Key Findings from Coral Conservation Project Survey:

1. Potential mismatch in allocation of resources according to perceived threat

In theory, in each site or program, some sort of analysis has been conducted to determine the priority threats and the feasibility of addressing those threats. This is followed by development of implementation plans that will eventually lead to initiation of the most actionable plans. Ideally, efforts are targeted to address the most significant threats to the coral reef system. However, our survey results suggest that efforts to address particular threats are often not in proportion to the importance of the threat. For example, while pollution and coastal development are identified as top threats, very few sites are working to address those threats directly through watershed management strategies (Figure A).

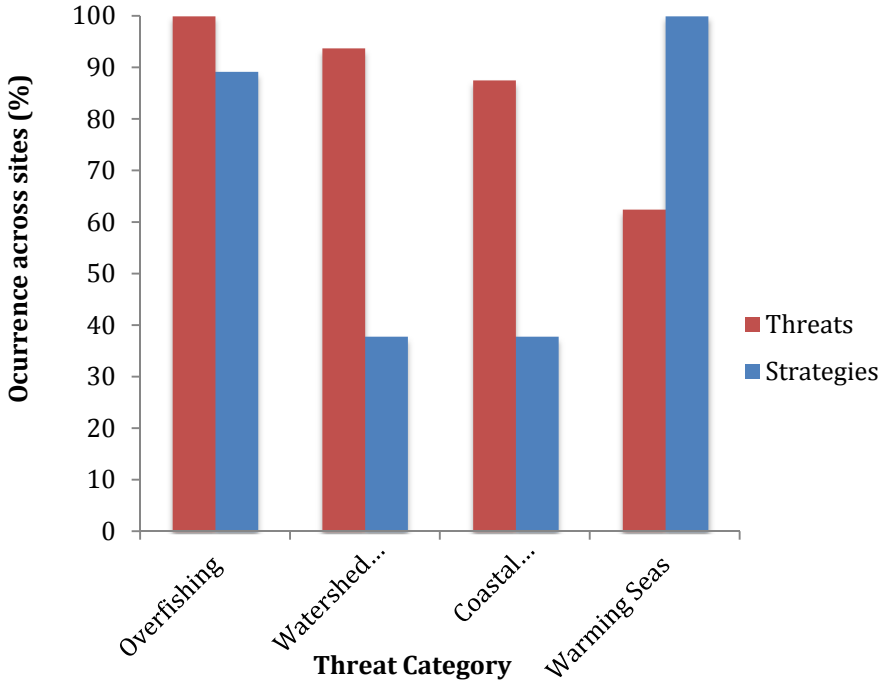

Figure A: This figure shows the percentage of sites that reported a particular key threat compared with the percentage of sites that are implementing strategies to address that threat.

The data collected do not include details about the magnitude of investment, nor is there any explanation as to why decisions are being made to prioritize a particular threat-based strategy (e.g., cost, lack of capacity, etc.). Deeper exploration of this observation is needed. Several of the key findings relate to this potential mismatch and are highlighted further below.

2. *Under utilization of watershed management strategies*

As mentioned above, the data reveal a disconnect between the threat of coastal development and pollution and conservation action. Some of the biggest threats to reefs come from activities on land including poor construction practices, faulty sewage treatment systems, and storm erosion and yet very few of our sites are addressing these types of threats. Out of 37 sites, only 15 reported implementing some type of watershed management strategy. The majority of the work aimed at pollution is happening in Micronesia, with 5 different sub-strategies being applied at all 8 sites in Micronesia. Good water quality is foundational to coral reef health and improving it should be a priority across all TNC programs going forward.

3. *Key climate-related threats underappreciated*

Sea-level rise and ocean acidification were not identified as common threats across TNC geographies with only a small number of sites finding them to be a concern. It is not clear whether this is because these threats are not being taken seriously, or that they are not understood, or because sites are taking a triage approach and the locally derived threats are more pressing or at least are manageable within each region. This is something we should investigate further. **UPDATE**: Since the survey was conducted, the Micronesia Program has initiated several climate adaptation initiatives including development of a community climate adaptation toolkit, a grant to Republic of the Marshall Islands to develop and implement a community-based adaptation strategy, and support of coastal EBA work in Palau, FSM, and RMI as part of a German International Climate Initiative grant.

4. *Potential inefficiencies in monitoring programs*

While the Conservancy is doing a lot of monitoring across all sites, we use a wide variety of monitoring methodologies, raising the potential for substantial redundancies. Some monitoring efforts are targeted to a particular conservation action, while others are broad-based programs tracking condition of the ecosystem. In some places as many as 5 different types of monitoring activities are being conducted simultaneously. The likelihood of redundancy in information collected and effort is fairly high and consideration should be given to identifying such redundancies and eliminating them where possible. In addition, with so much monitoring, it should be clear how this information is being used to inform management action (i.e., evidence-based management). This is not conspicuously the case. A strategic assessment of the return on investment from all monitoring programs is needed, with the opportunity for considerable cost-savings without any real sacrifice in conservation outcomes. Especially important is the elimination of redundancy. **UPDATE**: Since the survey was conducted, the Micronesia Challenge has identified this is an issue for their program, has developed a proposal to enhance their outcomes, and is in Year 1 of grant from Packard to improve on monitoring approaches and decision-making from monitoring efforts -in collaboration with Central Science. (Micronesia documents available: Contact Trina Leberer)

5. *Inconsistent application of strategies across many geographies*

When examining the types of strategies employed by each geography, it is clear that we are not taking advantage of economies of scale in many locations. Micronesia is the exception – they are applying the same suite of strategies at every site. However, in the Caribbean or Indonesia, for example, strategies vary widely. In programs where staff work between multiple geographies, such is the case in the Caribbean, selecting high leverage strategies that can be applied at all sites could increase efficiencies. These high leverage strategies will provide the opportunity to make relative comparisons between sites, with regard to the outcomes of employing similar conservation actions. In addition, there may be other advantages to consistent application of strategies across geographic regions such as cost savings or a focused suite of tools, rather than having to be proficient at everything. Lessons learned and improvements in strategy may be more easily learned when a single strategy is being applied to multiple sites as well.

6. *Restoration on the horizon*

The Caribbean is clearly focused on coral restoration as a key component of their conservation work. The early success and rapid expansion of this work is positioning the Caribbean to be a global leader in coral restoration. While the strategy isn't currently as highly relevant in parts of the Pacific, there will undoubtedly come a time in the near future where coral restoration is a necessity. It is important for programs that are not implementing restoration programs to consider near-term plans to initiate a restoration program and get prepared for unanticipated needs and changing condition of Pacific reef systems. It is important to note that restoration strategies are not sufficient on their own. New and existing restoration programs should be paired with conservation action and threat abatement, particularly watershed management, so that restoration efforts are not conducted in isolation of other strategies. It is also important to note that TNC isn't always the best-suited organization to lead these efforts and it is advisable to look to partners that have an interest and ability to do so.

Recommendations for Coral Conservation Project Survey

1. **Conservation Portfolio Evaluations**: Develop and implement conservation portfolio evaluations for each geography that would gather best practices, identify areas of strength and leadership, and conduct analyses of resource allocation that would inform an evaluation that could be used to make programmatic adjustments and track progress over time. Ideally, this would be low impact and performed remotely with the incentive being a rapid report back on results and recommendations. These evaluations could lead to resource reallocations to ensure program goals are compatible with the level of threat and local need.

2. **TNC Community of Practice & Fellowship Program**: Our current work lacks cohesion between geographies and across regions. Given the extent of

our work, a gathering of TNC staff (every other year) to share best practices and identify leaders and experts on key topics would increase efficiencies, facilitate collaborations, and increase the power of our work by bringing together the collective, making the sum greater than its parts. This community of practice would be enhanced by existing networks both within the Reef Resilience Network and TNC's CONNECT community. In each geography, there is clear leadership and expertise on particular conservation strategies (e.g., restoration in the Caribbean, capacity building in Micronesia, MPA networks in Indonesia, etc.). In line with broader expert exchanges such as the Coda Fellows Program, a coral reef conservation fellows program that provides opportunities for staff to spend extended time (1 to 3 months) in other regions both to share their expertise and to learn from the host site would greatly benefit both sites and the individuals involved. Such a program could be implemented via a collaboration between the Coda Fellows Program and the Global Marine Team. The program would help build staff leadership and raise the profile of both successes and failures through reporting findings of each fellowship to the TNC coral reef community.

3. **Threat Gap Analysis**: Identify expertise and threat gaps that are critical to our success. This can be done through conservation portfolio evaluations and additional surveys. This knowledge can inform priorities for both regional and global teams that are working to address critical needs (e.g., watershed management strategies).

4. **Measures Program**: Monitoring for the sake of monitoring is epidemic in coral reef management. So many places are collecting data, never to be used. As we analyze our own monitoring programs and in turn, work with partners to influence their methods, we must be promoting an 'evidence-based management ' approach. Monitoring data are meant to be used to inform decision-making – yet this rarely happens. Not only will such an approach help inform good management decisions, it will also increase efficiencies by reducing the number of indicators included in the monitoring protocol (i.e., eliminating indicators that don't provide actionable results). In many cases there is weak support from national and local governments for monitoring activities. However, adopting an evidence-based management approach where politicians can see clearly the results of the monitoring and how it is being used to make decisions – could potentially increase support and funding for critical monitoring programs. We also need to build on existing measures efforts to standardize where possible and expand biological monitoring to include social outcomes to our work. This will enable us to demonstrate the social value of coral reef conservation.

5. **Collaborative Funding**: Historically TNC coral reef fundraising has been done on a country-by-country or regional basis. However, recently we have seen great benefits in bringing multiple geographies together in combination

with the Global Marine Team to submit joint proposals. Coral reef conservation provides a great opportunity for this given the shared threats and local challenges shared among our program sites. Having illustrative and compelling measures built into such collaborations will add to the appeal for donor audiences. A successful example is the NOAA Coral Reef Conservation Program partnership. This is a 4-year, $7.2 million partnership that, by design, requires TNC programs to work together to assemble a coherent vision for coral reef conservation across multiple geographies. Participation in this partnership has resulted in new collaborations across sites, sharing of methodologies and advice amongst grantees, and greater clarity in terms of the impact of our work. Joint proposals can be a very effective way to focus programmatic vision and leverage larger amounts of funding over time.