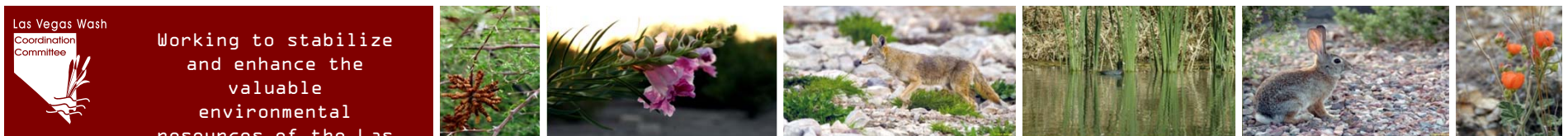


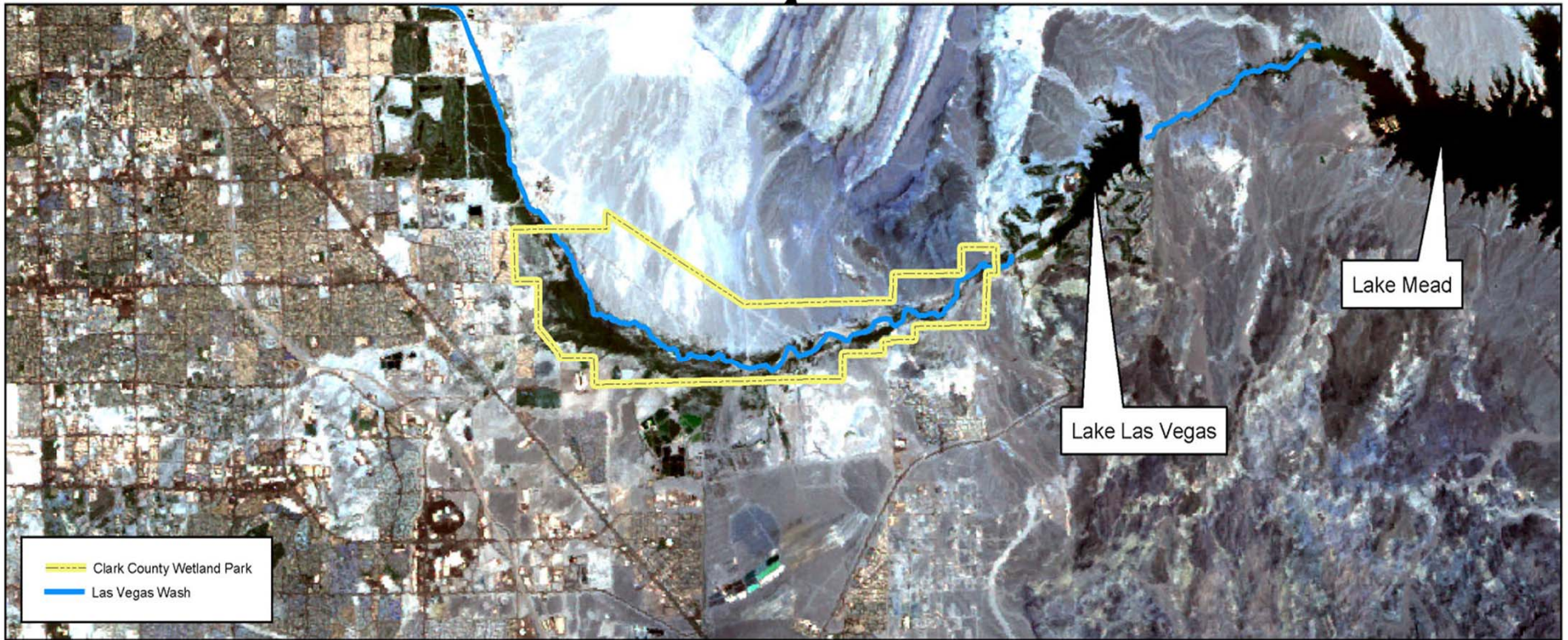
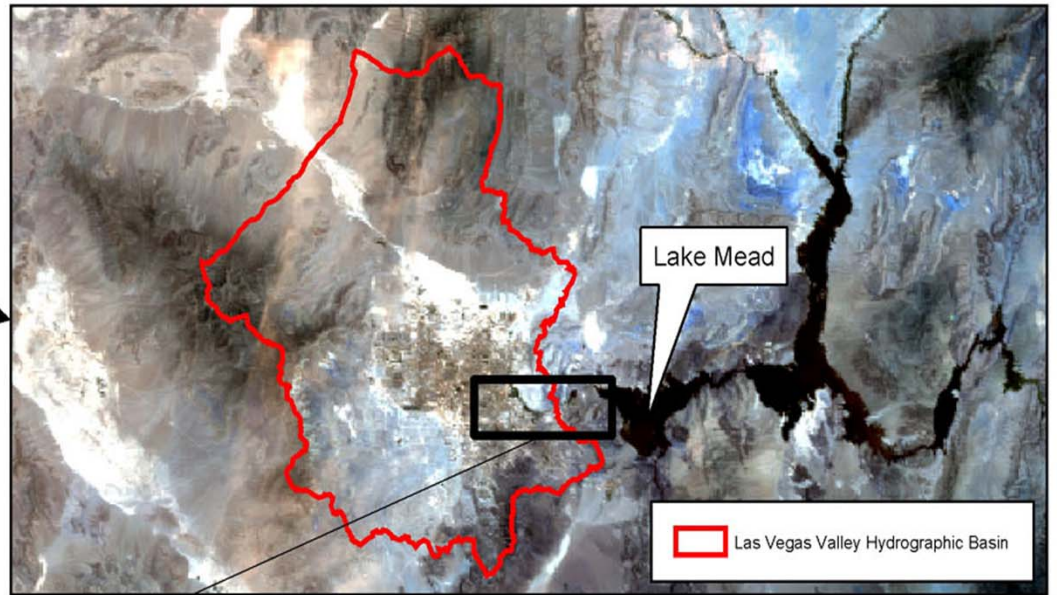
# Bird Monitoring along the Las Vegas Wash

January 25, 2012

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Southern Nevada Water Authority





# Las Vegas Wash

- Primary drainage channel for ~1600 sq. mile Las Vegas Valley watershed:
  - Discharges urban flows (primarily treated wastewater) to Lake Mead that exceed the inflows of the Muddy & Virgin rivers
  - Once ephemeral; perennial since the 1950s
  - Increasing flows created wetlands, but then incised the channel and eroded them away

# Las Vegas Wash Coordination Committee

- Stakeholder group formed in 1998 to stabilize and enhance the Las Vegas Wash; SNWA is lead agency
- Developed the Comprehensive Adaptive Management Plan, with 44 action items, to achieve goals:
  - Erosion control structures (14 out of 22 complete)
  - Revegetation
  - Biological resource surveys

# Changing Hydrology & Habitat

- Calico Weir Impoundment site, 2000, 2005 & 2009



# Point Count Surveys

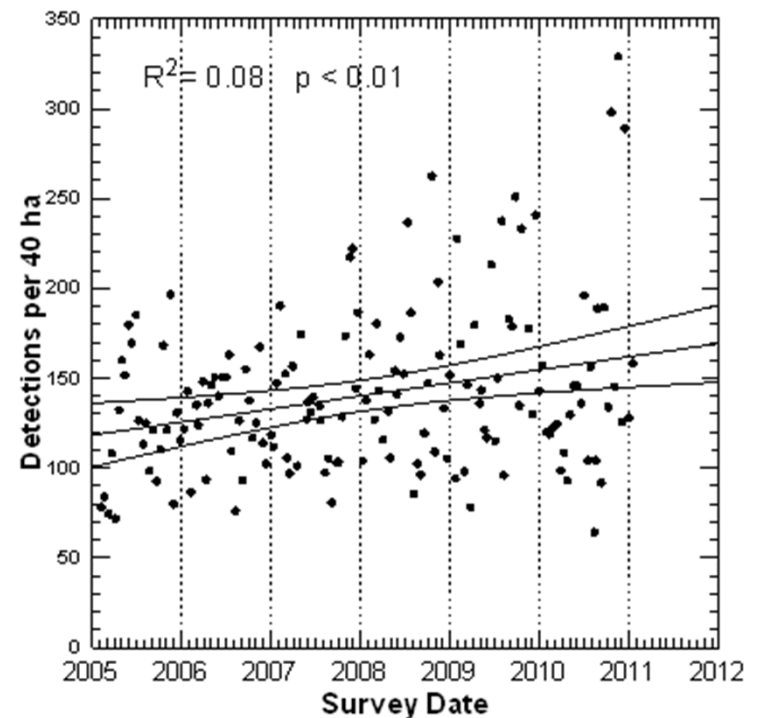
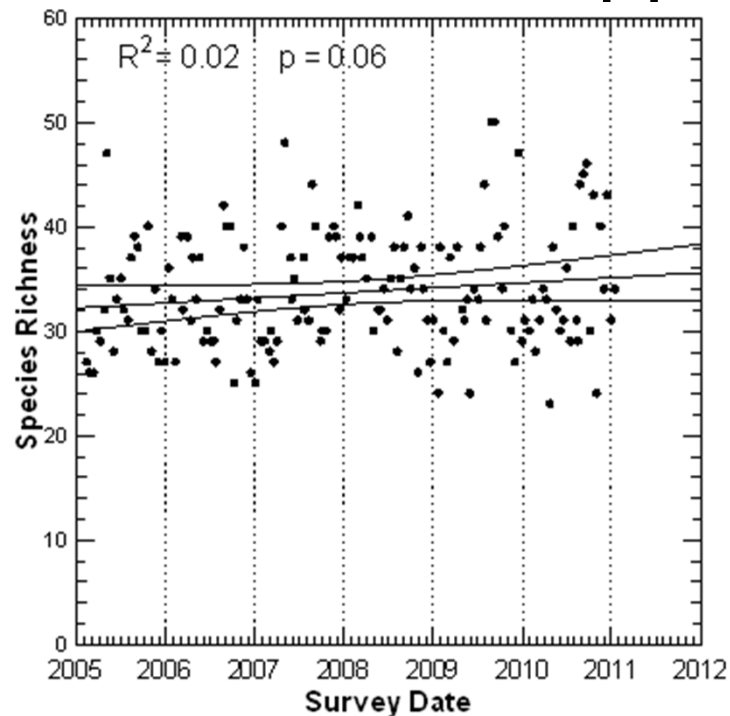
- 6-year study (2005-2011)
- ~30 points
  - Various habitats/treatments
- 5-minute counts
  - 100-m radius



- Data collected by:
  - SBCM – years 1-4
  - GBBO – years 5-6

# PC Results (GBBO 2011)

- 185 species
- Avg. richness – ~32 – 35 spp.
- Avg. abundance – 125 - 160 birds/40 ha.



# PC Results (GBBO 2011)

- Species-specific abundances
  - 15 increased – E.g., GAQU, MAWR
  - 9 decreased – E.g., ABTO, LUWA
  - Breeding season differences from other Mojave riparian sites:
    - Lower YWAR (0.7x), BEVI (0.03x), GAQU (0.4x)
      - Also lower MODO, HOFI
    - Higher ABTO (3x), SOSP (2x), COYE (4x)
      - Also higher BHCO



# PC Results (GBBO 2011)

- Treatment impacts

SPECIES	Treatment				ANOVA	
	No Treatm.	Cleared	New Reveg.	Old Reveg.	R <sup>2</sup> - Value	p- value
<i>Bird Species Richness</i>	<b>34.0</b>	<b>26.0</b>	<b>37.2</b>	<b>39.9</b>	<b>0.29</b>	<b>0.03</b>
<i>Total Abundance</i>	<b>121.5</b>	<b>104.3</b>	<b>154.0</b>	<b>183.7</b>	<b>0.28</b>	<b>0.03</b>
Say's Phoebe	1.05	0.73	2.94	0.60	0.71	<0.01
Yellow Warbler	0.59	0.50	0.97	4.03	0.39	<0.01
Ruby-crowned Kinglet	1.44	0.85	1.18	4.07	0.38	<0.01

# PC Discussion

- The Wash stabilization and enhancement program appears to be benefiting birds:
  - Richness & abundance stable to increasing despite widescale clearing at points
  - More species increased in abundance than decreased
    - Differences between sites raise some questions
  - Older reveg sites have higher richness and abundance overall and higher YWAR than other treatments

# Yuma Clapper Rail Monitoring

- Yuma clapper rail detections on the Wash prior to 2000
  - 1959 (8)
  - 1998 (1)
- In 2000, FWS recommended annual surveys
  - SBCM – 2000, 2001
  - SWCA – 2002-2007



- YCRA detections on the Wash post 2000
  - 2005 (1)
  - 2006 (1)

# Marsh Bird Monitoring

- Surveys initiated in 2007 (YCRA in 2008)
- North American Marsh Bird Monitoring Protocol (Conway 2005, 2008) - modified
  - Breeding season – April/May – 4 replicates
  - 3 routes, ~25 total points, direction reverses
  - Start 30 minutes before sunrise & last ~3 hrs
  - 5 minutes passive; then 1 min./species broadcast
    - BLRA, LEBI, SORA, VIRA, YCRA, AMBI

# MBM Results

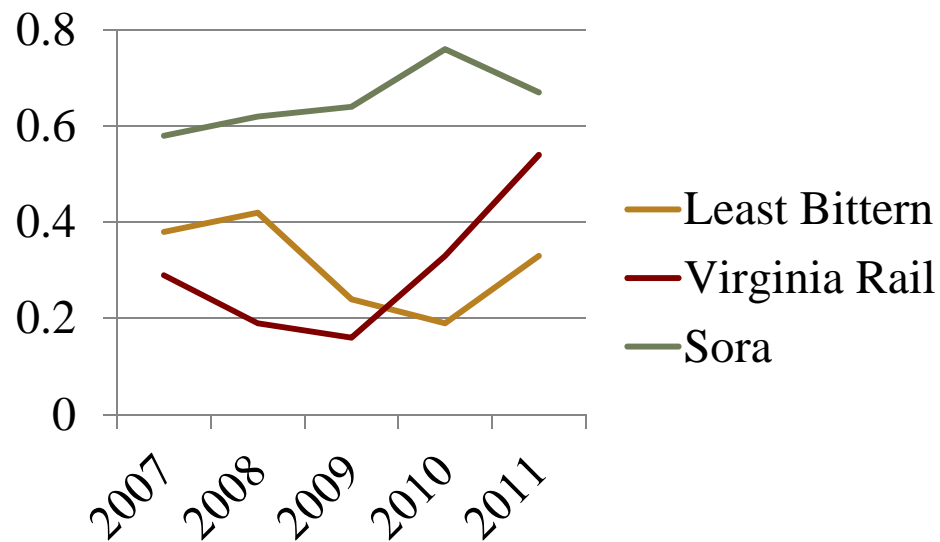


Chart: Per point abundances

- 3 target species and 3 non-target species – all years
  - LEBI, VIRA, SORA
  - PBGR, AMCO, COGA
- No YCRA or BLRA
- 1 AMBI - 2010

# MBM Discussion

- LEBI & VIRA annual abundances fluctuate; mitigation pond habitat benefiting VIRA
- SORA abundances stable, no brdg conf.
- Lack of YCRA & BLRA not surprising
  - Only a few detections of YCRA since 1998; all in late May/mid June
  - BLRA considered hypothetical for study area
- AMBI – primarily winter resident/migrant

# Southwestern Willow Flycatcher

- Annual surveys since 1998
  - SWCA – 1998-2009
  - SNWA – 2010+
- Conducted using federal protocol (Sogge et al. 2010)



# SWFL Results

Year	Migrants	Residents
1998	2	0
1999	0	0
2000	7	0
2001	0	0
2002	2	0
2003	2	0
2004	18	0
2005	0	0
2006	2	0
2007	0	1
2008	7	1
2009	3	0
2010	1	0
2011	15	1

Table: Detections

- 2011- A big year
  - 25% resighted, no bands
- All Years
  - Mostly migrants
    - Some “waves”
  - Residents
    - 2007, 2011 – singles >June 24
    - 2008 - on territory



# SWFL Resident Discussion



- 2008
  - 34 days
  - Mature reveg site
  - Banded by SWCA
    - Post-hatch year male
    - Resighted at Overton in 2009
- 2011
  - Single detection; but...

# SWFL Habitat Discussion

- Resident detections – all >2006
  - First revegetation sites planted in 2001; maturing reveg sites = improving habitat?
- Potentially suitable habitat
  - 1998 – unstabilized, dominated by tamarisk
  - 2011 – stabilized, dominated by natives
- Tamarisk beetle implications
  - Will the Las Vegas Wash become more appealing to willow flycatchers?

# Acknowledgments

- Bureau of Reclamation
- Great Basin Bird Observatory
- San Bernardino County Museum
- SWCA
  - Salt Lake City
  - Flagstaff



# Questions?

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