



Ramsar Information Sheet

Published on 10 January 2024

Update version, previously published on : 11 May 1999

United Kingdom of Great Britain and Northern Ireland (Overseas territories)

Warwick Pond



Designation date	11 May 1999
Site number	986
Coordinates	32°16'05"N 64°48'12"W
Area	4,35 ha

<https://rsis.ramsar.org/ris/986>

Created by RSIS V.1.6 on - 10 January 2024

Color codes

Fields back-shaded in light blue relate to data and information required only for RIS updates.

Note that some fields concerning aspects of Part 3, the Ecological Character Description of the RIS (tinted in purple), are not expected to be completed as part of a standard RIS, but are included for completeness so as to provide the requested consistency between the RIS and the format of a 'full' Ecological Character Description, as adopted in Resolution X.15 (2008). If a Contracting Party does have information available that is relevant to these fields (for example from a national format Ecological Character Description) it may, if it wishes to, include information in these additional fields.

1 - Summary

Summary

Warwick Pond occupies a low-lying peat-filled basin in a gently undulating lowland landscape. It contains the largest permanent freshwater pond on Bermuda. This is surrounded by a broad strip of fringing mixed-species marsh at the northern end. Locally rare native marsh plants such as the Chair Maker's Rush *Schoenoplectus americanus* and Arrow-leaved morning glory *Ipomoea sagittata* are found in this marsh, along with cattails, grasses and ferns. During the summer mudflats are exposed. The higher ground surrounding the pond basin is mostly wooded, apart from two small agricultural fields.

The pond biota is limited likely due to a combination of high water temperatures in summer, unstable organic sediment, nutrient run-off from surrounding land and gradual sedimentation. It nevertheless supports an internationally important population of the endangered endemic 'freshwater adapted' Bermuda killifish *Fundulus bermudae*, which has been used to populate two further ponds on Bermuda. The site also contains a notable subpopulation of the Endangered endemic Bermuda sedge *Carex bermudiana*, and a number of surviving trees of the Critically Endangered endemic Bermuda cedar *Juniperus bermudiana*. It is also noted as the most important mudflat area for passage of transient shorebirds on Bermuda and as an important location for resident and migratory waterfowl.

Warwick Pond is an important location for recreation and education. The Bermuda National Trust maintains a nature trail with interpretive signage. Pollution from surface water run-off is a major concern, along with the gradual encroachment of vegetation on to the mudflats. Invasive plant species also pose a challenge to reforestation efforts using native and endemic plants.

2 - Data & location

2.1 - Formal data

2.1.1 - Name and address of the compiler of this RIS

Responsible compiler

Institution/agency	Bermuda Government
Postal address	DENR Headquarters, the Botanical Gardens, 169 South Road, Paget, DV04, Bermuda

National Ramsar Administrative Authority

Institution/agency	Department for Environment, Food and Rural Affairs
Postal address	2 Marsham Street, London SW1P 4DF

2.1.2 - Period of collection of data and information used to compile the RIS

From year	1999
To year	2023

2.1.3 - Name of the Ramsar Site

Official name (in English, French or Spanish)	Warwick Pond
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2.1.4 - Changes to the boundaries and area of the Site since its designation or earlier update

(Update) A. Changes to Site boundary	Yes <input checked="" type="radio"/> No <input type="radio"/>
(Update) The boundary has been delineated more accurately	<input checked="" type="checkbox"/>
(Update) The boundary has been extended	<input type="checkbox"/>
(Update) The boundary has been restricted	<input type="checkbox"/>
(Update) B. Changes to Site area	the area has increased
(Update) The Site area has been calculated more accurately	<input checked="" type="checkbox"/>
(Update) The Site has been delineated more accurately	<input type="checkbox"/>
(Update) The Site area has increased because of a boundary extension	<input type="checkbox"/>
(Update) The Site area has decreased because of a boundary restriction	<input type="checkbox"/>
(Update) For secretariat only. This update is an extension	<input type="checkbox"/>

2.1.5 - Changes to the ecological character of the Site

(Update) 6b i. Has the ecological character of the Ramsar Site (including applicable Criteria) changed since the previous RIS?	Not evaluated
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2.2 - Site location

2.2.1 - Defining the Site boundaries

b) Digital map/image
<2 file(s) uploaded>

Former maps	0
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Boundaries description

The geographical coordinates for the site are 32°16'06"N, 64°48'13"W. It is located on the Main Island of Bermuda, adjacent to Middle Road in Warwick Parish, 3 km SW of Hamilton.

2.2.2 - General location

a) In which large administrative region does the site lie?	Bermuda
b) What is the nearest town or population centre?	City of Hamilton

2.2.3 - For wetlands on national boundaries only

a) Does the wetland extend onto the territory of one or more other countries? Yes No

b) Is the site adjacent to another designated Ramsar Site on the territory of another Contracting Party? Yes No

2.2.4 - Area of the Site

Official area, in hectares (ha):

Area, in hectares (ha) as calculated from GIS boundaries

2.2.5 - Biogeography

Biogeographic regions

Regionalisation scheme(s)	Biogeographic region
Marine Ecoregions of the World (MEOW)	Tropical Northwestern Atlantic
WWF Terrestrial Ecoregions	Neotropic

3 - Why is the Site important?

3.1 - Ramsar Criteria and their justification

- Criterion 1: Representative, rare or unique natural or near-natural wetland types

Hydrological services provided

See section 4.5.

Other ecosystem services provided

See section 4.5.

Other reasons

Warwick Pond is the largest freshwater pond in Bermuda and a good representative example of a near-natural, regional, small island wetland. There are areas of seasonal mudflats and a broad fringing mixed-species marsh that includes cattail, bulrush, grasses and giant ferns (see Criterion 3).

- Criterion 2 : Rare species and threatened ecological communities

Optional text box to provide further information

A subpopulation of reproductively mature plants of the endemic Bermuda sedge *Carex bermudiana* occurs on a rocky outcrop on the south side of Warwick Pond. This species is listed as Endangered on the IUCN Red List. A total of 242 mature specimens were mapped across Bermuda in 2014, with the 15 mature plants found at Warwick representing 6% of the global population. The woodland also contains a number of surviving endemic Bermuda cedar trees *Juniperus bermudiana*, which is a globally threatened species listed as Critically Endangered on the IUCN Red List.

Warwick Pond also supports an internationally important population of the endemic 'freshwater adapted' Bermuda killifish *Fundulus bermudae* which was used as the original-natural population to populate two further ponds on Bermuda. Scientific research suggests that the killifish populations at the western end of Bermuda (including Warwick Pond) group together in a genetic clade separate from the other Bermuda killifish populations, alluding to the possibility of a separate species. Bermuda's killifishes are rare, threatened and endemic to the Bermudan archipelago. *Fundulus bermudae* is classified as Endangered under the Bermuda Protected Species Act (2003) based on IUCN Criteria.

- Criterion 3 : Biological diversity

Justification

The site is rich in biodiversity. It contains a number of habitat types, including a freshwater pond, seasonal mudflats, and a broad fringing marsh with stands of Narrow-leaved cattail *Typha angustifolia*, Great American bullrush *Schoenoplectus lacustris*, Chair maker's rush *Schoenoplectus americanus*, Arrow-leaved morning glory *Ipomoea sagittata*, Sheathed paspalum *Paspalum vaginatum*, Joint grass *Paspalum distichum*, and Marsh fimbriatylis *Fimbristylis castanea*. The adjacent woodland contains Bermuda sedge *Carex bermudiana*, a number of surviving endemic Bermuda cedar trees *Juniperus bermudiana*, and some of the largest invasive Allspice trees *Pimenta dioica* in Bermuda. The mudflats are an important feeding area for passage shorebirds, regularly supporting 16 species, notably: Semipalmated plover *Charadrius semipalmatus*, Greater yellowlegs *Tringa melanoleuca*, Lesser yellowlegs *Tringa flavipes*, Semipalmated sandpiper *Calidris pusilla*, Least sandpiper *Calidris minutilla*, White-rumped sandpiper *Calidris fuscicollis*, Pectoral sandpiper *Calidris melanotos*, and Stilt sandpiper *Calidris himantopus*. Wintering birds include Pied-billed grebe *Podilymbus podiceps*, various species of heron (e.g. Great blue heron *Ardea herodias*, Yellow-crowned night heron *Nyctanassa violacea*, Green heron *Butorides virescens*), Blue-winged teal *Anas discors*, Sora rail *Porzana carolina* and American coot *Fulica americana*. The Common Common gallinule *Gallinula gleata* breeds on the pond. A total of 143 bird species have been observed at the site. The site also supports one of three freshwater-adapted populations of the endemic Bermuda killifish *Fundulus bermudae*.

3.2 - Plant species whose presence relates to the international importance of the site

Phylum	Scientific name	Criterion 2	Criterion 3	Criterion 4	IUCN Red List	CITES Appendix I	Other status	Justification
Plantae								
TRACHEOPHYTA/ LILIOPSIDA	<i>Carex bermudiana</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	EN	<input type="checkbox"/>	Listed on the Bermuda Protected Species Order 2012	Endemic to Bermuda; listed as Endangered on IUCN Red List
TRACHEOPHYTA/ PINOPSIDA	<i>Juniperus bermudiana</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	CR	<input type="checkbox"/>	Listed on the Bermuda Protected Species Order 2012	Endemic to Bermuda; listed as Critically Endangered on IUCN Red List

3.3 - Animal species whose presence relates to the international importance of the site

Phylum	Scientific name	Species qualifies under criterion			Species contributes under criterion				Pop. Size	Period of pop. Est.	% occurrence 1)	IUCN Red List	CITES Appendix I	CMS Appendix I	Other Status	Justification	
		2	4	6	9	3	5	7									8
Fish, Mollusc and Crustacea																	
CHORDATA/ ACTINOPTERYGII	<i>Fundulus bermudae</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	436	2004-2005			<input type="checkbox"/>	<input type="checkbox"/>	Bermuda Protected Species Act (2003) (Level 2)	Endemic to Bermudian archipelago; listed as Endangered under Bermuda Protected Species Act (2003)

1) Percentage of the total biogeographic population at the site

The population estimate for *Fundulus bermudae* is based on Table 2 in Outerbridge, Davenport and Glasspool (2007).

3.4 - Ecological communities whose presence relates to the international importance of the site

<no data available>

4 - What is the Site like? (Ecological character description)

4.1 - Ecological character

The site occupies a low-lying basin set in a gently undulating lowland landscape. It contains a large, permanent, shallow, freshwater pond, measuring about 250 m by 50 m and 20 cm in depth. The water is primarily derived from rain and ground water. It has a pH of about 9 and a high nutrient status (eutrophic). The pond is underlain by a deep layer of sapric peat. The biota is limited likely due to a combination of high water temperatures in summer months, unstable organic sediment, nutrient run-off from surrounding land and gradual sedimentation.

A broad strip of fringing marsh is present around the pond. This is subject to periodic flooding and contains distinct zones of vegetation in which Narrow-leaved cattail *Typha angustifolia*, Great American bullrush *Schoenoplectus lacustris*, Joint grass *Paspalum distichum*, Sheathed paspalum *Paspalum vaginatum*, Chair maker's rush *Schoenoplectus americanus*, and Marsh fimbriatilis *Fimbristylis*

Fimbristylis castanea are prominent. It is also one of the last remaining sites where the native Arrow-leaved morning glory *Ipomoea sagittata* grows. Seasonally exposed mudflats arise when water levels fall in the summer, providing a major foraging resource for passage shorebirds.

Woodland occurs on areas of the higher ground surrounding the pond basin. This contains a number of surviving endemic Bermuda cedar *Juniperus bermudiana* trees and some of the largest Allspice trees *Pimenta dioica* in Bermuda. Two small sections of the site are used as agricultural fields.

4.2 - What wetland type(s) are in the site?

Inland wetlands

Wetland types (code and name)	Local name	Ranking of extent (1: greatest - 4: least)	Area (ha) of wetland type	Justification of Criterion 1
Fresh water > Lakes and pools >> Tp: Permanent freshwater marshes/pools	Open pond	0	1.08	Representative
Fresh water > Marshes on peat soils >> U: Permanent Non-forested peatlands	Surrounding marsh	0	0.6	Representative

Other non-wetland habitat

Other non-wetland habitats within the site	Area (ha) if known
Agricultural field	0.43
Invasive woodland	2.24

4.3 - Biological components

4.3.1 - Plant species

Other noteworthy plant species

Phylum	Scientific name	Position in range / endemism / other
TRACHEOPHYTA/MAGNOLIOPSIDA	<i>Ipomoea sagittata</i>	Scarce native marshland plant
TRACHEOPHYTALILIOPSIDA	<i>Schoenoplectus americanus</i>	Scarce native marshland plant

Invasive alien plant species

Phylum	Scientific name	Impacts	Changes at RIS update
TRACHEOPHYTA/MAGNOLIOPSIDA	<i>Citharexylum spinosum</i>	Actual (major impacts)	No change
TRACHEOPHYTALILIOPSIDA	<i>Epipremnum aureum</i>	Actual (major impacts)	No change
TRACHEOPHYTALILIOPSIDA	<i>Livistona chinensis</i>	Actual (major impacts)	No change
TRACHEOPHYTA/MAGNOLIOPSIDA	<i>Pimenta dioica</i>	Actual (major impacts)	No change
TRACHEOPHYTA/MAGNOLIOPSIDA	<i>Schinus terebinthifolia</i>	Actual (major impacts)	No change

Optional text box to provide further information

The hillside to the south of Warwick Pond is a dense woodland of Allspice *Pimenta dioica* with Chinese fan palm *Livistonia chinensis*. The ground is densely covered by Pothos vine *Epipremnum aureum*.

4.3.2 - Animal species

Invasive alien animal species

Phylum	Scientific name	Impacts	Changes at RIS update
CHORDATA/ACTINOPTERYGII	<i>Gambusia holbrooki</i>	Actual (major impacts)	No change
CHORDATA/ACTINOPTERYGII	<i>Poecilia sphenops</i>	Potential	No change
CHORDATA/REPTILIA	<i>Trachemys scripta elegans</i>	Actual (major impacts)	No change

Optional text box to provide further information

The Eastern mosquito fish *Gambusia holbrooki* is a predator of the eggs of the endangered endemic killifish *Fundulus bermudae*

4.4 - Physical components

4.4.1 - Climate

Climatic region	Subregion
C: Moist Mid-Latitude climate with mild winters	Cfa: Humid subtropical (Mild with no dry season, hot summer)

Bermuda has a sub-tropical climate, which is hot and humid in summer, mild from autumn to spring, and with gales and strong winds common during the winter.

4.4.2 - Geomorphic setting

a) Minimum elevation above sea level (in metres)

a) Maximum elevation above sea level (in metres)

- Entire river basin
- Upper part of river basin
- Middle part of river basin
- Lower part of river basin
- More than one river basin
- Not in river basin
- Coastal

4.4.3 - Soil

Mineral

(Update) Changes at RIS update No change Increase Decrease Unknown

Organic

(Update) Changes at RIS update No change Increase Decrease Unknown

No available information

Are soil types subject to change as a result of changing hydrological conditions (e.g., increased salinity or acidification)? Yes No

Please provide further information on the soil (optional)

The soils are mainly peat mixed with limited amounts of nutrient-rich silt.

4.4.4 - Water regime

Water permanence

Presence?	Changes at RIS update
Usually permanent water present	No change

Source of water that maintains character of the site

Presence?	Predominant water source	Changes at RIS update
Water inputs from precipitation	<input checked="" type="checkbox"/>	No change
Water inputs from groundwater	<input checked="" type="checkbox"/>	No change

Water destination

Presence?	Changes at RIS update
Feeds groundwater	No change

Stability of water regime

Presence?	Changes at RIS update
Water levels largely stable	No change

Please add any comments on the water regime and its determinants (if relevant). Use this box to explain sites with complex hydrology:

During dry periods (spring-summer months) the area of open water can be reduced by almost half.

4.4.5 - Sediment regime

Sediment regime unknown

Please provide further information on sediment (optional):

The site acts as a sediment trap, gradually accumulating silt and organic matter.

4.4.6 - Water pH

Alkaline (pH>7.4)

(Update) Changes at RIS update No change Increase Decrease Unknown

Unknown

4.4.7 - Water salinity

Fresh (<0.5 g/l)

(Update) Changes at RIS update No change Increase Decrease Unknown

Unknown

4.4.8 - Dissolved or suspended nutrients in water

Eutrophic

(Update) Changes at RIS update No change Increase Decrease Unknown

Unknown

4.4.9 - Features of the surrounding area which may affect the Site

Please describe whether, and if so how, the landscape and ecological characteristics in the area surrounding the Ramsar Site differ from the site itself: i) broadly similar ii) significantly different

Surrounding area has greater urbanisation or development

Surrounding area has higher human population density

Surrounding area has more intensive agricultural use

Surrounding area has significantly different land cover or habitat types

Please describe other ways in which the surrounding area is different:

The site is surrounded by a mix of arable land used for vegetable production, woodland and sub-urban housing including condominium developments. It is bounded to the north by a major road. Within 50 m of the site boundary there is a church, graveyard and golf course. Within 300 m to the west is a football club, post office and shopping plaza. About 250 m to the north is Purvis Primary School.

4.5 - Ecosystem services

4.5.1 - Ecosystem services/benefits

Provisioning Services

Ecosystem service	Examples	Importance/Extent/Significance
Genetic materials	Genes for tolerance to certain conditions (e.g., salinity)	High

Regulating Services

Ecosystem service	Examples	Importance/Extent/Significance
Erosion protection	Soil, sediment and nutrient retention	Low
Hazard reduction	Flood control, flood storage	Medium

Cultural Services

Ecosystem service	Examples	Importance/Extent/Significance
Recreation and tourism	Nature observation and nature-based tourism	High
Recreation and tourism	Picnics, outings, touring	Low
Scientific and educational	Educational activities and opportunities	Low

Supporting Services

Ecosystem service	Examples	Importance/Extent/Significance
Biodiversity	Supports a variety of all life forms including plants, animals and microorganisms, the genes they contain, and the ecosystems of which they form a part	High

Optional text box to provide further information

The site provides benefits through the diversity of lifeforms and ecosystems that it supports. A phylogenetic investigation of the endemic 'freshwater adapted' Bermuda killifish *Fundulus bermudae* populations at the western end of Bermuda (including Warwick Pond) reveals a distinct genetic clade, separate from the other Bermuda killifish populations, alluding to the possibility of a separate species (Outerbridge 2020). The pond and marshes also act as a sediment trap, gradually accumulating silt and organic matter; they also help store flood waters after heavy rain. The site is also used for recreation and education, including birdwatching and other forms of quiet recreation. The Bermuda National Trust maintains a nature trail around the pond that has interpretive signage. Field trips are made by local schools and a teacher resource guide has been produced by under the Bermuda National Trust AXIS Education Programme. A study of geochemical composition of the surface and sediment pore waters was undertaken by Shosa et al (2004), and migrant bird usage has been monitored and recorded since 1950 by the Bermuda Audubon Society.

Outside the site: 1000s

Have studies or assessments been made of the economic valuation of ecosystem services provided by this Ramsar Site? Yes No Unknown

4.5.2 - Social and cultural values

- i) the site provides a model of wetland wise use, demonstrating the application of traditional knowledge and methods of management and use that maintain the ecological character of the wetland
- ii) the site has exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland
- iii) the ecological character of the wetland depends on its interaction with local communities or indigenous peoples
- iv) relevant non-material values such as sacred sites are present and their existence is strongly linked with the maintenance of the ecological character of the wetland

<no data available>

4.6 - Ecological processes

<no data available>

5 - How is the Site managed? (Conservation and management)

5.1 - Land tenure and responsibilities (Managers)

5.1.1 - Land tenure/ownership

Private ownership

Category	Within the Ramsar Site	In the surrounding area
Foundation/non-governmental organization/trust	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Provide further information on the land tenure / ownership regime (optional):

The site is owned and managed by the Bermuda National Trust.

5.1.2 - Management authority

Please list the local office / offices of any agency or organization responsible for managing the site:

Bermuda National Trust

Provide the name and/or title of the person or people with responsibility for the wetland:

Natural Heritage Officer for the Bermuda National Trust

Postal address:

Bermuda National Trust, 'Waterville', Paget, PG 05, Bermuda

E-mail address:

palmetto@bnt.bm

5.2 - Ecological character threats and responses (Management)

5.2.1 - Factors (actual or likely) adversely affecting the Site's ecological character

Human settlements (non agricultural)

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Housing and urban areas	Medium impact		<input type="checkbox"/>	No change	<input checked="" type="checkbox"/>	No change

Transportation and service corridors

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Roads and railroads	Medium impact		<input type="checkbox"/>	No change	<input checked="" type="checkbox"/>	No change

Human intrusions and disturbance

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Recreational and tourism activities	Low impact		<input checked="" type="checkbox"/>	No change	<input checked="" type="checkbox"/>	No change

Invasive and other problematic species and genes

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Invasive non-native/ alien species	High impact	High impact	<input checked="" type="checkbox"/>	No change	<input checked="" type="checkbox"/>	No change

Pollution

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Household sewage, urban waste water	High impact		<input checked="" type="checkbox"/>	No change	<input checked="" type="checkbox"/>	No change
Agricultural and forestry effluents		Medium impact	<input checked="" type="checkbox"/>	No change	<input checked="" type="checkbox"/>	No change

Climate change and severe weather

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Droughts		High impact	<input checked="" type="checkbox"/>	No change	<input checked="" type="checkbox"/>	No change

Please describe any other threats (optional):

Pollution from surface water run-off is a major concern. Middle Road, one of the most heavily used roads on Bermuda, is located approximately 17-20 m from the northern boundary of the pond. It is likely that, as with other ponds subject to surface water runoff that have been found to have high levels of hydrocarbon pollutants (especially heavy, diesel-family hydrocarbons from vehicular fuel spillage, sump drippings, etc.), it can be assumed that Warwick Pond is similarly affected. These heavy hydrocarbons have been directly implicated in high mortality and deformity rates among Marine toads *Rhinella marina* in Bermuda.

Another threat is reduction in the area of open water, which has been shrinking due to the gradual encroachment of *Typha angustifolia* on to the mudflats surrounding the pond, especially at the northern end. A series of aerial photographs dating back to the 1940s shows that the area of open water has been reduced by about 24%. It is unclear whether this is due to natural processes, eutrophication intake and/or a rising water table caused by increasing sea levels.

In the woodland, invasive plant species are present, e.g. Chinese fan palm *Livistona chinensis* and Brazilian pepper *Schinus terebinthifolia*, which pose a challenge to reforestation efforts using native and endemic plants.

5.2.2 - Legal conservation status

National legal designations

Designation type	Name of area	Online information url	Overlap with Ramsar Site
Nature Reserve, designated under the Bermuda National Trust Act (1969)	Sherwin Nature Reserve	https://bnt.bm/environment/protected_open_space/central_wetlands /	partly

5.2.3 - IUCN protected areas categories (2008)

- Ia Strict Nature Reserve
- Ib Wilderness Area: protected area managed mainly for wilderness protection
- II National Park: protected area managed mainly for ecosystem protection and recreation
- III Natural Monument: protected area managed mainly for conservation of specific natural features
- IV Habitat/Species Management Area: protected area managed mainly for conservation through management intervention
- V Protected Landscape/Seascape: protected area managed mainly for landscape/seascape conservation and recreation
- VI Managed Resource Protected Area: protected area managed mainly for the sustainable use of natural ecosystems

5.2.4 - Key conservation measures

Legal protection

Measures	Status
Legal protection	Implemented

Habitat

Measures	Status
Habitat manipulation/enhancement	Partially implemented

Species

Measures	Status
Control of invasive alien plants	Partially implemented

Human Activities

Measures	Status
Communication, education, and participation and awareness activities	Implemented

Other:

The Bermuda National Trust Act (1969) enables the Bermuda National Trust to hold land for the purposes of carrying out the Trust's objectives, including the conservation of natural areas. The land within the site is managed as a nature reserve by the Trust and named in honour of Dennis Sherwin. The Trust also maintains a nature trail along the south side of the pond that has interpretive signage and has also produced a teacher resource guide to support field trips <https://seureservercdn.net/192.169.220.85/ob4.376.myftpupload.com/wp-content/uploads/2020/11/sherwin.pdf>

Some areas of invasive plant species, e.g. Chinese fan palm *Livistona chinensis* and Brazilian pepper *Schinus terebinthifolius*, have been removed and replanted with endemic trees in a collaboration between the Bermuda National Trust and corporate volunteers from local businesses. Red-eared slider terrapins *Trachemys scripta elegans* are periodically trapped and removed from the pond.

5.2.5 - Management planning

Is there a site-specific management plan for the site? No

Has a management effectiveness assessment been undertaken for the site? Yes No

If the site is a formal transboundary site as indicated in section Data and location > Site location, are there shared management planning processes with another Contracting Party? Yes No

URL of site-related webpage (if relevant):

Sherwin Nature Reserve Teacher Resource Guide
<https://secureservercdn.net/192.169.220.85/ob4.376.myftpupload.com/wp-content/uploads/2020/11/sherwin.pdf>

5.2.6 - Planning for restoration

Is there a site-specific restoration plan? No need identified

Further information

See section 5.2.4.

5.2.7 - Monitoring implemented or proposed

Monitoring	Status
Birds	Implemented

Records of migrant birds have been kept since 1950 by the Bermuda Audubon Society. As of December 2021, 344 bird sighting check lists had been submitted to ebird.org by volunteers with 143 observed bird species.

6 - Additional material

6.1 - Additional reports and documents

6.1.1 - Bibliographical references

Hayward, SJ, Gomez, FH & Sterrer, W (eds.) (1981) Bermuda's delicate balance: people and environment. Bermuda National Trust, Paget.

Hepburn, I, Oldfield, S & Thompson, K (1992) UK Dependent Territories Ramsar study: Stage 1. Unpublished report to Department of the Environment, European and International Habitat Protection Branch, Bristol, from International Waterfowl and Wetlands Research Bureau/ NGO Forum for Nature Conservation in UK Dependent Territories, Slimbridge/ Sandy (Research contract, No. 7/2/126).

IUCN (2022) The IUCN Red List of Threatened Species. <https://www.iucnredlist.org/>

Outerbridge, M.E., Davenport, J. and Glasspool, A.F. (2007) Distribution, population assessment and conservation of the endemic Bermuda killifishes *Fundulus bermudae* and *Fundulus relictus*, *Endangered Species Research*, 3: 181-189.

Outerbridge, M.E. (2020) Recovery Plan for the killifishes of Bermuda (*Fundulus bermudae* & *Fundulus relictus*). Department of Environment and Natural Resources, Government of Bermuda. <https://environment.bm/s/Killifishes-Recovery-Plan-FINAL-July-2020.pdf>

Pienkowski, MW (ed.) (2005) Review of existing and potential Ramsar sites in UK Overseas Territories and Crown Dependencies. (Contractor: UK Overseas Territories Conservation Forum, Peterborough.) Final report on Contract CR0294 to the UK Department for Environment, Food and Rural Affairs, Bristol. www.ukotcf.org

Proctor, D & Fleming, LV (eds.) (1999) Biodiversity: the UK Overseas Territories. Joint Nature Conservation Committee, Peterborough.

Scott, DA & Carbonell, M (eds.) (1986) A directory of neotropical wetlands. IUCN/IWRB, Cambridge/Slimbridge.

Shosa, JD, CJ Becker, and BF Rueger (2004) A geochemical comparison of the surface and sediment pore waters of Spittal Pond and Warwick Pond, Bermuda. *Proceedings of the 11th Symposium on the Geology of the Bahamas and Other Carbonate Regions*, p. 205-214.

Thomas, M.L.H. (2005) Bermuda's Wetlands. Project Nature Field Study Guide, Fourth Edition, Bermuda Zoological Society. https://bamz.org/sites/bamz.org/files/Bermuda%27s%20Wetlands_0.pdf

Wingate, DB (1984) Taking stock of Bermuda's wetland heritage. Department of Agriculture and Fisheries, Hamilton.

Previous versions of RIS

Warwick Pond Ramsar Information Sheet UK41010. Version 3.0, 13/06/2008, produced by JNCC.

Warwick Pond Ramsar Information Sheet GB986RIS. Dated 10 February 1999.

Related websites/documents

Bermuda Audubon Society webpage <http://www.audubon.bm/birding/locations/40-warwick-pond-sherwin-nature-reserve>

Sherwin Nature Reserve Teacher Resource Guide, Bermuda National Trust 2014

<https://securereservercdn.net/192.169.220.85/ob4.376.myftpupload.com/wp-content/uploads/2020/11/sherwin.pdf>

Warwick Pond ebird sightings <https://ebird.org/hotspot/L2710734/>

6.1.2 - Additional reports and documents

i. taxonomic lists of plant and animal species occurring in the site (see section 4.3)

<no file available>

ii. a detailed Ecological Character Description (ECD) (in a national format)

<no file available>

iii. a description of the site in a national or regional wetland inventory

<no file available>

iv. relevant Article 3.2 reports

<no file available>

v. site management plan

<no file available>

vi. other published literature

<2 file(s) uploaded>

6.1.3 - Photograph(s) of the Site

Please provide at least one photograph of the site:



Panoramic view from the south-eastern end of Warwick Pond, Bermuda (Mark Outerbridge, 02-05-2010)

6.1.4 - Designation letter and related data

Designation letter

<1 file(s) uploaded>

Date of Designation