



# Dwarf saltwort

## *Salicornia bigelovii*

### About me:

I am a salt marsh plant and thrive in coastal habitats. My specialised roots are adapted to cope with high levels of salt and I can be irrigated using salt water. My stems are upright, green, and often have a red tinge on the top. I have very small leaves that are fused to my stem in pairs. My flowers are usually terminal spikes, which then bear the seeds. The seeds have a high oil content of 30% which makes them ideal for bio-fuel production. Recent research showed that *Salicornia* could produce up to twice as much bio-fuel as Soybean or Sunflower.

### Where do I come from?

I am native to the coastal regions of Eastern & Southern United States, California and Coastal Mexico.

### How is the bio-fuel produced?

The energy from the *Salicornia* biomass can be combusted to generate electricity, while the remaining oil rich seeds can undergo a series of procedures including pyrolysis (a form of decomposition at elevated temperatures) and then transesterification. (Transesterification is the reaction of a fat or oil with an alcohol to form esters and glycerol). Typically alcohol is added to the process to speed up the reaction time as this is a reversible process. The end product is bio-diesel.

### How is my energy used?

At present there is on-going research being carried out in Saudi Arabia and Mexico to produce sustainable feedback systems using fish aquaculture to grow the *Salicornia*, which could then in-turn power the fish farms.



Image taken by Anna Armitage (n.d)



Image taken by Mary Klem (n.d)



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