Presentation: Technology for Pictures from the South Bay Cruising Club
http://www.sbccsail.org/

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Rich Troy

Agenda

- What is the Best Camera you can own?
  - Food for thought
- Intro to Geotagging Pictures
  - Adding another dimension of fun to pictures
- Intro to Underwater Photography
  - From shirt pocket to snorkeling, SCUBA, etc
- Summary

Introducing Rich Troy
for these topics

- Not a professional; an 'advanced amateur'
- Did the SBCC 2006 yearbook cover photo
- Likes Apple iProducts and Nikon products
- Enjoys taking colorful scenic pictures

South Bay Cruising Club
Celebrating 55 Years in 2006
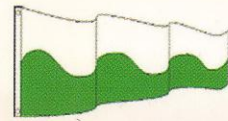
Next Topic:
What is the Best Camera you can own?

Question:
What is the Best Camera you can own?

- It's a hotly debated topic
  - Nikon? Canon?
  - DSLR? Lens built in or interchangeable lenses?
  - Film? 35mm? Medium Format?

Question:
What is the Best Camera you can own?

- Answer: It's the camera that is with you when you want to take "that" picture
  - Some moments aren't repeated ("I wish I had a camera then")
- Example: Apple iPhone has been the top contributor to Flickr
  - Flickr = public website for sharing pictures with 60 million photographers and 5 billion photos
- Suggestion: Sometimes small cameras are better… less to carry; easier to use

Next Topic: Intro to Geotagging

Intro to Geotagging

- Enables pictures to be displayed on a map, showing where the picture was taken

- Geotagging adds GPS data to an item, like a digital picture

- GPS data can be added by the camera or by picture editing software, if capable

- Some smart phones and tablets can take pictures with geotagging and then display the pictures on a map
  - Examples: iPhone, iPad, etc

How to see geotagged pictures displayed on a map (iPhone/iPad)

- Run "Photos" app

- Select "Places"

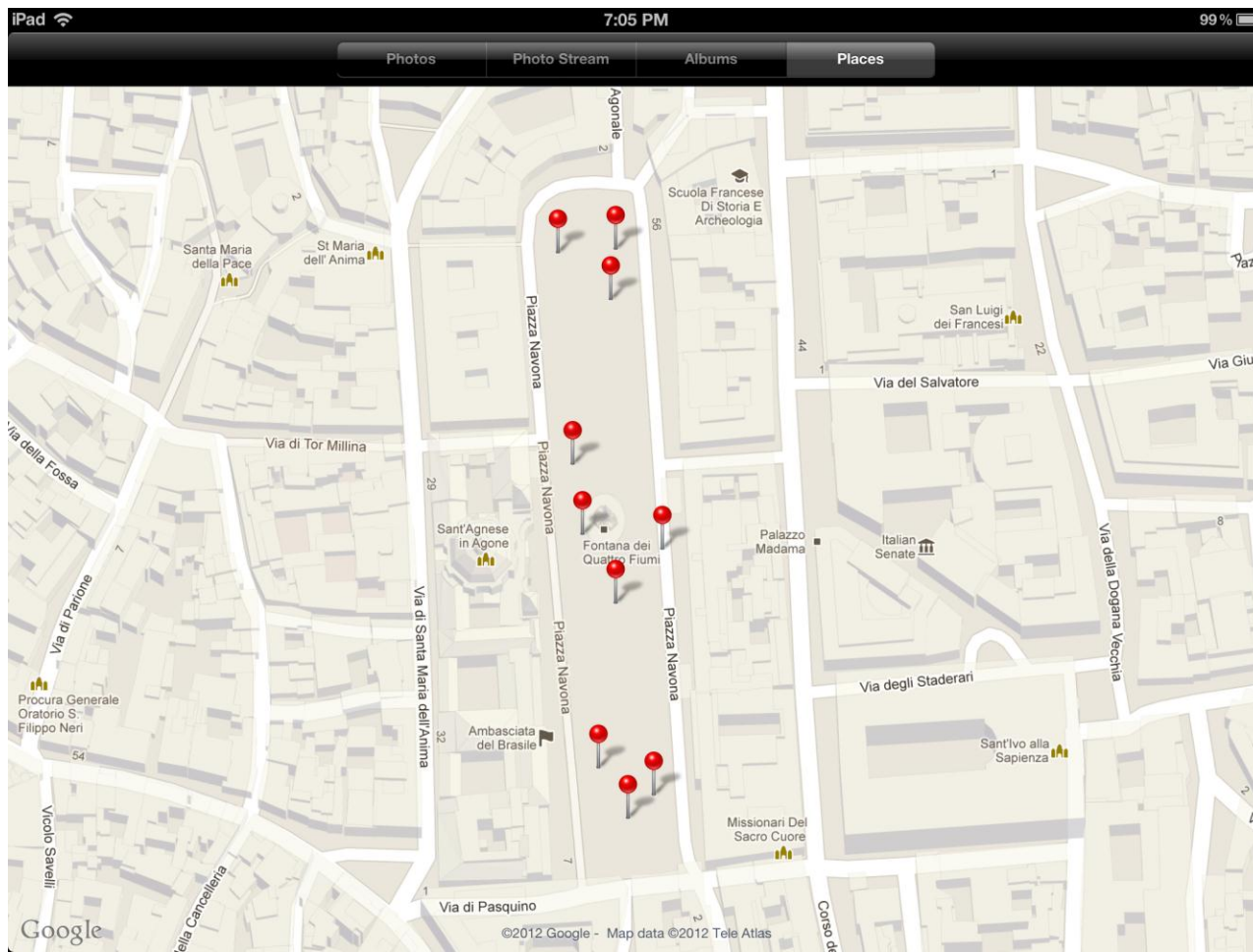- Note: Pictures taken with iPhone and iPad are geotagged automatically

Demo (iPhone/iPad display): Geotagged pictures on a world map

Demo (iPhone/iPad display): Geotagged pictures in Italy Venice, Florence Rome
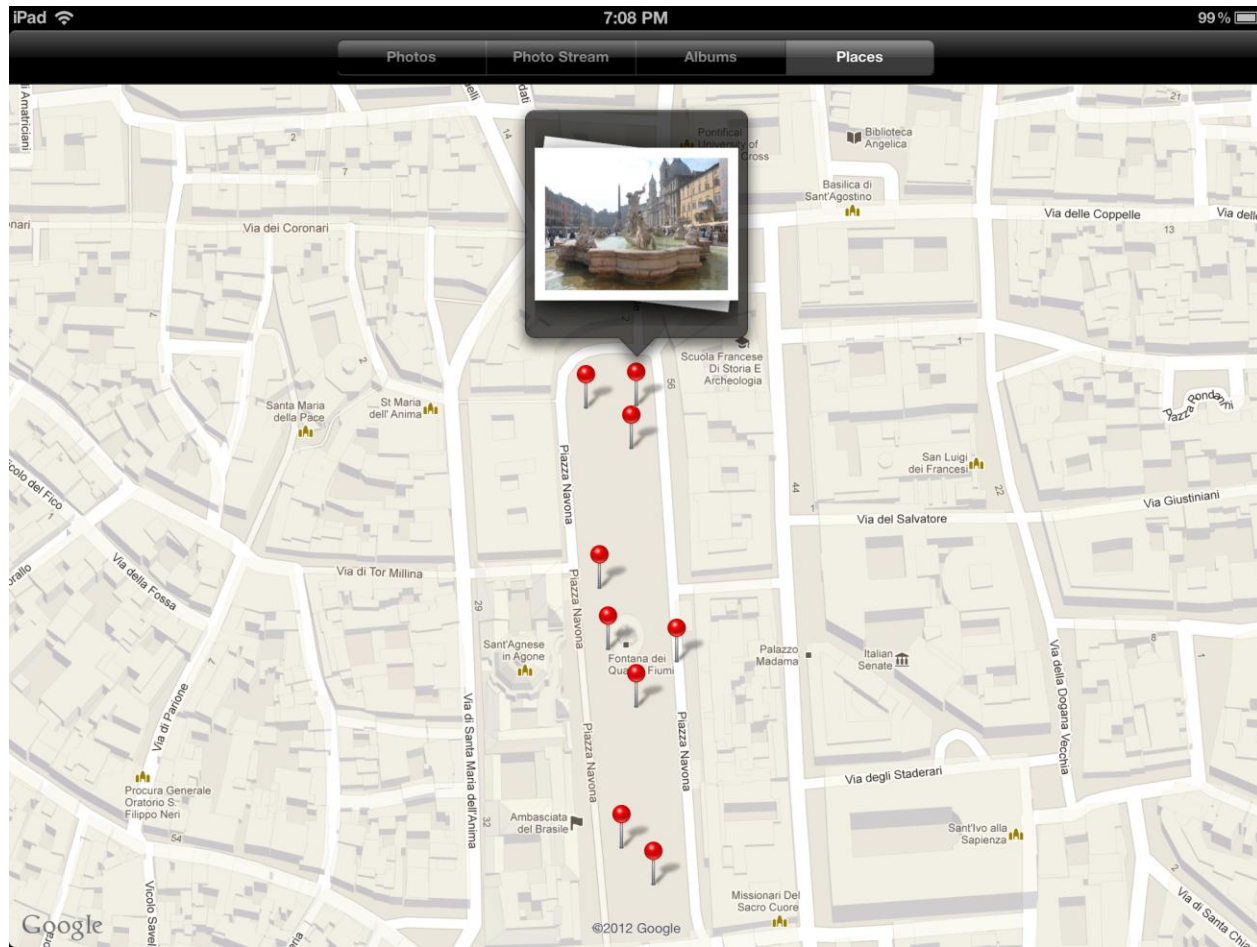
Demo (iPhone/iPad display): Geotagged pictures in Rome, Piazza Navona
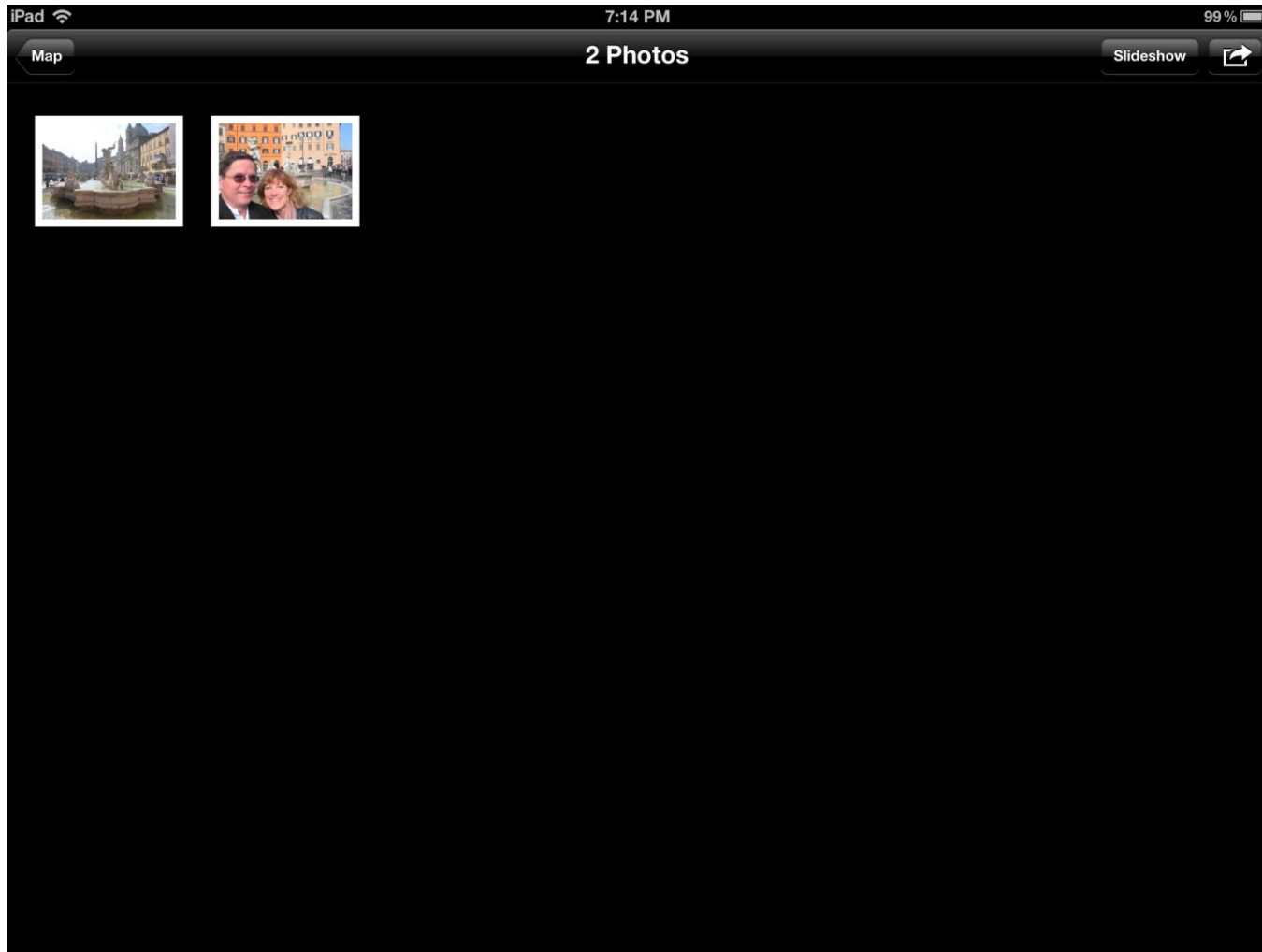
Demo (iPhone/iPad display): Geotagged pictures in Rome, preview

Demo (iPhone/iPad display): Geotagged pictures in Rome, preview

Demo (iPhone/iPad display): Geotagged pictures in Rome

- Now we know where this picture was taken!

Geotagging technology: EXIF Data in a JPG

- EXIF = Exchangeable Image File Format
  - Holds information like GPS, date, time, etc
- JPG or JPEG = Joint Photographic Experts Group
  - Popular file format for digital pictures

- Camera -> takes picture -> saves to file
  - EXIF is written into the saved picture file

Geotagging technology:
Examples of EXIF data in a JPG picture

Image	
Image description	
Artist	
Copyright	
Exposure time	0.00300842 s
F-number	f/5.7
Exposure program	Normal Program
ISO speed ratings	ISO 64
Date/time original	10/15/2010 4:36:29 AM
Date/time digitized	10/15/2010 4:36:29 AM
Component config	YCbCr
Compressed BPP	4
Exposure bias value	0.00 eV
Max. aperture value	f/2.7
Metering mode	Pattern
Light source	unknown
Flash	Flash did not fire, compulsory fla...
Focal length	6 mm
User comment	shutter speed is 3/1000 sec
Colorspace	sRGB
Pixel X dimension	4224
Pixel Y dimension	3168
Interoperability IFD	1292
Scene type	A directly photographed image
Custom Rendered	Normal process
Exposure mode	Auto exposure
White balance	Auto white balance
Digital zoom ratio	0
Focal length in 35mm film	28 mm
Scene capture type	Standard
Gain control	None
Contrast	Normal
Saturation	Normal
Sharpness	Normal
Subject distance range	unknown

Database \ File \ EXIF \ IPTC /

Properties - EXIF	
File	
Comment	
Camera	
Make	NIKON
Model	COOLPIX P6000
Orientation	Upper Left
X resolution	300/1
Y resolution	300/1
Resolution unit	inches
Software	COOLPIX P6000V1.2
Date/time	10/15/2010 4:36:29 AM
YCbCr positioning	co-sited

GPS	
GPS Latitude Reference	North latitude
GPS Latitude	41, 53.9872' 0"
GPS Longitude Referen...	East longitude
GPS Longitude	12, 28.3888' 0"
GPS Altitude Reference	Sea level
GPS Timestamp	9:35:57
GPS Satellites	05
GPS Map Datum	WGS-84
GPS Date Stamp	2010:10:15
Miscellaneous	
Exif version	2.2
FlashPix version	1.0
File source	DSC
GPS Version ID	(2,2,0,0)
White balance	Auto
Nikon Maker Notes	
Quality	FINE
Color Mode	COLOR
Image Adjustment	NORMAL
White balance	Auto
Digital zoom	1
Image sharpening	NORMAL
Focus mode	AF-S
ISO selection	AUTO
Adapter	OFF
Manual focus distance	Infinity
AF Focus	Bottom
Contrast	NORMAL
Noise reduction	OFF
Saturation	NORMAL

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Geotagging on websites

- Photo sharing communities use GPS
  - Panoramio (my favorite), Iocr, Flickr
  - Pictures on a map can be shared, browsed
  - This example is west of Gilgo Heading
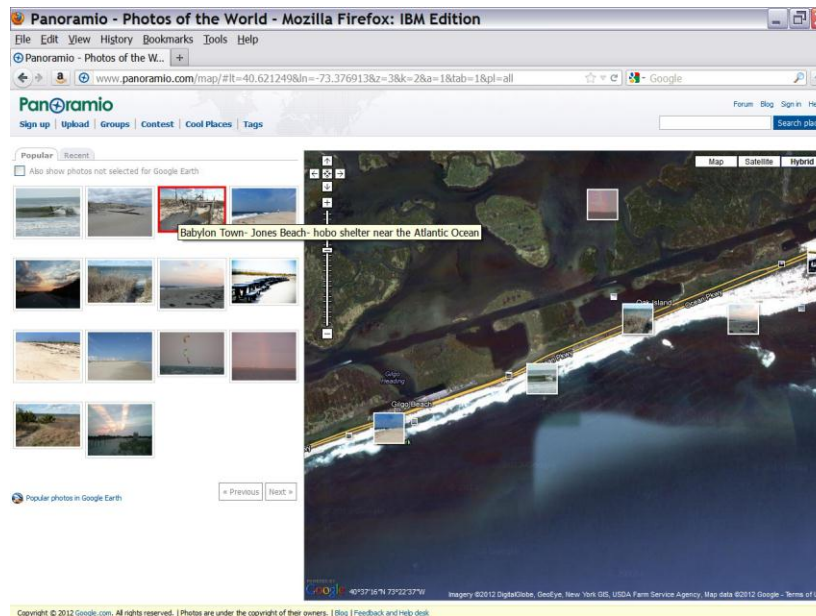
Geotagging on Panoramio
My photo with comments from Germany!

Geotagging software: Picasa (free)

- Picasa lets you set or adjust the location where a photo was taken, and displays it in an embedded Google Map
  - http://picasa.google.com/
  - Needs an Internet connection

Geotagging Cameras

- Camera phones: iPhone, Android, etc
- Cameras & pocket cameras: Nikon, Canon, etc
- Examples here today:
  – Nikon P6000 (pocket camera)
  – Panasonic Lumix (pocket camera)
  – iPhone 4S, iPod Touch, iPad (new)

Buying Considerations: Geotagging Cameras

- Cost, picture quality, megapixels, features, options, etc.
  - If no GPS fix, what GPS info is put on picture?
    - Some cameras put nothing

- Speed of GPS fix
  - Older systems take 11 Minutes; newer 3 or less
    - From power on to GPS fix ready

- GPS adds to battery drain
  - Consider buying one or more spare batteries
  - May need to manually turn off GPS if not using camera; some cameras are automatic

Geotagging risks!

- Public posts of geotagged pictures reveal
    - Your location
    - The date & time taken
- Celebrities have mistakenly revealed their home locations
- Thieves have used the information
    - Exact location of a valuable item for sale
    - Date & time a home is empty (vacation)

Geotagging summary

- Geotagging pictures are available from many cameras and phones
- Geotagged pictures can be seen on a map on phones, tablets (ex: iPad), websites, and desktop software
- It can add a fun dimension to pictures
- It's not expensive to get started

Next Topic:
Intro to Underwater Photography

Intro to Underwater Photography

- Wide range of pricing in cameras and equipment
- Wide range of capabilities in the equipment
  - With maximum depths of 10 ft, 33 ft, 200 ft, etc.

Taken by my compact camera

Buying Considerations: Underwater photography

- "Waterproof" limitations of cameras & equipment
  - Depth and/or time underwater (ex: 40 ft for 60 minutes)
  - Rubber gasket seals need to be replaced from time to time
- Many compact cameras with "Waterproof" also are:
  - "Drop proof" (ex: 6.6 ft fall to plywood)
  - Maybe also "Freeze proof" (to -14F) or "Crush Proof" (to 350#)
- On compact cameras, some users report rubber gasket failures
  - My 2 year old compact camera failed; repair cost would have been ½ price of a new camera
- Make sure you understand what you can do underwater
  - Some cameras don't allow all buttons to be used underwater

Underwater photography summary

- "Waterproof" is available on many compact cameras
- It's not expensive to get started

Next Topic: Conclusion

Conclusion

- **IF** the best camera you can own is the one that is with you when you want to take the picture
- THEN maybe a compact camera with geotagging and "waterproof" is a good solution, such as:
  - Panasonic Lumix (here today)
  - Nikon AW100
  - Others
- OR maybe find a waterproof case for the phone ☺