



**HERITAGE  
COUNCIL**  
OF WESTERN AUSTRALIA

## **REGISTER OF HERITAGE PLACES – ASSESSMENT DOCUMENTATION**

### **11. ASSESSMENT OF CULTURAL HERITAGE SIGNIFICANCE**

The criteria adopted by the Heritage Council in November 1996 have been used to determine the cultural heritage significance of the place.

The documentation for this place is based on the heritage assessment completed by Irene Sauman, Historian, and Laura Gray, Heritage and Conservation Consultant, in October 2004, with amendments and/or additions by HCWA staff and the Register Committee.

#### **PRINCIPAL AUSTRALIAN HISTORIC THEME(S)**

•	2.16.1	Dealing with hazards and disasters
•	3.8.1	Shipping to and from Australian ports
•	5.1	Working in harsh environments

#### **HERITAGE COUNCIL OF WESTERN AUSTRALIA THEME(S)**

•	106	Workers (incl. Aboriginal, convict)
•	201	River and sea transport
•	507	Water, power, major transport routes

#### **11.1 AESTHETIC VALUE\***

*Point Cloates Lightstation (Ruin)*, in its elevated position, is a landmark on the remote Ningaloo coastline, from both the ocean and the sea. (Criterion 1.3)

*Point Cloates Lightstation (Ruin)* demonstrates considerable achievement in the high quality workmanship that was carried out in an isolated location. (Criterion 1.2)

*Point Cloates Lightstation (Ruin)* demonstrates aesthetic values in the combination of built elements, and natural landscape, in the elevated position and landmark setting in a remote location at Ningaloo. The ruins of the Lighthouse are the dominant landmark on the site, prominent from the ocean and the mainland. (Criterion 1.3)

\* For consistency, all references to architectural style are taken from Apperly, R., Irving, R., Reynolds, P. *A Pictorial Guide to Identifying Australian Architecture. Styles and Terms from 1788 to the Present*, Angus and Robertson, North Ryde, 1989.

For consistency, all references to garden and landscape types and styles are taken from Ramsay, J. *Parks, Gardens and Special Trees: A Classification and Assessment Method for the Register of the National Estate*, Australian Government Publishing Service, Canberra, 1991, with additional reference to Richards, O. *Theoretical Framework for Designed Landscapes in WA*, unpublished report, 1997.

*Point Cloates Lightstation (Ruin)* forms a cultural environment in the harsh natural landscape with cohesive aesthetic character of detailed face work from local sandstone. (Criterion 1.4)

## **11.2 HISTORIC VALUE**

*Point Cloates Lightstation (Ruin)* was an important link in the development of coastal lights in Western Australia in the early twentieth century when the increased population of the State and the development of the North West meant a greater number of ship movements. (Criterion 2.1)

*Point Cloates Lightstation (Ruin)* was one of four coastal lights established on the north west coast in 1909-1910 in response to the imminent takeover of such installations by the Commonwealth Government. (Criterion 2.1)

*Point Cloates Lightstation (Ruin)* was one of the earliest European inhabited sites on the Ningaloo coast. (Criterion 2.2)

*Point Cloates Lightstation (Ruin)* demonstrates a way of life no longer practised where on-site accommodation was provide for those working in the lighthouse. (Criterion 2.2)

## **11.3 SCIENTIFIC VALUE**

*Point Cloates Lightstation (Ruin)* demonstrates high quality workmanship and use of local sandstone in a remote location. (Criterion 3.1)

## **11.4 SOCIAL VALUE**

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## **12. DEGREE OF SIGNIFICANCE**

### **12.1 RARITY**

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### **12.2 REPRESENTATIVENESS**

*Point Cloates Lightstation (Ruin)* assists in understanding the place, and represents a typical example of a lighthouse in an isolated location, albeit that it that has fallen into ruin since its decommissioning. (Criterion 6.2)

The fine craftsmanship of *Point Cloates Lightstation (Ruin)* demonstrates the importance accorded to the building of lighthouses, even in the most remote locations. (Criterion 6.2)

### **12.3 CONDITION**

*Point Cloates Lightstation (Ruin)* is in poor condition. The remaining stone walls of the Lighthouse are stable but weathered, although the concrete balcony is structurally unstable and presents a dangerous situation. The ruins of the Quarters are similarly in poor condition with the remnant stone walls being in an unstable condition.

#### **12.4 INTEGRITY**

*Point Cloates Lightstation (Ruin)* no longer functions for the original purposes. The entire site is a ruin that is of tourist interest. Clearly the original function will never be reinstated, but the remaining fabric provides evidence of the original use. The place has moderate integrity.

#### **12.5 AUTHENTICITY**

*Point Cloates Lightstation (Ruin)* shows no evidence of changes to the fabric over time, with the exception of deterioration through lack of use, and all that remains is original fabric. The place displays high authenticity.

### 13. SUPPORTING EVIDENCE

The documentary evidence has been compiled by Irene Sauman, Historian. The physical evidence has been compiled by Laura Gray, Heritage and Conservation Consultant.

Additional information has been sourced from Considine & Griffiths, *Lighthouse Conservation Assessment: Point Cloates, Exmouth, Western Australia*, Australian Maritime Safety Authority, May 2000, which is an assessment of the 1966 Lightstation.

#### 13.1 DOCUMENTARY EVIDENCE

*Point Cloates Lightstation (Ruin)* comprises the sandstone ruins of Point Cloates Lighthouse and Quarters and associated remnants, built in 1910 and decommissioned in 1936. There is a current Lightstation, erected in 1966, located a kilometre from the site.

The first lighthouse built in Western Australia was on Rottnest Island, to enable safer approach to the Fremantle port. It began operation in 1851. Albany was the major port of the Swan River Colony at this time, and lights were established there on Breaksea Island and King Point in 1858. These lighthouses were of masonry construction. In 1878, a prefabricated cast iron light tower, imported from England, was erected at Point Moore to serve the Geraldton port.<sup>1</sup>

The construction and maintenance of lighthouses along the coastline was the responsibility of each colony, but it was not until the granting of Responsible Government in 1890 and the discovery of gold that Western Australia could afford to build more lighthouses. The need was also greater, as the rapidly increasing population and spread of settlements meant a greater number of shipping movements around the coast. The developing pearling industry, and gold finds in the Pilbara and Kimberley regions, led to further pastoral expansion in those areas. Three lighthouses were built in the late 1890s, and eight lights came into operation between 1900 and 1905. While the population of the State stood at 179,000 in 1900 it had reached 282,000 by 1911.<sup>2</sup>

In 1906, the Federal Government indicated its intention to take over control of all coastal lights. This prompted a flurry of activity from the West Australian Government, because, as the Colonial Secretary pointed out:

[I]f we do not get all necessary lights established before that I am afraid it will be difficult to get the Federal Govt to put them there, but if the lights are erected now, the F. Govt. must continue them.<sup>3</sup>

The area of coastline most in need of navigation lights was the north west coast. At the request of the Public Works Department, the Chief Harbour Master, Captain G. Irvine, called for submissions from shipmasters 'in the trade' as to where lights should be established in the north west. Cape

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1 Cumming, D. A., Glasson, M. & McCarthy, M., *Lighthouses on the Western Australian coast and off-shore islands*, WA Maritime Museum, Fremantle, November 1995, pp. 6-9.

2 Cumming, D. A., Glasson, M. & McCarthy, M., op cit, pp. 6-9.

3 Correspondence 25 September 1906, Harbour & Lights Dept file, SROWA, AN 16/5, ACC 1066 Item 549/1911.

Inscription, Point Cloates, Bedout Island and Cape Leveque were the most favoured sites.<sup>4</sup>

A Board of Enquiry was established to interview shipmasters and make final recommendations. The Board concurred with the original choices, submitting their report on 13 March 1907. The previous day, however, the steamship *Mildura*, sailing from Wyndham to Fremantle, had been wrecked off the North West Cape and the siting of lighthouses in that section of the coast, in particular at Point Cloates, was called into question. Following an enquiry into the circumstances of the shipwreck, the Board recommended an additional three lights for the area, but only one, at Vlaming Head, was approved for construction at the time.<sup>5</sup>

The State had insufficient funds to build all five lighthouses, so it proceeded with construction of the original four and left the fate of the Vlaming Head Lighthouse to the Federal Government.<sup>6</sup>

Point Cloates was considered dangerous because of the set of the currents, the low lying land in the vicinity and the reefs extending offshore. The wreck of the *Perth*, which had gone down off the Point in 1878, was still visible. Later wrecks included the *Benan*, a 1338 ton full-rigged ship which was transporting coal to Hong Kong and was wrecked on 30 December 1888, and the lugger *Queen*, wrecked on 25 January 1892 with one life lost.<sup>7</sup>

In 1910, *Point Cloates Lightstation (Ruins)* was erected on Cloates Hill, which was part of Lyndon Location 73 and located within the Ningaloo Station pastoral lease.<sup>8</sup> Locally available sandstone was used to build the tower and Quarters, the stone being described as of excellent quality<sup>9</sup>, a pleasant warm brown in colour, but costly to work on account of its hardness. The Lighthouse was 47 feet high to the gallery floor. The internal ironwork, such as floors and stairs, were designed by the Harbour and Lights Department and constructed under contract in Perth. The light was provided by Chance Bros Ltd of Birmingham, and comprised a three-sided optic, with flashes one third of a second duration and eclipses four and two-thirds of a second.<sup>10</sup> The light was fuelled by vaporized kerosene.<sup>11</sup>

The duplex Lighthouse Quarters were of a similar design to those at Vlaming Head, except that the central rooms in one duplex half were slightly larger than in the other.<sup>12</sup> The larger dwelling may have been designed for the head light keeper. Each duplex half comprised a living room, two bedrooms, kitchen, bathroom and store room, and spacious verandah back and front.<sup>13</sup>

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4 Correspondence 25 September 1906, Harbour & Lights Dept file, 549/1911, op cit.

5 Correspondence, 13 & 23 March, 2 April 1907, Harbour & Lights Dept file, Item 549/1911, op cit; *Northern Times*, 23 March 1907.

6 Correspondence, 4 October 1909, Harbour & Lights Dept file, AN 16/5 ACC 1066, Item 959/1909.

7 Miller, Cecily, *Photographical History of Carnarvon and Gascoyne Region*, Vol. 7, Shire of Carnarvon [1990s], p. 907, from police journals.

8 Point Cloates lighthouse, National Archives file, Series PP828/1, 1975/75, 1936-1971.

9 Le Page, J.S.H., *Building a State*, Water Authority of Western Australia, Leederville WA, 1986, p.349.

10 Farrar, G. E., 'Recent examples of lighthouse construction on the West Australian coast', *Western Australian Institution of Engineers. Proceedings*, 1912, pp. 103-111.

11 Brewis, Commander, *Lighting of the Western Coast of Australia (King George Sound to Cambridge Gulf)*, Gov Printer Victoria, November 1912, p. 21.

12 Physical evidence, sketch floor plan.

13 Farrar, G. E., op cit; physical evidence.

An oil store, stabling and wash-houses were also provided. A 2-foot wide tramway, about 2.5 miles in length, connected the Quarters and oil store with the beach landing place. Goods were moved from the beach landing on a trolley pulled along the tram track by horse-power. An area of about fifteen acres was fenced in for the use of the light keepers. An 80-foot tall flagstaff was erected for signalling ships. The construction work was carried out 'departmentally' at a total cost of £13,265.<sup>14</sup>

The first lightkeeper in residence at Point Cloates was P.E. Stuart, with assistant F. Hill. Both remained in residence until 1924.<sup>15</sup>

The Commonwealth Navigation Act covering lighthouses was proclaimed in 1911, but the Commonwealth did not take control until 1915.<sup>16</sup> When Commander Brewis conducted his survey of lighthouses for the Commonwealth Government in 1912, he recommended that wireless telegraph communications be installed and a Morse lamp provided for communication with ships. He also recommended that the accommodation be increased for the employment of third light keeper, as the Lighthouse was 'in a very isolated position'.<sup>17</sup> At the time of his survey, there was one married and one unmarried keeper resident. The extra accommodation does not appear to have been provided, and post office directories continued to list only two staff at Point Cloates.<sup>18</sup>

The pilotage information provided for the northern anchorage at Point Cloates stated:

Approach with Pt Cloates Lighthouse bearing 157 degrees, keep in the middle of the fairway between the reefs until clear of the Northern Reef, then haul to the Eastward until well clear of the Northern Reef. The entrance is not always safe, but with caution it can be made with safety in moderate and fine weather. The holding ground is fair.<sup>19</sup>

Another entrance into Point Cloates anchorage was through Black Rock Passage.

The light keepers kept watch throughout the night, starting between four and six pm and finishing as late as eight am. The light source was derived from kerosene vapour sprayed onto the mantle and the lens was rotated by a system of gears, motivated by a weight situated in a column running up the centre of the tower. It was the duty of the light keeper to keep up the pressure in the kerosene tanks and to periodically wind the lens weight. Maintenance and other work on the light had to be carried out during the daylight hours.<sup>20</sup>

Following the departure of Stuart and Hull in 1924, the lightkeeper was H. J. Fowles, assisted by A. Wood.<sup>21</sup> Wood had first been employed at Cape

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14 Farrar, G. E., op cit.

15 Wises Post Office Directories 1910-1925.

16 Correspondence 14 October 1936, National Archives file, 1975/75, op cit.

17 Brewis, Commander, op cit, p. 21.

18 Wises Post Office Directories 1912-1936.

19 Cumming, D. A., Glasson, M. & McCarthy, M., p. 14A.

20 Keen, *Conservation Plan*, op cit, pp. 9 & 14, citing, 'Report of watches kept and duties performed, NW Cape', National Archives file, PT 457/3, 1944-1964.

21 Wises Post Office Directories, 1928-1936.

Naturaliste in 1919. In 1928, Fowles was replaced as head light keeper by H. T. Pearse, who was resigning after 23 years in the service.<sup>22</sup>

After Pearse's retirement, Wood was promoted to head lightkeeper, a post he retained until he was appointed head lightkeeper at Rottneest in 1935-36. During this time he was assisted by W. G. McColl (1929-1933) and C. J. Johnson (1934-1936).<sup>23</sup>

Point Cloates Lighthouse had been constructed on a parabolic sand dune, which eventually became unstable, threatening the stability of the structures. In 1936, an unattended acetylene gas fuelled light on a 74-foot steel tower was established on Frazer Island, a sand cay in Norwegian Bay visible from the Point. The new light was to replace the Point Cloates Lighthouse. Head light keeper J. Turner, who had replaced Wood in 1936, and assistant light keeper C. S. Johnson were the last light keepers employed at Point Cloates, and their last task was to set up the light at Frazer island. They left the Point on 14 October 1936. The lantern and operating equipment from Point Cloates Lighthouse appear to have been removed at this time.<sup>24</sup>

With the abandonment of *Point Cloates Lightstation (Ruin)*, letters were sent to pastoral stations in the area requesting offers for purchase and removal of the Quarters, but the only offer received was from D. & L. Black of Ningaloo Station, who offered to rent and maintain the place for two years at £5 a year. The offer was accepted.<sup>25</sup> The Lighthouse tower and site remained in the ownership of the Commonwealth.

In December 1937, Lefroy & MacBolt took over Ningaloo Station and after paying the next six months rent, declined to continue with the rental agreement, as they had no need for quarters. They reported that the Lighthouse were deteriorating and 'tumbling down'. The roof was rusting and wind erosion was undermining the foundations. In September 1939, Ningaloo Station purchased the Quarters from the Commonwealth Department of the Interior for £30, and paid £5 for the remaining one mile of tram track and a small shed at each end.<sup>26</sup> Timber and iron were removed from the roof of the Quarters and stone was removed from the walls over time. In 1958, Commonwealth interest in the Lighthouse tower and site were reassigned to the State and the land was re-incorporated into the pastoral lease, which was in the hands of F. E. & E. J. Lefroy at that time. The Lefroy's purchased the Lighthouse tower for £5.<sup>27</sup>

Meanwhile, the unattended light on Frazer Island was subject to sand drift and erosion caused by storms and the action of the sea. By 1965, the island had been eroded to within six feet of the tower's concrete base. On 6 May 1966, the Frazer Island tower collapsed into the sea and a temporary light was erected on the Island. A new Lightstation was promptly established on Perth Hill, one kilometre from Point Cloates Lighthouse, on Lyndon Location 71. This second Point Cloates Lightstation tower was a 4 metre high fibreglass

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22 Point Cloates lightkeepers, National Archives file, Series K1184, 91/10/1, 1926-1936.

23 Wises Post Office Directories, 1924-1928.

24 National Archives file, 91/10/1, op cit.

25 Correspondence 14 October 1936, National Archives file, 1975/75, op cit.

26 Correspondence 14 December 1937 & 27 September 1938, National Archives file, 1975/75, op cit.

27 Correspondence 16 April 1958, National Archives file, 1975/75, op cit.

cabinet fitted with a sixth order rotating light. The Lightstation came into operation on or about 16 July 1966 and the temporary light on Frazer Island was discontinued.<sup>28</sup> In 1983, the Lightstation was converted to solar power.<sup>29</sup>

A conservation analysis of the Point Cloates Lightstation (1966) was commissioned by the Australian Maritime Safety Authority and undertaken by Considine & Griffiths Architects. In their report of May 2000, the opinion expressed was that the Lightstation would be below threshold for entry on the Register of Heritage Places.<sup>30</sup>

In 2004, *Point Cloates Lightstation (Ruin)* remains as a ruin. The Lightstation continues to function as a coastal light.

## 13.2 PHYSICAL EVIDENCE

*Point Cloates Lightstation (Ruin)* is located on Ningaloo pastoral station, approximately 100 kilometres south of Exmouth that is located 1270 kilometres north of Perth. The site is accessed off the Minilya Exmouth Road, onto an unsealed road for 30 kilometres through the Bullara and Ningaloo Pastoral stations. Within 1 kilometre of Ningaloo Homestead that is located in close proximity to the Indian Ocean, a track veers to the south west and skirts around the base of Cloates Hill, to approach *Point Cloates Lightstation (Ruin)* from the west. Further west, the Quarters is located on a level site, with the Lighthouse a further 50 metres up the hill, to the east. *Point Cloates Lightstation (Ruin)* is a landmark on the Ningaloo coastline.

*Point Cloates Lightstation (Ruin)* comprises the ruins of Point Cloates Lighthouse and Lighthouse Quarters and associated remnants.

The Lighthouse is prominent on Cloates Hill, approximately 2 kilometres east of the Point Cloates, on the Indian Ocean and Jane Bay on the south. The Lighthouse is a landmark rising about 9.0 metres in height from the highest point of Cloates Hill. The 4.25 metre diameter base is defined by the remains of a concrete apron perimeter. The Lighthouse is constructed of local sandstone, with rendered interior walls. The exterior walls are detailed with pointed stone and quoining about the entry doors, and windows. The stone walls taper up from the base to the curved concrete balcony element at 9.0 metres in height. The remains of the concrete balcony encircle the stone base form. Sections that have collapsed are at the base of the Lighthouse and the remains are cracked and structurally unstable. The lantern section has been removed from the Lighthouse tower.

The footprint of the Lighthouse is circular. The ground floor is concrete. The double opening at ground level is located on the south east side of the Lighthouse. The interior walls have a render finish. There is no physical evidence of various levels through the height of the Lighthouse, except the remnants of some wall brackets that supported the platform floors and fixing elements associated with the staircase around the interior wall. The window openings are central within the thick stone walls with deep rendered reveals on the interior and exterior. The rusted remains of the central steel column

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<sup>28</sup> Frazer Island lighthouse, National Archives file, Series PP486/1, 1955/385, 1945-1967.

<sup>29</sup> Considine & Griffiths Architects, *Lighthouse conservation assessment: Point Cloates, Exmouth, Western Australia*, Australian Maritime Safety Authority, May 2000, p. 9.

<sup>30</sup> Considine & Griffiths Architects, op cit, p. 2.



that penetrated the centre of the Lighthouse to the underside of the gallery floor, remains partially in place at the top, but mostly collapsed on the floor of the Lighthouse.

The Lighthouse Quarters is located 50 metres west down a steep slope, on a levelled area. Aligned on a north south axis, the remains of the Quarters straddle the narrow ridge of Cloates Hill. The ruins of the Quarters clearly delineate the floor plan and the pointed face stone construction of the local sandstone, as for the Lighthouse. The roof, verandahs, floors, windows and doors are no longer insitu and most of the walls are only partly remaining. The east wall that remains mostly intact has been painted. The floor plan forms an elongated 'H' with east and west wings comprising 3 rooms, on a east-west alignments. Clearly there was a breezeway connection between each of the wings and the central section that comprises four rooms. The remains of the interior walls show a plaster finish, the excavated floor area indicates there was a timber floor. In the north wing there are the rusted remains of a stove within a fireplace. The remains of the fireplace in the east wing seem to indicate it may have been a mirror reverse in layout from the west wing.

A further 20.0 metres west of the Quarters is the off-form concrete pad of what was likely a water tank.

Westwards towards the coast, approximately 1 kilometre away across several dunes, located on Perth Hill, is the 1966 Lightstation and associated elements as described in the *Lighthouse Conservation Assessment, Point Cloates, Exmouth, Western Australia*, prepared by Considine and Griffiths in 2000.

The 1966 Lightstation and associated elements are of no cultural heritage significance.

*Point Cloates Lightstation (Ruin)* is in poor condition with only remnants of stone walls remaining, and the concrete element at 9.0 metres high, cracked and structurally unstable. It has a low degree of integrity, as it no longer functions as the original purposes but has some tourist interest. Except for the destruction and removal of fabric, there has been no intervention to the original surviving fabric that demonstrates a high degree of authenticity.

### 13.3 COMPARATIVE INFORMATION

There are twenty-three lighthouses entered on the HCWA database, of which fourteen are on the State Register. All lighthouses in the State are unattended, the last attended light being Cape Naturaliste, which was automated in 1996.

Point Cloates Lighthouse was one of five lighthouses installed on the North West Coast between 1909 and 1912, and had the tallest masonry tower at 47-feet. The other four lighthouses are:

Vlaming Head Lighthouse & Quarters, part of the *Vlaming Head Lighthouse Group* (Place 00837) was built in 1912. It is a concrete construction with a 30-foot high tower and Quarters of the same duplex design to Point Cloates Lighthouse Quarters. The Lighthouse is associated with a World War Two Radar Station & the Quarters are occupied by the owner/manager of the

extensive tourist operation on the site known as the Lighthouse Caravan Park. *Vlaming Head Lighthouse Group* is currently undergoing assessment.<sup>31</sup>

*Cape Inscription Lighthouse and Quarters* (Place 3261) located on Dirk Hartog Island, south of Carnarvon, is of similar concrete construction to Vlaming Head. The tower was 34-feet in height. The Quarters is of similar duplex design and is currently undergoing restoration work for the purpose of a tourist attraction, including the addition of a new roof structure and roof cladding. The place is on the State Register.<sup>32</sup>

*Cape Leveque Lighthouse* (Place 7198) has a cast iron tower designed and manufactured in Perth. It has a height of 28.3 feet to the gallery floor. The duplex Quarters were built to the same standard plan but were timber-framed, clad with horizontal corrugated iron on the exterior. This construction was designed to cool quickly in the evening, and was an adaptation to the tropical location. The Quarters are not extant. The Lighthouse is on the State Register.<sup>33</sup>

The fifth light at Bedout Island, was an unattended light powered by acetylene gas. It was the first of its type in Western Australia. The tower was an open-braced steel structure 51 feet tall, on a concrete base. It was demolished in 1970 and replaced with a stainless-steel lattice tower, again the first of its type in the State.<sup>34</sup> Bedout Island Lighthouse is not entered on the HCWA database or the State Register.

Lighthouses constructed in the second half of the twentieth century were for the most part unattended lights on steel lattice towers.

*Cape Naturaliste Lighthouse and Quarters* (Place 2914) came into operation in 1904. The Quarters consist of three identical single cottages. A custodian occupies one dwelling as a residence and a museum is located in another. *Woodman Point Lighthouse & Keepers' Cottages* (Place 508) built in 1902, are single bungalow style residences of limestone construction. *Carnarvon Lighthouse Keeper's Cottage (fmr)* at Babbage Island, Carnarvon (Place 462) is a single weatherboard bungalow built in 1897 and occupied as a museum. *Bathurst Lighthouse & Quarters*, Rottnest (Place 517) is a limestone and fibro bungalow built in 1900. All these quarters are on the State Register. Some have been abandoned and allowed to fall into ruin.<sup>35</sup>

#### 13.4 KEY REFERENCES

Harbour and Lights Department files, State Record Office as referenced.

Files relating to Point Cloates Lighthouse held at the National Archives, Perth, as referenced.

#### 13.5 FURTHER RESEARCH

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31 Farrar, G. E., op cit; HCWA assessment documentation, Place 00837.

32 Farrar, G. E., op cit; HCWA assessment documentation, Place 2461; personal knowledge.

33 Farrar, G. E., op cit; HCWA assessment documentation, Place 7198.

34 Lighthouses of Western Australia website, [www.upnaway.com](http://www.upnaway.com).

35 HCWA database and assessment documentation.

