Integrated Biodiversity Assessment Tool

SPECIES THREAT ABATEMENT AND RESTORATION REPORT

STAR CUENCAS IKEA-0

1.1 Summary

Country: Guatemala

Location: [14.7, -90.9]

Date of analysis: 30 January 2023 (GMT)

Size of site: 47 km^2

Generated by: Sara Fernández

Organisation: IUCN

Total STAR Threat Abatement score (centiSTAR unit): 427.93

Total STAR Restoration score (centiSTAR unit): 21.18

Mean STAR Threat Abatement score (centiSTAR unit): 213.97

Mean STAR Restoration score (centiSTAR unit): 10.59

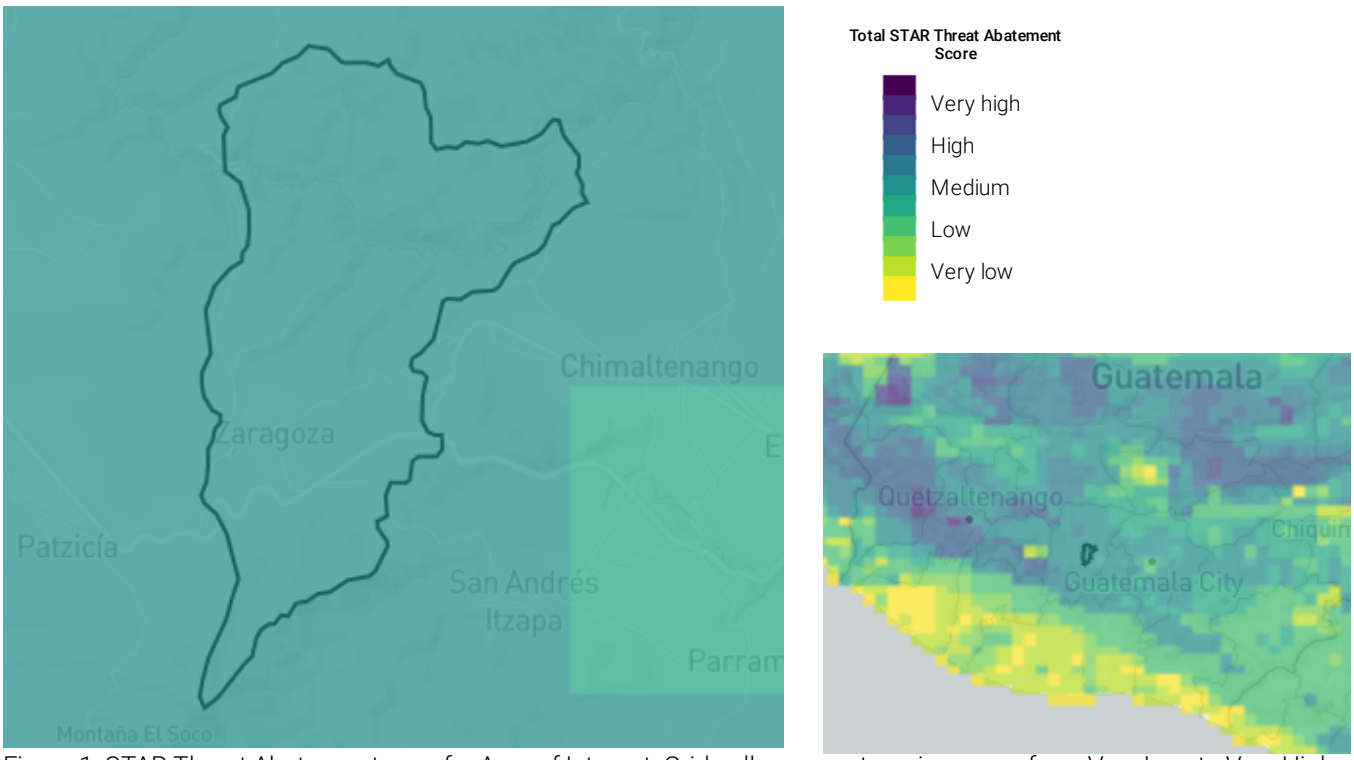

Figure 1: STAR Threat Abatement map for Area of Interest. Grid cell score categories range from Very Low to Very High. Note that low scores do not mean that there are no threatened species present. Grid cells are at a 5 km resolution.

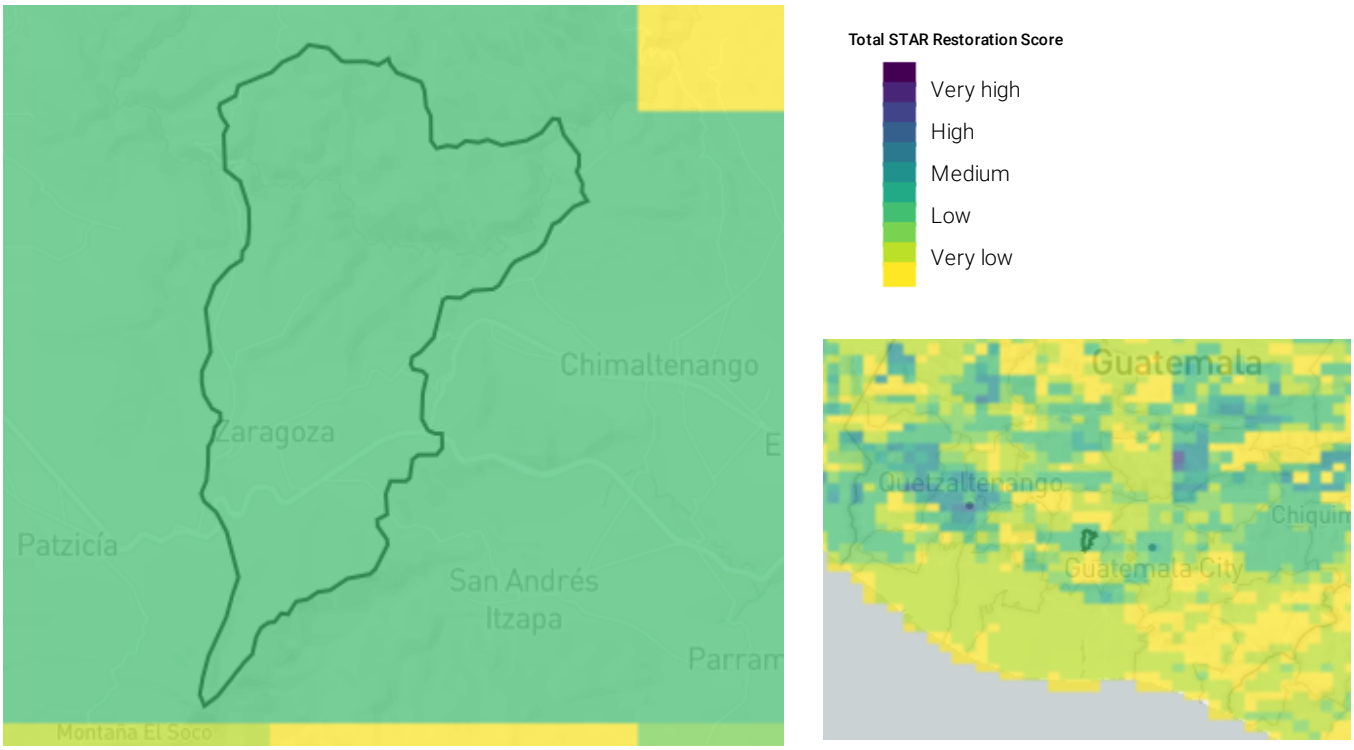

Figure 2: STAR Restoration map for Area of Interest. Grid cell score categories range from Very Low to Very High. Grid cells are at a 5 km resolution.

The Area of Interest includes pixels in the top 96% of scores globally for both Threat Abatement and Restoration.

STAR Cuencas IKEA-0's total threat abatement score as a proportion of Guatemala's total threat abatement score

Figure 3: % contribution of total STAR Threat Abatement score for Area of Interest to total country score.

Guatemala's total threat abatement score as a proportion of The Americas's total threat abatement score

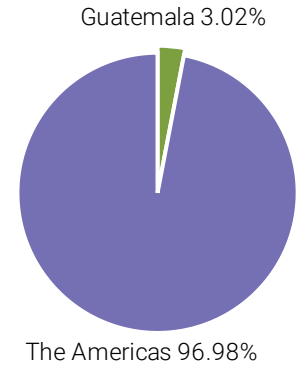

Figure 4: % contribution of total STAR Threat Abatement score for country to total continent score.

The Americas's total threat abatement score as a proportion of the global total threat abatement score

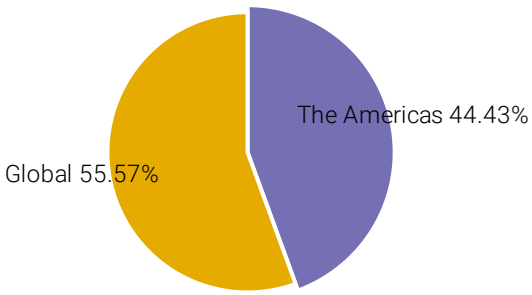

Figure 5: % contribution of total STAR Threat Abatement score for continent to global score.

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1.2 About this report

This report presents STAR Threat Abatement and Restoration scores for species located within the Area of Interest.

It is part of a package generated by IBAT on 30 January 2023 (GMT) that includes the following files:

1. This PDF report, including maps showing Species Threat Abatement and Restoration scores across the Area of Interest, maps showing STAR scores globally, summary STAR scores for the Area of Interest, and information on STAR and its interpretation.
2. PDF "README" containing recommended use of IBAT and limitations.
3. Compressed CSV file "threat_STAR_scores" containing the breakdown of STAR Threat Abatement and STAR Restoration scores by threat type.
4. Compressed CSV file "grid_cell_threat abatement_scores" containing the breakdown of the total STAR Threat Abatement scores for each grid cell in the Area of Interest, including coordinates.
5. Compressed CSV file "grid_cell_restoration_scores" containing the breakdown of the total STAR Restoration scores for each grid cell in the Area of Interest, including coordinates.
6. The STAR Guidance Manual
7. STAR Industry Briefing Note
8. For IBAT Enterprise subscribers only: Compressed CSV file "STAR_species" containing a list of the individual species present in the Area of Interest that are contributing to the STAR scores. Note that other threatened species in other taxon groups (not amphibians, birds or mammals), and non-threatened species of interest for other reasons, might also be present in the Area of Interest, but are not included in this list.

For information on how STAR is calculated and STAR interpretation, please see sections 1.2 and 1.6. Please note the data caveats in section 1.8. For further context on STAR and its uses, refer to STAR methodology publication, and for commercial users also the STAR Industry Briefing Note and Guidance Manual.

1.3 Threat Abatement Scores

The total STAR Threat Abatement score within the Area of Interest is (centiSTAR unit): 427.93

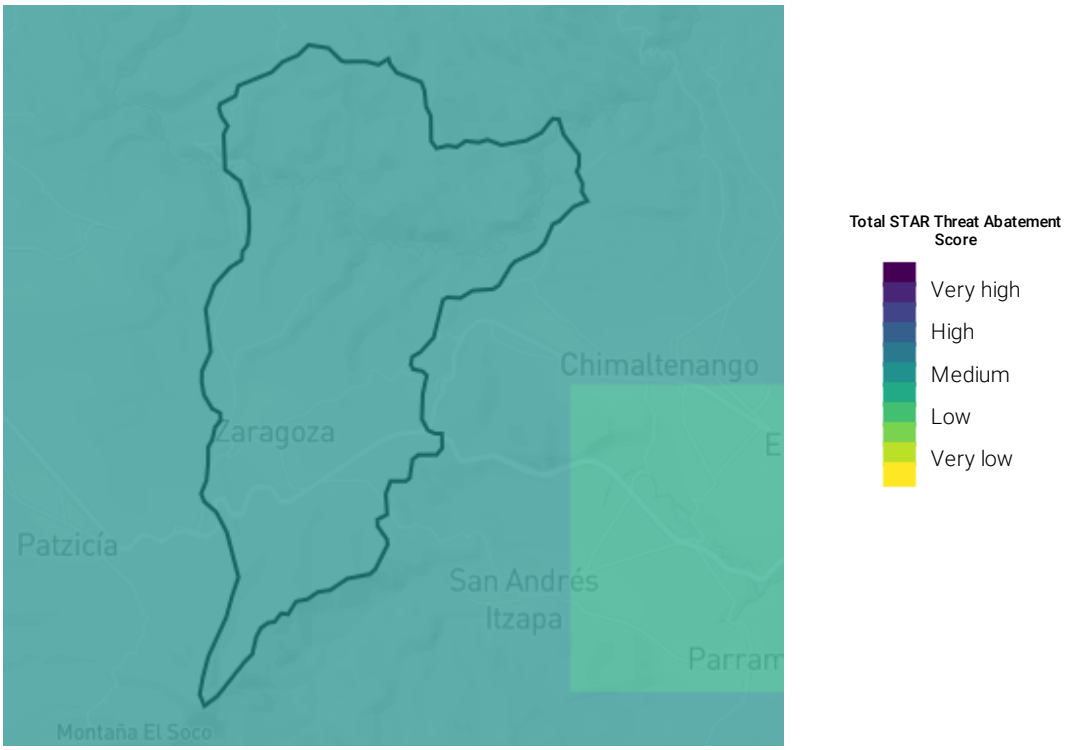

Figure 6: STAR Threat Abatement map for Area of Interest. Grid cell score categories range from Very Low to Very High. Note that low scores do not mean that there are no threatened species present. Grid cells are at a 5 km resolution.

1.3.1 STAR Threat Abatement score context

- The total STAR Threat Abatement score for your site comprises 0.03% of the STAR Threat Abatement score for Guatemala.
- Guatemala is in the 95th percentile of national STAR Threat Abatement scores across all countries in the world.
- The total STAR Threat Abatement score for Guatemala comprises 3.02% of the continental STAR Threat Abatement score. The continental STAR Threat Abatement score in turn comprises 44.43% of the total global STAR Threat Abatement score.
- The maximum grid-cell Threat Abatement score for your site is in the 80th percentile of grid-cell scores nationally and the 99th percentile of grid-cell scores globally. Its relative classification is Medium. A breakdown of your Threat Abatement score by different threat types is provided in Table 1.

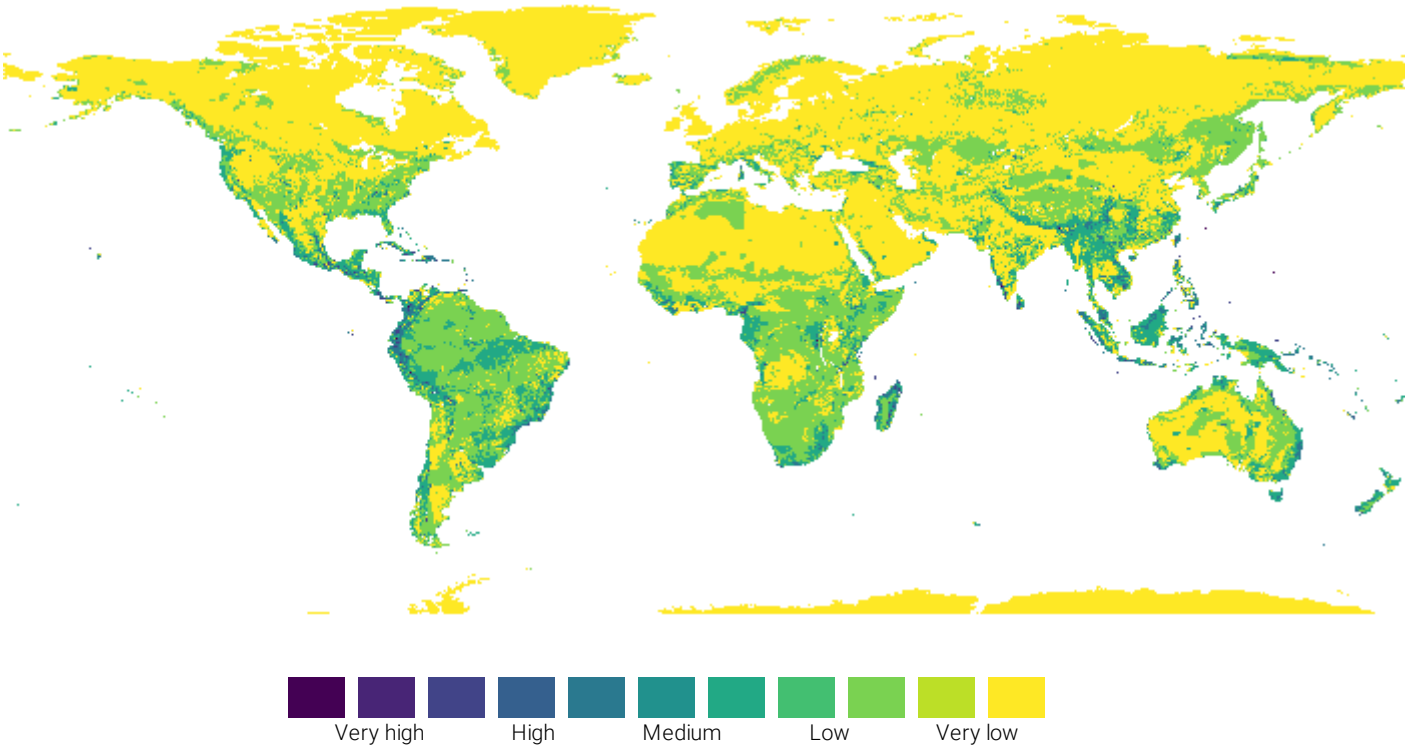

Figure 7: Global STAR Threat Abatement map. Grid cell score categories range from Very Low to Very High. Note that low scores do not mean that there are no threatened species present. Grid cells are at a 5 km resolution.

Table 1: Summary table of STAR Threat Abatement scores within the Area of Interest. Scores are broken down by the different threat types and their relative contributions to the overall score. For more information on the IUCN threat categories, see IUCN Threat Classification Scheme.

Threat type	Total Threat Abatement score across Area of Interest (centiSTAR unit)	% of overall Threat Abatement score for Area of Interest	Mean(maximum) STAR Threat Abatement score per grid square (centiSTAR unit)
Logging & wood harvesting	135.37	31.63	21.41103
Annual & perennial non-timber crops	105.993	24.77	13.12644
Agricultural & forestry effluents	60.178	14.06	4.23124
Invasive non-native/alien species/diseases	47.869	11.19	2.67739
Housing & urban areas	43.941	10.27	2.25599
Other	19.708	4.61	0.09074
Livestock farming & ranching	8.658	2.02	0.08759
Mining & quarrying	6.215	1.45	0.04514

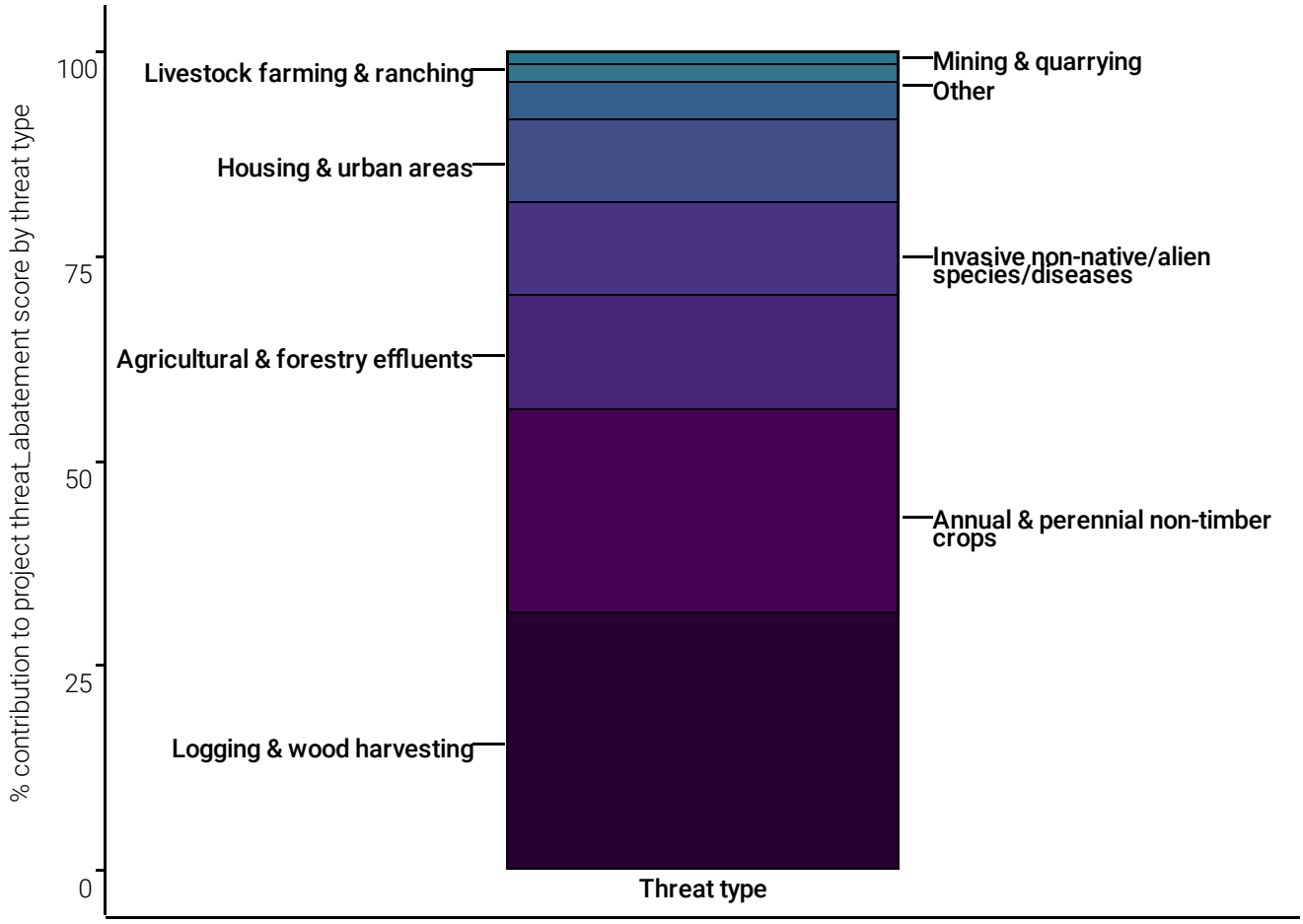

Figure 8: Breakdown of STAR Threat Abatement scores within the Area of Interest by threat type.

1.4 Restoration Scores

The total STAR Restoration score within the Area of Interest is (centiSTAR unit): 21.18

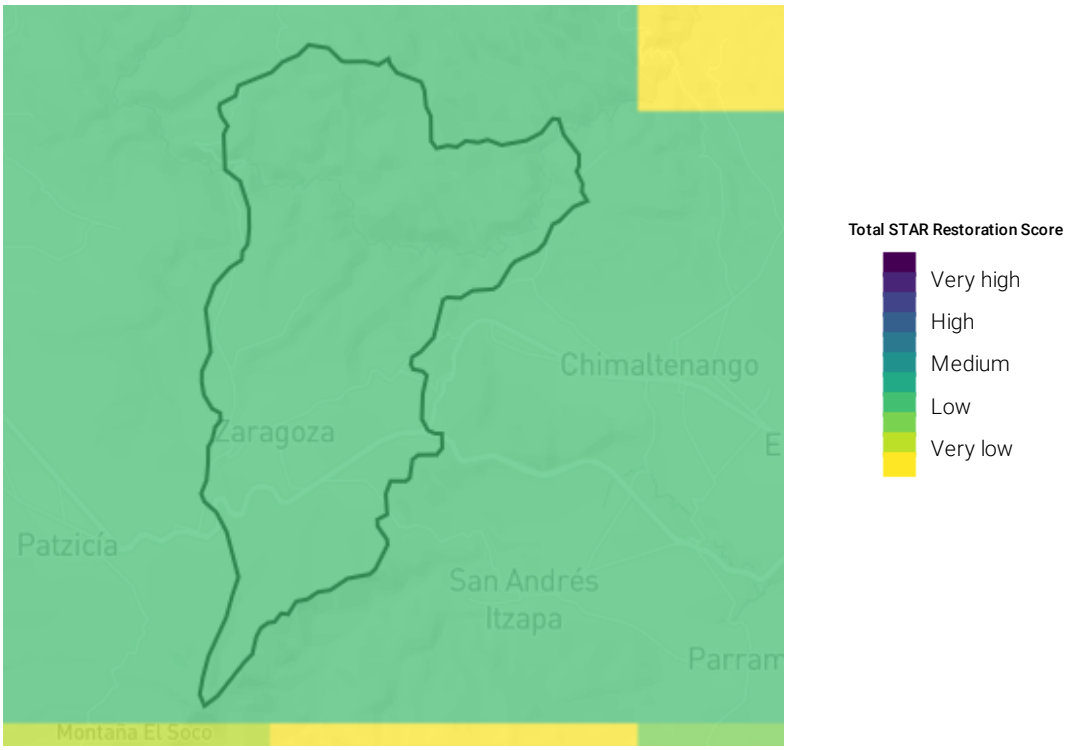

Figure 9: Global STAR Restoration rankings map for Area of Interest. Grid cell score categories range from Very Low to Very High, and reflect the range of values found within the site in the global context. Grid cells are at a 5 km resolution.

1.4.1 STAR Restoration score context

- The total STAR Restoration score for your site comprises 0.02% of the STAR Restoration score for Guatemala.
- Guatemala is in the 80th percentile of national STAR Restoration scores across all countries in the world.
- The total STAR Restoration score for Guatemala comprises 0.48% of the continental STAR Restoration score. The continental STAR Restoration score in turn comprises 26.65% of the total global STAR Restoration score.
- The maximum grid-cell Restoration score for your site is in the 85th percentile of grid-cell scores nationally and the 96th percentile of grid-cell scores globally. Its relative classification is Low. A breakdown of your Restoration score by different threat types is provided in Table 2.

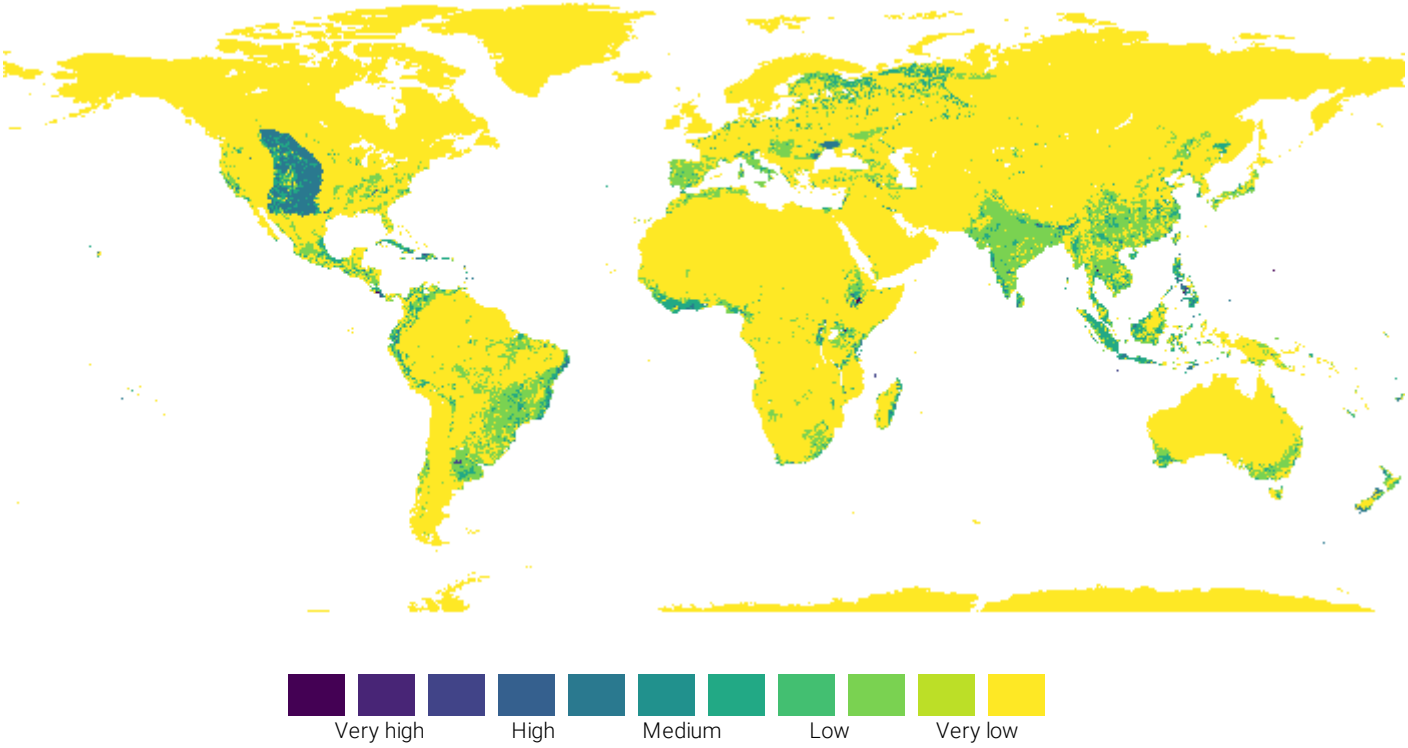

Figure 10: Global STAR Restoration map. Grid cell score categories range from Very Low to Very High. Grid cells are at a 5 km resolution.

Table 2: Summary table of STAR Restoration scores within the Area of Interest. Scores are broken down by the different threat types and their relative contributions to the overall score.

Threat type	Total Restoration score across Area of Interest (centiSTAR unit)	% of overall Restoration score for Area of Interest	Mean(maximum) STAR Restoration score per grid square (centiSTAR unit)
Logging & wood harvesting	5.74	27.11	0.77788
Annual & perennial non-timber crops	4.451	21.02	0.46787
Agricultural & forestry effluents	3.21	15.16	0.24324
Invasive non-native/alien species/diseases	2.558	12.08	0.1545
Housing & urban areas	2.492	11.77	0.1466
Other	1.003	4.74	0.00419
Livestock farming & ranching	0.61	2.88	0.00878
Mining & quarrying	0.478	2.26	0.00541
Roads & railroads	0.374	1.77	0.00331
Gathering terrestrial plants	0.26	1.23	0.00159

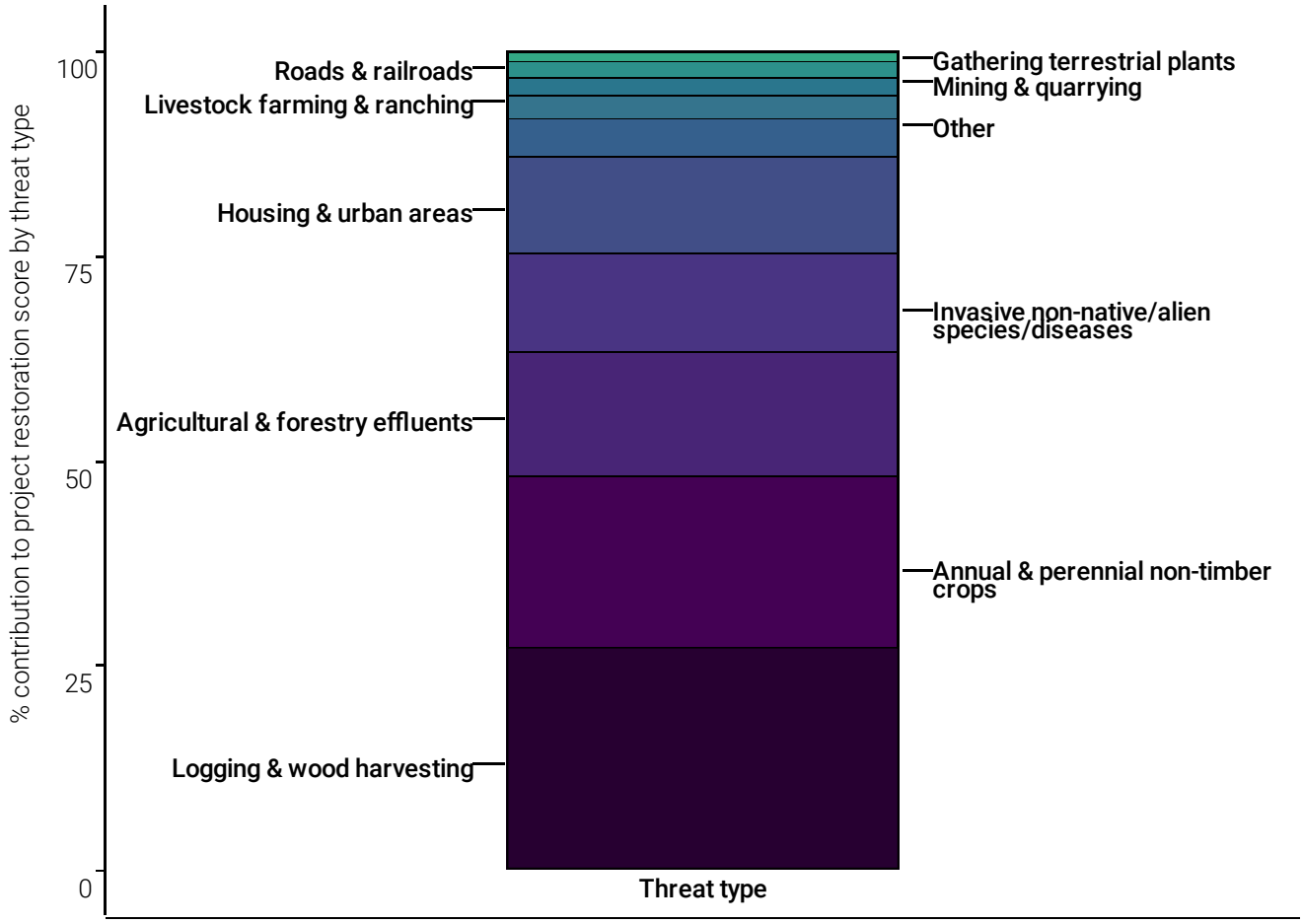

Figure 11: Breakdown of STAR Restoration scores within the Area of Interest by threat type.

1.5 About STAR

STAR scores included in this report are calculated for species of amphibians, birds and mammals for which current or historical area of habitat occurs in the Area of Interest. Species assessed as Near Threatened, Vulnerable, Endangered or Critically Endangered on the IUCN Red List of Threatened Species receive non-zero weightings in calculating the STAR score.

For each 5x5 km grid square, the STAR Threat Abatement score for a species is assessed based on the proportion of current range represented by the grid square, and the species' extinction risk. Adding STAR scores across all species gives the total STAR score for the square. STAR Threat Abatement scores indicate a location's relative potential contribution for biodiversity, specifically for reduction of species extinction risk. Scores can also be broken down to show the relative opportunity to abate the different threats[2] causing species to be at risk of extinction.

STAR Restoration scores are calculated similarly to STAR Threat Abatement Scores, but for areas formerly occupied by a species. They indicate the potential of restoration within a grid cell to reduce species' extinction risk. A global weighting of 0.29 is applied to STAR Restoration scores based on studies of restoration success, to discount for the time taken for restoration and its probability of success.

A site containing 0.5% of the global range of one Vulnerable species will have a STAR Threat Abatement score of 1. A site offering potential to restore an area equal to 1.7% of the global range of one Vulnerable species will have a STAR Restoration score of 1.

1.6 How To Use This Report

The report indicates relative potential contribution to biodiversity through mapping and documenting the STAR Threat Abatement and STAR Restoration scores at a 5x5 km resolution. It further breaks down the scores by opportunity to abate principal threats. Scores are presented through categories from "Very Low" to "Very High", but it should be recognised that even in "Very Low" grid cells, there is often still important biodiversity present, and it should not be assumed that these areas have no biodiversity significance.

Uses for this report include:

- Supporting establishment of science-based targets for contributions towards global biodiversity goals
- Screening opportunities for conservation interventions that address threats and/or restore species' habitats
- Assessing current or potential future footprint from land transformation and/or occupancy, and planning mitigation or compensation measures.

For a more detailed understanding of STAR and its uses, including application in other uses such as screening biodiversity risk, please refer to the STAR methodology publication, and, for commercial users, also the STAR Industry Briefing Note. Please also refer to the other datasets, tools and reports available from the IBAT platform to help with interpretation of the outputs from this report.

1.7 Data used to generate this report

- IUCN. The IUCN Red List of Threatened Species. Version 2019-3. (2019). https://www.iucnredlist.org
- IUCN. Threats Classification Scheme (Version 3.2). (2019)
- Strassburg, B.B.N., Iribarrem, A., Beyer, H.L. et al. Global priority areas for ecosystem restoration. Nature 586, 724–729 (2020). https://doi.org/10.1038/s41586-020-2784-9

1.8 Data caveats

This report is based on data from the IUCN Red List of Threatened Species , and in particular on species range maps refined by the presence of suitable habitat for the species (area of habitat maps) and on categorization and scoring of threats.

The analysis uses global datasets. Species population densities and the relevance and severity of threats may vary across their ranges. STAR scores in this report do not reflect local variations. Species listed as within their current area of habitat are not necessarily present within the particular Area of Interest.

The STAR layers are currently only available for terrestrial habitats. Therefore, for sites which partially overlap with marine areas (i.e. coastal sites), the STAR scores will only be generated for the terrestrial portion of the Area of Interest.

The values used to generate the STAR categories in the global maps closely approximate but do not exactly match the values used to calculate the scores for the Area of Interest. This is due to the way the STAR values underlying the scores for the Area of Interest area generated vs the way they are generated for the global maps. The differences are marginal however, so it can be assumed that both site and global maps are sufficiently accurate for comparing within and between areas of interest.

The limitations of IBAT reports outlined in the 'Read me' document apply. This report should be regarded as a 'first step' and is not a substitute for further investigation and due diligence. To apply STAR beyond initial screening and high-level assessment, for example for action planning and monitoring, it is recommended to validate and update information from this report with site-specific data on species, threats, and restorable habitat.

1.9 Legal disclaimer

The designations employed and the presentation of material on IBAT maps do not imply the expression of any opinion whatsoever on the part of the IBAT Alliance concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. IBAT cannot take responsibility for errors or inaccuracies in the data presented, nor for the consequences of any decisions taken on the basis of the information provided.

Recommended citation

IBAT STAR Report. Generated under licence 32087-39181 from the Integrated Biodiversity Assessment Tool on 30 January 2023 (GMT). www.ibat-alliance.org

2 Glossary

Area of Interest (AoI): in this report, the user-defined location or polygon

IUCN Red List of Threatened Species (or Red List): international standard for assessing species extinction risk. The Red List is compiled by IUCN's global network of experts, specialist groups and partners. For further information, please see the IUCN Red List of Threatened Species website. Red List categories used in STAR calculation are:

- **Critically Endangered (CR):** Highest risk of extinction. A taxon is Critically Endangered when the best available evidence indicates that it meets any of the criteria A to E for Critically Endangered, and it is therefore considered to be facing an extremely high risk of extinction in the wild.
- **Endangered (EN):** Very high risk of extinction. A taxon is Endangered when the best available evidence indicates that it meets any of the criteria A to E for Endangered, and it is therefore considered to be facing a very high risk of extinction in the wild.
- **Vulnerable (VU):** Risk of extinction. A taxon is Vulnerable when the best available evidence indicates that it meets any of the criteria A to E for Vulnerable, and it is therefore considered to be facing a high risk of extinction in the wild.
- **Near Threatened (NT):** A taxon is Near Threatened when it has been evaluated against the criteria but does not qualify for Critically Endangered, Endangered, or Vulnerable now, but is close to qualifying for or is likely to qualify for a threatened category in the near future.

STAR Restoration score: Potential contribution towards reduction of global species extinction risk from habitat restoration actions in a given Area of Interest. A score at varying spatial scales representing the overall restorable area of habitat for a species present within the defined geographic area relative to the total current area of habitat for that species. Scores are weighted according to each species' Red List status. These scores can be summed across all species in a defined area, and can be broken down by the relative contributions of different threats to the overall score.

STAR Threat Abatement score: Potential contribution towards reduction of global species extinction risk from threat abatement actions in a given Area of Interest. A score at varying spatial scales representing the proportion of an entire species' habitat range present within the defined geographic area, weighted by the species' Red List status. These scores can be summed across all species in a defined area, and can be broken down by the relative contributions of different threats to the overall score.