

Building “Learning Networks” Among MPAs: Projects Aim to Help Managers Learn from Each Other

MPA practitioners can benefit in learning from the experience of their peers, particularly when addressing similar challenges. But with MPAs spread out across the world, the transfer of knowledge among practitioners can be a challenge in itself. Without ways of networking peers — and their knowledge — across potentially great distances, the planning and management of marine protected areas can suffer.

Various projects are now addressing this issue. This month, *MPA News* describes two efforts aimed at building “learning networks” among MPA practitioners. Although these networks are still works-in-progress, they offer examples for practitioners elsewhere.

Networking locally managed marine areas in the Western Pacific

The concept of learning networks as described here is different from other methods of distributing knowledge on MPA management. Networks provide for regular, back-and-forth sharing of information among practitioners — in contrast to training courses for managers, for example, in which knowledge transfer is mostly one-way. At their essence, learning networks are communities of practitioners seeking to determine what makes their projects successful, then sharing those lessons with other practitioners.

In the Western Pacific, a network has been underway since 2000 to help locally managed marine areas (LMMAs) benefit from the collective experience of their managers. Involving more than a dozen sites so far in Southeast Asia, Melanesia, Micronesia, and Polynesia, the LMMA Network consists of a mix of traditional leaders, conservation staff, and others. What they have in common is their involvement in local efforts to manage marine resources through no-take areas or fishing-effort restrictions. The overarching goal of the network is to determine the conditions in which LMMAs work in practice.

With support from the Packard Foundation and the MacArthur Foundation (US-based charitable organizations), the LMMA Network has taken a systematic approach to the collection and sharing of information. Using an agreed-upon framework, each site collects and

shares data for a standardized set of variables, thus making comparisons as direct as possible. Most sites are still in the data collection phase, and organizers are just beginning to compare lessons from sites that have already submitted results. (The project website, <http://www.lmmanetwork.org>, will display results later this year.)

There are examples of learning between sites. At an LMMA in Fiji, managers adopted signage used by an LMMA in Indonesia. And sites in the Philippines learned from one other, says Daisy Flores, a member of the network coordination team. “When the Philippine teams came together at an LMMA workshop, it provided them a venue to look at what the others were doing — they learned good lessons such as techniques for quick measurements of fish size.” When the Philippine teams went to Fiji for a whole-network meeting, she adds, their eyes were opened to the fact that many other people in the region were concerned about similar issues.

The network has faced challenges. The logistics involved in physically bringing together network members from throughout the Western Pacific have been daunting and expensive. The network website, which offers an electronic discussion forum as a lower-cost way for members to communicate with each other, has not been widely used so far, and is undergoing revisions. (Flores notes that the more remote projects have little access to the internet at the community level.) And explaining and applying the data-collection framework has sometimes proven difficult, even with interested communities, says Cliff Marlessy, who helps coordinate LMMA Network activities in Indonesia. “One problem was that we had to bring together community members and researchers, who initially didn’t trust each other and didn’t want to work together,” he says. By training community members so that they could participate in monitoring, he says, trust was established.

The LMMA data-collection framework could prove useful to other MPA learning networks outside the Western Pacific, says Nick Salafsky of Foundations of Success, a US-based organization that assists the LMMA Network. “The learning framework includes a

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statement of the core assumptions that we are testing and guidance on how to define specific sites and collect both measures of success and factors contributing to success,” he says. “Much of this will be directly relevant to other regions, although a few of the assumptions and factors will likely have to be adapted to fit local needs and conditions.” The framework is available online at http://www.lmmanetwork.org/Learning_Framework.asp.

Networking MPAs that share a common source of funding

The Global Environment Facility (GEF), initiated by donor countries in 1991, is a financial mechanism for providing grants to achieve global environmental benefits, including for biodiversity conservation. The GEF channels its grants through implementing agencies — like the United Nations Development Programme (UNDP) — that are responsible for overseeing the projects and ensuring impact. There are more than 100 UNDP-GEF biodiversity conservation projects around the world. These include a large and growing portfolio

of projects involving management of MPAs (with over US\$50 million in GEF funding and \$100 million in co-funding from other sources).


Andrew Bovarnick is the technical advisor for the freshwater, coastal, and marine conservation projects under UNDP-GEF, including those with MPAs. With this array of projects come opportunities for collective learning, he says. In this light, he gathered a subset of the UNDP-GEF projects focused on conservation and sustainable use of coral reef ecosystems, and in 2002 created SHARK: the SHAring Reef Knowledge network.

“SHARK is an attempt on my part to recognize that at UNDP-GEF, we do not just have a series of individual projects but a portfolio of similar projects focusing on marine conservation through MPA develop-

ment and threat reduction,” he says. “I wanted SHARK to help facilitate the creation of a community of practitioners — both experts and government staff — who could dialogue with each other on a regular basis as they confront similar challenges. Each UNDP-GEF team felt it was the only one dealing with a particular problem or issue, but in fact all the teams in our projects were facing similar challenges.” There are SHARK projects in the Caribbean, Indian Ocean, South East Asia, and the Pacific.

Similar to the LMMA Network, SHARK provides a discussion forum for members on its website (<http://roo.undp.org/gef/shark/index.cfm>), as well as opportunities for face-to-face meetings and project visits. Although it does not feature as formalized a data-collection framework as the LMMA Network, SHARK does seek to post lessons learned, best practices, and common conservation strategies collected from participating projects, as they become available. Lessons learned from some individual projects are available on the SHARK website.

To this point, use of the SHARK website and its forum has been limited, says Bovarnick, who says project teams will probably need to meet each other in person first to build relationships. “Once trust and respect are built and teams see the value in each other’s work, then dialogue and partnerships will form,” he says. “Hence we need to facilitate more face-to-face meetings and other opportunities for discussion.” He points out that the director of a UNDP-GEF project in Belize is traveling to Cuba this July to help conduct a workshop on MPA financing for UNDP-GEF projects in Latin America.

MPAs interested in seeking UNDP-GEF support should visit the UNDP-GEF website (<http://www.undp.org/gef>) for further information. Requests must be endorsed by central government as national priorities for GEF biodiversity support, and must fit within the GEF’s criteria for support. The GEF is cautious about “one-off” funding at specific sites, preferring to support an overall program to move an entire system toward sustainability. The GEF has recently established two strategic priorities of relevance to MPAs, says Bovarnick: one regarding sustainability of protected area systems, and one on mainstreaming biodiversity into productive landscapes or seascapes. 

For more information

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Background on UNDP-GEF coastal and marine projects

UNDP-GEF coastal and marine projects provide significant financial resources and technical expertise for assistance at local and national levels. Assistance takes several forms, including:

- Development of national policy and legal frameworks;
- Development and implementation of management plans at MPAs;
- Development of long-term financing strategies for MPA networks;
- Raising of public awareness;
- Support for socioeconomic development of communities in and around MPAs;
- Promotion of community-based marine and reef resource management;
- Building of partnerships with productive sectors such as fisheries, tourism, and other industry; and
- Capacity-building of stakeholders to continue and replicate conservation efforts after project termination.

GEF recently awarded through UNDP a US\$3.5 million grant, with an additional US\$7 million in co-financing, to the government of Chile to establish three multi-use marine and coastal protected areas. Project goals are to demonstrate integrated management of marine and coastal resources, and build capacity for management and replication along the coast of Chile.

Designing an MPA Learning Network: Interview with Nick Salafsky

Assisting with overseeing the design and implementation of the LMMA Network (described in the preceding article) is a US-based not-for-profit organization, Foundations for Success (FOS). Established in 2000, FOS aims to improve the practice of nature conservation by coordinating the sharing of lessons learned among networks of practitioners. Nick Salafsky, a founder of FOS, works closely with the LMMA Network as well as other learning networks worldwide. Below, *MPA News* asks him about some of the considerations that go into designing such a network.


MPA News: Learning networks for practitioners can take many forms, including informal discussion groups. The LMMA Network and other FOS-coordinated networks have adopted a relatively formal, scientific approach to their information sharing, in which network participants follow a standardized framework for collecting and submitting their data. What does this approach enable managers to do that a more informal approach would not?

Salafsky: At least in theory, our more formal approach will enable us to test systematically the conditions under which an LMMA strategy can contribute to enhanced marine resources and conservation. That is to say, we can compare the situation at sites across the Pacific and hopefully say something about the effect of different management regimes, community tenure systems, or government policies on LMMA use. We can then also present our findings to the world in a collective voice, which will hopefully have some influence on policymakers. The more formal approach also enables us actively (as opposed to passively) to provide training and capacity-building support to our members.

Along these lines, Foundations of Success is currently wrapping up a study of learning networks in different

fields. It has found that there are definitely trade-offs between the degree of formality and cost/complexity of learning networks. It remains to be seen whether the increased costs of more formal networks are justified by increased learning. To this end, the LMMA Network is testing this concept by trying it. I suspect that over time, we will find that both formal and informal networks have their uses, depending on the circumstances and needs of the members of the network.

MPA News: How much does it cost to set up and manage a learning network, and are there ways to minimize costs while still having an effective system?

Salafsky: Costs will vary widely depending on how formal a network is and other factors. The LMMA Network, based in the Pacific where it is very expensive to travel and bring people together, currently spends several hundred thousand dollars (US) per year on travel, workshops, training, and coordination. One way to reduce costs is to limit the geographic scope over which a network is working. Another is to limit the amount of training and technical support that the network provides. A third is to rely more on virtual electronic communication systems. We have found, however, that because of our emphasis on community-based conservation, electronic communications are at best a supplement to face-to-face training and communications. 

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Letter to the Editor

Dear MPA News:

In supporting what Adrian Phillips said in the February *MPA News* (*MPA News* 5:7) about failures in local management, I'd like to quote from my paper in the proceedings of the 2000 International Coral Reef Symposium in Bali entitled "The Development and Establishment of Coral Reef Marine Protected Areas", as follows:

"Design and management of MPAs must be *both top-down and bottom-up*. A common feature of Western thought, which many Asians find amusing, is the 'either-or' mentality. This is demonstrated by the adversarial legal systems that prevail in many Western countries and by the tendency to think in black-and-white terms. The debate about the relative merits of

top-down and bottom-up approaches exemplifies this problem. Except in effective dictatorships, pure top-down methods will never work. Equally, attempts by local communities to establish protective measures without the support of appropriate levels of government will end in their rules being broken by outsiders. Therefore, in developing MPAs, it is necessary to obtain the formal support of both local communities and government."

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[Editor's note: Kelleher is a senior advisor to the IUCN World Commission on Protected Areas.]

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Ecuadorian Government Agrees to Review Galápagos Fisheries Regulations Following Seizure of Park Facilities by Fishermen

Editor's note

The social and political unrest facing the Galápagos Marine Reserve holds serious potential consequences for one of the world's best-known MPAs. It also reflects challenges this MPA shares with other sites worldwide, including the continual pressure to readjust the balance of resource use and conservation amid changing economic and ecological circumstances.

In late February, the Ecuadorian government agreed to review and potentially change fisheries regulations in the Galápagos Marine Reserve as part of a negotiated agreement to end the latest in a series of protests by local fishermen. Several dozen fishermen seized and blockaded access to the premises of the Galápagos National Park Service and the Charles Darwin Research Station on 19 February and held the facilities for eight days, insisting that the government address a list of demands. The demands included that the regulations that govern fishing in the reserve, negotiated among stakeholders over four years and issued in 2003, be abolished.

Under the pact with fishermen (see box, below), Ecuadorian Environment Minister César Narváez agreed to form a committee to review the fisheries regulations over 60 days and recommend appropriate changes. The committee would be composed of federal officials and a national representative of the fishing sector, and would also review other demands of Galápagos fishermen, including that longline fishing be permitted in the protected area. (Industrial fishing is banned inside the 140,000-km² Galápagos Marine Reserve, but “artisanal” fishing — using smaller, locally based boats and various fishing techniques — is allowed in most areas.)

However, the future of this committee is already unclear: Minister Narváez resigned from his post on 3 March, citing personal reasons. Speculation among environmental groups and Ecuadorian media suggested Narváez had been forced out due to national and international pressure on Ecuador to strengthen, not weaken, protection for the Galápagos Islands. Such pressure included a formal reminder from the United Nations Educational, Scientific and Cultural Organization (UNESCO) that the Galápagos Marine Reserve, a UNESCO World Heritage Site, could be placed on the “World Heritage in Danger” list if events led to a reduction of the site's conservation standards.

In another sign that Ecuadorian officials might be reconsidering the agreement, the international Charles Darwin Foundation — which cooperates with the Ecuadorian government to provide technical and scientific advice to the Galápagos National Park Service through the Charles Darwin Research Station — was invited on 1 March to provide the government with a technical response to the agreement. Officials of neither the Darwin Foundation nor the Park Service had been invited to attend the February negotiations between government and fishermen. (The Park Service oversees management of terrestrial and marine protected areas in Galápagos.)

Despite the political upheaval, the fishermen who led the protest expect the agreement to be honored, and for their demands to be met. If not, said one group leader to an Ecuadorian newspaper, a new and “real” protest would occur.

Responses to the agreement

The February protest was the latest in a string of conflicts between fishermen and park officials dating back to 1992 upon development of lucrative sea cucumber fishing in Galápagos, about 1000 km from the Ecuadorian mainland. Owing to that fishery and a growing, illegal shark-fin fishery, income for the Galápagos fishing sector surged in recent years, attracting a rush of immigrants from the mainland. The increased demand for resources led to sustainability concerns among managers, forming the basis of the conflict. Violent episodes included riots in November 2000 (*MPA News* 2:6) and the shooting of a park official in 1997.

Park and Darwin Foundation officials, fishermen, tourism operators, NGOs and other sectors worked through the 1990s to establish a framework of participative management, aiming to generate greater stakeholder support for management activities. This participative framework was enshrined in Ecuador's Special Law for

Features of Galápagos agreement

According to the pact negotiated between Ecuadorian officials and the Galápagos artisanal fishing sector on 27 February, the federal government agreed to do the following, among other actions:

- Form a committee to review the regulations that govern fisheries and sanctions in the Galápagos Marine Reserve, and suggest any changes within 60 days. The committee would also examine the use of longlines for fishing in the marine reserve.

- Examine whether charges should be dropped against several Galápagos fishermen accused of past crimes.


- Ensure priority to fishermen in cases where there were opportunities for individuals to enter the tourism sector. Under Galápagos tourism law, fishermen are supposed to receive such priority, but regulatory revisions introduced by the government in January 2004 threatened to take that away.

- Provide a line of credit to the artisanal fishing sector in Galápagos.

Galápagos in 1998, featuring multistakeholder bodies for decision making. Edwin Naula, director of the Galápagos National Park Service, says the system has raised awareness of management responsibilities among resource users, and needs to be upheld. "Strengthening this system and solidifying its effective legal framework for sustainable management of the islands are important for the Galápagos National Park," he says.

Peter Kramer, president of the Charles Darwin Foundation, says the Ecuadorian government appears to be in the process of determining how to proceed. "The agreement was a mistake," he says. "The circumstances under which it was negotiated and agreed were dubious." In fact, he says, the agreement is not even in the best interests of the fishermen who negotiated it.

"The worst scenario, for everyone, is that the whole system of regulations and negotiations among stakeholders gets dismantled, and each sector constantly has to fight for its own share of the resources in the marine reserve."

Cecilia Falconi of WildAid, one of a group of international NGOs that have allied on Galápagos management issues, says the fishermen are following the lead of large tourism companies, which worked with government in January — also outside the required participatory channels — to revise the Galápagos regulatory framework for tourism. "The fishing sector started planning to eliminate the fishing regulation and impose the adoption of longlines after witnessing how the tourism sector got what it wanted without playing by the rules," she says. 

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Notes & News

Report: Most coral reefs may disappear by 2050 due to climate change

By 2050, coral cover will decrease to less than 5% on most existing, shallow-water coral reefs if global carbon dioxide emissions are not reduced and sea surface temperatures continue to rise as a result, according to a report released in February by WWF Australia and the Queensland (Australia) Tourism Industry Council. Conducted by reef biologist Ove Hoegh-Guldberg of Queensland University and economist Hans Hoegh-Guldberg, the study focuses primarily on anticipated effects of human-induced climate change on the Great Barrier Reef (GBR).

Under the best-case scenario, write the authors, there would be recoverable loss of corals on the GBR and elsewhere if global warming remained less than 2 degrees Celsius above pre-industrial levels. (Average global warming is now at 0.6 degrees above pre-industrial levels.) Such a scenario would require Australia and other developed nations to cut their greenhouse-gas emissions by 80% by the middle of this century, namely by switching from fossil fuels to renewable energy sources. The report is available online in PDF format at <http://www.qtic.com.au/WWF.htm>.

Coral death can result from prolonged bleaching episodes, in which corals turn white in response to stress (*MPA News* 3:1). Any number of stressors — including siltation, destructive fishing practices, and increased temperatures — can result in the loss of corals' symbiotic algae, whose photosynthetic pigments give coral reefs their color. Bleached corals can survive for some time during sporadic increased-temperature events, but if conditions do not return to normal they can die. "The rapid reduction in coral cover will have major consequences for other organisms and reef functions," as well as for tourism, write the report authors. Reef-interested tourism annually generates AU\$1.4 billion

(US\$1.1 billion) for communities surrounding the Great Barrier Reef.

By reducing other stressors to corals, MPA practitioners can help increase reef resiliency in the face of climate change. The Great Barrier Reef Marine Park Authority (GBRMPA) has co-instituted a Reef Water Quality Protection Plan to reduce the flow of contaminants into coastal waters of the park, and has proposed a re-zoning plan with expanded no-take areas (*MPA News* 5:6). For more information on GBRMPA's responses to the threat of coral bleaching, visit http://www.gbrmpa.gov.au/corp_site/info_services/science/bleaching/index.html.

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Tasmania to designate two marine reserves

In February, the Australian state government of Tasmania proposed designation of two marine reserves, representing what officials termed the first large-scale declaration of MPAs in Tasmanian coastal waters. The 170-km² Port Davey/Bathurst Harbour Marine Reserve and the 290-km² Kent Group Marine Reserve will both feature highly protected (no-take) "sanctuary zones" comprising just over 50% of each site's total area. The remainder of each reserve will be "habitat protection zones" in which certain fishing methods, including for abalone and rock lobster, will be allowed. Handlining for finfish will also be permitted in the latter zones.

The proposed reserves represent the culmination of nearly eight years of off-and-on public planning. For the reserves to take effect, the Tasmanian Parliament must allow amendments to existing fisheries rules at the two sites, which officials expect to happen. The government seeks to have the new reserves take effect in mid-April, according to Tasmanian Environment Minister Judy Jackson.

The designations represent a 20-fold increase in marine reserve area in Tasmanian coastal waters, from 20 km² to nearly 500 km². The Tasmanian government

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Atlas available on Brazilian coral reef MPAs

The National Protected Areas Program of Brazil has released a large-format, full-color atlas of the nation's coral reef MPAs, including dozens of satellite-imaged maps and descriptions of each site. These are the first published maps of Brazilian reef environments. Brazil's nine coral reef MPAs are distributed along 3000 km on its northeastern coast. To order a free copy of the printed atlas, of which a limited number of copies are available, e-mail Ana Paula Leite Prates (technical advisor to the Protected Areas Program) at ana-paula.prates@mma.gov.br.

MPA Figures

Percentage of world's population living within 100 km of:

Coastlines	38%
Coral reefs	12%
Estuaries	27%
Mangroves	17%
Seagrass beds	19%
MPAs	19%

Percentage of MPAs worldwide that include areas of:

Coral reefs	25%
Estuaries	17%
Mangroves	17%
Seagrass beds	25%

Source: *Sea Around Us* project, a partnership between the Fisheries Centre of the University of British Columbia (Canada) and the Pew Charitable Trusts. The data were gathered from analyses of several global databases. For more information: Jackie Alder, Research Associate, Fisheries Centre, 2259 Lower Mall, University of British Columbia, Vancouver, BC V6T 1Z4, Canada. E-mail: j.alder@fisheries.ubc.ca

designated four smaller marine reserves in 1991, as well as a 58,000-km² no-take zone within the sub-Antarctic Macquarie Island Marine Park in 2000 (*MPA News* 1:1). The new reserves will be the first to be designated since finalization of the government's Tasmanian Marine Protected Areas Strategy in 2001.

One hallmark of that strategy is its provision that "adjustment payments" be made to fishermen or other parties — such as shop or motel owners — who can show that designation of an MPA resulted directly in a financial loss, and that there was no alternative for recouping the loss elsewhere (*MPA News* 3:11). Doug Nicol, principal fisheries management officer for the Tasmanian Department of Primary Industries, Water, and the Environment, says that in the case of the two proposed reserves, he doubts any fishers or other business owners will be eligible for such payments. Neither site is a significant fishing ground "from a whole of state view", he says, and there are no other businesses in either area.

In a statement, the Tasmanian Fishing Industry Council (TFIC) said it was disappointed that the proposed reserves would mean the loss of "valuable and productive fishing grounds", but recognized the government had accounted for some industry concerns in forming its plan.

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Scientists: Protect deep-sea corals, sponges

Bottom-trawling poses a serious threat to deep-sea coral and sponge ecosystems and immediate measures at the national and international level are needed to protect them, according to a statement signed by more than 1000 scientists from 69 countries. Released in February by two US-based conservation organizations, the statement calls on the United Nations to impose a moratorium on bottom-trawling on the high seas, and on individual nations to ban this fishing technique in national waters wherever deep-sea coral and sponge communities are known to exist. The statement also urges nations to support research and mapping of these ecosystems, and establish representative networks of MPAs that include deep-sea corals and sponges. "As marine scientists and conservation biologists, we are profoundly concerned that human activities, particularly bottom-trawling, are causing unprecedented damage to the deep-sea coral and sponge communities on continental plateaus and slopes, and on seamounts and mid-ocean ridges," it says. To view the statement, visit the website of the Marine Conservation Biology Institute (MCBI) at <http://www.mcbi.org>. MCBI and Oceana, another NGO, jointly released the statement.

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Report: MPAs needed to protect deep-sea fisheries

In the face of rapid growth in the deep-sea fishing industry, management of its target species has generally failed to ensure sustainability of the resource, and new management strategies — including creation of networks of MPAs — are necessary to stem the depletion, according to a new report published by TRAFFIC Oceania and the Endangered Seas Programme of WWF, an NGO. (TRAFFIC monitors the international trade of wildlife and is a joint program of WWF and IUCN.) *Managing Risk and Uncertainty in Deep-Sea Fisheries: Lessons from Orange Roughy* uses case studies of orange roughy fisheries around the world to illustrate the need for more precautionary and ecosystem-based approaches to deep-sea fisheries management. "There is some evidence that it may be possible to manage orange roughy fisheries sustainably," write the authors. "However, it is going to take major changes in the approach to management." The 73-page report is available online in PDF format (<http://www.traffic.org/OrangeRoughy.pdf>).

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Data available on hundreds of marine species

MPA planners and managers who need data on distribution and abundance of marine mammals, sea turtles, or seabirds may find what they need from SEAMAP, a free, web-based project compiling research data from around the world. The project provides taxonomic and geo-referenced data on nearly 200 species so far, as well as access to physical oceanographic data at regional and global scales and software tools for biogeographic analysis.

Project leader Andrew Read of Duke University (US) says SEAMAP may help MPA practitioners and stakeholders to explore reserve-siting options (including through the use of site-selection tools that will be available later this year on the project website), and to better understand the oceanographic context for species distribution. "The project can also help outreach and education efforts by providing basic information on the biology, threats, and conservation status of these animals," says Read. The project is overseen by the Ocean Biogeographic Information System (OBIS), a worldwide consortium of academic and governmental organizations seeking to make data on marine species freely available on the web. The OBIS-SEAMAP website is at <http://obismap.env.duke.edu>.

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