

Bird Monitoring along the Las Vegas Wash

February 21, 2013

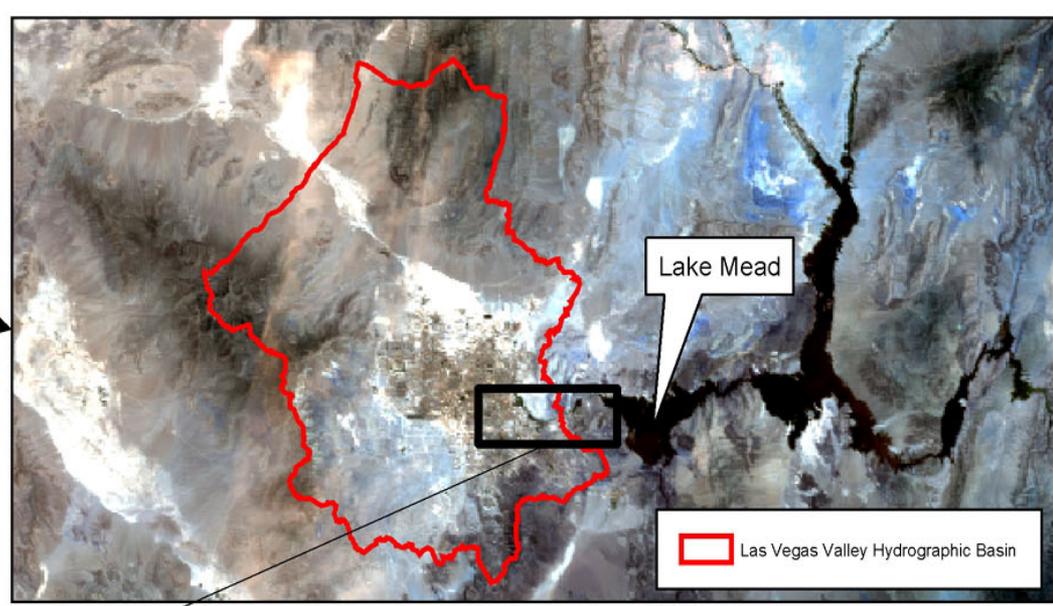
Debbie Van Dooremolen

Southern Nevada Water Authority

Las Vegas Wash
Conservation
Committee

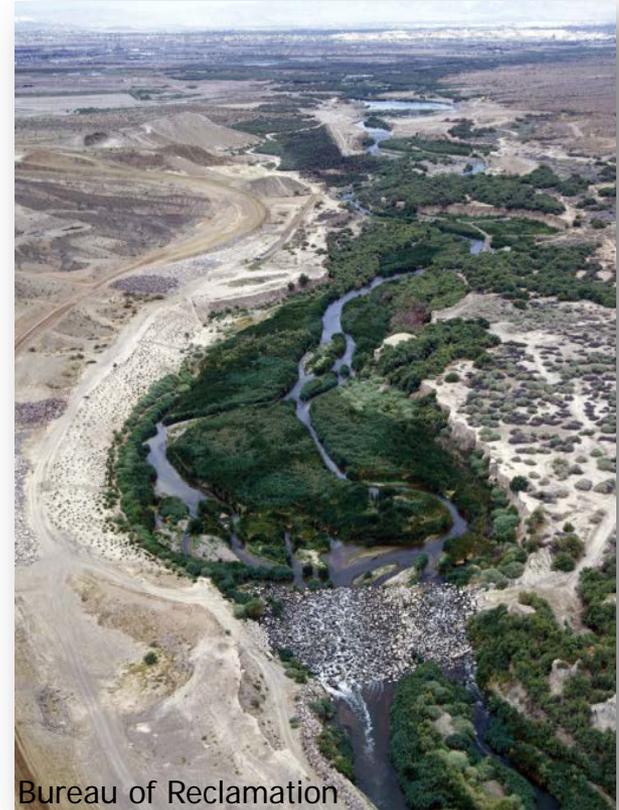
Working to stabilize
and enhance the
valuable
environmental
resources of the Las





Las Vegas Wash

- Primary drainage channel for ~1600 sq. mile Las Vegas Valley watershed:
 - Once ephemeral; perennial since the 1950s
 - Increasing flows created wetlands, but then incised the channel and eroded them away



Bureau of Reclamation

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 (16 out of 22 complete)
 - Revegetation
 - Biological resource surveys

Changing Hydrology & Habitat

- Calico Weir Impoundment site, 2000, 2005 & 2009

Pre-erosion
control



Stabilized, newly
planted



Mature habitat



Point Count Surveys

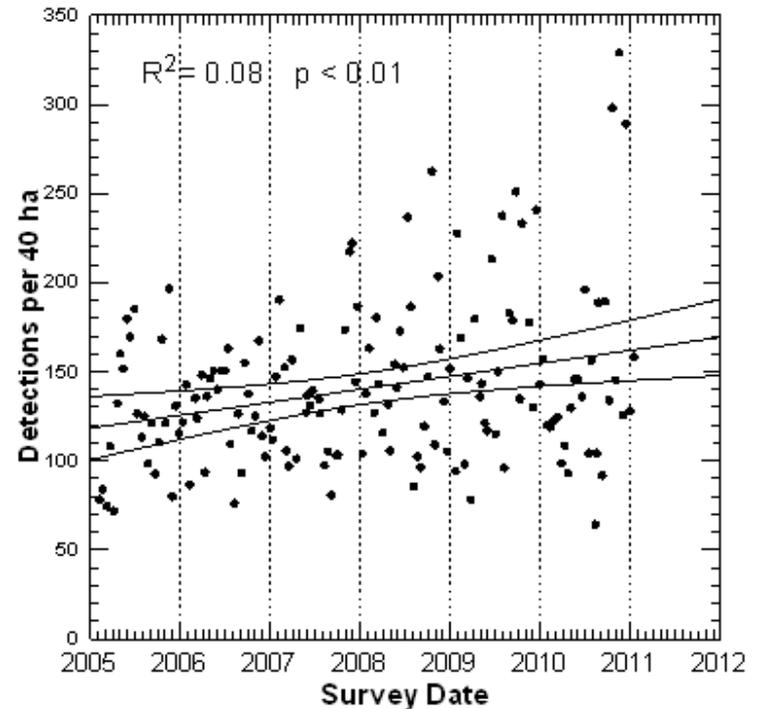
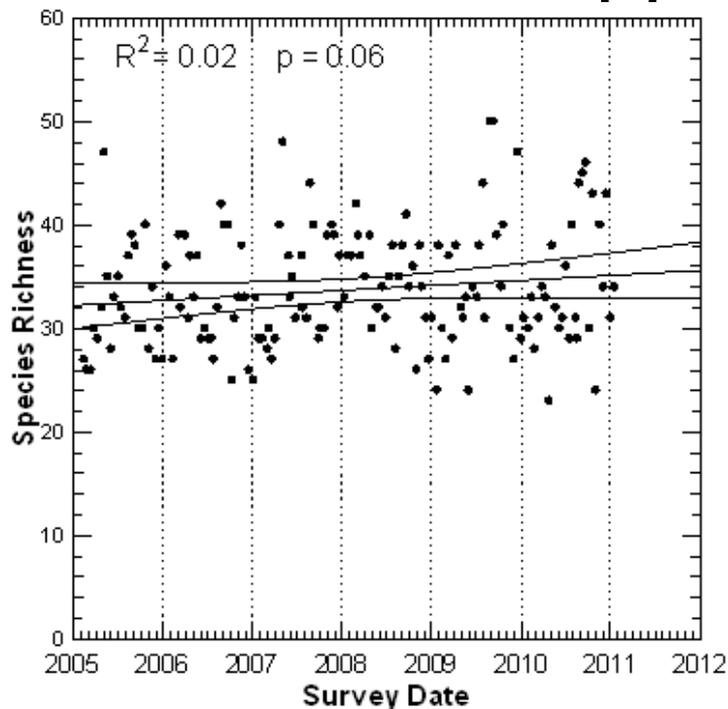
- 6-year study (2005-2011)
- ~30 points
 - Various habitats/treatments
- 5-minute counts
 - 100-m radius

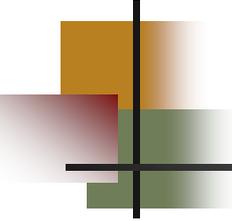


- Data collected by:
 - SBCM – years 1-4
 - GBBO – years 5-6

Point Count Results

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





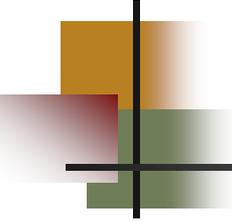
Point Count Results

- 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

Point Count Results

■ Treatment impacts

SPECIES	Treatment				ANOVA	
	No Treatm.	Cleared	New Reveg.	Old Reveg.	R ² - Value	p- value
<i>Bird Species Richness</i>	34.0	26.0	37.2	39.9	0.29	0.03
<i>Total Abundance</i>	121.5	104.3	154.0	183.7	0.28	0.03
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



Point Count 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

Aquatic Bird Counts

- Two site types:
 - Weir (Wash)
 - Mitigation Ponds (off-channel)
- Censused monthly; one extra in spring & fall
- Study year
 - Oct. – Sept.



ABC Results & Discussion

Study Year	<u>Species Richness</u>		<u>Abundance</u>	
	Weir Sites	Mitigation Ponds	Weir Sites	Mitigation Ponds
1	17.8	24.1	239.1	414.5
2	16.9	24.5	303.2	377.7
3	16.4	21.7	328.3	336.4

Table: Preliminary average species richness and abundance by site type

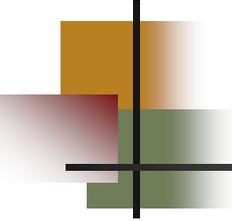
- Avg. richness is significantly higher at the mitigation ponds
- No other differences are statistically significant

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

Marsh Bird Results

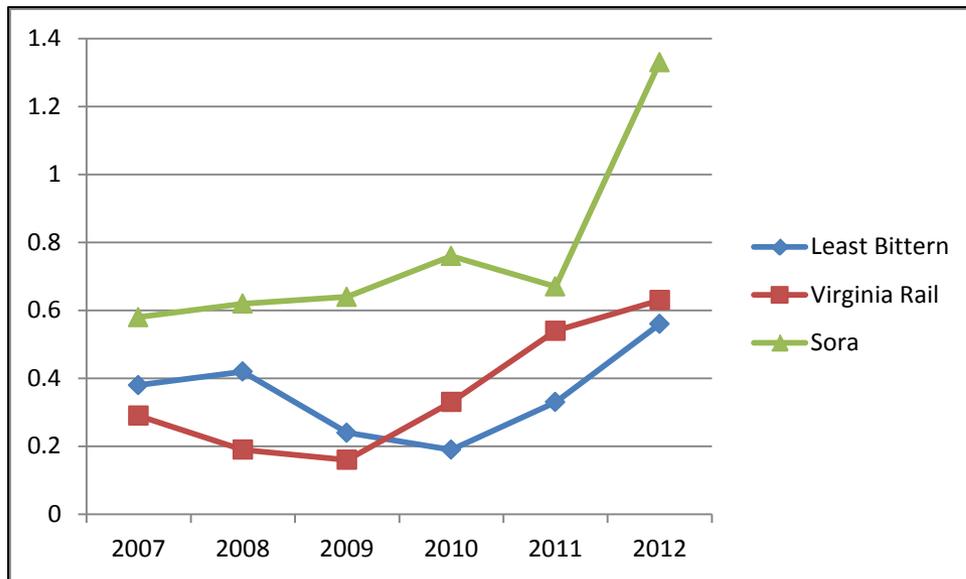


Chart: Target species per point abundances

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

Marsh Bird Discussion

- LEBI & VIRA abundances have increased off their lows by ~300%
 - Mitigation pond habitat benefiting VIRA
- SORA abundance doubled in 2012
 - No breeding confirmed
- 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	16	0
2005	0	0
2006	2	0
2007	0	1
2008	7	1
2009	3	0
2010	1	0
2011	15	1
2012	13	0

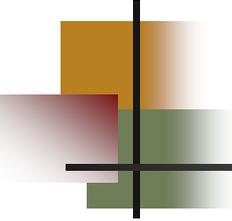
- Mostly migrants
 - Some “waves”
- Residents
 - 2007, 2011 – singles >June 24
 - 2008 - on territory

Table: Number detected

SWFL Resident Discussion



- 2008
 - 34 days
 - Mature reveg site
 - Banded by SWCA
 - Post-hatch year male
 - Resighted at Overton in 2009
- 2007 & 2011
 - Single detections; residency by date



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
 - 2012 – 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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