

# **State of expectation on CCS Societal Considerations and Impacts (SCI): enabling business offshore Gulf of Mexico**

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# Why do we need SCl assessments?

## 1. Overview of Global CCUS:

Terrain gained despite stronger opposition and political risk.

## 2. How societal risks could be a barrier to CCUS projects deployment?

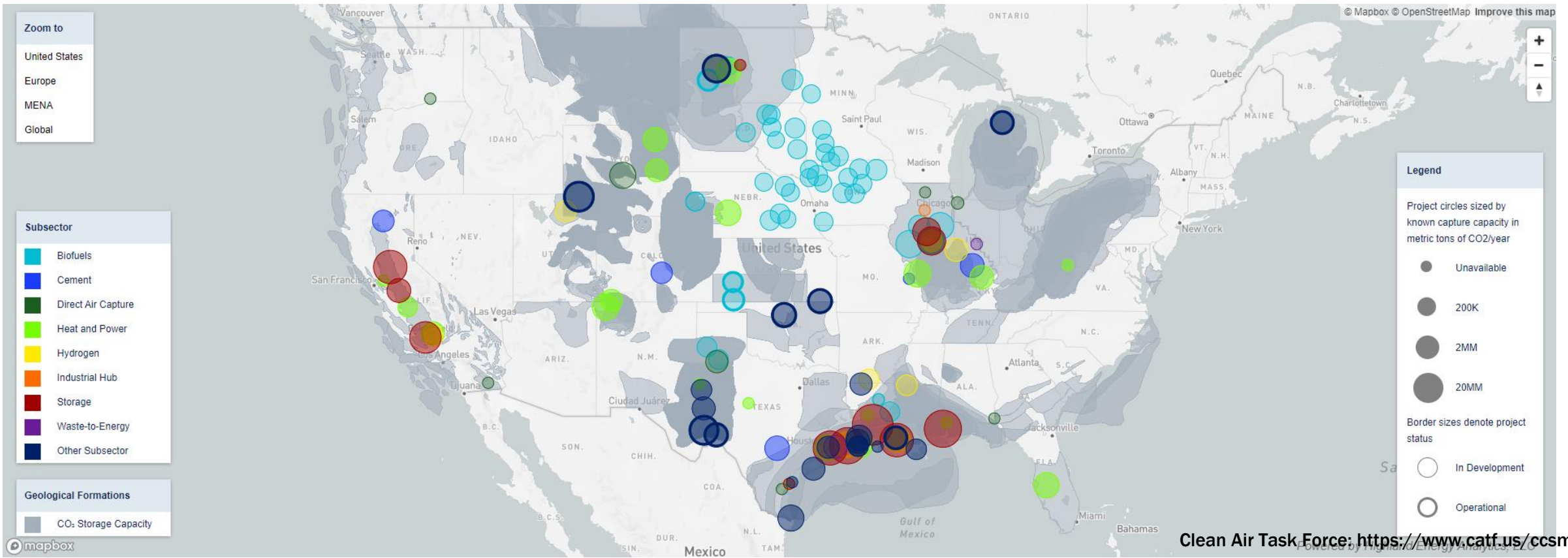
- CCUS long-term investment and operations
- Socioeconomic, and cultural contexts
- Community concerns can delay or even cancel a project

## 3. The critical role of Community Engagement in deploying CCUS projects

- Communities with negatively prejudged opinions about CCUS
- Historic marginalized and Disadvantage Communities needing attention

## 4. Federal Agencies Legal obligation

# US CCUS Project Developments



[https://www.catf.us/wp-content/uploads/2022/09/CATF\\_CCSOverTime\\_Blog.gif](https://www.catf.us/wp-content/uploads/2022/09/CATF_CCSOverTime_Blog.gif)

# EJ to CBP: A Moving Target

## Evolving concepts, definitions, and scopes

- EJ demonstrations (60' & 70')
- EJ includes socioeconomic and health issues
- First tools (EPA EJScreen & states tool)
- DOE rebranded EJ as EEJ and made it part of a broader scope: SCI
- 2022 (July) first DOE's FOA formal request on SCI assessment

## SCI evolved to CBP requirements (4 Sub-plans):

- The latest Scope: **Community engagement, Invest in American Workforce, DEIA and Justice40**

### Requests examples by project type:

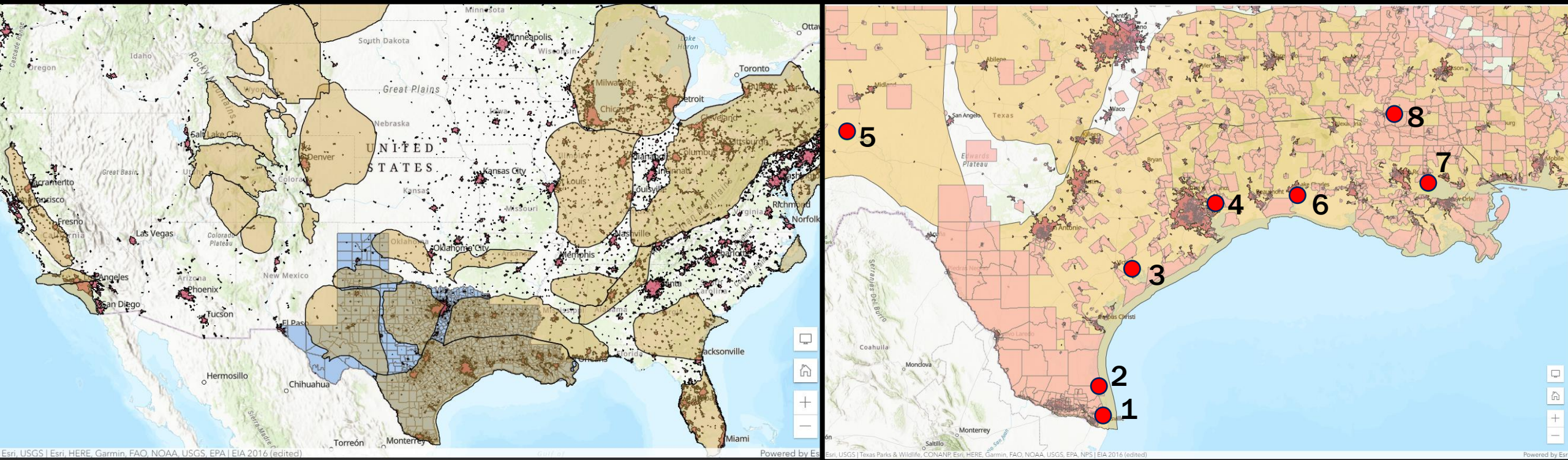
- 2023 DOE's FOA calls
  - *CCS-Academic and research projects*
    - ✓ preliminary assessments
    - ✓ If awarded 90 days to create plans
  - *CCS-Commercial developments at Initial phases (Pre-FEED)*
    - ✓ Demonstrate capabilities to create a CBP
    - ✓ If awarded 9 months to create CBPDP
    - ✓ 15 months to create a full CBP
- CBP package weight 15-20% in DOE's FOA selection criteria (same as technical aspects)

# The Tools:

- White House Council on Environmental Quality (WHCEQ)  
Climate and Economic Justice Screening Tool (CEJST)  
<https://screeningtool.geoplatform.gov/en/#3/31.71/-98.1>  
<https://screeningtool.geoplatform.gov/en/methodology#3/33.47/-97.5>  
Communities are considered disadvantaged:
  1. If they are in census tracts that meet the thresholds for at least one of the tool's categories of burden, or
  2. If they are on land within the boundaries of Federally Recognized Tribes
- EPA's Environmental Justice Screening and Mapping Tool (Version 2.11)  
<https://ejscreen.epa.gov/mapper/>  
<https://www.epa.gov/ejscreen/how-interpret-standard-report-ejscreen>
  1.  $EJ\ Index = (Environmental\ Indicator) \times (Demographic\ Index\ for\ Block\ Group - Demographic\ Index\ for\ US) \times (Population\ Count\ for\ Block\ Group)$
  2.  $Demographic\ Index = ((\% \text{ minority} + \% \text{ low-income})/2)$
- DOE's Energy Justice Mapping Tool - Disadvantaged Communities Reporter  
<https://energyjustice.egs.anl.gov/>

# Potential Storage Area with Low SCI Issues

Urban and rural-disadvantage areas within potential CCS areas



Sedimentary Basins ideal for CO<sub>2</sub> storage overlain with Census Data to distinguish rural-disadvantaged areas (based on demographics, environmental exposure, vulnerabilities, and job characterization)

Urban areas (> 2,500 people) in salmon high SCI risk

Rural-disadvantaged areas in pink medium SCI risk

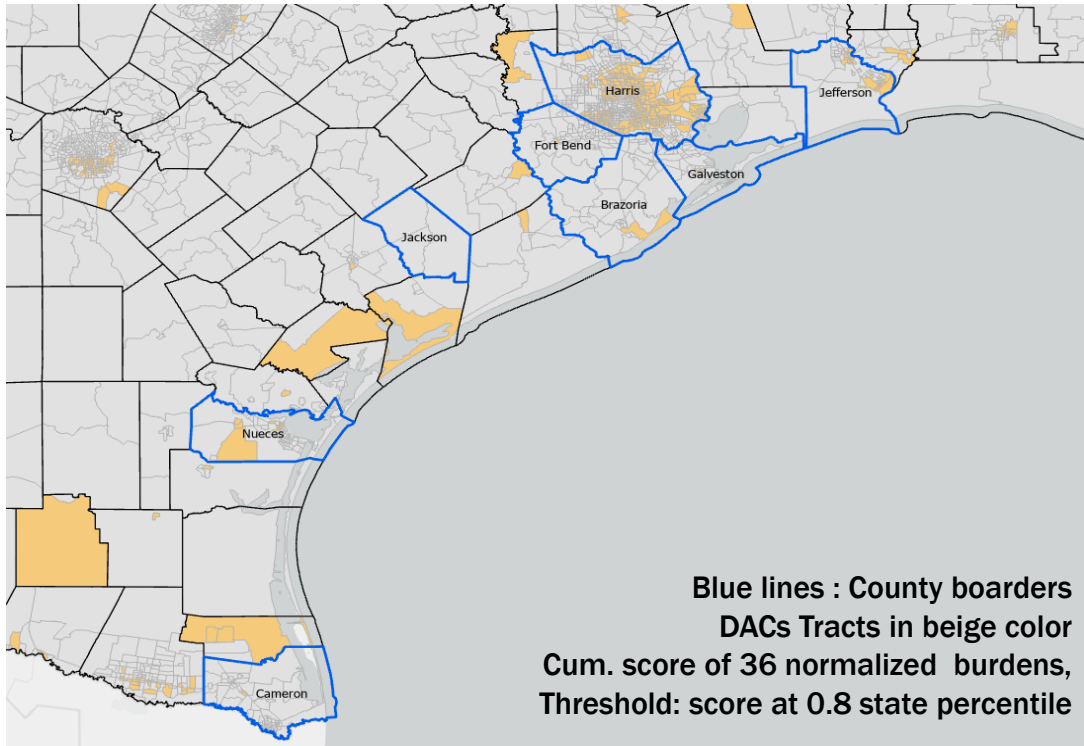
Rural areas privileged areas in beige low SCI risk

# Comparison of DOE's DACR vs EPA's EJScreen Tool

Tool's mapping resolution

DACR

TX Gulf Coast potential CCUS Hubs Locations

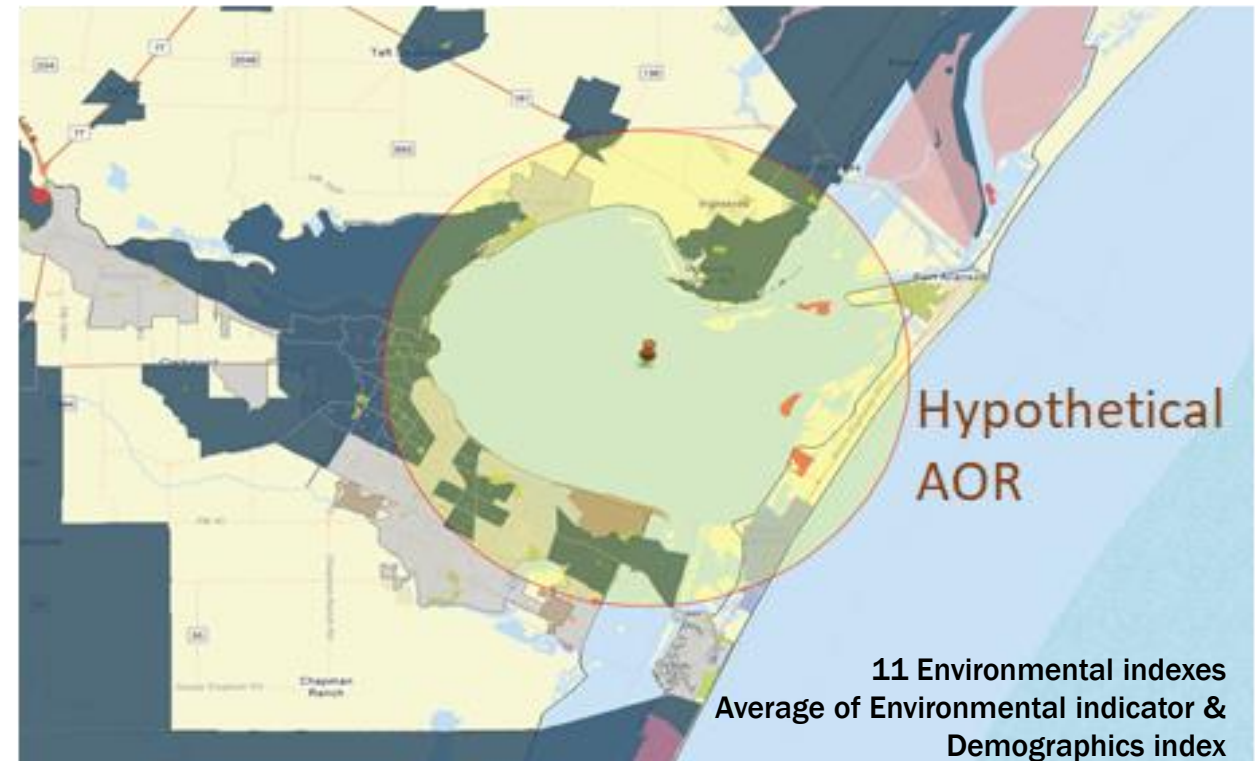


Our ArcGis integration

Projects AOR within DACs areas:

Dark blue Higher SCI Risk

SCI risk on potential Corpus Christi CCS project



# DOE's New Screening Tool: Disadvantage Community Reporter (DACR)

## 1. Overview:

- 36 environmental hazards, energy, transport, socioeconomic and health burdens.
- Integrates EPA's-Ejscreen and WHCEQ's-CEJST
- Simplified methodology to identify and characterize DAC (DAC scores)
- Census tracts resolution (+73k Tracts)

## 2. DACR vs DOE's EJScreen Tool

- DACR is a broader database including several missing indicators in EPA's EJScreen tool
- Resolution: DACR = tract; EJScreen = Block Group (more granular)
- DACR uses a better methodology to determine DAC

## 3. Examples of how these tools have been used in CCUS projects in the Gulf Coast region



## Preliminary DAC Assessment TX & LA. Source: DOE's DAC Reporter database

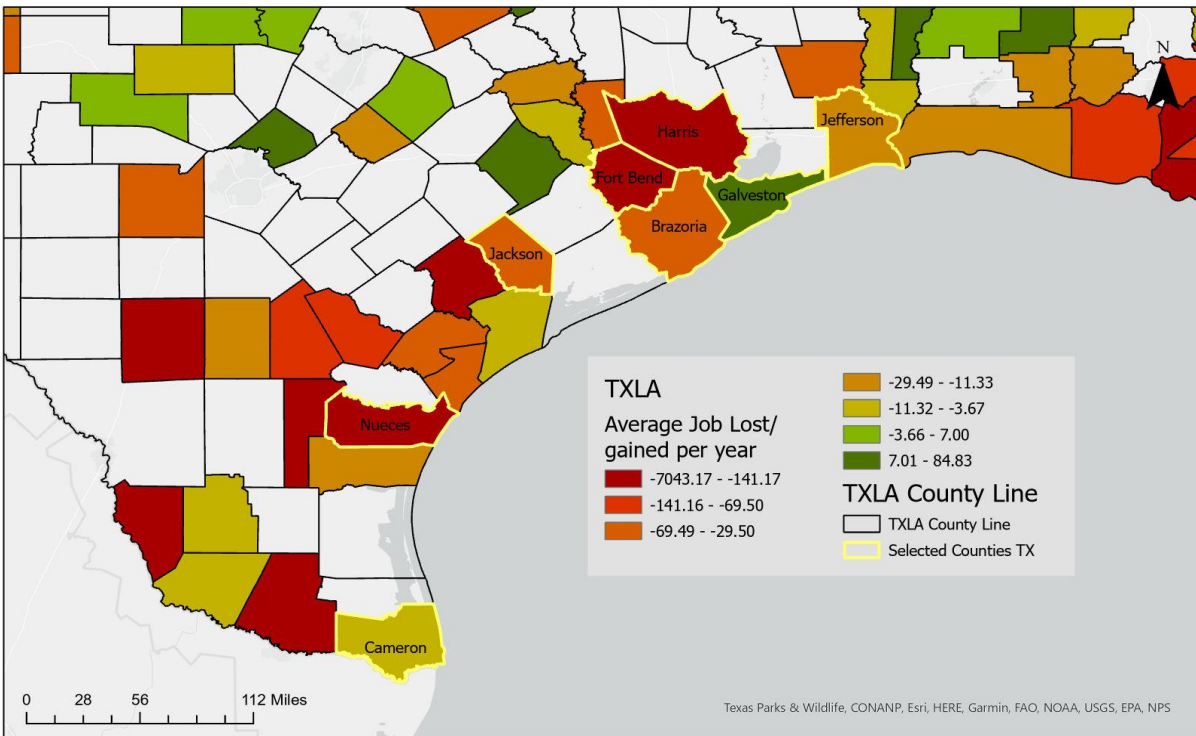
Gulf Coast Area (Total)				Scores and Percentiles			Gulf Coast Average %	
State fips	State	1) Num of Guls Coast Tracts	2) Gulf Coast Population	3)	4)	5)	6)	7)
				Gulf Coast ave DAC score	Gulf Coast ave DAC score national percentil e	Gulf Coast ave DAC score state percentil e	low income <200% fpl	energy burden =>6%
22	LA	699	3,251,657	17.89	0.64	0.46	38%	3.75
48	TX	1,787	10,402,182	19.35	0.73	0.61	39%	3.28
Grand Average				<b>18.62</b>	<b>0.69</b>	<b>0.53</b>	<b>38%</b>	<b>3.52</b>
<b>Totals</b>		<b>2,486</b>	<b>13,653,839</b>					
Gulf Coast Area (DAC)				Scores and Percentiles			Gulf Coast Average %	
States' Desavantaged Trats Average (DAC)								
22	LA	113	389,097	21.85	0.92	0.83	59%	5.77
48	TX	529	2,714,603	23.13	0.92	0.82	55%	3.96
Grand Average				<b>22.49</b>	<b>0.92</b>	<b>0.83</b>	<b>57%</b>	<b>4.87</b>
<b>Totals</b>		<b>642</b>	<b>3,103,700</b>					
Shares and Changes DACs tracts/Total Gulf Coast Area								
States'		Share on the total		Percentage Change DAC/County Tract Avg				
22	LA	16%	12%	22%	45%	82%	93%	83%
48	TX	30%	26%	20%	25%	36%	26%	50%
Grand Average				<b>21%</b>	<b>35%</b>	<b>59%</b>	<b>60%</b>	<b>67%</b>
<b>Share of Totals</b>		<b>26%</b>	<b>23%</b>					

## Preliminary DAC Assessment. Source DOE's DAC Reporter database

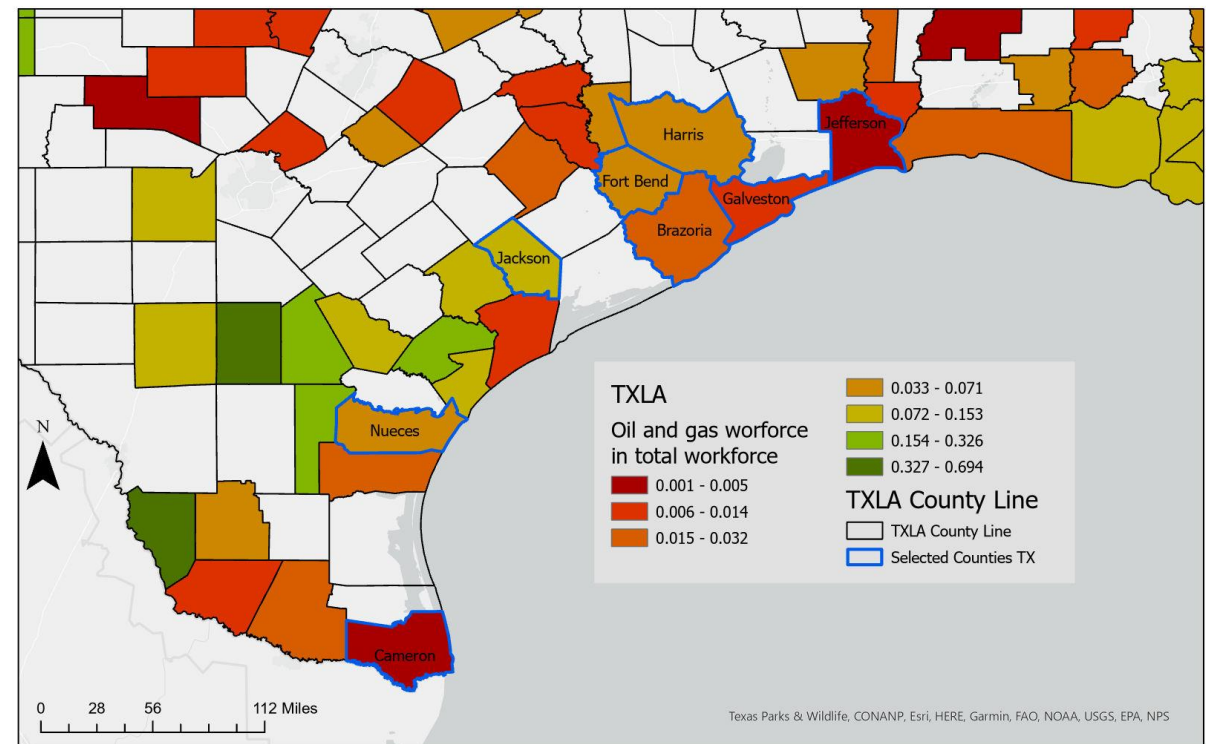
### Selected CCS Counties

county fips		1) Num of Tracts	2) County Population	Scores and Percentiles			County Average %	
				3) County ave DAC score	4) Connty ave DAC score national percentile	5) County ave DAC score state percentile	6) low income <200% fpl	7) energy burden =>6%
<b>Counties' Trats Average</b>								
48039	Brazoria County, TX Average	51	360,677	16.66	0.52	0.36	0.26	2.73
48061	Cameron County, TX Average	87	421,666	18.27	0.70	0.54	0.56	4.00
48157	Fort Bend County, TX Average	76	765,394	17.03	0.54	0.38	0.24	2.18
48167	Galveston County, TX Average	67	332,885	17.03	0.56	0.40	0.33	3.24
48201	Harris County, TX Average	786	4,646,630	21.10	0.84	0.74	0.38	2.95
48239	Jackson County, TX Average	3	14,816	18.01	0.65	0.48	0.32	3.33
48245	Jefferson County, TX Average	73	254,340	21.10	0.84	0.74	0.39	3.54
48355	Nueces County, TX Average	82	361,540	17.52	0.59	0.46	0.37	3.31
Grand Average				<b>18.34</b>	<b>0.65</b>	<b>0.51</b>	<b>0.36</b>	<b>3.16</b>
<b>Totals</b>		<b>1,225</b>	<b>7,157,948</b>					
<b>Counties' Desavantaged Trats Average (DAC)</b>								
48039	Brazoria County, TX Average	2	4,581	21.44	0.92	0.83	0.50	5.00
48061	Cameron County, TX Average	7	22,837	21.31	0.92	0.82	0.71	6.00
48157	Fort Bend County, TX Average	2	9,081	21.83	0.94	0.86	0.49	3.00
48167	Galveston County, TX Average	3	7,644	21.83	0.94	0.86	0.54	4.33
48201	Harris County, TX Average	411	2,212,137	23.43	0.97	0.93	0.54	3.67
48239	Jackson County, TX Average							
48245	Jefferson County, TX Average	29	79,557	22.49	0.95	0.89	0.57	5.03
48355	Nueces County, TX Average	15	62,457	22.25	0.95	0.88	0.62	5.27
Grand Average				<b>22.08</b>	<b>0.94</b>	<b>0.87</b>	<b>0.57</b>	<b>4.62</b>
<b>Totals</b>		<b>469</b>	<b>2,398,294</b>					
Counties' Desavantaged Trats Average		Share on the total		Percentage Change DAC/County Tract Avg				
48039	Brazoria County, TX Average	4%	1%	29%	77%	132%	93%	83%
48061	Cameron County, TX Average	8%	5%	17%	32%	51%	26%	50%
48157	Fort Bend County, TX Average	3%	1%	28%	74%	124%	104%	37%
48167	Galveston County, TX Average	4%	2%	28%	68%	113%	65%	34%
48201	Harris County, TX Average	52%	48%	11%	16%	25%	41%	25%
48239	Jackson County, TX Average	0%	0%					
48245	Jefferson County, TX Average	40%	31%	7%	14%	20%	46%	42%
48355	Nueces County, TX Average	18%	17%	27%	60%	91%	67%	59%
Grand Average				<b>20%</b>	<b>44%</b>	<b>69%</b>	<b>59%</b>	<b>46%</b>
<b>Share of Totals</b>		<b>38%</b>	<b>34%</b>					

## Changes in oil and gas job on county level Selected Counties in TX, 2015 - 2021

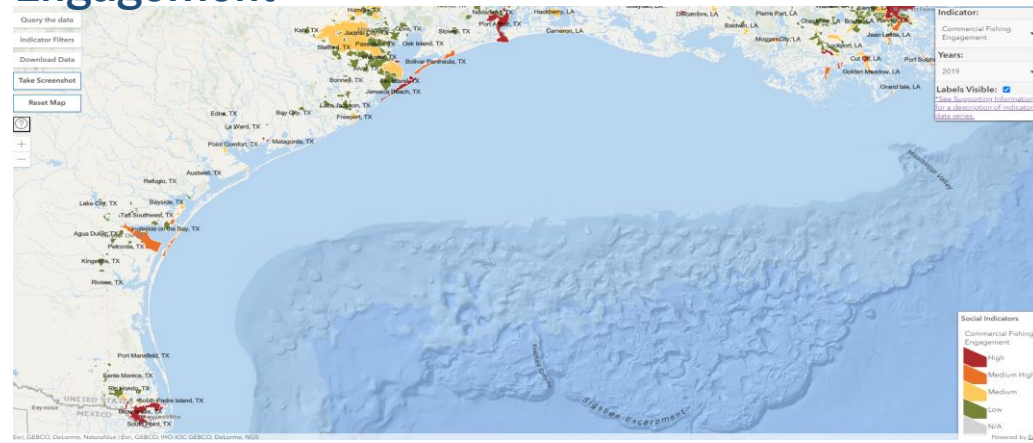


## Oil and gas jobs in total workforce Selected counties, TX and LA, 2015

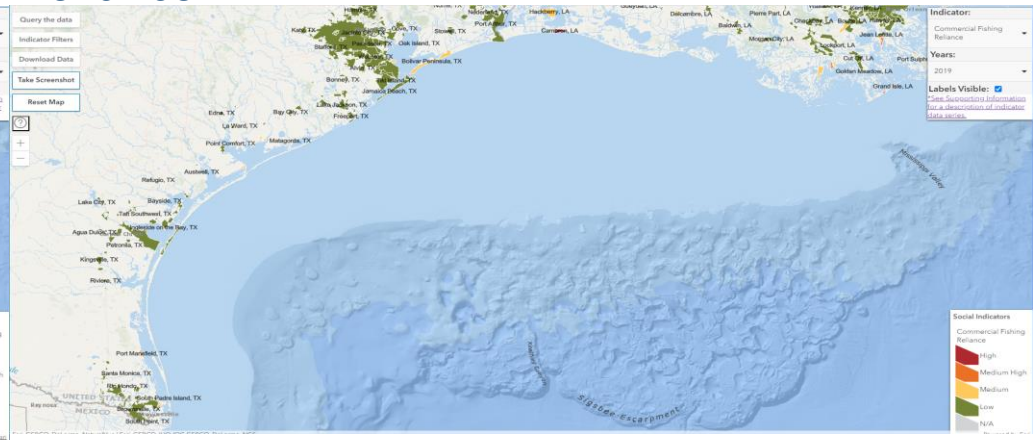


# Gulf Coast Fishery Dependence

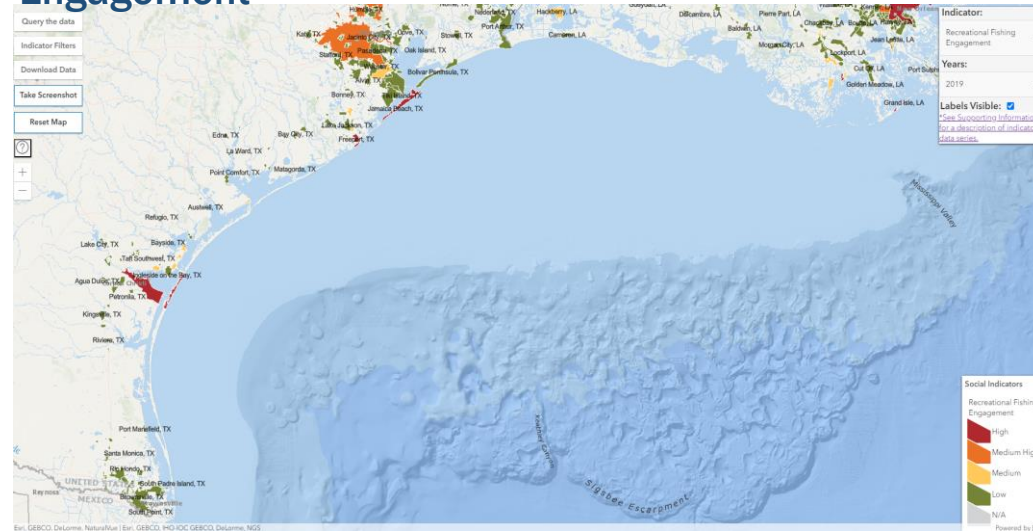
## Commercial fishery Engagement



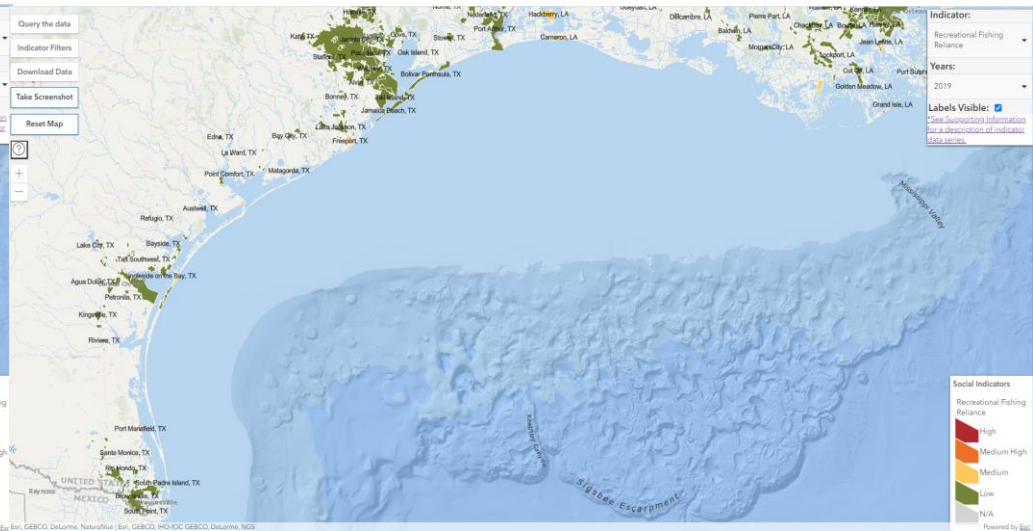
## Reliance



## Recreational fishery Engagement



## Reliance

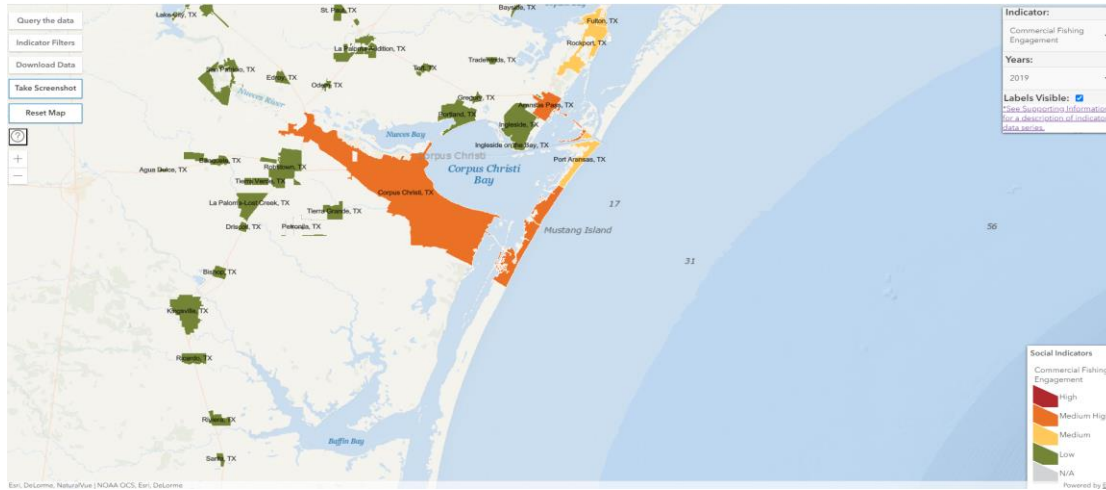


NOAA Fisheries Office of Science and Technology. 2019. NOAA Fisheries Community Social Vulnerability Indicators (CSVIs). Version 3 (Last updated December 21, 2020). <https://www.fisheries.noaa.gov/national/socioeconomics/social-indicators-fishing-communities-0>

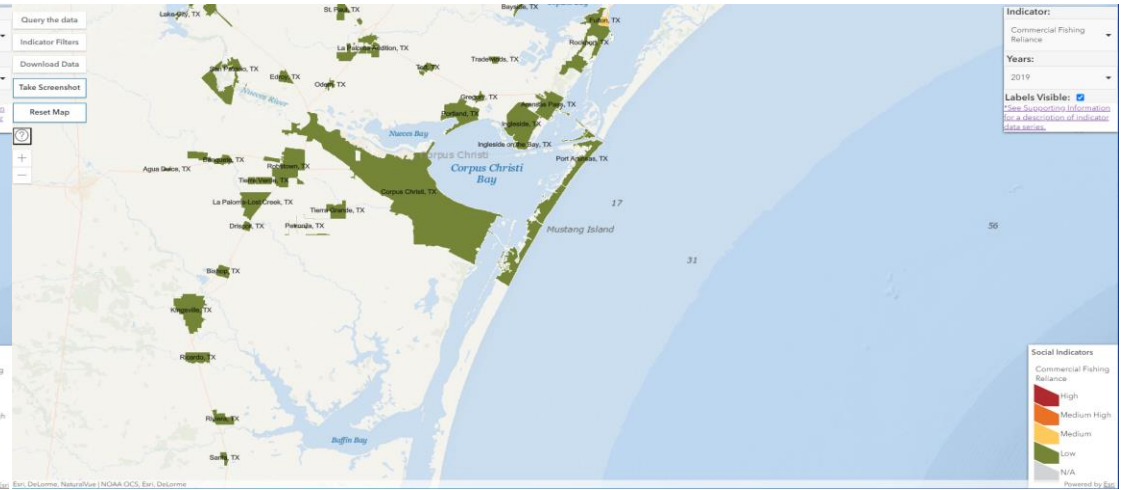


# Corpus Christi Fishery Dependence

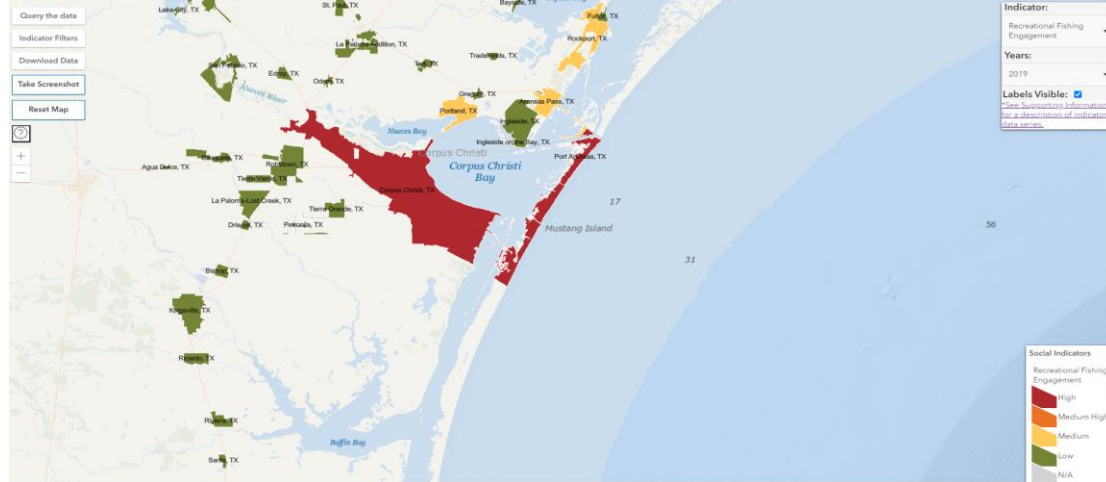
## Corpus Christi Commercial fishery Engagement



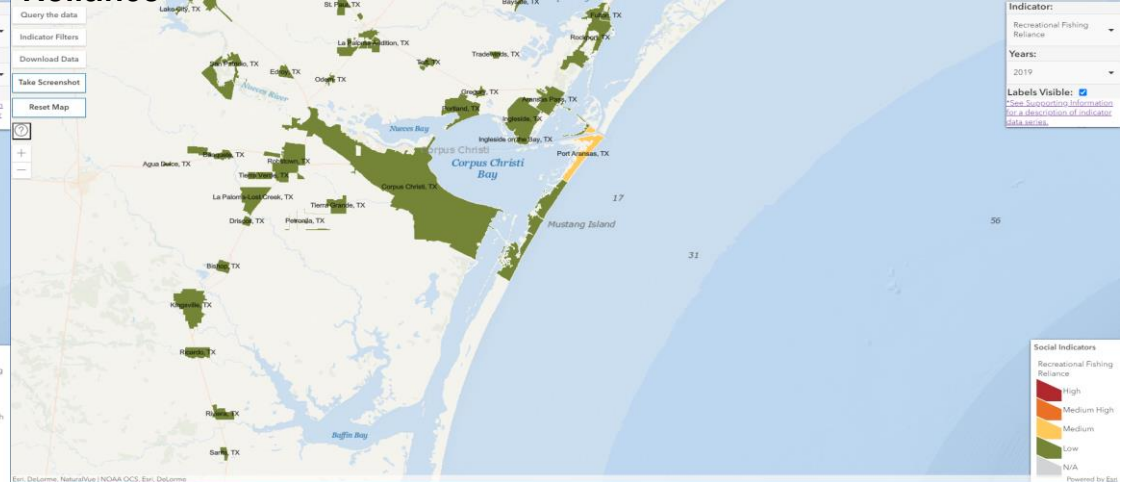
## Reliance



## Corpus Christi Recreational fishery Engagement



## Reliance



NOAA Fisheries Office of Science and Technology. 2019. NOAA Fisheries Community Social Vulnerability Indicators (CSVIs). Version 3 (Last updated December 21, 2020). <https://www.fisheries.noaa.gov/national/socioeconomics/social-indicators-fishing-communities-0>



# Conclusions

- **CBPs are expected to:**
  - **continue gaining importance**
  - **request more resources and efforts**
  - **be proactive from early stages of project:**
    - *Communicate*
    - *Transparency*
    - *Specific local benefits*
- **GCCC will continue to:**
  - **inform and assess the latest updates on SCI and CBP**
  - **planning to create knowledge network and sharing center**
  - **maximizing Community benefits through education**
  - **help our partners reduce the learning curve**

# Thank you!

**For more information visit our poster and scan the code bars**



## **Contact us**

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