

# Anhui G3 Tongling Bridge Project: Protecting Biodiversity



## Terminology :

*Yangtze Finless Porpoise* (*Neophocaena phocaenoides*): also called Yangtze River dolphin 长江江豚, critically endangered as defined by IUCN, Class I national protection fauna species. River dolphin is also called “panda in the water”. Based on the 2022 survey, there are only 1,249 river dolphins in Yangtze River Basin, with a much smaller population size than the Giant Panda. Yangtze finless porpoise, also called “the Goddess of the Yangtze”, is known for its mischievous smile and has a level of intelligence comparable to that of a gorilla. Its close cousin, Baiji Dolphin, has been formally declared extinct in 2022.

*Whitefin Dolphin* (*Lipotes vexillifer*): also called Baiji Dolphin, close cousin of Yangtze finless porpoise, is claimed to be extinct in 2022. This was the first time in history that an entire species of dolphin had been wiped off the planet because of human activity.

*Critical habitats*: are areas with high importance for biodiversity, including (a) highly threatened or unique ecosystem; (b) habitat important to Critically Endangered or Endangered species, as listed in the International Union for Conservation of Nature (IUCN) Red List of threatened species or under national law; (c) habitat important to endemic or restricted-ranges species; (d) habitat supporting globally or nationally significant concentrations of migratory or congregatory species; (e) ecological functions or characteristics that are needed to maintain the viability of the biodiversity features described above in (a) to (d).

*Natural protected areas*: include a core zone, a buffer zone and an experimental zone, with descending importance in its ecological value and protection requirements.

*NDB's Policy on Critical Habitats*: the clients “do not implement project activities in areas of critical habitats, unless: (a) there are no measurable adverse impacts on the critical habitat that could impair its ability to function; (b) there is no reduction in the population of any recognized endangered or critically endangered species; and (c) any lesser impacts are mitigated. If the project is located within a legally protected area, implement additional programs to promote and enhance the conservation aims of the protected area.”



A river dolphin was sighted jumping out of the water near the project site in December 2021

## NDB Project :

The Project aims to build a G3 Tongling road-rail bridge, totaling about 11.96 km, as a Yangtze River crossing channel shared by G3 Beijing-Taipei Expressway, Hefei-Lujiang-Tongling Intercity Railway, and Tongling-Zongyang Commuter Rail.

The Project is located within the experimental zone of the Yangtze River Dolphin National Natural Reserve (YRDNNR), 14.1 km upstream from the buffer zone, and 22.4 km upstream from the core zone. As such, the Project triggers NDB's requirements on critical habitat.

This Project may fit in the “no-go” category unless NDB has sufficient evidence that the IA has developed a set of actions and programs to enhance the conservation aims of the protected area and compliances with NDB ESF.



Tongling River Dolphin National Nature Reserve Administration Bureau

As the mother river of China, Yangtze River serves ecological, socio-economic and cultural importance. The NNR is dedicated to protect three endangered species, which are Class-I national protected species, endemic to Yangtze River and endangered by IUCN Red List, including Yangtze Finless Porpoise, Whitefin Dolphin, and Chinese Sturgeon (*Acipenser sinensis*). In addition, the NNR is home to other eleven endangered species. These species include “critically endangered” Chinese alligator, yellow pond turtle, Yangtze giant softshell turtle, Baer’s pochard and Siberian crane, as well as “endangered” Japanese eel, Japanese grenadier anchovy and four species of birds.

## Impacts:

Main E&S impacts include impacts on critical habitats and aquatic biological resources of the national protected area - YRDNNR and the critically endangered species Yangtze River Dolphin.

Impacts on critical habitats and aquatic biological resources during construction include:

- Loss and change of aquatic habitats due to construction of temporary docks, cofferdams and other underwater structures;

- Impacts to the distribution of aquatic animals caused by noises emitted through underwater construction activities (e.g. drilling), and induced injury or death;
- Impacts to Yangtze River Dolphin, including potential mechanical damage or death by construction activities, reduced population due to project negative impacts to fishery resources, disturbances to feeding and breeding activities attributed to nighttime lighting, and disturbances to migration due to congested vessels;
- Impacts to the habitat and protected species due to deteriorated water quality by accidental release or diffusion emission; and
- Exacerbated damage or injury in case of inappropriate rescue activities.

Impacts on critical habitats and aquatic biological resources during operations include:

- Change of habitat and hydraulic conditions, and water quality-related impacts on endangered dolphin species and their migration, feeding and breeding activities;
- Cumulative impacts to aquatic animals together with the existing bridge; and
- Impacts to habitats and aquatic animals due to accidental release of dangerous goods from the bridge.

In addition, potential reputational risks may arise from non-compliance with legal procedures, inadequate protection measures, or mismanagement of the identified biodiversity impacts.

In addition, project development in Yangtze River is likely to cause close attention and stringent scrutiny from both government agencies and NGOs. Reputational and project delay risks can arise from less than full compliance with legal procedures, inadequate studies and protected measures, or mismanagement during construction.

## Proposed impact mitigation measures:

Prior to the construction, project design alternatives have already been assessed and optimized based on environmental, social, economic and technical considerations, comprising key actions of:

- Single-span bridge with no pillars in the middle of the river,
- Sing jack-down method for pillar drilling instead of percussion, to reduce noise, vibration and turbidity,
- Limit construction window for under-water works to dry season only (October to next April) to avoid breeding season of the dolphin,
- Minimization of construction vessels by utilizing road transportation, and
- Establishment of cofferdams prior to underwater construction.

## Gaps with NDB's ESF:

NDB engaged three reputable third-party biodiversity consultants from China Aquatic Life Research Institute, the WWF and the ERM to review project E&S documents, verify project biodiversity impacts and risks, and develop necessary set of actions to manage the biodiversity risks.

Findings include:

- Biodiversity impact assessment is not comprehensive enough to the standards of NDB ESF, e.g. the loss of habitats caused by the temporary ports and decks, noise impacts by piling and operations etc.
- Mitigation measures are absent or inappropriate, e.g. release of fisheries, driving away dolphins by making noise etc. .
- Implementation capacity is insufficient. There is no biodiversity expertise within the project team to implement mitigation plans.

The consultants proposed a workplan for the Project to comply with NDB ' s ESF. Actions include but not limited to additional biodiversity studies, mitigation and offset measures, monitoring and reporting mechanisms.

NDB is advised not to commit to the Project until the biodiversity review is complete and a set of necessary actions is agreed with IA, in order for the Project to comply with country system and NDB ESF provisions for projects in critical habitats.

## NDB measures specified in the Environmental and Social Impact Management Plan (ESIMP):

- Engaging aquatic biodiversity expert in the due diligence: identification, concept note to appraisal stages: China Academy of Aquatic Life Research Institute.
- Holding an expert panel meeting to validate the proposed Aquatic Life Conservation Plan: organized by China Aquatic Wide Life Committee, involving five top dolphin experts in the country.
- Visiting the authority: Fishery Bureau of Yangtze River Administration Committee.
- Finalizing mitigation plans (Aquatic Life Conservation Plan) and including it in the ESIMP.
- Assisting the PIA to implement the plans: identify ecological expert in the project team, ongoing technical support, monitoring.



NDB project team conducting a site visit with the project staff during the project appraisal.

## Aquatic Life Conservation Plan

- Compensation/offset of habitat loss by restoring river beaches within 2-3km upstream and downstream of the pillar construction sites, currently occupied by temporary farming activities;
- Noise-abatement devices to further reduce noise emission from the construction activities;
- Establishment of real-time monitoring on noise levels and detection devices to alarm the approaching of dolphins so that the construction can be paused in due course;
- Enhancement of dolphin rescue system including a special rescue fund, rescue equipment in construction sites and in the YRDNNR, development of and drills on an emergency rescue plan;
- Navigation control near the pillar construction sites to avoid vessel jam;
- Noise monitoring and modelling during operation to optimize traffic management on the bridge and navigation management on the river; and
- Information disclosure and public participation to improve public awareness on conservation of aquatic life.

## Outcomes

- Increased sighting of river dolphins around the construction site (potential indication of increase in species count);
- Increased contractor awareness on biodiversity conservation through awareness training and resulting better construction practices;
- Increased community awareness on dolphin protection through project stakeholder engagement activities;
- River bank is restored to its natural status after being impacted by past farming activities.




## Reference

NDB's Environmental and Social Framework and Standards  
<https://www.ndb.int/projects/environment-and-social-sustainability/>



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