Ponds 6 – 8 Restoration Monitoring Update 2017

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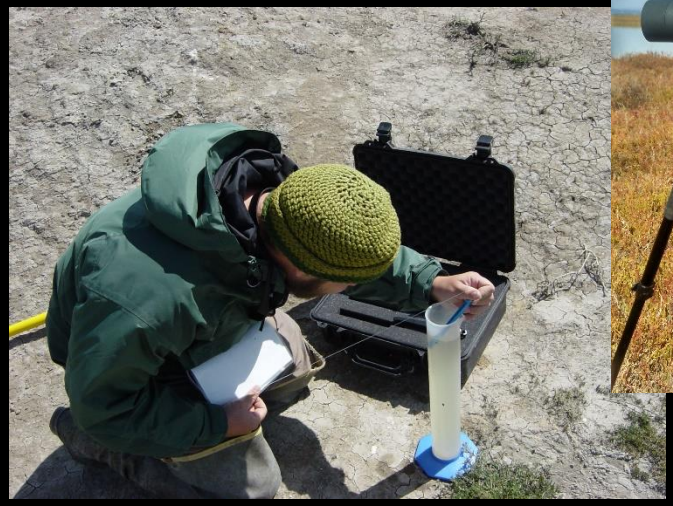
Restoration Monitoring Tasks

- Contracted by USACE to complete permit-required biological monitoring
  - Water Quality
  - Trace Metals
  - Toxicity
  - Delta Smelt
  - Waterbirds



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Methods

Data collection

- Water quality
  - Dissolved Oxygen
  - Salinity
  - Temperature
  - pH
- Trace Metals
  - As and Ni, dissolved and total
- Toxicity
  - Acute and Chronic
- Delta Smelt Larval Sampling
- Waterbirds

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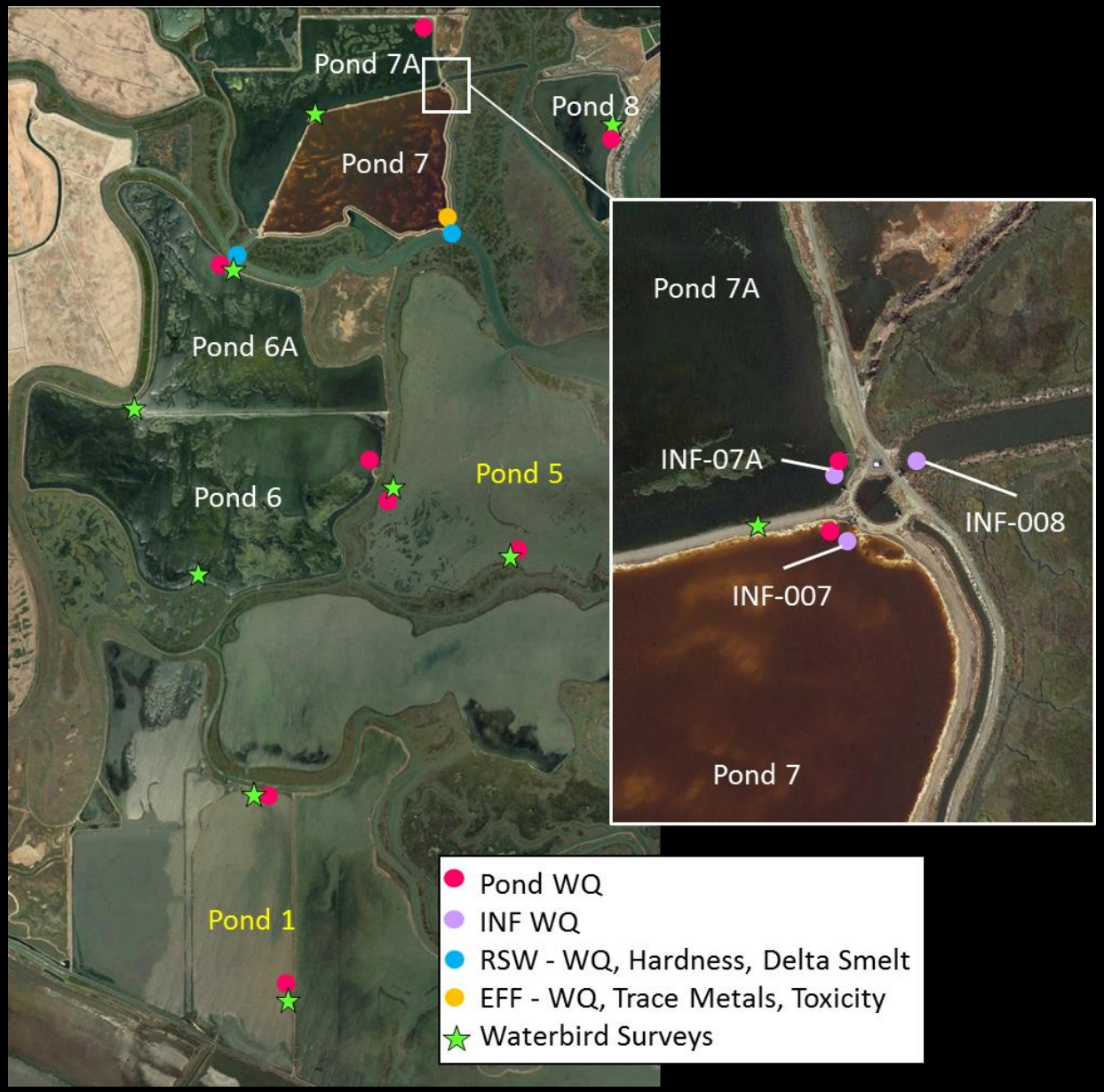
Pond 7A
Pond 8
Pond 7
Pond 6A
Pond 6
Pond 5
Pond 1
Pond 7A
INF-07A
INF-008
INF-007
Pond 7
Pond WQ
INF WQ
RSW - WQ, Hardness, Delta Smelt
EFF - WQ, Trace Metals, Toxicity
Waterbird Surveys

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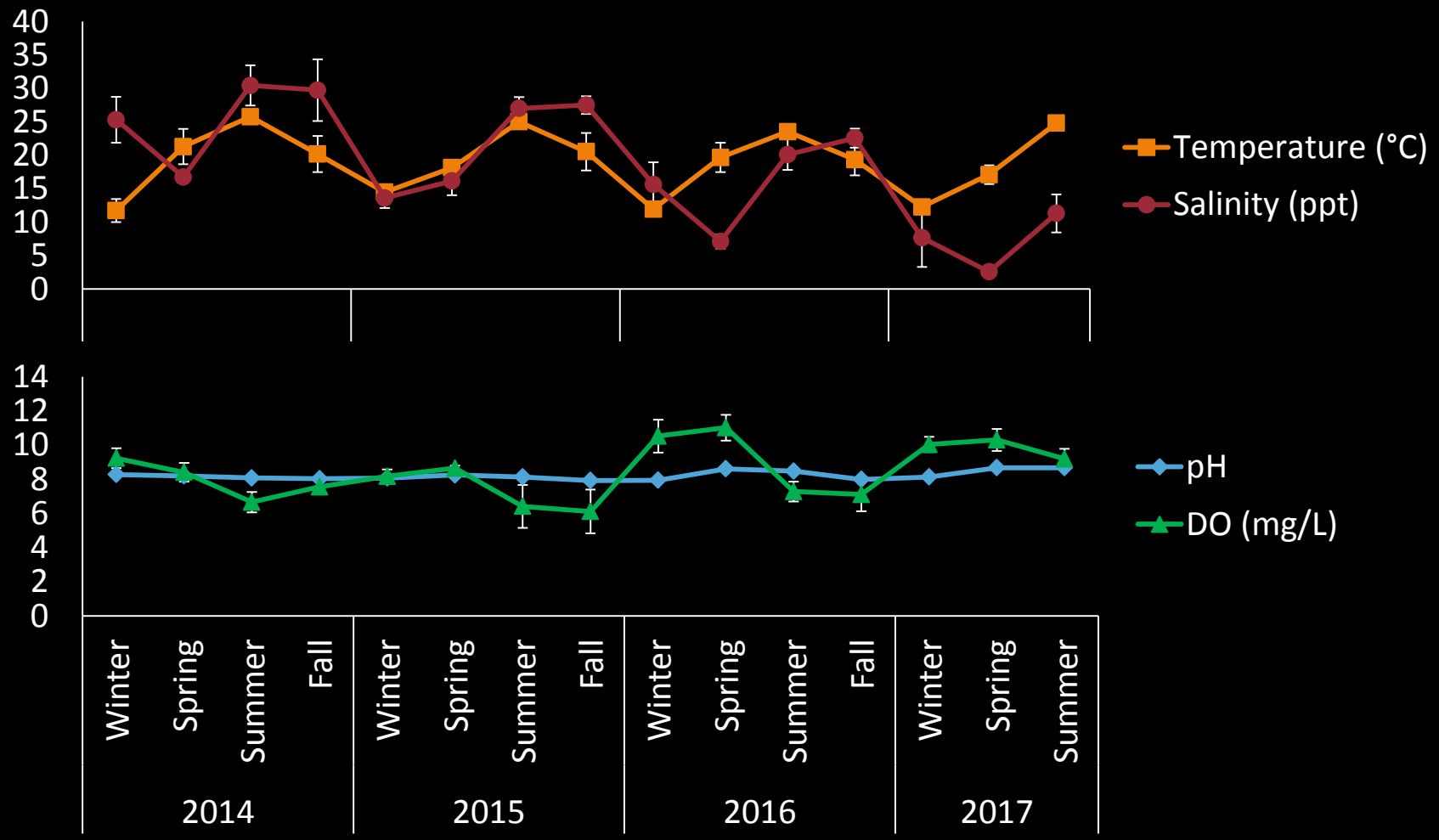
Results: Water Quality – 6, 6A, 7A, 8



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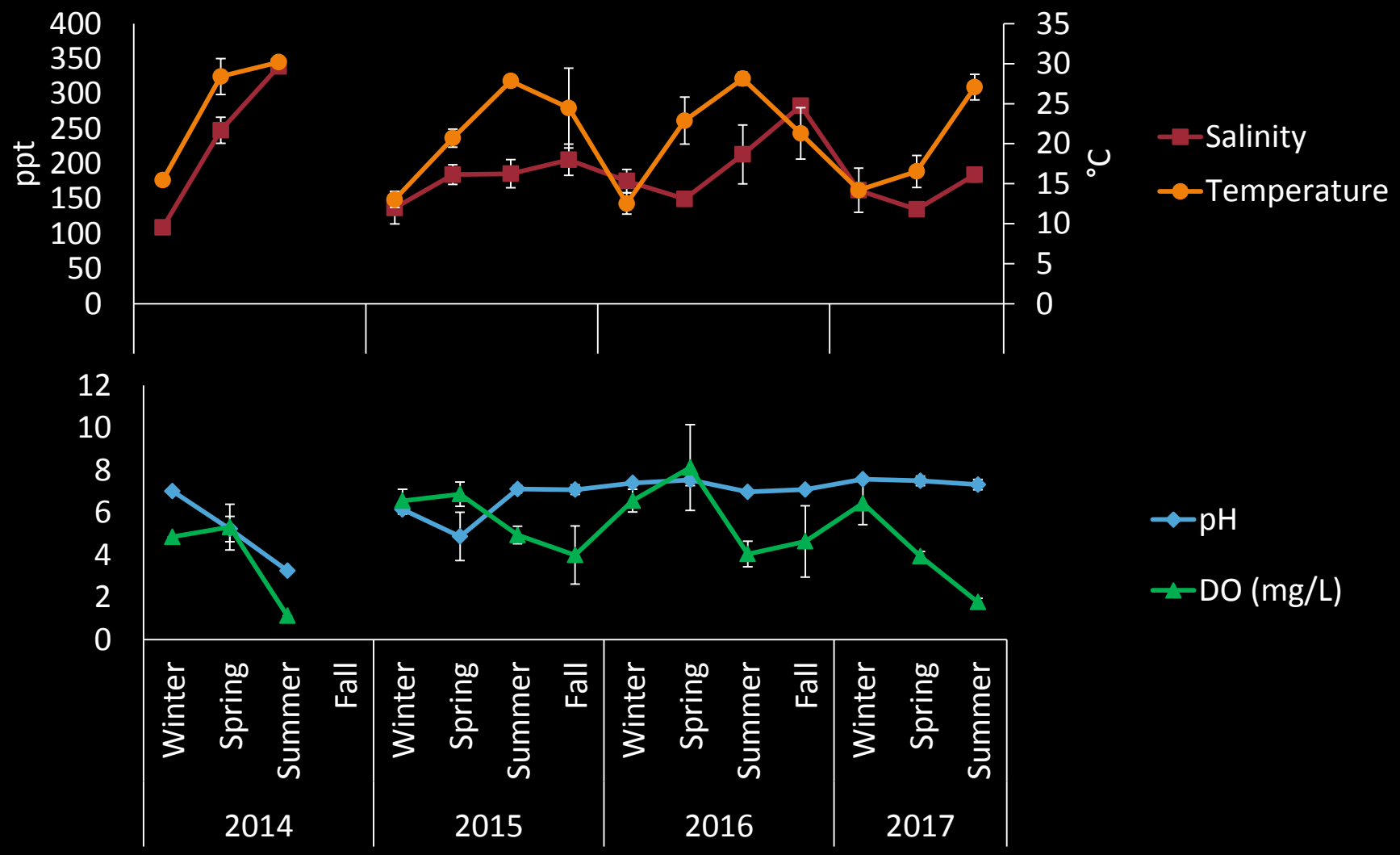
Results: Water Quality – Pond 7



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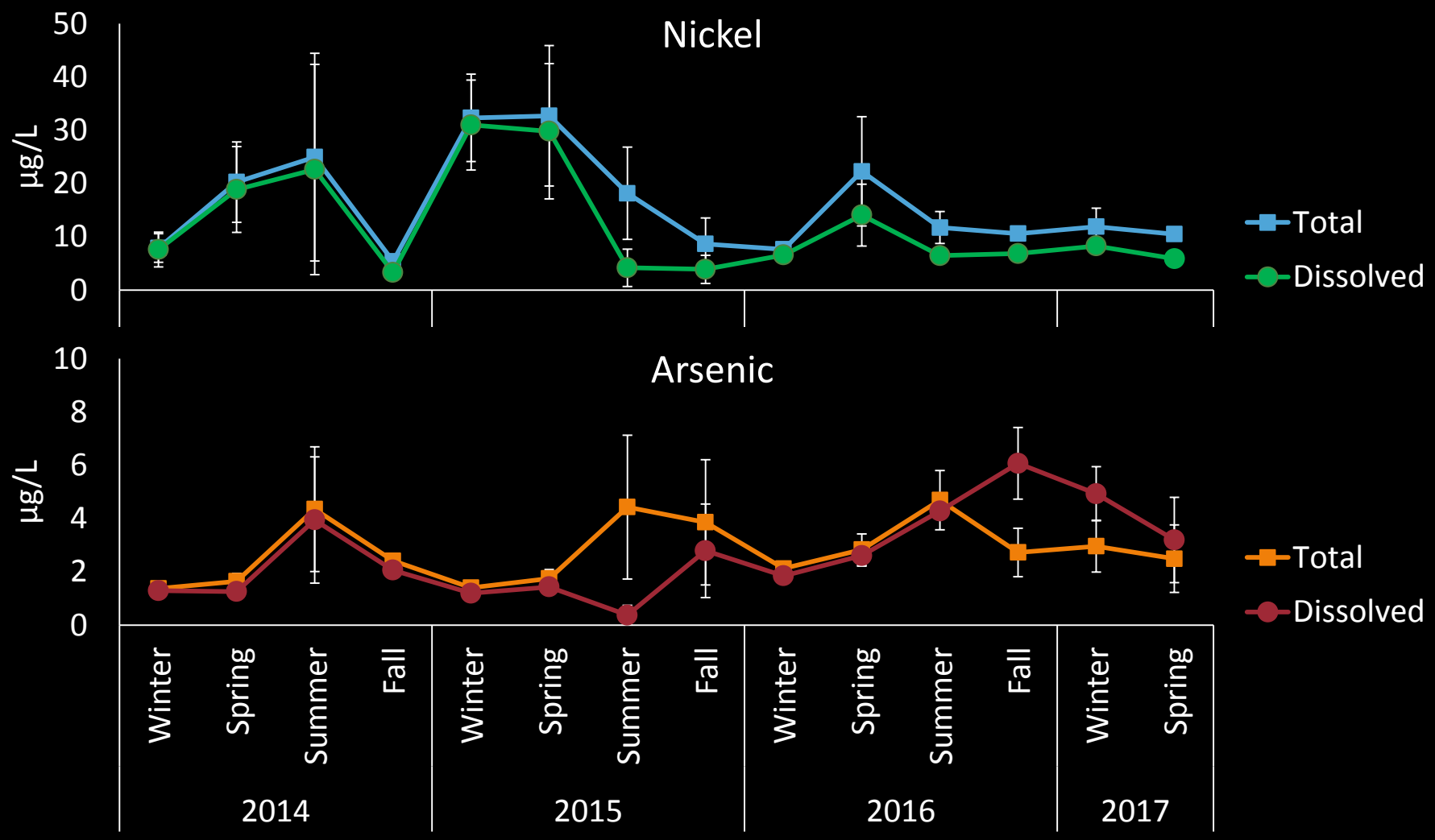
Results: Trace Metals



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Results: Toxicity Testing

- <u>Acute Toxicity</u>
  - *Americamysis bahia* (mysid)
    - 92.5% (Feb)
    - 100% (April)
  - *Menidia beryllina* (Inland silverside)
    - 100% (Feb and April)

- <u>Chronic Toxicity</u>
  - *A. bahia* – No significant reduction in growth or survival

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Results: Delta Smelt

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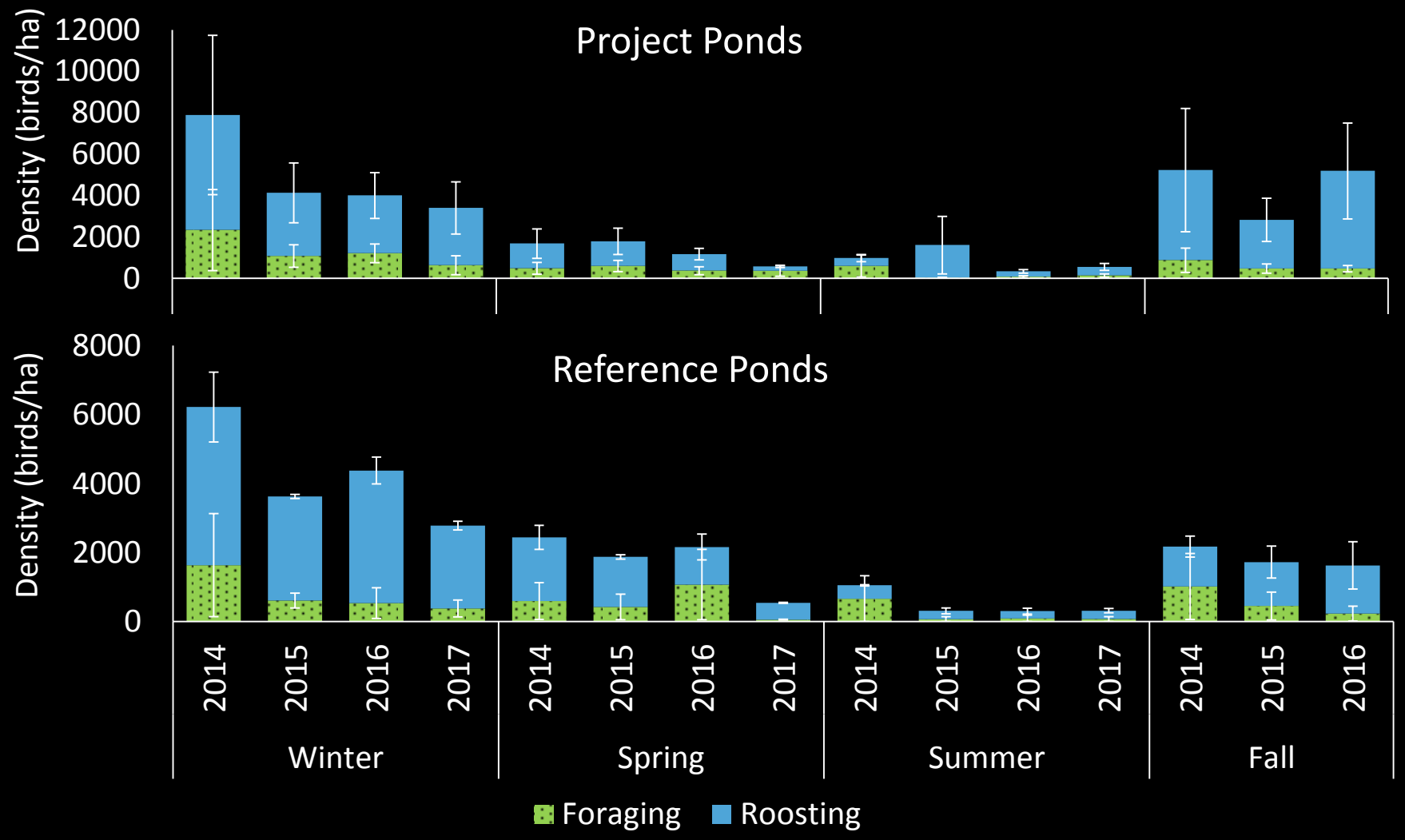
Results: Waterbirds



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Conclusions

- Water Quality
  - Pond 7 conditions improving
  - Other project ponds show consistent seasonal trends
- Trace Metals
  - Ni improving, but As is a bit uncertain
- Toxicity
  - No acute or chronic toxicity ever detected
- Delta Smelt
  - No Delta smelt observed
- Waterbirds
  - More birds on project ponds in fall

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Continued Monitoring Efforts

- Water Quality
- Trace Metals
- Delta Smelt
- Waterbirds

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