Chapter 8

Submarine Communications Cables and Science:
A New Frontier in Ocean Governance?

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I Introduction

Since 1850, when the first submarine telegraph cable was laid between Dover and Calais, submarine communications cables have become one of the most important uses of the world’s oceans. These fiber optic cables are made out of high quality glass fiber that is sheathed in plastic, and are often no bigger than a garden hose. Configured into a vast network on the seabed, they transmit massive amounts of data across oceans. The global submarine network forms the backbone of the Internet, e-mail, social media, phone and banking services, goods we now take for granted. Undoubtedly, “these unseen and unsung cables are the true skeleton and nerve of our world, linking our countries together in a fiber optic web.”

From their inception, submarine communications cables have held a privileged place in international law, reflecting their status as an essential public good. Both the 1958 Geneva Conventions on the Law of the Sea and the 1982 United Nations Convention on the Law of the Sea place obligations on States to protect such cables, and recognize that all States have the freedom to lay, maintain and repair cables beyond territorial waters. These conventions were adopted at a time when submarine cables were not extensively relied upon for

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communications. The drafters could not have possibly foreseen the developments in science and technology that would facilitate the exponential growth in cables. Yet, they adopted a regime that arguably played an instrumental role in the development of such technology. In many ways, the development of submarine communications cables is a prime example of how law can create an environment conducive to technological developments for the benefit of the international community.

In recent years, further advances in technology have led to new uses for submarine communications cables, namely for the collection of oceanographic data from the marine environment. First, scientists have utilized submarine communications cables to transport data in real time from ocean observatories that collect oceanographic data. Second, there has been interest in using submarine communications cables not to just transport data but also to collect data by placing scientific sensors on these cables. It is believed that the placement of sensors on cables will enable the collection of data on ocean temperature, salinity and water pressure that could be used for real-time monitoring of the oceans, climate change and disaster monitoring.

In this regard, this chapter explores the legal and policy issues that arise from the use of submarine cables for both communications and marine data collection. Part II provides an overview of the development of submarine communications cables, and Part III discusses the legal regime governing submarine communications cables under UNCLOS. Part IV examines the legal regime governing marine data collection under UNCLOS. Part V discusses the use of cables for ocean observatories and climate monitoring and disaster detection. It examines the extent the use of cables can be considered marine scientific research (MSR) under UNCLOS, or other forms of marine data collection, and the legal and policy challenges arising from this classification. Lastly, Part VI offers some recommendations on how States, the scientific community and the cable industry can better address the regulatory challenges arising from the deployment of cables used for marine data collection.

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4 However, the United States, the United Kingdom and Australia were in contact with their respective delegations during the negotiations of UNCLOS, and were aware that developments during negotiations could impact the future development of submarine cables. See Douglas Burnett, Tara Davenport and Robert Beckman, “Overview of the International Legal Regime Governing Submarine Cables,” Submarine Cables: The Handbook of Law and Policy, eds. Douglas Burnett, Robert Beckman and Tara Davenport (Netherlands: Martinus Nijhoff Publishers, 2014), 74–75.