

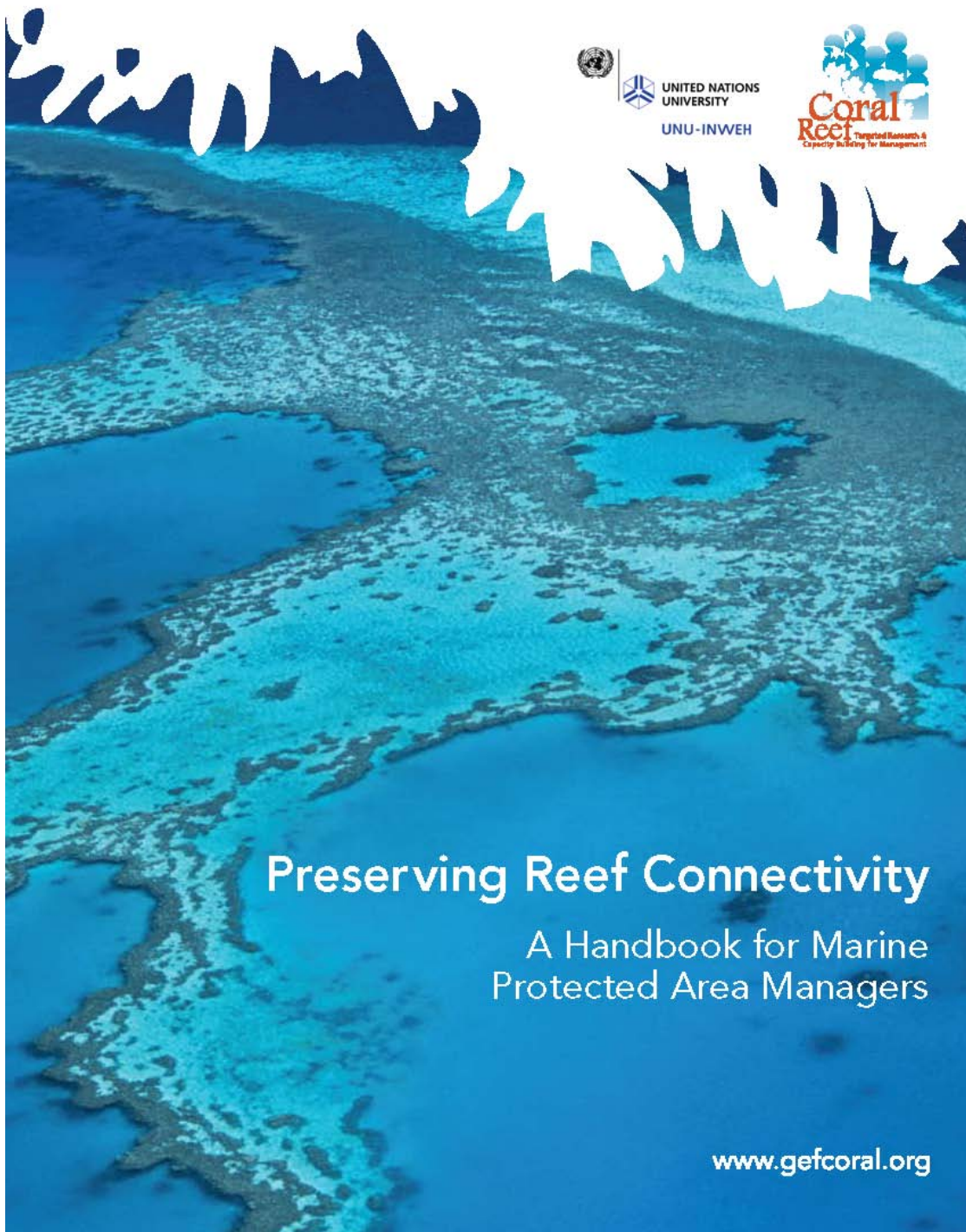
Spawning Aggregations and Migration Patterns of Mutton Snapper

Dry Tortugas Florida

M. Feeley, A. Acosta,
T. Switzer, J. Hunt,
P. Barbera, D. Morley, M.
Burton & M. Patterson

Photo credit: C. Parsons

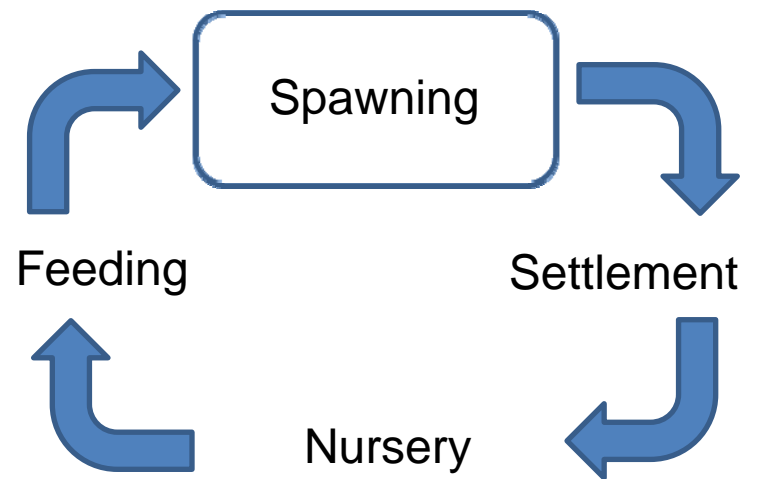




Marine Protected Areas

- Biodiversity
- Ecosystem function
- Fisheries

Connectivity/Reserves



Aggregation sites

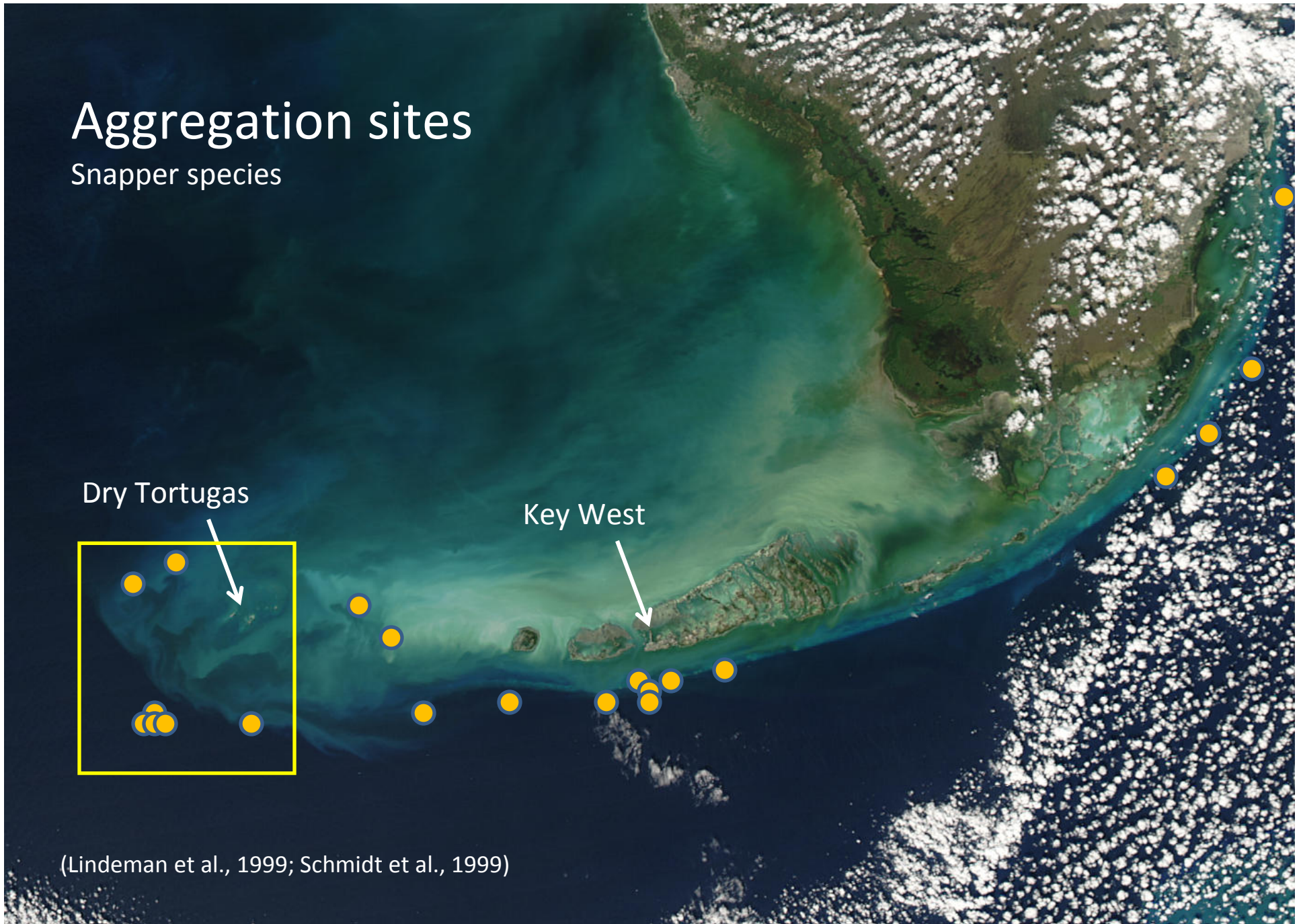
Snapper species

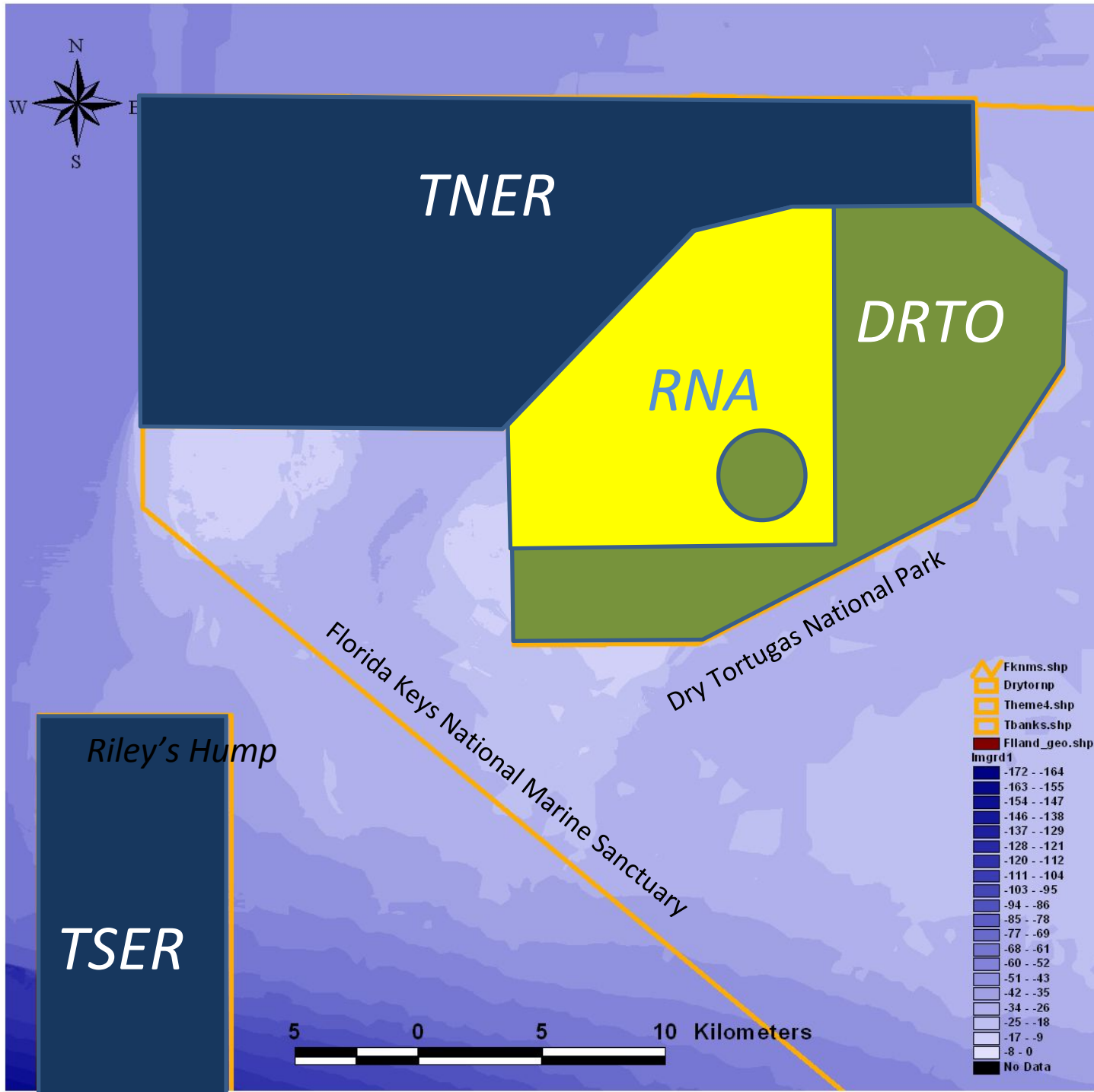
Dry Tortugas

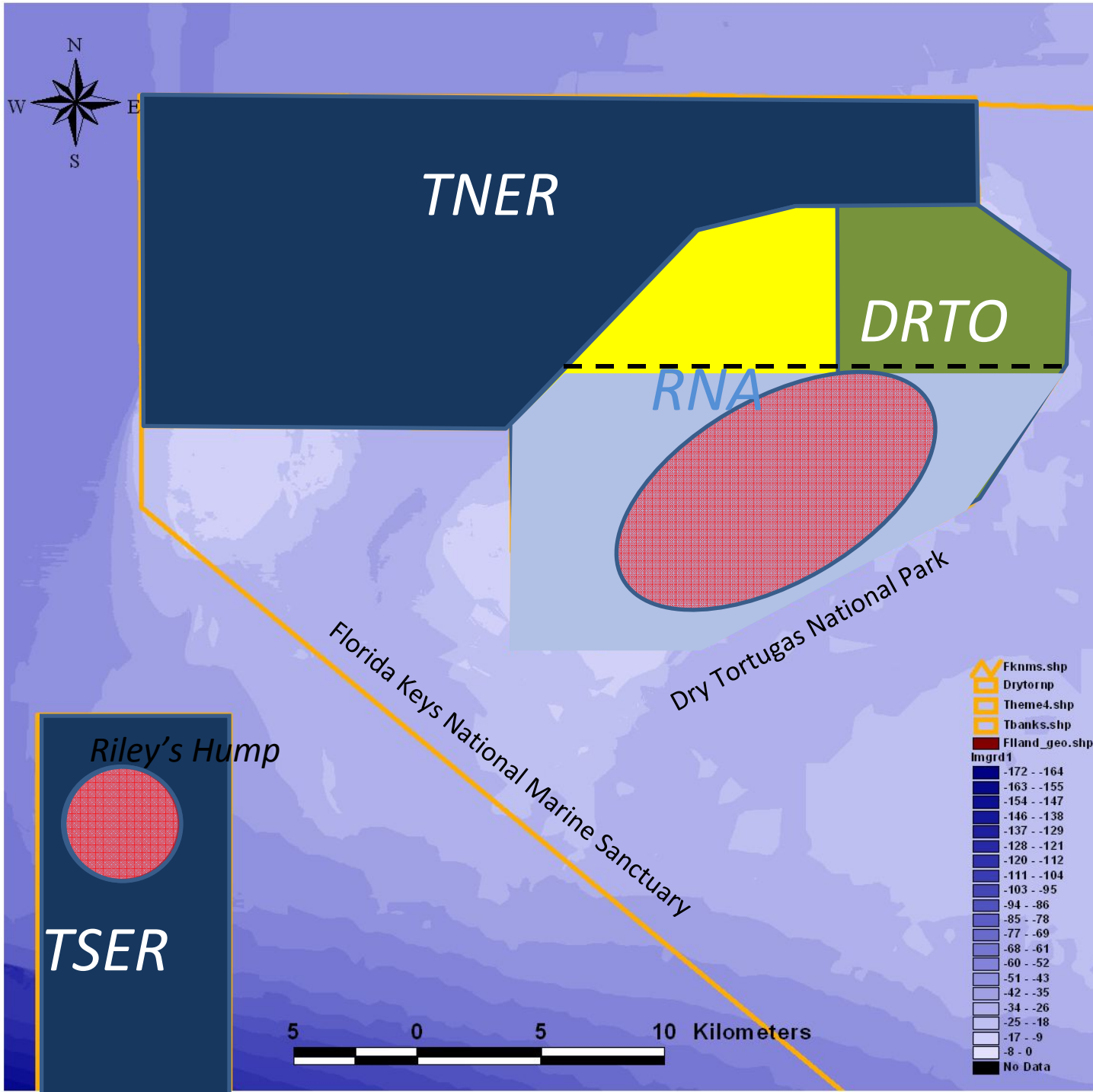
Key West

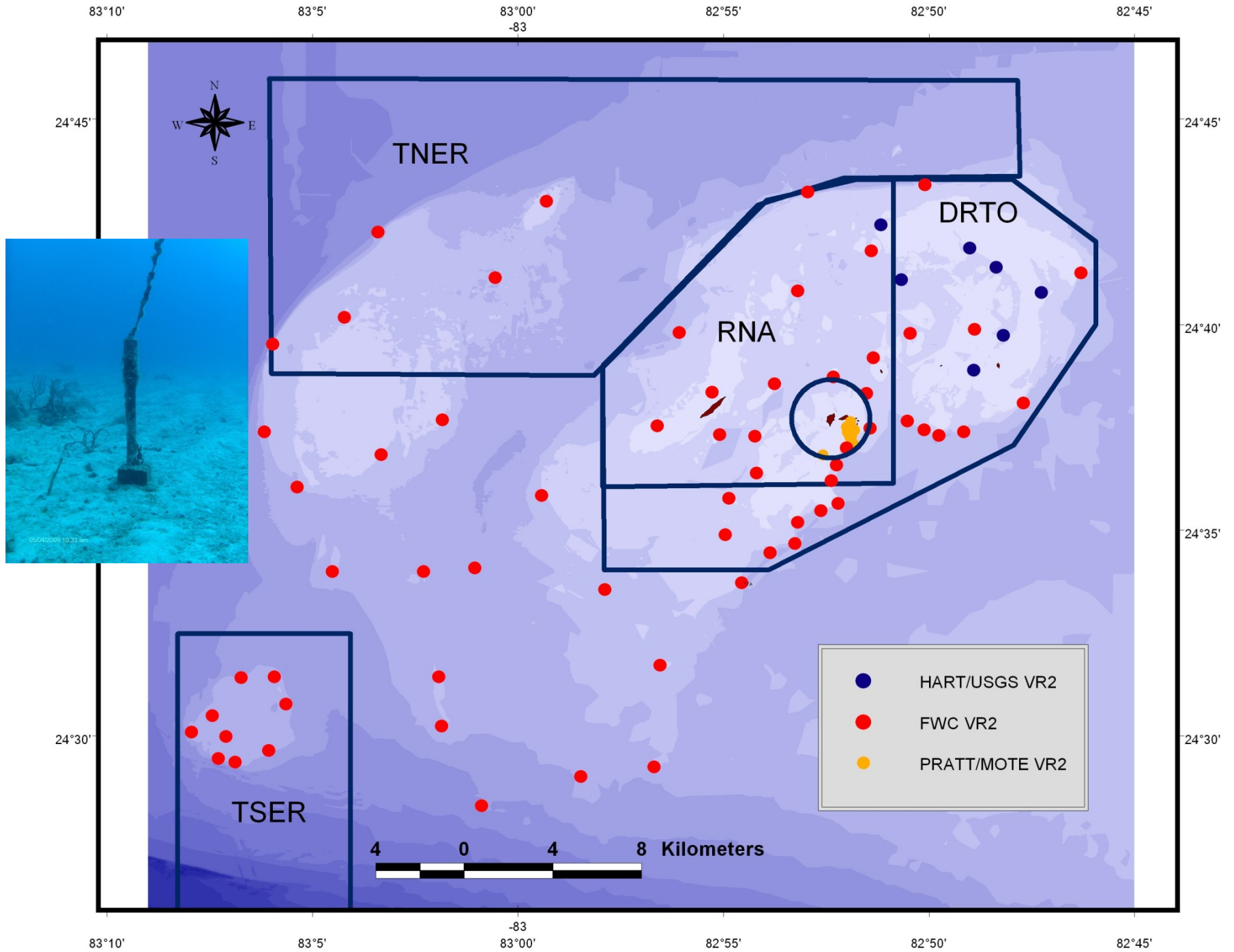


(Lindeman et al., 1999; Schmidt et al., 1999)









Acoustic Tagging

Mutton snapper (54)

TSER (28) DRTO/RNA (26)

$\bar{TL} = 62.8$ cm

15 tracking

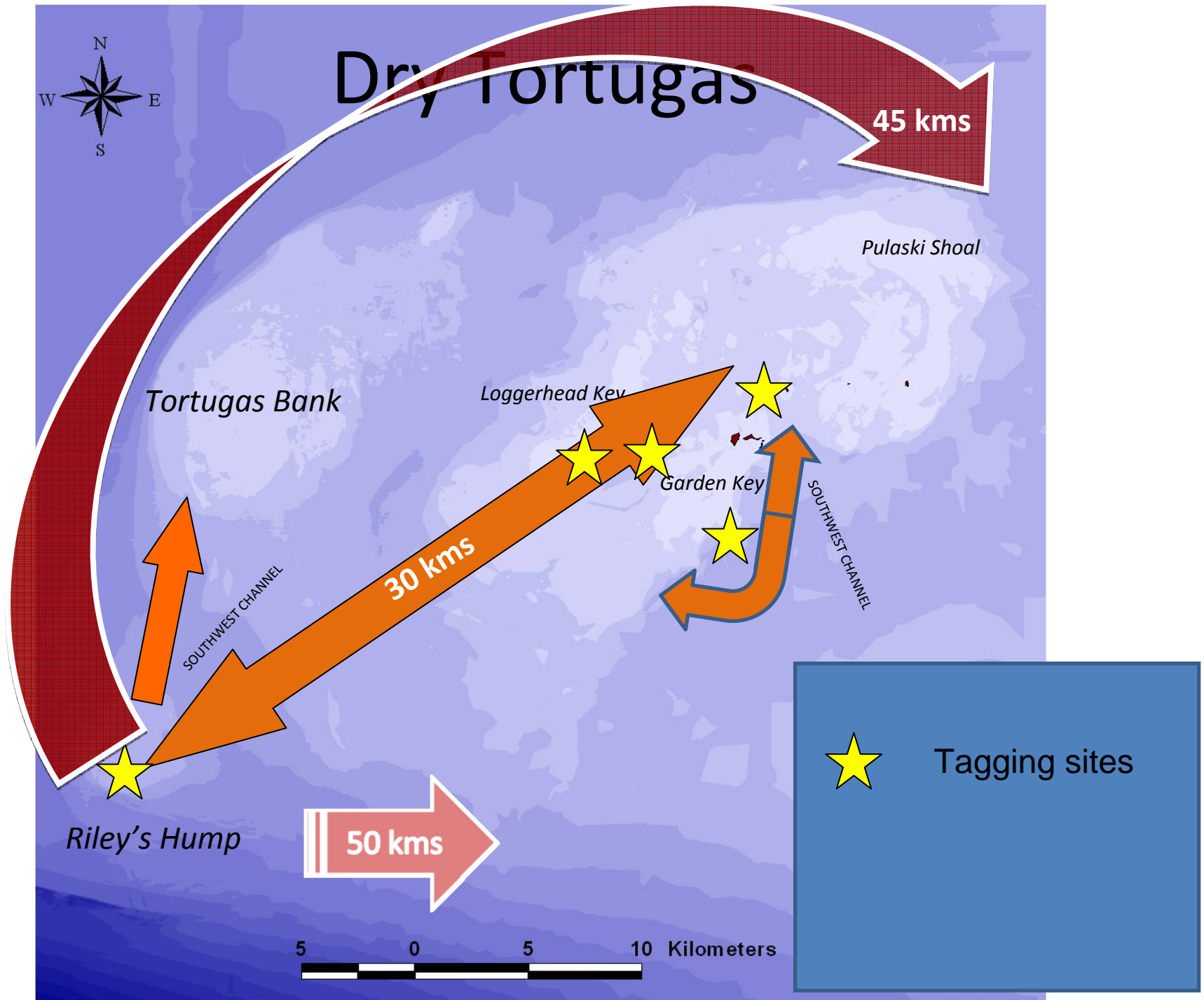


Photo credit: C. Parsons



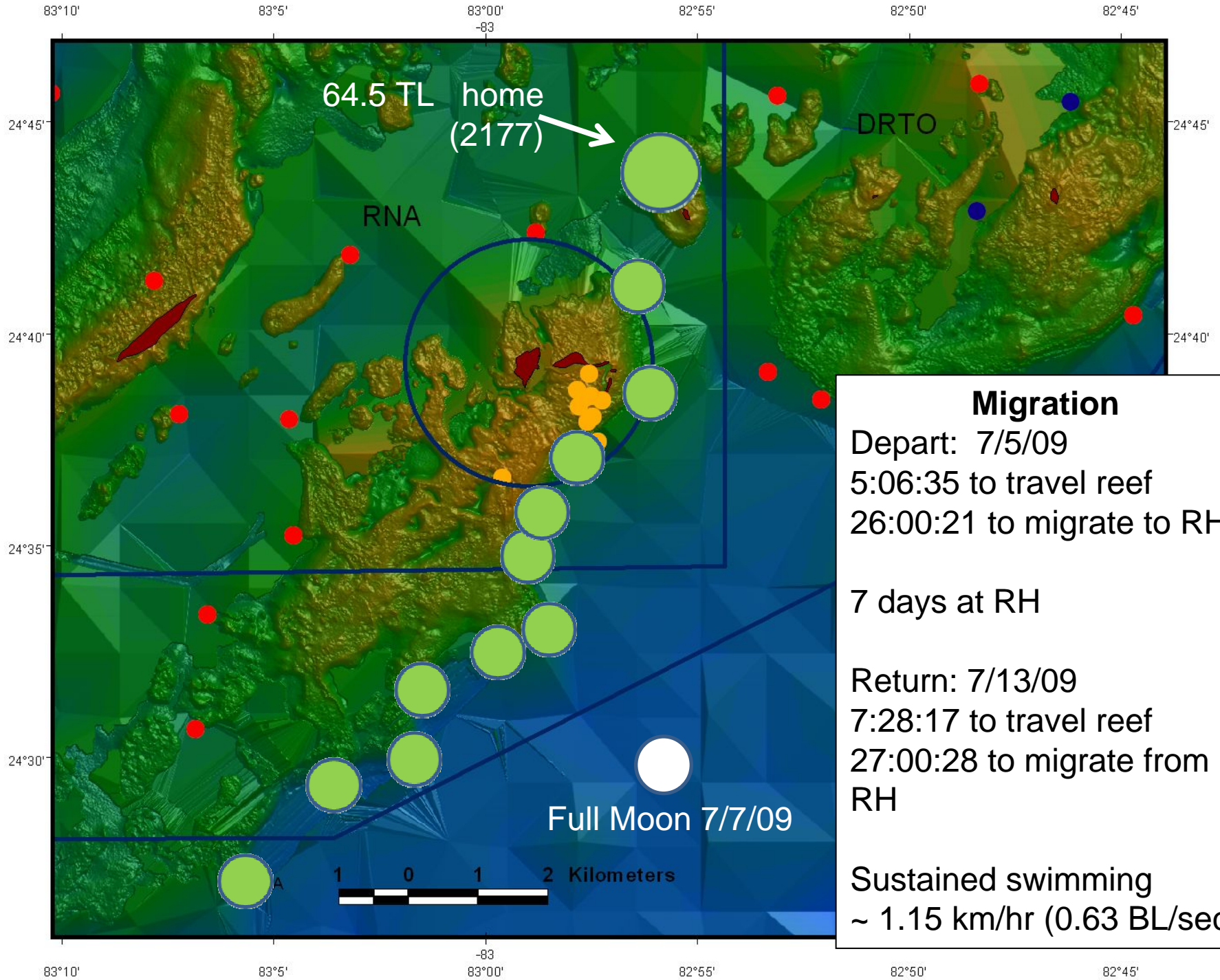
V16 transmitters

Vemco





TL 64.5 cm (2177)
5/30/08 tagged



Migration

Depart: 7/5/09

5:06:35 to travel reef

26:00:21 to migrate to RH

7 days at RH

Return: 7/13/09

7:28:17 to travel reef

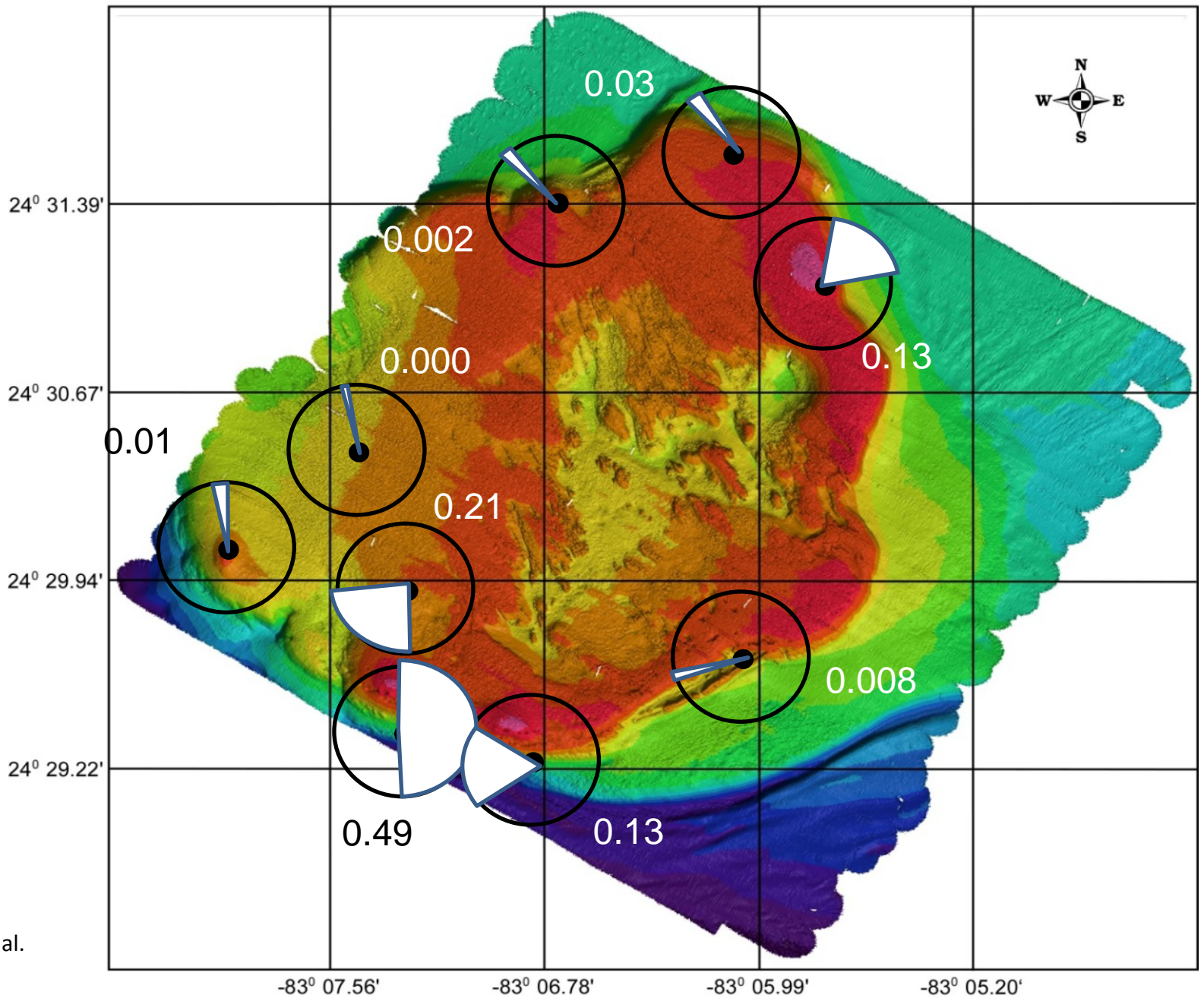
27:00:28 to migrate from RH

Sustained swimming

~ 1.15 km/hr (0.63 BL/sec)

R
I
L
E
Y
'
S

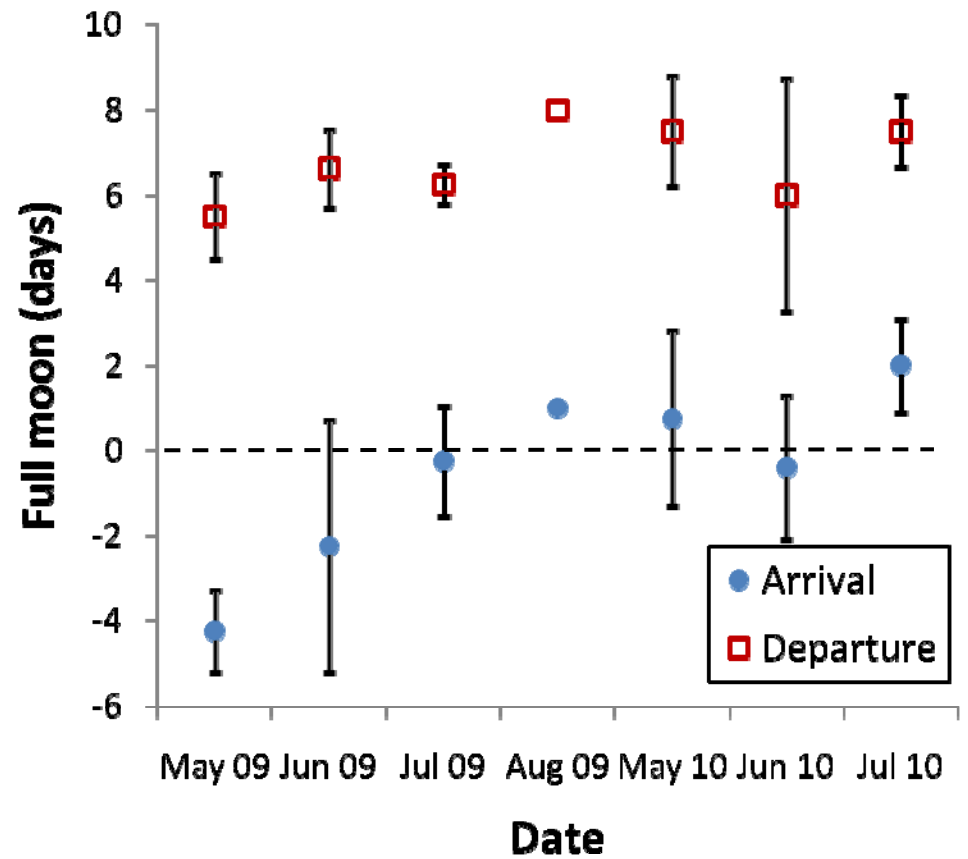
H
U
M
P



Credit: USF; Burton et al.

Riley's Hump

Mutton snapper
Aggregations



Fish Spawning Aggregations (FSAs)



Credit: C. Parsons



Photo credit: C. Parsons

Lutjanus analis

Conclusions

- Marine reserve network
 - TSER established 2001
 - RNA established 2007
- Species capacity to rebound
 - Burton et al. 2005
 - Spawning documented 2009
 - Population indices?
- Connectivity patterns: better understanding.
 - Population w/in DRTO/
RNA & FSA site w/in TSER

Thanks!



FWC/FIM
National Park Service
USGS
NOAA Fisheries - Beaufort, NC
NOAA Fisheries - Miami, FL
Mote Marine Laboratory
M/V SPREE
M/V Ft. Jefferson

Future Work



- Acoustic tagging TSER funded in 2010.
- Expand efforts on black grouper.
- Continue tracking through 2011.
- Other RH FSA sites....Yellowtail? Gray? Cubera? Dog? Deeper habitat?
- Migratory ability of reef fish?

