Marsh Bird Monitoring along Las Vegas Wash, Clark County, Nevada

February 3, 2010

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Southern Nevada Water Authority

Las Vegas Wash Coordination Committee

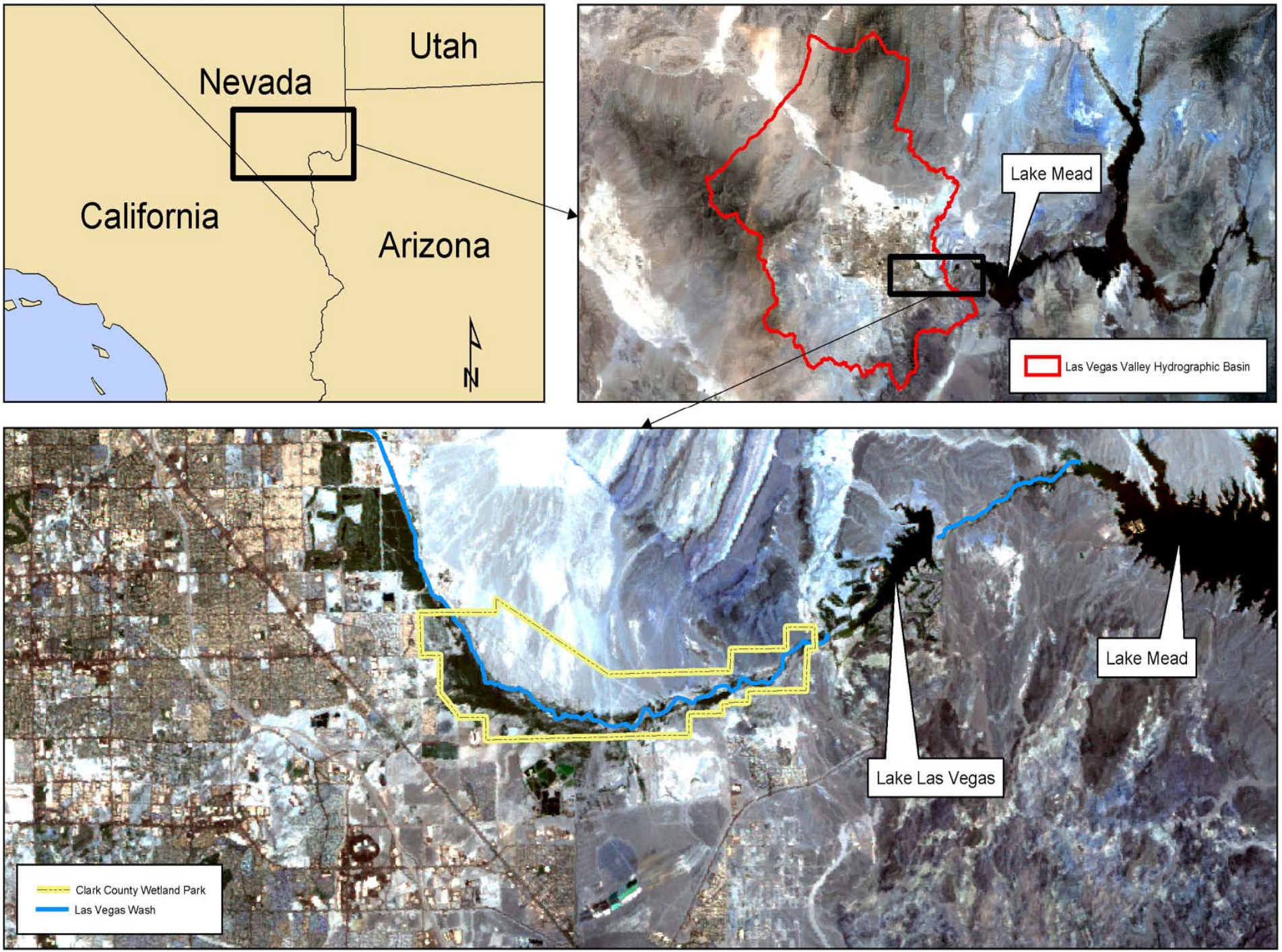
Working to stabilize and enhance the valuable environmental resources of the Las Vegas Wash



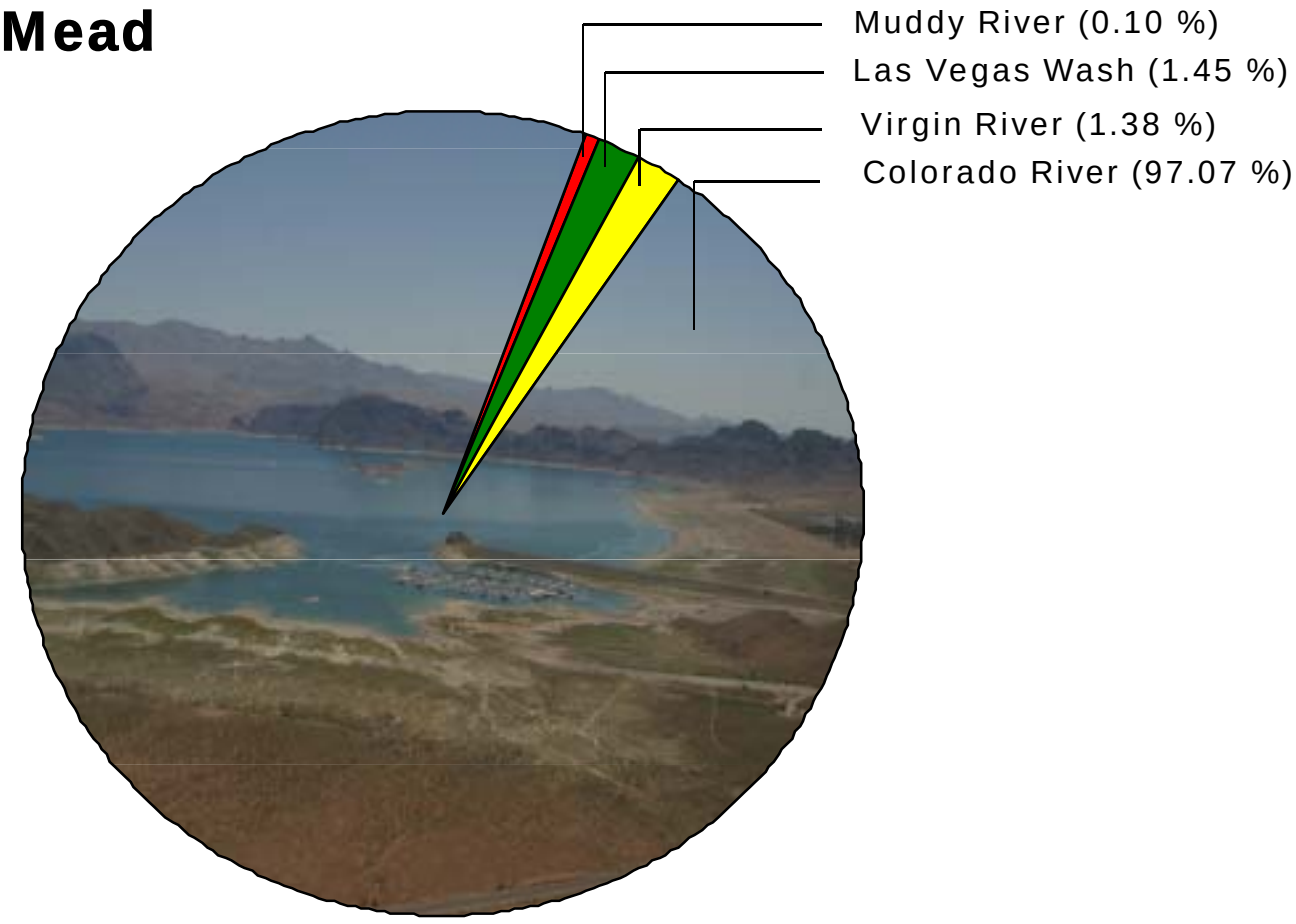



Las Vegas Wash

- Las Vegas Wash is the primary drainage channel for the ~1600 sq. mile Las Vegas Valley watershed.
- It discharges urban flows in to Lake Mead at Las Vegas Bay.


Utah
Nevada
California
Arizona
N
Lake Mead
Las Vegas Valley Hydrographic Basin
Lake Mead
Lake Las Vegas
Clark County Wetland Park
Las Vegas Wash

Water Flowing into Lake Mead



Las Vegas Wash Chronology

- <1905: The Wash is an ephemeral stream.
- 1905–1980s: Las Vegas pop. increases and urban runoff and effluent discharge to the Wash begin, making it a perennial stream. Thousands of acres of wetlands form.
- 1980s–1998: Flows increase with population. Large storm events occur. Increased flows cause erosion, headcuts, draining wetlands, and depositing tons of sediment in Lake Mead.
- 1998: <200 acres of wetlands remain.

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- Stakeholder group formed in 1998 to stabilize and enhance the Las Vegas Wash
- SNWA designated as lead agency
- Developed a Comprehensive Adaptive Management Plan (CAMP), with 44 action items, to achieve goals
  - Erosion control structures (12 out of 22)
  - Revegetation, including wetlands
  - Mgt actions target ~5-mile stretch of channel

Changing Hydrology & Habitat

- Calico Weir Impoundment site, 2000, 2005 & 2009

Yuma clapper rail

- Yuma clapper rail detections on the Wash prior to 2000
  - 1959 (8)
  - 1998 (1)
- In 2000, FWS recommended annual surveys for Yuma clapper rail

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

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Monitoring for other Marsh Birds too

- North American Marsh Bird Monitoring Protocol; Conway (2005, 2008)
- Surveys initiated in 2007 (YCRA in 2008)
- Intent
  - Richness – what is out there
  - Abundance – how much is out there
  - Distribution – where is it

Monitoring for Marsh Birds

- Method
  - Breeding season – April/May – 4 replicates
  - 3 routes established
    - 25 total points, minimum 200 meters apart
    - Direction reversed each visit
  - Surveys start 30 minutes before sunrise and end within ~3 hrs
  - 5 minutes passive listening; 1 minute per species – 30 secs call broadcast/listen
    - Sequence – BLRA, LEBI, SORA, VIRA, YCRA (2008+), AMBI

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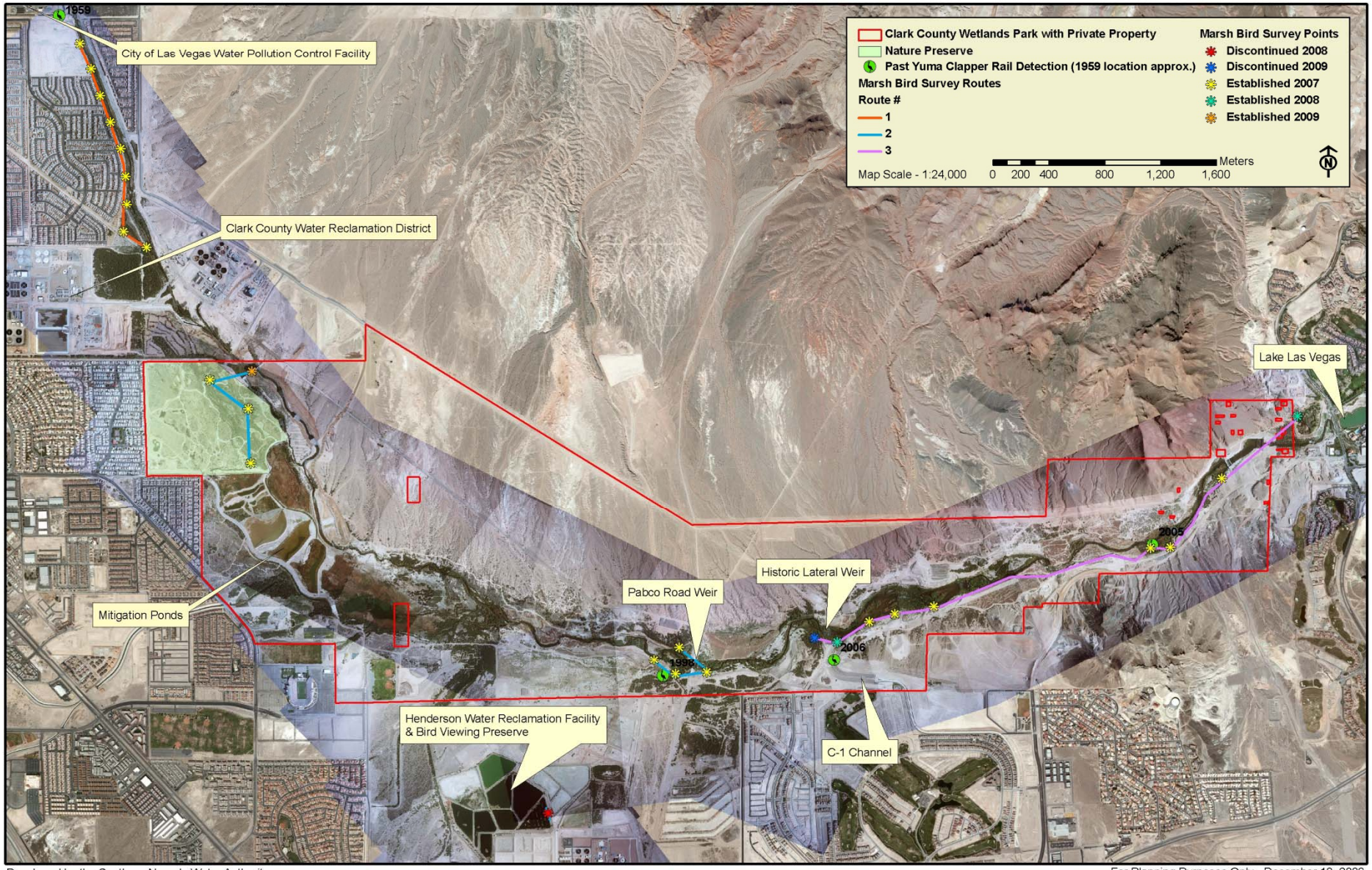

Developed by the Southern Nevada Water Authority

For Planning Purposes Only - December 10, 2009

Route Descriptions

- Route 1 - 9 pts
  - Cattails and tamarisk with tall whitetop
  - Flows from one WRF and urban runoff
  - No treatment

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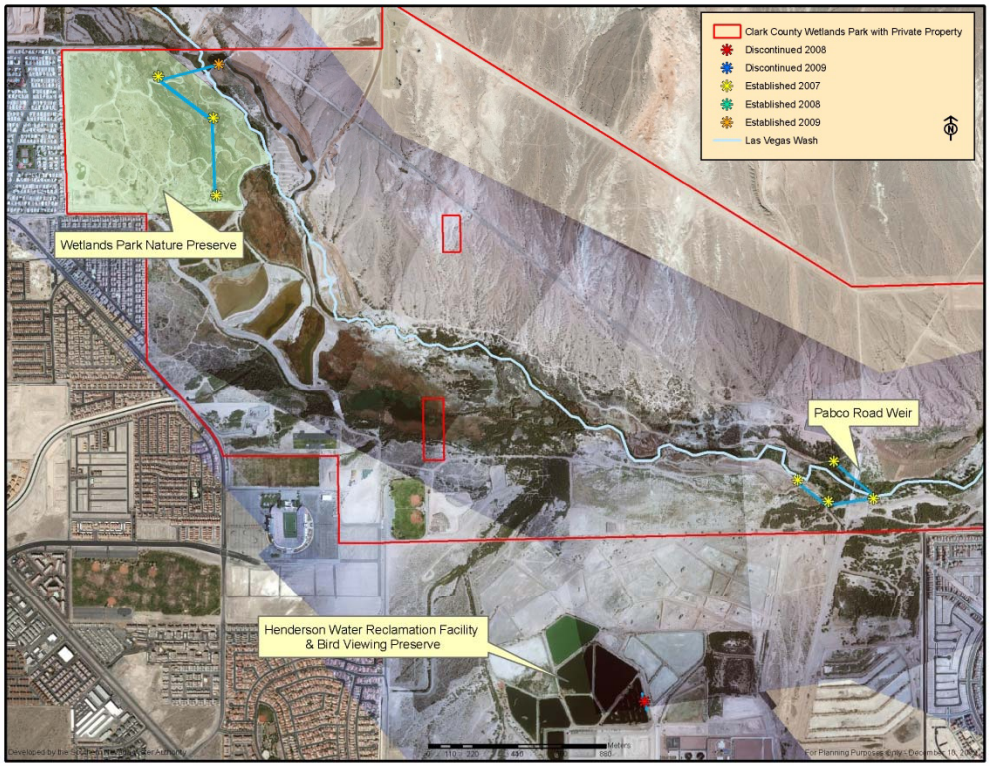
Route Descriptions

- Route 2 – 8 pts
  - Bulrush, cattails, phragmites, willows, cottonwoods
  - off channel wetland ponds - 3-4 pts
  - Wash weirs/ impoundments - 4-5 pts



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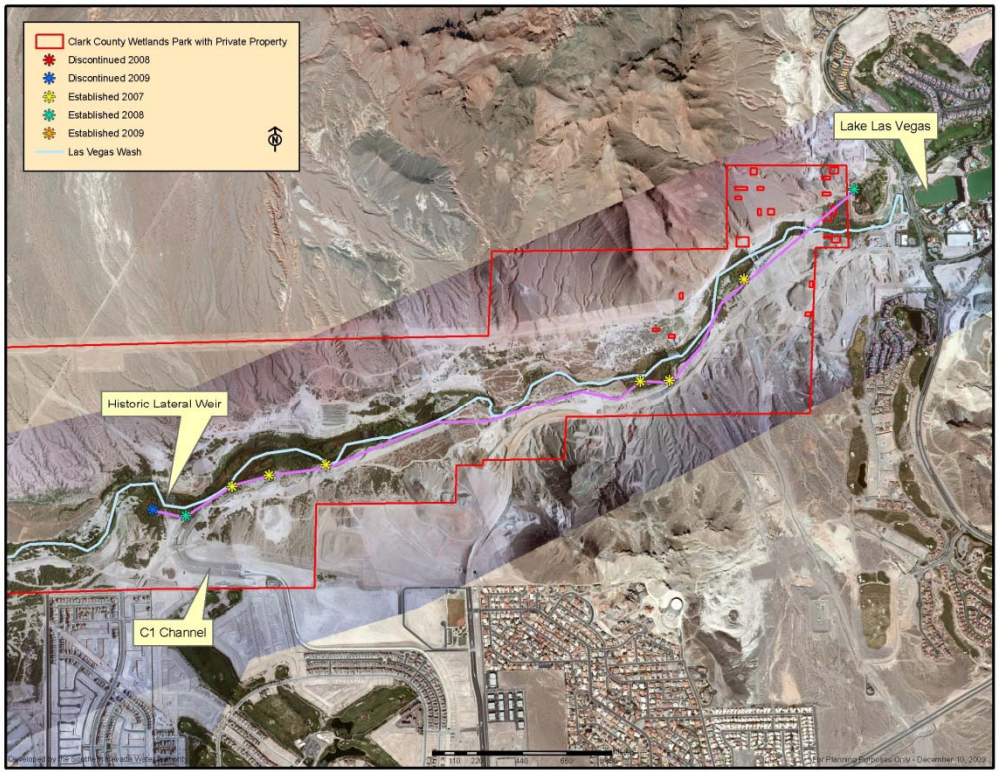
Route Descriptions

- Route 3 – 8 pts
  (7-2007, 9-2008)
  - Bulrush, cattails, phragmites, willows, cottonwoods
  - Wash weirs/ impoundments – 7-8 pts
  - Off channel wetlands – 1 pt



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Results from 2007-2009 Surveys

- 3 target species and 3 non-target species
  - LEBI, VIRA, SORA
  - PBGR, AMCO, COMO
- No YCRA, AMBI or BLRA

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Abundances (per point)

Year	LEBI	VIRA	SORA	PBGR	COMO	AMCO	Total
2007 (24)	9 (0.38)	7 (0.29)	14 (0.58)	12 (0.50)	28 (1.17)	164 (6.83)	234 (9.75)
2008 (26)	11 (0.42)	5 (0.19)	16 (0.62)	10 (0.38)	28 (1.08)	212 (8.15)	282 (10.85)
2009 (25)	6 (0.24)	4 (0.16)	16 (0.64)	8 (0.32)	24 (0.96)	147 (5.88)	205 (8.20)
Total	26 (0.35)	16 (0.21)	46 (0.61)	30 (0.40)	80 (1.07)	523 (6.97)	721 (9.61)

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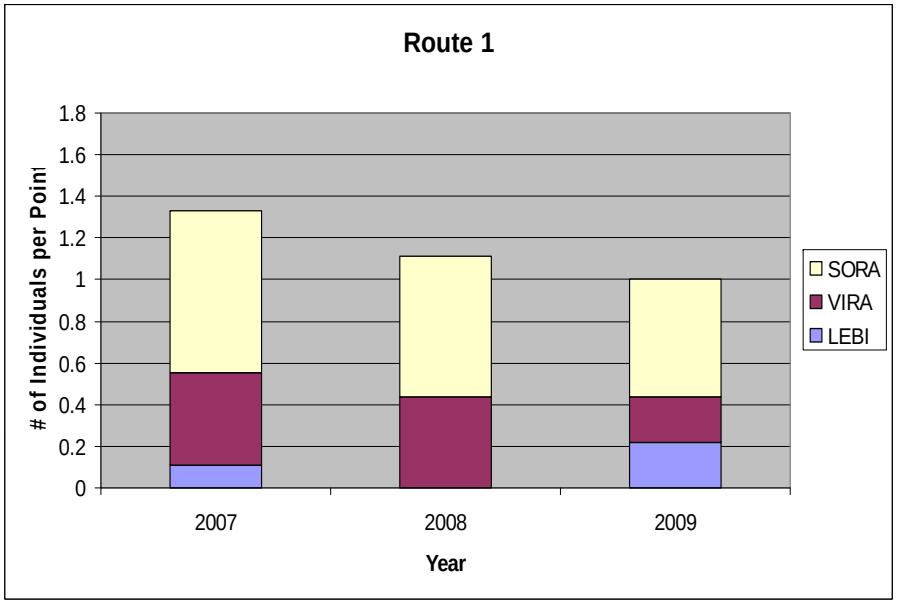
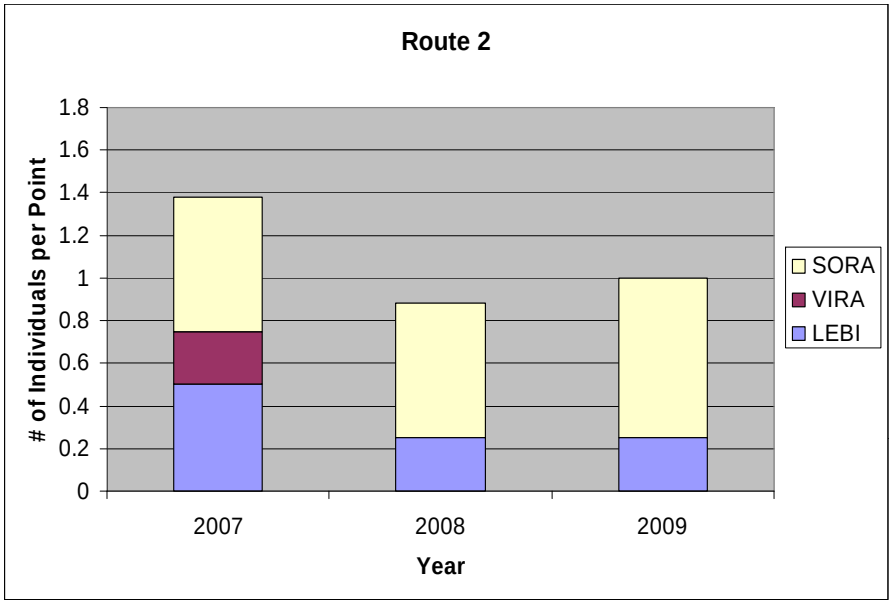
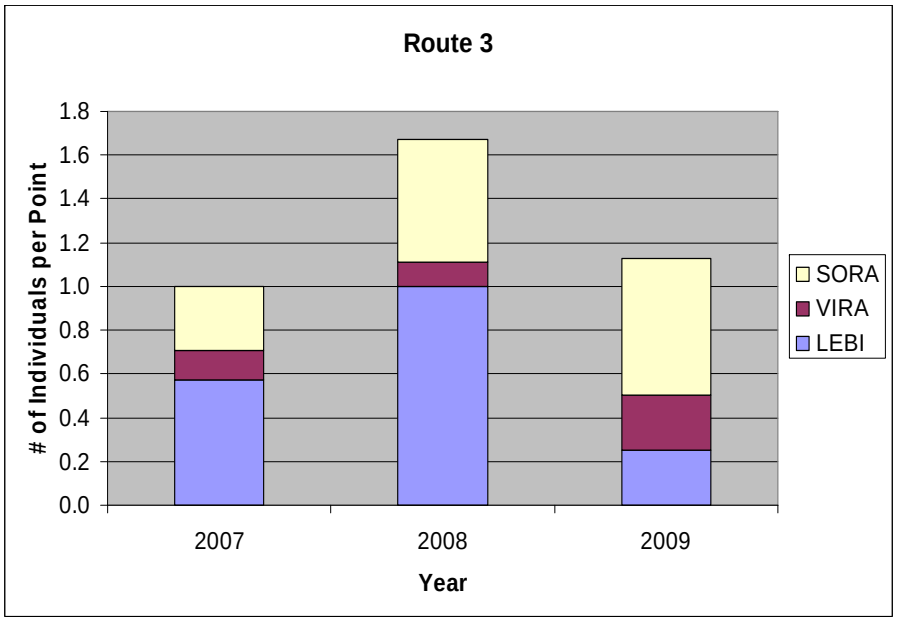
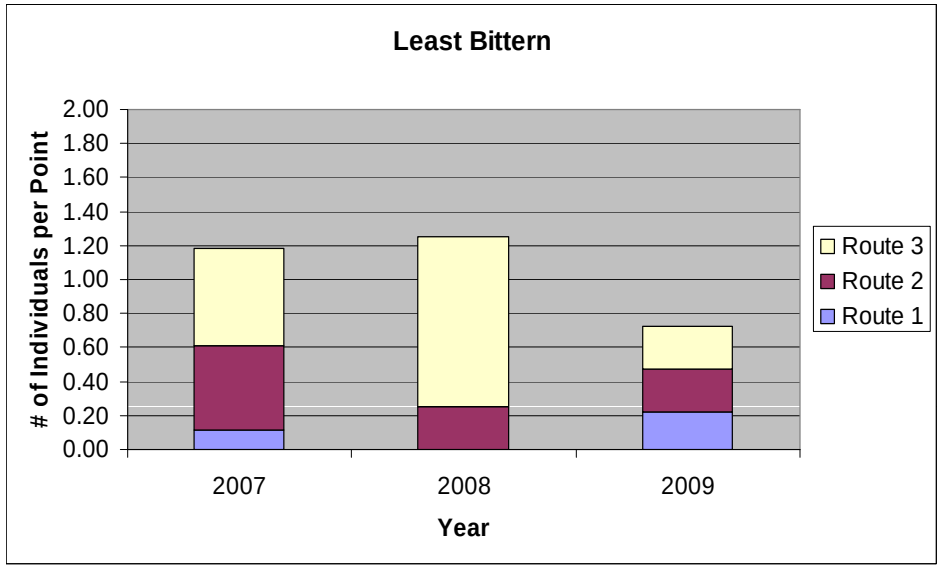
Routes – Abundance per Point

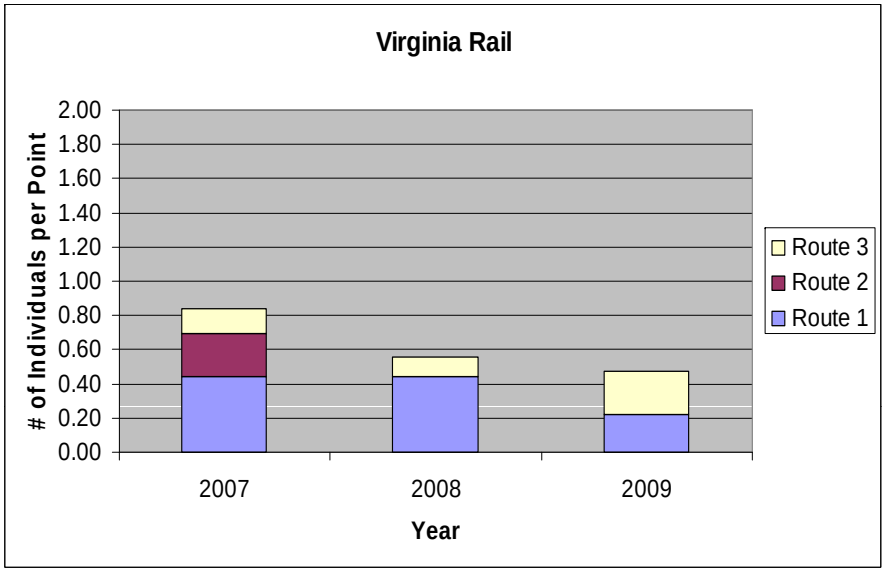


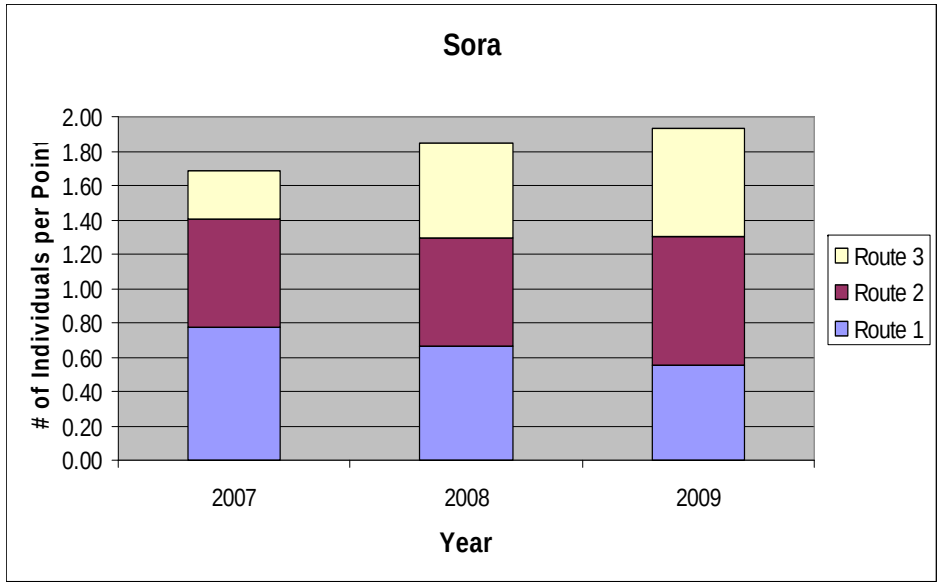


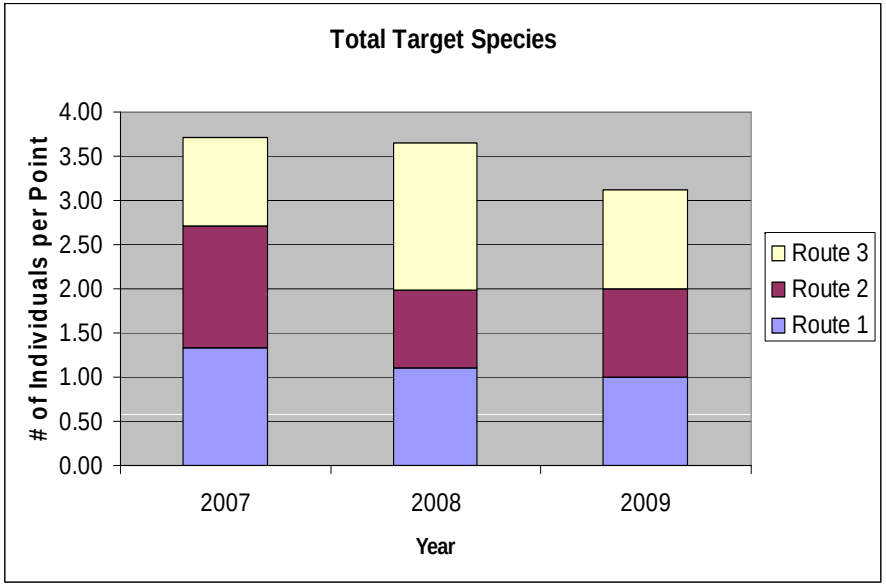


Individual Abundances per Point









Discussion

- Total richness and individual species detected remained the same across years within the study area.
- Richness and composition fluctuated across routes and per point abundance fluctuated across routes and years during the 3-yr period.
- Data were tested for significance, and the consistent outcome was that they were not statistically significant. However, given the small sample sizes, the tests lacked power.

Discussion

- The general “trend” was a decline in abundance.
  - Route 3 was the only route where abundance was higher in 2009 than in 2007.
  - Sora was the only species whose abundance increased over the 3-yr period.
- Relative abundance remained the same across all years:
  - SORA → LEBI → VIRA

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Discussion

- Sora
  - Most abundant, but is it breeding?
- Least bittern
  - Survey timing?
  - No known records prior to March 2005; now a breeding summer resident
- Virginia rail
  - Known breeding resident
  - Rare

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Discussion

- Lack of YCRA, BLRA, AMBI detections not surprising
  - Only a handful of detections of YCRA in 10 yrs; all of which were in late May/mid June
  - BLRA considered hypothetical for area
    - Several unconfirmed April/May and September/October records in the past several years in So. NV.
  - AMBI – really a winter resident/migrant

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Acknowledgements

- Bureau of Reclamation provided grant funding for these surveys

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- Draft report is available on-line for review. Comments due by February 10.
  - http://www.lvwash.org/html/resources_library.html

- Questions?
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