

Fog-Derived Water on North and South Facing Slopes on Santa Rosa Island

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INTRODUCTION

Flora and fauna on Santa Rosa Island greatly depend on fog as one of the main sources of water. Our goal was to understand the amount of fog that influences our research and restoration area.

Hypothesis: There will be more fog-derived water on the north facing slopes of the ridge.

METHODS

Location

Fog collectors are placed at three sites along the main ridge of the island on both the north and south sides at similar elevations.

Fog Collectors

Fog collectors are 12 gauge 1" square wire mesh fencing with 40% shade cloth attached to the upwind side of the fencing. Each fog collector is 1 meter long by 0.5 meter high, supported by a wooden and metal structure. A rain gutter collects and funnels the fog drip into a Onset HOB0 Rain Gauge Data Logger #RG3-M. The data logger measures collected water as number of tips; each tip is equivalent to 0.2 mm of rainfall.

RESULTS

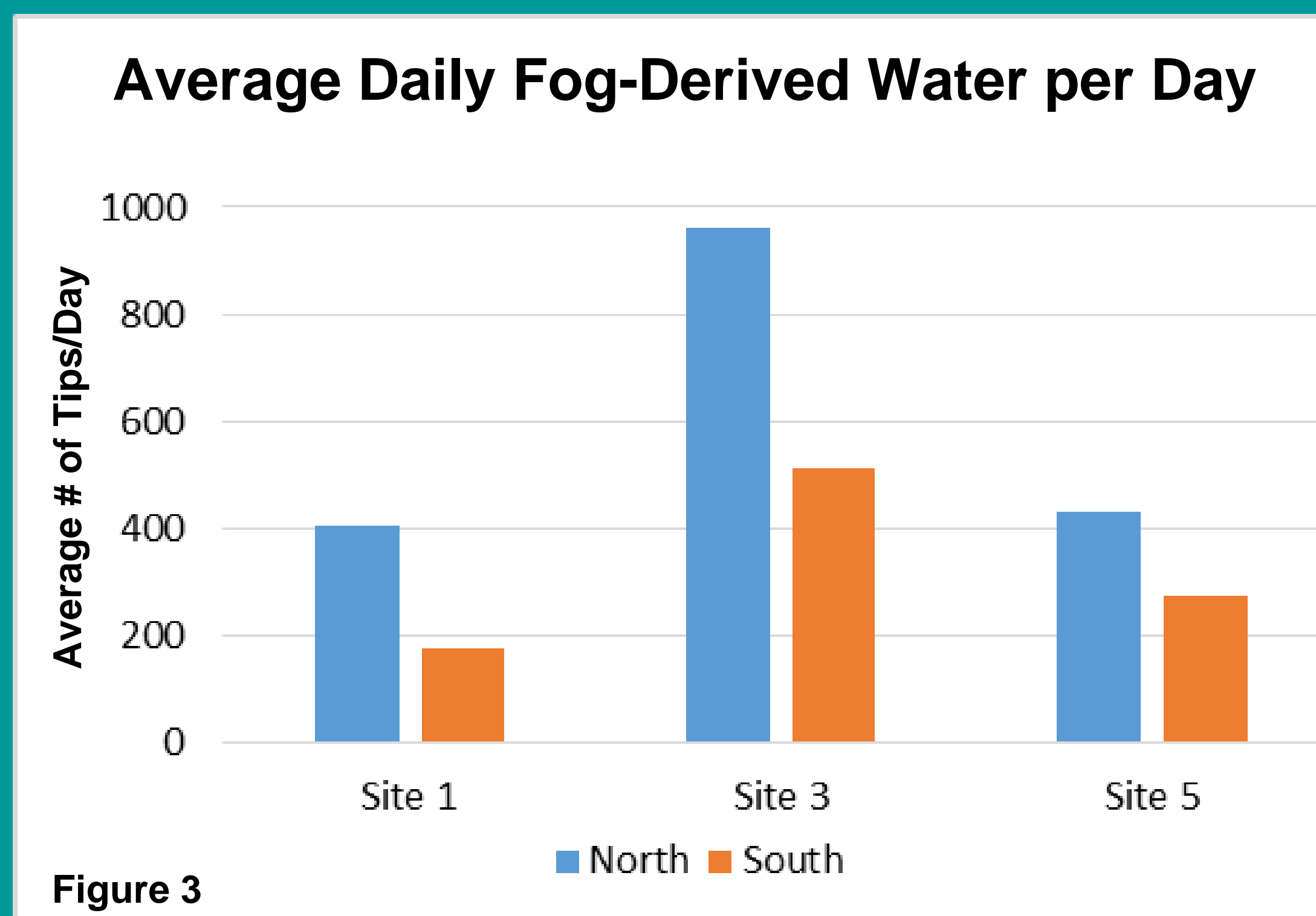


Figure 3

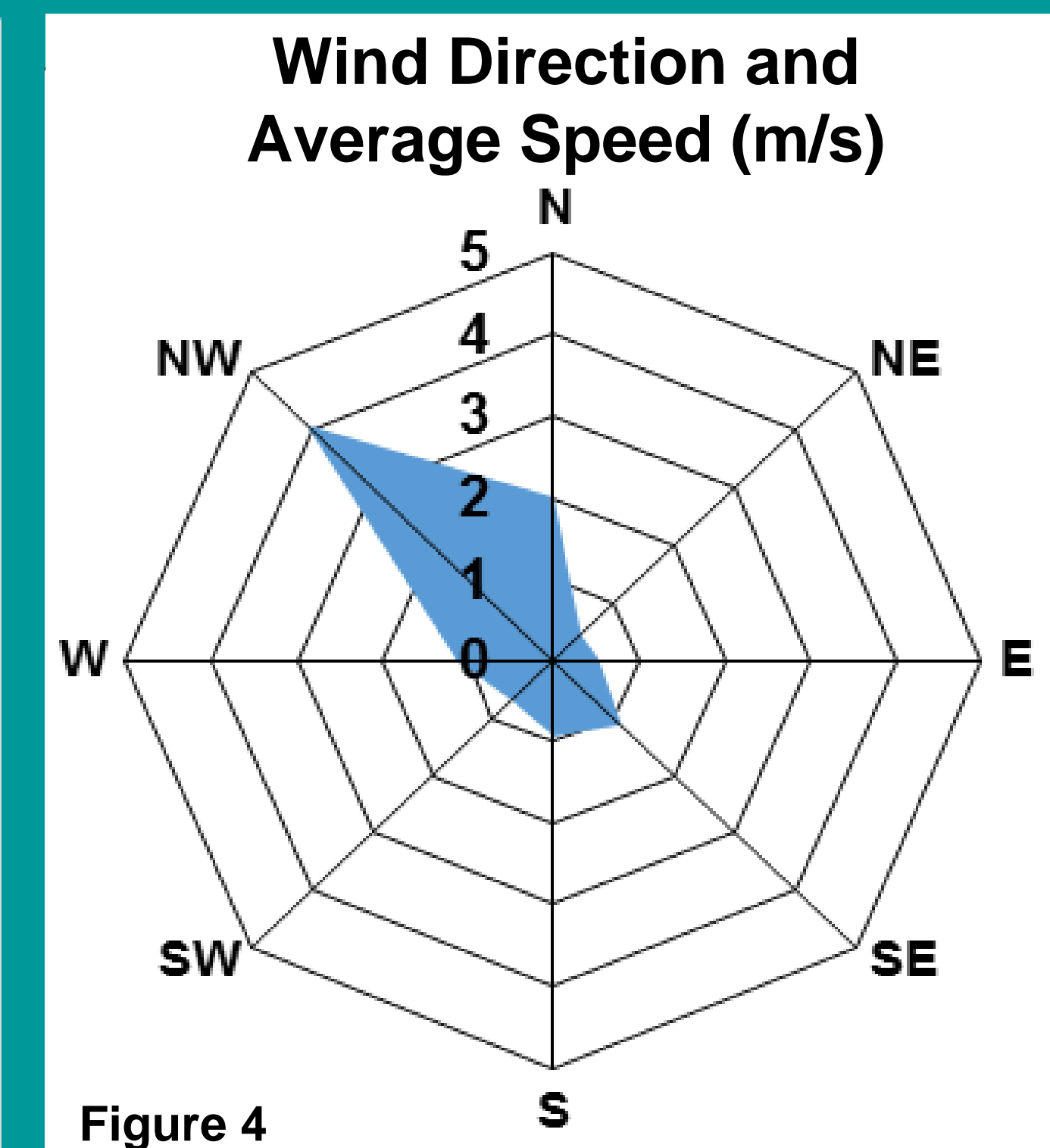


Figure 4

Figure 3: Fog-derived water from June 17 to 21, 2017 as average number of tips per day. All three sites had more fog moisture on the north side of the ridge.

Figure 4: Average wind direction during the same time period is predominately from the northwest. Wind data were collected at a permanent weather station near Site 3 south.

CONCLUSION

We found that there are more tips on the north facing slope; the wind is mostly from the northwest. This supports the hypothesis of more fog-derived water on the north facing slopes. This difference could result in different vegetation on north and south facing slopes, and influence our restoration efforts.

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Figure 1



Figure 2

Figure 1: Map of restoration area and fog collectors.
Figure 2: Fog collector and data collection.