STATEMENT AT 21ST MEETING OF INFORMAL CONSULTATIVE PROCESS ON SEA-LEVEL RISE AND ITS IMPACTS

The International Cable Protection Committee (ICPC) is delighted to participate in the 21st meeting of the Informal Consultative Process, and welcomes the choice of "sea-level rise and its impacts" as the topic of this meeting.

The Secretary General noted in its advance report that: "Sea-level rise is projected to negatively affect various economic sectors, including by damaging electrical and telecommunication support facilities." The ICPC concurs and would like to emphasize some of the risks caused by sea-level rise for submarine cables, the critical infrastructure that the ICPC has the vocation to protect.

Submarine cables carry over 99% of the word's international digital data and communications.[1] Submarine cables are connected to terrestrial networks through landing stations, which are very often located in areas at risk of flooding due to sea-level rise. Four researchers estimated in 2018 that, in the United States alone, 4,400 miles of fiber-optic conduits and 1,100 colocation centers may be flooded by 2030, based on a comparison of sea-level rise projections with maps of the coastal internet infrastructure.[2]

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[1] Clare, M., 2021. *Submarine Cable Protection and the Environment*. Publication from the International Cable Protection Committee. file:///C:/Users/adcolaro/Desktop/ICPC_Submarine_Cable_Protection_Environment_issue_1%20(1).pdf

[2] Durairajan, R., Barford, C., and Barford, P., 2018. Lights out climate change risk to Internet infrastructure. Paper for Applied Networking Research Workshop ' 18 Montreal Canada. http://ix.cs.uoregon.edu/~ram/papers/ANRW-2018.pdf

Although submarine cables are designed to be resilient to flooding, terrestrial fiber-optic cables and joints are not; neither are the shore-based landing stations. As a result, the rising sea levels threaten the reliability of internet networks. This is of course a problem not only in the United States, but also in most other coastal regions, including in many developing states that rely on fiber-optic cables to have access to global telecommunication networks and many essential services.

Additionally, the 2018 study likely under-estimates the impacts as it only considered the effects of submergence during future sea level rise and did not include: (1) the impacts of storm surges (whose frequency and impacts will likely become greater under sea level rise); (2) compound impacts relating to other flooding types (such as river and coastal); (3) indirect effects such as enhanced coastal erosion or seafloor mobility that may expose buried cables or undermine landing stations; and (4) other hazards, whose frequency and magnitude may increase as a function of future climate change.[3]

Subsea cables typically have a 25 to 30 year design life; hence, it is critical that sea-level rise be considered in future route and landing station planning, as well as assessing the risk posed to existing systems. Sea level rise is therefore the focus of ongoing research by the ICPC and its academic collaborators, and we are grateful for the opportunity to participate in the ICP discussions on this important topic.

[3] Pope, E.L., Talling, P.J., Carter, L., Clare, M.A. and Hunt, J.E., 2017. Damaging sediment density flows triggered by tropical cyclones. *Earth and Planetary Science Letters*, *458*, pp.161-169.