Guidelines for the Management of Nature Based Tourism Activities at Qurm Nature Reserve

2017
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**About Qurm Nature Reserve**

The Qurm Nature Reserve is located in the Qurm neighborhood in the heart of the capital city of Muscat facing the Gulf of Oman at the foot of the Hajar Mountains. Khawr Qurm lies on the alluvial deposits at the mouth of Wadi Aday.

The Qurm Nature Reserve is part of wadi Aday catchment area. It is one of the few Omani mangroves which has been declared a nature reserve in 1975 (RD 38/75) and designated as Ramsar site of international importance in 2013. Located in the coastal plain of wadi Aday it is a very important spot for several local coastal species, terrestrial and aquatic. The total area of the reserve is 104.5775 hectares.

QNR mangroves are natural forests that comprised of one species *Avicennia marina* like the rest of natural mangrove forests found in Oman. The mangrove covering area is around 60 hectares. Tall and healthy mangroves are growing on shores along eastern and western water channels. Some natural seedlings are developing on shore near mouth of western water channel. Tall trees reach to approximately 7-8m in height.
Besides its importance as shelter, nursery, breeding, biodiversity promotion and food supply, mangrove forests also act as a buffer zone between the open ocean and the land. This not only protects the shores from damage, but also its many inhabitants—包括 humans. Mangroves protect the coastal land areas from life threatening erosion and siltation problems, preventing a great deal of property damage and sometimes even human death.

Figure 2: Mangrove trees

**Purpose of Qurm Nature Reserve**

The primary objective of Qurm Nature Reserve is to conserve the unique and relatively pristine condition of the globally significant biological diversity and ecological processes of the Reserve and to manage the surrounding area on a sustainable and ecologically sound basis. Additional uses of the reserve should be compatible with this conservation mission. These include: providing visitors with opportunities for non-consumptive recreation; encouraging nature based tourism that can provide direct and indirect economic benefits for local communities, and allowing for limited and rational use of resources.
NATURAL CHARACTERISTICS

CLIMATE

Climate of northern Oman is a typically desert climate with random and rare precipitations, high temperatures and continuous sunshine during day time. Qurm Nature Reserve is located in the Muscat area. The average temperature varies from 24°C to 33°C. During the summer the temperature can reach 50°C and the atmospheric humidity increases up to about 100%. In winter, the temperature ranges from 15°C to 22°C and the humidity reduced.

PHYSICAL FEATURES

Surface waters in the lagoon (khawr) are relatively murky except at the khawr mouth. Water salinity was lower upper stream than downstream. The salinities in middle and lower channel were ranging from 3.0 to 3.9% and salinity in upper channel was about 2%. dissolved oxygen was about 5mg/l in mouth of khawr and 3.5mg/l in upper stream. The value of COD was increasing to the upper khawr but the values were less than 4mg/l. Khawr Qurm lies on the alluvial deposits at the mouth of Wadi Aday. PH in the water channel in the area ranges from 7 to 8. Tide regimen is semidiurnal through a year showing diurnal inequality. The difference of tide level between high tide and low tide ranges 1.8m at spring tide and 1.0m at neap tide.

Surface soils under mangrove vegetation along two water channels are basically silty and clayey with humus accumulation under anaerobic condition. Depths of these surface soils are around 60 to 70 cm in midstream of water channel and thinner at lower khawr. Sand layers are always recognized in the subsurface. Salt marsh area covered by halophytes lies on the center of Qurm Nature Reserve, this is how the site used to look like until it's central area was washed out by cyclone Gonu in 2007. Soils in this area are deep and sandy. Firm sand soils cover the surface and soft sand soils lie underneath. Rock outcrops are observed on the eastern border of this area and upstream areas of western shore along east water channel. Sand layers cover the areas near the mouth of the west water channel.

HYDROLOGICAL VALUES

QNR provides shoreline protection during cyclone, shoreline stabilization, maintenance of water quality as well as its role in natural water cycle. It is also functions as retention pond of runoff water.
GENERAL ECOLOGICAL FEATURES

There are 194 species of birds, 27 species of crustaceans, 48 species of molluscs and 40 species of fish. On the landward fringe of the mangroves, the fiddler crab, *Uca inverse*, was recorded in wet sand, while the hermit crab, *Coenobita scaevola*, occurred in drier sandy areas. The large mud snail (*Terebralia palustris*) was abundant on wet sand in the shade of the trees, but did not usually occur in drier areas or in the open sun. On the seaward fringe of the mangroves, Ring-legged Fiddler Crab *Uca annulipes* and Fiddler crab *U. vocans* occurred with other small burrowing crabs (Mangrove crab *Perisesarma guttatum* and *Macrophthalmus depressus*). The small mud snail, *Cerithidea cingulata*, was abundant at the edge of the channel, while the molluscs, *Cerithiids Cerithium caeruleum*, *Furrowed Clusterwink Planaxis sulcatus* and *Small rock oyster Saccostrea cucculata*, occurred among the prop roots.

Small fish, hermit crabs (Diogenes sp) and shrimps (Palaemon sp) were abundant in the channel. Burrowing in the sediment of the channel, callianassid shrimps, polychaetes, Common Top Shell *Umbonium vestiarium*, *Dosinia alta* and *Pirinella conica* were found. Along the pools at the landward end of the reserve, waders (*Ruff Common Redshank*, *Common Greenshank*, *Common Sandpiper* and herons (*Grey Heron*, *Great White Egret*) were common, while in the mangrove channels Striated Heron occurred with Western Reef Egret, and Sand and Kentish plovers on sandy edges. Gulls and Terns are common along the beach (*Slender billed Gull*, *Sooty Gulls*, *Lesser Crested Tern*, *Sandwich Tern*).

Figure 3: Grey heron & little ringed plovers
The waterways of mangrove forests are ideal for young fishes to grow, due to the calm waters, abundant food and many hiding places available (e.g. aerial roots). Over 40 species have been recorded at Qurm Nature Reserve (QNR), including many commercial species such as the following, Killifish *Aphanius dispar*, Grunter *Terapon jarbua*, Silver-biddy *Gerres sp.*, Glass fish *Ambassis sp.*, Mullet *Ellochelon vaigiensis*, Eyebrow goby *Oxyurichthys ophthalmonema*, Indo-Pacific tropical sand goby *Favonigobius rechei*, Insignia prawn-goby *Cryptocentroides insignis*.

On the dune side of Al Qurm nature reserve, *Halopyrum mucronatum* is found. Where vegetation grows on the Sabkha deposits in the central part of the reserve, *Sabit Suaeda vermiculata* is dominant. At the edges of the mangroves and channels in wet saline sand, *Halopeplis Halopeplis perfoliata*, *Mamoncillo Aeluropus lagopoides* and Glaucous Glasswort *Arthrocnemum macrostachyum* occur. On drier sandy areas mainly on the landward side of the mangroves, Qataf *Suaeda aegyptiaca* is dominant. Other common plants recorded on stable sandy areas include Hesar *Indigofera oblongifolia*, Oshub *Cyperus conglomeratus*, and *Limonium Limonium stocksii*. On the landward southeast side of the reserve along the pools, large clumps of Sea rush *Juncus rigidus* follow the edges of the watercourse. More terrestrial vegetation typical of wadis includes *Tamarix mascatensis*, Umbrella Thorn *Acacia tortilis*, Ghaf *Prosopis cineraria*, Christ’s Thorn Jujube *Ziziphus spina* christi and *Osaj Lycium shawii*.

On the landward southeast side of the reserve along the pools, large clumps of *Juncus rigidus* follow the edges of the watercourse.

**Threats to Mangroves**

QNR is located at the heart of Muscat and due to its urban location, the mangrove ecosystem is under constant pressure from human activities such as construction works, wastewater discharge, illegal fishing and introduction of invasive species... etc. This site was strongly affected by the construction of highway along the shoreline and buildings adjacent to the forest. Furthermore, a part of the forest was washed away by cyclone gonu in 2007. This mangrove forest, however, still has a valuable resource for education/research. Regular floods affecting the site are usually violent.
Figure 4: The site before and after cyclone Gonu 2007

Invasive plant species found in the site are, Ghaf bahri _Prosopis Juliflora_, and Shoreline Sea-purslane (_Sesuvium portulacastrum_) which were found to spread very fast and occupy a large area of the site. The second species was found to grow between mangroves and utilize its nutrients resulting in unhealthy/dead mangroves. Since those species quickly reproduce, the Ministry of Environment and Climate Affairs (MECA) is carrying out regular eradication activities to minimize their effects and maintain a healthy status of the site.

Figure 5: Shoreline sea-purslane species found in the reserve
SOCIAL AND CULTURAL VALUES

Fisheries production, recreational value and aesthetic value are examples of values that QNR could provide to the community. Through the nature based tourism approach it will be developed into the first conservation/education site in the city with an educational visitor center. The reserve is located in the center of urban area facing to the beach. Many residents and tourist visit this area to enjoy beach football and barbeques. The site provides scenery view to the visitors in the circumstances.

An archeological site* is located in Qurm Nature Reserve (RH6 - THE FIRST INDIAN OCEAN FISHERMEN). Excavation studies in the site confirmed in recent years the existence of mangrove trees and fishing activity in this area. This site is dated from the 6th millennium to the beginning of the 5th millennium BC, thanks to the use of the radiocarbon dating.


NATURE BASED TOURISM VISION AT QNR:

The vision for Nature Based Tourism at the Qurm Nature Reserve is that visitors to the Nature Reserve will have opportunities to observe and learn about the unique and relatively pristine condition of the globally significant biological diversity and ecological processes of mangrove ecosystem at Qurm Nature Reserve and to contribute into managing the surrounding area on a sustainable and ecologically sound basis.

They will also have the chance to take a nature based Guided walks & boating tours (Kayak & stand up paddling) into the Nature Reserve with an Arabic and English-speaking guide. A visitor center will provide tourists with information about the Nature Reserve, including available nature based activities and exhibits about the area's natural history and cultural heritage. Dining and toilet facilities will be available for them as well.

Visitors will have the chance to purchase special produced items featuring mangroves and its values. Local community from Muscat will benefit economically from tourists through the sale of their products, foods and meals, and through being employed as guides, drivers, and other jobs at the Nature Reserve.

REASONS AND ADVANTAGES FOR TOURISM DEVELOPMENT IN QNR:

✓ Qurm Nature Reserve consists of one of the largest areas of natural mangrove forest in the Arabian Desert and Oman sea ecoregion.
The area has high hydrological importance as it is the only mangrove area in the city that provides a natural control against tropical storms and cyclones that have regularly affected the city of Muscat (Cyclone Gonu, 2007, Cyclone Phet, 2010).

QNR is a Ramsar site (wetland of international importance) since 2013.

QNR has two mangrove nurseries that can supply a number of 24000 mangrove seedlings per year which played a major role in the rehabilitation efforts by MECA to restore mangroves in the Sultanates since the year 2000 through the national project of mangrove transplantation.

An archeological site is located in Qurm Nature Reserve (RH6 - THE FIRST INDIAN OCEAN FISHERMEN).

The area is located in the center of urban area facing to the beach. Many residents and tourist visit this area to enjoy beach football and barbeques. The site provides scenery view to the visitors in the circumstances.

Oman is located on a flying route of migratory birds between Africa and Russia. The site provides resting and feeding area for the migrate birds as well as domestic birds.

**Tourism Goals for Qurm Nature Reserve**

1. Visitors learn about the purposes and values of Qurm Nature Reserve.
   - Visitors understand the reserve’s contribution to biodiversity in Oman.
   - Visitors understand that the primary purpose of the reserve is conservation.
   - School children participate in education programs about the biodiversity and conservation values of QNR.

2. Tourists have a positive experience during their visit to Qurm Nature Reserve.
   - No visitors are injured or become lost while touring or visiting the reserve.
   - Visitors are satisfied with their experience at the reserve.

3. Visitation to the Qurm Nature Reserve increases.
   - The number of people visiting the reserve increases over previous years.
   - The number of visitors participating in nature based tours, hiking, and/or boating tours increases over previous years.

4. Tourists are willing to pay to visit Qurm Nature Reserve.
   - The majority of arriving visitors pay the entry fee.
5. Management of tourism and visitors at Qurm Nature Reserve is not a financial burden to MECA (e.g., income and revenue from visitors helps pay for the management of the tourism).
   - The total cost to manage, maintain and operate all the tourism activities/programs will equal or exceed the revenues/income being collected from tourist fees.

6. SME's provide services, (e.g., food, handicrafts, etc.) to tourists visiting Qurm Nature Reserve.
   - Tourists visiting QNR eat and pay for a traditional Omani meal that is provided by (and paid to) people from the local community (Women's Society).
   - Nature based tours at QNR are guided by English speaking local people who have training in conservation.
   - Local people sell locally made products (e.g., honey, art, handicrafts, souvenirs) for tourists visiting the reserve.

7. Tourism activities at Qurm Nature Reserve have minimal negative effects on the Nature Reserve's natural resources and cultural heritage.
   - The number of visitor violations (illegal activities, e.g., collecting plants, cutting wood, throwing trash, harassing wildlife, fishing etc.) decreases compared to the previous year.
   - The number of birds, fish... and mangroves in QNR does not decrease compared to the last five-year average.
   - The amount of visitor deposited trash in the natural areas of the reserve decreases compared to previous years.

8. Visitors become a “friend” of Qurm Nature Reserve and MECA; they support the conservation purposes of the Protected Area.
   - The number of people/scouts who volunteer at QNR increases over the previous year.
   - The number of violations reported to rangers by local people/visitors increases over the previous years.

**Zonning Classification:**

The land uses classification in the protected area determines activities that may or may not be allowed in areas of the protected area based on the distribution of natural and cultural and human activities. There are several benefits of zoning:

1. The process of zoning helps managers, operators, visitors and local communities to understand what park values are located where;
2. Zoning oriented to establishing standards of acceptable human impact helps to
control the spread of undesirable impacts; and
3. Zoning provides a better understanding of the distribution and nature of different recreation and tourism opportunities within and around the protected area.

**Core Zone:**

The core zone is of highest conservation value, with minimal intervention as so to maintain ecosystem as integrity and minimize disturbance. Because of the dynamic nature of the mangrove ecosystem at this site the frequency and intensity of flood events are included within the core zone.

**Allowed activities:**
- Conservation
- Research
- Monitoring
- Education and awareness
- Limited guided tours

**Not allowed activities:**
- Infrastructure
- Water sports
- Discharge and disposal of waste
- Dredging and reclamation
- Damaging mangrove and other saline plants
- Logging
- Fishing and hunting
- Any actions that may harass/ disturb biodiversity found at the site (for example, collection of gastropods...etc.)

**Limited-Use Zone (Buffer Zone):**

Functions as a buffer in minimizing negative and external effects of human activities on the core areas, but also promotes connectivity between the zones and the wider landscape. It also should have some protection, so that they can be designed to allow low-intensity sustainable use, helping maintain their function for both biological and cultural diversity conservation.

Or, Wise use zone

The Ramsar Convention defines wise use of wetlands as “the maintenance of their ecological character, achieved through the implementation of sound ecosystem approaches, within the context of sustainable development, to maintain environmental, economic and social sustainability in land use decisions, encourage compromises (“trade-offs “) between individual and collective interests.”
Allowed activities:
- Conservation
- Research
- Monitoring
- Education and awareness
- Limited tourist activities (bird watching, guided tours).
- Water sports (kayak, SUP)
- Construction of low impact structures (board walks, multiple platforms, bird watching hides, boat launch platform, storage)

Not allowed activities:
- Infrastructure
- Discharge and disposal of waste
- Dredging and reclamation
- Damaging mangrove and other saline plants
- Logging
- Fishing and hunting
- Any actions that may harass/ disturb biodiversity found at the site (for example, collection of gastropods...etc.)

Limited Development Zone:
The area where infrastructure development is limited in line with the objectives of the establishment of the reserve, taking into account the values and benefits of the reserve. The purpose of the Limited development zone is to identify land known to be significantly affected by one or more development constraints, particularly natural hazards.

The Limited development zone is to ensure:

- development is compatible with the constraints on the site;
- people, property and infrastructure are safe from flood hazard and storm tide flood events;
- essential community services are located and designed to remain functional during and immediately after flood events;
- flood-storage capacity and flood-carrying capacity of a waterway is not reduced;
- hydraulic characteristics of land are preserved.

Allowed activities:
- Conservation
- Research
- Monitoring
- Education and awareness
- Tourist activities (visitor center).
- Water sports
- Limited Infrastructure (Visitor center, F&B, Toilets, Storage… etc.)

**Not allowed activities:**
- Discharge and disposal of waste
- Dredging and reclamation
- Damaging mangrove and other saline plants
- Logging
- Fishing and hunting
- Any actions that may harass/ disturb biodiversity found at the site

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**Figure 6:** Zoning classification for Qurm Nature Reserve (Source: MECA)

**TOURISM AND RECREATION ACTIVITIES:**

Nature reserves/ protected areas are characterized by the existence of many natural and cultural components that can become of tourist value. These components when included in protected area tourism activities approaches can be converted into a tourist product taking into account that the main purpose of the establishment of the reserve is protection/ conservation.

The following should be considered when planning for tourism development in the nature reserve.
- The natural and cultural environment within the reserve should form the basis for all other uses and values affecting the reserve and its management. These fundamental assets must not be put at risk;

- Protected area tourism depends on maintaining a high quality environment and cultural conditions within the area. This is essential to sustaining the economic and quality of life benefits brought by tourism;

- The protected area management organization exists to protect the values for which the area was originally established through, among other things: active management of tourism and tourists; sharing of responsibility for management with tourism operatives, local communities and visitors; and providing potential economic opportunities for tourism;

- Protected area visitors expect to find facilities, programmes, and recreational and learning opportunities within the reserve, but not all demands can be met, as some of these expectations may be inconsistent with the reserve goals and objectives;

- Managing expectations is jointly the responsibility of reserve managers and other tourism operators.

**Carrying Capacity:**

According to the World Tourism Organization (WTO), Tourism carrying capacity is defined as “the maximum number of people that may visit a tourist destination at the same time, without causing destruction of the physical, economic, socio-cultural environment and an unacceptable decrease in the quality of visitors’ satisfaction”.

The carrying capacity of physical, biological, economic and social characteristics can be defined as follows:

- **Physical carrying capacity:** This is the maximum number of tourists that an area is actually able to support.

- **Economic carrying capacity:** This relates to a level of acceptable change within the local economy of a tourist destination, it is the extent to which a tourist destination is able to accommodate tourist functions without the loss of local activities.

- **Social carrying capacity:** This relates to the negative socio-cultural related to tourism development.

- **Biophysical carrying capacity:** This deals with the extent to which the natural environment is able to tolerate interference from tourists.

- **Capacity of facilities:** refers to the type of facilities and amounts to support visitors such as parking.
The availability of infrastructures and facilities in the protected area is one of the basic requirements for the activities carrying capacity management and such development should not destroy habitats and natural resources. Examples of such infrastructures are as follows:

- Signboards providing information on the carrying capacity of the activities in the protected area.
- Signboards for the guided tour area and safety guidelines.
- Signboards for the biodiversity distribution and general information about the site.
- Toilets and garbage containers at the assigned zones in the protected area.

The carrying capacity of visitation at Qurm Nature Reserve is limited to 100-120 persons per day.

<table>
<thead>
<tr>
<th>Activity type</th>
<th>Zone</th>
<th>Number of visitors, tours and equipment’s</th>
<th>Operation</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kayaking and sub tours</td>
<td>Buffer zone</td>
<td>4 Tours/day</td>
<td>Booking</td>
<td>Tours are depending on tidal fluctuations and weather conditions.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3-5 canoes/tour</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>20-30 persons/day</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mangrove Nurseries</td>
<td>Limited development zone</td>
<td>20 persons/tour</td>
<td>Without booking</td>
<td>Tours are (unlimited)</td>
</tr>
<tr>
<td>Footpaths</td>
<td>Buffer zone/ limited</td>
<td>10 person/tour</td>
<td>Without booking</td>
<td>bird migration seasons.</td>
</tr>
<tr>
<td></td>
<td>development zone</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multiple platform/ Board</td>
<td>Buffer zone</td>
<td>5-10 person/tour</td>
<td>Without booking</td>
<td></td>
</tr>
<tr>
<td>Walks/ Bird Watching hides</td>
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</table>

Table (1): Activities carrying capacity limits in the protected area zones.
**Guidelines for Sensitive Development of Infrastructure and Services:**

Tourist facilities and programmes within protected areas should act as standard-setters in environmentally sensitive design and operations. Good design and sympathetic operations can increase local and visitors’ awareness of key reserve values, and demonstrate to all visitors the protected area management’s commitment to environmental protection.

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Guidelines</th>
</tr>
</thead>
</table>
| Environmental impact assessments (EIA)  | ◦ Consider whether or not a statutory or informal environmental assessment is required, including ecological, social, cultural and economic evaluation.  
◦ Develop a mitigation plan          |
| Landscaping and site design             | ◦ Develop a context plan - examining the entire surrounding area and community, including valued views and resources.  
◦ Develop a management plan for the site, including the relationship with the surrounding/ adjacent protected area, addressing zoning and access.  
◦ Develop a site plan, focusing on detailed design. This should minimize site disturbance, physical intrusion and intervention.  
◦ Tree management considers tree retention, relocation or replacement.  
◦ Plant special recommended vegetation to supply a more natural environment that provides habitat for birds, mammals and other wildlife.  
◦ Use indigenous species for landscaping.  
◦ Consider cultural aspects of site.  
◦ Ensure linkages are considered (for land use, human circulation, nearby trails, other facilities, outpost camps, etc.).  
◦ Identify the desired paths across the reserve for the visitors movement, that have no/least impact on the reserve nature. |
| Built facilities                        | ◦ Heights should be limited to a single floor to minimize negative visual impacts on the reserve’s perception  
◦ Mass should be kept as minimal as possible in size and proportionally in scale with existing vegetation and topography.  
◦ In any visual impact assessment, Dominance should always be to the existing vegetation, topography and site morphology |
<table>
<thead>
<tr>
<th>Resource consumption and conservation</th>
<th>Design and operate services so as to minimize use and production of water, energy, waste, sewage, effluent, noise, light and any other emissions.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Encourage the use of renewable sources of energy.</td>
</tr>
<tr>
<td></td>
<td>Consider a permaculture approach (which mimics the interconnectedness and diversity of flora and fauna in natural systems) to turn waste into resources and problems into opportunities.</td>
</tr>
<tr>
<td>Materials</td>
<td>Materials should be indigenous, appropriate to the area, and involve low maintenance.</td>
</tr>
<tr>
<td></td>
<td>Materials used in construction should be “sourced” to ensure that they come from sustainable production systems, or should be recycled where appropriate.</td>
</tr>
<tr>
<td></td>
<td>Ensure that all materials brought onto the site for construction are used – apply a “no waste” condition to contractors.</td>
</tr>
<tr>
<td>New and low impact technologies</td>
<td>Use new technologies in construction and operations where appropriate, practical, cost effective, and where there are no perverse effects elsewhere (e.g. “smart” room controls and sensors, low heat transfer glazing assemblies, free cooling/heating, energy from solar/ wind/micro-hydro, power controls for energy savings, re-use of produced heat, etc.).</td>
</tr>
<tr>
<td></td>
<td>Use new technologies, which are more effective in stand-alone equipment and vehicles, as well as in facilities.</td>
</tr>
<tr>
<td>Services</td>
<td>Develop and implement service standards to meet the needs of all stakeholders – visitors, agencies, private sector, staff.</td>
</tr>
</tbody>
</table>
| **Quality control** | - If guidelines and conditions of operation of the protected area agency are clear, reporting or decisions should be simple and clear.
- Baseline information should be maintained (ideally from pre-construction) so as to assess what, if any, impacts may occur as a result of construction and operations. These may be very simple observations, or quite complex.
- Set conditions of operation and timelines such that the developer/concessionaire can afford to invest in quality and visitor satisfaction, as well as obtain a reasonable return on the investment.
- Initiate regular meetings with managers and facility operators to help resolve problems or issues. |
| **Green practices** | - Develop green purchase policies.
- Use biodegradable cleaning products.
- Use alternatives to watering, such as mulching, alternate mowing and composting.
- Develop an integrated pest management plan.
- Use bulk or re-usable storage containers.
- Keep all systems and equipment well maintained, since all systems degrade in efficiency over time.
- Encourage staff vehicle pooling for staff transport to site.
- Ensure marketing materials are environmentally sensitive, and use electronic communications. |
| **Programming** | - Reward staff for creativity and monitoring.
- Involve visitors in developing ongoing improvements.
- Manage human use - a human use strategy (see above) assists this.
- Consider partnerships with others (e.g. other public agencies) to assist in programming.
- Develop high staff to client ratios.
- Build monitoring into programme activities. |
**Facilities Development:**

In Oman there is a need for recreation/tourism facilities so that public, school children, tourists and researchers can visit and observe the mangroves, their wildlife and scenery without damaging the environment they have come to enjoy. The following list indicates some of the facilities already present and the type of facilities that may be required in or near to mangrove ecosystem.

Facilities for Mangrove Conservation and Management:
- Mangrove Nursery
- Small building for equipment
- Fencing

Facilities for Recreation/Tourism:
- Parking
- Shade
- Picnic tables
- Footpaths and boardwalks
- Small boat access
- Bird observation hide
- Information panels and leaflets
- Waste bins and collection system
- Toilets

**Education Facilities:**

• Access to classroom/library with books/leaflets
• Wetlands exhibit at QNR visiting center
• Interactive wetlands information kiosks
• Mangrove poster series
• An interactive web quest for school students
• A wetlands curriculum unit for school teachers

Research Facilities:
• Access to laboratory, museum collections of flora and fauna

**APPROVED TOURISM ACTIVITIES:**

**Kayaking and SUP tours:**

✓ MECA staff, MOT experts and rangers must be included in determining and approving the exact travel routes and seasons for the kayaking tours in order to avoid sensitive areas and to ensure that the routes are safe.

✓ A training and safety briefing of how to properly use kayaks/canoes shall be conducted before each tour.

✓ Kayaks and canoes used in all activities shall be of a type that is suitable for the nature and duration of the activity.

✓ All on-water activity involves risks and hazards, most of which can be eliminated through planning, good Instructor or Guide skills and effective management. Licensed tour guides and safeguards with safety and swimming skills must be around at all times.

✓ Tour guides are to complete and report on incidents to the reserve management team.

✓ All users to sign a kayak liability waiver before the tour.

✓ All users renting equipment’s from operators to sign a renting waiver.

✓ All users are to wear an appropriate Lifejacket and helmets (especially with children).

✓ During the day, all users are encouraged to apply sunscreen on exposed areas for protection from sun burns,

✓ Take account of water flows, levels, weather and forecasted conditions.
Keep a safe distance away from wildlife to avoid causing disturbance and stress to mangroves and sea birds as well as their nesting, shelter and feeding areas e.g. mudflats, lagoons.

During the tour, visitors will not be allowed to get out of their canoes/kayaks except at designated “stops”.

Check, Clean and Dry canoes & wet equipment after use to minimize the risk or prevent the spread and environmental damage from invasive aquatic species and diseases.

Provide an appropriate place for storing the canoes and equipment.

Provide a stable platform to launch the boats and make sure that access is safe at all times.

All water sports users will be required to register and purchase an entry fee at the visitor center/ranger station before starting their tour.

All users will be provided with a brochure that includes a route map and information about route difficulty, time to complete the trek, description of features that can be observed along the route, safety guidelines, “leave no trace” messages, and emergency contact numbers.

Figure 7: Kayaking inside the reserve
**Mangrove Nursery:**

- The existing MECA mangrove nurseries should be rehabilitated and used for visitor orientation and education.
- MECA staff and rangers must be included in determining and approving the rehabilitation process.
- Safety boots/ diving boots should be used during high tide.
- Maintain facilities in regular basis (shade, wind breaker and water channels).
- In coordination with MECA staff conduct an annual sowing of mangrove seeds in the nurseries.

Figure 8: Existing mangrove nursery at the reserve

**Footpaths/Bench Chairs:**

- MECA staff, MOT experts and rangers must be included in determining and approving the exact location/ routes/ paths for the guided tours in order to avoid sensitive areas and to ensure that the routes are safe.
- All routes to have information sign boards highlighting the importance and values of the reserve.
✓ Footpaths in the Nature Reserve are not to be paved, but may be improved with rock or gravel to address any safety concerns.

✓ At least two paths of differing length and difficulty should be established.

✓ Collection and destruction of biodiversity from the reserve is prohibited.

✓ All participants will be required to register and purchase entry fee at the visitor center/ranger station before starting their walk. All participants will be provided with a brochure that includes a route map and information about path difficulty, time to complete the trek, description of features that can be observed along the route, safety guidelines, “leave no trace” messages, and emergency contact numbers.

**MULTIPLE PLATFORM/ BOARD WalkS/ BIRD WATCHING HIDES**

✓ MECA staff, MOT experts and rangers must be included in determining and approving the location of the above mentioned facilities.

✓ Follow the guidelines for sensitive development of infrastructure and services.

✓ It should be in a location convenient and easy for the rangers to check.

✓ Information “stops” will be included on these facilities highlighting the importance and values of the reserve.

✓ Safety measures should be in place to ensure no injury could occur to the participants in these facilities,

✓ Maintain facilities in regular basis.
Figure 9: Existing facilities at the reserve

**Visitor Center:**

- MECA staff, MOT experts and rangers must be included in determining and approving the location of the visitor center.
- New structure should be constructed. Rangers and MECA staff must be included in determining and approving the design of the building to ensure that their operational needs are met as well as those of visitors.
- Follow the guidelines for sensitive development of infrastructure and services.
- The visitor center needs to include office space for staff, reception area where visitors can purchase their entry fee, and space for education exhibits that provide visitors with information about the natural history and cultural heritage of the Nature Reserve and safety and “leave no trace” messages.
- The facility will be the entry and starting point for visitors; it will be their welcome center, the payment center and where they will discover what tours and activities are available in the Nature Reserve.
- An information teaching center / gallery. Ticket office/ Toilets / Gift shop/ workshop

**Playground for children:**

- Equipment should be made of recyclable materials; no motorized equipment will be permitted. Playground equipment must be concentrated in one location near the visitor center/ designated activities area. A theme that reflects the natural reserve characteristics should be adopted.
**Food Service and Sales Area:**

- Rangers, MOT experts, MECA staff, and local community members must be included in determining and approving the design of these facilities.
- It is envisioned that a small multi-purpose shop would be constructed to provide a location for sale of locally-produced handicrafts and food, as well as a café shop for visitors.
- Plastic eating utensils are not permitted inside the reserve (*QNR is straw free zone*).
- Plastic bags are not permitted inside the reserve.

**Events and Workshop**

- Establish mechanism to rent out facilities at the Qurm Nature Reserve for “events” to generate additional income for MECA.

**Experiencing Nature Activities**

- Installation of animal cams to view live footage of animals at Qurm Nature Reserve
- Integration of modern smart phone technology
- Bird watching
- Exploring with guides
- Photography

**Supporting Guidelines:**

**Guideline for Development of Environmental Education Program**

These guidelines are provided in a separate document (look appendix I)

- MECA staff and rangers must be included in determining and approving the education program.
- Create education programs for school children, college students, scouts, and adults about QNR. This could take place at the park and/or at the student’s school.
- Create a “mangrove friends” group for those interested on volunteering on conservation activities.
Mangrove Protection Guideline

These guidelines are provided in a separate document (look appendix II)

- MECA staff and rangers must be included in determining and approving the mangrove protection guideline.

Mangrove Monitoring Guideline

These guidelines are provided in a separate document (look appendix III)

- MECA staff and rangers must be included in determining and approving the mangrove monitoring guideline.

Mangrove Plantation Guideline

These guidelines are provided in a separate document (look appendix III)

- MECA staff and rangers must be included in determining and approving the mangrove plantation guideline.

Legal Status:

Royal Decree:

Qurm Nature Reserve was declared a nature reserve in 1975 (RD 38/75). The Royal Decree gave the Minister of Environment the authority to issue regulations and organizational decisions for the protected area.

International Significance:

Qurm Nature Reserve is the first Ramsar site in Oman and was designated as wetland of International importance in 19 August 2013.

Regulations:

His Excellency the Minister of Environment and Climate Affairs issued the general regulations of Qurm Nature Reserve by ministerial decision No. ( /2017).

The Reserve General Provisions:

The following activities are prohibited within the reserve and are an essential part of the reserve management plan:

1. Entry to the reserve is not permitted without a written permission issued by MECA.
2. Actions that may cause damage/disturbance to mangrove trees, saline shrubs, other marine life, and non-living natural resources, such as shells or snails, are prohibited.

3. Fishing/hunting activities of fish, crabs and birds of all kinds is not allowed in the reserve.

4. Any dumping or disposal of any liquid waste in the marine environment directly or indirectly is not allowed in the nature reserve.

5. The establishment of any source or work area within the reserve is not permitted without obtaining of an environmental permit confirming its environmental safety, upon the request of the owner to the Ministry of Environment and Climate Affairs. The owner shall be required to remedy the damage and to return the site to its initial state.

6. Cats, dogs or other animals, or any exotic plants or seeds, may not be brought to the reserve.

7. Waste should be placed in designated areas.

**Monitoring and Evaluation:**

There are two types of monitoring for tourism in the reserve:

1. **Monitoring of visitor’s impacts:**
   Visitors of the reserve have environmental and social impacts on the reserve that must be known and managed by the reserve management team. The development of visitors impacts indicators is a key part of understanding these impact methodologies over time.

2. **Monitoring the quality of service and satisfaction of visitors:**
   The plan defines the types of services and facilities that are prepared for visitors and therefore the quality of these services should be monitored for visitors.

**Monitoring indicators for mangrove ecosystem:** (see Mangrove Monitoring Guideline)
### Monitoring indicators for visitors:

<table>
<thead>
<tr>
<th>Type</th>
<th>Objective</th>
<th>Indicator</th>
<th>Monitoring methodology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of visitors</td>
<td>The success of tourism in the reserve, the possibility of exceeding the carrying capacity, the adequacy of the infrastructure</td>
<td>- Numbers of visitors and areas used&lt;br&gt;- Origins of visitors&lt;br&gt;- Favorite activities</td>
<td>- Booking records&lt;br&gt;- Visitor center records&lt;br&gt;- Individual activities records&lt;br&gt;- Visitors survey</td>
</tr>
<tr>
<td>Visitors satisfaction</td>
<td>The degree of appreciation of visitors and the level of experience gained</td>
<td>- % of returning visitors&lt;br&gt;- Satisfaction with the facilities provided&lt;br&gt;- Demand for new and alternative facilities and activities&lt;br&gt;- Feeling crowded</td>
<td>- Visitors survey&lt;br&gt;- Visitors feedback and complains&lt;br&gt;- Sent back food from the café</td>
</tr>
<tr>
<td>Visitors awareness</td>
<td>Visitors’ awareness of the importance of natural and cultural values of the protected area and their responsibility and impact percentage</td>
<td>- % of littering&lt;br&gt;- Selection and appreciation of nature-based activities</td>
<td>- Visitors survey&lt;br&gt;- Monitoring of littering percentage</td>
</tr>
</tbody>
</table>
COMPETITION FOR TOURISM DEVELOPMENT OF QURM NATURE RESERVE

COMPETITION OBJECTIVE:
The government, represented by the Ministry of Climate Affairs in coordination with the Ministry of Tourism, seeks to promote investment of nature based tourism in Nature Reserves according to the criteria set for the development of natural and cultural potentials for Qurm Nature Reserve. The aim of such promotion is to encourage tourism and economic development and to introduce the natural elements of the Sultanate at the same time. Additionally, to highlight the importance of Nature Reserves values and services and their biodiversity contribution at the national and international levels.

DESCRIPTION OF COMPETITION:
The competition is a process to enable specialized and qualified local and international companies and institutions to submit their bids to the Ministry as expression of interest to build and operate the nature based tourism development of Qurm Nature Reserve in the Sultanate of Oman.

ELIGIBILITY TO ENTER THE COMPETITION:
All companies, organizations and investors (local and international) with appropriate skill and ability to invest in nature based tourism with experience in wetland ecosystem have the right to submit their development proposals for the site.

TECHNICAL CONDITIONS FOR INVESTMENT:
The project must achieve the foundations of sustainability, which include the following:

1) Environmental Sustainability
   - Conservation and protection of biological and physical diversity
   - Materials used in the reserve must be recyclable and have no effect on the natural environment.
   - Respect of the zoning requirements.
   - Environmental Impact Assessment
   - Taking into account the landscape in design and construction.
   - The use of clean technology.
   - Conservation and protection of biological and physical diversity.
   - Monitoring and evaluation of visitor activities.
   - Focus on prevention over treatment.
- Promote specialized research.
- Education and awareness in tourism activities.

2) Economic Sustainability
- Activate the local market around the reserve (small and medium enterprises).
- Economic and social programs to raise the livelihood standards of the local community.
- Exchange of benefits between international and local investor and those related to the nature reserve operations and the provision of products and services of the reserve.
- Give priority to the local community.

3) Social Sustainability
- Respect the customs, traditions and culture of the local community.
- Experience the livelihood of local communities and their culture.
- Promote local community products and culture.
- Preservation of cultural heritage and physical human heritage.

**Procedures and Competition Phases**

**First Phase: Submitting the Application**

**First:**

✓ The bidder must complete the competition application form and attach the following documents:
  - Name of the company, its full address, and title of legally authorized person.
  - Previous experience in nature based tourism development in protected areas (wetland ecosystem), including:
    - List of all similar projects the company has completed or is in the process of developing within last five years in the Sultanate or any other country that has similar environment; in addition, to all currently being executed projects, including: (Project Client, Project detailed description, contract value, provided services, execution period and deadline of the project).
• Detailed and specific description about the company’s experience and potential including; classification of experiences whether (local or international); how these will be beneficially applied to the project.

• Statement of the company’s audited budget, banking manifesto testifying capital of the company, and financial assets that prove the company’s ability to invest in the project.

• Concept design. This must comply with Ministry of Environment and Climate Affairs (MECA) Policy, Omani law and principles of sustainable tourism development including but not limited to conserving the cultural and natural heritage of the site including the surface and subsurface aesthetic, geological and ecological values of the site; and prohibiting any activities that may negatively affect the environmental values of the site.

• Statement that the applicant has viewed all documents and special conditions of investment cited in this document.

• Statement confirming the accuracy of the data provided in the submitted documents and undertaking personal responsibility for the submitted data.

• For local companies or international companies already registered in Oman, Attach a copy of:
  o 1. Commercial registration,
  o 2. Company’ registered activities in the Ministry of Commerce and Industry,
  o 3. Affiliation certificate to Oman Chamber for Commerce and Industry, and
  o 4. Affiliation certificate to the Tender Board.

• International Companies not yet registered shall attach their business registration certificates from their home country and shall provide an undertaking stating that if their bid is successful they shall furnish the registration formalities in the Sultanate according to Omani laws within thirty (30) working days from such notification.

✓ The application form and all required documentation shall be placed in a sealed envelope or package addressed to:

His Excellency the Under Secretary of Environment and Climate Affairs
The Committee for Investment in Protected Areas
P.O. Box 323
Postal Code 100, Al Khuwair
Sultanate of Oman
Bidding No. (                ) pertaining to the competition for the best proposal for the Nature based tourism development for Qurm Nature Reserve in the Sultanate of Oman.

✓ The exterior of the envelope or package must not reveal the identity of the Bidder. The package shall be delivered by hand (for international bids, hand delivery by courier is acceptable) to the Ministry office as per the date specified in published media and on the Ministry of Environment and Climate Affairs website.

**Note:** All pages of attached documents must be stamped by the company official stamp.

**SECOND:**
✓ The Ministry evaluation team will open envelops and exclude any ineligible application per required attachment identified in Article (FIRST).
✓ All completed and eligible applications will be evaluated according to the following criteria:

<table>
<thead>
<tr>
<th>No.</th>
<th>Evaluation Criteria</th>
<th>%</th>
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<tbody>
<tr>
<td>1.</td>
<td>Master Plan &amp; Conceptual Design</td>
<td>45</td>
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<tr>
<td>1.1</td>
<td>Understanding of the site and project opportunities and constraints</td>
<td>5</td>
</tr>
<tr>
<td>1.2</td>
<td>The reflection of the Understanding of the site and project opportunities and constraints on the proposed plans.</td>
<td>10</td>
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<tr>
<td>1.3</td>
<td>Proposed site plan, creativity and sustainability of design</td>
<td>10</td>
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<tr>
<td>1.4</td>
<td>Proposed accessibility, entrances and linkages ideas with external existing surrounding road network</td>
<td>5</td>
</tr>
<tr>
<td>1.5</td>
<td>Site organization and circulation, include but not limited to internal site infrastructure locations and access, services locations and proposed circulation, visitor center location visitor’s movement</td>
<td>5</td>
</tr>
<tr>
<td>1.6</td>
<td>Architectural designs, Urban Character concepts and ideas</td>
<td>5</td>
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<tr>
<td>1.7</td>
<td>Local Community engagement</td>
<td>5</td>
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<tr>
<td>2.</td>
<td>Company previous</td>
<td>25</td>
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<tr>
<td></td>
<td>Experience in natural reserves tourism <strong>planning, design</strong></td>
<td>10</td>
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<tr>
<td>2.2</td>
<td>Experience in natural reserves tourism <strong>operating</strong></td>
<td>15</td>
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<tr>
<td>3.</td>
<td>Financial Guarantees</td>
<td>25</td>
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<tr>
<td>3.1</td>
<td>Business plan</td>
<td>10</td>
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<tr>
<td>3.2</td>
<td>Feasibility study</td>
<td>10</td>
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<tr>
<td>3.3</td>
<td>Financial ability</td>
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<tr>
<td>4</td>
<td>Project Time Plan / Schedule</td>
<td>5</td>
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<tr>
<td><strong>Total</strong></td>
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<td><strong>100%</strong></td>
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**SECOND PHASE: FINAL ALLOCATION**

A. The Ministry will select the best complying application within two months after the deadline for receipt of applications and will announce the winner who must attend the Ministry of Environment and Climate Affairs (Directorate General of Nature Conservation) within two weeks of the date of announcement. In case the winner does NOT attend within that period, the Ministry shall select the second ranked as winner pursuant to the evaluated list of bidders.

B. If the Ministry has any comments concerning the winning bid, the Ministry shall require bidder responses to be completed within one month. The winning bid will be rejected if follow up comments and responses are required more than three times.
For Communication, please contact:

Miss Aziza Saud Al Adhoobi
Email: aziza.aladhubi@meca.gov.om
Off. Tel: +968 24404773
GSM: +968 93930033

Mr. Andrew Lawrence
Email: andrew.Lawrence@omantourism.gov.om
Off. Tel: +968 22088217
Expression of interest Application Form
Qurm Nature Reserve Site, Wilayat of Bawshar

(Plot area ha)
Bid No. (/ 2017)

Name of Applicant:
ID No:
Company / Firm:
Commercial Registration No:
P.O.Box: P.C: Office Tel:
Mobile: Fax:
Email:
Mail:

Note: Submission of this form DOES NOT mean acceptance of the application

For Ministry Use: (Documents Directorate)

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<tr>
<th>No:</th>
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<tr>
<th>Notices:</th>
<th>Signature of concerned official:</th>
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