



WWF

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THE BELT AND ROAD INITIATIVE

WWF Recommendations and Spatial Analysis

In 2013, China launched an ambitious foreign policy initiative to revive and strengthen its trade links between China and the rest of the world, with an initial focus on Asia and Europe – the Belt and Road Initiative (BRI). At WWF, we recognise that this unprecedented initiative presents both enormous development opportunities but also some challenges, and that it will have substantial impacts on biodiversity and natural resources.

Thus, we have undertaken a preliminary spatial analysis of the possible environmental impacts along its initially proposed 6 land-based economic corridors. This paper summarises our findings and recommendations. In it, we outline ways in which the initiative (also known as the New Silk Road) could be designed and implemented to maximise the potential sustainable development benefits and minimise the potential negative impacts. We also recommend that a more detailed spatial analysis is carried out before the many projects are designed and implemented.

We urge the participants of the Belt and Road Forum to consider our recommendations. We remain committed to working with all stakeholders to implement these recommendations.

UNEQUALLED SCOPE

The geographical scope of the BRI is unequalled. Currently, at least 64 countries fall within its ambit and the number is increasing. Its terrestrial route aims to cut across Central Asia, Russia, India, Pakistan and Europe and the maritime route runs along the coast of Asia, East Africa and Europe. Increasingly, the BRI reaches beyond Asia and Europe; it is becoming a global strategy for China.

The initiative focuses heavily on regional infrastructure development but its official objectives are far wider. The BRI has been designed with economic and geopolitical objectives at its core and it will shape China's foreign policy for decades to come.

By 2015, participating financial institutions and companies may have raised funds well over US\$800 billion to support the BRI.¹ In 2017, these figures are likely to be much higher.

In 2016, China's president Xi Jinping called for a "green, healthy, intelligent and peaceful" Silk Road. He suggested the participating countries should "deepen cooperation in environmental protection, intensify ecological preservation and build a green Silk Road".²

WWF welcomes this call. Indeed, infrastructure development can generate enormous economic benefits, but if it isn't planned carefully, it can have unintended negative environmental consequences, which in turn can jeopardise the success of the project. Much of the damage that infrastructure development can cause, can potentially be avoided through careful decisions about location, an integrated and coherent approach to development planning, and sensitive construction methods and other mitigation measures. Adopting these approaches can yield important social and economic benefits, as well as minimise environmental risks. WWF is committed to working with governments and investors to discuss how this can be done in practical terms.

MAPPING POTENTIAL ENVIRONMENTAL IMPACTS

The BRI area includes many different environmentally important areas such as Protected Areas, key landscapes, Global 200 Ecoregions, and biodiversity hotspots that cover the distribution range of flagship species, as well as areas that are important for delivering ecosystem services that provide social and economic benefits to people.

At WWF, we have carried out an initial rapid spatial analysis of the potential areas where the BRI might impact on biodiversity and natural resources by looking at where proposed BRI corridors may be located in relation to important areas for biodiversity and natural

¹ Grimsditch, M (20 October 2015), Financial platforms that may support projects in the "One Belt One Road" route, Inclusive Development International (IDI), and see IDI (2016) "Making Inroads: Chinese Infrastructure Investment in ASEAN and Beyond" [Online] <http://www.inclusivedevelopment.net/wp-content/uploads/2016/08/Making-Inroads-China-Infrastructure-Finance.pdf>

² State Council Information Office of the People's Republic of China (23 June 2016) President Xi calls for building 'green, healthy, intelligent and peaceful' Silk Road [Online] <http://www.scio.gov.cn/32618/Document/1481477/1481477.htm>.

resources. The analysis aims to contribute to identifying the benefits and mitigating the risks of the BRI, with an emphasis on its infrastructure development component.

Our analysis used international GIS datasets to scope out the impacts that the initially proposed 6 land-based BRI corridors could have on terrestrial and inland water environments. Key elements of our rapid spatial analysis include:

- examining overlaps of biodiversity and natural resources with planned BRI corridors. Importantly, the corridors are not fixed, and the routes indicated only represent our current best knowledge of their location.³
- using a multi-variate approach. Each component is categorised in a range from **lower risk or potential impact** (indicated in **green** on the maps) through to **higher risk or potential impact** (indicated in **red**). Blank areas within the corridors are those where we did not identify a specific risk.
- examining and mapping the following:
 1. **Threatened species:** our analysis of IUCN Red list data⁴ **showed that BRI corridors overlap with the range of 265 threatened species including 39 critically endangered species and 81 endangered species** – including saiga antelopes, tigers and giant pandas.
 2. **Environmentally important areas:** we found **BRI corridors overlap with 1,739 Important Bird Areas or Key Biodiversity Areas and 46 biodiversity hotspots or Global 200 Ecoregions**⁵.
 3. **Protected areas:** all protected areas⁶ in BRI corridors were potentially impacted. In addition, 32% of the total area of all protected areas in countries crossed by BRI corridors were potentially affected.
 4. **Water-related ecosystem services:** we highlighted the key natural and semi-natural ecosystems that are important for supporting water-linked ecosystem services (e.g., natural forests and grasslands) in areas where there is the biggest pressure on water supply and the highest risk of large floods⁷. This analysis therefore highlights where there are social and economic risks from environmental damage.

³ The corridors are based on those set out in a report undertaken by the National Remote Sensing Centre of China, and were provided by Dr Zheng Yaomin, Institute of Remote Sensing and Digital Earth, Chinese Academy of Science.

⁴ We examined distribution data for all Critically Endangered, Endangered and Vulnerable terrestrial mammals, inland aquatic mammals, birds and reptiles on the IUCN Redlist of species. Bird data are from Birdlife International. All other species data are from IUCN.

⁵ A biodiversity hotspot is a biogeographic region with significant levels of biodiversity that is threatened with destruction. The Global 200 (G200) is the list of ecoregions identified by WWF as priorities for conservation. An Important Bird and Biodiversity Area (IBA) is an area identified using an internationally agreed set of criteria as being globally important for the conservation of bird populations. IBAs are identified by BirdLife International. The Key Biodiversity Areas (KBA) approach helps to identify and designate areas of international importance in terms of biodiversity conservation using globally standardised criteria. KBAs extend the Important Bird Area (IBA) concept to other taxonomic groups and are now being identified in many parts of the world, by a range of organisations.

⁶ Data obtained from the World Database on Protected Areas.

⁷ Data obtained from the WWF Water Risk Filter.

5. **Wilderness characteristics:** we analysed areas with the greatest wilderness characteristics.⁸ New activities in these areas (e.g., a road through a previously remote, inaccessible area) can cause more serious long-term impacts than an extra road in an accessible area.
6. **Overall impacts:** we also produced an equally-weighted summary of layers 1-5. This provides an initial summary of the areas that are likely to be at highest risk as a result of the BRI corridors.

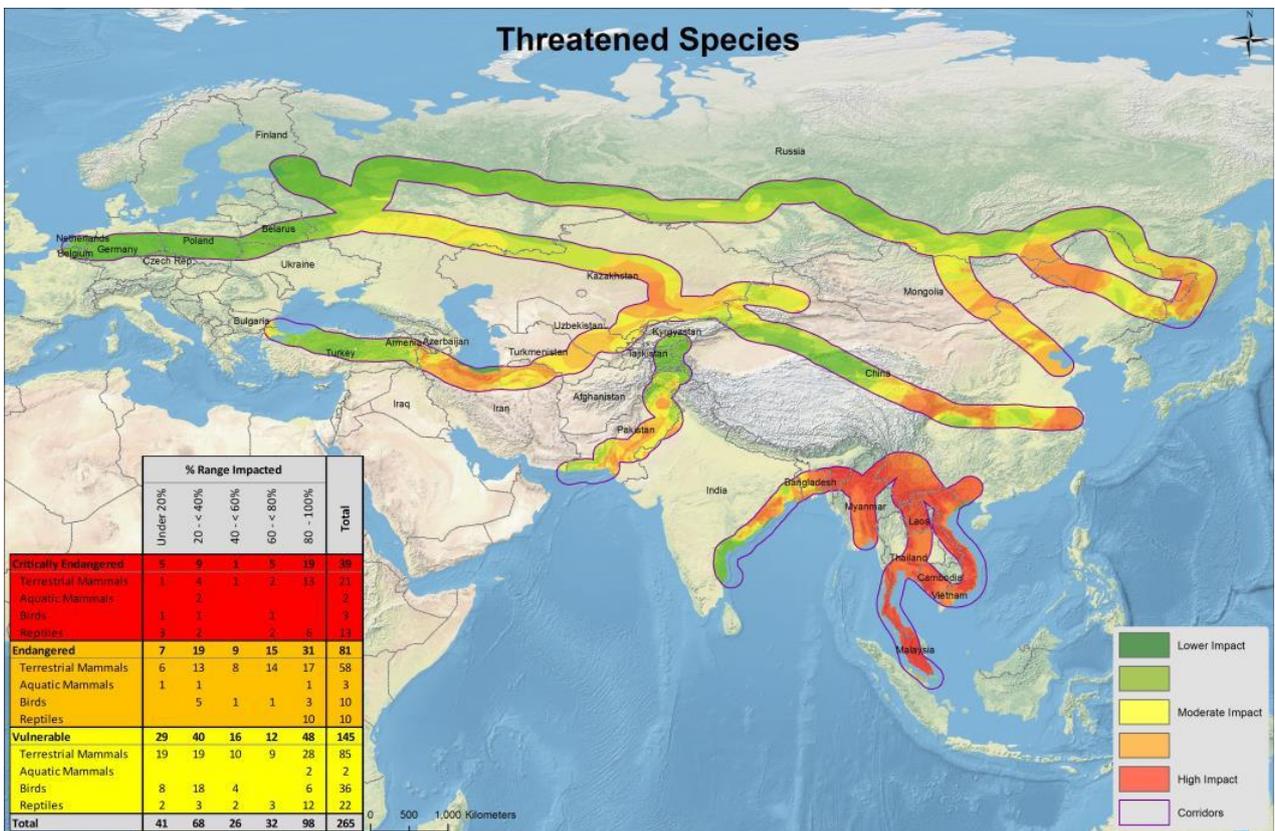
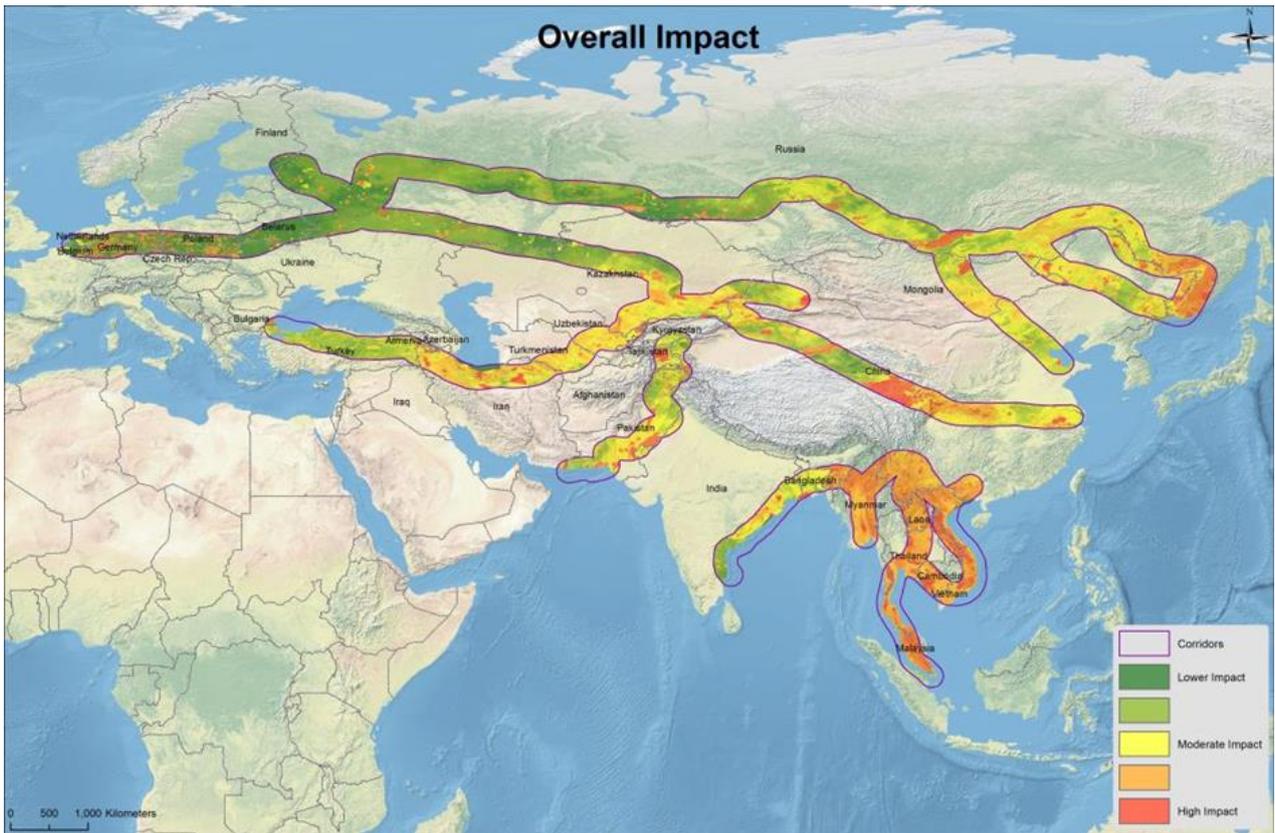
The maps on the next pages show the results of our spatial analysis. They reveal two important points:

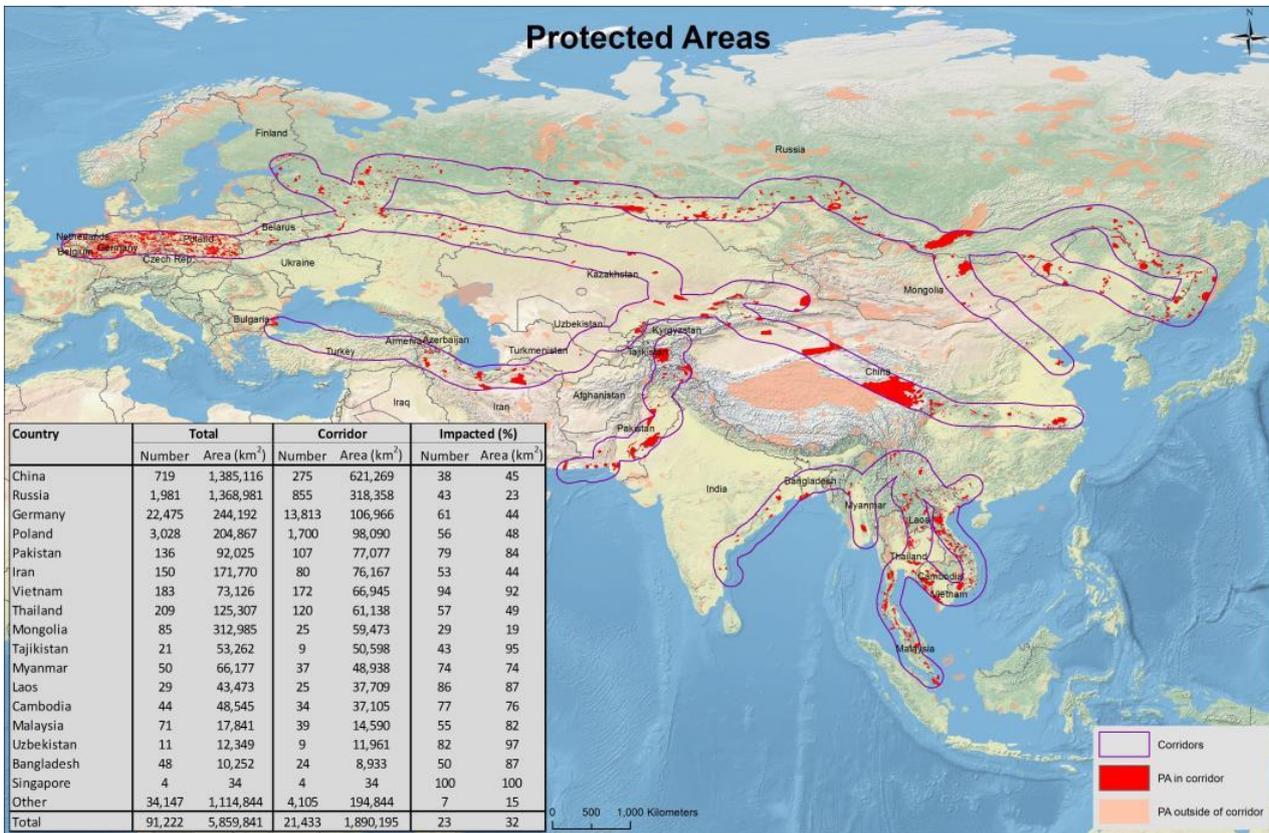
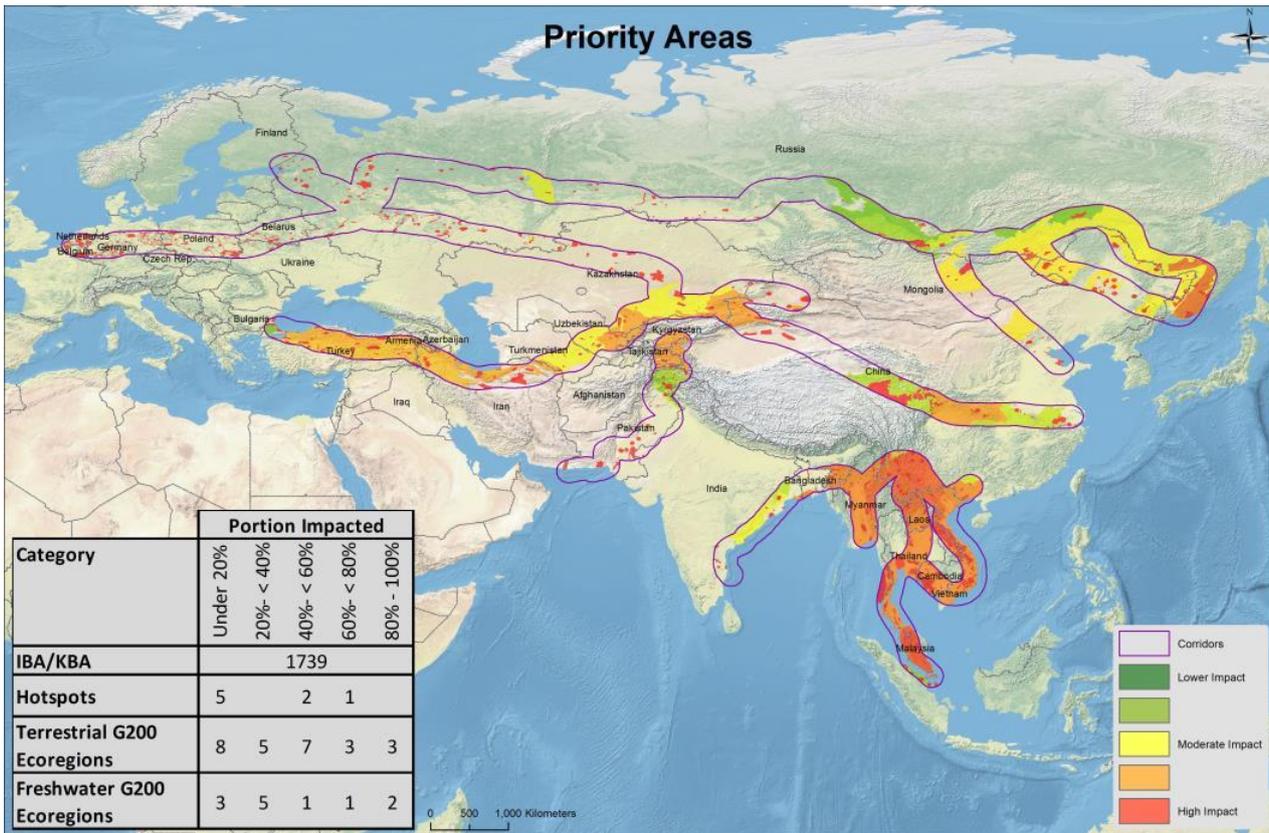
- There is significant potential overlap between the terrestrial BRI corridors and areas that are important for biodiversity conservation and for the provision of social and economic benefits to people. These overlaps indicate risk areas for potentially negative impacts of infrastructure development.
- Follow up analysis is required to fully document the potential overlap, to identify potential solutions, and to develop opportunities for investment in ecological infrastructure.

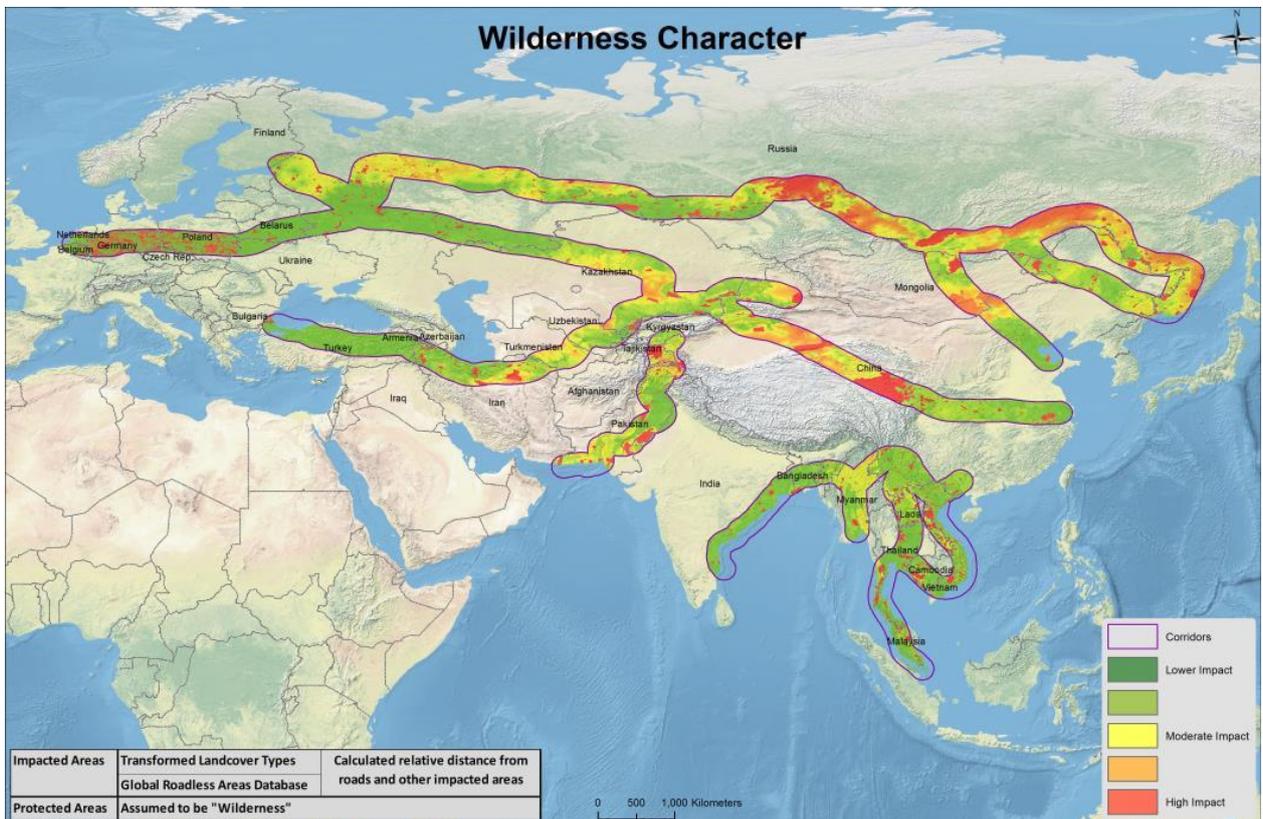
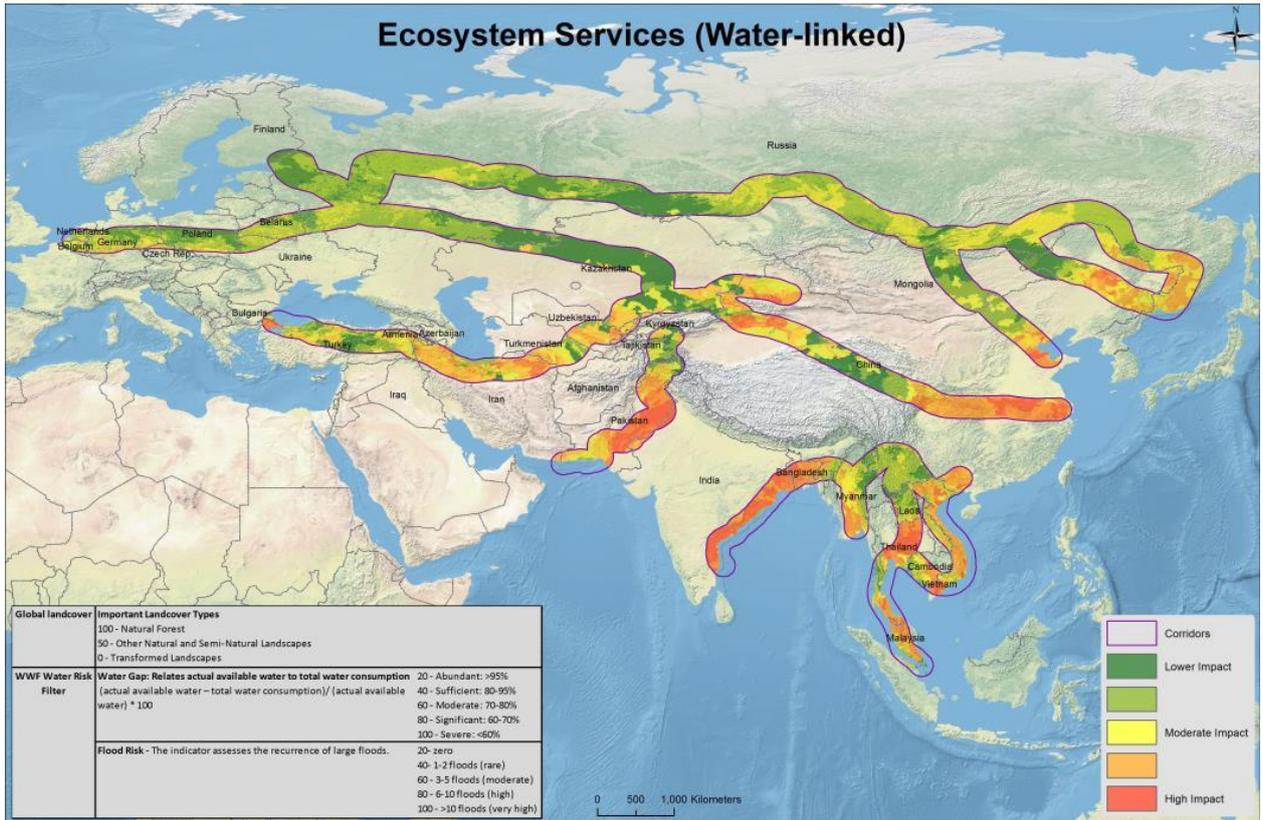


Uncia uncia Snow leopard © Klein & Hubert / WWF

⁸ We used data from from: www.global-roadmap.org which shares the supporting information of Laurance, WF, Clements, GR, Sloan, S, O'Connell, CS, Mueller, ND, Goosem, M, Venter, O, Edwards, DP, Phalan, B, Balmford, A and Van Der Ree, R, (2014) A global strategy for road building, *Nature*, 513(7517), pp. 229-232; the 2009 1km global land cover from the European Space Agency; and the World Database on Protected Areas.







The current analysis has a number of limitations⁹, of which box 1 presents an example. Our suggestions for follow-up spatial analyses that should be used to guide policy and decision making are presented in recommendation 5 below.

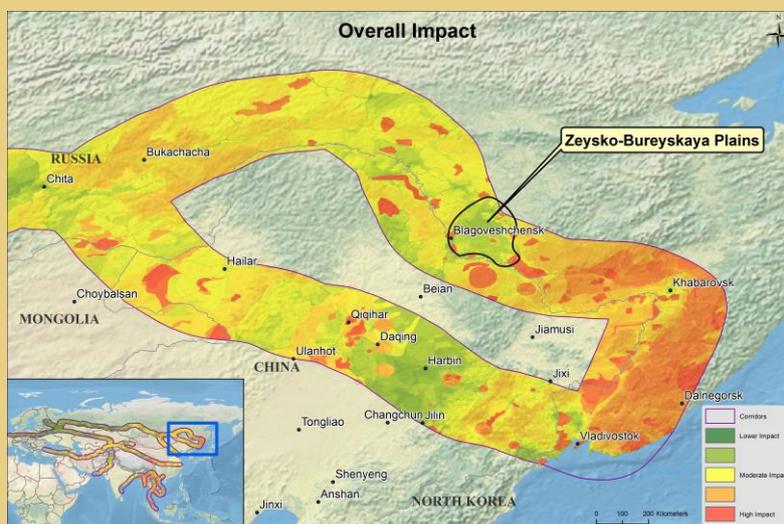
Box 1: ‘Green’ on the map does not mean a ‘green light’ for infrastructure projects.

The BRI corridors will cut across the Russian Far East – a vast territory that comprises a third of the Russian Federation. The Russian Far East contains large areas of intact forest landscapes and valuable wetland ecosystems, and is home to many threatened species that will all be impacted by the BRI. Our spatial analysis correctly identifies high risk areas of the BRI corridors in Primorsky and Khabarovsk provinces, which house the Korean pine broadleaf forests, the habitats of the Amur tiger.

However, in the spatial analysis, the Zeysko–Bureyskaya plains (Amursky province) show up in ‘green’ (i.e. indicating “low risk”), despite the fact that this is a very important area for the conservation of several threatened species: including the Oriental white storks, the Red-crowned cranes and the Daurian cranes. The BRI corridors are likely to severely impact these plains. This example shows the need for further detailed mapping and analysis before BRI projects are planned and implemented.



Ciconia boyciana © Alpsdake



⁹ Limitations include:

- Although we have used the best indication of the BRI corridor routes available at the moment, these are subject to change.
- We will have missed some very important biodiversity and ecological features because we analysed published international datasets rather than country or local datasets (see box 1). Furthermore, our study did not include any input from stakeholders.
- We have not examined the marine BRI corridors and hubs, or impacts on marine features.
- The analysis does not examine impacts on ecosystem services in any detail. Significant impacts on vulnerable people are possible.
- The analysis is not a fine-scale local assessment. It should not be used at the local level.
- Our analysis is only focused on impacts. It does not identify opportunities (e.g., for the development of ecological infrastructure).

THE BELT AND ROAD FORUM

China has very high ambitions for the Belt and Road Forum, which it hosts on 14-15 May 2017. The Ministry of Foreign Affairs (MFA)¹⁰ says China will use the forum to:

- build a more open and efficient international cooperation platform,
- promote a closer, stronger partnership network,
- push for a more just, reasonable and balanced international governance system relating to the BRI.

During the forum, China is expected to sign agreements of cooperation with nearly 20 countries and more than 20 international organisations. Furthermore, China aims to work with countries along both the terrestrial and maritime BRI corridors on nearly 20 action plans – relating to infrastructure, energy and resources, production capacity, trade and investment – which will help to turn the current blueprint for the BRI into a clear roadmap¹¹. According to the MFA, all parties attending the forum will identify major cooperative projects and sign financing agreements in support of these projects. Working groups and an investment cooperation centre will be set up. Finally, China will work with all parties on a set of measures, including an improved financial cooperation mechanism, a cooperation platform for science, technology and environmental protection, and better exchange and training opportunities to share expertise.

CONCERNS AND OPPORTUNITIES

WWF is concerned that BRI-related investments, including infrastructure development, may result in a unique set of challenges to sustainable development, if they are not properly planned and implemented. The maps presented above provide a preliminary indication of these challenges. At the same time, we see significant opportunities for the BRI to achieve positive outcomes in economic, social and environmental terms – for example in the areas of ecological infrastructure (see box 2 on the next page) and renewable energy.

Prior to the Belt and Road Forum, the Ministry of Environmental Protection of China (MEP) released the “Guidance on Building the Green Belt and Road”¹². We welcome this new guidance, which is the first step to turn the slogan ‘a green Silk Road’ into reality. We are happy to see the guidance reflect several principles that are important to WWF (e.g. mainstreaming sustainability and promoting ecological infrastructure and renewable energy). However, there is a long way to go for stakeholders to turn the guidance into effective actions. The Forum will provide an important opportunity to begin implementation. The following section presents recommendations to support this process.

China, as the convenor of the forum, has the opportunity to show true global leadership by working with recipient countries and taking responsibility for managing the environmental impacts of the BRI abroad.

¹⁰ http://news.xinhuanet.com/english/2017-04/18/c_136218408.htm

¹¹ http://news.xinhuanet.com/english/2017-04/18/c_136218408.htm

¹² <https://eng.yidaiyilu.gov.cn/zchj/qwfb/12479.htm>

WWF'S RECOMMENDATIONS

System level design

Recommendation 1.

The BRI should be formulated, planned and implemented within the framework of two key policy instruments that address pressing sustainable development challenges in China and the rest of the world:

- The concept of **ecological civilisation**, recently expressed by the government of China as being a key concept to achieve sustainable development.
- The **Sustainable Development Goals**, unanimously adopted by all 193 UN member states.

The participants of the forum should use these two policy instruments, as well as applicable international law, as a starting point for formulating the BRI roadmap.

In particular, the Paris Agreement on tackling climate change and other multilateral environmental agreements are important international legal instruments that should also steer the design and implementation of the BRI.

Recommendation 2.

Considering the speed and scale of investment supported by the BRI as well as the non-mandatory nature of the guidance issued by MEP, we recommend that more proactive actions are taken to ensure the guidance would be implemented effectively by:

- 2.1 preparing annual work plans with concrete activities;

Box 2. Ecological infrastructure

Infrastructure encompasses more than just roads and railways. Ecological or 'green' infrastructure can be broadly defined as a strategically planned network of high quality natural and semi-natural areas with other environmental features, which is designed and managed to deliver a wide range of ecosystem services and in order to protect biodiversity in both rural and urban settings.¹³

Ecological infrastructure aims to enhance nature's ability to deliver multiple ecosystem goods and services, such as clean air or water, and protection from natural hazards such as floods and storms. One of the key attractions of ecological infrastructure is its ability to perform several functions in the same spatial area. In contrast to most 'grey' infrastructure, which usually has one single objective, green infrastructure is multifunctional, so it can promote win-win solutions or 'small loss--big gain' combinations that deliver benefits to a wide range of stakeholders, as well as to the public at large. However, for this to happen, the ecosystem must be in a healthy condition. Ecological infrastructure encourages a development process that is more sustainable and resource efficient.

We are promoting ecological infrastructure in various places around the world, for example in the lower Danube region.¹⁴

¹³ http://ec.europa.eu/environment/nature/ecosystems/benefits/index_en.htm

¹⁴ http://d2ouvy59podg6k.cloudfront.net/downloads/wwf_factsheet_green_corridors_ldgc.pdf

- 2.2 strengthening monitoring and evaluation by identifying key indicators and establishing feedback mechanisms;

Recommendation 3.

BRI participants must direct significant investments towards:

- ecological infrastructure (see box 2)
- renewable energy infrastructure

This will maximise the benefits of the BRI. It should be reflected in the nature of the cooperation projects that may be announced during the forum.

Sector level planning

Recommendation 4.

Environmental and sustainable development concerns should be upstreamed and mainstreamed in infrastructure decision making and investment, for example through:

- 4.1 using Strategic Environmental Assessments and other tools to assist decision making in policy development and planning;
- 4.2 applying natural capital approaches (See box 3 on the next page).

Recommendation 5.

Ecologically important and sensitive areas must be identified and mapped and opportunities for ecological infrastructure must be identified. In particular:

- 5.1. The key environmental risk areas identified by our mapping should be further assessed, using key country and local datasets and with input from stakeholders. This will help to highlight BRI corridor planning concerns and to find solutions.
- 5.2. An important addition to our mapping will be to examine the marine corridors and hubs or potential BRI impacts on marine features.
- 5.3. It is important that risks to natural capital (see box 3) are examined at a local level, and that risks to vulnerable and marginalised people (including indigenous peoples) are fully understood.
- 5.4. Further work should be undertaken to identify opportunities for investments in ecological infrastructure.

Recommendation 6.

Infrastructure planning should promote sustainable supply chain management.

Recommendation 7.

To secure the integrity of ecosystems along the BRI routes, relevant authorities should:

- 7.1 establish transboundary national parks, cross border ecological corridors and infrastructure;
- 7.2 enhance collaboration for transboundary biodiversity conservation (e.g. with regards to migratory species).

Box 3. Natural capital: an approach to maximise benefits and manage environmental risks

Analysing the available ‘natural capital’ at the potential development site is one of the tools that can help limit the damage that infrastructure development may cause to the environment. ‘Natural capital’ is the term used for those natural assets that yield economic and social benefits, such as:

- rivers which provide fresh water for domestic agricultural and industrial use and energy through hydropower;
- oceans which provide seafood, transport and recreational opportunities, and
- forests which provide timber, and other valuable products such as medicinal plants, and generate livelihoods and cultural benefits. They also and which prevent land erosion, absorb carbon to reduce climate change, and provide a home for wildlife that attracts tourism.

Mapping these natural assets (or natural capital) and calculating their value, will help in assessing the impact that new developments will have on these assets and the benefits they provide. It also, helps planners to better understand the associated benefits or costs of alternative infrastructure development options in monetary terms.

Benefits can include improved resilience of development and infrastructure, a higher rate of return on investment, reduced economic and financial risks and costs, and stimulation of new markets, innovation, investment and job creation.

Project level planning and implementation

Recommendation 8.

To mitigate potential negative impacts, all BRI projects and their financing should:

- 8.1 follow the highest environmental and social standards and safeguards (such as the ones applied by international finance institutions such as the World Bank/International Finance Corporation);
- 8.2 be consistent and comply with relevant international law and standards;
- 8.3 apply a fair and level playing field in procurement procedures.

Governance and transparency

Recommendation 9.

Transparent and inclusive governance in BRI projects will positively influence the quality of BRI decision-making processes and the outcome of BRI projects. It will increase ownership and the chances of effective implementation. We therefore:

- 9.1 encourage CSO participation and consultation at all levels (including local, national and multinational) and at all stages of the BRI (conceptual, planning and project implementation, and monitoring);
- 9.2 recommend that the cooperation platform for science, technology and environmental protection, which is planned to be established during the forum, will be open to participation from a wide variety of (self-selected) stakeholders. These should include those from environmental, social and economic backgrounds.

We urge the participants of the Belt and Road Forum to express strong commitments to these recommendations by addressing them and incorporating them in the outcomes of the forum – including within cooperation agreements and projects, the BRI roadmap, action plans, financing agreements, the terms of reference and composition of the working groups, and the terms of reference of the investment cooperation centre.

WWF AND THE BELT AND ROAD INITIATIVE

The BRI is highly relevant to WWF's work: we are active in 33 of the 64 or more countries that the BRI currently traverses. And the BRI cuts across several important ecological regions as well as the ranges of a number of important species where we are working. We have been interacting with high-level decision makers in China to promote the 'greening' of the BRI. Using our network and presence throughout the BRI corridor areas, as well as our expertise and credibility in several subjects critical to the BRI, we are committed to continuing to provide support and suggestions at various levels of the development and implementation of the BRI, including:

- the conceptual and standards-setting level;
- the sectoral level, including the finance sector; and
- the project level, with respect to mitigating potential negative impacts of BRI projects.

Also, by promoting and maximising positive impacts (for example by encouraging the inclusion of ecological infrastructure and renewable energy infrastructure, as well as greater participation and transparency within the BRI), WWF will contribute towards implementing the recommendations we have outlined above.

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Why we are here

To stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature.

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