



Did We Save **Our** Tigers?



CPSC 547 Information Visualization
Kattie Sepehri, Unma Desai, Ramya Rao Basava

Motivation



- 60% decline in species populations in last 40 years
- Tigers are apex predators
- Mitigate climate change, freshwater resource, conserve other species



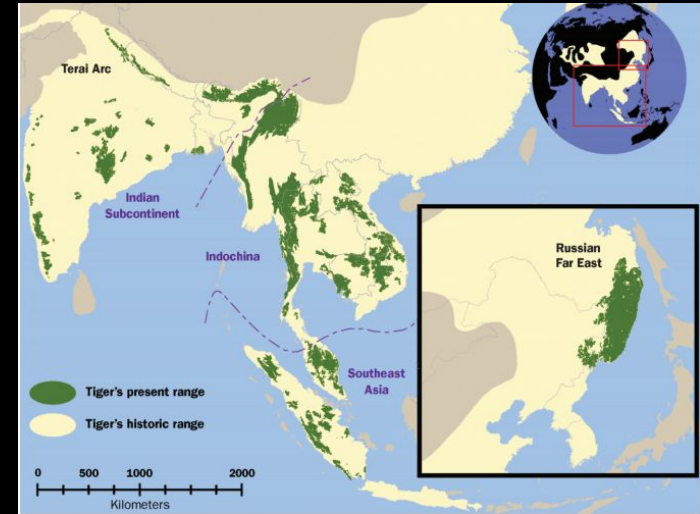
A Bengal tiger.

Source: <https://www.tigers-world.com/bengal-tiger/>

Motivation - Current Status



- Lost over 95% habitat
- 100000s → <4000 - 96% decrease
- \$20bn illegal trade market
- Only 8 countries have breeding populations
- Endangered species in the IUCN Red List



Historic vs. present tiger ranges.
Source: Dinerstein et al. (2007)

Motivation - Tigers in India



- India has 70% global tiger population
- 1411 (2006) → 2967 (2018)
- Save Our Tiger, Project Tiger → successful conservation campaigns
- Across 18 tiger populated states across 12 years



The ad campaign by WWF in India

Source:

<https://installornot.com/news/aircels-save-our-tigers-campaign-gets-support-and-so-do-the-tigers/>



Our Project

- Interactive explainer article visualizing change in tiger population
- Enable analysis and insights for future conservation efforts
- Static and interactive visualizations
- No such current visualizations
- **Data:** Obtained from Government of India website
12 year data for 18 states, grouped by region
- **Technique:** Website in HTML, CSS
Visualizations in Python, using Plotly

Data Abstraction



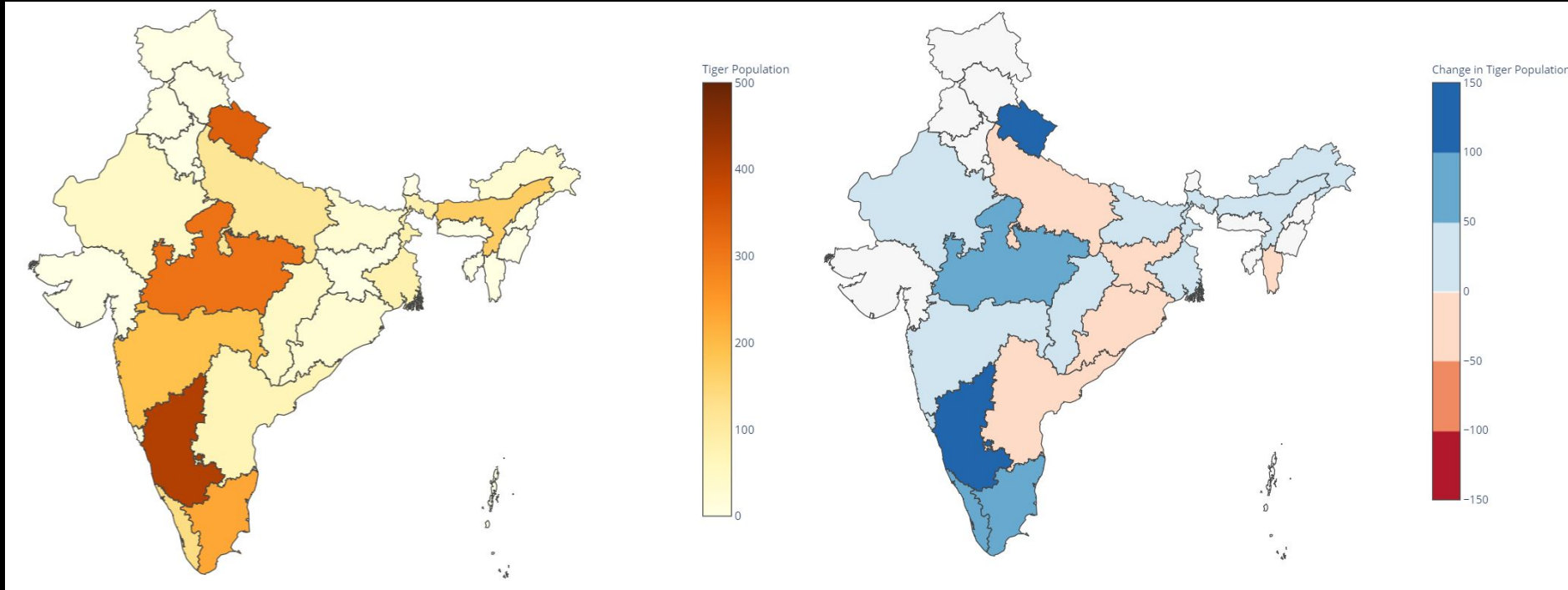
- Time-series static dataset for 2006, 2010, 2014, 2018 for 18 states
- Attributes: States, Regions, Tiger population for each year
- Derived data: Change in population
- Categorized: States grouped by region

Task Abstraction

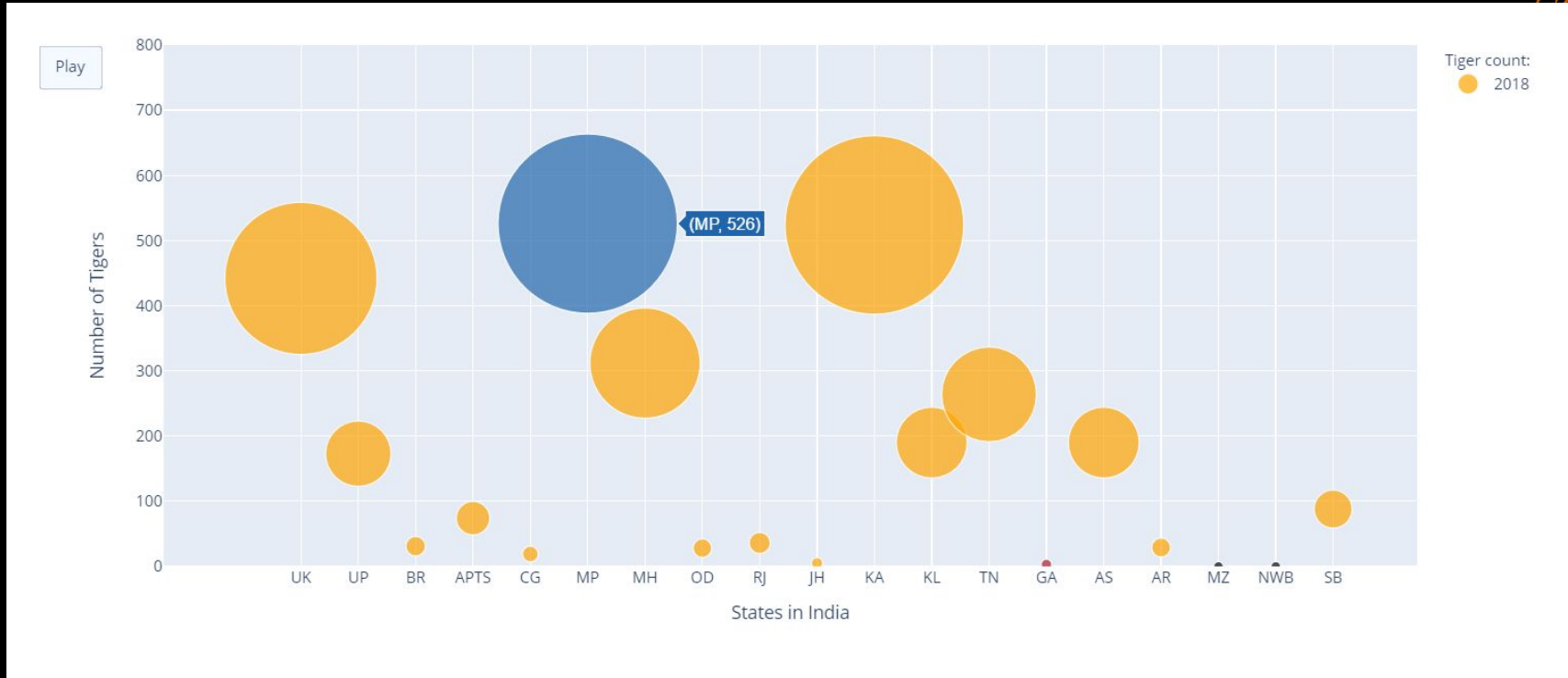


- Discover, Present, Enjoy
- Target: Trends and Outliers
- How: Map → Hue, Saturation
Juxtapose
Change
Select

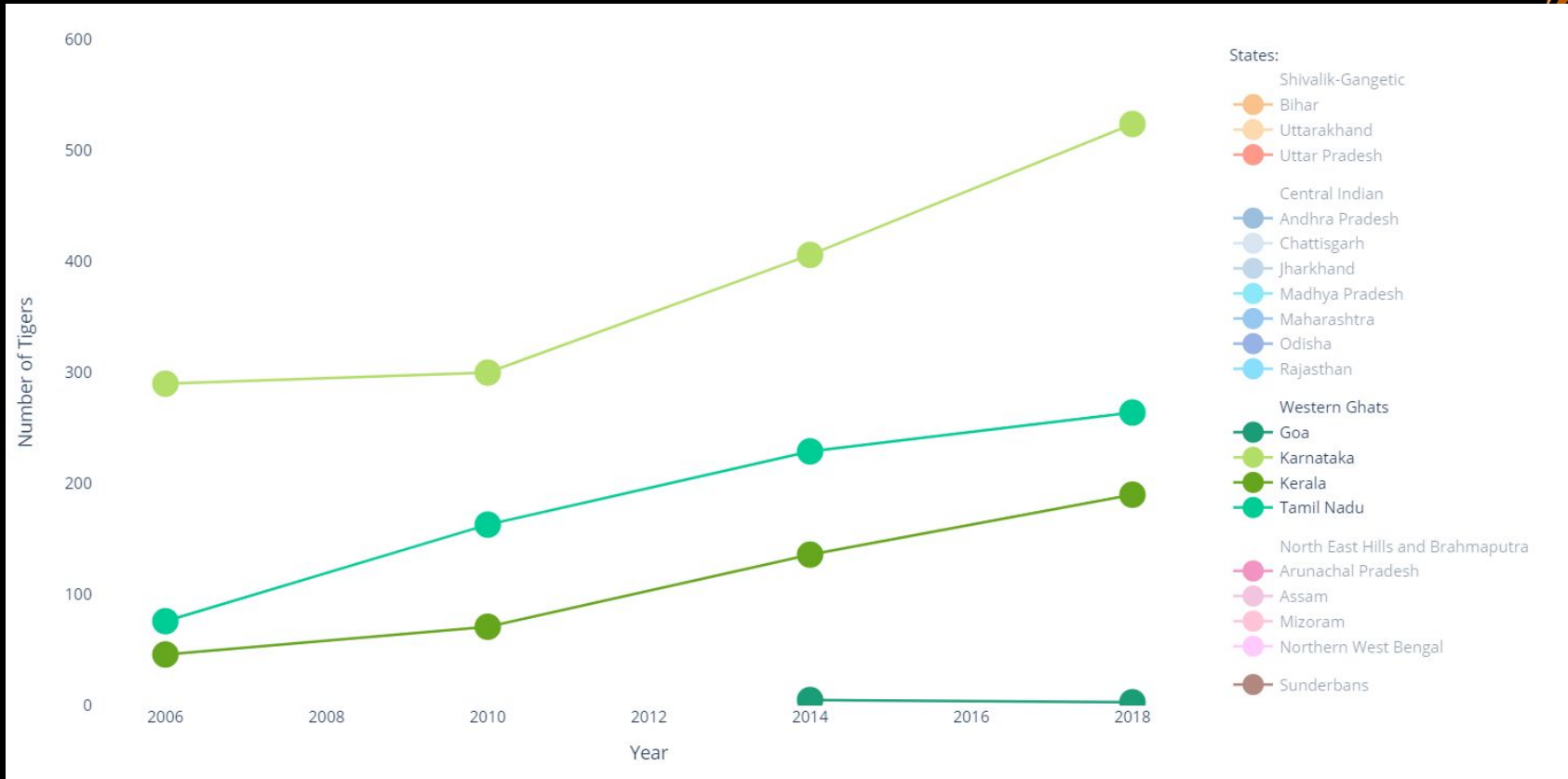
Idioms: Choropleth Maps



Idioms: Scatterplot



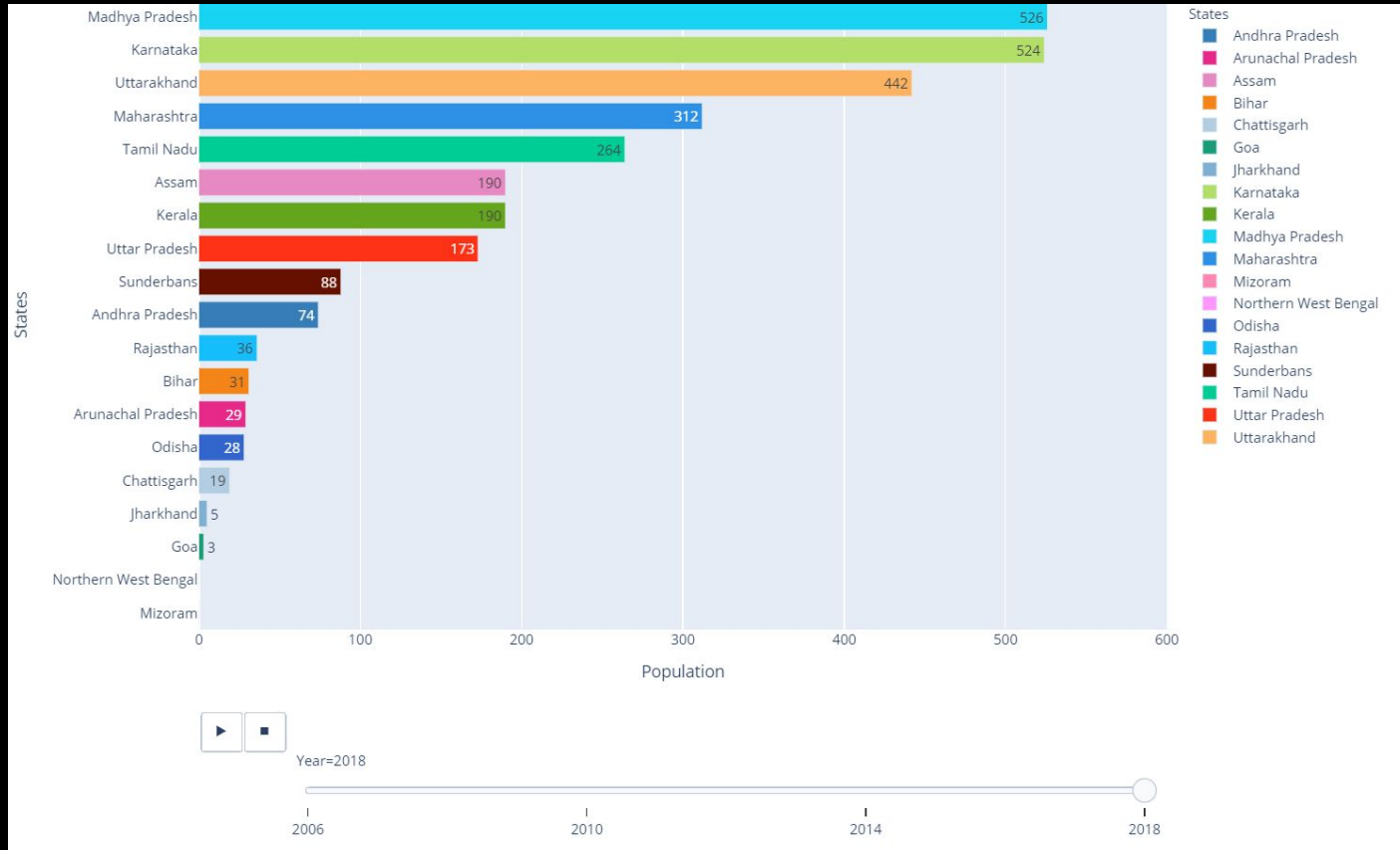
Idioms: Stacked line chart



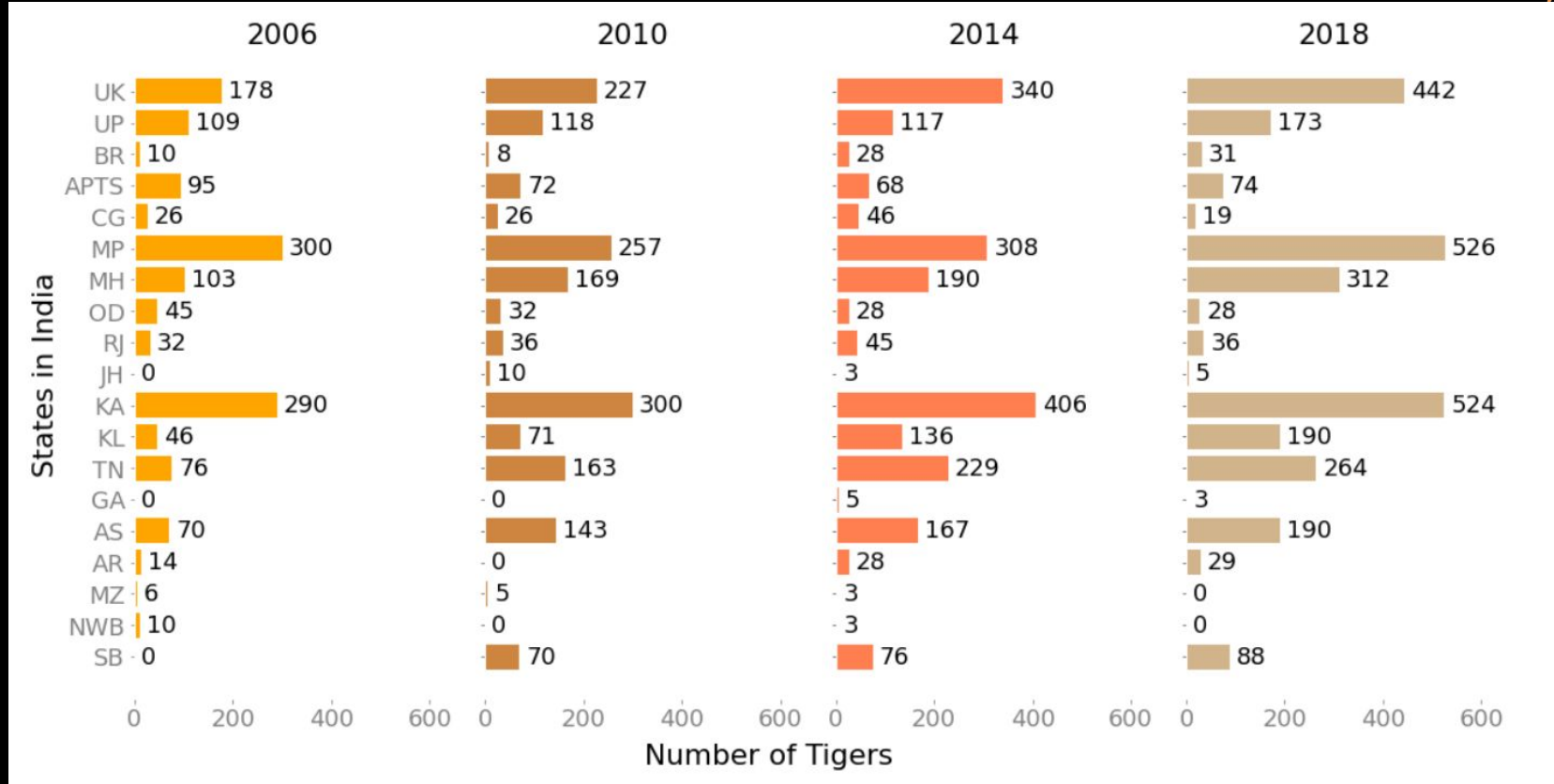
Idioms: Multiple line charts



Idioms: Racing bar chart



Idioms: Multi-bar chart





Project Demo

Link: <https://bramyarao.github.io/547-Infoviz-Final/>

Results



- Completed interactive visualizations
- Informative explainer article
- Able to see trends, outliers, geographic data
- Enable readers to analyse and recommend future policies

Limitations and Future Work



- Lack of larger data set
- No in-depth analysis of socio-political and environmental factors
- Global scale for more species
- Predict trends for future populations

References



- https://wwf.panda.org/wwf_news/?360235/world-wildlife-day
- https://www.wwfindia.org/about_wwf/priority_species/bengal_tiger/why_save_the_tigers/#
- https://ntca.gov.in/assets/uploads/Reports/AITM/Status_Tigers_India_summary_2018.pdf
- <https://www.worldwildlife.org/species/tiger>
- <https://www.panthera.org/cat/tiger>
- <https://www.bbc.com/news/world-asia-india-49148174>
- Dinerstein, E. Loucks, C. Wikramanayake, E. Ginsberg, J. Sanderson, E. Seidensticker, J. Forrest, J. Bryja, G. Heydlauff, A. (2007). "The Fate of Wild Tigers". *BioScience*. 57 (6): 508–514. doi:10.1641/B570608. S2CID 85748043
- <https://www.redbubble.com/i/postcard/Tribal-tiger-by-albertocubatas/25686334.V7PMD>



Thank you!