

USDA-NRCS Agency Report
October 9th, 2008
NDOP Meeting

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USDA-NRCS

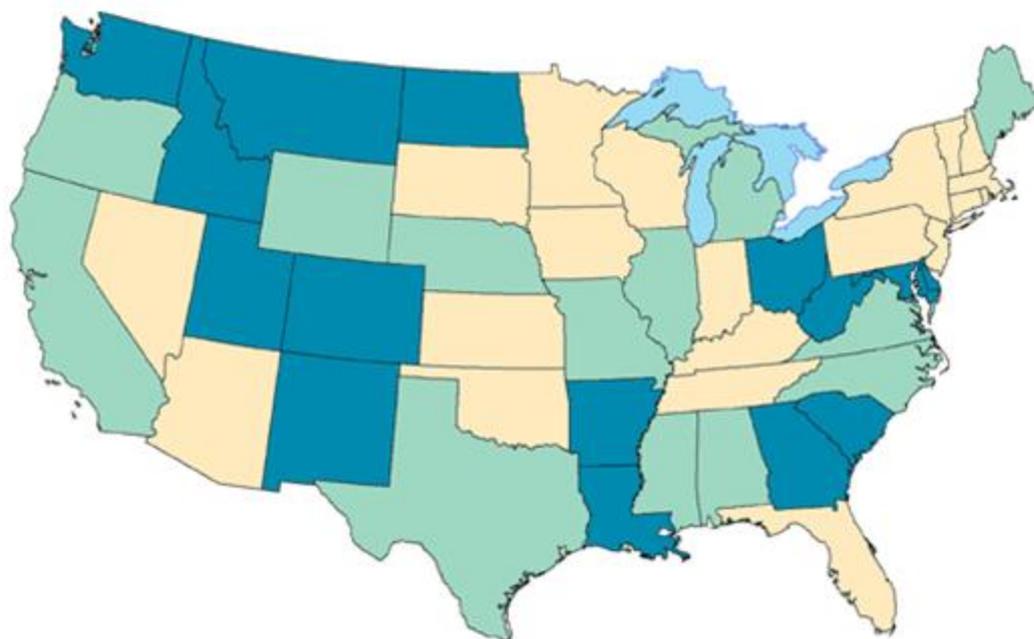
Topics

- NRCS Funding Priorities and Acquisitions for FY 2009
- Orthoimagery Status
 - Hawaii
 - Pac Basin
- NRI/WRP Test for Medium Format Digital Camera

NRCS 2009 Orthoimagery Priorities and Acquisitions

NRCS overall support this Acquisition Cycle!

Proposed NAIP Acquisition Cycle



Cycle Dates



NRCS NAIP Funding

2003 = 2,500,000

2004 = 3,000,000

2005 = 2,600,000

2006 = 2,800,000

2007 = 500,000*

2008 = 500,000*

2009 = 1,750,000

*** Plus addition funding via state partnerships**

NRCS has also funded High Resolution Orthoimagery via State Innovative Partnerships. In addition NRCS has funded acquisition of Orthoimagery in Alaska, Hawaii, Pacific Basin, Puerto Rico and the Virgin Islands.

2009 NAIP

- **\$1.75M NRCS contribution for NAIP funded by the Resources Inventory and Assessment Division (RIAD).**
- **Funding for the 2010 and 2011 NAIP acquisitions will continue to be funded by RIAD.**

United States Department of Agriculture
Natural Resources Conservation Service



Future NRCS Orthoimagery Issues

- Chief of NRCS and the RIAD Director supports the NAIP 3 Year Acquisition Cycle.
- Tommie Parham does have issues with Orthoimagery funding in general. Limited or insignificant funding from NRCS has been allocated for Alaska, Hawaii, Pacific Basin, Puerto Rico and the Virgin Islands.
- In general, there is no active Federally funded state-wide Leaf-Off Orthoimagery acquisitions. NRCS has been contacted about funding Leaf-Off Orthoimagery Acquisitions in Louisiana and Michigan. Both States contacted NRCS in April, 2008 and have told NRCS there preference for Leaf-Off Imagery.
- Has FSA thought about asking NRCS State GIS Personnel for assistance to raising funding for NAIP within a state?

Hawaii and Pacific Basin

Digital Globe Pacific Basin Update (October, 2008)



State/Region	County/Island	Ground Condition Required	Geo/Ortho
American Samoa	Eastern + Western (Tutuila)	(0-4%)	Ortho
American Samoa	Manu'a	(0-4%)	Ortho
Micronesia	Pata, Tol, Poile	(0-4%)	Geo
Micronesia	UdoI	(0%)	Geo
Micronesia	Fefan	(0-4%)	Geo
Micronesia	Parem	(0%)	Geo
Micronesia	Uman	(0-4%)	Geo
Micronesia	Dublon	(0%)	Geo
Micronesia	Moer	(0%)	Geo
Micronesia	Kosrae & Lelu	(0-4%)	Ortho
Micronesia	Pohnpei	(0-4%)	Ortho
Micronesia	Fais	(0%)	Geo
Micronesia	Asor & Falalop	(0%)	Geo
Micronesia	Yap Islands	(0-4%)	Ortho
Guam**	Guam	(0-1%)	Ortho
CNMI*	Saipan Island	(0-1%)	Ortho
CNMI*	Tinian Island	(0-1%)	Ortho
CNMI*	Aguijan Island	(0%)	Geo
CNMI*	Rota	(0%)	Ortho
CNMI*	Agrihan	(5%)	Geo
CNMI*	Alamagan Island	(0-1%)	Geo
CNMI*	Anatahan Island	(5%)	Geo
CNMI*	Pagan Island	(0-1%)	Ortho
Palau*	Ngirwal	(0-1%)	Ortho
Palau*	Ngatpang & Aimeliik	(0-1%)	Ortho
Palau*	KayangeI	(0%)	Geo
Palau*	Angaur	(0-1%)	Geo

Palau (aka Babeldoab* and Rock Islands**)	Melekeok*, Aiar*, Ngarchelong*, Ngardmau*, Ngaraard*, Ngchesar*, Ngeremlengui*, Toulomekang**		
Palau*	Ulong**, Ngerukeuid**	(0-1%)	Ortho
Palau*	Bailechegengel**, Ngercheu**	(0-1%)	Geo
Palau*	Peleliu	(0-1%)	Ortho
Palau*	Koror	(0-1%)	Ortho
Marshall Islands	Arno*, Majuro, Maloelap*, Mili*, Rongelap, Ailinglapalap, Jalut, Kwajalein, Likiep, Wotje, Aur, Eniwetok	(0-1%) (0-4%)	Ortho
Palau** add 1/2008	Sonsorol, Hatohobei, Helen	(0-4%)	Geo

In addition USDA-NRCS has acquired the following in the Commonwealth of the Northern Mariana Islands:

- Asuncion, Guguan, Maug, Medinilla, Pajaros, and Sarigan (QuickBird, .6 Meter | Georeferenced Imagery from USDA-FS / NOAA / FEMA)

Highlighted Island(s):

Green = Completed, at the NCGC

Gray = Imagery Data at NCGC, Image Processing and Data Distribution In-Work

Yellow = In-Work/Satellite Tasking at Digital Globe, data not at the NCGC

Ortho = Four Band (IR, R, G, B) Orthoimagery at 1:50 K Accuracy

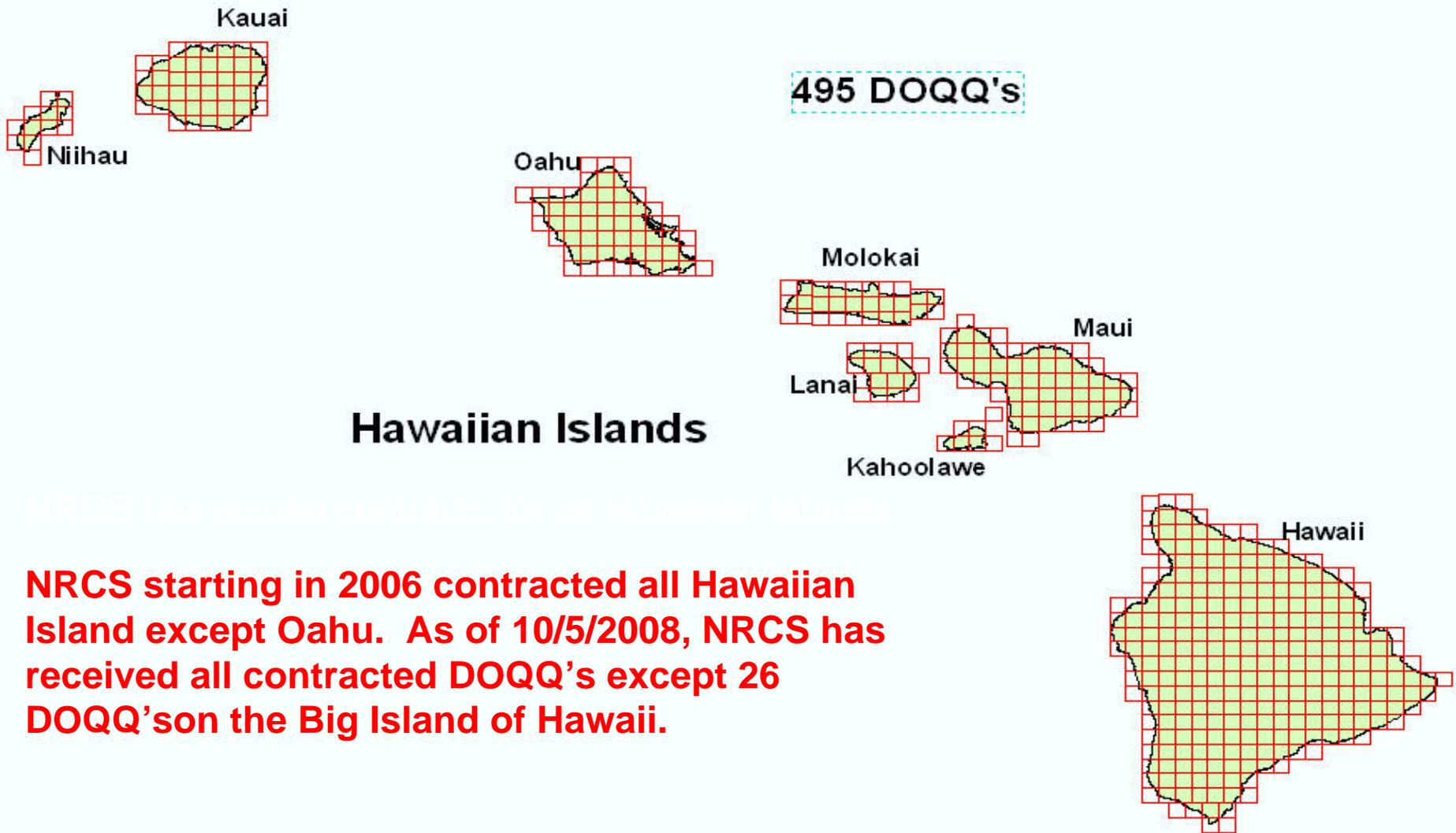
Geo = Digital Globe Standard Three Band (RGB) Georeferenced Product

NRCS has received complete coverage of the Pacific Basin Islands under contract except Kosrae and Alamagan Islands. These islands are now in production at DG. Final data delivery will be in the next 30-45 days.

**American Samoa
Tutuila
Orthoimagery
Mosaic**



**Digital Globe Orthoimagery
.59 GSD**

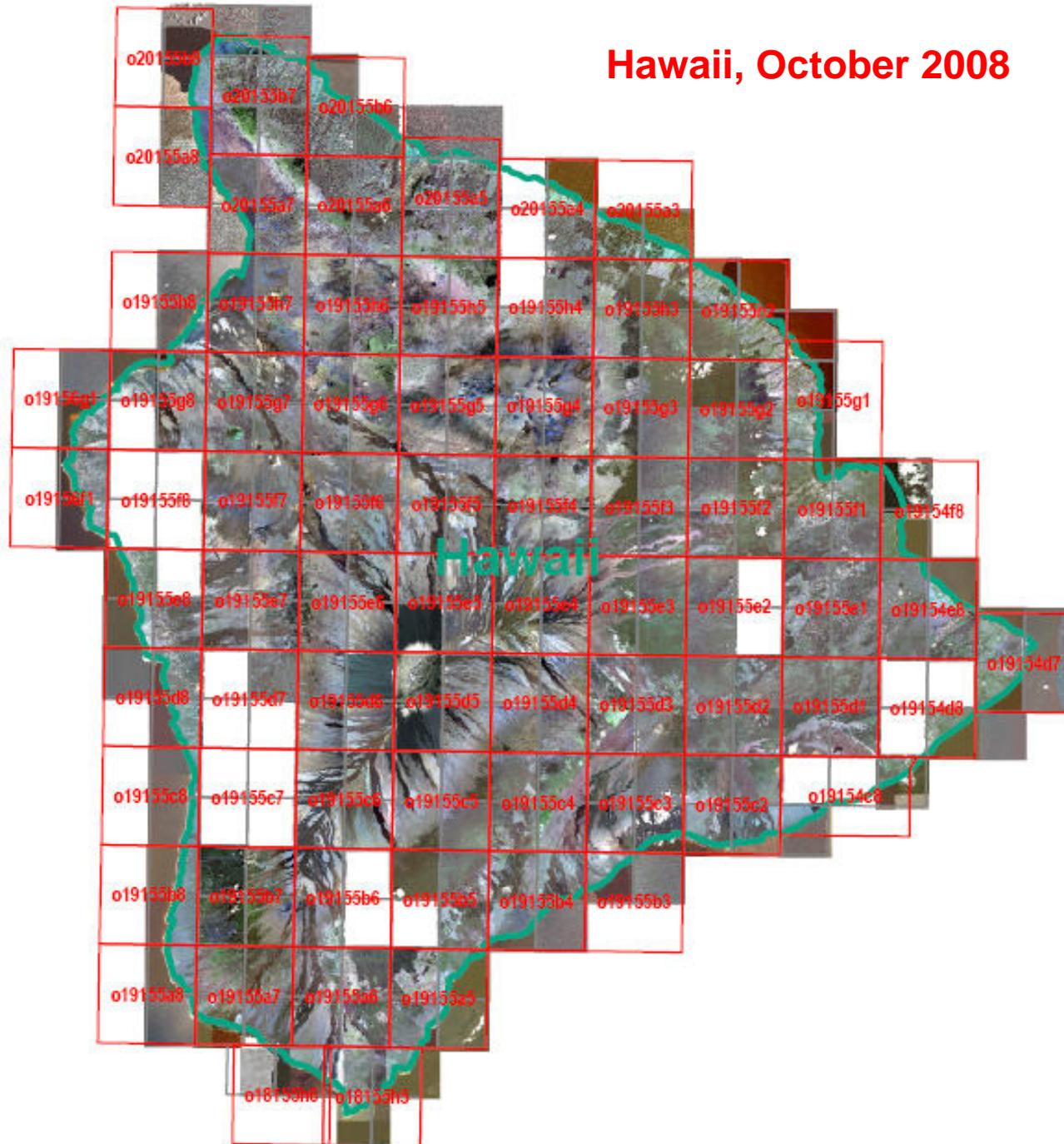


Hawaiian Islands

NRCS has issued contracts for all Hawaiian Islands

NRCS starting in 2006 contracted all Hawaiian Island except Oahu. As of 10/5/2008, NRCS has received all contracted DOQQ's except 26 DOQQ's on the Big Island of Hawaii.

Hawaii, October 2008



DG-QuickBird Status by DOQQ (10/05/08)

- Approximately 75% of DOQQ's received had 0-2% cloud cover

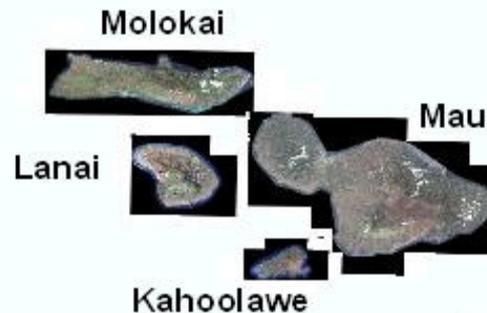
- Approximately 15% of DOQQ's received have 2% to 10% clouds.

- Remaining 26 DOQQ's if acquired from current achieve would have 10% to 75% clouds.

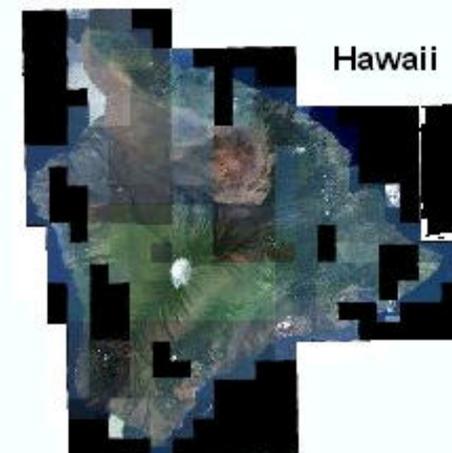
- Digital Globe put into production this week (10/5/08) the remaining 26 DOQQ's.



495 DOQQ's



Hawaiian Islands



NCGC Web Map Service
October, 2008

New Hawaii and Pacific Basin Funding

- NRCS has about 55K of funding available for purchasing new Satellite data in Hawaii and the Pacific Basin.
- NRCS-NCGC has contacted USGS-Hawaii and NOAA about coordination of new Orthoimagery.
- USGS/NOAA/USDA are working on a common set of DEM's and GCP's to be used in this area. This information will be provided to Satellite Companies as needed.
- USDA-NRCS will work with Bill Nellist on Orthoimagery data that may be available via NGA contracts.

1) The Northwest Hawaiian Islands:

- Kure Atoll
- Midway Islands
- Pearl and Hermes Atoll,
- Laysan Island,
- Maro Reef
- Gardner Pinnacles
- French Frigate Shoals
- Necker Island
- Nihoa

2) Kaula Island - southwest of Niihau

3) Outlying islands:

- Baker Island,
- Howland Island
- Jarvis Island
- Kingman Reef
- Wake Island
- Palmyra Atoll
- Johnston Atoll

4) Marshall Islands:

- Namorik
- Ebon
- Mejit
- Lae

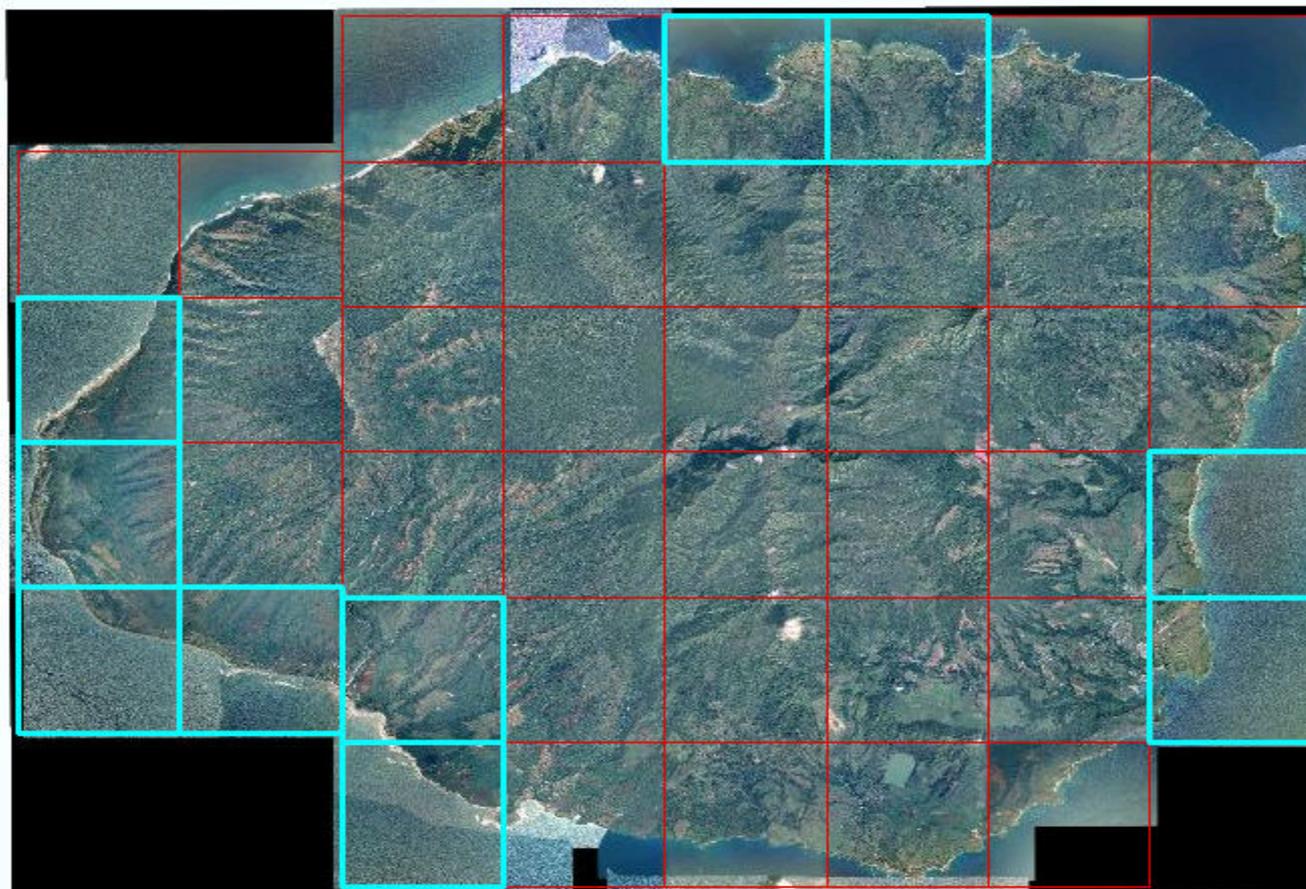
- Bikar
- Tangi
- Ailinginae
- Namu
- Erikub
- Taka
- Ujelang



Pacific Basin Priority List 2008

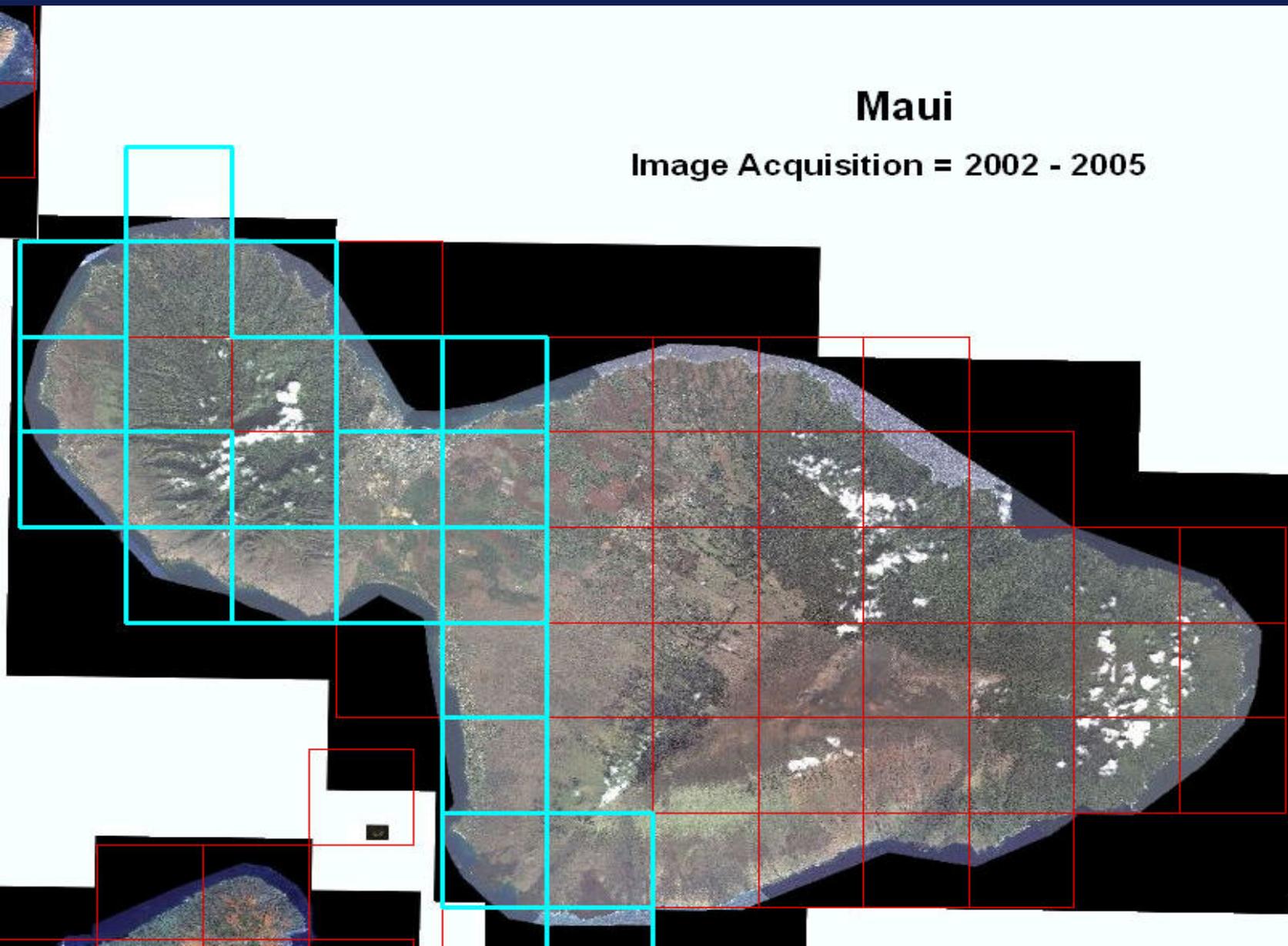
Kauai

Image Acquisition = 2002 - 2005



Maui

Image Acquisition = 2002 - 2005

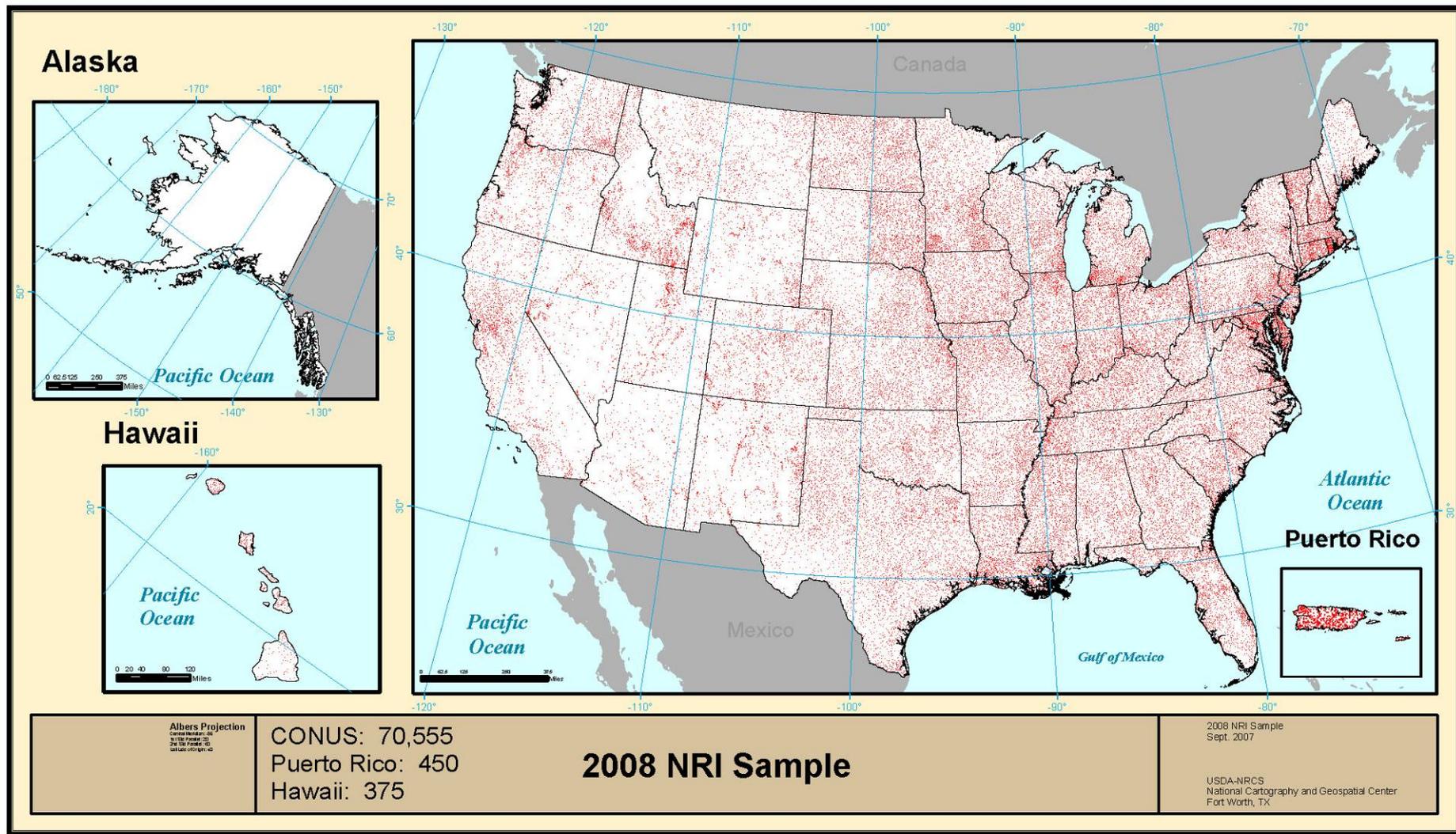


NRI-WRP Imagery Acquisition Issues

USDA Small Area Photography Contract Aerial Photography Services-NRI/WRP

- Indefinite Delivery Indefinite Quantity (IDIQ)
- Base year (2005) & four option years (2006-2009)
- Contracts awarded through task orders.
- Services: Flying, scanning & ortho-rectification.
- Standard scales: 1:4,000 to 1:15,840.
- Aerial film only, no digital sensors.
- Contract awarded to six vendors (Keystone, Midwest, Aerial Services, Blue Skies, Surdex, Photo Science,
- Administered by FSA-APFO

2008 NRI Sample





Why go digital?

- Elimination of film processing and scanning costs.
- More automated workflow.
 - Orthophotos/mosaics with little delay between capture and end-product.
- Twelve-bit-per-pixel radiometric resolution, or even higher, ensures better light sensitivity.



Digital Aerial Cameras



Zeiss RMK TOP 15 Film Camera
Approx. \$500K



Leica ADS40 Digital Scanner



DMC Digital Frame Camera
Approx. \$1 million

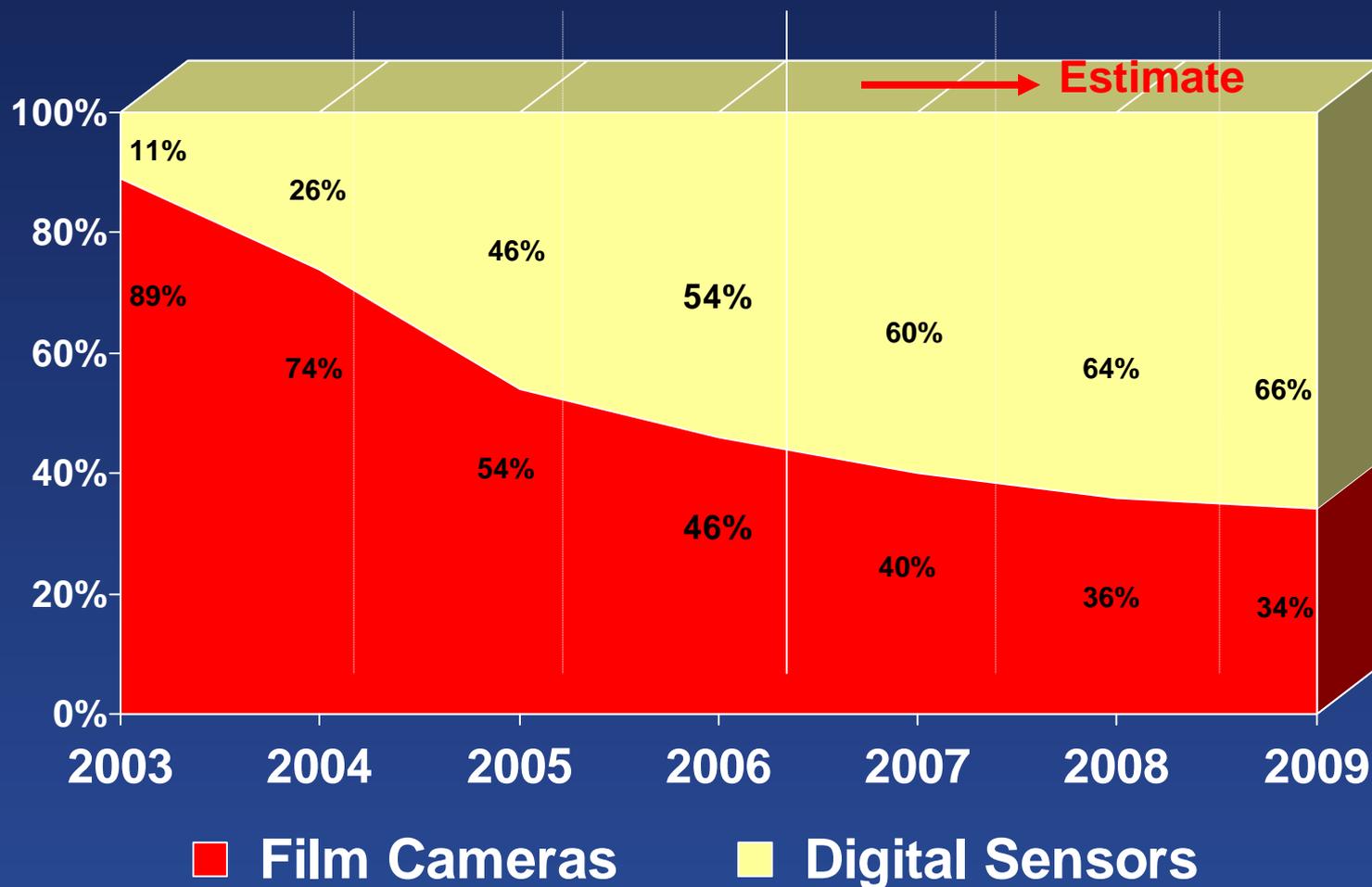


NRI Contractor Comments

- Kodak raising film prices 5-10 % per year.
- Film is getting harder to find. Agfa may be the only source for film in the future.
- Rumor that Kodak is dropping CIR film.
- One vendor recommended that NRCS start looking at digital sensors now as in 4-5 years film and film cameras may not be available.

NAIP Camera Trends

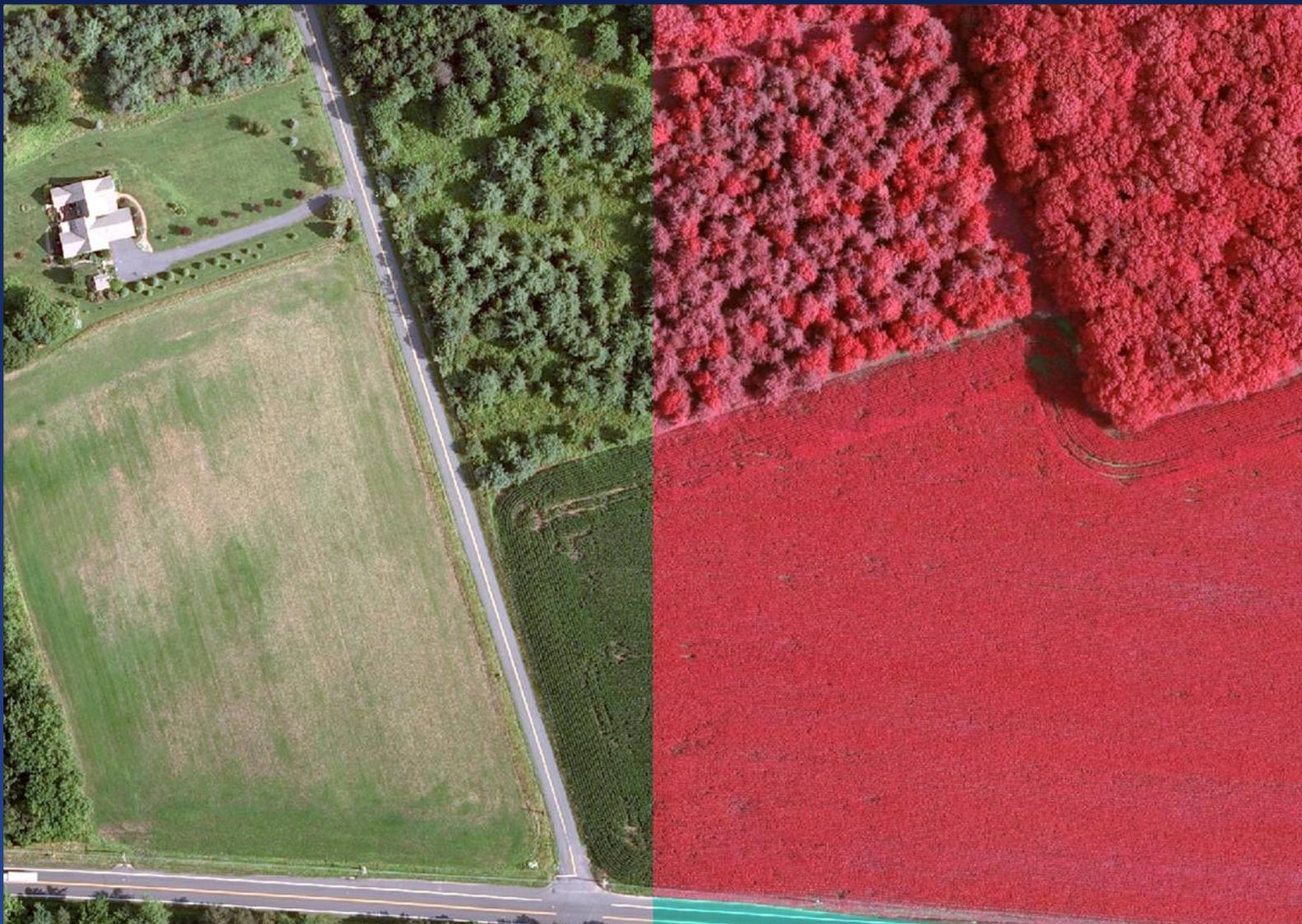
Film Cameras vs. Digital Sensors





APFO Comments on Digital

- Going all digital with NRI-WRP will limit number of vendors and reduce capacity.
- Programs like NRI will have to use digital frame cameras not scanning sensors like the ADS-40.
- DOQs going to absolute control rather than relative to older DOQ.
- Need web based delivery of digital products.
- Real-time DOQ delivery isn't reality, at least for NAIP.
- Any digital acquisitions need to specify **4-bands**.



UltraCamX – Color and CIR – 8" GSD

2009 Digital Imagery Pilot Project

- **PURPOSE:**
- Evaluate the effects on the National Resources Inventory (NRI) trending data base due to changing from scanned natural color aerial photography to four band direct digital imagery.
- Determine the digital imagery requirements for issuing a RFP for the 2010-2014 small area contract.
- Evaluate how four band imagery can improve our ability to interpret features for NRI and the Wetlands Reserve Program (WRP).

Project Area

- Want to select counties that have croplands, wetlands, and forestlands.
- Currently looking at a cluster of 3 to 5 counties in Arkansas, Missouri, or Iowa.
- Would also like to select counties that have LiDAR data to evaluate how draping CIR and natural color imagery over elevation data can improve our ability to detect plant species, water features, wetlands, features within shadow areas, etc.
- For comparison, imagery will be acquired during the same photo period as used for the NRI and WRP aerial photography acquisitions.

Project Funding

- \$60,000 budgeted
 - 60% for NRI segments
 - 40% for WRP easements

Future Applications

- Also want to evaluate four band digital imagery and elevation data to annually monitor over 11,000 for maintenance needs.
- WATERSHED DAMS
- Dam breach analysis for downstream inundation due to dam failure.



End of Presentation