Bathing Water Profile - Rathmullan (2016)

<table>
<thead>
<tr>
<th>Profile Id</th>
<th>BWPR00339</th>
</tr>
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<tbody>
<tr>
<td>Year Of Profile</td>
<td>2016</td>
</tr>
<tr>
<td>Year Of Identification</td>
<td>1992</td>
</tr>
<tr>
<td>Version Number</td>
<td>1</td>
</tr>
</tbody>
</table>

### 1. Profile Details:

<table>
<thead>
<tr>
<th>Toilets Available</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Car Parking Available</td>
<td>Yes</td>
</tr>
<tr>
<td>Disabled Access</td>
<td>No</td>
</tr>
<tr>
<td>First Aid Available</td>
<td>Yes</td>
</tr>
<tr>
<td>Sensitive Area</td>
<td>Yes</td>
</tr>
<tr>
<td>Dogs Allowed</td>
<td>Yes</td>
</tr>
<tr>
<td>Lifesaving Facilities</td>
<td>No</td>
</tr>
</tbody>
</table>

**Figure 1: Bathing Water**

![Bathing Water Profile](image)
2. Bathing Water Details:

**Map 1: Bathing Water Location & Extent**

Rathmullan Beach (Ráth Maoláin) is located on the edge of the village of Rathmullan, which is located on the South Eastern shore of the Fanad peninsula in the North of County Donegal. It is located in the Lough Swilly Coastal waterbody (NW_220_0000) and just North of the Swilly Estuary Transitional waterbody (NW_220_0100) running into the Northwestern Atlantic Seaboard Coastal waterbody (NW_100_0000) within the North Western River Basin District. The designated bathing area is approx. 0.142km² and the extent along the water is approximately is 1380m.

**Main features of the Bathing Water:**

**Type of Bathing Water:** Rathmullan beach consists of a sandy beach in Lough Swilly, which is confined by Rathmullan pier to the South and runs up past Kinnegar to the Glebe outcrop to the North. It is 2.5km across Lough Swilly to Lisfannon Blue Flag beach. Flora/Fauna, Riparian Zone: The riparian zone is semi natural with a pier, car park and walkway at the South end of the beach constricting the beach from eroding further, the rest of the beach is natural. The Rathmullan Wood Nature Reserve is dominated by Sessile Oak (*Quercus petraea*) and Birch (*Betula pubescens*), but many other species are present including exotics such as Beech (*Fagus sylvatica*), Alder (*Alnus glutinosa*) and Willows (*Salix* spp.) occur in the wetter parts. These woodlands display a generally intact structure and support a range of breeding birds, including Woodcock. The site supports a population of Otter, a species listed on Annex II of the EU Habitats Directive.

Lough Swilly is an important site for waterfowl in autumn and winter. The shallow waters provide suitable habitat for grebes and diving duck, while the intertidal flats are used by an excellent diversity of wading birds, including Woodcock. The site supports a population of Otter, a species listed on Annex II of the EU Habitats Directive.

**Water Depth:** There is a deep gradient off Rathmullan Beach with the water depth reaching 1m approx 10m from the water line and continuing out at an even slope into the deeper water of the bay.

**Tidal Range:** Tidal ranges are in the mesotidal range (2-4m) in normal tidal conditions.

**Land Use:** Land use immediately surrounding the designated bathing area consists of car parking facilities, a small play park, the village of Rathmullan and agricultural land. A public road runs behind the beach through the village.

**Local Sites of Interest:** Rathmullan is a small seaside village, situated on the westernshore of Lough Swilly. Rathmullan was the scene of the Flight of the Earls in 1607. There are also the ruins of a medieval Carmelite Friary and graveyard in Rathmullan, which was built in 1516. In the 19th century there was an
English battery, similar to the Martello Towers, situated near the pier to defend Lough Swilly from a possible invasion from France during the Napoleonic Wars. This battery currently serves as a heritage centre. The Rathmullan Sailing and Watersports school operates during the summer. Rathmullan Charters run from the pier organising angling trips along the Swilly and off shore. The Rathmullan Wood Nature Reserve is 2km from the village; this oakwood has a well-developed structure and is rich in plant species. There is also a ferry service between Rathmullan and Buncrana.

**Additional Information:** Beach and Maritime Craft Bye Laws were implemented at Rathmullan beach in 2009. These Bye Laws were introduced to regulate and/or prohibit the use of personal watercrafts, recreational crafts, vehicles, horses, dogs, camping, vendors, water sport schools and to protect the beach and dune systems. Rathmullan Beach receives the Green Coast Award from An Taisce. This is a symbol of excellence, which recognizes; excellent water quality, high environmental standards, good management and community involvement. Green Coast beaches are ideal for those wishing to enjoy a beach experience far removed from the intrusions normally associated with the traditional and more urban seaside beaches.

**Facilities:** Facilities available at the beach include car parking, toilets (seasonal), information boards, recycling, refuse bins and lifeguards (seasonal). During the lifeguarded periods, extra facilities provided by the lifeguards include: emergency information, telephone access, first aid equipment and rescue equipment. There are shops, restaurants etc available in Rathmullan village approximately 300m from the beach.

**Visitor Numbers:** Visitor numbers to the beach vary throughout the season. The maximum number of visitors to the beach during a high season day has been estimated at approximately 1,200 people with a large proportion if users using the water for swimming and a variety of recreational water sports. Throughout the season approximately 35,000 people have been estimated to visit the beach. Visitor numbers are representative of the visitors recorded by the lifeguards that are on duty during the bathing season.

**Activities:** Activities at Rathmullan beach include swimming, fishing, kayaking, boating, sailing, power boating, jet skiing (outside the designated area of the Maritime Craft Bye Laws), diving and other land based activities on the beach. Rathmullan Sailing and Water Sports operate from the beach during the summer months.

**Contributing catchment details:**

Rathmullan Beach is located along the banks of Lough Swilly. The beach is situated in front of the village of Rathmullan and across the bay from Lisfannon Blue Flag Beach. The beach itself has a small catchment area running of the surrounding hills to the shore.

**Contributing Catchment:** The contributing catchment of the designated bathing area for Rathmullan Beach is approximately 1.246km² in area.

**Water Bodies draining to Bathing Area:** There are no waterbodies draining onto the beach or in the catchment area.

**Land Cover and Land Use:**

**Topography:** The catchment consists of a small lowland area surrounding the beach. Rathmullan village is the main population centre, with on-off housing scattered throughout the remainder of the catchment.

**Land Use:** Discontinued Urban fabric makes up nearly 60% of the catchment with a further 17% being classified as pastures and 15% for land principally occupied by agriculture with areas of natural vegetation.

**Soils, Subsoils, Bedrock:** The catchment bedrock is predominantly comprised of Upper Crana Quartzite Formation (84%), the other fraction of bedrock is not yet classified. The main soil/subsoil type in the catchment are surface water/groundwater gleys (75%) and metamorphic till (75%) respectively.

**Formal Designations:** Rathmullan Beach is located within the Lough Swilly Special Area of Conservation (SAC) (Code 002287), Lough Swilly including Big Isle, Blanket Nook and Inch Lake proposed National Heritage Area (pNHA) (Code 000166) and Lough Swilly Special Protection Area (SPA) (Code 004075).

**Population Centres:** Rathmullan village is the only centre of population in the beach catchment with a population of 863 in the electoral district (CSO 2011). This population increases significantly during the summer tourist season.

**Rainfall:** The closest weather station to the designated beach is at Malin Head Weather Station (IC 418 575), which is approximately 35km as the crow flies from the beach. During the bathing water season (2013-2015), the average rainfall (mm) for May, June, July, August and September is 108.7, 63.4, 91.7, 99.6 and 40.8 respectively. Details of the rainfall data can be obtained through www.met.ie
<table>
<thead>
<tr>
<th>Monitoring point details:</th>
<th>The monitoring point for this bathing water is located at the grid reference point IC 300 278.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reason for selection of the monitoring point:</td>
<td>The location of the bathing water monitoring point is the location where most bathers are expected to use the bathing water. The bathing water monitoring point location chosen is always within the area patrolled by the Lifeguards and is usually the area of the beach most heavily used by the public. This area can vary somewhat on this beach depending on tidal and weather influences and is marked by the Lifeguards flags.</td>
</tr>
<tr>
<td>Water quality assessment:</td>
<td>The bathing water quality monitoring carried out at Rathmullan Beach since 2003 has shown consistently good water quality at all times. From the 2010 bathing season, Rathmullan Beach has achieved good water quality status and complied with the EU guide and mandatory values as set out in the Bathing Water Directive (2006/76/EC) and the Quality of Bathing Water Regulations, 2008 (S.I. 79 OF 2008). In the four year assessment period from 2012 to 2015, the current classification for this bathing water is Excellent Quality. The 95%ile classification of <em>E. coli</em> and Enterococci are 79.6 and 145.6 respectively. Rathmullan Beach bathing water will qualify for a Green Coast Award in 2016 based on water quality.</td>
</tr>
</tbody>
</table>
### 3. Identified Pressures:

**Map 2: Bathing Water Catchment**

#### 3.1 Potential pressures in the catchment assessed as posing no risk:

<table>
<thead>
<tr>
<th>Description</th>
<th>Source</th>
<th>Type</th>
<th>Short Term Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>There are a significant number of individual houses located throughout the catchment, which all presumably have some form of on-site effluent treatment system.</td>
<td>On-site Wastewater Treatment Systems</td>
<td>Septic Tank</td>
<td>No</td>
</tr>
<tr>
<td>Approximately 17% of the catchment is classified as pastures and 15% for land principally occupied by agriculture with areas of natural vegetation.</td>
<td>Agriculture</td>
<td>Run off from agricultural land</td>
<td>No</td>
</tr>
<tr>
<td>Bird faeces can affect bathing water as it contains high levels of bacteria (much higher than treated human waste).</td>
<td>Seabirds</td>
<td>Bird colony</td>
<td>No</td>
</tr>
</tbody>
</table>

#### 3.2 Potential pressures in the catchment assessed as posing risk:

<table>
<thead>
<tr>
<th>Description</th>
<th>Source</th>
<th>Type</th>
<th>Short Term Pressure</th>
<th>Nature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heavy rainfall carries an added risk of pollution from surface runoff.</td>
<td>Rainfall</td>
<td>Rainwater discharges</td>
<td>Yes</td>
<td>Low Risk</td>
</tr>
</tbody>
</table>
### Risk Assessment Methodology:
The bathing water vulnerability for short term pollution (STP) events has been examined. The beach has been assessed to incorporate the small size of the catchment, the absence of surface water inflows to the beach, and the historical water quality monitoring data over a 10 year period from 2004 to 2013. The STP event was calculated in conjunction with the Information Note on Short Term Pollution (STP) Events specified in the 2008 Bathing Water Quality Regulations (SI No. 79 of 2008) by the OEA Bathing Water Unit 17 May 2013.

### Risk Assessment Results:
Rainfall is not expected to affect the bathing water quality unless there is >20mm of rain in 24 hours.

### Details:
Pollution risk is linked to weather systems and rainfall data.

### Management Measures:
If heavy rain is anticipated, warning notices will be erected on the beach together with incident notification to the EPA. The public will be informed of the risk, likely duration and nature of the short term pollution, displayed on the beach notice boards.

After a STP event, a sample shall be taken to confirm that the event has passed; if microbiological analysis shows that no contamination was detected, then the event is not considered to be a STP. If necessary, a replacement sample can be taken in accordance with Regulation 7(4), Schedule 2 of S.I. No. 79 of 2008. If the predicted rainfall does not arrive, the warning notices will be taken down.

In the event that bathing water quality is found to be unsatisfactory, the public will be advised of this by way of public notices at the beach and through the lifeguards until the quality has improved to satisfactory standards.

### Description:
Rathmullan Wastewater Treatment (WWTP) plant is located on the outskirts the village of Rathmullan at grid reference IC 294 274. Two septic tanks treat the waste to primary stage prior to discharge to the sea via long outfalls into Lough Swilly. The tank was installed in 1952 to serve a population of 650 and have received no upgrade or refurbishment since. There are no storm water overflows or ejector stations in the system. The coastal waterbody (NW_220_0000) has a high water quality status to which Rathmullan WWTP discharge is considered a risk; the WWTP has been on a Water Services Improvement Programme list to increase the capacity of treatment and proposed works are being dealt with by Irish Water. An application for a licence for the WWTP has been submitted.

### Source:
Rathmullan Waste Water Treatment Plant

### Type:
Waste Water Treatment plant

### Short Term Pressure:
Yes

### Nature:
Low Risk

### Frequency:
<1/month

### Duration:
< 48 hours

### Risk Assessment Methodology:
Microbial Pollution Potential (MPP) combined with the Water Quality Impact (WQI) grades for bathing waters result in the Microbial Pollution Risk (MPR) assessment for pollution sources affecting coastal and inland bathing waters. The Microbial Pollution Potential for this discharge is Low. The Water Quality Impact grade for this bathing water is B; therefore, the Microbial Pollution Risk (MPR) Assessment for this discharge is Low. The discharge could be considered to be a long outfall as the discharge point is located approximately 800m from the South end of the beach. Lough Swilly is monitored for bacteriological quality throughout the year in conjunction with the EPA estuarine monitoring programme. This result is consistent with the water quality results obtained at Rathmullan Beach during all recent bathing water quality monitoring.

### Risk Assessment Results:
With a long outfall and consistant water quality results for Lough Swilly, Rathmullan Beach is at a low risk from the WWTP.

### Details:
Though the MPR for this site is Low, given the location of the discharge, the PE of the plant and level of treatment at the WWTP there is a low risk of short-term pollution during busy periods in the village when the system is running to capacity or if issues occur at the plant. The bathing water is monitored during the bathing period, indicating that there is sufficient treatment so that the beach is not usually adversely affected.
### 3.3 Other Risks:

#### Assessment of the potential for proliferation of cyanobacteria:

There has been no known incident of cyanobacteria impacting on the Donegal coastline or its marine environment. An event of this kind is considered to be extremely unlikely.

#### Proposed management measures for cyanobacteria:

Nutrient management would be examined in the potential pressures and risk assessments carried out on the catchment to calculate and reduce the potential risks. In the event of a problem with cyanobacteria, samples would be taken to determine the levels of chlorophyll. Depending on the concentration found, bathing conditions would be considered in relation to calm weather without surface wave actions lasting for 24 hours or longer and temporary risk signs would be erected for the duration of the climatic conditions. In the instance of high levels of chlorophyll, bathing would be prohibited, signage would be erected for the duration of the bloom and regular sampling and analysis would take place.

#### Assessment of the potential for proliferation of macroalgae:

Rathmullan Beach is located in a sheltered Bay off the North coast of Donegal providing some shelter from macroalgae being washed into the bay. There are no significant problems with macroalgae on this beach.

#### Proposed management measures for macroalgae:

In the event of a large volume of macroalgae being washed ashore, it would be left for natural dispersion with the tides if it were not causing a nuisance or health concern. If macroalgae deposits became an issue, it would be removed and disposed of by the local authority.

#### Assessment of the potential for proliferation of marine phytoplankton:

Marine phytoplankton bloom events have occurred on beaches in County Donegal though none have been recorded at Rathmullan to date hence the risk is considered low. The previous incidents have occurred when algal blooms have washed into the area and have taken 2-4 days to disperse.

#### Proposed management measures for marine phytoplankton:

If algal blooms develop offshore and their movement can be monitored, attention will be paid to prevailing winds in the case of the bloom being driven onshore. This will allow for the situation to be monitored closely and action taken accordingly or if necessary. In a serious case in the bathing area, the bloom would be sampled to identify the dominant bloom species. The beach would be closed to the public after consultation with the local authority laboratory and public health professionals. Signage would be erected at access points with an explanation for the closure. Public co-operation would be greatly encouraged.

#### Additional Information:

Information in relation to the quality of the water at each of the 21 designated bathing waters in County Donegal along with their compliance history is available on the EPA’s Bathing Water Website ‘Splash’ available at www.bathingwater.ie

For information on Blue Flag Beaches please visit www.antaisce.ie

Information on the Environmental Protection Agency and the work they undertake is available on the EPA website at www.epa.ie

The Marine Institute is the national agency responsible for Marine Research, Technology Development and Innovation and information is available at www.marine.ie

For information on Donegal County Council and its services please visit www.donegalcoco.ie

### 4 Bathing Water Status From Previous Sampling Years:

<table>
<thead>
<tr>
<th>Management Measures:</th>
<th>The inspector routinely inspects the site. In the event of a problem within the plant, measures have been put in place as described in the Wastewater Discharge License Application Form. The problem will be examined and rectified as soon as possible. In the event of a discharge batters shall be notified of potential risk to water quality &amp; advised not to use designated bathing waters by signage at the bathing area and by informing lifeguards on duty until bathing water results prove that any possible incident has passed. The WWTP upgrade proposals are being assessed by Irish Water to provide more adequate treatment.</th>
</tr>
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</table>

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5 Contact Details:

<table>
<thead>
<tr>
<th>Contact:</th>
<th>Donegal County Council</th>
</tr>
</thead>
<tbody>
<tr>
<td>Email:</td>
<td><a href="mailto:bathingwaters@donegalcoco.ie">bathingwaters@donegalcoco.ie</a></td>
</tr>
<tr>
<td>Address:</td>
<td>Central Laboratory, The Kube, Magheranan, Letterkenny, Co. Donegal</td>
</tr>
<tr>
<td>Phone:</td>
<td>074 9122787</td>
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<table>
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<tr>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sufficient</td>
<td>Good</td>
<td>Good</td>
<td>Good</td>
</tr>
<tr>
<td>Quality</td>
<td>Quality</td>
<td>Quality</td>
<td>Quality</td>
</tr>
</tbody>
</table>

- Rathmullan: 2012 - Sufficient Quality, 2013 - Good Quality, 2014 - Good Quality, 2015 - Good Quality