Definitions of Key Terms Describing Environmental Influence on Species Distributions

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| **Term** | **Definition** | **Interpretation** |
| **Favoring turnover** | For a species at a location, the SHAP value of a given variable changes from ≤ 0 at baseline to > 0 in the future. | A location where an environmental driver changes from a negative (or neutral) to a positive contribution to species suitability, indicating emerging local opportunities from that driver. |
| **Disfavoring turnover** | For a species at a location, the SHAP value of a given variable changes from > 0 at baseline to ≤ 0 in the future. | A location where an environmental driver changes from a positive to a negative (or neutral) contribution to species suitability, indicating a local exposure associated with that driver. |
| **Favorability shifts** | For a species at a location, change in the SHAP value of a given variable from baseline to future (∆SHAP). | A change in the magnitude of a driver’s contribution to suitability. A decreasing contribution may reflect rising risk, while an increasing contribution may suggest potential relief associated with that driver. |