Counting the Solomon Islands: How Many Islands Does the Archipelago Actually Contain?

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Abstract

Solomon Islands is widely reported to comprise approximately 900–1,000 islands, a figure repeated across government, tourism, and encyclopedic sources without a traceable methodology. We re-examine this figure using two independent, reproducible geospatial datasets: the USGS/Esri/UNEP-WCMC Global Islands database (30 m Landsat-derived classification) and OpenStreetMap (OSM) land polygon data (human-verified coastline digitization), both clipped to the Solomon Islands Exclusive Economic Zone (EEZ) and analyzed without an arbitrary minimum size threshold. The USGS dataset yields 1,738–1,771 islands; the OSM dataset yields 3,540, with the smallest verified feature at 34.89 m². Both figures substantially exceed the commonly cited number and should be read as reproducible estimates rather than a definitive count. Large-island counts (>1 km²) agree closely between sources (174 vs. 176); divergence grows steadily as the size threshold shrinks, from 4.9% higher in OSM above 0.1 km² to 26.1% higher above 0.0036 km², USGS's Landsat detection floor, indicating the gap is concentrated among small islets historically excluded from navigational and administrative counts. We identify tidal-state imagery capture, mangrove canopy misclassification, and the absence of an agreed, tide-referenced operational definition of "island" as open sources of uncertainty, and recommend a tide-referenced field survey as the necessary next step toward a definitive count.

Keywords: Solomon Islands, island count, GIS, OpenStreetMap, remote sensing, archipelago geography

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1. Introduction

Solomon Islands is commonly described as an archipelago of approximately 900–1,000 islands, a figure that appears across government publications, tourism materials, and general references without a documented source or counting methodology. No peer-reviewed study appears to have directly interrogated this figure. This study follows a comparable effort for Indonesia, where Andréfouët et al. (2022) reconciled a commonly cited official figure of 17,508 islands against a new Landsat-based census of 13,558 — notably lower, the opposite direction from the discrepancy identified here, illustrating that careful methodology does not systematically inflate or deflate a count but depends on what the original figure was measuring. This paper attempts the equivalent reconciliation for the Solomon Islands using two independent, publicly available geospatial datasets.

2. Data and Methods

Two island datasets were used. First, the USGS/Esri/UNEP-WCMC Global Islands database (Sayre et al., 2019; Sayre, 2023), derived from a 30 m resolution Global Shoreline Vector classified from 2014 Landsat imagery, with a stated minimum mapping unit of 3,600 m². A supplementary UNEP-WCMC/Island Conservation dataset is merged into the release to backfill smaller islands. Second, OpenStreetMap land polygons (OpenStreetMap contributors, n.d.), assembled from `natural=coastline` ways traced by volunteer contributors against high-resolution imagery, with completeness governed by contributor coverage rather than sensor resolution.

Both datasets were reprojected to WGS84 and clipped to the Solomon Islands EEZ (Flanders Marine Institute, n.d.), after removing topological holes in the EEZ boundary polygon (minimum hole area = 0) that would otherwise erroneously exclude small islands. Area was calculated using QGIS's ellipsoidal method on WGS84 geometry, avoiding UTM zone-boundary distortion (Solomon Islands spans zones 57S/58S). No minimum size threshold was applied. As an informal, non-systematic data-quality check, a small number of individual features, including the two smallest OSM features and one local cluster of small islands at Barora Island, were manually verified against high-resolution satellite imagery; this falls short of the systematic, feature-by-feature verification applied in comparable studies (e.g., Andréfouët et al., 2022) and is identified below as a priority for future work.

3. Results

Table 1: Summary comparison of island counts for Solomon Islands.

Source	Count	Basis
Commonly cited figure	~900–1,000	Unclear origin, repeated uncritically
USGS Global Islands (core Landsat methodology)	1,738	30 m classification, 3,600 m² minimum mapping unit
USGS Global Islands (full dataset)	1,771	Landsat + UNEP-WCMC/Island Conservation merge
OpenStreetMap land polygons	**3,540**	Human-verified tracing, smallest = 34.89 m²

Large-island counts agree closely between sources (USGS: 174 islands >1 km²; OSM: 176), as do their largest features (~5,394 km² vs. ~5,360 km², both consistent with Guadalcanal). Divergence is concentrated in small size classes and grows steadily as the size threshold decreases, tracking the USGS Landsat detection floor:

Table 2: Cumulative island counts by size threshold, showing divergence increasing as the threshold approaches USGS's 0.0036 km² minimum mapping unit.

Size threshold	OSM	USGS	OSM excess
> 0.1 km²	623	594	4.9%
> 0.05 km²	871	812	7.3%
> 0.01 km²	1,630	1,454	12.1%
> 0.0036 km²	2,193	1,739	26.1%

OSM identifies 1,347 islands under 0.0036 km², against 33 in the USGS dataset.

A local case illustrates the scale of this gap. At the southeastern end of Barora Island, Santa Isabel group (Figure 1), OSM identifies 170 islands and islets against 5 in the USGS dataset at the same location; 47 of the 170 exceed 1,000 m^2 and are visually unambiguous in satellite imagery, while 49 are under 200 m^2, a size range where genuine islands, tidal flats, and digitization artifacts become difficult to distinguish without ground verification.

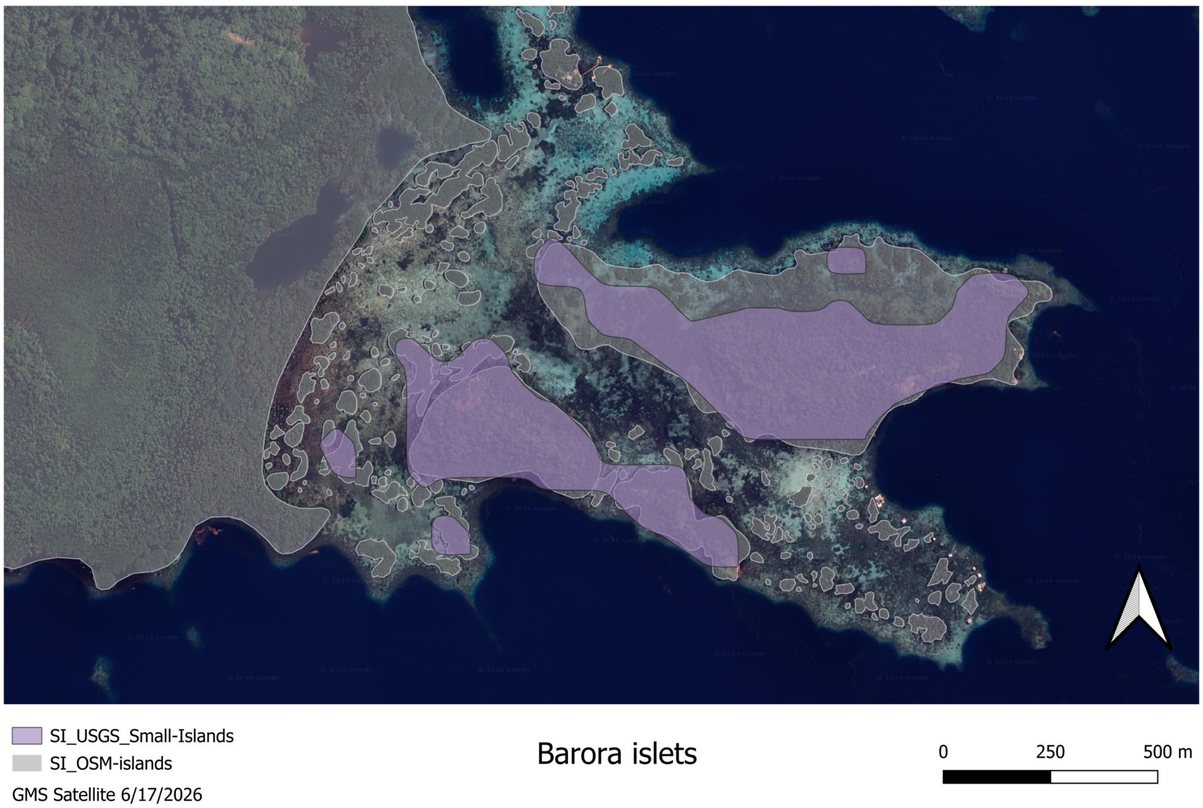

Figure 1: Barora Island, Santa Isabel group: USGS Small Islands polygons (purple) against OSM island polygons (grey), overlaid on satellite imagery. USGS identifies 5 features in this locality; OSM identifies 170.

Closer inspection of part of this same coastline (Figure 2) identifies 12 individual islets with visible houses, none of which correspond to any OSM polygon. Human habitation is strong evidence of genuinely, permanently emergent land, since houses cannot be sited on ground that regularly submerges; this indicates that even the 3,540-island OSM-derived total should be read as a floor rather than a ceiling, and that a mapping standard closer to Norway's or Sweden's (Section 4) would push the true figure higher still.

Figure 2: A closer view of part of the Barora coastline, showing 12 individual islets with visible houses, none of which correspond to a mapped OSM island polygon.

4. Discussion

The gap between sources reflects differing detection floors rather than disagreement about major geography. USGS's Landsat classification has a hard 3,600 m² minimum mapping unit (four Landsat pixels); OSM's volunteer-traced coastlines are constrained instead by contributor coverage, allowing detection down to 34.89 m² in this analysis. Andréfouët et al. (2022) achieved a finer 900 m² (single-pixel) floor from comparable Landsat data, but only by manually verifying every one of the 3,915 single-pixel polygons their classification produced, of which just 845 were confirmed as genuine islands; this level of feature-by-feature verification exceeds what this study was able to apply even at OSM's finer floor, underscoring the priority placed on systematic accuracy assessment below. A further complication is tidal-state variation at image capture: manual inspection of one atoll rim found the USGS dataset representing it as five disconnected islands, while OSM represented the same landform as continuous. Two explanations are plausible and cannot be distinguished without tide-referenced survey data: the fragmentation may be a capture artifact of one satellite pass, or it may more accurately reflect the underlying geography if the connecting reef sections are properly non-island low-tide elevations rather than permanent land — in which case USGS's fragmented representation, not OSM's continuous one, would better match the internationally recognized legal definition of an island.

This points to an unresolved definitional question. Article 121(1) of the UN Convention on the Law of the Sea defines an island as land remaining above water at high tide, while Article 13(1) separately defines a low-tide elevation as land above water at low tide but submerged at high tide (United Nations, 1982) — in effect a reef or drying feature, not an island, with far more limited legal status. Mapped onto standard nautical charting convention, this suggests a concrete operational definition: an island is land above Mean High Water Springs (MHWS), while land dry only between Chart Datum and MHWS is a low-tide elevation, not part of any island. Neither dataset used here applies this tide-referenced standard, meaning our totals likely include some mangrove-fringed or tidal-flat features that would not qualify as islands under it; comparable studies have made this determination explicitly rather than leaving it open (Andréfouët et al., 2022, included mangrove islands for their emergent canopy while excluding transient sand cays), a step this study did not take. The commonly cited ~900–1,000 figure may itself reflect a narrower category, such as named or administratively significant islands, rather than a full census: Andréfouët et al. (2022) similarly note that only around 8,844 of Indonesia's 13,558 census-mapped islands are officially named.

No universal minimum size threshold exists in national practice, and this study's choice of none is not an outlier. Norway and Sweden, the world's two most island-rich countries, use thresholds far smaller than the pixel-constrained floors of the Landsat-derived studies discussed above: Statens Kartverk defines a Norwegian island as any islet exceeding 10 m² (239,057 islands nationally), while Statistics Sweden applies no separate size policy at all beyond map resolution, with a smallest recorded island of 9 m² (267,570 islands, the world's highest count). Both thresholds are smaller than the 34.89 m² empirical floor reached in this study's OSM analysis, suggesting a more permissive threshold would remain consistent with how the most island-rich nations define the term, and that the Solomon Islands' commonly cited ~900–1,000 figure is unlikely to reflect any rigorously applied size threshold at all.

5. Conclusion

Solomon Islands comprises between 1,738 and 3,540 islands by two independent, reproducible geospatial methods, substantially more than the commonly cited ~900–1,000 figure, whose original source could not be traced. Both figures should be read as estimates: likely inclusion of mangrove and tidal-flat features may inflate them, while undocumented detail visible in a higher-resolution commercial basemap during this study suggests the true figure could be higher still. We recommend future citations reference a reproducible geospatial methodology rather than the traditional figure, and that a tide-referenced field survey, guided by an explicit definitional standard such as UNCLOS Articles 121(1) and 13(1), be pursued to establish a genuinely definitive count.

The weight of these findings should not be underestimated. This study provides clear, reproducible evidence that the figure by which the Solomon Islands has described itself for decades is a substantial underestimate, and the Barora case study (Section 3) shows this underestimate persists even in this study's own most complete data source. A nation's count of its own islands speaks to national identity, territorial and maritime jurisdiction, and the practical foundations of coastal management and disaster response; a question of this weight should not rest on one independent study alone. We recommend the figure be formally investigated by a dedicated national team involving Solomon Islands National University and verified by the national authority responsible for surveying, lands, and geospatial information, and we hope this study provides a credible starting point for that national effort rather than a final word on the question.

Declaration of AI-Assisted Technologies

An AI assistant (Claude Sonnet, Anthropic) was used during August 2026 in the preparation of this manuscript to support literature and dataset discovery, troubleshoot GIS software workflows, and assist with drafting and editing text. All data sources, analytical decisions, and conclusions were directed, reviewed, and verified by the author, who takes full responsibility for the accuracy and integrity of the content presented.

Data Availability and Positionality

The public source datasets used are freely available from their respective providers (see References). Derived, EEZ-clipped layers are deposited at Zenodo (Andås, 2026). The author has resided in Munda, Western Province, Solomon Islands, for over nine years in a missionary and community capacity, providing motivation for this research but no financial or institutional interest in its outcome.

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About the Author

Eivind Andås is a student of Intercultural Studies at NLA University College, Norway, and a Norwegian missionary based in Munda, Western Province, Solomon Islands, where he has worked with Youth With A Mission (YWAM) Solomon Islands since 2017. He holds a previous MSc in Petroleum Engineering, including mapping and geospatial subsurface modelling, from the University of Stavanger, which informed the GIS methodology used in this study.