

Biodiversity Best Practice - Overview

Nesting Aid for Sand Martin Birds

Project title:

Nesting Aid for Sand Martin Birds

Country:

Western Europe

Location:

Loam-, sand and gravel pits

Mineral extracted:

Habitat created:

Artificial breeding walls made from concrete

Species protected:

Birds

Wildlife sanctuary:

Short description:

In Western Europe, large-scale river readjustments causing the destruction of river banks have led to the massive loss of the natural breeding sites of the sand martin.

The sand martin is a regular visitor of quarries and of sand- and gravel pits, the protection of the species in these secondary habitats is of the greatest importance.

Adequate breeding sites for the sand martin can be created either by the construction of natural or artificial breeding walls. The creation of natural breeding walls can be easily realized during the course of the mining activities.

Public benefit:

The Sand Martin is a well-known and popular species with high nature protection value. The tips summarized here will be applied in as many projects as possible to protect the sand martin in Germany and abroad. Thanks to this, the companies' contribution to active species protection will be recognized.

Contact person:

Martin Wollschläger; Tina Gölzer



Natural breeding walls in the mining areas



Sand wall with frame construction

Guideline and practical tips for the creation of natural and artificial nesting aids for the sand martin (*Riparia riparia*)

Location

Loam-, sand and gravel pits

Breeding areas / habitats

- sand-, loam or loess steep faces, free from vegetation
- sand embankments and topsoil dumps
- artificial breeding walls made from concrete



Background

In Western Europe, large-scale river readjustments causing the destruction of river banks have led to the massive loss of the natural breeding sites of the sand martin. Because the sand martin is a regular visitor of quarries and of sand- and gravel pits, the protection of the species in these secondary habitats is of the greatest importance.

Description – construction of nesting aids

Adequate breeding sites for the sand martin can be created either by the construction of natural or artificial breeding walls. The creation of natural breeding walls can be easily realized during the course of the mining activities. Both constructions, as well as their pros and cons, will be defined below.

a) Natural breeding walls:

From beginning/mid of April the appropriate breeding walls should be available, because it is at that time of the year that the sand martins are returning from their wintering habitats.

During the mining process the created walls should be cut off cleanly before the new breeding season starts.

Natural breeding walls should have the following characteristics:

- accumulated debris should be removed, particularly at lower walls, to keep predators away
- the walls should be as free as possible from vegetation and should not feature high vegetation at the lower and the upper part of the walls.
- free corridors to reach the walls
- preferably over 2,5 m high
- southern or south-eastern exposed (if possible)
- proximity to water bodies

Fig.1: natural breeding walls in the mining areas



b) Artificial breeding walls:

Possible constructions:

1. creation of **topsoil dumps**, which are depressed and afterwards scribed at the southern exposed side (see fig. 2)
2. establishment of **sand dumps**, which are depressed and afterwards scribed at the southern exposed side (see fig. 3)
3. **concrete walls** with backfilling of sand (see fig. 4)
4. **concrete walls** with breeding tubes elements (see fig. 5)
5. **sand walls** with frame construction (see fig. 6)

Natural and artificial breeding walls should have the following characteristics :

- accumulated debris should be removed, particularly at lower walls, to keep predators away
- the walls should be as much as possible free from vegetation and should not feature high vegetation at the lower and the upper part of the walls
- free corridors to reach the walls
- preferably over 2,5m high
- southern or south-eastern exposed (if possible)
- proximity to water bodies

Fig. 2: created topsoil dumps (outside of the mining)



Fig. 3: already existing or established sand dumps with scribing (cross section, own illustration)



Fig. 4: construction with concrete walls and Backfilling of sand



Fig. 5: wall with breeding tubes elements



Fig. 6: sand wall with frame construction



Conclusion

It is obvious that **artificial sand- and topsoil dumps** are a **cost-efficient alternative** to constructions made of concrete. While the artificial sand- and topsoil dumps can be built with **little effort**, and are created anyway during the quarry works, the constructions made of concrete walls are very cost-intensive and difficult to maintain, because the breeding tubes have to be filled in again with sand before each breeding season..

The pros and cons of the construction of artificial nesting aids are summarized in the following table:

Table 1: comparison of the different artificial nesting aids

	sand dumps	sand wall with frame construction	concrete walls	walls with nesting tube elements
creation				
space required	>100 m ²	>25 m ²	>25 m ²	>25 m ²
consumption of sand	>200 m ²	>15 m ²	>50 m ²	>1,5 m ²
consumption of concrete	-	-	average	high
consumption of further materials	-	wood, metal	angle elements, armour	armour, tube elements
consumption of heavy construction machines	necessary	necessary	necessary	necessary
effort	average	high	average	very high
durability	low	average	high	high
costs	low	high	high	very high
maintenance				
material requisition	low	low	low	low
machine need	necessary	necessary	possible	-
personnel requirement	low	average	average	high
effort	average	high	average	high
costs	low	average	high	high
control of breeding tubes	-	-	-	possible
date of the building	winter, possibly during breeding season	winter, possibly during breeding season	winter	winter

Target species

Sand Martin

Public benefits

The Sand Martin is a well-known and popular species with high nature protection value. The tips summarized here will be applied in as many projects as possible to protect the sand martin in Germany and abroad. Thanks to this, the companies' contribution to active species protection will be recognized.

Contact

Martin Wollschläger

Projektmanager

Heidelberg Sand und Kies GmbH
Germany

martin.wollschlaeger@heidelbergcement.com
www.heidelbergcement.com

Tina Gölzer

Project Operator

Team Geology and Raw Materials;
Heidelberg Technology Center
GmbH, Germany

tina.goelzer@htc-gmbh.com
www.heidelbergcement.com