**Ecosystem Type: GRASSLANDS**

**Category: Clean and Plentiful Waters**

1. **Materials**

***Supplier*** – not applicable

***Driver*** – One study found that manured grasslands are more prone to greater runoff because the manure puts a seal on the soil surface (Burkhardt et al., 2004). This prevents grasslands from naturally filtering water to help protect the nearby waterways.

***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*** – Grasslands can mediate nutrients and bacteria from going into waterways because their soils and plant roots absorb and transform them (Lucas and Jones, 2006).

***Driver*** – not applicable

***Demander*** – not applicable

1. **Mediation of Flows**

***Supplier*** – Grasslands can filter water (Burkhardt et al., 2004), which helps improve the overall quality of the water.

***Driver*** – not applicable

***Demander*** – not applicable

1. **Maintenance of Physical, Chemical, and Biological Indicators**

***Supplier*** – Grasslands maintain adjacent waterways by cleaning water through absorption of nutrients, and supplying water by regulating the flow of water into the reservoirs (Egoh et al., 2011).

***Driver*** – not applicable

***Demander*** – not applicable

1. **Spiritual, Symbolic, Religious, and Social Experiences**

***Supplier*** – not applicable

***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:**

Burkhardt, M. et al. (2004) Surface Runoff and Transport of Sulfonamide Antibiotics and Tracers on Manured Grassland. *Journal of Environmental Quality, 34*(4), 1363-1371. DOI: 10.2134/jeq2004.0261. [abstract only]

Egoh, B.N. et al. (2011) Identifying priority areas for ecosystem service management in South African grasslands. *Journal of Environmental Management, 92*(6), 1642-1650. <https://doi.org/10.1016/j.jenvman.2011.01.019>. [abstract only]

Lucas, S.D. and Jones, D.L. (2006) Biodegradation of estrone and 17 B-estradiol in grassland soils amended with animal wastes. *Soil Biology and Biochemistry, 38*(9), 2803-2815. [abstract only]