Conservation Objectives Series

South Dublin Bay and River Tolka Estuary SPA
004024

An Roinn
Ealaíon, Oidhreacht agus Gaeltachta
Department of
Arts, Heritage and the Gaeltacht
Introduction

The overall aim of the Habitats Directive is to maintain or restore the favourable conservation status of habitats and species of community interest. These habitats and species are listed in the Habitats and Birds Directives and Special Areas of Conservation and Special Protection Areas are designated to afford protection to the most vulnerable of them. These two designations are collectively known as the Natura 2000 network.

European and national legislation places a collective obligation on Ireland and its citizens to maintain habitats and species in the Natura 2000 network at favourable conservation condition. The Government and its agencies are responsible for the implementation and enforcement of regulations that will ensure the ecological integrity of these sites.

A site-specific conservation objective aims to define favourable conservation condition for a particular habitat or species at that site.

The maintenance of habitats and species within Natura 2000 sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level.

Favourable conservation status of a habitat is achieved when:
• its natural range, and area it covers within that range, are stable or increasing, and
• the specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and
• the conservation status of its typical species is favourable.

The favourable conservation status of a species is achieved when:
• population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and
• the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and
• there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

Notes/Guidelines:

1. The targets given in these conservation objectives are based on best available information at the time of writing. As more information becomes available, targets for attributes may change. These will be updated periodically, as necessary.
2. An appropriate assessment based on these conservation objectives will remain valid even if the targets are subsequently updated, providing they were the most recent objectives available when the assessment was carried out. It is essential that the date and version are included when objectives are cited.
3. Assessments cannot consider an attribute in isolation from the others listed for that habitat or species, or for other habitats and species listed for that site. A plan or project with an apparently small impact on one attribute may have a significant impact on another.
4. Please note that the maps included in this document do not necessarily show the entire extent of the habitats and species for which the site is listed. This should be borne in mind when appropriate assessments are being carried out.
5. When using these objectives, it is essential that the relevant backing/supporting documents are consulted, particularly where instructed in the targets or notes for a particular attribute.
### Qualifying Interests

*indicates a priority habitat under the Habitats Directive*

<table>
<thead>
<tr>
<th>Code</th>
<th>Species Name</th>
<th>Scientific Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>004024</td>
<td>South Dublin Bay and River Tolka Estuary SPA</td>
<td></td>
</tr>
<tr>
<td>A046</td>
<td>Light-bellied Brent Goose</td>
<td><em>Branta bernicla hrota</em></td>
</tr>
<tr>
<td>A130</td>
<td>Oystercatcher</td>
<td><em>Haematopus ostralegus</em></td>
</tr>
<tr>
<td>A137</td>
<td>Ringed Plover</td>
<td><em>Charadrius hiaticula</em></td>
</tr>
<tr>
<td>A141</td>
<td>Grey Plover</td>
<td><em>Pluvialis squatarola</em></td>
</tr>
<tr>
<td>A143</td>
<td>Knot</td>
<td><em>Calidris canutus</em></td>
</tr>
<tr>
<td>A144</td>
<td>Sanderling</td>
<td><em>Calidris alba</em></td>
</tr>
<tr>
<td>A149</td>
<td>Dunlin</td>
<td><em>Calidris alpina alpina</em></td>
</tr>
<tr>
<td>A157</td>
<td>Bar-tailed Godwit</td>
<td><em>Limosa lapponica</em></td>
</tr>
<tr>
<td>A162</td>
<td>Redshank</td>
<td><em>Tringa totanus</em></td>
</tr>
<tr>
<td>A179</td>
<td>Black-headed Gull</td>
<td><em>Chroicocephalus ridibundus</em></td>
</tr>
<tr>
<td>A192</td>
<td>Roseate Tern</td>
<td><em>Sterna dougallii</em></td>
</tr>
<tr>
<td>A193</td>
<td>Common Tern</td>
<td><em>Sterna hirundo</em></td>
</tr>
<tr>
<td>A194</td>
<td>Arctic Tern</td>
<td><em>Sterna paradisaea</em></td>
</tr>
<tr>
<td>A999</td>
<td>Wetlands</td>
<td></td>
</tr>
</tbody>
</table>

Please note that this SPA overlaps with South Dublin Bay SAC (000210). It adjoins North Bull Island SPA (004006) and North Dublin Bay SAC (000206). See map 2. The conservation objectives for this site should be used in conjunction with those for overlapping and adjacent sites as appropriate.
### NPWS Documents

<table>
<thead>
<tr>
<th>Year</th>
<th>Title</th>
<th>Author</th>
<th>Series</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>North Bull Island SPA (site code: 4006) and South Dublin Bay and River Tolka Estuary SPA (site code: 4024) Conservation objectives supporting document V1</td>
<td>NPWS</td>
<td>Conservation objectives supporting document</td>
</tr>
</tbody>
</table>

### Other References

<table>
<thead>
<tr>
<th>Year</th>
<th>Title</th>
<th>Author</th>
<th>Series</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>Autumn roosting by terns in south Dublin Bay</td>
<td>Merne, O.J.; Madden, B.; Archer, E.; Porter, B.</td>
<td>Irish Birds 8: 335-340</td>
</tr>
<tr>
<td>2010</td>
<td>Terns roosting in Dublin Bay, autumn 2010</td>
<td>Merne, O.J.</td>
<td>Irish Birds 9: 126-128</td>
</tr>
<tr>
<td>2014</td>
<td>Dublin Bay Birds Project - Dublin Port Tern Conservation Project; report for the 2014 season</td>
<td>Newton S.; Tierney N.; Whelan R.</td>
<td>BirdWatch Ireland and Dublin Port Company</td>
</tr>
</tbody>
</table>
### Spatial data sources

<table>
<thead>
<tr>
<th>Year</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title</td>
<td>NPWS SPA boundary data</td>
</tr>
<tr>
<td>GIS Operations</td>
<td>SPA boundary polygons divided into two classifications (wetlands, terrestrial) based on line identified by expert judgement. Expert opinion used as necessary to resolve any issues arising</td>
</tr>
<tr>
<td>Used For</td>
<td>Wetlands (map 3)</td>
</tr>
</tbody>
</table>
To maintain the favourable conservation condition of Light-bellied Brent Goose in South Dublin Bay and River Tolka Estuary SPA, which is defined by the following list of attributes and targets:

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Measure</th>
<th>Target</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population trend</td>
<td>Percentage change</td>
<td>Long term population trend stable or increasing</td>
<td>Waterbird population trends are presented in part four of the conservation objectives supporting document</td>
</tr>
<tr>
<td>Distribution</td>
<td>Range, timing and intensity of use of areas</td>
<td>No significant decrease in the range, timing or intensity of use of areas by light-bellied brent goose, other than that occurring from natural patterns of variation</td>
<td>Waterbird distribution from the 2011/2012 waterbird survey programme is discussed in part five of the conservation objectives supporting document</td>
</tr>
</tbody>
</table>
To maintain the favourable conservation condition of Oystercatcher in South Dublin Bay and River Tolka Estuary SPA, which is defined by the following list of attributes and targets:

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Measure</th>
<th>Target</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population trend</td>
<td>Percentage change</td>
<td>Long term population trend stable or increasing</td>
<td>Population trends are presented in part four of the conservation objectives supporting document</td>
</tr>
<tr>
<td>Distribution</td>
<td>Range, timing and intensity of use of areas</td>
<td>No significant decrease in the range, timing or intensity of use of areas by Oystercatcher, other than that occurring from natural patterns of variation</td>
<td>Waterbird distribution from the 2011/2012 waterbird survey programme is discussed in part four of the conservation objectives supporting document</td>
</tr>
</tbody>
</table>
Conservation Objectives for : South Dublin Bay and River Tolka Estuary SPA [004024]

A137  Ringed Plover *Charadrius hiaticula*

To maintain the favourable conservation condition of Ringed Plover in South Dublin Bay and River Tolka Estuary SPA, which is defined by the following list of attributes and targets:

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Measure</th>
<th>Target</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population trend</td>
<td>Percentage change</td>
<td>Long term population trend stable or increasing</td>
<td>Population trends are presented in part four of the conservation objectives supporting document</td>
</tr>
<tr>
<td>Distribution</td>
<td>Range, timing and intensity of use of areas</td>
<td>No significant decrease in the range, timing or intensity of use of areas by ringed plover, other than that occurring from natural patterns of variation</td>
<td>Waterbird distribution from the 2011/2012 waterbird survey programme is discussed in part five of conservation objectives supporting document</td>
</tr>
</tbody>
</table>
Grey Plover is proposed for removal from the list of Special Conservation Interests for South Dublin Bay and River Tolka Estuary SPA. As a result, a site-specific conservation objective has not been set for this species.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Measure</th>
<th>Target</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
To maintain the favourable conservation condition of Knot in South Dublin Bay and River Tolka Estuary SPA, which is defined by the following list of attributes and targets:

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Measure</th>
<th>Target</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population trend</td>
<td>Percentage change</td>
<td>Long term population trend stable or increasing</td>
<td>Waterbird population trends are presented in part four of the conservation objectives supporting document</td>
</tr>
<tr>
<td>Distribution</td>
<td>Range, timing and intensity of use of areas</td>
<td>No significant decrease in the range, timing or intensity of use of areas by knot, other than that occurring from natural patterns of variation</td>
<td>Waterbird distribution from the 2011/2012 waterbird survey programme is discussed in part five of the conservation objectives supporting document</td>
</tr>
</tbody>
</table>
To maintain the favourable conservation condition of Sanderling in South Dublin Bay and River Tolka Estuary SPA, which is defined by the following list of attributes and targets:

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Measure</th>
<th>Target</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population trend</td>
<td>Percentage change</td>
<td>Long term population trend stable or increasing</td>
<td>Waterbird population trends are presented in part four of the conservation objectives supporting document</td>
</tr>
<tr>
<td>Distribution</td>
<td>Range, timing and intensity of use of areas</td>
<td>No significant decrease in the range, timing or intensity of use of areas by sanderling, other than that occurring from natural patterns of variation</td>
<td>Waterbird distribution from the 2011/2012 waterbird survey programme is discussed in part five of the conservation objectives supporting document</td>
</tr>
</tbody>
</table>
To maintain the favourable conservation condition of Dunlin in South Dublin Bay and River Tolka Estuary SPA, which is defined by the following list of attributes and targets:

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Measure</th>
<th>Target</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population trend</td>
<td>Percentage change</td>
<td>Long term population trend stable or increasing</td>
<td>Population trends are presented in part four of the conservation objectives supporting document</td>
</tr>
<tr>
<td>Distribution</td>
<td>Range, timing and intensity of use of areas</td>
<td>No significant decrease in the range, timing or intensity of use of areas by Dunlin, other than that occurring from natural patterns of variation</td>
<td>Waterbird distribution from the 2011/2012 waterbird survey programme is discussed in part five of the conservation objectives supporting document</td>
</tr>
</tbody>
</table>
Bar-tailed Godwit *Limosa lapponica*

To maintain the favourable conservation condition of Bar-tailed Godwit in South Dublin Bay and River Tolka Estuary SPA, which is defined by the following list of attributes and targets:

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Measure</th>
<th>Target</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population trend</td>
<td>Percentage change</td>
<td>Long term population trend stable or increasing</td>
<td>Population trends are presented in part four of the conservation objectives supporting document</td>
</tr>
<tr>
<td>Distribution</td>
<td>Range, timing and intensity of use of areas</td>
<td>No significant decrease in the range, timing or intensity of use of areas by bar-tailed godwit, other than that occurring from natural patterns of variation</td>
<td>Waterbird distribution from the 2011/2012 waterbird survey programme is discussed in part five of the conservation objectives supporting document</td>
</tr>
</tbody>
</table>
To maintain the favourable conservation condition of Redshank in South Dublin Bay and River Tolka Estuary SPA, which is defined by the following list of attributes and targets:

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Measure</th>
<th>Target</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population trend</td>
<td>Percentage change</td>
<td>Long term population trend stable or increasing</td>
<td>Population trends are presented in part four of the conservation objectives supporting document</td>
</tr>
<tr>
<td>Distribution</td>
<td>Range, timing and intensity of use of areas</td>
<td>No significant decrease in the range, timing or intensity of use of areas by redshank, other than that occurring from natural patterns of variation</td>
<td>Waterbird distribution from the 2011/2012 waterbird survey programme is discussed in part five of the conservation objectives supporting document</td>
</tr>
</tbody>
</table>
To maintain the favourable conservation condition of Black-headed Gull in South Dublin Bay and River Tolka Estuary SPA, which is defined by the following list of attributes and targets:

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Measure</th>
<th>Target</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population trend</td>
<td>Percentage change</td>
<td>Long term population trend stable or increasing</td>
<td>Waterbird population trends are presented in part four of the conservation objectives supporting document</td>
</tr>
<tr>
<td>Distribution</td>
<td>Range, timing and intensity of use of areas</td>
<td>No significant decrease in the range, timing or intensity of use of areas by black-headed gull other than that occurring from natural patterns of variation</td>
<td>Waterbird distribution from the 2011/2012 waterbird survey programme is discussed in part five of the conservation objectives supporting document</td>
</tr>
</tbody>
</table>
Table: Conservation Objectives for South Dublin Bay and River Tolka Estuary SPA

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Measure</th>
<th>Target</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passage population: individuals</td>
<td>Number</td>
<td>No significant decline</td>
<td>Evening surveys of roosting terns in South Dublin Bay and River Tolka Estuary SPA confirm the conservation importance of the south Dublin Bay area during the post-breeding/pre-migration period. Up to 11,700, 9,025 and 8,020 terns were recorded in 2006, 2007 and 2010 respectively. Given the counting conditions (i.e. low light levels and long distance recording) it was rarely possible to identify the terns to species level but the majority of the birds appear to have been common terns (<em>Sterna hirundo</em>), with smaller numbers of Arctic and roseate terns (<em>S. paradisaea, S. dougallii</em>) (sandwich, little and black terns (<em>S. sandvicensis, S. albifrons, Chlidonias niger</em>) were also recorded) (Merne et al., 2008; Merne 2010). At least 645 roseate tern have been recorded here during the aforementioned survey years. This estimate does not factor in turnover rates and therefore the total number of roseate tern using this SPA may be significantly higher.</td>
</tr>
<tr>
<td>Distribution: roosting areas</td>
<td>Number; location; area (hectares)</td>
<td>No significant decline</td>
<td>Merne et al. (2008) describe the main roosting area as the exposed sand banks in south Dublin Bay primarily between the Martello Towers at Sandymount (319524, 232021) and Williamstown (320796, 229979). Terns have been occasionally recorded outside of this area on adjacent sandflats extending to Irishtown/South Bull Wall and to Blackrock but these birds eventually join the birds roosting in the main area (Merne et al., 2008).</td>
</tr>
<tr>
<td>Prey biomass available</td>
<td>Kilogrammes</td>
<td>No significant decline</td>
<td>Terns associated with the roost are thought to feed during the day in the wider Dublin Bay area but direct survey evidence is incomplete. Evening observations of terns arriving to the roosting area indicated that most flew in from an easterly and southeasterly direction leading the authors to suggest they were feeding in the shallow waters of the Kish/Bray and Burford Banks (Merne et al., 2008). During the breeding season, roseate terns can make extensive use of marine waters adjacent to their breeding colonies. Key prey items: Small, schooling marine fish, very rarely small crustaceans. Key habitats: roseate tern forage in/over shallow and upwelling areas, including tide rips and shoals and over sandy bottoms. Foraging range: max. 30km, mean max. 18.28km, mean 12.3km (Birdlife International, 2014). As these foraging range estimates relate to birds during the breeding season, the distances between post-breeding roost sites and feeding areas may be greater.</td>
</tr>
</tbody>
</table>
Terns associated with the roost are thought to feed during the day in the wider Dublin Bay area but direct survey evidence is incomplete. Evening observations of terns arriving to the roosting area indicated that most flew in from an easterly and southeasterly direction leading the authors to suggest they were feeding in the shallow waters of the Kish/Bray and Burford Banks (Merne et al., 2008). During the breeding season roseate terns can make extensive use of marine waters adjacent to their breeding colonies. Key habitats: roseate tern forage in/over shallow and upwelling areas, including tide rips and shoals and over sandy bottoms. Foraging range: max. 30km, mean max. 18.28km, mean 12.3km (Birdlife International, 2014). As these foraging range estimates relate to birds during the breeding season, the distances between post-breeding roost sites and feeding areas may be greater.

Human activities should occur at levels that do not adversely affect the numbers of roseate tern among the post-breeding aggregation of terns. Merne et al. (2008) describes the main roosting area as the exposed sand banks in south Dublin Bay primarily between the Martello Towers at Sandymount (319524, 232021) and Williamstown (320796, 229979). Although principally used as a night roost, birds begin to roost at least one hour before sunset during the period July - September with peak activity occurring between mid-August and mid-September (Merne et al., 2008; Merne, 2010). Merne (2010) recorded significant disturbance events to the roosting terns caused by people with dogs off the leash and kite surfing.
To maintain the favourable conservation condition of Common Tern in South Dublin Bay and River Tolka Estuary SPA, which is defined by the following list of attributes and targets:

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Measure</th>
<th>Target</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breeding population abundance: apparently occupied nests (AONs)</td>
<td>Number</td>
<td>No significant decline</td>
<td>Measure based on standard tern survey methods (see Walsh et al., 1995). For more information on the history and recent population estimates of the tern colony at this SPA see Newton et al. (2014)</td>
</tr>
<tr>
<td>Productivity rate: fledged young per breeding pair</td>
<td>Mean number</td>
<td>No significant decline</td>
<td>Measure based on standard tern survey methods (see Walsh et al., 1995). For more information on the history and recent population estimates of the tern colony at this SPA see Newton et al. (2014)</td>
</tr>
<tr>
<td>Passage population: individuals</td>
<td>Number</td>
<td>No significant decline</td>
<td>Evening surveys of roosting terns in South Dublin Bay and River Tolka Estuary SPA confirm the conservation importance of the south Dublin Bay area during the post-breeding/pre-migration period. Up to 11,700, 9,025 and 8,020 terns were recorded in 2006, 2007 and 2010 respectively. Given the counting conditions (i.e. low light levels and long distance recording), it was rarely possible to identify terns to species level but the majority of the birds appear to have been common terns (<em>Sternula hirundo</em>), with smaller numbers of Arctic and roseate terns (<em>S. paradisaea, S. dougallii</em>); (sandwich, little and black terns (<em>S. sandvicensis, S. albifrons, Chlidonias niger</em>) were also recorded) (Merne et al., 2008; Merne 2010). At least 4,887 common tern have been recorded here during the aforementioned survey years. This estimate does not factor in turnover rates and therefore the total number of common tern using this SPA may be significantly higher</td>
</tr>
</tbody>
</table>

Distribution:

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Measure</th>
<th>Target</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>breeding colonies</td>
<td>Number; location; area (Hectares)</td>
<td>No significant decline</td>
<td>The common tern breeding colony in Dublin Bay is primarily sited on an artificial structure known as the ‘ESB Dolphin’ (see Newton et al., 2014)</td>
</tr>
<tr>
<td>roosting areas</td>
<td>Number; location; area (Hectares)</td>
<td>No significant decline</td>
<td>Merne et al. (2008) describe the main roosting area as the exposed sand banks in south Dublin Bay, primarily between the Martello Towers of at Sandymount (319524, 232021) and Williamstown (320796, 229979). Terns have been occasionally recorded outside of this area on adjacent sandflats extending to Inish town/South Bull Wall and to Blackrock but these birds eventually joined the birds roosting in the main area (Merne et al. 2008)</td>
</tr>
</tbody>
</table>

Prey biomass available

<table>
<thead>
<tr>
<th>Measure</th>
<th>Target</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kilogrammes</td>
<td>No significant decline</td>
<td>During the breeding season, common terns can make extensive use of marine waters adjacent to their breeding colonies. Key prey items: Small fish, crustaceans, insects and occasionally squid. Key habitats: forage in/over shallow coastal waters, bays, inlets, shoals, tidal-rips, drift lines, beaches, saltmarsh creeks, lakes, ponds or rivers. Foraging range: max. 37km; mean max. 33.81km; mean 8.67km (Birdlife International, 2014). Terns associated with the roost are thought to feed during the day in the wider Dublin Bay area but direct survey evidence is incomplete. Evening observations of arriving terns to the primary roosting area indicated that most flew into Dublin Bay from an easterly and southeasterly direction leading the authors to suggest they were feeding in the shallow waters of the Kish/Bray and Burford Banks (Merne et al., 2008). Foraging ranges between post-breeding roost sites and feeding areas may be greater than the estimates given for the breeding season</td>
</tr>
<tr>
<td>Barriers to connectivity</td>
<td>Number; location; shape; area (hectares)</td>
<td>No significant increase</td>
</tr>
<tr>
<td>Disturbance at breeding site</td>
<td>Level of impact</td>
<td>Human activities should occur at levels that do not adversely affect the breeding common tern population</td>
</tr>
<tr>
<td>Disturbance at roosting site</td>
<td>Level of impact</td>
<td>Human activities should occur at levels that do not adversely affect the numbers of common tern among the post-breeding aggregation of terns</td>
</tr>
</tbody>
</table>
## Conservation Objectives for: South Dublin Bay and River Tolka Estuary SPA [004024]

### Arctic Tern *Sterna paradisaea*

To maintain the favourable conservation condition of Arctic Tern in South Dublin Bay and River Tolka Estuary SPA, which is defined by the following list of attributes and targets:

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Measure</th>
<th>Target</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passage population</td>
<td>Number of individuals</td>
<td>No significant decline</td>
<td>Evening surveys of roosting terns in South Dublin Bay and River Tolka Estuary SPA confirm the conservation importance of the south Dublin Bay area during the post-breeding/pre-migration period. Up to 11,700, 9,025 and 8,020 terns were recorded in 2006, 2007 and 2010 respectively. Given the counting conditions (i.e. low light levels and long distance recording) it was rarely possible to identify the terns to species level but the majority of the birds appear to have been common terns (<em>Sterna hirundo</em>), with smaller numbers of Arctic and roseate terns (<em>S. paradisaea</em>, <em>S. dougallii</em>); (sandwich, little and black terns (<em>S. sandvicensis</em>, <em>S. albifrons</em>, <em>Chlidonias niger</em>) were also recorded) (Merne et al., 2008; Merne 2010). At least 200 Arctic tern have been recorded here during the aforementioned survey years. This estimate does not factor in turnover rates and therefore the total number of Arctic tern using this SPA may be significantly higher.</td>
</tr>
<tr>
<td>Distribution: roosting areas</td>
<td>Number; location; area (hectares)</td>
<td>No significant decline</td>
<td>Merne et al. (2008) describe the main roosting area as the exposed sand banks in south Dublin Bay primarily between the Martello Towers at Sandymount (319524, 232021) and Williamstown (320796, 229979). Terns have been occasionally recorded outside of this area on adjacent sandflats extending to Irishtown/South Bull Wall and to Blackrock but these birds eventually join the birds roosting in the main area (Merne et al., 2008).</td>
</tr>
<tr>
<td>Prey biomass available</td>
<td>Kilogrammes</td>
<td>No significant decline</td>
<td>Terns associated with the roost are thought to feed during the day in the wider Dublin Bay area but direct survey evidence is incomplete. Evening observations of terns arriving to the roosting area indicated that most flew in from an easterly and southeasterly direction leading the authors to suggest they were feeding in the shallow waters of the Kish/Bray and Burford Banks (Merne et al., 2008). During the breeding season Arctic terns can make extensive use of marine waters adjacent to their breeding colonies. Key prey items: Small fish, crustaceans and other invertebrates. Key habitats: forage in/over open waters and shallow bays, rocky shores, tidal flats, shoals, tide rips and ocean fronts. Foraging range: max. 20.6km, mean max. 12.24km, mean 11.75km (Birdlife International, 2014). As these foraging range estimates relate to birds during the breeding season, the distances between post-breeding roost sites and feeding areas may be greater.</td>
</tr>
<tr>
<td>Barriers to connectivity</td>
<td>Number; location; shape; area (hectares)</td>
<td></td>
<td></td>
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<tr>
<td>-------------------------</td>
<td>------------------------------------------</td>
<td></td>
<td></td>
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<tr>
<td>No significant increase</td>
<td>Terns associated with the roost are thought to feed during the day in the wider Dublin Bay area but direct survey evidence is incomplete. Evening observations of arriving terns to the primary roosting area indicated that most flew into Dublin Bay from an easterly and southeasterly direction leading the authors to suggest the birds were feeding in the shallow waters of the Kish/Bray and Burford Banks (Merne et al., 2008). During the breeding season Arctic terns can make extensive use of marine waters adjacent to their breeding colonies. Foraging range: max. 20.6km, mean max. 12.24km, mean 11.75km (Birdlife International, 2014). As these foraging range estimates relate to birds during the breeding season, the distances between post-breeding roost sites and feeding areas may be greater.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Disturbance at roosting site</th>
<th>Level of impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human activities should occur at levels that do not adversely affect the numbers of Arctic tern among the post-breeding aggregation of terns</td>
<td>Merne et al. (2008) describes the main roosting area as the exposed sand banks in south Dublin Bay primarily between the Martello Towers at Sandymount (319524, 232021) and Williamstown (320796, 229979). Although principally used as a night roost, birds begin to roost at least one hour before sunset during the period July - September with peak activity occurring between mid-August and mid-September (Merne et al., 2008; Merne, 2010). Merne (2010) recorded significant disturbance events to the roosting terns caused by people with dogs off the leash and kite surfing.</td>
</tr>
</tbody>
</table>
To maintain the favourable conservation condition of the wetland habitat in South Dublin Bay and River Tolka Estuary SPA as a resource for the regularly occurring migratory waterbirds that utilise it. This is defined by the following attribute and target:

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Measure</th>
<th>Target</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Habitat area</td>
<td>Hectares</td>
<td>The permanent area occupied by the wetland habitat should be stable and not significantly less than the area of 2,192 hectares, other than that occurring from natural patterns of variation. See map 3</td>
<td>The wetland habitat area was estimated as 2,192ha using OSi data and relevant orthophotographs. For further information see part three of the conservation objectives supporting document</td>
</tr>
</tbody>
</table>
Map 2: South Dublin Bay and River Tolka Estuary SPA

Legend
- South Dublin Bay and River Tolka Estuary SPA 004024
- North Bull Island SPA 004006
- North Dublin Bay SAC 000206
- South Dublin Bay SAC 000210
- OSI Discovery Series County Boundary

Consortium / Overlapping Designations
Site Code:
- SPA 004006: version 2, SPA 004024: version 2
- SAC 000206: version 3, SAC 000210: version 3

Co. Dublin

The mapped boundaries are of an indicative and general nature only. Boundaries of designated areas are subject to revision.

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Níl sna teorainneacha ar na léarscáileanna ach nod garshuiomhach ginearálta. Féadfar athbhreithnithe a déanamh ar theorainneacha na gceantar comharthaithe. Suirbhéarachta Ordonáis na hÉireann Ceadúnas Uimh EN 0059214. © Suirbhéarachta Ordonáis na hÉireann Rialtas na hÉireann

Map Version 1
Date: Sep 2014

Map to be read in conjunction with the NPWS Conservation Objectives Document.