**McFaddin Beach Field Trip Information**

McFaddin Beach is located on the Texas Gulf coast about 2 hours drive south of Houston. As with elsewhere on the Gulf Coast, McFaddin Beach has salt domes close by and these have influenced the geologic history of the area. The McFaddin Beach salt dome is located 1.6km offshore while the High Island salt dome is located less than a ¼ mile from McFaddin Beach. The High Island piercement salt dome stands only 38ft above sea level but is still the highest point on the Gulf of Mexico between Mobile, Alabama and the Yucatan Peninsula. Although the salt is Jurassic in age, many of the diapirs have been active during the Holocene which has resulted in the uplift of some of the associated younger sea floor sediments. The structures formed by these salt domes and their related activity are the origin of many onshore and offshore oil and gas reservoirs which have been and continue to be produced throughout the Gulf Coast area.

McFaddin Beach is perhaps best known as an archeological site where artifacts and animal bones have been washed ashore for many years. The Texas Gulf Coastline is a rapidly changing environment due to its exposure to currents and storm surges. Artifacts from most of the known span of Texas prehistory can be found at McFaddin Beach but it is best known for the relative abundance of Paleoindian and Early Archaic projectile points and “Clovis points”. Clovis points are the characteristically-fluted [projectile points](http://en.wikipedia.org/wiki/Projectile_points) associated with the [North American](http://en.wikipedia.org/wiki/North_America) [Clovis culture](http://en.wikipedia.org/wiki/Clovis_culture) and date back to around 13,500 years ago. Clovis fluted points are named after the city of [Clovis, New Mexico](http://en.wikipedia.org/wiki/Clovis%2C_New_Mexico), where examples were first found in 1929.

Archaeologists have determined that these artifacts and other fossils have been washed ashore from the Gulf and were not eroded out of deposits behind the beach. They have also suggested that the present McFaddin Beach area and the offshore source area of the artifacts were in higher and drier inland coastal areas than they are today. In other words, the area where the artifacts and fossils were originally deposited is now submerged beneath the Gulf. In order to understand the relatively recent geologic history of the area it is necessary to look at the changes in sea level that have taken place in this area over the last tens of thousands of years.

Studies suggest that a maximum glaciation, and therefore minimum sea level, occurred around 26,000 years ago and that sea level was then around 125m lower than it is today. At that time the Texas Gulf Coastline would have been some 200km to the southeast of where it is today. Around 14,000 years ago sea level was rising as the ice sheets were melting although the sea level was still some 65m below the present level and the present McFaddin Beach area was still well inland with the sites of artifact and fossil deposition situated on the paleo-coastal plain. It is between 14,000 and 10,000 years ago that many of the projectile points and fossil remains are thought to have been deposited in this paleo-coastal plain environment. There followed a period of relatively rapid sea level rise and flooding of the Gulf Coastline in the early Holocene from around 9000 to 7000 years ago and during this time the populated inland coastal plains are thought to have been flooded. By about 1500 years ago (450AD) the shoreline was thought to be approximately in its present position with the previously inhabited coastal plain areas underwater and subject to currents and storm surges which have mobilized the artifacts and fossils and redeposit them on McFaddin Beach where archaeologists find them today.

Some of the things you hope to see and photograph while at McFaddin Beach?

* Vertebrate fauna with horse bones and deer antlers being the most common.
* Bison teeth and leg bone fragments.
* Extinct species bones such as cave bear, mammoth and mastodon.
* Aquatic animal remains such as turtle shells, otters and catfish.
* Trace fossils such as arthropod and worm burrows.
* Clovis points and other projectile points are extremely rare but over 100 have been found at this site making it the largest concentration of any Texan county

Questions to ask yourself and discuss while you are visiting McFaddin Beach:

* Are the all the animal fossil bones associated with the Clovis and other projectile points found at this location from one prehistoric time period or were they deposited at several different times. How might archaeologists find out?
* Is the presence of the salt domes important in the distribution of these fossils and artifacts? How might it be affecting the sediments overlying the salt domes in which the fossils were originally deposited?
* How might recent human activity in the last 100 years have affected the distribution of the fossils and artifacts that we see today?

We hope you enjoy your trip to McFaddin beach and that is an opportunity to learn more about how McFaddin Beach, the Gulf Coast and the state of Texas fits into the global picture of our planet, Earth.

**“Civilization exists by geological consent, subject to change without notice.”
-Will Durant (American writer, historian and philosopher)**