



**BOLIDEN  
TARA MINES**

**BIODIVERSITY  
GRI REPORT  
2021**

**BOLIDEN**

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Regarding Natura2000 sites, we have one area identified as a special area of conservation (SAC), and one area designated as a special protection area within 15 km of the proposed development site: **River Boyne and River Blackwater** (see figure 2):

- River Boyne and River Blackwater SAC (IE0002299) which covers the surface of 2317,87 ha.
- River Boyne and River Blackwater SPA (IE0004232).

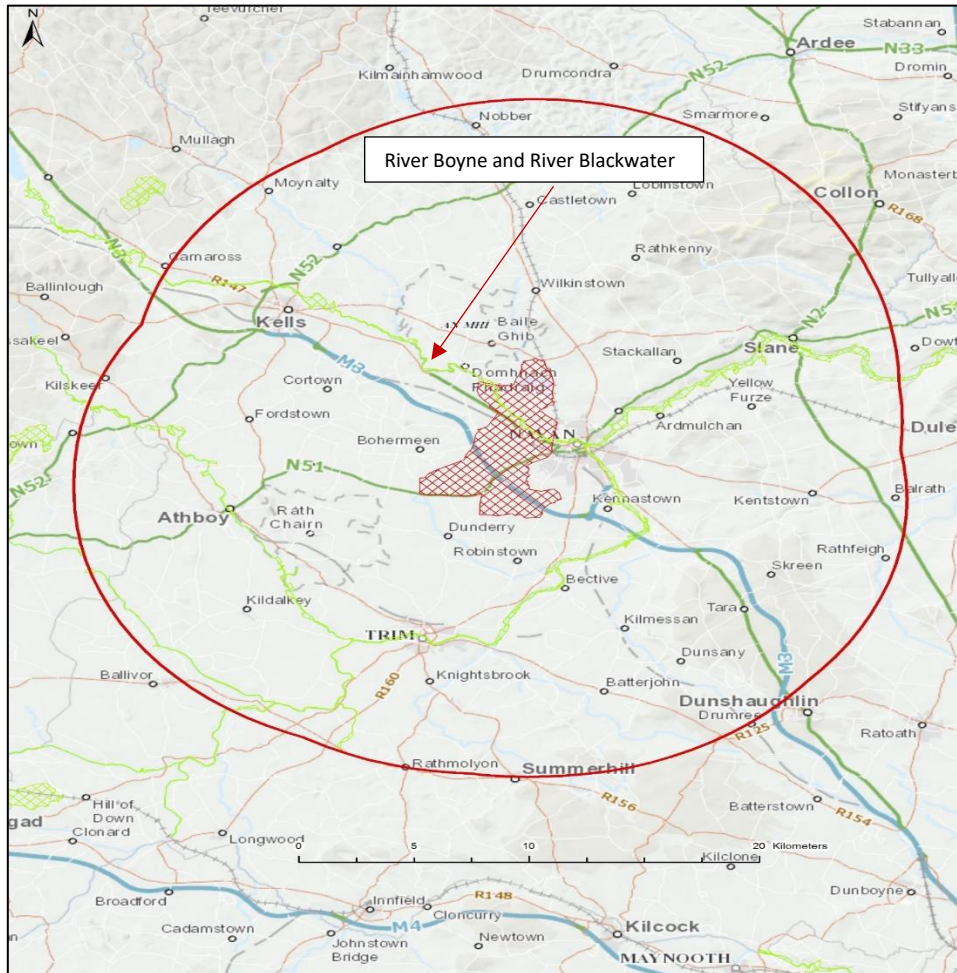


Figure 2. Map illustrating the location of River Boyne and River Blackwater

## 2. IMPACTS OF ACTIVITIES, PRODUCTS AND SERVICES ON BIODIVERSITY

### 2. Water Quality

Both Natura2000 sites River Boyne and River Blackwater are adjacent to the operational area and they both are considered ecologically sensitive receptors, mainly when it comes to water's quality. In this regard, Otter and Kingfisher are both species of value that are equally used as indicative of the areas' water quality.

Given that these species are top predators within their ecosystems, their population status is likely to reflect the status of the overall habitat (including that of Salmon and Lamprey). Here within, in agreement with the Precautionary Principal as an integral component of the ongoing operations at Boliden Tara Mines, annual monitoring of the populations of these species will be handled in tandem with water quality's monitoring.

#### 2.1. Otter Survey

The main purpose of Otter surveys is to develop a baseline and continuous monitoring of:

- Numbers of Otter present within the survey area.
- Numbers of potential holts within the survey area.

Otter (*Lutra lutra*) is a primarily piscivorous species, feeding mostly on salmonids but also consumes frogs, crayfish, etc. Otter surveys will be carried out annually under optimal conditions based on the methodology, presented by NPWS in the Irish Wildlife Manual 76 (National Otter Survey of Ireland 2010/12 – Reid et al., 2013), with a survey conducted for spraints (and other indicators like footprints, fish remains, slides, couches, etc.). The survey takes place along both banks of water courses within relevant study area (5 km upstream and downstream of any discharge point).

Additionally, a number of 5 trail cameras will be utilized for a period of one month annually at suitable sites in order to record the activity. The optimal time for surveying is during dry spells in spring.

#### 2.2. Kingfisher Survey

The main purpose of Kingfisher survey is to identify:

- Stretches suitable for nesting Kingfisher within the survey area.
- Breeding indicators or foraging Kingfisher within the survey areas.

A number of species of European significance occur near the facility's waterways including the Kingfisher (*Alcedo atthis*), which is listed on Annex I of the EU Birds Directive. In 2010, six key river systems (Rivers Barrow, Blackwater (Munster), Boyne, Clare, Moy and Nore (in addition to two smaller systems, the Rivers Gill and Illen) were investigated to assess the distribution and abundance of Kingfisher in representative habitats throughout Ireland. Kingfisher species was documented in all river systems surveyed. The Kingfisher survey will be yearly carried out in the Spring. The methodology as presented in "Assessment of the distribution and abundance of Kingfisher *Alcedo atthis* and other riparian birds on six SAC river systems in Ireland" (Cummins et al, 2010) – which was prepared by Birdwatch Ireland for the NPWS.

#### 2.3. Conclusion

Assuming a full implementation of all mitigation and monitoring procedures as outlined in the CHC Environmental Solutions Report, harmful impacts on either surface/ground waters are likely to be eradicated or minimized. Consequently, no major significant damages on the conservation objectives are outlined.

## 3. HABITATS PROTECTED OR RESTORED

As mentioned earlier in this document, we have two Natura2000 sites that are potentially impacted upon by Tara’s operations:

N2K Site Code	Designation	Site Name
IE0002299	SAC	River Boyne and River Blackwater
IE0004232	SPA	River Boyne and River Blackwater

The Natura2000 sites potentially impacted upon by the operations at Boliden are described according to:

1. General description of the site.
2. Qualifying Interests (QI) of the site.
3. Threats, pressures, and activities with negative impacts on the site.
4. Conservation Objectives of the site, and
5. Conservation status of the site.

### 3.1. Boyne Coast and Estuary SAC

Boyne Coast site comprises tidal sections of the River Boyne, intertidal sand and mudflats, saltmarshes, marginal grassland, and the stretch of coast from Bettystown to Termonfeckin. The latter, in turn, includes the Mornington and Baltray sand dune systems.

Under the Natura2000 form, the area is also noted to cover most of the estuary of the Boyne River, which is underlined as substantial river draining a large catchment. The main channel of the Boyne is confined by training walls for control purposes. As well as intertidal sand and mudflats, the inner part of the site has salt marshes and *Spartina* swards.

While the site holds a good diversity of coastal habitats, most have somewhat been changed. For instance, the containment of the main tidal channel has altered the tidal pattern which affects the functioning of the various estuarine habitats. Likewise, both dune systems were once wider but much of the stable areas have now been transformed to golf courses. Overall, the site is important for wintering Waterfowl, supporting nine species in great numbers: including *Pluvialis apricaria* (an Annex I EU Birds Directive species). It has been also noted that *Sterna albifrons* breeds or attempts to breed in most years.

The ensuing table (Table 1) provides a summary of the habitats of qualifying interest within SAC which is overlapping with Boyne Estuary SPA (004080) and adjacent to the River Boyne and River Blackwater SAC (002299):

**Table 1.** SAC Habitats of Interest in Overlapped Area with Boyne Estuary SPA (004080) and Area Neighboring River Boyne and River Blackwater SAC (002299)

Geographic coordinates	Priority Habitats
1130	Estuaries
1140	Mudflats and sandflats not covered by seawater at low tide
1310	Salicornia and other annuals colonizing mud and sand
1330	Atlantic salt meadows ( <i>Glauco-Puccinellietalia Maritimae</i> )
1410	Mediterranean salt meadows ( <i>Juncetalia Maritimi</i> )
2110	Embryonic shifting dunes
2120	Shifting dunes along the shoreline with <i>Ammophila orenaria</i> (white dunes)
2130	Fixed coastal dunes with herbaceous vegetation (grey dunes)

### 3.2. River Boyne and River Blackwater SAC

This area covers most of the freshwater element of the River Boyne from upriver of the Boyne Aqueduct at Drogheda, the Blackwater River as far as Lough Ramor and the principal Boyne tributaries, notably the Deel, Stoneyford and Tremblestown Rivers. The geology is Carboniferous Limestone for the most part with areas of Upper, Lower and Middle well denoted. In the vicinity of Kells, Silurian Quartzite is existing while close to Trim are Carboniferous Shales and Sandstones. In addition, the rivers flow through a landscape dominated by intensive agriculture (enhanced grassland but also cereals). It is also noted that flood plains now exist along few limited stretches of the river, even though there is a fringe of reed swamp, freshwater marsh, wet grassland, or deciduous wet woodland. Along some parts between Drogheda and Slane exist stands of tall, mature mixed woodland.

The main channel of the Boyne contains a good example of alluvial woodland of the *Salicetum albo-fragilis* type which has developed on three alluvium islands. Alkaline fen vegetation is well represented at Lough Shesk, where there is a very fine example of habitat succession from open water to raised bog.

The site is one of the most important in eastern Ireland for *Salmo salar* and has very extensive spawning grounds. The site also has an important population of *Lampetra fluviatilis*, though the abundance of this species is not well known. As for Otter *Lutra lutra*, the species is widespread throughout the site and as mentioned before, used as an indicator for water's quality. Some of the grassland areas along the Boyne and Blackwater are used by a nationally important winter flock of *Cygnus cygnus*. Several Red Data Book plants occur within the site, with *Pyrola rotundifolia*, *Poa palustris* and *Juncus compressus*. Also occurring are a number of Red Data Book animals, notably *Meles meles*, *Martes martes* and *Rana temporaria*. And finally, River Boyne is a designated Salmonid Water under the EU Freshwater Fish Directive.

**Table 2.** SAC Habitats of Interest in Overlapped Area with Boyne Estuary SPA (004080) and Area Neighboring River Boyne and River Blackwater SAC (002299)

Geographic coordinates	Priority Habitats
7230	Alkaline Fens;
91E0	Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> ( <i>Alno-Padion</i> , <i>Alnion incanae</i> , <i>Salicion albae</i> ) – PRIORITY HABITAT
1099	<i>Lampetra fluviatilis</i>
1106	<i>Salmo salar</i>
1355	<i>Lutra lutra</i>

#### 3.3.1. Threats, Pressures and Activities with Negative Impacts on the Site

Details as to the threats, pressures and activities with negative impacts on the site are identified from the Natura2000 data form for the sites and are illustrated in table 3. It is important to note that the assessment of potential threats, pressures and activities of the operations at Boliden includes, but is not restricted to, those identified in the Natura2000 form.

**Table 3:** Threats, Pressures and Activities with Impacts on the Site

Rank	Sector	Threats and pressures	Inside/outside/both
High	Agriculture	Grazing	Both
High	Agriculture	Cultivation	Both
High	Agriculture	Fertilisation	Both
Medium	Agriculture	Sylviculture/agriculture	Outside
High	Biological resource use (other than agriculture/ forestry)	Fishing	Inside
Medium	Human intrusions and disturbances	Nautical sports	Inside
Medium	Human intrusions and disturbances	Walking, horseriding and non-motorised vehicles	Inside
Medium	Natural system modifications	Human induced changes in hydraulic conditions	Inside
High	Sylviculture/agriculture	Sylviculture/agriculture	Inside
High	Transportation and service corridors	Roads, motorways	Both
High	Urbanisation, residential and commercial development	Dispersed habitation	Outside
High	Urbanisation, residential and commercial development	Urbanised areas, human habitation	Outside
Medium	Urbanisation, residential and commercial development	Discharges	Inside

### 3.3. The River Boyne and River Blackwater SPA

The River Boyne and River Blackwater SPA is a long linear site that comprises stretches of the River Boyne and several of its tributaries: most of the site is in Co Meath but it extends also into Counties Cavan, Louth and Westmeath. It includes the following river sections: The River Boyne from the M1 motorway bridge, west of Drogheda, to the junction with the Royal Canal, west of Longwood, Co Meath; the River Blackwater from its junction with the River Boyne in Navan to the junction with Lough Ramor in Co Cavan; the Tremblestown River (and Athboy River) from the junction with the River Boyne at Kilnagross Bridge to the bridge in Athboy, Co Meath; the Stoneyford River from its junction with the River Boyne to Stonestone Bridge in Co. Westmeath; the River Deel from its junction with the River Boyne to Cummer Bridge, Co. Westmeath. The site includes the river channel and marginal vegetation.

The River Boyne and River Blackwater SPA supports nationally important numbers of *Alcedo atthis*. Other species which occur within the site include *Cygnus olor*, *Anas crecca*, *Anas platyrhynchos*, *Phalacrocorax carbo*, *Ardea cinerea*, *Gallinula chloropus*, *Gallinago gallinago* and *Riparia riparia*.

#### 3.3.1. Qualifying Interests

The Qualifying Interest (QI) of the River Boyne and River Blackwater SPA is

- Kingfisher (*Alcedo atthis*).

#### 3.3.2. Threats, Pressures and Activities with Negative Impacts on the Site

Details as to the threats, pressures and activities with negative impacts on the site are identified from the Natura2000 data form for the sites and are illustrated in Table 4. It is important to note that the assessment of potential threats, pressures and activities of the operations at Boliden includes, but is not restricted to, those identified in the Natura2000 form.



**Table 4:** Threats, Pressures and Activities with Impacts on the Site

Rank	Sector	Threats and Pressures	Inside/outside/both
High	Urbanisation, residential and commercial development	Roads, motorways	Both
Medium	Natural system modifications	Human induced changes in hydraulic conditions	Inside
High	Urbanisation, residential and commercial development	Urbanised areas, human habitation	Outside
High	Urbanisation, residential and commercial development	Dispersed habitation	Outside

## 4. RED LIST SPECIES AND NATIONAL CONSERVATION LIST SPECIES WITH HABITATS IN AREAS AFFECTED

### 4.1. BIRDS

We have a total of 65 species of birds within the vicinity of Tara’s facility and Table 5 provides a glimpse on their current status. All in all, we have:

11 Red-listed.

23 Amber-listed.

31 Green-listed.

**Table 5:** Species Occurring Within Tara’s Site and Their Status

SPECIES	STATUS
Black Headed Gull	Breeding and wintering
Blackbird	Breeding and wintering
Blackcap	Breeding
Black-Tailed Godwit	Wintering
Bluetit	Breeding and wintering
Bullfinch	Breeding and wintering
Buzzard	Breeding and wintering
Chaffinch	Breeding and wintering
Chiffchaff	Breeding
Collared Dove	Breeding and wintering
Dunnock	Breeding and wintering
Goldcrest	Breeding and wintering
Goldfinch	Breeding and wintering
Great Tit	Breeding and wintering
Greater Black Backed Gull	Breeding and wintering
Greenfinch	Breeding and wintering
Grey Wagtail	Breeding and wintering
Herring Gull	Breeding and wintering
Hooded Crow	Breeding and wintering
House Martin	Breeding
Jackdaw	Breeding and wintering
Jay	Breeding and wintering
Kestrel	Breeding and wintering
Kingfisher	Breeding and wintering
Lesser Black Backed Gull	Breeding and wintering
Linnet	Breeding and wintering
Magpie	Breeding and wintering
Mallard	Breeding and wintering
Meadow Pipit	Breeding and wintering

<b>SPECIES</b>	<b>STATUS</b>
Mute Swan	Breeding and wintering
Peregrine Falcon	Breeding and wintering
Pheasant	Breeding and wintering
Pied Wagtail	Breeding and wintering
Raven	Breeding and wintering
Reed Bunting	Breeding
Robin	Breeding and wintering
Rook	Breeding and wintering
Sand Martin	Breeding
Shelduck	Breeding and wintering
Skylark	Breeding and wintering
Song Thrush	Breeding and wintering
Sparrowhawk	Breeding and wintering
Spotted Flycatcher	Breeding
Starling	Breeding and wintering
Stonechat	Breeding and wintering
Swallow	Breeding
Willow Warbler	Breeding
Wood Pigeon	Breeding and wintering
Wren	Breeding and wintering
Yellowhammer	Breeding and wintering
Whooper Swan	Wintering
Golden Plover	Wintering
Lapwing	Wintering
Sanderling	Wintering
Dunlin	Wintering
Shovellor	Wintering
Tufted Duck	Wintering
Teal	Wintering
Pochard	Wintering
Wigeon	Wintering
Snipe	Wintering
Curlew	Wintering
Cormorant	Breeding and wintering
Red Breasted Merganser	Wintering
Fieldfare	Wintering

## 4.2. Mammals

Touching upon mammals, table 6 also provides a glimpse on the mammals' diversity occurring within the neighboring area of Tara and their status.

**Table 6:** Description of Mammals of Value within the Vicinity of Tara and their Current Status

SPECIES	STATUS
American mink	High Impact Invasive Species    Invasive Species: Invasive Species >> Regulation S.I. 477 (Ireland)
Badger	Protected Species: Wildlife Acts
Brown long-eared bat	Protected Species: EU Habitats Directive    Protected Species: EU Habitats Directive >> Annex IV    Protected Species: Wildlife Acts
Brown rat	Not protected
Common pipistrelle	Protected Species: EU Habitats Directive    Protected Species: EU Habitats Directive >> Annex IV    Protected Species: Wildlife Acts
Daubenton's bat	Protected Species: EU Habitats Directive    Protected Species: EU Habitats Directive >> Annex IV    Protected Species: Wildlife Acts
Fallow deer	High Impact Invasive Species    Invasive Species: Invasive Species >> Regulation S.I. 477 (Ireland)    Protected Species: Wildlife Acts
Grey squirrel	High Impact Invasive Species    Invasive Species: Invasive Species >> EU Regulation No. 1143/2014    Invasive Species: Invasive Species >> Regulation S.I. 477 (Ireland)
Hedgehog	Protected Species: Wildlife Acts
Irish hare	Protected Species: Wildlife Acts
Leisler's bat	Protected Species: EU Habitats Directive    Protected Species: EU Habitats Directive >> Annex IV    Protected Species: Wildlife Acts
Nathusius' pipistrelle	Protected Species: EU Habitats Directive    Protected Species: EU Habitats Directive >> Annex IV    Protected Species: Wildlife Acts
Natterers bat	Protected Species: EU Habitats Directive    Protected Species: EU Habitats Directive >> Annex IV    Protected Species: Wildlife Acts
Otter	Protected Species: EU Habitats Directive    Protected Species: EU Habitats Directive >> Annex II    Protected Species: EU Habitats Directive >> Annex IV    Protected Species: Wildlife Acts
Pine marten	Protected Species: EU Habitats Directive    Protected Species: EU Habitats Directive >> Annex V    Protected Species: Wildlife Acts
Pygmy shrew	Protected Species: Wildlife Acts
Rabbit	Invasive Species: Invasive Species    Invasive Species: Invasive Species >> Medium Impact Invasive Species
Red fox	Protected Species: Wildlife Acts
Soprano pipistrelle	Protected Species: EU Habitats Directive    Protected Species: EU Habitats Directive >> Annex IV    Protected Species: Wildlife Acts
Whiskered bat	Protected Species: EU Habitats Directive    Protected Species: EU Habitats Directive >> Annex IV    Protected Species: Wildlife Acts
Wood mouse	Not protected

## 4.3. Plants

No species listed on the flora protection order (2015) have thus far been observed.

## 5. References

*Ecological Monitoring of Qualifying interests at European Sites.* (2018). Forest, Environmental Research and Services Ltd. Response to RFI Item (2). Reg NoP05-16-04

Matus. A. (2020). *Boliden Summary Report: Mineral Resources and Mineral Reserves.* Boliden Mineral AB. [https://www. resources-and-reserves-tara-2020-12-31.pdf \(boliden.com\)](https://www.resources-and-reserves-tara-2020-12-31.pdf)