**Ecosystem Type: FORESTS**

**Category: Clean and Plentiful Waters**

1. **Materials**

*Supplier –* Forests supply rivers and lakes with course woody debris (Czarnecka, 2016; Sweeney and Newbold, 2014; Guyette et al. 2002; Christensen et al. 1996), soil through erosion and sediment transport, and substrate for aquatic organisms leaf litter and dead organic material (Kuglerova et al. 2014). These materials supplied to waters from forests have been shown to be extremely important in maintaining clean water.

*Driver –* Not applicable

*Demander –* Not applicable

1. **Nutrition**

*Supplier –* Not applicable

*Driver –*Not applicable

*Demander –* Not applicable

1. **Energy**

*Supplier –* Not applicable

*Driver –* Not applicable

*Demander –* Not applicable

1. **Mediation of waste, toxics, and other nuisances**

*Supplier –* Harmful materials, such as waste and toxics, can be filtered by forests before reaching streams and lakes, which protects aquatic ecosystems against excessive nutrients, pollutants, and sediment loading (Vidon et al., 2010; Kreutzweiser and Capell, 2001). Forests, especially riparian forests, can control water temperature and light by shading (Kuglerova et al., 2014).

*Driver –* Forests can regulate the amount of dissolved organic carbon, nitrogen and sulfur that reaches streams and rivers (Creed et al., 2008; Eglin et al., 2008). Dissolved organic carbon controls the acidity of waters, influences metal mobilization and is an important part of the carbon budget (Aherne and Posch, 2013; Laudon et al., 2011).

*Demander –* Not applicable

1. **Mediation of flows**

*Supplier –* Forests stabilize stream banks and reduce erosion, which can lead to decreases in clean water (Naiman and Decamps, 1997).

*Driver –* Not applicable

*Demander –* Not applicable

1. **Maintenance of physical, chemical, and biological indicators**

*Supplier –* Forests store significant portions of the carbon cycle (Pan et al., 2011), and can function as biological hotspots (Liang et al., 2016). These types of forest indicators have been linked to cleaner and more plentiful water within forested watersheds (Zheng et al., 2016).

*Driver –* Forests aid in the maintenance of soil biogeochemical cycles (Futter et al., 2010; Kreutzweiser et al., 2008) by buffering atmospheric nitrogen and sulfur deposition before it is transported to streams (Takemoto et al. 2001). Excessive nitrogen in water bodies can cause eutrophication and harmful algae blooms, reducing water quality (Randall and Mulla, 2001).

*Demander –* Not applicable

1. **Spiritual, symbolic, religious, and social experiences**

*Supplier –* No available literature.

*Driver –* Not applicable

*Demander –* Not applicable

1. **Physical and intellectual interactions w/ biota, ecosystems, and land/seascapes**

*Supplier –* Not applicable

*Driver –* Not applicable

*Demander –* Not applicable

**Sources:**

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