**G**eocatcher is a structure that takes its inspiration from the desert cactus to collect and store ambient water through its increased surface area and unique geometry, providing drinking water, shelter from the sun, and creating an ideal environment for the growing of food producing crops. Using new technology in photovoltaic fabric would also allow the structure to produce its own energy and generate light at night which would further promote the growth of plants. The Goecatcher’s unique geometry is especially designed to collect water, we expect that with an increased surface area of 45% compared to a geodesic dome structure each pod could collect up to 50 Gallons of water a day ambient not counting rainwater.

While some of the structures could be used for the purpose of growing crops others can be used as spaces for people to gather and shield themselves from the sun while enjoying a glass of water. Although the Geocatcher is not site specific, our team imagines the structures to be located near camp grounds where its ability to produce food, collect energy, provide drinking water and shelter could be most accessible.

During the early afternoon the fabric on the structure serves a double function as its photovoltaic capability stores energy to power evening grow lights. At night the structures will glow a magneta hue which will promote the plant’s growth and increase the crop productivity under each structure.

**CONSTRUCTABILITY.**

The structure is based on the modularity and structural efficiency of a 5th degree geodesic dome with repeating modules that can be easily fabricated and assembled at remote sites. While simple metal rods provide compressive strength, tensile cables provide light es and anchor the structure to the ground.

In the early dawn, water mist in the air condenses on the structure’s fabric which slides down the sloped surface into the structure’s 10 foundation points where funnels collect the water. Each funnel connects to a central water tank that stores the water for both drinking and irrigation.

**TECHNOLOGY.**

 A working prototype can be achieved using very simple materials, such as fine mesh nylon and galvanized metal rods, however the use of photovoltaic fabric would be ideal in order for the design to not only catch water, but generate energy. We understand through our research that fabric PV technology is still expensive and not yet economically accessible in large volumes.

**COST.**

We anticipate the built prototype cost as follows

$30,000 structure + consultant fee

$10,000 fabric harness cables

$5,000 land preparation & foundations

$4,500 Pump lights tank piping

$40,000 Construction/ labor /transportation (will vary depending on amount of volunteer work)

**Estimated Total: $89,500**

**ENVIRONMENTAL IMPACT**

Geocatcher is a light weight structure of the utmost efficiency which utilizes recyclable materials such as simple metal pipes and simple acrylic mesh. The project requires minimum site preparation and utilizes mostly passive technology to function in the collection of water. Our team believes that its straightforward simplicity and modularity will make this a lasting project with high social and productive value.