

Sustaining Conservation at Helen Reef, Palau: A Summary of Current Costs and Sustainable Financing Needs

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Background

The Helen Reef Conservation Area now protects one of Palau's most outstanding biodiversity resource, the Helen Reef Atoll – a large coral reef atoll located in the Southwest Islands of Palau. Helen Reef, 163 sq. km in extent, is an enclosed atoll with extensive reef flats, a long channel complex, and a small vegetated island. Roughly two-thirds the extent of Palau's largest island, Babeldaob, the Helen Reef ecosystem is one of the Pacific's most outstanding atolls in terms of its area, ecological integrity, abundance of marine biomass, and biological diversity. Approximately 40 hours by boat from Koror and remote from dense human settlement and land use, Helen Reef is relatively intact compared to similar reef ecosystems in Indonesia, the Philippines, and the main Palau Islands. However, over the years, many of Helen's economically valuable species have been depleted by over-harvesting, mainly due to the difficulty of enforcing marine laws and preventing the incursion of illegal foreign fishers.

Helen Reef's proximity to Indo-Pacific centers of coral and fish diversity result in high species richness and unique fauna compositions for the site relative to the rest of Micronesia and the Pacific. Helen is home to a very high number of reef fish species (530 species so far recorded), soft coral, (43 spp. so far recorded), and the highest recorded hard coral diversity of any Pacific atoll, (282 spp. so far recorded) (C. Birkeland et al., 2000). The Helen Reef Conservation Area provides protection to some of the highest populations of nesting sea birds and marine turtles in Palau and the region. Other significant living resources include historically high levels of marine invertebrates and important reef fish species, which are often depleted or otherwise not abundant in Palau proper. Helen Reef is identified as a priority in many national and international biodiversity conservation planning documents.

The Helen Reef Conservation Area and Resource Management Program

The Hatothobei State Government, the owner and steward of Helen's marine resources, has enacted a state Conservation Area for Helen Reef which encompasses approximately 264 sq. km. The Conservation Area is currently a no-entry / no-take zone (with exceptions) and in

the future is intended, through the development of a management plan, to allow for multiple-use and compatible economic activities, as decided by the resource-owning community.

The Helen Reef Conservation Area supporting program, the Helen Reef Resource Management Program, is overseen by a volunteer Management Board, assisted by a NGO, and is currently configured with the following staff, infrastructure, and operations:

- A small field station located on Helen Island (housing officers, communication and surveillance systems)
- 6 Conservation Officer positions (that rotate on Helen in three person teams)
- 2 Management and Administrative staff
- State Government provided transportation aboard the ship Atoll Way (approximately 9 required trips a year)
- A 17ft. skiff that serves as local transportation only within the Helen Reef Atoll.
- A 27ft power catamaran to transport personnel and supplies between Tobi and Helen Reef (soon to be purchased)
- Administrative and monitoring equipment (including office equipment, computers, SCUBA gear, an air compressor, etc.)
- Dedicated office space (approx. 200 sq. ft) in the Hatohebei State Government office

Contributing to the Conservation of the Unique Biodiversity of Palau

The Conservation Area and supporting management program is currently co-financed by State and National Government, NGO, and private and foreign government donor funds and thus far has been fairly successful in achieving short-term goals. Legal, surveillance, protective, and resource monitoring systems have been established and, to date, the number of observed illegal foreign vessels is declining. Management activities, such as the eradication of introduced rats and the reestablishment of giant clam populations, appear to be meeting with success. As part of annual or semi-annual activities, the program plans to undertake comprehensive (both internal and external) performance monitoring and evaluations. This will occur through training and participation in the Locally Managed Marine Area Network's monitoring process (of which the program is a member) and/or additional evaluation methods, such as the soon to be released guidelines of the World Commission on Protected Areas - Marine MPA Effectiveness Program sponsored by IUCN, WWF, and NOAA.

On-going Program Needs

Since the onset of the Management Program, the unique characteristics and requirements of long-term conservation at Helen Reef have been considered. The program has evolved through a start-up phase and has sought workable solutions that minimize the costs of operation. The program has made tremendous strides in making tangible improvements to the site and community, yet, implementing an mixture of appropriate sustainable financing mechanisms to ensure that activities and effective management continues remains a key priority. It is readily recognized that the circumstances of Helen Reef will not allow for a wide variety of easily implemented sustainable income generating opportunities, and that careful thought must be directed towards this issue. Long-term National Government (and other) support and commitment that align with existing plans and activities is regarded as essential to the conservation area – due to the fact that the program is currently required to undertake activities at the site that, to some degree, address national level roles (namely enforcing territorial waters and foreign fishing infractions) that are truly beyond the resources and

responsibility of the State Government. On-going training and support for staff is also recognized as a key need of the project.

Major Annual Program Expenses

The following table outlines major annual program expenses (excluding technical support provided by CCN) based on current configuration and activities, which are further detailed in the text below.

Major Annual Expenses Based on Current Configuration (2003) Helen Reef Conservation Area, Hatohobie State, Palau

Item	\$US/year
1) Program Staff	
a. Conservation Officers (6 full time)	\$ 45,000
b. Program Manager	\$ 20,000
c. Administrative	\$ 6,500
sub-total	\$ 71,500
2) Transportation - Diesel (65% of the cost of 9 trips)	\$ 30,000
3) Site Operations and Maintenance	\$ 12,000
total	\$ 113,500

1. Program Staff

a) Six Conservation Officer Salaries (\$45,000/year)

The program currently employs six full-time Conservation Officers to maintain a presence at Helen Reef and to conduct resource management activities. The six officers are divided into two teams of three persons each. These teams exchange on 6 week rotations, between the field station on Helen Island and Koror. Each officer is trained in marine law enforcement, surveillance, and resource monitoring, and perform multiple functions for the program, including during their time spent in Koror. Given the inherent risks and extremes related to their position, staff are employed on a full-time basis. Currently all six of these positions are funded through external sources. It is envisioned that over the next three years, these positions will be completely funded by National or State Government sources.

b) Two Administration Salaries (\$26,500/year)

The Helen Reef Resource Management Program currently employs a Program Manager (annual salary \$20,000) and an Administration Assistant (annual salary \$6,500) based in Koror to manage the day-to-day aspects of the program and implement the long-term goals and objectives, as overseen by a volunteer Management Board and a soon to be established Advisory Council.

2. Transportation – Diesel Fuel for the Atoll Way and Ship Maintenance (\$30,000/year)

Transportation to and from the Helen Reef Conservation Area is provided by the Hatohobei State's transport vessel, the *Atoll Way*. Each trip to Helen Reef aboard the

Atoll Way requires approximately \$5000 in diesel and lubricants. As a result of program activities, about 9 trips a year to Helen Reef (and nearby Tobi) are scheduled (which allow program staff to rotate on a six-week basis). Prior to the inception of the Helen Management Program, the State's normal operations allowed for 3-4 trips to the Tobi Island a year. In its initial phase, program cost-sharing is designed to use funds from external sources to cover the incremental cost of transportation related to supporting conservation activities at Helen Reef (e.g., 6 of 9 trips, or roughly 65% of the total \$45,000 fuel costs required for 9 trips totaling approximately \$30,000). The Hatothobei State Government provides for the balance of costs, including ship crew salaries, through annual budget allocations. In subsequent phases, responsibility for these costs will be transferred to the State and National Governments. It is expected that overtime, these expenses may be reduced through more efficient Tobi Island – Helen exchanges of staff and supplies provided by a dedicated 30ft transport vessel.

3. Site Operations and Maintenance (\$12,000/year)

These costs include the costs of gasoline fuel for patrolling and monitoring Helen Reef and maintaining the field station on Helen Island, which provides shelter for officers and houses communications and surveillance equipment. Fuel costs average \$500 per month with an additional \$500 in maintenance and food costs, for a total of approximately \$12,000 per year. With the installment of a solar powered RADAR facility on the island, it is expected that annual site fuel costs will be drastically reduced, as much of the site surveillance will be able to be conducted remotely. Additionally, the RADAR facility will contribute daily radar coverage for an area of some 45,000 sq. nautical miles of the National maritime jurisdiction, providing for the broader surveillance of Palau's EEZ.

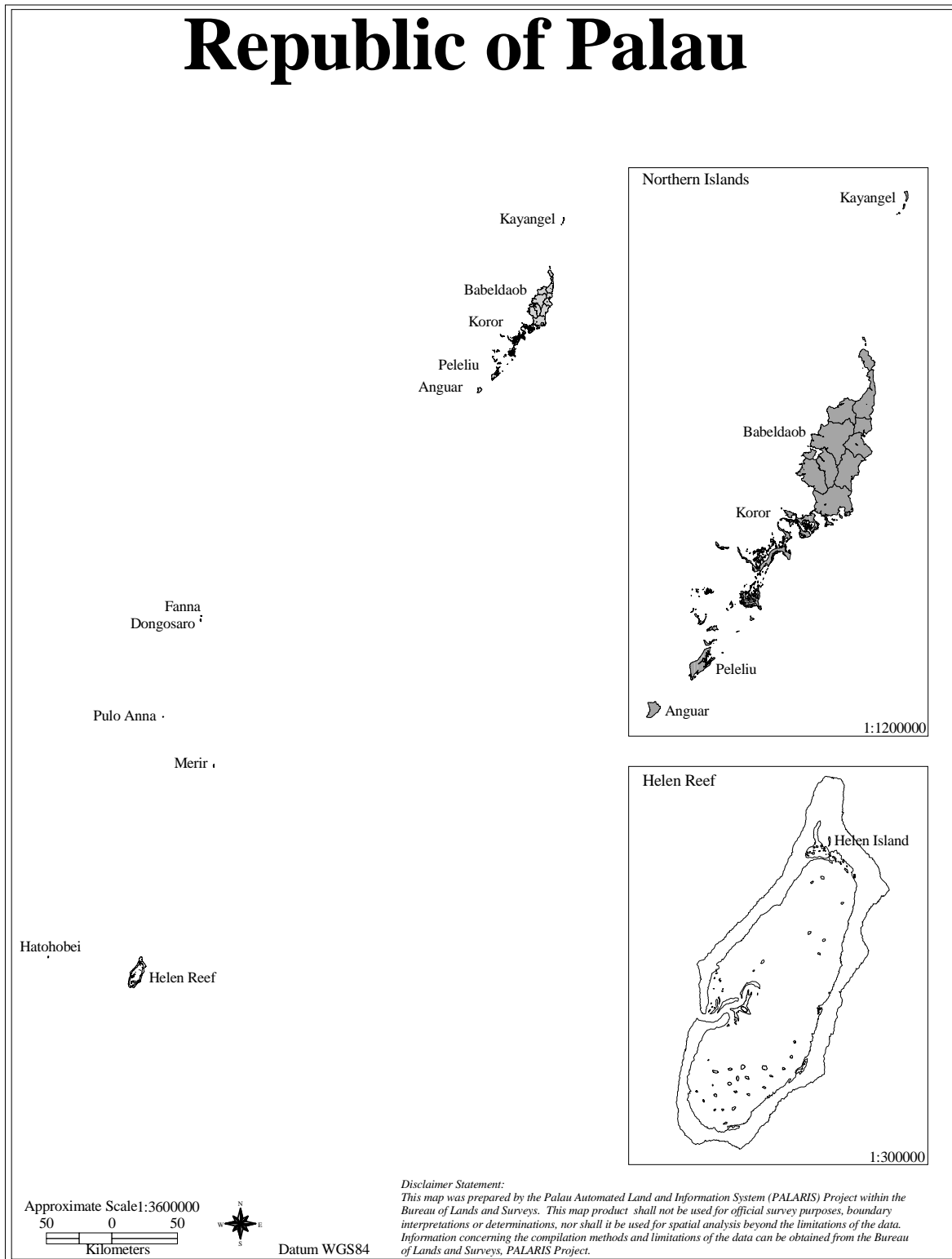
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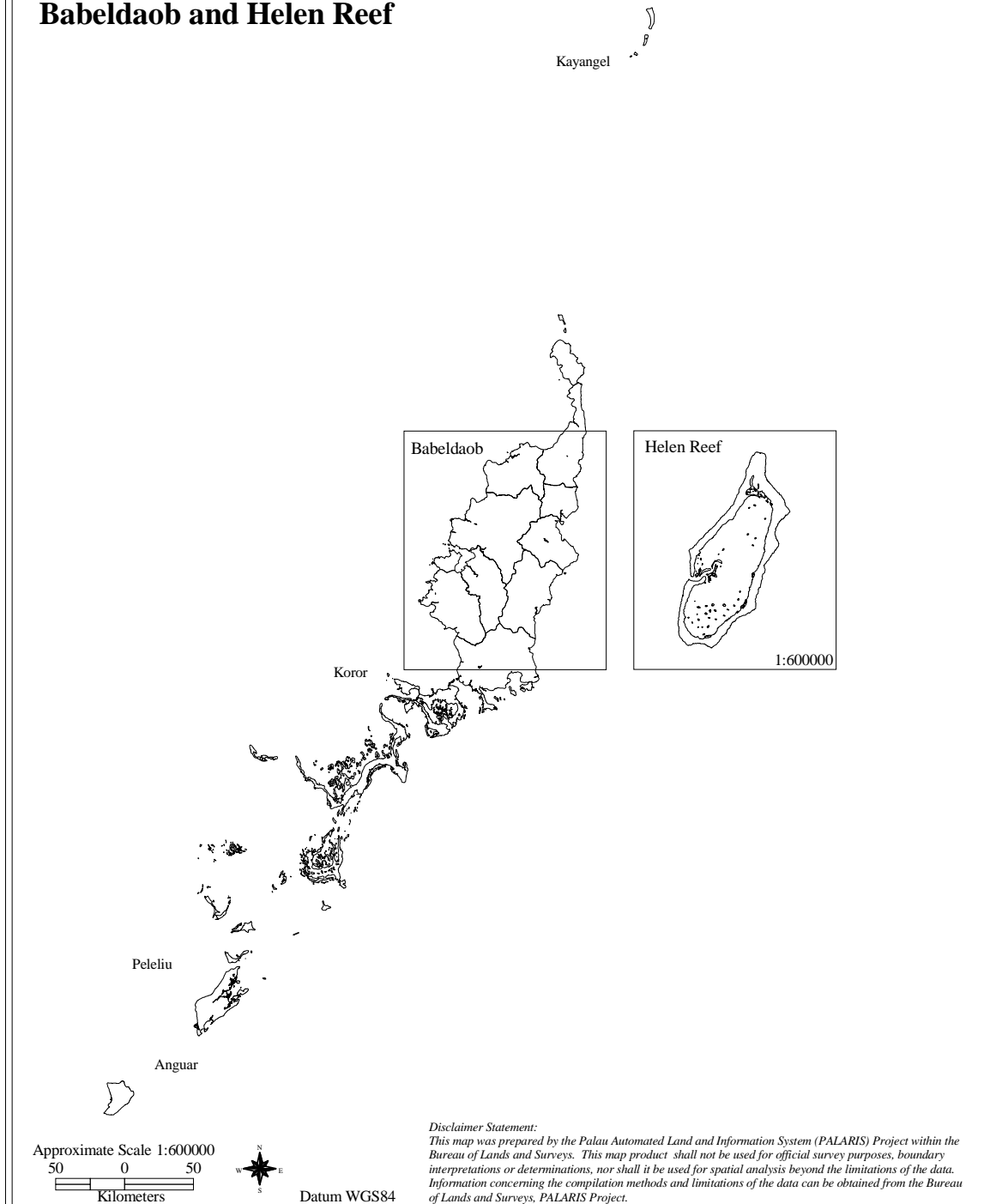
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Appendix 1. Maps Indicating a.) Location and b.) Relative Size of Helen Reef.



Republic of Palau

Relative Size Comparison Babeldaob and Helen Reef



APPENDIX 2. Examples of Sustainable Financing Concepts for the Helen Reef Conservation Area Previously Discussed or Proposed

A. Excerpt from 2003-5 Conservation Support Proposal for Helen Reef

Component 5. Sustainable Economic Development and Financing Plan

The sustainability of the conservation activities at Helen Reef and Hatohobei Island will require the development of long-term financing plans. A primary focus of the program is to assist the State and community to pursue partnerships that will enable the protection of the reef with an appropriate proper balance of outside funding and internal revenue generation. The next four to six years will be a critical phase during which partnerships and long-term financial and institutional support systems will be established.

- Activity 5.1: Continue detailed assessment of stocks of trochus, giant clams, live food fish, and other species as relevant and undertake a study of the feasibility of reseeded certain populations for reef restoration and for long-term, sustainable use of these species.
- Activity 5.2: Formulate a sustainable economic development plan and associated resource-use regulations within State and National frameworks.
- Activity 5.3: Undertake a sustainable financing options study including feasibility of encouraging tourism and or scientific research,
- Activity 5.5: If shown to be viable, encourage partnerships with compatible ecological, science and educational tourism to promote sustainable and appropriate tourism development within the State.
- Activity 5.6: Establish institutional partnerships with agencies such as the Division of Maritime Enforcement that can provide cost sharing on long-term surveillance and protection.
- Activity 5.7: Investigate the establishment of an endowment program for the long-term resource management of Helen Reef.
- Activity 5.7: Encourage regular appropriations for long-term marine resource management from the National and State governments and investigate possibly integrating with other national conservation financing mechanisms and support, including the proposed Palau Protected Area Network (PAN).

B. Examples from 2001 Planning Discussion on Sustainable Economic Development and Financing related to the Helen Reef Conservation Area.

COMPONENT 3. Marine Resource Economic Development Center (Hatohobei and Helen Reef) – (Subject to Feasibility Study)

In the past, Helen Reef has supplied considerable economic benefit to the State and others through the harvesting of marine resources. Earlier harvesting, either authorized by the State or illegal poachers however, were not apparently duly concerned about the sustainable yield

of target species. As a result, the harvesting grew to beyond sustainable levels until target populations collapsed. Recent preliminary surveys by marine scientists suggest that many marine species may be able to sustain commercially viable yield levels if properly managed. The Hatohobei community is interested to assess the potential and feasibility for sustained harvest and/or culture of key marine species including life food fish, trochus, green snails, giant clams, and black pearls.

To support this research and possible eventual harvest and/or mariculture, the State proposes the construction of a Marine Resource Economic Development Center (with two facilities – one at Hatohobei Island and one at Helen Reef). The facility at Hatohobei Island would conduct research and initial production of mariculture species such as trochus and giant clams. The facility at Helen would initial support continual assessment of the stocks of potential commercial species and may eventually operate as a mariculture/harvest facility if these options are proven feasible. The facility can also be used as an Enforcement Station for monitoring and surveillance of the reef to ensure that foreigners do not poach the State's resources. The health of Helen Reef is directly related to the long-term economic viability of Hatohobei State as both reef tourism and possible mariculture and sustainable harvest depend entirely on a healthy reef environment. Such facilities could promote the recovery and restoration of Helen Reef's marine environment.

COMPONENT 4. Ecotourism Lodge/Community Center – (Subject to Feasibility Study)

While Hatohobei Island and Helen Reef are remote, given the right marketing and transportation capabilities, there is potential for small-scale tourism development of Hatohobei State. Advisors to the State have been in consultation with tourism and live-aboard dive operators who have expressed an interest in the possible development of specialized tourism trips to Hatohobei Island and Helen Reef. These may include groups from programs such as EarthWatch, an educational organization that involves tourists in research and conservation activities. Other possibilities include the development of student travel for semesters abroad or schools for field studies. In addition, specialized dive tourism and nesting sea turtle observation may be possible. To support these options, the State may need to develop a facility to house small numbers of tourists. These could number approximately 12 at a time.

A full feasibility study of tourism potential needs to be done. However, if this successful proves that tourism is feasible, the State proposes the development of a facility to host tourists. The likely option is a simple traditional style lodge on Hatohobei Island to accommodate up to 20 visitors that would primarily be dive tourists at Helen Reef. Given that tourism is likely to remain small scale and community oriented, parts of the lodge can also serve as a community center for education and community activities. These functions will be kept separate but complement one another as most of the tourism operators that have been contacted are interested in cultural as well as biological features of Hatohobei and the Southwest Islands.