**Products available for this survey area**

* Sidescan sonar imagery (GeoTIFF)
* Bathymetric point data from Singlebeam Echosounder (ArcGIS Shapefile and CSV)
* SV data from Singlebeam Echosounder (ArcGIS Shapefile and CSV)
* Classified thematic habitat map of submerged habitats (ArcGIS shapefile)
* Interpolated DEM from bathymetric point data (Raster)
	+ Data has some noise/streaking, so use in automated analyses is not suggested
* Peer reviewed journal publication
	+ Legare, B. and C. Mace. 2016. Mapping and classifying eastern oyster habitat in Copano Bay, Texas, by coupling acoustic technologies. Journal of Coastal Research.

**Field Data Collection**

* Data were collected from 4 September 2013 to 25 February 2014
* Sidescan = Teledyne Benthos C3D
	+ Bow-mounted
	+ 200 kHz frequency
	+ Range of 100 meters
	+ 12% Overlap between transect
	+ Transect spacing of 185 meters
	+ Data collected in WGS 84
	+ Projected to UTM 14N
	+ Location Data: Ashtec dGPS receiver with Communication System International MBX-3 Differential
* Singlebeam = Biosonics DTX
	+ 120 kHz frequency
	+ Collected in Visual Acquisition
	+ Beam width = 8.1o
	+ Pulse rate = 5
	+ Pulse duration = 0.1
	+ Power Reduction = -9.2
	+ Transducer depth = 0.61 m
	+ Location Data = Garmin GA 29 GPS
* Survey planning in Hypack

**Data Post Processing**

* Sidescan
	+ Chesapeake SonarWiz V6
	+ Bottom track
	+ Empirical Gain Normalization
	+ Mosaic and output as 8-bit GeoTiff with 0.5 m-resolution
	+ WGS84 UTM 14N
* Singlebeam
	+ Processed in EchoView
	+ Bottom Line Selection
		- Min SV for pick = -30
		- Backstep @ 0
		- Peak threshold = -40
	+ Bottom Classification (to pull features)
		- Distance between intervals = 3 m
		- Background noise = -70
	+ Bathy file metadata:
		- “Depth\_TrnCor” = raw range data converted to depth by adding the transducer offset of 0.61 m
		- “Dep\_TidCor” = “Depth\_TrnCor” corrected for tide
			* Corrected to MLLW using 1-hour intervals from nearest tide station = Rockport, 8774770
		- All depths reported in meters

DEM Creation (can be re-created from point data using different interpolation techniques)

* Empirical Bayesian kriging
	+ Output cell size 50
	+ Logempirical transformation
	+ Exponential semivariogram
	+ 500 points in each local model
	+ Local model overlap 3
	+ 50 simulated semivariograms
	+ Standard circular search pattern
		- Radius of 100 m
		- Maximum neighbors = 500
		- Minimum neighbors = 100
		- Angle 45
		- Sector Type - 4

**Habitat Classification**

* Manual interpretation based on sidescan imagery and singlebeam SV values
* Accuracy assessment using poling
* 150 ground-truthing samples
	+ User’s accuracy
		- Mud = 100%
		- Oyster = 90%
		- Sand = 63%
		- Shell = 69%
	+ Producer’s accuracy
		- Mud = 93%
		- Oyster = 89%
		- Shell = 83%
		- Sand = 78%
	+ Overall accuracy = 89.6%