

NOAA Coral Reef Conservation Program Strategic Goals and Objectives Public Comment Opportunity

The NOAA Coral Reef Conservation Program (CRCP) is providing an opportunity for public comment on the *Draft NOAA Coral Reef Conservation Program FY 2010-2015 International Goals and Objectives* as developed by each of the three threat-based working groups and the International Working Group. Please note that the *Draft NOAA Coral Reef Conservation Program FY 2010-2015 Threat-Based Goals and Objectives*, which focuses on the domestic priorities, are included in a separate document. These documents are available for public comment from March 27 – April 24, 2009. Comments will be forwarded to the appropriate working group for their consideration. The final document will be made public in early June.

Public Comment Submission Guidelines

To ensure your comments are submitted in a consistent and useable format, (to the greatest extent possible) please follow the guidelines below:

- Submit comments via email to: crcp.roadmap@noaa.gov
- Indicate in the email subject line, which focus area your comments address. For example, RE: International (for comments on this document), RE: Climate Change; RE: General Comments. This will help us to better direct and address your comments.
- Please do not provide comments using the "track changes" feature.
- Provide comments based on the **PAGE #** and **LINE #** if addressing a specific section of the document. A comment form is available for your convenience at: www.coralreef.noaa.gov/wgroups/resources/comment.html

PAGE #	LINE#	COMMENT
4	152	Objective does not adequately address

When providing comment, we are particularly interested in the following:

- Are the Goals and Objectives at the appropriate scale (20-year Goals and 5-year Objectives)?
- Are there significant gaps?
- Are the Goals and Objectives sufficiently focused to achieve measurable improvement in coral reef ecosystem condition?
- Identify which objectives you feel should be the top priority for the CRCP.

Dates

Public comments may be submitted from March 27, 2009 through April 24, 2009. The CRCP will not individually respond to those who provide comments. Comments will be forwarded to the appropriate working group for consideration in developing the final Goals and Objectives documents.

Addresses

You may submit comments electronically via e-mail to crcp.roadmap@noaa.gov.

To submit your comments in writing or for further information contact:

CRCP Roadmap Comments

NOAA

1305 East-West Highway, Sta. 10405, (N/ORM)

Silver Spring, Maryland 20910

1 **Draft NOAA Coral Reef Conservation Program**
2 **FY 2010-2015 International Goals and Objectives**
3
4

5 **Introduction**
6

7 Coral reef ecosystems have great economic, social, and cultural importance to communities,
8 businesses and nations around the world. These ecosystems provide a wide range of
9 valuable ecological services that constitute a major food source, economic base and future
10 hope for sustained development in many countries, particularly small island nations. Given
11 these important roles of coral reefs across the globe, U.S. efforts to promote healthy coral
12 reefs internationally are critical to U.S. diplomatic and development strategies to promote
13 economic and food security, social stability, democratic governance, improved human
14 health, disaster and climate change mitigation, and biodiversity conservation in many
15 countries.
16

17 International efforts to promote healthy, resilient coral reef ecosystems also benefit coral
18 reefs in U.S. waters. Most coral reef ecosystems in U.S. waters are interconnected with and
19 depend on coral reefs in other countries. Coral reef ecosystems in most U.S. states and
20 territories are directly connected with reef habitats in other countries. Ocean currents carry
21 not only essential larvae and juvenile corals, fish, and other invertebrates that replenish reefs
22 but also potentially harmful pollutants and diseases. Thus, strategies for supporting healthy
23 coral reef ecosystems in the United States must also consider protecting coral reefs beyond
24 U.S. waters.
25

26 NOAA's Coral Reef Conservation Program (CRCP) was established in 2000 to help fulfill
27 NOAA's responsibilities under the Coral Reef Conservation Act (CRCA) and Presidential
28 Executive Order 13089 on Coral Reef Protection. The primary goal of the CRCP is to
29 protect, conserve, and restore coral reef resources by maintaining healthy ecosystem
30 function. Since 2001 the CRCP has supported a variety of international initiatives to build
31 human and institutional capacity to support integrated coastal management, protected area
32 management, reduction of land-based sources of pollution, and sustainable fisheries in coral
33 reef nations. The CRCP has addressed these issues through an assortment of collaborative
34 partnerships, technical support and competitive small grants described in this category.
35

36 In 2007 the CRCP solicited an external review to assess the Program's effectiveness in
37 achieving its mandates and provide recommendations for improving its impact and
38 performance (<http://coralreef.noaa.gov/review.html>). The review panel made several
39 specific recommendations regarding the Program's international efforts, including expanding
40 partnerships and increasing international coral reef conservation efforts
41 (http://coralreef.noaa.gov/review/summary_report.pdf). In response to the panel's
42 recommendations and new program leadership, the CRCP developed a 'Roadmap for the
43 Future' to set the Program's direction for FY 2010-2015 and lead the CRCP toward a more
44 focused set of domestic and international priorities.
45

46 The CRCP engaged its community of partners through the formation of an international
47 working group. The group has a diverse membership of NOAA staff, other federal agencies,
48 academia, non-governmental organizations, and regional representatives, which is intended to
49 draw on a wide breadth of experience and expertise. The international working group is
50 charged with providing recommendations on the twenty-year strategic goals and five-year
51 objectives the CRCP should work towards to effectively address international threats to coral
52 reefs. The CRCP is committed to refining its performance and efficiency measures to reflect
53 the new program direction and better evaluate overall CRCP performance, placing greater
54 emphasis on outcomes rather than outputs.

55
56 This International Coral Reef Conservation Strategy is intended to respond to the
57 recommendations from the Program External Review and other input to strengthen and
58 expand the Program’s international coral reef conservation efforts. The Strategy is designed
59 to bring more focus to the CRCP’s international activities on topics and regions where the
60 Program can have the greatest impact by building on NOAA’s strengths, building
61 partnerships and leveraging resources and expertise. The Strategy’s major focus will be to
62 support activities related to MPA capacity building in four key international regions.
63 Depending on the availability of funds, the implementation of the CRCP international goals
64 and objectives, described below, could produce significant benefits to global coral reef
65 habitats, including:

- 66
- 67 Expanded networks of resilient coral marine protected areas
- 68 Strengthened national and regional measures to foster an ecosystem approach to coral
- 69 fisheries management
- 70 Strengthened policy frameworks and institutional capacities to reduce impacts to coral
- 71 reef ecosystems from land-based pollution
- 72 Increased ability to observe, predict, communicate, and manage climate change
- 73 impacts on coral reefs

74

75 **Regional Priorities**

76
77 The NOAA CRCP international strategy will focus on supporting existing regional efforts in
78 four primary regions based on their interconnections with U.S. reef ecosystems and existing
79 initiatives and partnerships: the Caribbean, Micronesia, Polynesia (with a focus on Samoa),
80 and the Coral Triangle.

81

82 **Wider Caribbean**

83 The wider Caribbean region, as defined by the Cartagena Convention, comprises the marine
84 environment of the Gulf of Mexico, Caribbean Sea and adjacent areas of the Atlantic Ocean
85 south of 30 degrees north latitude. The region includes 35 independent states and territories
86 and includes approximately 7% of the world’s shallow coral reefs. The Caribbean is relatively
87 small and is surrounded by multiple drainage areas that support large human populations,
88 thus coral reef ecosystems in the region are particularly vulnerable to human impacts.

89

90 The Caribbean is referred to as the “Third Border” of the United States and it is critically
91 important to the nation’s environment, economy and national security. Coral reefs in U.S.
92 waters of the Gulf of Mexico, Florida, Puerto Rico and the U.S. Virgin Islands are intimately
93 connected of the Yucatan Peninsula and Eastern Caribbean. The World Resources Institute
94 “Reefs at Risk in the Caribbean” report estimated that in 2000 Caribbean coral reef resources
95 provided between \$3.1 and \$4.6 billion per year from fisheries, shoreline protection and
96 tourism services. Over fifteen million people visit the region every year, including over
97 seven million visitors from the United States.

98
99 In recent decades coral communities throughout the region have experienced massive
100 decline, suffering from a series of large scale impacts, including mass coral bleaching events,
101 infectious disease outbreaks and substantial die-offs of important species, such as the long-
102 spined sea urchin (*Diadema anatillarium*) and staghorn and elkhorn corals (*Acropora cervicornis*
103 and *A. palmata*). As a result, many reefs in the region have lost as much as 80% of their
104 historical coral cover. According to the Reefs at Risk Threat Index, nearly two-thirds of the
105 Caribbean’s coral reefs are threatened by human activities, including coastal development,
106 land-based sediments and pollution, vessel discharges and overfishing.

107

108 **Micronesia**

109 The Pacific is a vast region and home to some of the most diverse and important coral reef
110 areas in the world. The Micronesian region in particular has some of the world’s highest
111 marine biodiversity, home to 60% of the known coral species. However, four main threats in
112 the form of overfishing (especially commercial fishing), climate change, habitat destruction
113 and pollution are impacting the region’s coral reefs.

114

115 The Micronesia region includes three freely associated states of the US: Republic of the
116 Marshall Islands, Republic of Palau, and the Federated States of Micronesia as well as the
117 independent nations of Kiribati and Nauru. Also found in the Micronesia region are two US
118 Territories of Guam and the Commonwealth of the Northern Marianas Islands. Geographic
119 proximity of the Micronesian countries to the US territories underscores the need to protect
120 coral reefs in international Micronesian locations. These independent islands share a common
121 environmental initiative with US jurisdictions: the locally-led Micronesian Challenge, which
122 sets long-term ecological goals and establishes the legislative mechanisms for their
123 implementation. The Micronesia Challenge brings together both local governments and
124 NGOs active in the region, and has been recognized internationally as a model of
125 environmental stewardship.

126

127 **Polynesia, with a focus on Samoa**

128 Polynesia is a large Pacific region stretching from Hawaii in the north to New Zealand in the
129 South. Included within the region are two US states and territories of Hawaii and American
130 Samoa. The independent nation of Samoa is located just 73 miles from American Samoa and
131 is therefore the geographic focus of the CRCP within the Polynesia region. The CRCP
132 international strategy will initially focus on supporting marine conservation efforts in
133 independent Samoa, which shares close cultural, geographical, and biological links to
134 American Samoa, located just 73 miles from Samoa. The leaders of Samoa and American
135 Samoa have initiated the “Two Samoas Initiative” to bring together local and regional
136 environmental agencies and organizations to promote efficient management for addressing

137 shared marine and terrestrial environmental concerns. The Initiative also aims to increase the
138 cooperation between the two neighboring islands and is among the regional projects that
139 CRCP can support as a primary vehicle for coral reef conservation within Polynesia.
140

141 Other independent Polynesian nations that are candidates for support from the CRCP
142 include Fiji, Vanuatu, Tonga, and Tuvalu. Numerous overseas territories and freely
143 associated states of other nations such as France, Australia, and New Zealand are also found
144 in Polynesia; however, these islands will not be prioritized by the CRCP.
145

146 **Coral Triangle**

147 The “Coral Triangle” (CT) is the region with the highest diversity of corals and reef fish on
148 the planet. Located along the equator at the confluence of the Western Pacific and Indian
149 Oceans, the CT includes all or part of the exclusive economic zones of six countries:
150 Indonesia, Malaysia, Papua New Guinea, the Philippines, the Solomon Islands and Timor-
151 Leste. Covering only 1.6% of the planet’s oceanic area, it includes over one-third of the
152 world’s coral reefs, the greatest extent of mangroves in the world, and the spawning and
153 nursery areas for the world’s largest tuna fishery. The complex biogeographical conditions of
154 the region may enable the CT to maintain its exceptional productivity in the face of future
155 impacts of climate change, making it potentially a globally important “refuge” for marine life.
156

157 These marine and coastal living resources provide important benefits to over 360 million
158 people who reside in the region, along with benefits to many millions more outside the
159 region. One- third of the inhabitants within the CT itself – more than 120 million people,
160 particularly those living in coastal communities -- depend directly on local marine and coastal
161 resources for their income, livelihoods, and food security. These valuable marine resources
162 are under significant and increasing threat from variety of pressures including: overfishing,
163 unsustainable fishing practices, land-based sources of marine pollution, coastal habitat
164 conversion, and climate change. Additional action is needed at many levels to reduce these
165 pressures and sustain resilient ecosystems for current and future generations.
166

167 The CT is the focus of an international effort among government and non-governmental
168 partners called “The Coral Triangle Initiative: Coral Reefs, Fisheries and Food Security”
169 (CTI) to help sustain the region’s precious marine resources and the people, communities
170 and economies that depend on them. In 2007, the United States government became a
171 formal partner in the Initiative and committed to help support implementation of CTI by
172 the six CT nations. As part of the U.S. government support for CTI, NOAA and NOAA’s
173 CRCP has made the CT a priority focus area and is building on its existing efforts in the
174 region.
175

176 **Global Leadership**

177 The CRCP recognizes that the US is only one center for coral reef research and
178 conservation. The Program is committed to learning from the efforts of other entities,
179 including regional initiatives, national governments, and NGOs, to further its domestic
180 mission to protect US coral reefs. In addition the Program will engage in international
181 collaborative research in order to improve science and management for coral reefs around
182 the world, including supporting efforts to standardize tools and methods used in coral reef
183 monitoring and management. The CRCP will continue to support international governance

184 and reporting efforts, such as the International Coral Reef Initiative and the Global Coral
185 Reef Monitoring Network.

186
187 The CRCP will also seek to continue supporting successful partnerships in geographical
188 areas outside of the priority areas outlined above. While the priority geographic regions will
189 receive the bulk of funding and other assistance from the CRCP, other outstanding projects
190 may be supported in areas such as the broader Indian Ocean, including East Africa, Western
191 Indian Ocean, South Asia, and areas of Southeast Asia lying outside of the Coral Triangle.

192

193 **FY 2010-2015 International Goals and Objectives**

194

195 **PRIORITY GOAL (GOAL 1): Support Effective MPAs and MPA Networks**

196

197 **Work with regional initiatives to build MPA networks and strengthen local capacity**
198 **for MPA management to improve and maintain resilience of coral reef ecosystems**
199 **and the human communities that depend on them**

200

201 Marine and coastal ecosystems are in decline worldwide from a variety of stressors. Coral
202 reef ecosystems are some of the hardest hit, exhibiting loss and degradation in most reef
203 regions from overfishing, run-off of nutrients and other land-based pollutants, habitat
204 degradation and the increasing impacts of climate change and other impacts. Over the last
205 decade significant progress has been made in understanding the impacts of these stressors
206 on reef ecosystems, and developing effective management strategies to reduce these impacts
207 and promote healthy, resilient reef ecosystems. This experience has shown that
208 appropriately placed and well managed marine protected areas (MPAs) – areas managed to
209 protect natural and/or cultural resources – are very effective tools to protect and restore
210 coral reef ecosystems especially when combined with other management tools (such as
211 integrated coastal management, fisheries management) in comprehensive reef management
212 strategies. MPAs are considered especially vital parts of management strategies to improve
213 and maintain resilience of coral reef ecosystems in the face of a changing climate. MPAs and
214 MPA networks are now being designed, implemented and evaluated in coral reef ecosystems
215 around the world at local, national and regional levels. Supporting these efforts is the top
216 priority of this International Strategy.

217

218 The intent of this Goal is to build well-designed and effectively managed MPAs and MPA
219 networks by strengthening capacity to design and implement MPAs at regional to local
220 levels. To achieve this goal, this strategy focuses on building capacity in the key areas
221 necessary for successful design, implementation, monitoring and evaluation of MPAs and
222 MPA networks in coral reef ecosystems. These key areas are outlined in the Objectives
223 below.

224

225 **Objective 1.1:** Support regionally-based social networks of MPA practitioners to foster
226 training needs assessments, peer exchanges and the sharing of good practices among
227 international MPAs and between the U.S. and international MPA partners

228 **Objective 1.2:** Develop comprehensive long-term capacity building programs, based on
229 regional training needs assessments, to provide training and technical assistance for
230 biophysical and socioeconomic monitoring, management planning and effectiveness,
231 enforcement, use of climate change tools, crisis response planning and other topics as
232 needed

233 **Objective 1.3:** Support the use of science-based tools to identify priority sites for
234 conservation assessment and build community support for designation of MPAs and MPA
235 networks, and application of MPA network principles in MPA design, including
236 connectivity, representativeness, biodiversity, livelihood impacts, and resilience to climate
237 change

238 **Objective 1.4:** Provide management planning support, encouraging development of
239 effectiveness indicators tied to management objectives. Provide tools, training and support
240 for standardized effectiveness monitoring and adaptive management

241 **Objective 1.5:** Promote the use of regionally appropriate biophysical and socioeconomic
242 monitoring and evaluation protocols to establish baselines, detect changes over time and
243 support adaptive management. Consider integration of biophysical and socioeconomic
244 monitoring when feasible

245 **Objective 1.6:** Support engagement of local communities and stakeholders in MPA design
246 and management, including the formation of stakeholder advisory groups, development of
247 community watch programs, and community involvement in biophysical and socioeconomic
248 monitoring

249 **Objective 1.7:** Increase local enforcement capacity to improve compliance with MPA
250 regulations and conservation-oriented customary practices, including training in evidence
251 collection and educational enforcement, and technical assistance to review and increase the
252 enforceability of local, traditional, state and national legislation.

253 **Objective 1.8:** Support the development and implementation of sustainable finance plans to
254 ensure long-term financial support for conservation efforts.

255

256 While the CRCP will focus its international work on capacity building for MPA management
257 as described in Goal 1, the following three goals remain a priority for the Program.

258

259 **GOAL 2: Support Sustainable Coral Reef Fisheries**

260

261 **Strengthen local and institutional capacity and policy frameworks to reduce impacts** 262 **of fishing on coral reef ecosystems**

263

264 Coral reef fisheries have an important role for sustaining communities around the globe by
265 providing job and food security. Unsustainable fishing practices are detrimental to the long-
266 term social fabric and have profound, far-reaching ecosystem consequences in terms of loss
267 of biodiversity, habitat degradation, and loss of ecosystem function and productivity. To be
268 effective, governance must balance short-term opportunity for exploitation with long-term

269 economic stability and ecosystem persistence. The well being of local communities depends
270 on achieving this balance.

271
272 Coral reef management, however, is not just a local issue because coral reefs are shared large
273 marine ecosystems. In the Caribbean Sea, for example, approximately 35 governments,
274 including the U.S., share coral reef resources connected by physical oceanographic and
275 biological processes that support the dispersal and re-supply of fished species to support to
276 local human populations. International advancement in the understanding and managing of
277 coral reefs are needed, including the need to eliminate harmful impacts of illegal or
278 unregulated fishing, switching to less damaging fishing methods, and regulating total
279 mortality to protected long-term productivity and biodiversity. Cooperative international
280 approaches to management provide the best opportunity to ensure that coral reef fisheries
281 continue to play their vitally important role. NOAA's active engagement with the
282 international community enables the U.S. to contribute to and learn from the global lessons
283 of science and management experience.

284
285 **Objective 2.1:** Support capacity building and training for enforcement and facilitate
286 government participation in cooperative enforcement partnerships to improve compliance
287 with fishing regulations and conservation-oriented customary practices

288 **Objective 2.2:** Assess the US role in the international trade of coral reef-based ornamental
289 and food species, evaluate US and international legal mechanisms to assess trade impacts and
290 work with exporting countries to adopt sustainable and responsible harvesting measures

291 **Objective 2.3:** Provide support and technical assistance to strengthen fisheries policy,
292 governance and regulatory measures at national and regional levels to foster an ecosystem
293 approach to fisheries management

294 **Objective 2.4:** Provide support and technical assistance to local and regional initiatives to
295 identify and protect spawning aggregations of coral reef fish species

296 **Objective 2.5:** Encourage fisher and community participation and use of traditional
297 knowledge in fisheries planning, management and monitoring to improve stakeholder input
298 into and buy-in for decision making

299 **Objective 2.6:** Support initiatives that encourage the adoption of sustainable fishing
300 practices and gear choices along with efforts to reduce incidences of ghost fishing by lost
301 and abandoned fishing gear

302
303 **GOAL 3: Address Land-Based Sources of Pollution**

304
305 **Strengthen policy frameworks and institutional capacities to reduce impacts to coral**
306 **reef ecosystems from pollution and loss of critical habitats due to land and marine-**
307 **based activities**

308
309 Coral reef degradation from land-based activities and runoff is widespread on inhabited
310 coasts. Pollution and sediment from land-based sources accounts for nearly 80% of the

311 marine pollution in some regions of the world, such as the Wider Caribbean. Increased
312 nutrients in coastal waters from agricultural fertilizers and sewage discharge have increased
313 algal growth and water turbidity, causing a widespread degradation on coral reef ecosystems,
314 impeding coral growth and may cause algae to overgrow corals. Additionally, increased
315 sedimentation from changes in upstream land-use and from coastal development activities
316 can adversely impact coral reefs by smothering coral, blocking photosynthesis, and decreasing
317 the survival of juvenile coral due to lack of suitable substrata for colonization.

318

319 The freshwater–coastal system is closely inter-linked and should be recognized as a
320 continuum and managed as such. Unfortunately, in most countries integrated watershed
321 management and coastal resource management are normally two different disciplines that
322 rarely communicate. The lack of integrated planning between these two sectors results in
323 overlapped activities, different technical languages, and lack of understanding each others’
324 issues and problems, and hence solutions.

325

326 This goal seeks to address land-based pollution on coral ecosystems, by outlining steps that
327 should be taken to identify threatened habitats, reduce or eliminate pollution sources, develop
328 demonstration case studies, and—most importantly—enhance the capacity of planners, users,
329 and decision makers of targeted coastal and watershed areas.

330

331 **Objective 3.1:** Support regional initiatives to identify priority coral reef areas that are
332 susceptible to land based pollutants from adjacent watersheds

333 **Objective 3.2:** Conduct needs assessments of legal and policy frameworks and institutional
334 requirements for implementing coastal and watershed management in priority coral reef
335 areas

336 **Objective 3.3:** Provide technical assistance to utilize marine and coastal observing data and
337 information for coastal spatial planning, including the use of remote sensing products.

338 **Objective 3.4:** Collaborate with CRTF partners to support peer exchanges and provide
339 technical assistance to design and adopt coastal and watershed management plans.

340 **Objective 3.5:** Provide technical assistance for developing integrated decision support
341 systems to identify and assess upstream and coastal sources of pollution for coastal and
342 watershed planning

343

344 **GOAL 4: Address Climate Change**

345

346 **Develop and implement tools and practices to more effectively observe, predict,**
347 **communicate, and manage climate change impacts in priority international locations**

348

349 Human activities are changing the world’s climate. Increasing ocean temperatures and ocean
350 acidification are already affecting reefs by bringing more frequent mass coral bleaching
351 events and slowing the formation of coral skeletons at some coral reef locations. Under
352 some scenarios, the next century of climate stress could even lead to the loss of most corals
353 and the biological and human communities that depend on them. While the only long-term

354 solution is to stabilize greenhouse gases in the atmosphere by reducing emissions, that task
355 lies beyond NOAA's mandate and outside the control of coral reef managers.

356
357 The intent of this goal is to identify some key actions that can be taken to help promote the
358 adaptation and resilience of coral reef ecosystems. Effective action requires sound science,
359 of course, and research and monitoring is still needed to understand and reduce impacts in
360 some key areas. The first three four activities are aimed at fostering the international
361 collaborations that will expand the science to inform management. These
362 research/monitoring activities are especially critical with regard to the emerging issue of
363 ocean acidification and many questions remain on its effects on coral reef ecosystems
364 around the world. Outreach and capacity building are also key activities that NOAA plans
365 to foster internationally, through the development of case studies and training programs.
366 And finally, though many questions remain, NOAA will seek to test potential management
367 strategies that may help coral reefs survive.

368
369 **Objective 4.1:** Collaborate with global partners to broaden the international delivery of coral
370 bleaching prediction tools and improve the science for predicting climate impacts to global
371 coral reef ecosystems

372 **Objective 4.1:** Expand international climate monitoring systems using standardized tools
373 and methods, particularly to fill critical gaps relating to ocean acidification

374 **Objective 4.1:** Support the expansion of observing networks in priority areas to monitor
375 reef ecosystem conditions over time, in particular, capacity to detect and predict the effects
376 of global climate change on coastal ecosystems

377 **Objective 4.1:** Collaborate with international and local partners to identify priority coral reef
378 areas that are especially resilient or vulnerable to climate change

379 **Objective 4.1:** Develop international case studies on impacts of climate change and ocean
380 acidification in order to encourage global greenhouse gas reductions and encourage greater
381 incorporation of climate change impacts on coral reefs into future global assessments

382 **Objective 4.1:** Provide training and build local capacity to implement management strategies
383 to reduce climate change impacts, including testing and evaluating management strategies
384 measures for local applicability and effectiveness