Non-breeding Abundance, Distribution and Habitat Use by American Oystercatcher *Haematopus palliatus frazari* in Sinaloa, México

Miriam Lerma, José Alfredo Castillo-Guerrero and Eduardo Palacios.
Based in site surveys a total of 3,000 individuals has been estimated (Clay et al. 2014).
### Key sites

<table>
<thead>
<tr>
<th>Site name</th>
<th>State / Province</th>
<th>Country</th>
<th>High count</th>
<th>Seasonal use</th>
<th>Importance</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ojo de Liebre / Guerrero Negro</td>
<td>Baja California</td>
<td>Mexico</td>
<td>458</td>
<td>–</td>
<td>G</td>
<td>WHSRN 2009 unpbl. data</td>
</tr>
<tr>
<td>Laguna San Ignacio</td>
<td>Baja California</td>
<td>Mexico</td>
<td>287</td>
<td>–</td>
<td>R</td>
<td>WHSRN 2009 unpbl. data</td>
</tr>
<tr>
<td>Bahia Magdalena</td>
<td>Baja California</td>
<td>Mexico</td>
<td>423</td>
<td>–</td>
<td>R</td>
<td>WHSRN 2009 unpbl. data</td>
</tr>
<tr>
<td>Río Colorado Estuary</td>
<td>Sonora/Baja California</td>
<td>Mexico</td>
<td>121</td>
<td>–</td>
<td>R</td>
<td>Morrison &amp; Ross 2008</td>
</tr>
</tbody>
</table>

Clay et al. 2014

In Sinaloa there is a lack of information of numbers of Oystercatchers during the non-breeding season.

### Palacios et al.

<table>
<thead>
<tr>
<th>State/Province</th>
<th>High count</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baja California</td>
<td>129</td>
<td>5.5</td>
</tr>
<tr>
<td>Baja California Sur</td>
<td>531</td>
<td>22.8</td>
</tr>
<tr>
<td>Delta</td>
<td>90</td>
<td>3.8</td>
</tr>
<tr>
<td>Sonora</td>
<td>264</td>
<td>11.3</td>
</tr>
<tr>
<td>Sinaloa</td>
<td>1263</td>
<td>54.4</td>
</tr>
<tr>
<td>Nayarit</td>
<td>42</td>
<td>1.8</td>
</tr>
<tr>
<td>TOTAL</td>
<td>2319</td>
<td></td>
</tr>
</tbody>
</table>
Habitat use

- Coastal development
- Loss of habitat can cause a redistribution on remaining habitat and increase in competition.
Threats

• Besides habitat loss, predation and human disturbance are main threats to Oystercatchers.
• Increased vigilance interfere with feeding.
• We know almost anything of threats to Oystercatchers.
Conservation needs
Survey non-breeding population
• Estimate non-breeding abundance
• Describe distribution
• Describe habitat use
• Identify Threats

Methods
Surveys from Sept to Dec
• Register individuals or flocks
• Record GPS position
• Description of Habitat
• Register threats
Site surveys

65 sites were surveyed. In 52 sites Oystercatchers were detected.

Kilometers surveyed by site varied from 0.26 km in small islands (Coyotilla, BSM) to up to 38.3 km on large islands (Altamura, BSM).

26 sites visited more than on three occasions. In 14 sites 100% of presence, 5 sites no oystercatchers were observed; and in 7 sites detection varied between surveys (60-85%).
Abundance & Distribution

- Considering roost site fidelity during non-breeding season and communal high tide resting flocks we use maximum count per site and a Total of 1,351 Oystercatchers were in Sinaloa during the non-breeding season.

- BSM (74.6%) > MAZ (8.2%) > NAV (7.7%) > TOP (5.1%) > LEC (3.5%) > CEU (0.7%).
Flock size

- Largest resting flocks were found in BSM in Islands of El Mero (253), Botetero (87), Altamura (77) and Melendres (76).
- In the rest of the bays, flock size was modest. Maximum resting flocks consisted of: 11 individuals in LEC, 13 individuals in NAV, 17 in TOP, 4 in CEU, and 48 individuals in MAZ.
Habitat use

Mangrove islands and mudflat had larger number of individuals than expected according to its extension; and sand islands and rock islands had lower number of individuals than expected according to its extension.
Threats

• Predators: raccoons and coyotes.
• Introduced species: donkeys, cows, horses, goats or dogs.
• Human disturbances: fisherman or tourist.
• Habitat loss: Docks, platforms, houses, shrimp farms, and recreational buildings occupying large areas of coast.
Population Estimate

Based on a 43,000 total estimation for *Haematopus palliatus* including subspecies (Clay et al. 2014), BSM represents 2.3% of total population of this species.

Based on 3,000 *frazari* estimation, BSM represents 33.6% of total western population.

The numbers of individuals inhabiting BSM outranks Baja Californian sites as a key sites for the conservation of this species.
Habitat use

- Oystercatchers preferred open habitat with low levels of human disturbance and absence of predators close to feeding areas.
- Mangrove islands and mudflats had less interferences, and probably that is the reason why these habitat had larger numbers of Oystercatchers than expected according to its extension.
- BSM is the bay that offers the most diverse mosaic of habitats and extensive mudflats to feed.
Threats

- Threats were generalized on all Sinaloa. Livestock, tourists, and fisherman were a source of disturbance, interfering with Oystercatchers activities as feeding on resting, but habitat loss seem to be the main threat to Oystercatcher population in Sinaloa.
Conclusion

- BSM is the most important site for non-breeding Oystercatchers in Sinaloa, and probably in all Mexico.

- Mangrove islands and mudflats are important habitat for Oystercatcher in Sinaloa.

- Habitat loss the main threat to Oystercatcher in Sinaloa.

Each bay needs to have their particular management plan, and especial interest should be placed on BSM for the conservation of *Haematopus palliatus frazari*.
Acknowledgments

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