**IST 512: Annotated Bibliography 6**

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T. Platt, S. Sathyendranath *Ecological indicators for the pelagic zone of the ocean from*

*remote sensing***.** Remote Sensing of Environment, 112 (8) (2008), pp. 3426-3436

This article focused on landscape ecology is a broad research area that focuses on reciprocal interactions that take place in an ecosystem. It integrates spatial patterns and ecological processes in a way that researchers can analyze temporal changes. The research conducted by Platt and Sathyendranath works to create important ecological indicators for the pelagic zone of the ocean. This research has been greatly enabled by technology including remote sensing, satellite data and the increase of computational power to process and store this data.

The importance of this research is related to developing large scale holistic ways to manage ocean ecosystems; examples in the paper include dealing with climate change or overfishing. Taking a broad ecological focus is important in measuring the health, vigor and resilience of a system but developing and measuring ecological indicators can be complex and difficult. Some important indicators include the following:

* Indicator Species
* Indicators based on the relative abundance of a species in a community
* Community properties without identification of a species
* Quantitate attributes of the community through input to a model or models of the marine ecosystem

The research then goes on to focus on remote sensing as an important ecological indicator. They demonstrate this through six years of data analyzing remotely-sensed chlorophyll fields in the Northwest Atlantic Ocean. The next portion of this paper discusses how this was done, which includes developing indicators from visible spectral radiometry. This also includes indicators related to phytoplankton biomass, production, community processes, community structure, large scale regional structure and variance in the chlorophyll fields.

This research could be important to my current research since it builds upon large datasets that I believe I could gain access too. It also has a heavy emphasis on computation specifically computer visualization and remote sensing which is being more heavily used in ecological fields. Potential research might involve utilizing machine learning or artificial intelligence to process far more spatial and temporal data that could be conducted by even a large scientific team.