The notion of the “silent world” was been changed with the introduction of underwater acoustics. However, marine soundscapes are still one of the least understood subjects in marine biology. These soundscapes are made up of a combination of different sounds from marine organisms (biophonies), their environment (geophonies), and anthropogenic sources (technophonies) (Farina and James 2016).

Underwater acoustics is one of the fastest growing fields in marine biology with a large part of that movement centered around the interpretation of large acoustic data files collected by passive acoustic monitoring (PAM) systems (Lammers et al. 2008; Luczkovich et al. 2008; Wall et al. 2013; Merchant et al. 2015; Phillips et al. 2018). Several studies are working toward learning programs that can pull information from this big data without user input (Sattar et al. 2016; Lin et al. 2017, 2018). Due to the largely passive nature of recordings, large time scales and varying spatial scales have been extensively studied within the field. Biogenic soundscapes have been connected to temporal variations, revolving around daily, lunar and seasonal cycles (Staaterman et al. 2014; Nedelec et al. 2015). Spatial variations in soundscapes have also drawn the attention of researchers, investigating differences in biogenic soundscapes and what the effects of those soundscapes for their inhabitants (Kennedy et al. 2010; McWilliam and Hawkins 2013; Staaterman et al. 2013; Radford et al. 2014)

Several acoustic metrics and indices have been adopted from terrestrial systems to apply to the marine environment (Farina et al. 2016). A variety of metrics have been studied to determine correlations with ecosystem health indicators to provide information about the reefs (Parks et al. 2014; Bertucci et al. 2016; McPherson et al. 2016; Bolgan et al. 2018). Sound pressure level (SPL), used to describe a volume of a sound is often used to describe the volume of individual sounds and entire soundscapes underwater (Kaplan et al.; Radford et al. 2011b). The Acoustic Complexity Index (ACI) was adapted from use in avian soundscapes to give information about acoustic complexity underwater (Pieretti et al. 2011). It has been used in a variety of ecosystems as a metric to describe complexity in the marine soundscape (Kaplan et al.; McWilliam and Hawkins 2013; Butler et al. 2016). Particle motion, an underwater metric in its origin, provides information about the kinetic energy released with sound production (Popper and Hawkins 2018). However, while particle motion is a determinate factor in the study of underwater acoustics, because it requires such close proximity to the sound producer, it is difficult to assess on a community level and therefore was excluded from this study (Nedelec et al. 2016).

One major goal of acoustic studies is to draw connections between the health of an ecosystem and its biogenic soundscape (Nedelec et al. 2015; Bertucci et al. 2016; Freeman and Freeman 2016). Biophonies of coral reefs are made up by the complex acoustic interactions of their inhabitants. High frequency sounds of the reef are made of the “snaps” created by snapping shrimp (Butler et al. 2017). Mid-frequency sounds are the result of a variety of organisms, but are often contributed to different invertebrate sounds and herbivory on the reef **NEED REF** (Radford et al. 2008). While low frequency sounds are typically reserved for fish communications, consisting of a variety of different types of calls, knocks, and grunts (Lobel et al.; McCauley and Cato 2000; Tricas and Boyle 2014).

These biophonies are affected by the communities that create them, their habitats, and their interactions with non-biogenic sounds. Reef soundscapes are independent of one another spatially, compositionally, and temporally (Staaterman et al. 2013; Radford et al. 2014). Coral reef soundscapes have been connected to larval settlement patterns in both fish and invertebrate larvae (Simpson et al. 2008; Radford et al. 2011b, 2011a; Stanley et al. 2012). In addition to larval settlement, fish use sound production as a method of communication involved in a variety of behaviors (Lobel et al.; Tricas and Boyle 2014). Within fishes, sound is actually communicated through otolith movement determined by particle motion in the immediate water surrounding an individual (Popper and Fay 2011). In the damselfish, *Pomacentrus partitus*, male reproductive calls were used by females as part of the mate selection process (Myrberg et al. 1986). *Chromis viridis* larvae were more attracted by the sounds of conspecifics than those of different species when determining where to settle (Lecchini et al. 2005). Juvenile reef fishes migrated toward man-made patch reefs that broadcasted reef sounds significantly more than man-made patch reefs broadcasting no sounds (Radford et al. 2011a).