Submarine Cable Analysis for Marine Renewable Energy Development

Table of Contents

Introduction 1

Covariates 1

Data 1

Submarine Cables 2

Maps 2

Cable Sharing? 3

Ecological 3

References 3

format: docx

## Introduction

try refs (Amante, Kilcher, Roberts, & Draxl, 2016; Communications Security, Reliability and Interoperability Council IV, 2014, 2016)

## Covariates

* depth

## Data

See Table 1.

Table 1 Data sources from preliminary report.

|  |  |  |
| --- | --- | --- |
| Data | Source | Website |
| Offshore Cables | National Oceanic and Atmospheric Administration (NOAA) | <http://marinecadastre.gov/data/> |
| Bathymetry | General Bathymetric Chart of the Oceans (GEBCO) | <http://www.gebco.net/data_and_products/gridded_bathymetry_data/> |
| U.S. Shoreline | NOAA | <http://shoreline.noaa.gov/data/datasheets/medres.html> |
| Tide | Georgia Tech Research Corporation | <http://www1.eere.energy.gov/water/pdfs/1023527.pdf> |
| Wave | Electric Power Research Institute | <http://www1.eere.energy.gov/water/pdfs/mappingandassessment.pdf> |
| Wind (100m height) | AWS Truepower, LLC for windNavigator | <http://apps2.eere.energy.gov/wind/windexchange/windmaps/> |

### Submarine Cables

* [North American Submarine Cable Association (NASCA)](https://www.n-a-s-c-a.org/)
* data.noaa.gov:
  + [NOAA Charted Submarine cables in the United States as of December 2012 - NOAA Data Catalog](https://data.noaa.gov/dataset/noaa-charted-submarine-cables-in-the-united-states-as-of-december-2012)
  + [North American Submarine Cable Association (NASCA) Submarine Cables - NOAA Data Catalog](https://data.noaa.gov/dataset/north-american-submarine-cable-association-nasca-submarine-cables)

## Maps

See Figure 1.

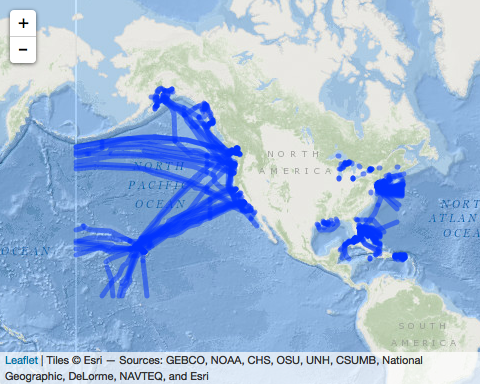


Figure 1 Map of NOAA Charted Submarine cables in the United States as of December 2012.

## Cable Sharing?

## Ecological

(A. B. Gill, 2005; Inger et al., 2009; Lester et al., 2013; Pelc & Fujita, 2002; Willsteed, Gill, Birchenough, & Jude, 2017)

## References

Amante, C., Kilcher, L., Roberts, B., & Draxl, C. (2016). *Offshore Cable Analysis: Pilot Study*.

Communications Security, Reliability and Interoperability Council IV. (2014). *Protection of Submarine Cables Through Spatial Separation*.

Communications Security, Reliability and Interoperability Council IV. (2016). *Clustering of Cables and Cable Landings*.

Gill, A. B. (2005). Offshore renewable energy: Ecological implications of generating electricity in the coastal zone. *Journal of Applied Ecology*, *42*(4), 605–615. <https://doi.org/10.1111/j.1365-2664.2005.01060.x>

Inger, R., Attrill, M. J., Bearhop, S., Broderick, A. C., James Grecian, W., Hodgson, D. J., … Godley, B. J. (2009). Marine renewable energy: Potential benefits to biodiversity? An urgent call for research. *Journal of Applied Ecology*, *46*(6), 1145–1153. <https://doi.org/10.1111/j.1365-2664.2009.01697.x>

Lester, S. E., Costello, C., Halpern, B. S., Gaines, S. D., White, C., & Barth, J. A. (2013). Evaluating tradeoffs among ecosystem services to inform marine spatial planning. *Marine Policy*, *38*, 80–89. <https://doi.org/10.1016/j.marpol.2012.05.022>

Pelc, R., & Fujita, R. M. (2002). Renewable energy from the ocean. *Marine Policy*, *26*(6), 471–479. <https://doi.org/10.1016/S0308-597X(02)00045-3>

Willsteed, E., Gill, A. B., Birchenough, S. N. R., & Jude, S. (2017). Assessing the cumulative environmental effects of marine renewable energy developments: Establishing common ground. *Science of The Total Environment*, *577*, 19–32. <https://doi.org/10.1016/j.scitotenv.2016.10.152>