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Roosting oystercatchers at Swan Bay, Port Stephens, NSW

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Wader counts conducted by Hunter Bird Observers Club (HBOC) members since 2004 have identified the quiet shoreline of Swan Bay in Port Stephens NSW (32^{0}41'48.55"S, 151^{0}58'45.65"E), with its oyster-farm breakwater and associated oyster poles, as an important site for viewing a variety of waders and waterbirds (Stuart 2005). When the Port Stephens-Great Lakes Marine Park was created, in December 2005, the location fell within the Swan Bay Sanctuary Zone and local oyster farming ceased. During 2012 the oyster processing shed was dismantled, but the cement pad, which had supported it along with its rocky breakwater, was retained.

Prior to demolition of the shed up to six Australian Pied Oystercatchers *Haematopus longirostris*, and one to two Sooty Oystercatchers *Haematopus fuliginosus* were occasionally seen roosting on the breakwater. Both species are classified as Endangered and Vulnerable, respectively, under the *NSW Threatened Species Conservation Act 1995* (NSW Scientific Committee 2008a, 2008b). Larger groups of Pied Oystercatchers (often 20+) roosted on Orobillah Island (32^{0}41'48.55"S, 151^{0}58'45.65"E) and at the south-east end of Gur-um-bit National Park (NP) (32^{0}42'29.28"S, 151^{0}58'11.90"E). These sites lie approximately 1.25km east, and 1.67km south-east of the breakwater, respectively, at locations presenting difficult access and restricted visibility.

Figure 1. Swan Bay oyster farm site

From an aerial perspective, the newly cleared cement slab resembled an unobstructed landing pad (**Figure 1**), a fact that did not go unnoticed by Caspian Terns *Hydroprogne caspia* and Silver Gulls *Chroicocephalus novaehollandiae*, but the site was almost immediately appropriated by Pied and Sooty Oystercatchers as a roost (**Figure 2**). Except during inclement weather, both species of oystercatcher continue to dominate the approximately 12m x 8m site by sheer force of numbers. They defend it from interlopers such as Pacific Black Ducks *Anas superciliosa* and Chestnut Teal *Anas castanea*, but gulls and terns are tolerated.

Figure 2. Oystercatchers roosting on concrete slab at oyster farm site (Tide level: 1.7m).

The location benefits both birds and birders. For oystercatchers, the site, although exposed to the elements and frequent raptor patrols, offers a roost with excellent predator visibility and minimal human disturbance. For birders, the site offers easy access to a prime monitoring location that contributes data which may eventually help to resolve the question of why so many Australian Pied Oystercatchers of reproductive age congregate within the estuary but do not breed.

Sooty Oystercatchers prefer to breed on the offshore islands (NSW Scientific Committee 2008a). The steady increase in numbers seen within the estuary probably reflects successful off-shore breeding events in response to advantageous off-shore and on-shore habitat. Conversely, Pied Oystercatchers, though frequently seen feeding in

pairs, nest sparsely, and often unsuccessfully, along the sandy shores of Stockton Beach and similar locations. There are only two known breeding attempts within the estuary, a nest at Corrie Island which contained eggs (Lawrence Penman *pers. comm.*) and another at Orobillah Island (G. Little *pers. comm.*, rep. Stuart 2011). The fate of both nests is unknown.

HBOC data gathered from monthly land-based wader counts, in combination with biannual boat surveys, continue to confirm that the sheltered shoreline of Port Stephens, the largest estuary in NSW, is a haven of national significance for Australian Pied Oystercatchers (Stuart 2011). Annual high counts (2008-2015) show increased use of the Oyster Farm roost (Pied Oystercatchers, 3-57; Sooty Oystercatchers 1-28). This development involves a large proportion of both species of oystercatcher in Port Stephens, and highlights the importance of the new roosting location. (**Tables 1** and **2**).

Benthic biomass collections at ten sites around the relatively undeveloped 288km shoreline, including Swan Bay, confirm the abundance of pipis *Plebidonax deltoides* (Stuart & Wooding unpublished data). Pipis are reported to be a dietary preference for Australian Pied Oystercatchers (Jones 2016; Owner & Rohweder 2003). Given that food, shelter and reproduction are the driving forces for survival it is concerning that Port Stephens only seems capable of satisfying the first two of these three prerequisites for a species classified as Endangered in NSW.

Boat surveys, encompassing the entire Port Stephens estuary on the same high tide, indicate that Australian Pied Oystercatcher numbers in the estuary have remained steady (HBOC Annual Bird Reports 2008-2014). Increased numbers at the oyster farm roost since December 2012, might mean that these birds were always present, but not previously visible to land-based surveyors, or perhaps the site has attracted oystercatchers from other parts of the estuary. Reduced count numbers at Orobillah Island and Gur-um-bit NP seem to confirm the oyster farm site as the current, primary, fair-weather roost for the estuary's west-end oystercatchers; increased count accuracy is a beneficial consequence (**Tables 1** and **2**).

The diminished presence of roosting oystercatchers at Orobillah Island and Gur-um-bit NP gives rise to speculation regarding the increased potential for Pied Oystercatchers to nest at these locations. Both sites are difficult to access, and therefore relatively secure from anthropogenic stress. Both are more sheltered and offer more cover from raptors than ocean-beach sites, although fox predation might be a concern. Neither site has ever undergone a systematic assessment. Given the changed circumstances, and the Endangered status of the Australian Pied Oystercatcher, this would seem to be a project worthy of future consideration.

Table 1. A comparison of annual highest-count data for Pied Oystercatchers from: Biannual HBOC boat surveys, Port Stephens; Monthly Swan Bay Wader Surveys; Oyster Farm site.

Survey Site	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
HBOC Boat Survey	154	134	148	166	192	130	162	164
Swan Bay Wader Counts	18	35	20	20	50	47	41	46
Oyster Farm Site	3	4	6	6	36	38	46	57
% of HBOC Total - Swan Bay	11.7	26.1	13.5	12.5	26.0	36.2	25.3	28.0
% of HBOC Total - Oyster Farm	1.5	3.0	4.1	3.6	18.7	29.2	28.4	34.8

Table 2. A comparison of annual highest-count data for Sooty Oystercatchers from: Biannual HBOC boat surveys, Port Stephens; Monthly Swan Bay Wader Surveys; Oyster Farm site.

Survey Site	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
HBOC Boat Survey	14	13	24	19	28	42	37	52
Swan Bay Wader Counts	2	2	3	3	4	11	18	28
Oyster Farm Site	1	1	4	3	4	11	17	28
% of HBOC Total - Swan Bay	11.7	26.1	13.5	12.5	26.0	36.2	25.3	28.0
% of HBOC Total - Oyster Farm	7.1	7.7	16.7	15.8	14.3	26.2	46.0	53.8

Notes: 1. Oyster Farm figures include counts by the author on and between official survey dates.
2. Years 2008-2015 represent years when the author participated in Swan Bay wader counts.

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