (503) 370-6333; E-mail: [dcraig@willamette.edu](mailto:dcraig@willamette.edu).

Of the Adults ( $n > 1,000$ ) and chicks ( $n > 4,500$ ) tagged between 2000-2007 at least 112 individuals were re-sighted away from their breeding colony.

Google Chrome - Bird Research

http://www.columbiabirdresearch.org

WU Insider Ed. Boing! Kitcher Facebook: THE LITER Flickr: GEC JustCurrents More Books MICOTEXT Bill Howe BidBands Birding.org

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**Columbia Bird Research**

Published here are frequent weekly reports and recommendations on issues involving the impacts of ecosystem management (i.e., removal of juvenile salmonids) in the lower Columbia River (Click [here](#) to see map of study area). These data were collected by researchers from Oregon State University, the U.S. Fish and Wildlife Service, the National Marine Fisheries Service, the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, the U.S. Army Corps of Engineers, and the U.S. Army Corps of Engineers. Weekly economic information is provided to monitor and evaluate the 2007 Caspian Tern Management Plan. Other data include: CBR Home, Background, Weekly Reports, Past Weekly Reports, Regional Trends, Field Chronology, Migration, Caspian Tern Management Plan, Caspian Tern Recovery Plan, Color-coded Band Summary, Reports and Publications, Links.

New: [Submit color band sightings of your web data!](#)

Help us find other banded Caspian Terns by entering this [link!](#)

**WANTED**

**Submit**

014-803

Done

### OBSERVACIONES DE PEQUIRROJOS (PÁGASA MAYOR, GOLONDRINA MARINA CÁSPICA, STERNA CASPIA) CON ANILLOS DE COLOR EN SUS PATAS

Ayuda a los investigadores a localizar los movimientos de los Pequirrojos con anillos de color notando las combinaciones de color de los anillos en sus patas. También anota la hora, la fecha, el lugar, la actividad de cualquier Pequirrojo que tenga anillos. Los Pequirrojos han sido marcados hasta con seis anillos (hasta tres en cada pata). Los anillos usadas son de color rojo, naranja, amarillo, azul, oscuro, verde, oscuro, negro, blanco, gris, y plata (metálico). Por favor, anota la combinación de los anillos de color en cada pata. Anotando los colores de arriba a abajo. Usando Internet podrás saber el lugar donde los Pequirrojos fueron anillados y donde se ha visto el Pequirrojo que has observado.

blanco	verde oscuro	amarillo	azul oscuro	rojo	azul	negro	gris	plata
white	dark green	yellow	dark blue	red	blue	black	grey	silver

Por favor, informa todas estas observaciones a la página web:  
[www.columbiabirdresearch.org](http://www.columbiabirdresearch.org)

Dr. David P. Craig, 900 State Street, Salem, OR 97301  
Telephone: (503) 370-6333, Carta electrónica: [dcraig@willamette.edu](mailto:dcraig@willamette.edu)

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Caspian Tern with color bands - Google Image Search - Mozilla Firefox

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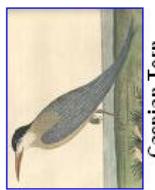
  
Caspian Tern ... 300 x 233 - 14k - jpg  
[www.pwrc.usgs.gov](http://www.pwrc.usgs.gov)

  
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CASPIAN TERN Birds, Order IX.  
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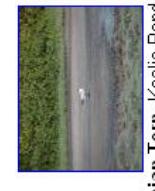
  
Caspian Tern ... 192 x 300 - 20k - jpg  
[www.friendsofsleepingbear.org](http://www.friendsofsleepingbear.org)

  
Caspian Tern ... Least ...  
400 x 310 - 29k - jpg  
[qc2007bigyear.blogspot.com](http://qc2007bigyear.blogspot.com)

  
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[www.elkhornslough.org](http://www.elkhornslough.org)

  
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Goooooooooooooole ▲ [Next](#)

1 2 3 4 5 6 7 8 9 10

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start

Logout Davi... CATE Band... FLICKR.UW... OSU 08.Ter... FLICKR.UW... 2 Windows... Caspian Ter... Type to search

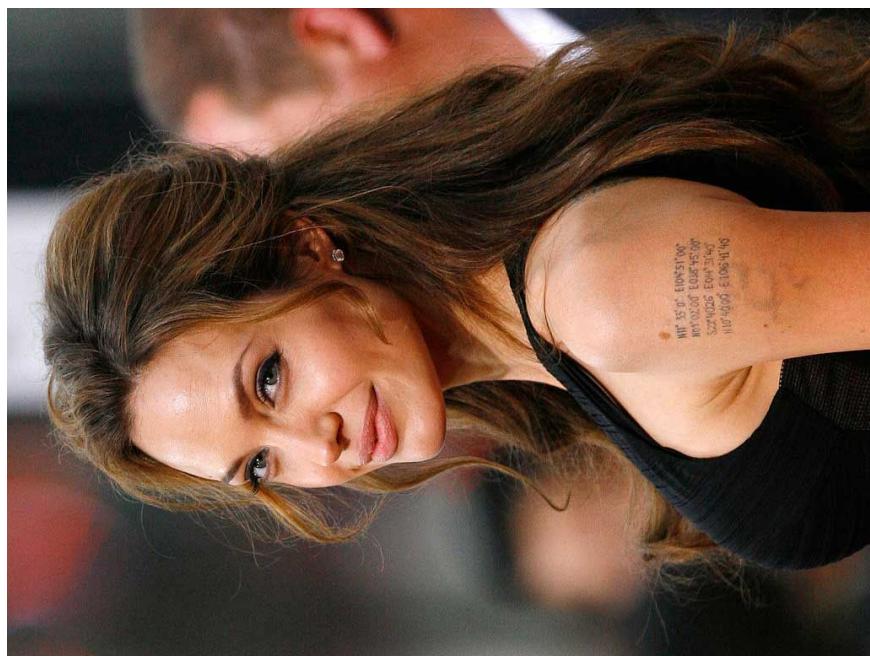
Now: Cloudy, 43° F Tue: 52° F Wed: 54° F

10:37 PM

Caspian Tern juv at Modesto STP 7/15/05 © 2005 Jim Gain



# Volunteer Geographic Information (VGI): Data mining user-generated content in Web 2.0



Google Maps - Mozilla Firefox

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http://maps.google.com/m?hl=en&sa=zoom&zoom=1&ll=40.5538030948951795,0.000011260205674965&t=m&z=16&q=angeline+jolie+children

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Angeline Jolie - Children's birthplaces

Locations according to Joe Tatoua  
Created on May 29 · Updated Dec 1  
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Start

NSF Cyber-enabled Discovery and Innovation (CDI) Type II Grant Proposal:  
*Exploiting Volunteered Geographic Information In Knowledge Creation.*  
PI: Michael Goodchild, UC Santa Barbara; Co-PI's Rajan Gupta, Los Alamos National Laboratory; Daniel Sui, Texas A & M; David Craig, Willamette University

Esquimalt Lagoon bird s Esquimalt Lagoon bird  
sanctuary, Victoria, BC Canada  
4 July 2006



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Esquimalt Lagoon bird sanctuary, Victoria, BC Canada

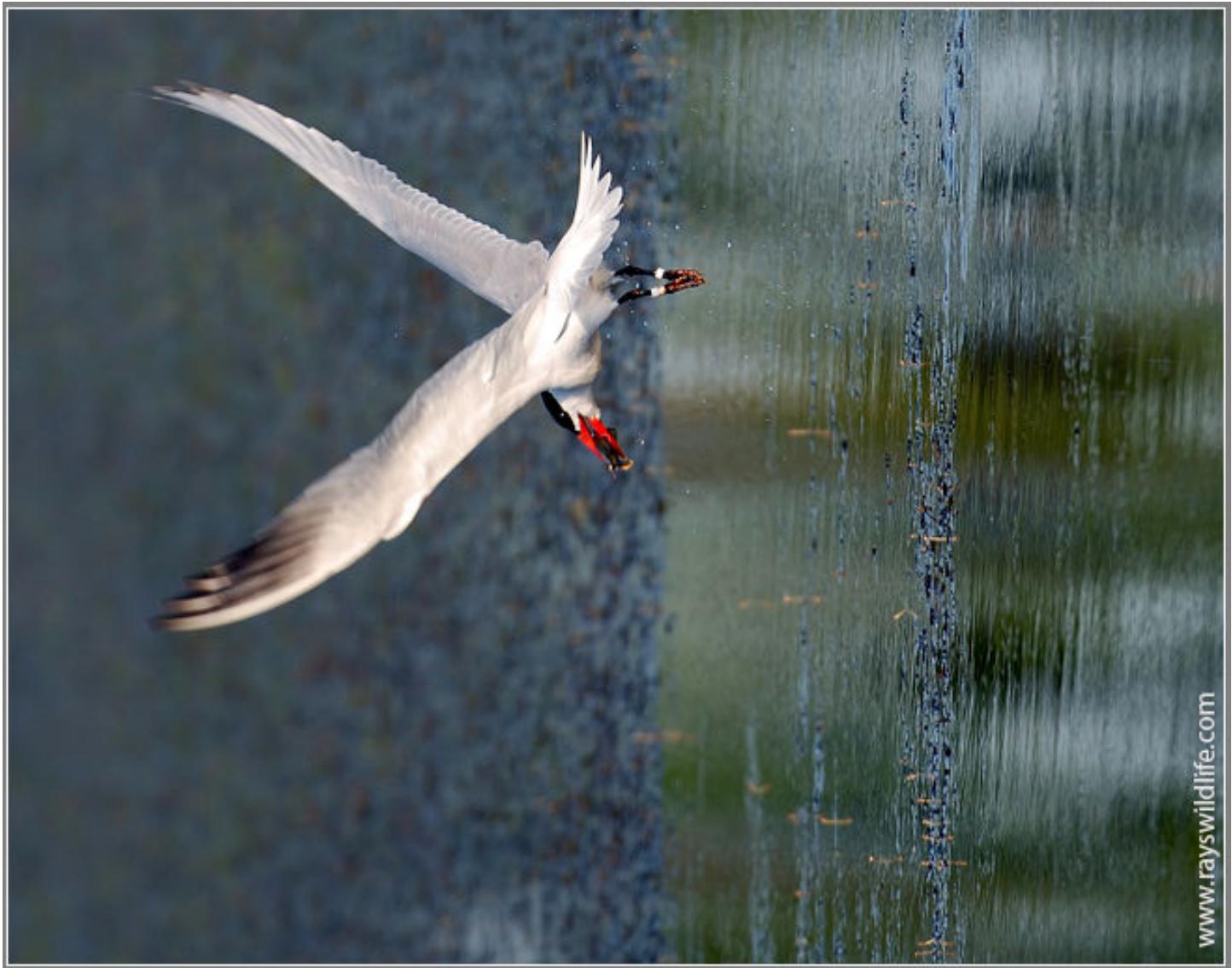
**18-JUN-2006**

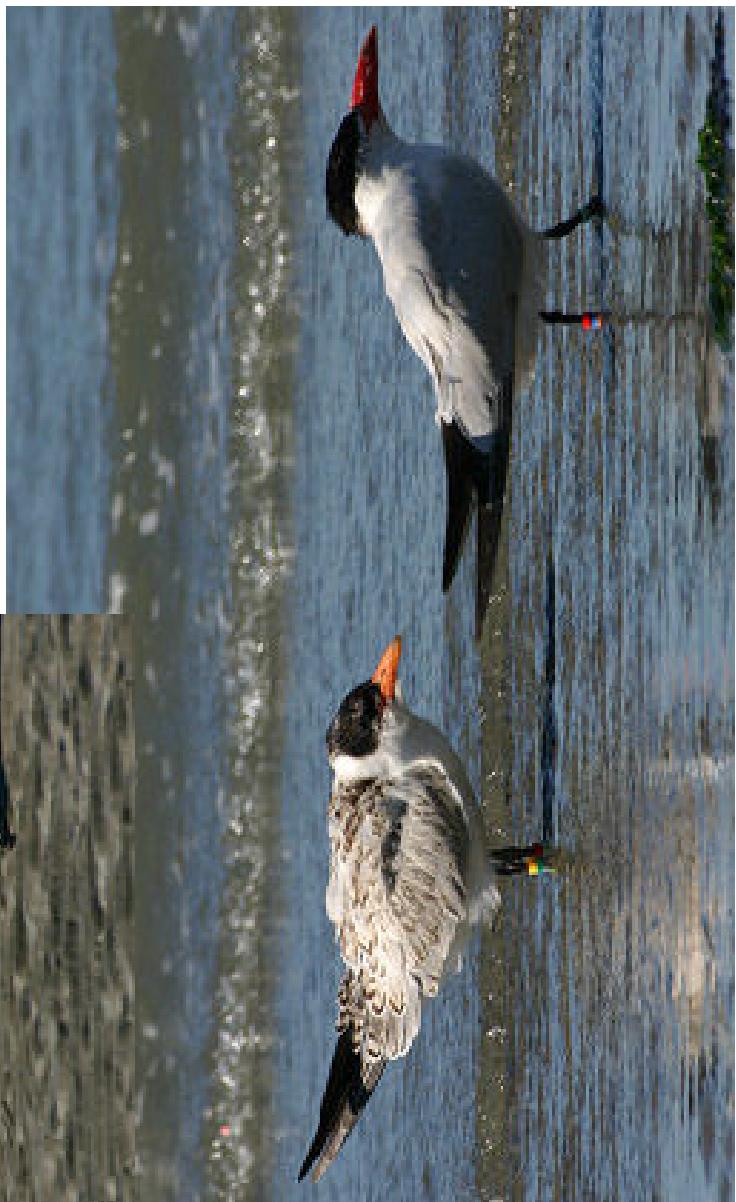




QuickTime™ and a  
TIFF (Uncompressed) decompressor  
are needed to see this picture.

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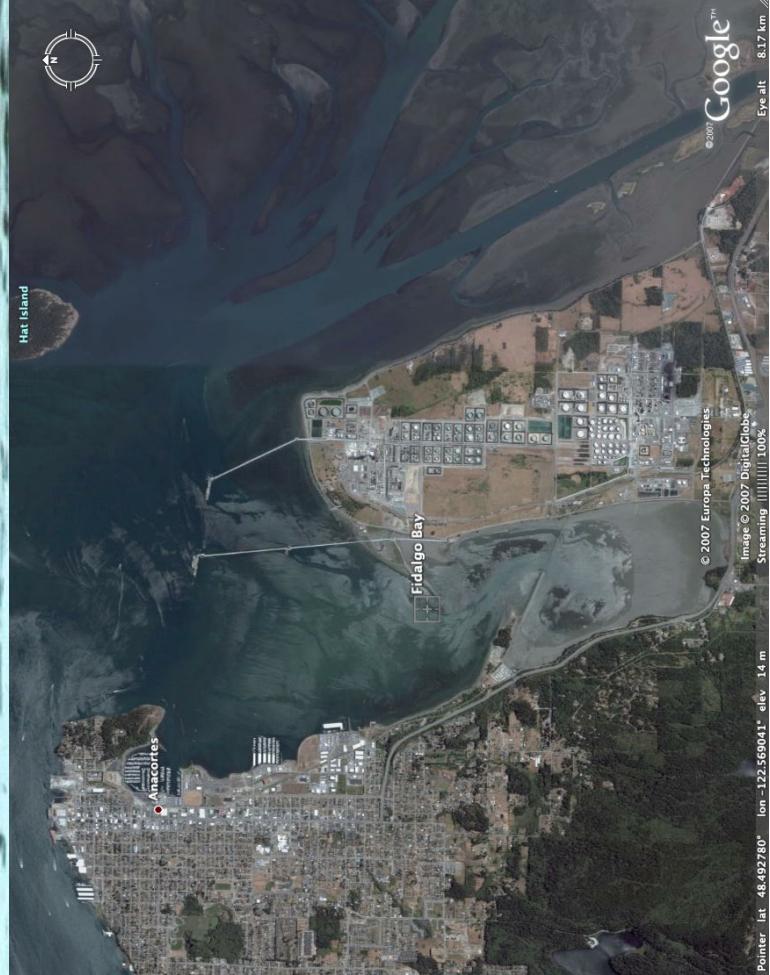




- Juveniles and Adults
- August 2004: South Beach, Discovery Park, Seattle, WA

August 12, 2007





Taken on August 12, 2007



# Photo Sharing on the Web



- Pbase
- Dropshot
- Fotki
- Ringo
- Photobucket
- Picassa
- Webshots
- Zooomr
- Zoto

Esquimalt Lagoon bird sanctuary, Victoria, BC Canada

**4-July-2006**

Welcome to Flickr - photo sharing - Microsoft Internet Explorer

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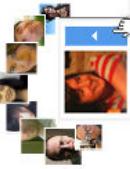
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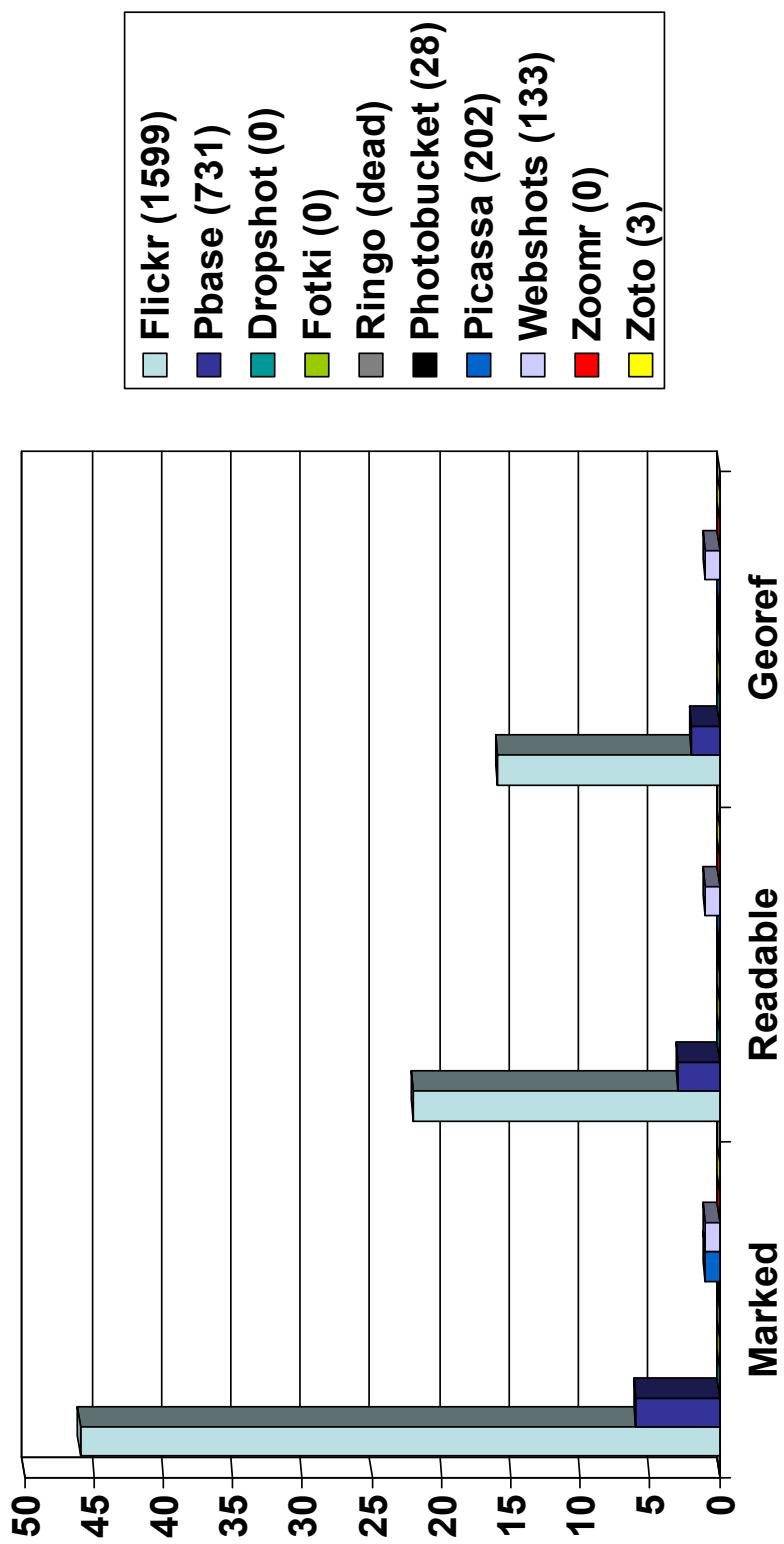
Explore Flickr Blog, the World Map, Camera Finder or interesting uploads from the [Discussion](#)

Discussions

Internet

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# Caspian Terns found among various Photo Sharing Sites on July 29, 2008



Flickr: The Birds with Field Readable Markers: Bands, Collars, Rings & Tags Pool - Microsoft Internet Explorer

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Address: http://www.flickr.com/groups/505232@N24/pool/pages5/ Go Bookmarks ► 11 blocked Check ► AutoLink ► Settings ►

Signed in as Caspian Tern Help Sign Out

Search this group's pool Search

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**Birds with Field Readable Markers: Bands, Collars, Rings & Tags**

Group Pool Administration Discussion 83 Members Map | Invite Friends

» Add photos or video

 From isulton8

 From isulton8

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 From brad.schram

 From 8800dark

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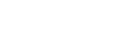
 From Second\_City...

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Discussions | Internet

Discussions not available on http://www.flickr.com/

## trumpeter # 126 on Flickr - Photo Sharing!

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Columbia River Bird Research

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Uploading by a booo

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## trumpeter # 126

Uploaded on September 25, 2007

by a booo

+ la booo's photostream

**Banded Birds & Auxiliary Markers (Pool)** [X]

312 photos



Tags

long branch  
beach  
water  
lake onland  
trumpeter swan  
tag

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Add your comment

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Taken in Toronto, Ontario (map)  
Taken with a Panasonic DMC-FZ30.

More properties

Taken on September 16, 2007  
See different sizes  
Viewed 6 times

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Stumble! I like it! Sand to Channel: trumpeter# 126 on Flickr - Phot... Columbia River Bird Research

**trumpeter # 126**

Uploaded on September 25, 2007 by la boe

Banded Birds & Auxiliary Markers (Pool)

+ la boe's photostream

+ View la boe's map

Add to Friends Add Note All Sizes

YAHOO!

Taken in Toronto, Ontario (See [more photos here](#))

43°35'48" N, 79°31'59" W

- Taken in Toronto, Ontario ([map](#))
- Taken with a Panasonic DMC-FZ30
- More properties
- Taken on September 16, 2007
- See different sizes
- Viewed 6 times
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Cooper's Hawk (*Accipiter cooperii*) on Flickr - Photo Sharing!

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Columbia River Bird Research Cooper's Hawk (*Accipiter cooperii*)

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## Cooper's Hawk (*Accipiter cooperii*)

Uploaded on December 25, 2007 by Crappy Wildlife Photography's photostream

**Banded Birds & Auxiliary Markers (Pool)**

312 photos

Crappy Wildlife Photography's photostream

This photo also belongs to:

- Family Accipitidae (Hawks, Kites, Eagles, and Allies) (Set)
- Raptors (Pool)

**Tags**

- hawk
- cooper's hawk
- raptor
- accipitor
- bird
- washington

Add a tag

Additional Information

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o Taken in Seattle, Washington (map)

Montlake Flt, Seattle, WA.

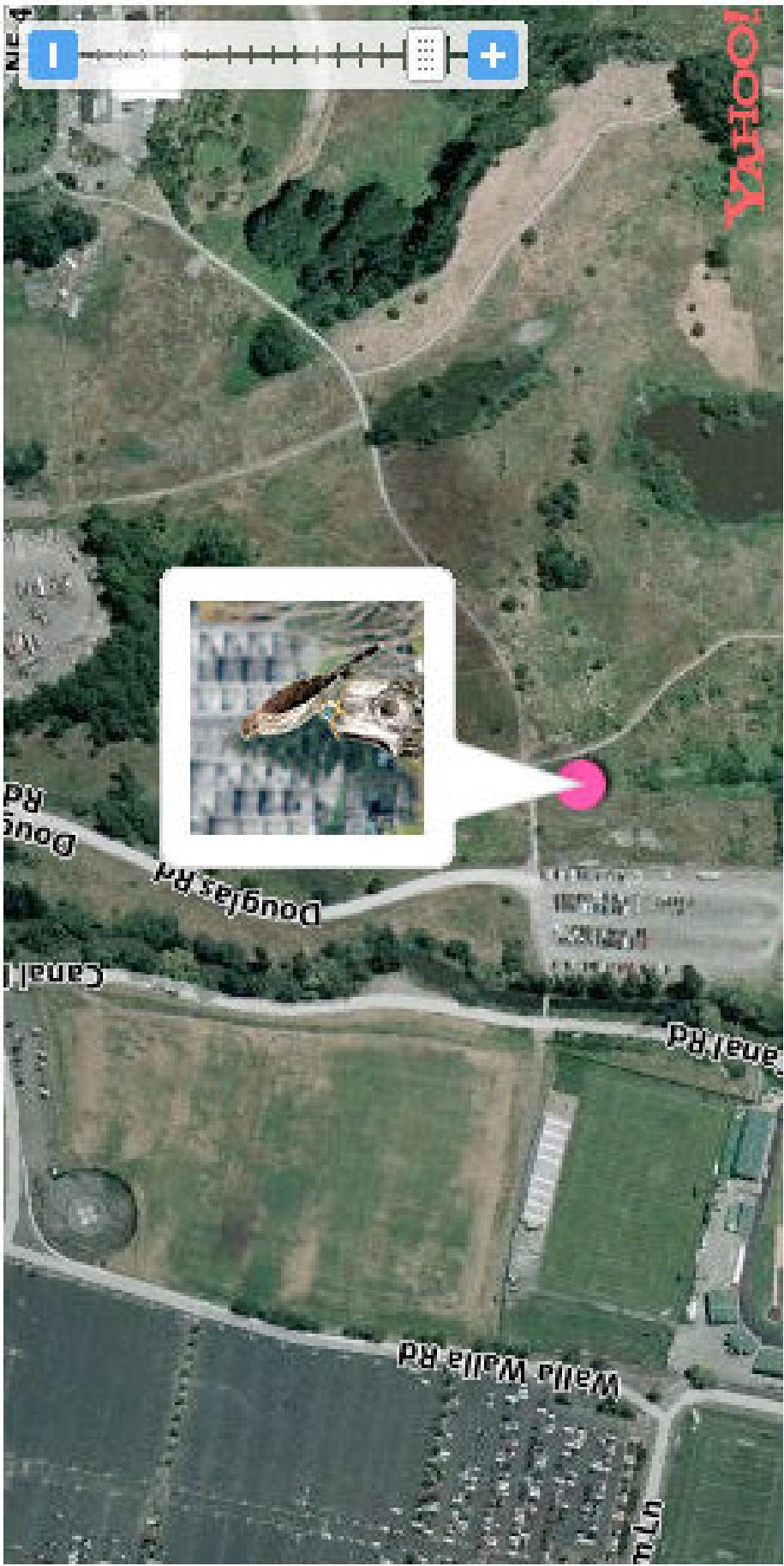
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Dont



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Taken in Seattle, Washington (See [more photos here](#))

47°39'21" N, 122°17'43" W

## Rio Papagayo.20060113



Uploaded on December 31, 2007  
by Caspian Tern

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(Set)

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Caspian Tern's photostream

250 photos



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24 photos



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Part of Caspian Tern Research

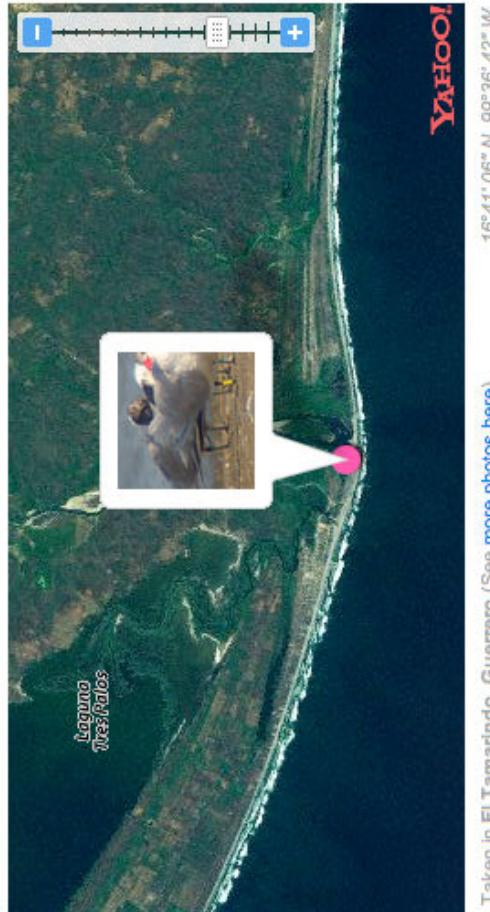
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(Set)

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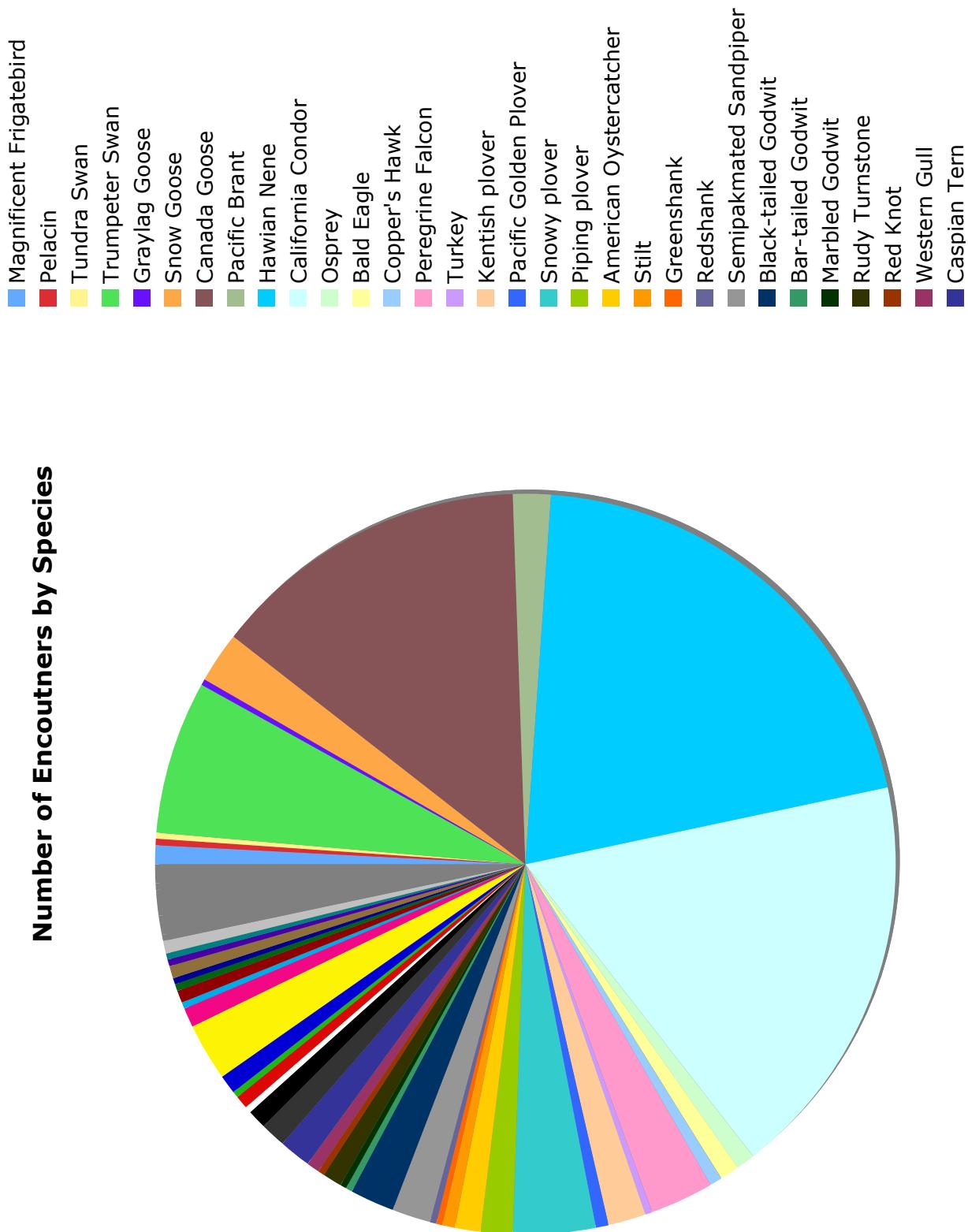
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16°41'06" N, 99°36'42" W

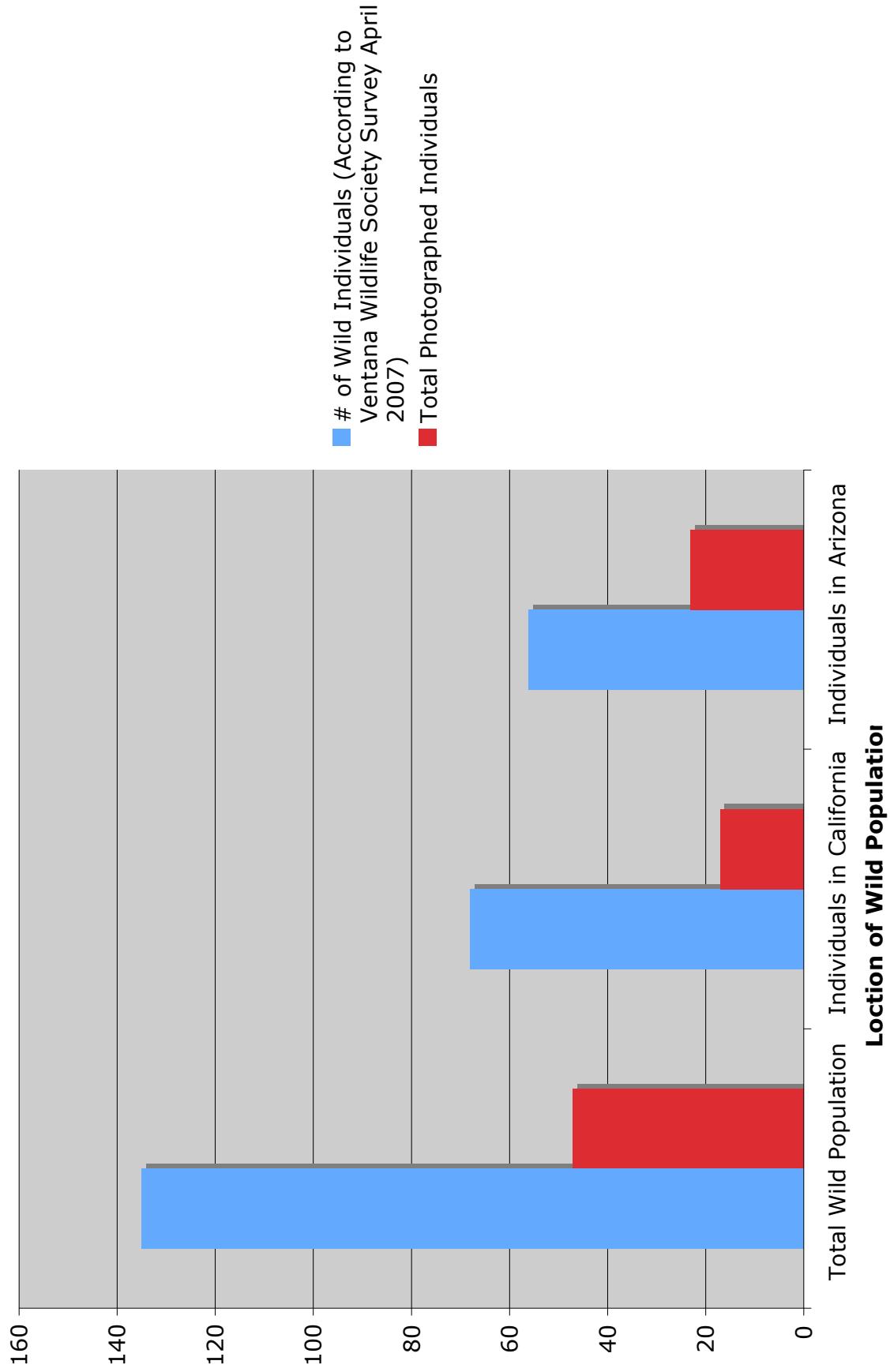
[more photos here](#)

## Number of Encounters by Species



## Frequency of Condor

3,000 photos with tags matching to "California Condor"



# Ability to Track Individuals



- Condor 250 (50)
- Hatched 4/09/01
- Release December 9  
2002 Vermillion Cliffs AZ
- Geo tracking via Flickr
  - Oct 28 2006 Zion UT
  - March 21 2007 Marble  
Canyon AZ
  - June 9 2007 Marble  
Canyon AZ
  - January 26 2008 AZ  
Vermillion Cliffs

## Common redshank (Tringa totanus)

[★ Fave](#)[ADD NOTE](#)[BLOG THIS](#)[ALL SITES](#)

Common redshank (tagged in Singapore)

Tringa totanus

Sungei Buloh Wetland Reserve, Singapore

Distribution: [www.hsc-eoc.org/avibase/species.jsp?lang=EN&id=727BC8...](http://www.hsc-eoc.org/avibase/species.jsp?lang=EN&id=727BC8...)

\_QOS1265

### Comments

**RoninRist** [pro](#) says:

Great capture.

Posted 9 months ago. ([permalink](#))**hiker1974** [pro](#) says:

hi Lip Kee, I think we got the same birds....!!!!

Posted 9 months ago. ([permalink](#))**Lip Kee** [pro](#) says:Had a look and it is the same pair tags and all. Talking about great minds.....  
[www.flickr.com/photos/32336\\_64@N00/2031687094/](http://www.flickr.com/photos/32336_64@N00/2031687094/)Posted 9 months ago. ([permalink](#))**Staveren** [pro](#) says:

Beautiful shot

Posted 7 months ago. ([permalink](#))[Add your comment](#)

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Uploaded on November 11, 2007

by [Lip Kee](#)

### Lip Kee's photostream



This photo also belongs to:

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- [Birds on the World Map \(Please Read Rules\) \(Pool\)](#)
- [\\*Sungei Buloh Wetland Reserve\\* \(SBWR\) \(Pool\)](#)
- [Birds with Field Readable Markers: Bands, Collars, Rings & Tags \(Pool\)](#)

### Tags

- [Common redshank](#)
- [Tringa totanus](#)
- [bird](#)
- [aves](#)
- [wader](#)
- [Perna-vermalha-comum](#)
- [Turnitur](#)
- [アカアシシギ](#)
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- [Archibele Común](#)
- [Racben](#)
- [Rotschenkel](#)

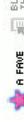
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- Taken in Johor Bahru, Johor (map)
  - More properties
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  - 4 people call this photo a favorite
  - Viewed 95 times

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## Common Redshanks



A FIVE



BLOG THIS



sbwr

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Uploaded on November 15, 2007 by [hiker1974](#)[hiker1974's photostream](#)

This photo also belongs to:

[Birds \(Set\)](#)**Additional Information**[All rights reserved](#)[Anyone can see this photo](#)

- Taken on **November 11, 2007**
  - 1 person calls this photo a favorite
  - Viewed 21 times

[Flag this photo](#)**Comments**[kampang](#) [pro](#) says:

Redshanks perching on branches? Must be waiting for receding tide.  
Interesting catch.

Posted 9 months ago. ( [permalink](#) )[hiker1974](#) [pro](#) says:

maybe water too cold.. ))))  
Posted 9 months ago. ( [permalink](#) )

**Add your comment**

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03AA

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Tagged goose at Ann Morrison Park

## Comments

[Caspian Tern](#) [pro](#) says:



Hi, I'm an admin for a group called [Banded Birds & Auxiliary Markers](#), and we'd love to have your photo added to the group.  
Posted 9 months ago. ([permalink](#))

Uploaded on December 3, 2006  
by [i like pudding](#)

i like pudding's photostream



browse

This photo also belongs to:

[+ Anything Boise \(Pool\)](#)

Birds with Field Readable Markers:  
Bands, Collars, Rings & Tags (Pool)  
[\[X\]](#)

Tags

goose  
tag  
boise

[Add a tag](#)

Additional Information

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 Anyone can see this photo

- Taken with a Fujifilm FinePix S5100.
- [More properties](#)
- Taken on December 3, 2006
- 1 person calls this photo a favorite
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## Branta canadensis (Canada goose)

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Uploaded on March 29, 2007  
by [mark6mauno](#)



Seen in the Boise River next to my hotel in Boise. They had both just lifted their head from under the water. The slightly larger one (a male?) had an identification tag (03AA) around its neck.

[mark6mauno](#) [pro](#) says:

Added location on map. The 'more properties' link provides date and local time information.  
Posted 9 months ago. ( [permalink](#) )



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123 items

browse

Part of Mark's Trips

[X]

Bolse 20070328-0401 (Set)



browse

Part of Mark's Trips

[X]

This photo also belongs to:

Birds with Field Readable Markers:  
Bands, Collars, Rings & Tags (Pool)  
[X]

Tags

70-200mm f/2.8G VR

Nikkor

boise

birds

banded

tag

Nikon D200

Nikon

D200

Add a tag

Additional Information

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- o Taken in Boise Junction, Idaho (map)
  - o Taken with a Nikon D200.
- o More properties
- o Taken on March 29, 2007
  - o Viewed 81 times

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The screenshot shows a Microsoft Internet Explorer window with the following details:

- Title Bar:** "ringed" greenshank on Flickr - Photo Sharing! - Microsoft Internet Explorer
- Address Bar:** http://www.flickr.com/photos/dukeleto/2710648665/in/pool-505232@N24
- Favorites Bar:** Back, Forward, Stop, Refresh, Favorites, Search, Favorites, Search, Favorites, Go, Links, Settings.
- Left Sidebar:** flickr logo, Home, You, Organize, Contacts, Groups, Explore, Add to Faves, Add Note, Blog This, All Sizes.
- Content Area:**
  - A large image of a Greenshank bird standing in shallow water, wearing two red and blue leg rings.
  - Text overlay: "ringed" greenshank
  - Profile picture and info: Steve Plume, ed on July 28, 2008, Steve Plume's photostream.
  - Photo details: Birds With Field Readable Markers: Bands, Collars, Rings & Tags (Pool) [550 items]
  - Photo stats: You are at the last photo, browse.
  - Photo count: 550 items
  - Photo description: Sandpipers and allies (Scolopacidae) (Set)
  - Tags: greenshank, River Stour, Nikon, Wildlife, ringed
  - Copyright: © StevePlume 2008
  - Notes: A "Ringed" Greenshank - North of River Stour, Manningtree, Essex 260708
  - Text at bottom: Okay so its not a good picture but heavily cropped, but its a record of what might be the 2nd sighting of a ringed Greenshank seen in Essex, will update when I have the details
- Bottom Navigation:** Back, Forward, Stop, Refresh, Home, Internet, Discussions, and a link to http://www.flickr.com/

**http://www.cr-birding.be/ - Microsoft Internet Explorer**

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# All About Auxiliary Markers



Many researchers use additional markers to allow them to identify an individual bird at a distance. Researchers who want to use auxiliary markers on wild birds need to have federal banding permits and auxiliary marking authorization as well as any state permits that may be required. There are additional permits required to work on endangered or threatened species.

Auxiliary markers include plastic cylinders or cone-shaped collars on geese, nasal markers on ducks, dyes and colored plastic leg bands on many species of birds. Radio transmitters are also used to track birds from a distance, sometimes across huge areas. These auxiliary markers are all attached at the time of banding. Some are designed to be lost with time, and others are more permanent markers.

For some types of markers there are agreements about the size, shape, color, and/or style of the markers. These agreements are called protocols, and they help to keep many different projects coordinated so that all the researchers can identify all the individual birds.

**Neck Bands or Collars**

**Nasal Markers**

**Dyes**

**Colored Leg Bands and Flags**

**Web Tags and Plasticine-filled Bands**

**Radio Transmitters**

**Patagial Markers**

**Tail Streamers**

**RRFinland**

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Mainpage Caspian Tern with colored leg bands, (c) Steven Smith

Mainpage Willet with colored leg bands, (c) Steven Smith

Mainpage Discussions not available on http://www.cr-birding.be/

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Euring home - Microsoft Internet Explorer

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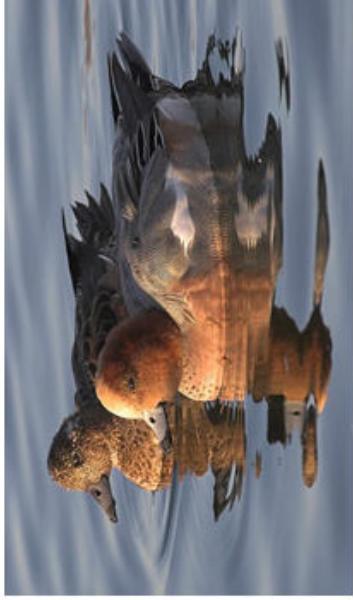
# Euring

Co-ordinating bird ringing throughout Europe

About Euring Data and Codes Meetings Research National Schemes

Welcome to Euring

The European Union for Bird Ringing promotes research needed to inform the conservation and scientific understanding of wild birds



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Wigeon is one of the 21 species for which EURING has developed a **Migration Mapping Tool**

Discussions Discussions not available on <http://www.euring.org/>

Internet

**Migration Mapping Tool - Microsoft Internet Explorer**

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Address <http://bx1.bto.org/äi-eu/>

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Settings

# Migration Mapping Tool



Migration Mapping Tool home page

This tool provides a summary of the movements of 21 species of wild bird to and from the area you select using recoveries of ringed birds.

**To use the tool:**  
First select an area of interest (e.g. Spain and Portugal) from the drop down menu to the right - then you can either -

A. Choose 'Search by location' if you want to look at all movements between a particular location and your area of interest and you:

- know the co-ordinates of the location
- can find the location by using the Google Map provided

You will be provided with a list of species that pass through your chosen location, to or from your area of interest, after specifying the month of interest. You can then choose a species to see the migration maps.

B. Choose 'Browse species' if you wish to see migration routes to and from your area of interest for a particular species.

Discussions |  |  |  |  |  |  |  |  |  |  | 

Done

## Migration Mapping Tool

This tool provides a summary of the movements of 21 species of wild bird to and from the area you select using recoveries of ringed birds.

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Your options

 Search by location	 Browse species
 Google	 View sites

**Euring Web Recoveries Index - Microsoft Internet Explorer**

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Euring > Languages

## Euring Web Recovery Form

Please choose a language

 English	 Deutsch	 Italiano	 Nederlands	 Français
 Português	 Español	 Türkçe	 Русский	 Lietuviškas
 Magyar				 Ελληνικά

Click here to email webmaster

Discussions |  |  |  |  |  |  |  |  |  |  | 

Done

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The site is hosted by the BTO on behalf of EURING

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- [pop.](#)
- [migration](#)
- [survival](#)
- [- my book](#)
- [- fuscus](#)
- [Histories](#)

**About the bird and ring**

Please tell us as much as you can about the bird and ring

**Help**

Please tell us as much as you can about the bird and colour marks on the bird, noting their relative positions and colours by describing them below. If you have found a metal ring, please click here.

If the bird had a **single** coloured ring or wing tag with **numbers and letters**, please tell us the details here. Remember to tell us the colour of the ring **and the** colour of the lettering.

**Nasal saddle (colour and code)**

**Neck collar (colour and code)**

**Left wing tag (colour and code)**

**Right wing tag (colour and code)**

**Leg ring (colour and code)**

**Right above knee**

**Right below knee**

**Left above knee**

**Left below knee**

If the bird had a **combination** of coloured rings and/or leg flags, please tell us the details here. If there was more than one ring in any position on the leg, please note the order of the rings from top to bottom, including the position of the metal ring. You can enter details of several colour marks in each position.

**Discussions**  **Internet**

Discussions not available on <http://www.cr-birding.be/>

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Wigeon 

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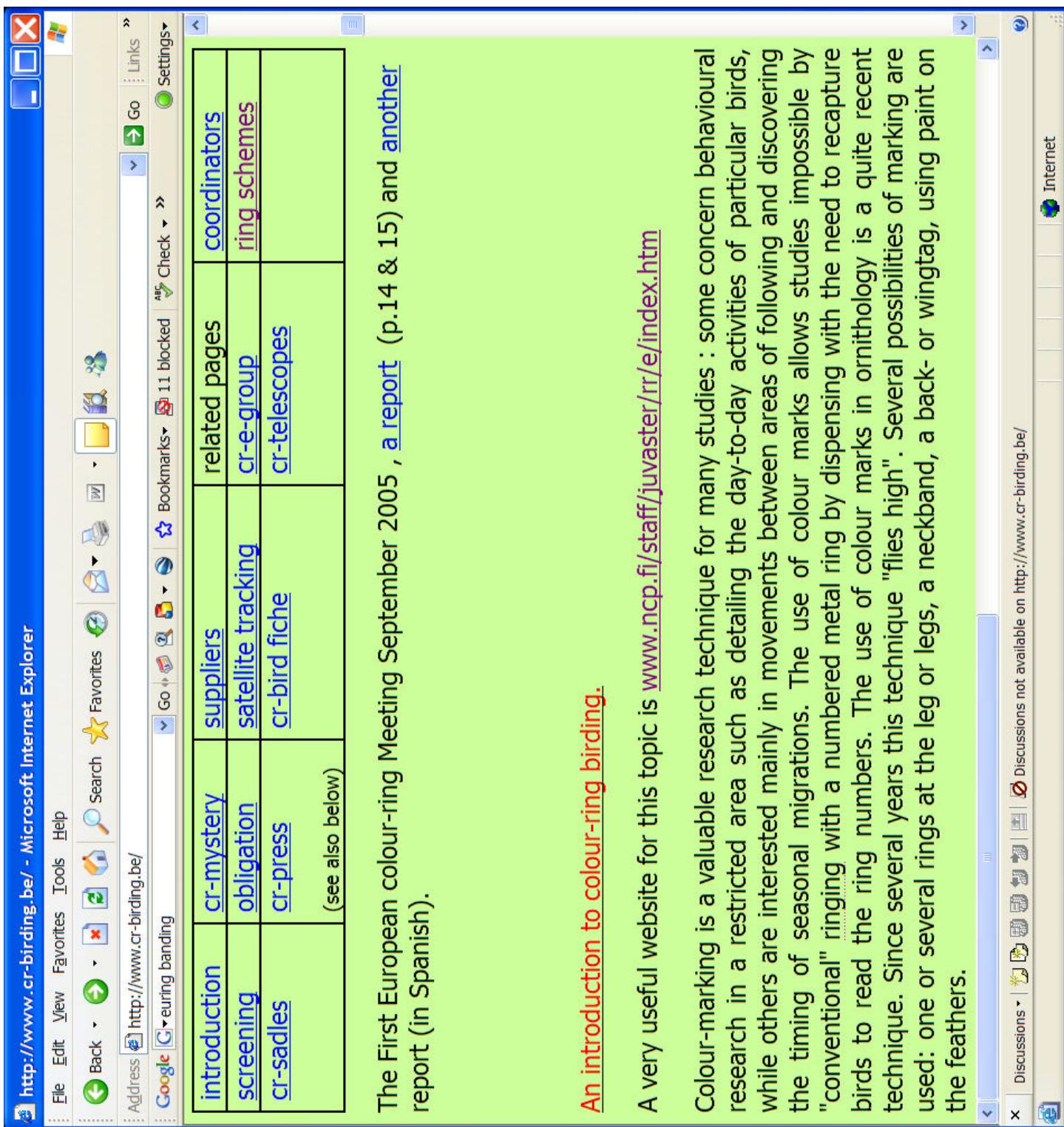
European colour-ring Birding

*birds from the trouble of the world, we twin to*

Last update: **21.07.2008**

next update : 22.07.08

Discussions | Discussions not available on http://www.cr-birding.be/ | Internet

A screenshot of a Microsoft Internet Explorer browser window. The address bar shows the URL <http://www.cr-birding.be/>. The main content area displays a table with four rows and three columns. The first column contains links: "introduction", "screening", and "cr-saddles". The second column contains links: "cr-mystery", "obligation", and "cr-press". The third column contains links: "suppliers", "satellite tracking", and "cr-bird fiche". A note "(see also below)" is placed under the "cr-bird fiche" link. The browser interface includes standard toolbar icons for Back, Forward, Stop, Refresh, and Home, along with menu options like File, Edit, View, Favorites, Tools, and Help.

<a href="#">introduction</a>	<a href="#">cr-mystery</a>	<a href="#">suppliers</a>
<a href="#">screening</a>	<a href="#">obligation</a>	<a href="#">satellite tracking</a>
<a href="#">cr-saddles</a>	<a href="#">cr-press</a>	<a href="#">cr-bird fiche</a> (see also below)

The First European colour-ring Meeting September 2005 , a report (p.14 & 15) and another report (in Spanish).

An introduction to colour-ring birding.

A very useful website for this topic is [www.ncp.fi/staff/juvaster/rr/e/index.htm](http://www.ncp.fi/staff/juvaster/rr/e/index.htm)

Colour-marking is a valuable research technique for many studies : some concern behavioural research in a restricted area such as detailing the day-to-day activities of particular birds, while others are interested mainly in movements between areas of following and discovering the timing of seasonal migrations. The use of colour marks allows studies impossible by "conventional" ringing with a numbered metal ring by dispensing with the need to recapture birds to read the ring numbers. The use of colour marks in ornithology is a quite recent technique. Since several years this technique "flies high". Several possibilities of marking are used: one or several rings at the leg or legs, a neckband, a back- or wingtag, using paint on the feathers.

This list is based on Palearctic Birds, a checklist of the Birds of Europe, North Africa and Asia from Mark Beaman.

<u>Gaviidae</u>	<u>Podicipedidae</u>	<u>Diomedeidae</u>	<u>Procellariidae</u>	<u>Hydrobatidae</u>	<u>Phalacrocoracidae</u>
Loons	Grebes	Albatrosses / Giant Petrel	Shearwaters	Storm-petrels	Cormorants
<u>Pelecanidae</u>	<u>Ardeidae</u>	<u>Ciconiidae</u>	<u>Threskiornithidae</u>	<u>Phoenicopteridae</u>	<u>Anatidae</u>
Pelicans	Egrets	Storks	Ibis / Spoonbills	Flamingos	Swans / Geese / Ducks
<u>Accipitridae</u>	<u>Pandionidae</u>	<u>Falconidae</u>	<u>Rallidae</u>	<u>Gruidae</u>	Otididae
Raptors	Osprey	Falcons	Rales and Coots	Cranes	Bustards
<u>Haematopodidae</u>	<u>Recurvirostridae</u>	<u>Burhinidae</u>	<u>Dromadidae</u>	<u>Glareolidae</u>	Charadriidae
Eur. Oystercatcher	Avocets	Stone-curlew	Crab-plover	Pratincoles	Plovers
<u>Scolopacidae</u>	<u>Stercorariidae</u>	<u>Laridae</u>	<u>Sternidae</u>	<u>Alcidae</u>	Columbidae
Waders	Skuas	Gulls	Terns	Auks	Doves
<u>Cuculidae</u>	<u>Strigidae</u>	<u>Coraciidae</u>	<u>Upupidae</u>	<u>Picidae</u>	Alaudidae
Cuckoos	Owls	Rollers	Hoopoes	Woodpeckers	Larks
<u>Hirundinidae</u>	<u>Motacillidae</u>	<u>Bombycillidae</u>	<u>Cinclidae</u>	<u>Trochilidae</u>	Prunellidae
Swallows	Pipits / Wagtails	Bohemian Waxwing	Dippers	Wrens	Accentors
<u>Turdidae</u>	<u>Sylviidae</u>	<u>Muscicapidae</u>	<u>Paridae</u>	<u>Sittidae</u>	Remizidae
Trushes Redstarts Whinchats	Warblers	Flycatchers	Tits	Eur. Nuthatch	Eur. Pend.Tit
<u>Laniidae</u>	<u>Corvidae</u>	<u>Sturnidae</u>	<u>Passeridae</u>	<u>Estrildidae</u>	Fringillidae

## The projects.

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**Terns – Sternidae**

<a href="#">Gull-billed Tern</a>	<a href="#">Caspian Tern</a>	<a href="#">Lesser Crested Tern</a>	<a href="#">Sandwich Tern</a>
3pr. - 06.11.2007 -	4pr. - 14.04.2008 -	1pr. - 23.12.2007	5pr. - 10.02.2008
<a href="#">Elegant Tern</a>	<a href="#">Roseate Tern</a>	<a href="#">Common Tern</a>	<a href="#">Little Tern</a>
1pr. - 28.12.2002 -	1pr. - 28.12.2002 -	16pr. - 29.06.2008 -	8pr. - 28.07.2007 -
<a href="#">Whiskered Tern</a>	<a href="#">Black Tern</a>		
2pr. - 21.01.2007 -	1pr. - 14.08.2002 -		

**Auks - Alcidae**

<a href="#">Guillemot</a>	<a href="#">Brünnich's Guillemot</a>	<a href="#">Razorbill</a>	
7pr. - 23.12.2007	3pr. - 01.01.2003	4pr. - 07.06.2006	
<a href="#">Black Guillemot</a>	<a href="#">Atlantic Puffin</a>		
2pr. - 07.04.2005	3pr. - 14.02.2004		

**Doves – Columbidae**

<a href="#">Eurasian Collared Dove</a>
2pr. - 04.11.2007

**Cuckoos – Cuculidae**

<a href="#">Great Spotted Cuckoo</a>	<a href="#">Common Cuckoo</a>
1pr. - 21.01.2007	1pr. - 21.01.2007

Discussions euring banding Discussions not available on <http://www.cr-birding.be/> Internet

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06060- Caspian tern - **Sterna caspia**

Yellow ring with black 3-digit code (AAA till ZZZ).

Instituto Nazionale per la Fauna Selvatica, INFS, via Ca' Fornacetta 9, 40064 Ozzano Emilia BO - Italy.

fax: +39-51-79.66.28.

e-mail: [nicola.baccetti@infs.it](mailto:nicola.baccetti@infs.it)

note 1 : used letters are : A,B,C,D,F,H,J,K,L,N,P,S,T,V,Z

note 2 : the ringer is Adriano Talamelli and birds are ringed Salina di Commachio, Italy.

Combination of rings.

Alexander Yurlov, Institute of Systematic and Animal Ecology SB RAS, Frunze-street 11, 630091 - Novosibirsk-91, Russia.

e-mail: [YA@eco.nsc.ru](mailto:YA@eco.nsc.ru) or [AKYURLOV@yahoo.com](mailto:AKYURLOV@yahoo.com)

Black ring (on left leg, no metal ring) with white code KJnn, where n is number.

Risto Juvaste, Viljakaari 4, 80510 Onttola, Finland.

e-mail: [risto.juvaste@kolumbus.fi](mailto:risto.juvaste@kolumbus.fi)

note 1: birds are ringed in Russian Karelia.

Discussions | Discussions not available on <http://www.cr-birding.be/> | Done

Internet

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## READ RINGING – PAGES by Risto Juvaste

The term “**READ RING**” is here used for individually text coded at field readable (colour) rings (bands). The main thing is to differ them from usual COLOUR RINGS which are not individual or need a set of different rings for identity of a bird. In the same way I use the terms “**READ**” a ring or “**READ RINGING**” or even “**READS**” for sightings. In USA terms “read band” and “read banding” could be used.

**NOTE**

**Red marked pages are updated 8 Feb 2006**  
**A lot of new from read ring materials, rolling and testing etc..**

**Note MY HERRING GULL PROJECT IN FINLAND 2005**

**Red rings with white code (CnQn)** (where ‘n’ is a number and ‘Q’ is a letter X, Y, or Z).

REPORT THESE TO straight to me (not via Finnish Ringing Centre)  
Risto Juvaste, Viljakaari 4, SF-80510 Oulu, Finland  
e-mail : [risto.juvaste@kolumbus.fi](mailto:risto.juvaste@kolumbus.fi) or [risto.juvaste@ncp.fi](mailto:risto.juvaste@ncp.fi)

In this project 246 gulls were ringed in 2005, without a metal ring. There are also small check marks (spot or – or 1) at different heights (top, middle or bottom) between C and the first number or spot in the middle : these are good to write down, though normally not needed. They are for a study use of check marks.

Actually in many cases we do not even need the colour of the read ring in order to identify the individuals (in Finland we have used thousands Cxxxx codes, which are not available in other countries).

Mainpage  [www.R.Juvaste](http://www.R.Juvaste) 

Read rings - types materials tests rolling inquiry

How to put ring read report

RRFinland projects maps Discussions Internet

↳ discussions not available on <http://www.cr-birding.be/>



# Materials and Types of read rings – a difficult choice

## The First European colour- ring Meeting 4.9.2005

Note There is some more about this subject in my 9th IGM presentation.

Read rings can be made from metals or plastics.

### 1) METAL RINGS

The use of large short codes makes metal rings similar that plastic rings. There exists also modified metal rings, which are double coded and therefore easy to read from one position by telescope. Some pictures of these can be found on the web site produced by Holmer Vonk <http://www.holmer.nl/birdrings.htm> (have a look at Storks and Large gulls). Coloured eloxyl aluminium is commonly used for birds of prey.

The problems with metal read rings can be bad stamping, small codes and the wear. Aluminium rings (also eloxyl colours) wear out fairly quickly.

### 2) PLASTICS RINGS

There are many different polymer materials, which have been used in colour and read rings. Most common are amorphous polymers like CA, PVC, ABS and PMMA. Many more polymers can be used. Crystalline polymers would be better in wear resistance and they are used in some projects (for instance POM in German Elsa-stork ring). The problem of many materials is the availability of suitable half-products like two layered sheets for engraving.

Here shortly from the most common plastic ring materials.

a) CA

In the beginning plastic rings (=bands) used to be made cellulose acetate=CA (= acetate rings). CA can be glued with acetone. The production of CA plastic is decreasing. These rings are normally made from one colour sheets.

I do not know that it is produced as two-layer laminate for engraving.  
I have not tested C\A myself but I think it is not very durable as bird rings

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Google G euring banding

reading rings make similar notes. Please use email, if possible.

Happy ringing and reading! Risto

F1. Put plate to tool F2. Get soft in boiling water and start to roll F3. Rolling against kettle

F4. Ready to take from boiling water

F5. Finish rolling by fingers

F6. Put rings to calibrating pipe

F7. Finish calibration by rolling with bar water, they are ready.

F8. Drop to cold water, they are ready.

F9. Tools for small rings

F10 Tools and glues

Click on the thumbnail for a larger version!!

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**HERE IS SOME PICTURE SERIES FROM READ RINGING**

Some commets will come later...

Ringingpics - Page 1 / 2

	Put the ring into opening pliers.
	Put glue
	OK
	Close
	OK OK
	Measuring knee
	Measuring wing
	Metal ring
	Good leg-length
	Measuring bill
	Measuring bill
	Measuring bill
	Close well
	Close well
	Close well
	Close well
	Measuring bill
	Measuring bill
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	Measuring bill

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[RRFinland](#)

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- [projects](#)
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[Results](#)

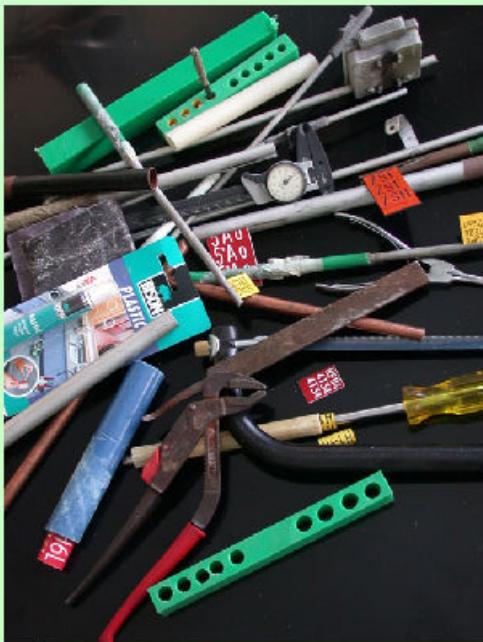
- [dump](#)
- [pon.](#)

Discussions | <http://www.ncp.fi/staff/juvaster/rr/pic/ringingpic/Dscn1868.html>

Internet

to the ring plate.

**LOOK AT THE PICTURES TEXT WILL BE ADDED NEXT WEEK !! Hurry now and some problems!!**



C-7X8	C-8X5	C-9X2	C-9X9	C-0Y6	C-1Y3	C-2Y0	C-2Y0	C-3Y4
TV8	CAV5	C9X2	C9X9	C0Y6	C1Y3	C2Y0	C2Y0	C3Y4
RF04								
0121	35355	C9X2	C9X9	C0Y6	C1Y3	C2Y0	C2Y0	C3Y4
0121	A444	C4Y7	C4Y7	C4Y7	C4Y7	C524	C524	C524
0121	REF04	00-72	00-72	00-72	00-72	00-72	00-72	00-72
0121	23TL	00-72	00-72	00-72	00-72	00-72	00-72	00-72
0121	US-11	00-72	00-72	00-72	00-72	00-72	00-72	00-72
0121	US-11	00-72	00-72	00-72	00-72	00-72	00-72	00-72



Discussions not available on <http://www.cr-birding.be/>

**Small Gulls, small waders and large Terns**

[ Omhoog ] [ Small Terns, very small waders and large Passerines ] [ Small Gulls, small waders and large Terns ] [ Large Gulls ] [ Storks ] [ Swans ] [ Very large rings ]  
 [ Colourrings ] [ Nasal marks ] [ Who is doing what ] [ Typical wear ] [ Very strange ring ]

Arnhem - Holland      Bruxelles - Belgium  
 Copenhagen - Denmark      Stockholm - Sweden  
 Gdansk - Poland      Comparison Stockholm - Copenhagen  
 Helsinki - Finland  
 Helgoland - Germania  
 Jersey  
 Kaunas - Lithuania  
 London - Britain  
 Matsalu - Estonia  
 Moskwa - Russia  
 Paris - France  
 Riga - Latvia  
 Icona - Madrid  
 Washington USA  
 Praha - Czechia  
 Leiden - Holland

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**An overview of almost all European rings**

How to  
 - put ring  
 - read  
 - report  
 BlueFM WhiteFA01

RRFinland  
 - statistics  
 - projects  
 - maps  
 Results  
 - dump-  
 pop.  
 migration

Arnhem Holland

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ST154629  
MUSEUM ZOOLOG.  
HELSINKI - FINLAND

ST125.558  
MUSEUM ZOOLOG.  
HELSINKI - FINLAND

ST150308  
MUSEUM ZOOLOG.  
HELSINKI - FINLAND

ST125.559  
MUSEUM ZOOLOG.  
HELSINKI - FINLAND

Ring on Caspian Tern (Italian site)  
ST-728.939  
MUSEUM ZOOLOG.  
HELSINKI - FINLAND

Mainpage 

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rings  
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- materials  
- tests  
- rolling  
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Discussions > Discussions not available on <http://www.cr-birding.be/>



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**HOW TO READ RINGS ...**

**As a rule be careful !!!**

With false reads you can spoil scientific data and get a lot of trouble to people, who try to clear out strange reads.

**Learn the FONTS !**

Be careful with different fonts while reading the code. Try to exclude all other possible characters. Here is some examples with DIN and Aeronaut fonts. Note that it is very easy to mix 1, T, L, and J, if fonts are narrow. Very often people mix 4 and A, which look very similar, especially, if number 4 is "closed" (see Aeronaut-fonts below). It is easy to read wrong pairs 0 - U, 7 - Z, K - X and V - Y, specially, if the whole character is not visible. In Aeronaut fonts it is easy to mix 3, 5 and letter S. In DIN fonts there is easy to mix 3, 6, 9 and 8, which look very similar. Dirt, mud, shit etc. increase risks for confusions. Sometimes false reads are made because the characters are read upside down (W - M and 6 - 9).

These risks are the reason, why I like to use in my rings the best mixture of these two fonts, thought it demands some more time and trouble in engraving.

**Mainpage**

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**Din normal 124567890**  
**Aero normal 1234567890**  
**Din QWERTYUIOPASDFGH**  
**Aero QWERTYUIOPASDFGH**  
**Din JKLZXCVBNM Z7398**  
**Aero JKLZXCVBNM Z7398**  
**DIN width 140% 1TDFLY**  
**AERONAUT width 140 1TDFLY**

**Discussions** [Discussions not available on http://www.cr-birdring.be/](#)

**Internet**

# Colour Mark Recording

This document describes a standard way of recording colour marks (combinations of colour rings, colour rings with inscriptions, multi-coloured rings, leg flags, neck collars, wing tags, nasal tags and saddles...). Many thanks to Alain Fosse for putting together this web page to better show the use of the coding standard ([link](#)). Some of the text is in French and English.

See illustrations of colour marks on the web site produced by Holmer Vonk : <http://www.holmer.nl/birdrings.htm>

## Colour codes

<b>R = red</b>	<b>O = orange</b>
<b>W = white</b>	<b>C = dark pink (carmine)</b>
<b>G = dark green</b>	<b>K = light pink</b>
<b>L = light green (lime)</b>	<b>B = dark blue</b>
<b>N = black (niger)</b>	<b>U = brown</b>
<b>M = metal ring</b>	<b>V = violet/mauve/purple</b>
<b>Y = yellow</b>	<b>S = grey/silver</b>
<b>P = pale blue</b>	<b>A = other metal ring</b>

The screenshot shows two windows side-by-side. The left window is titled 'IPMR Home' and contains text about recording colour marks. The right window is titled 'ding - Microsoft Internet Explorer' and displays various bird leg ring color codes and their combinations. Examples shown include '509X' (grey), 'LAM;RBWN(509X)' (yellow with a grey band), 'LBM;RBGW(X/9)' (yellow with a green band), 'LAM;RBRW(L91)' (yellow with a red band), 'LBOB2' (yellow with a red, blue, and black band), and 'LBOB2N(A8)' (yellow with a red, blue, and black band).

Microsoft Internet Explorer

- Microsoft Internet Explorer

Help

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Vertical

**A | B**

Horizontal

**A — B**

Horizontal

**◀ | □**

Vertical

**◀ — □**

Code: A/B

Code: A-B

Code: A-B

Code: A/B

Code: A/B

Band



**[LBGW(>RH6);RBWN  
(E)]**

**[LBM  
(L89127);RBBW  
(<ATAM)]**

Discussions not available on <http://www.cr-birding.be/>

Internet

Microsoft Internet Explorer

- Microsoft Internet Explorer

Help

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RW = plaque aile droite/right wing tag

LW = plaque aile gauche/left wing tag



photo [Delfin Gonzales](#)



photo [Thierry Printemps](#)



photo [Thierry Printemps](#)

**[RWNY(N)]**

**[LWL,B;RWP,O]**

Discussions not available on <http://www.cr-birding.be/>

Internet

**TESTS....**

The most common problem with plastic rings is said to be the insufficient life time. This is very true if you have wrong materials. Specially most thin (0.8mm) materials, which are normally modified ABS (some producers also call them modified acrylics), are not for outdoor use (see [materials](#)).

I have tested the wear resistance of different materials by different ways. There are really big differences even between different colours of the same producers (through the same product name). Some material wear in sand blowing test in 15 seconds others stand more than 5 minutes. Note that aluminium rings loose their text in a half minute and stainless steel rings stand about 3 minutes !

It is important to test also base layer, because rings can wear out from inside. The base layers of most materials are softer and worse in wear resistance.

Here are some photos from some sand blowing tests.

Test	Material	Result
Test A	Metal rings	
Test B	Sandblow start Test	
Test C	Result 1 Test C	
Test D	Result 2 Test C	
Test E	Result 3 Test C	
Test F	0,8mm laminates Test	
Test G	1,5mm laminates Test	
Test H	Sandblow box	

**How to**

- put ring
- read
- report

**RRFinanc**

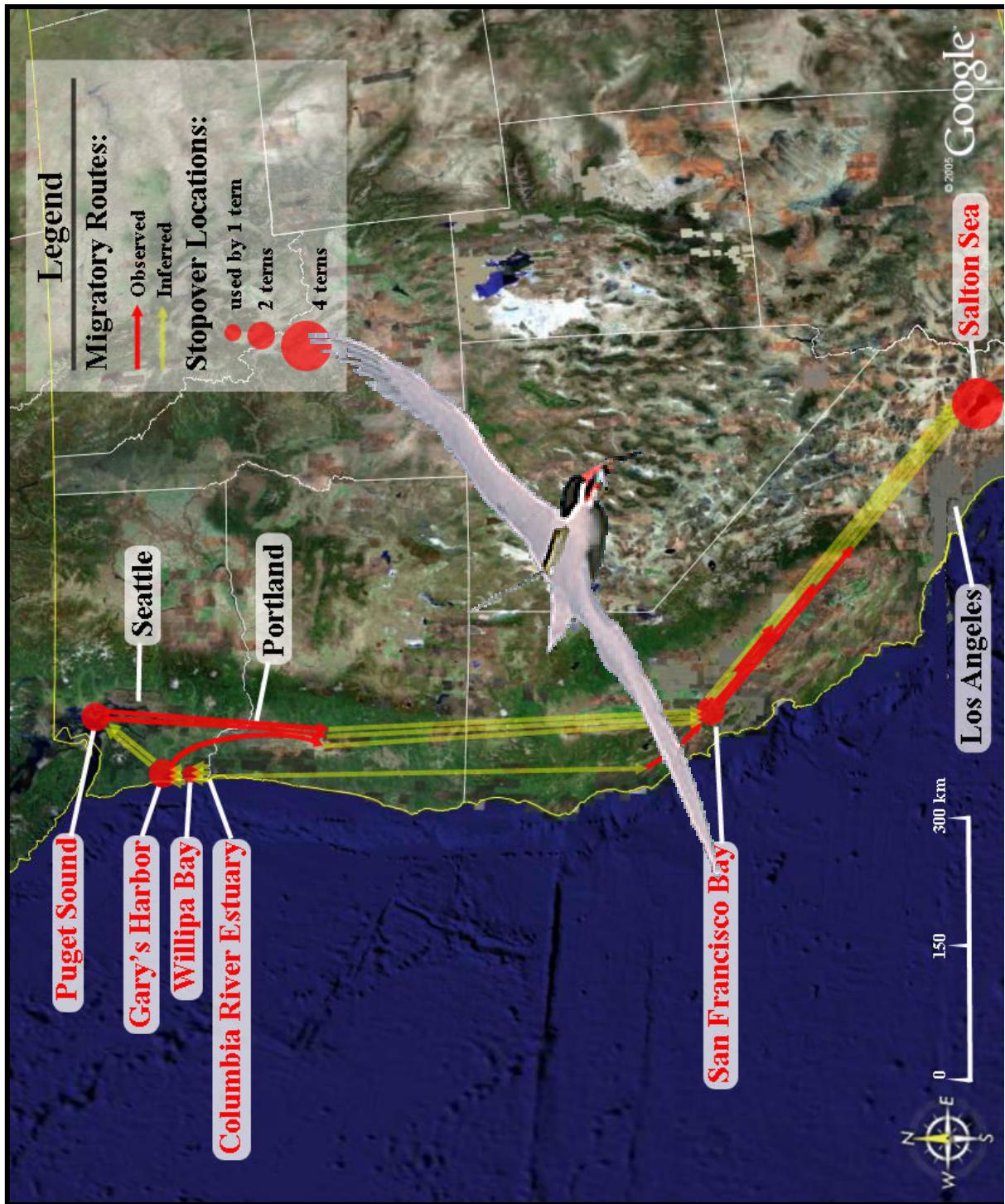
- statistics
- projects
- maps

**Results**

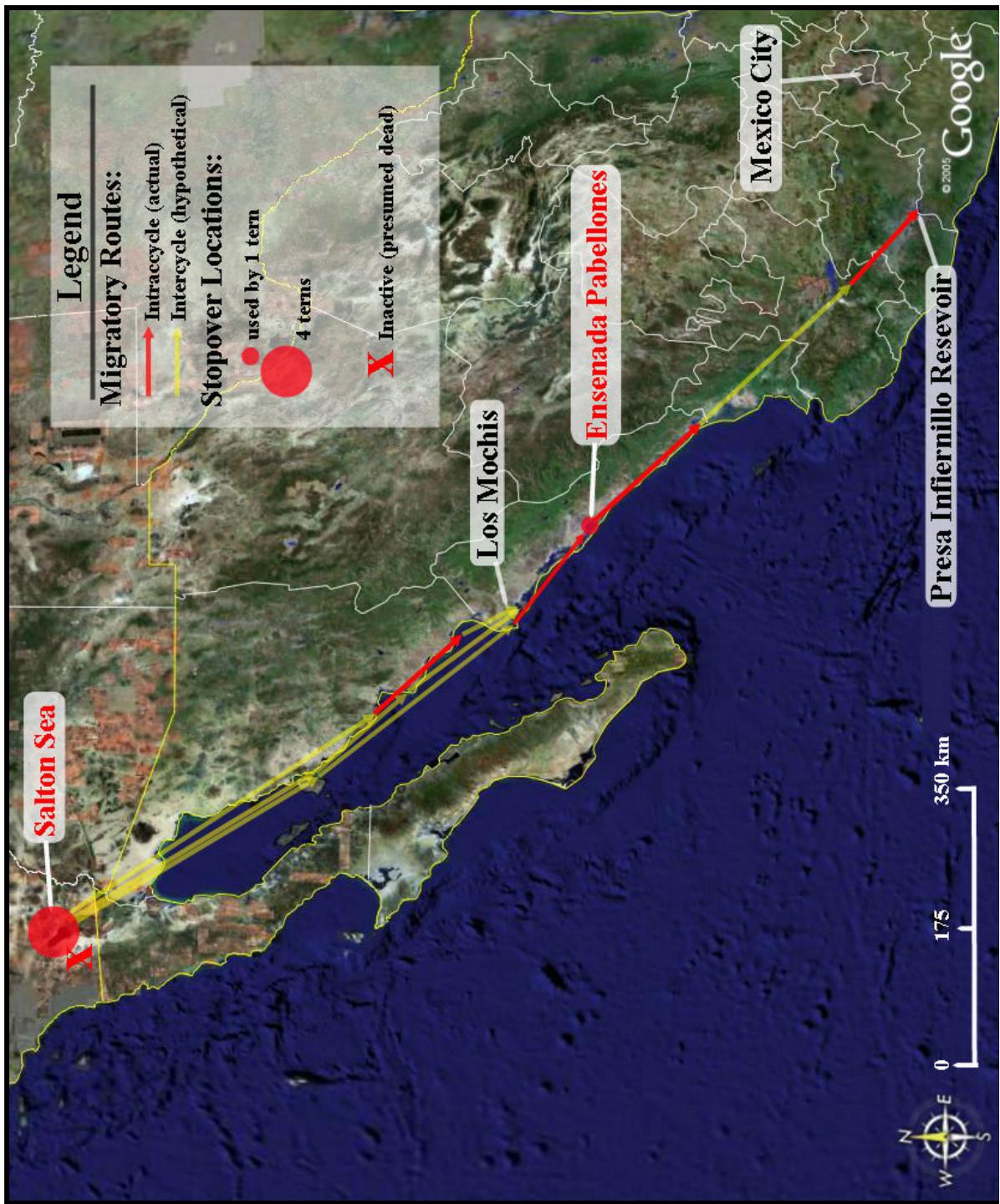
- dump-
- dod.

Discussions not available on <http://www.cr-birding.be/>

# Contributions of satellite telemetry (remote tags) to understanding CATE connectivity.



# Contributions of satellite telemetry (remote tags) to understanding CATE connectivity.



# Using Google Earth to Prospect Potentially Important Winter Habitat for Caspian Terns (Satellite Tags)

Mouth of Rio Papagayo,  
south of Alcupulco,  
Mexico

© 2007 Europa Technologies

Image © 2007 DigitalGlobe

Google

# Verification of Rio Papagayo as CATE Wintering Habitat



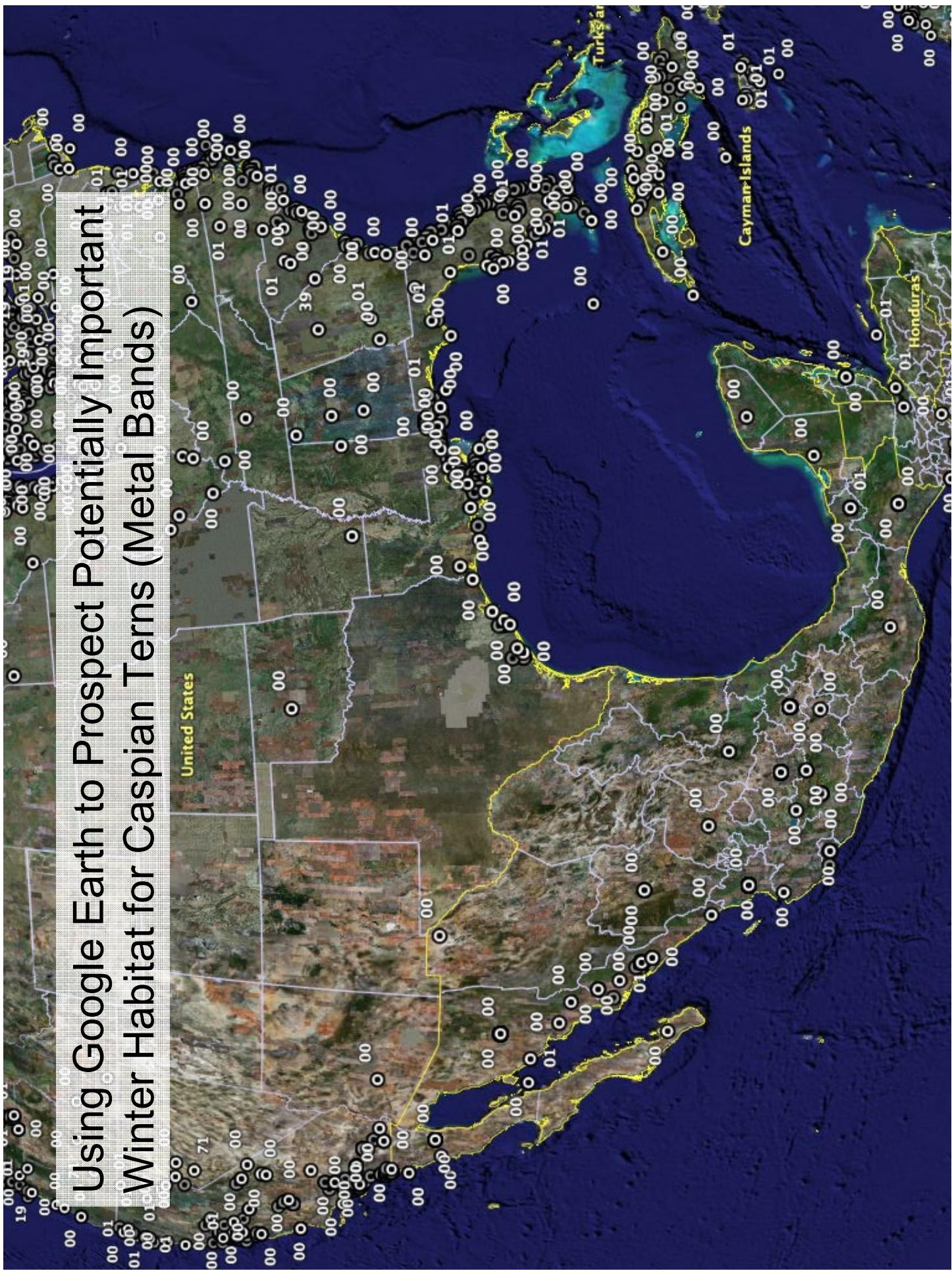
Verification of CATE Connectivity between Rio Papagayo & the  
Columbia River Estuary



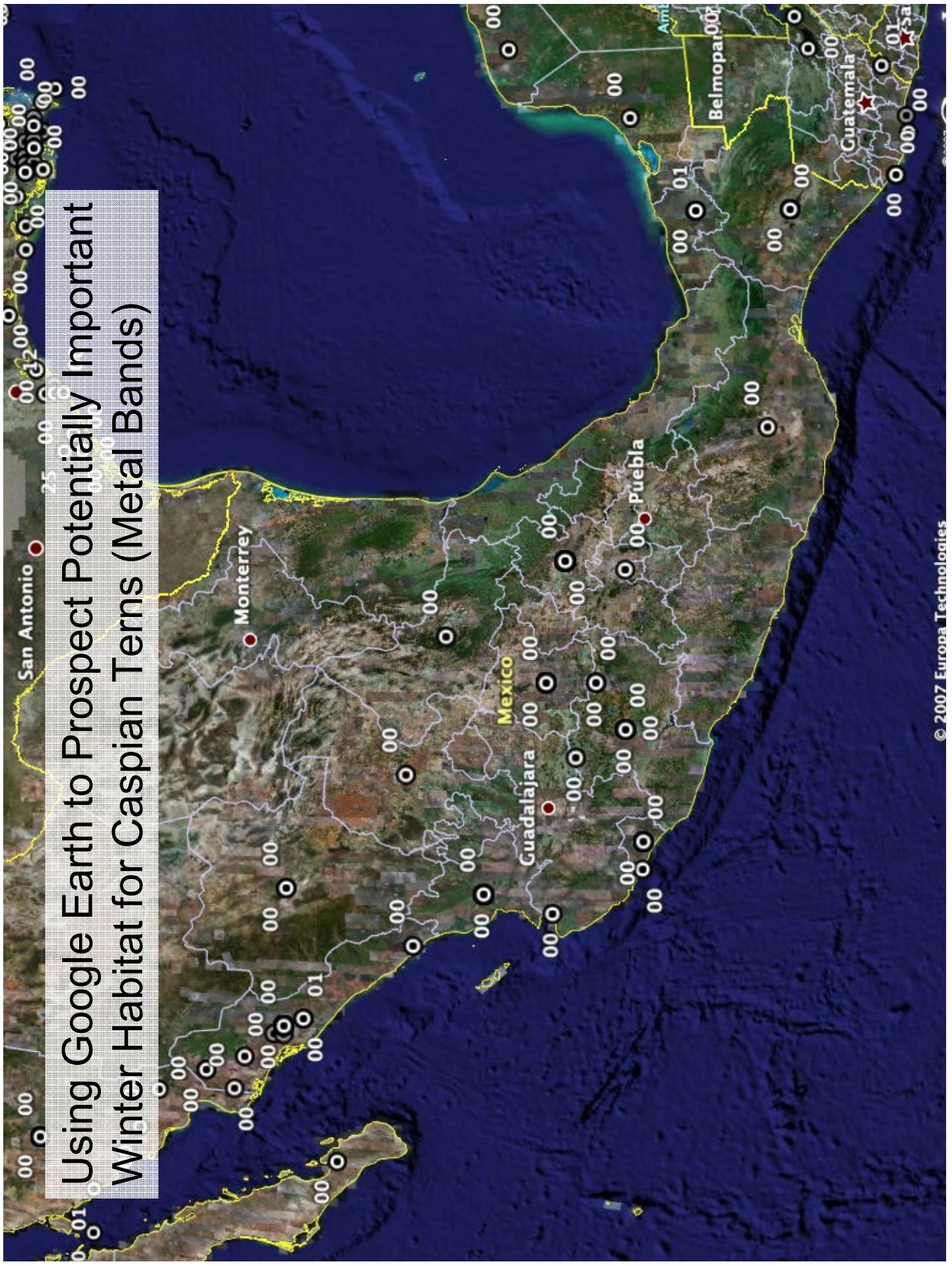
Digiscoped



# Using Google Earth to Prospect Potentially Important Winter Habitat for Caspian Terns (Metal Bands)



## Using Google Earth to Prospect Potentially Important Winter Habitat for Caspian Terns (Metal Bands)



## Using Google Earth to Prospect Potentially Important Winter Habitat for Caspian Terns (Metal Bands)

# Using Google Earth and Panarimo to Prospect Potentially Important Winter Habitat for Caspian Terns (Metal Bands)



# Verification of Lago de Gaudalupe as CATE Wintering Habitat



WORLD	U.S.	N.Y. / REGION	BUSINESS	TECHNOLOGY	SCIENCE	HEALTH	SPORTS	OPINION	ART
					ENVIRONMENT	SPACE & COSMOS			

## Thousands of Miles From Home, and Possibly Carrying Avian Flu

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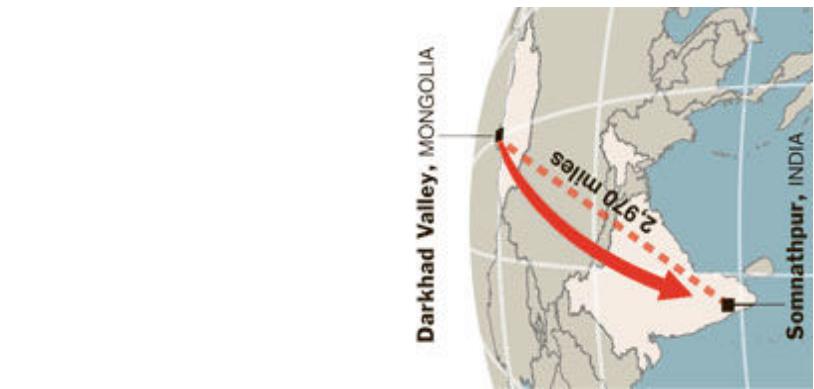


Narayan M.

At left is the goose designated E6.

By DONALD G. MCNEIL Jr.

Published: January 29, 2008



Caspian Tern. Aptos Creek Mouth at Rio Del Mar Beach, Santa Cruz Co., CA. 06-04-04. © Anne Spence

