



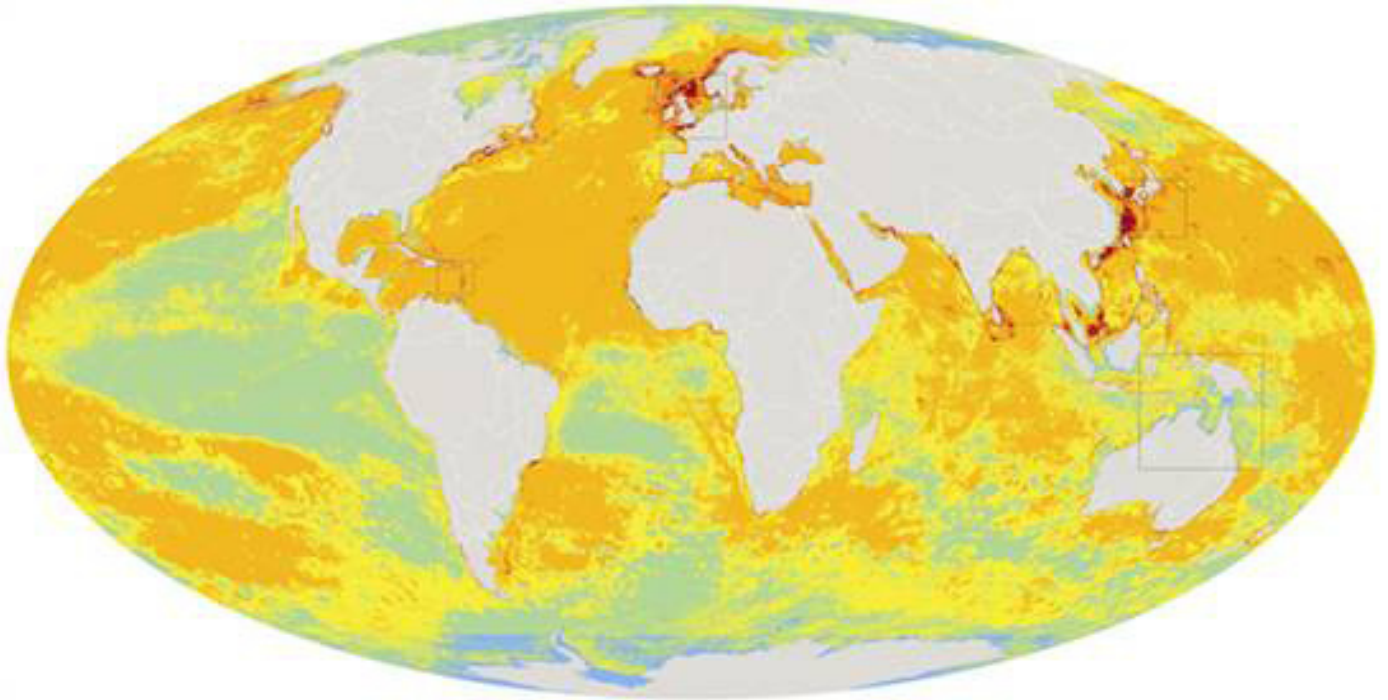
High Seas Briefing

An update for policy makers on recent scientific articles, reports, intergovernmental and experts meetings and upcoming events regarding marine biodiversity in areas beyond national jurisdiction.

April 2008 Pilot Version



Recent Science Articles



“A GLOBAL MAP OF HUMAN IMPACT ON MARINE ECOSYSTEMS”

In a first ever global attempt, scientists have compiled in a single map the impacts that humans are having on the oceans through specific activities. The map, published in *Science* (15 February 2008), provides a broad-scale overview of the ecological impacts of human activities on marine ecosystems. To develop the map, scientists identified seventeen types of human impacts such as commercial fishing, global warming, coastal development on the coasts, and pollution from shipping, which were measured against twenty different marine ecosystems taking into account their specific vulnerabilities. The results that this effort yielded are disturbing. Forty-one percent of the oceans are highly impacted by human activities including many areas beyond national jurisdiction and only four percent is considered relatively pristine. The most critically impacted ecosystems include coral reefs and seamounts among others. The Arctic and Antarctic are the least impacted: yet as the effects of global warming are felt more and as the ice caps melt they are becoming more accessible and susceptible to human disturbances.

The map and its underlying analytical framework demonstrate how modern mapping tools can help to improve and rationalize spatial management of human activities. For example, they can help quantify the ecological tradeoffs associated with different human uses of marine ecosystems, identify locations for priority protection, and inform strategies to minimize ecological impact and maintain sustainable use.

Halpern, B. et al. Science Vol 319, 5865:948 - 952
To access map and background see: <http://www.nceas.ucsb.edu/globalmarine>

“EXPONENTIAL DECLINE OF DEEP-SEA ECOSYSTEM FUNCTIONING LINKED TO BENTHIC BIODIVERSITY LOSS”

Based on a broad-scale study on biodiversity collected from deep sea ecosystems, Roberto Danovaro and others discovered, for the first time, that small deep sea invertebrates (including nematodes and copepods) play a key role in sustaining the overall function of global ocean biogeochemical and ecological processes that are essential for the air, water and food we consume. As published in *Current Biology* (8 January 2008), the study found that sites with a higher diversity of species support exponentially higher rates of ecosystem processes and an increased efficiency with which those processes are performed. The research, which was conducted as part of a larger European Commission-funded project on Hotspot Ecosystem Research on the Margins of the European Seas (HERMES), has an important consequence: ‘the loss of deep-sea species poses a severe threat to the future of the oceans, In fact, even a minor biodiversity loss could reduce drastically the function of these ecosystems, and a species loss of 50% could lead to ecosystem collapse’ (HERMES Newsletter, Winter 2007/2008).

Danovaro, R. et al., (2008) Exponential Decline of Deep-Sea Ecosystem Functioning Linked to Benthic Biodiversity Loss, Current Biology 18(1):1-8

Deep-sea biodiversity conservation needed to avoid ecosystem collapse HERMES Newsletter Issue 11 Winter 2007/2008 available at: <http://www.eu-hermes.net/>

See also: Loreau, M., (2008) Biodiversity and Ecosystem Functioning: The Mystery of the Deep Sea, Current Biology 18(3)

Recent Science Articles (continued)

“WHY FISHING MAGNIFIES FLUCTUATIONS IN FISH ABUNDANCE”

In an article published in *Nature* (April 17, 2008), the authors reveal that selective harvesting of the biggest, oldest fish can alter the basic dynamics of exploited populations, making stocks more vulnerable to overexploitation. It has long been known that fished populations can fluctuate more than unharvested stock, yet the causes of that have not been clear. The authors found that the changing demographic parameters caused by the selective harvesting of the larger, older fish shows the strongest evidence for explaining fluctuations in fish abundance in California Current fisheries. They found that the bigger, older fish not only provide more and better quality offspring but they are better able to withstand fluctuations in food abundance, and hence should be the ones spared, not the younger ones. This has significant implications for commercial and sport fisheries that focus on targeting the biggest, oldest fish.

Anderson, C. N. K., C.-H. Hsieh, S. A. Sandin, R. Hewitt, A. Hollowed, J. Beddington, R. M. May, and G. Sugihara. Why fishing magnifies fluctuations in fish abundance. Nature 452 (7189), 835-839.

See also <http://www.sciencedaily.com/releases/2008/04/080416153548.htm>

Recent Reports

IUCN's Environmental Law Centre in Bonn, Germany has released a series of four papers to advance consideration on options and approaches to enhance the governance of marine biodiversity in areas beyond national jurisdiction:

1) Analysis of the Regulatory and Governance Gaps in the International Regime for the Conservation and Sustainable Use of Marine Biodiversity in Areas beyond National Jurisdiction

2) Options for Addressing Regulatory and Governance Gaps in the International Regime for the Conservation and Sustainable Use of Marine Biodiversity in Areas beyond National Jurisdiction

3) Case Study on the Mid-Atlantic Ridge

4) Elements of a Possible Implementation Agreement to UNCLOS for the Conservation and Sustainable Use of Marine Biodiversity in Areas beyond National Jurisdiction

The papers present a compendium of information and ideas that have been developed by an international team of experts with respect to governance or regulatory gaps, based on a gap analysis of the international legal regime for marine biodiversity in areas beyond national jurisdiction and case study on the Mid Atlantic Ridge. Two of the papers profile options for addressing such gaps through a variety of short and medium term options, including possible elements that States could consider within the framework of a possible Implementation Agreement to the United Nations Convention on the Law of the Sea. The team of experts includes Kristina M. Gjerde, IUCN Global Marine Program, Harm Dottinga, Netherlands Institute for the Law of the Sea, Sharelle Hart, IUCN Environmental Law Centre, Erik Jaap Molenaar Netherlands Institute for the Law of the Sea, Rosemary Rayfuse, University of New South Wales, Sydney, Australia and Robin

Warner, University of Wollongong, Australia. The papers were prepared with support from the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety and the Dutch Ministry of Agriculture, Nature and Food Quality.

Copies of the papers are available at:
http://cms.iucn.org/about/work/programmes/environmental_law/index.cfm?uNewsID=857



“IN DEAD WATER: MERGING OF CLIMATE CHANGE WITH POLLUTION, OVER-HARVEST AND INFESTATIONS IN THE WORLD’S FISHING GROUNDS”

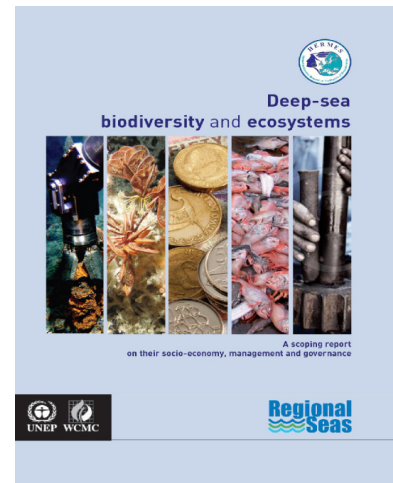
In this UNEP report, the contributing authors looked at the most productive fishing locations in the oceans and compared them to projected scenarios of climate change, including ocean acidification, coral bleaching, temperature increases leading to shifts in range and changes in

algal, plankton and fish abundance, slowing of ocean thermohaline circulation potentially leading to changes in marine ecosystem productivity, oceanic CO₂ uptake, oxygen concentrations and declines in dense shelf water cascading, with associated effects on continental shelf and deep-sea fauna and fisheries flushing and cleaning mechanisms. It also reviewed the impacts of current stressors such as unsustainable fishing practices, land-based pollution, increase of invasive species infestations, and growth in coastal development, and how these are potentially exacerbated by climate change. The report cautions that the synergistic effects of these stressors risks an unprecedented, dramatic and wide-spread collapse of marine ecosystems and fisheries within the next decades unless we substantially increase our focus on building and strengthening the resilience of marine ecosystems.

*Nelleman, C., Hain, S., and Alder, J. (eds.) February 2008
Copies of the report are available at www.unep.org/pdf/In-DeadWater_LR.pdf*

DEEP-SEA BIODIVERSITY AND ECOSYSTEMS: A SCOPING REPORT ON THEIR SOCIO-ECONOMY, MANAGEMENT AND ECONOMY

In a joint UNEP/HERMES (Hotspot Ecosystem Research on the Margins of European Seas (an EU-sponsored project) report published in December 2007, the authors observe that despite its remoteness, the deep sea is showing signs of anthropogenic impacts. The report answers key questions, such as: 'where do we find vulnerable deep sea and high sea ecosystems, what are the goods and services they provide, and how are they affected or threatened by existing or emerging human activities and climate change'. By applying modern methods and concepts used in the context of the Millennium Ecosystem Assessment, the report scopes new



ways and perspectives for answering these questions. The report also looks at gaps in socio-economic and governance knowledge, evaluates shortcomings in assessment methodologies and valuation concepts, and identifies research needs. Finally, it urges immediate action to protect and conserve the deep waters, seabed, and high seas, and calls for the governance and sustainable management of human activities causing impacts on them.

UNEP. (2007). Deep-Sea Biodiversity and Ecosystems: A scoping report on their socio-economy, management and governance.

*Copies of the report are available at: http://www.unep-wcmc.org/resources/publications/UNEP_WCMC_bio_series/index.aspx
http://www.unep.org/regionalseas/Publications/Reports/Series_Reports/Reports_and_Studies/default.asp*

Intergovernmental Meetings

FIFTH INTERNATIONAL MEETING FOR THE ESTABLISHMENT OF THE SOUTH PACIFIC REGIONAL FISHERIES MANAGEMENT ORGANIZATION ("SPRFMO"), GUAYAQUIL, ECUADOR, 10 – 14 MARCH 2008

The SPRFMO had before it a third revision of the draft text of the Convention. The meeting discussions of the draft text focused on the articles on conservation and management principles, organization and functioning of the commission and its subsidiary bodies. Much of the Meeting's work was carried out in small working-group mode enabling a frank and constructive discussion of some of the contentious articles of the draft Convention text and the key underlying issues. The meeting thoroughly discussed the issue of participation in fisheries, and compatibility of conservation measures for straddling stocks, issues highly relevant to the application of the UN Fish Stock Agreement.

The plenary of the meeting also discussed the implementation of the interim measures that have been adopted in the 3rd consultative meeting in Chile. Several delegates were disappointed and concerned about the low level of implementation of some interim measures, and the low level of provision of data. The Meeting strongly encouraged all participants to submit data in accordance with the data standards adopted at previous meetings.

An informal group met to discuss the boundaries of the convention, and several delegates were concerned about leaving a geographical gap between the southern boundary of the proposed NW Pacific RFMO (currently set for 20° N) and the currently proposed northern boundary of the SPRFMO (Equator).

The report of the meeting as well as the reports of the Scientific and Data and information working groups are available at www.southpacificrfmo.org

13TH MEETING OF THE SUBSIDIARY BODY ON SCIENTIFIC, TECHNICAL AND TECHNOLOGICAL ADVICE, ROME, ITALY, 18-22 FEBRUARY 2008.

The 13th SBSTTA had before it the report of the Azores workshop on Ecological criteria and biogeographic classification systems for marine areas in need of protection and its 3 annexes; background documentation by the secretariats on options for preventing and mitigating the impacts of some activities to selected seabed habitats; as well as. Draft Report on Global Open Oceans And Deep Sea-Habitats (GOODS) Bioregional Classification.

Delegates were divided between noting, endorsing or adopting the criteria for the establishment of areas in need of protection (Annex II of the Azores workshop report) and guidance for the establishment of representative networks of MPAs (Annex III).

The report on biogeographic classification systems and bioregionalization was also another subject of lengthy discussions, and remains subject to further review and discussion at COP9 and the next SBSTTA.

On options for preventing and mitigating impacts, Parties discussed the need for developing guidelines for environmental impact assessment and strategic environmental assessments for activities and processes under the jurisdiction and control of states which have a potential to impact biodiversity in ABNJ. The paragraph remains bracketed for consideration by the COP9. The other actions proposed to COP9 on this subject are about taking note of the options available to Parties and requesting further compilation of information. The result of SBSTTA discussions is a heavily bracketed text, including even the entire annexes of the Azores workshop.

Source: UNEP/CBD/COP/9/3, available at: <http://biodiv.org>
See also: <http://www.iisd.ca/biodiv/sbstta13/>

TECHNICAL CONSULTATION ON THE INTERNATIONAL GUIDELINES FOR THE MANAGEMENT OF DEEPSEA FISHERIES IN THE HIGH SEAS, ROME, ITALY, 4-8 FEBRUARY 2008

The Technical Consultation had before it the draft International Guidelines on the management of deep-sea fisheries in the high seas, based on two Expert Consultations and additional workshops sponsored by FAO in 2006 and 2007. The Guidelines are to aid States and regional fisheries management organizations (RFMOs) in the implementation of the 2006 United Nations General Assembly Resolution 61/105 which calls for the adoption, no later than December 2008, of conservation and management measures to protect vulnerable marine ecosystems (VMEs) on the high seas from serious impacts as a result of deep-sea fishing activities.

The Draft International Guidelines on Managing Deep-Sea Fisheries on the High Seas outline the measures and approaches that States should take to ensure that the deep-sea fish stocks of the high seas are not overexploited or that fishing damages VMEs through contact with fishing gear. Though the Technical Consultation did not finish its task, a number of important provisions were agreed regarding the approach to determining which types of ecosystems are vulnerable to bottom fisheries on the high seas, where such ecosystems may be found or are likely to be found, and how to conduct environmental impact assessments to determine what impact bottom fishing may have.

A second Technical Consultation will take place from August 25-29, 2008 to pursue and hopefully complete the review and finalization of the Guidelines.

The draft Guidelines are available at: <http://www.fao.org/fishery/nems/38028/en>

IUCN
The World Conservation Union

The Science behind the Guidelines:

A Scientific Guide to the FAO Draft International Guidelines (December 2007) for the Management of Deep-Sea Fisheries in the High Seas and Examples of How the Guidelines may be Practically Implemented

Alex D Rogers, Malcolm R Clark, Jason M Hall-Spencer, Kristina M Gjerde



ZSL
ZOOLOGICAL SOCIETY OF LONDON

See also the IUCN-Commissioned, Lenfest Ocean Program-funded briefing: "The Science behind the Guidelines: A Guide to the FAO Draft International Guidelines (December 2007) for the Management of Deep Sea Fisheries in the High Seas and Examples of How the Guidelines may be Practically Implemented", by Alex D Rogers, Malcolm R Clark, Jason M Hall Spencer and Kristina M. Gjerde available at http://cmsdata.iucn.org/downloads/science_behind_the_guidelines_low_res.pdf

International expert meetings

“FOURTH GLOBAL CONFERENCE ON OCEANS, COASTS, AND ISLANDS: ADVANCING ECOSYSTEM MANAGEMENT AND INTEGRATED COASTAL AND OCEAN MANAGEMENT BY 2010 IN THE CONTEXT OF CLIMATE CHANGE” HANOI, VIETNAM, 8-11 APRIL 2008

The Fourth Global Conference was organized by the Global Forum on Oceans, Coasts, and Islands, which was created by an informal World Summit on Sustainable Development (WSSD) coordinating group in Johannesburg, South Africa, in 2002. The event brought together over 430 participants from 71 countries representing governments, UN and other international agencies, NGOs, industry, oceans donors, organized science groups, and networks of museums and aquaria. The Fourth Global Conference provided a review of progress, or lack thereof, in attaining the goals adopted by the world's political leaders at the 2002 WSSD relating to oceans management and conservation in the context of climate change.

The Global Forum Working Group on Governance of Marine Areas Beyond National Jurisdiction produced a report that will provide insights into the debate by the UN Working Group on biodiversity in marine areas beyond national jurisdiction. Against a sense of urgency to act so as to prevent and reduce adverse impacts of human activities, the Group produced advice on modalities for increasing cooperation and coordination at various levels, the need to continue exchanging and debating on marine genetic resources under an appropriate UN forum, the encouragement to continue developing area-based management tools and underpinning scientific knowledge, and the approach needed to ensure sectoral reinforcement and integration along a continuum of measures and actions.

For copies of the report and other information see <http://www.globaloceans.org/globalconferenes/2008/index.html>

“TOWARDS A NEW GOVERNANCE OF HIGH SEAS BIODIVERSITY”, PRINCIPALITY OF MONACO, 21-22 MARCH 2008

Organised by the Institute for Sustainable Development and International Relations (IDDRI), the seminar “Towards a new governance of high seas biodiversity” aimed to foster interaction between the different disciplines involved and bring together high-level international experts with a view to precisely examining the possible perspectives for better governance of biodiversity in areas beyond national jurisdiction. This event – organized in partnership with the Prince Albert II of Monaco Foundation, the French Agency of Marine Protected Areas, the French Global Environmental Facility (FFEM) and with the collaboration of the Maritime and Oceanic Law Centre (University of Nantes) - brought together around 100 experts from international organisations, national admin-

istrations, non-governmental organisations and research centres. A series of expert panels discussed a wide range of ideas for addressing the increasing threat to marine biodiversity from human pressures exerted on the oceans beyond national jurisdiction as well as approaches for addressing critical oceans governance issues and gaps.

The Report is available at: <http://www.iddri.org/Activites/Conferences-internationales/Towards-a-new-governance-ofhighseas-biodiversity/>

“GLOBAL OCEANS ISSUES IN MARINE AREAS BEYOND NATIONAL JURISDICTION IN THE CONTEXT OF CLIMATE CHANGE”, NICE, FRANCE, 23 - 25 JANUARY 2008

The Strategic Planning Workshop hosted by the Global Ocean Forum brought together 45 experts from governments (developed and developing), NGOs, IGOs, science, and industry (submarine cables, fishing, marine transportation). The workshop was conducted under the Chatham House rule to consider strategic perspectives for the next 5-10 years, to clarify the issues, lay out various perspectives, develop options, and identify possible avenues for consensus-building among disparate interests.

Workshop discussions addressed

- 1) the nature of the issues in marine areas beyond national jurisdiction;
- 2) the management of various marine activities in areas beyond national jurisdiction;
- 3) the policy and legal issues that are raised; and
- 4) issues related to the science/policy interface and climate change effects. The special issues raised by marine genetic resources were also discussed.

The Workshop was organized by the Global Forum on Oceans, Coasts, and Islands; the Gerard J. Mangone Center for Marine Policy at the University of Delaware; NAUSICAA, Centre National de la Mer, Boulogne-sur-Mer, France; the World Ocean Network; and Le Centre de Decouverte du Monde Marin, Nice, with principal support from the Nippon Foundation, Japan, and with additional funding support by Canada's Department of Fisheries and Oceans, and UNESCO.

For more information, see <http://www.globaloceans.org/planning/index.html>

“WORKSHOP ON HIGH SEAS GOVERNANCE FOR THE 21ST CENTURY”, NEW YORK, NEW YORK, 17-19 OCTOBER 2007

At the Workshop on High Seas Governance for the 21st Century, over 50 leading experts in international marine policy, science, law and economics gathered to explore policy and regulatory options to improve oceans governance beyond areas of national jurisdiction (BANJ). The

informal experts' workshop focused on environmental impacts of various human activities, opportunities for coordination among states, the potential role of area-based management tools (eg, MPAs), and ways to address regulatory and governance gaps. The Experts Informal Workshop was an initiative of the Sub-Group on High Seas Governance of the IUCN Commission on Environmental Law. It was organized with the cooperation and support of IUCN, the University of New South Wales Law School, Pace Law School, the Natural Resources Defense Coun-

cil (NRDC), Bard Center for Environmental Policy, and Juice Energy, Inc. Support was provided by the Australian Government, the JM Kaplan Fund and the Netherlands Ministry for Agriculture, Nature and Food Quality.

The workshop report, keynote presentations, background articles and "thought pieces" provided by participants are available at: <http://www.iucn.org/themes/marine/high-seas-workshop-oct07.html>

Upcoming events

28 April - 2 May, 2008, New York, NY

UN *Ad Hoc* Open-ended Informal Working Group to study issues relating to the conservation and sustainable use of marine biological diversity beyond areas of national jurisdiction

<http://www.un.org/Depts/los/biodiversityworkinggroup/biodiversityworkinggroup.htm>

19-23 May 2008, Guayaquil, Ecuador

31st session of the London Convention Scientific Group/2nd session of the London Protocol Scientific Group (agenda includes ocean fertilization)

19 - 30 May, 2008, Bonn, Germany

Ninth Meeting of the Conference of the Parties to the Convention on Biological Diversity

<http://www.cbd.int/doc/meeting.aspx?mtg=COP-09>

23 - 27 June 2008, Rome, Italy

FAO Technical Consultation On Illegal, Unreported and Unregulated (IUU) Fishing

http://www.fao.org/fi/NEMS/events/detail_event.asp?event_id=3638

23 - 27 June 2008, New York, NY

Ninth Meeting of the United Nations Open-ended Informal Consultative Process On Oceans and the Law of the Sea "Maritime Security and Safety."

http://www.un.org/Depts/los/consultative_process/consultative_process.htm

8 - 11 July, 2008, Rome, Italy

International Symposium on Coping With Global Change in Marine Social-Ecological Systems

http://www.fao.org/fi/NEMS/events/detail_event.asp?event_id=36388

25 - 29 August, 2008 Rome, Italy

Second FAO Technical Consultation on the International Guidelines for the Management of Deep-sea Fisheries in the High Seas

5 - 14 October, 2008, Barcelona, Spain

Fourth IUCN World Conservation Congress. The first half, the World Conservation Forum, from 6-9 October 2008 is open to the public; the second half is for IUCN members. <http://www.iucn.org/congress/2008/>

11 - 15 November, 2008, Valencia, Spain

World Conference on Marine Biodiversity. <http://www.marbef.org/worldconference/>

Acknowledgements

This newsletter was developed by Tanya Rosen and Kristina Gjerde and was made possible in part by funding from the JM Kaplan Fund, New York, NY. The views expressed in this newsletter do not necessarily reflect those of IUCN or the JM Kaplan Fund.

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