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Managing Water in the West

Laughlin Lagoon Avian Predation Monitoring Update

U.S. Department of the Interior
Bureau of Reclamation

Background

Laughlin Lagoon

- Upper end of Reach 3
- 250 acre backwater/wetland
- Depth heavily influenced by Colorado River flows
- Utilized by a suite of avian predators
- >14k Bonytail and Razorback stocked to date
- Anecdotal observations of avian predators raised questions

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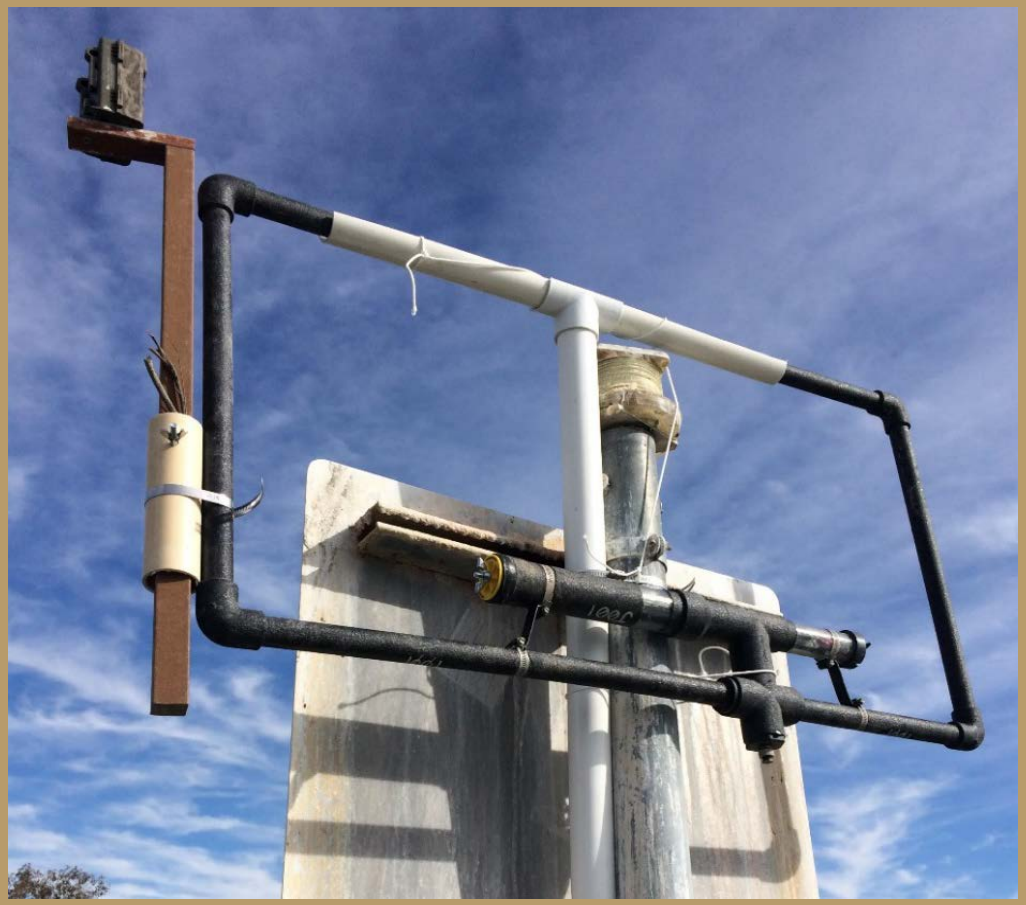
Methods

- **PIT scanner antennas**
  - **Mounted on known perching locations**
- **Motion activated cameras**
  - **Mounted on the antennas**
- **Point counts**
  - **Established around the perimeter of the lagoon**



Scanners deployed and point counts Initiated 2 days prior to Stocking event

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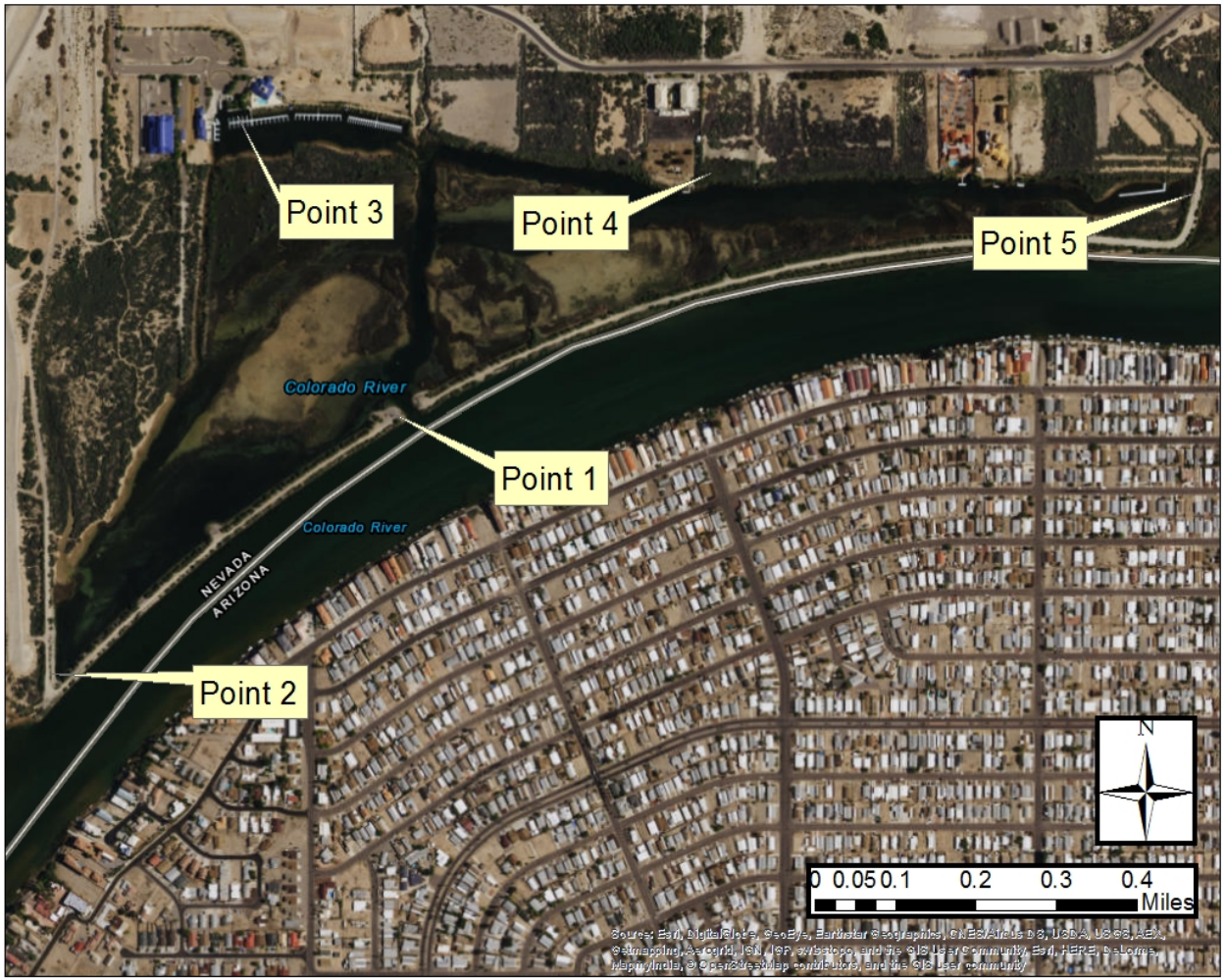
Point count route



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Study area and manipulation (start Dec. 2016)

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Results

23-09-2015	04:37	3DD.003BCB6FAB
23-09-2015	04:38	3DD.003BCB6FAB
23-09-2015	04:39	3DD.003BCB6FAB
23-09-2015	04:40	3DD.003BCB6FAB
23-09-2015	04:41	3DD.003BCB6FAB
23-09-2015	04:42	3DD.003BCB6FAB
23-09-2015	04:43	3DD.003BCB6FAB
23-09-2015	**04:44**	**3DD.003BCB6FAB**
23-09-2015	04:45	3DD.003BCB6FAB
23-09-2015	04:46	3DD.003BCB6FAB
23-09-2015	04:47	3DD.003BCB6FAB
23-09-2015	04:48	3DD.003BCB6FAB
23-09-2015	04:49	3DD.003BCB6FAB
23-09-2015	04:50	3DD.003BCB6FAB
23-09-2015	04:51	3DD.003BCB6FAB

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Results

Date	BTC Stocked	# Days scanned	Tags detected	% of stock	Cormorant	Osprey	Great Blue Heron	No Photo
December 9, 2015	947	9	24	2.5	22	1	0	1
May 17, 2016	697	13	7	1.0	5	0	1	1
December 7, 2016	1,685	12	90	5.3	72	0	11	7
May 30, 2017	852	10	0	0.0	0	0	0	0
December 5, 2017	1,200	13	10	<1.0	3	0	1	6

- **Cormorants were largest consumers of BTC**
- **% Predated conservative**
  - **Not all birds utilized perches**
  - **GBHE too tall?**
  - **OSPR often utilize nearby power poles**

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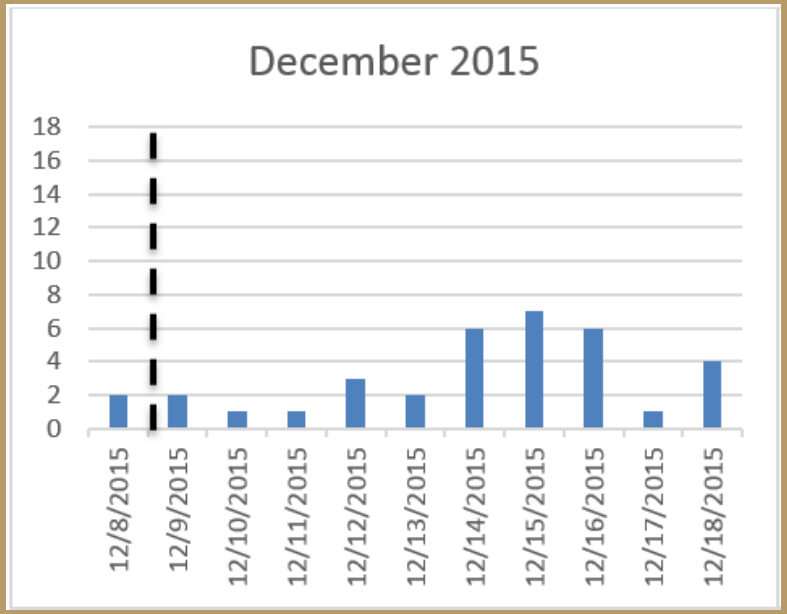

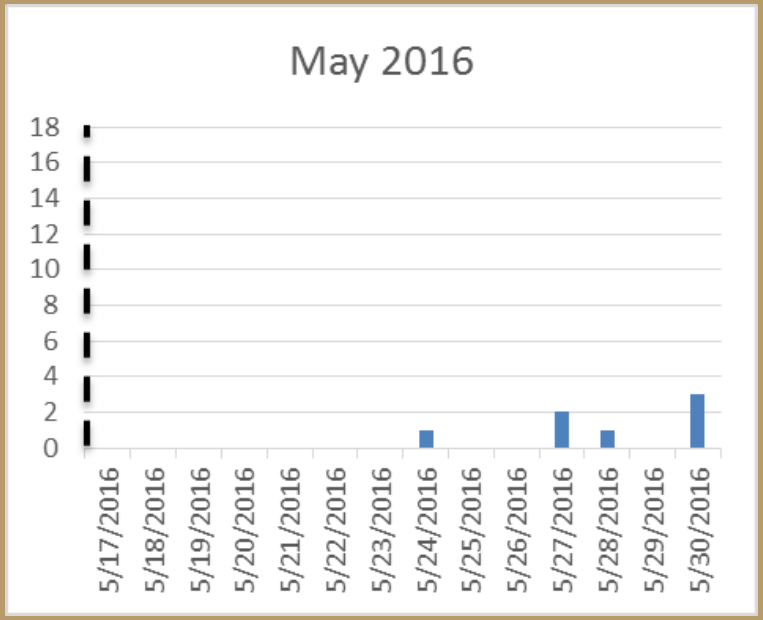

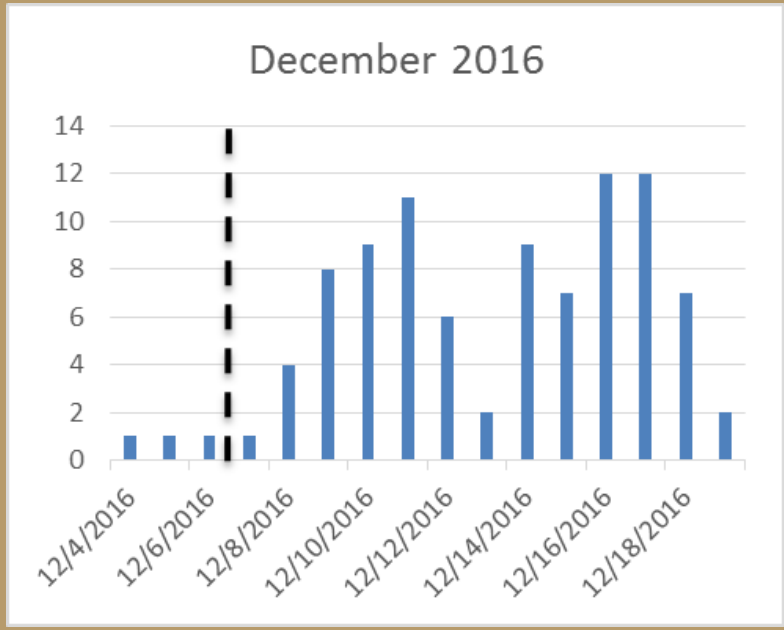

- **Detections/day increase but don't remain consistent**
- **1 – 7 day detection lag with May 2017 detecting 0 recently stocked fish**

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Predation from prior stockings

- December 2015
  - 4 BTC stocked 9/2015
  - 5 RASU stocked 10/2015
- December 2016
  - 3 BTC stocked 5/2016 (6 months survival)
- May 2017
  - 4 BTC stocked 4/2017

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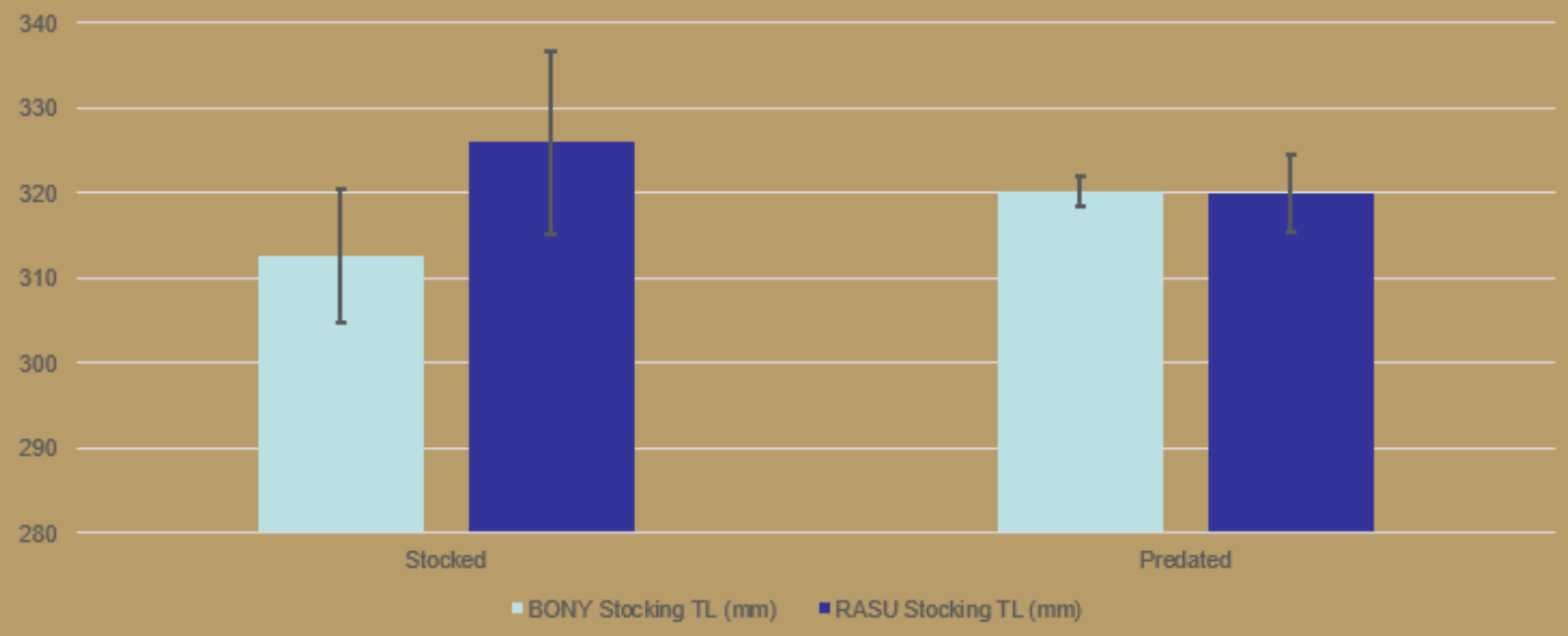
Average size at stocking for BTC and RASU vs. those predated



Size not a limiting factor

- **COMO – 396mm; GBHE – 385mm**

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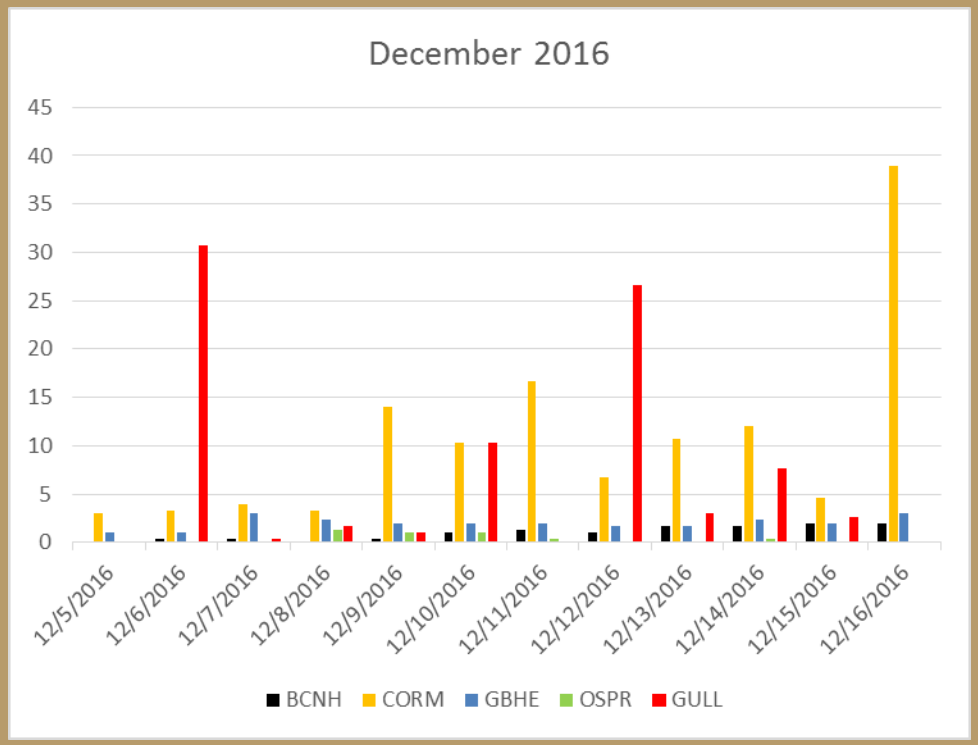
Avian Predator Densities

- **No steady increase observed**
  - **Can change quick with large flocks of COMO observed flying over (migrants)**



May = 1 COMO/day
December = 7 COMO/day

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Future work

- Refine parameters for depredation model to get a better idea of predation rates
- Determine if further iterations are needed
- Look at options to reduce impacts if warranted

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Thanks!

MSCP Staff
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