



When will the Eagle Ford Shale run dry?

Zoe Gottlieb

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No matter the strength of the equipment or the size of the rigs, eventually oil fields run dry.

[Kicked off by Project Falcon](#) in 2008, the Eagle Ford has grown to become a key oil and gas play, raking in billions of dollars in investments from oil companies worldwide. [The Eagle Ford](#) has also helped turn surrounding counties into mini-boomtowns, opening up hundreds of high-paying jobs to workers across the state.

But oil is a finite resource, and someday [drillers across South Texas](#) may find themselves out of business.

The Business Journal spoke with a range of experts to gain insight into the future of the Eagle Ford and examine just how long it can continue to be viable.

Virginia Palacios, Executive Director, Commission Shift

Virginia Palacios is the executive director of Commission Shift, a 501(c)(3) nonprofit that aims to reform oil and gas oversight in the state of Texas. Previously, she worked as a senior research analyst for the Environmental Defense Fund.

What are the current estimates of oil and gas reserves remaining in the Eagle Ford Shale?

[I don't know what's actually left](#), but I know that as long as we've been predicting peak oil, there's been a new technology that comes around and ... changes the economics of what you can get out of the ground. What I've been hearing is that people are drilling longer horizontals. They have more control over the direction of the horizontals and can better control where they're accessing gas. And so, all of that creates economies of scale for a single wellbore that increases efficiency and generates more profit.

What sustainability initiatives are being implemented to ensure the long-term viability of oil and gas extraction in the Eagle Ford Shale?

I'm a mineral owner too, and times when we've asked companies for better lease provisions that would reduce emissions or be more protective of groundwater, the companies usually refuse. They don't want to do more than what state law requires, and that's why I think it's so important to have the public be a part of these regulatory processes and these permitting processes and to set a level playing field.

Nathan Meehan, Professor of Petroleum Engineering, Texas A&M University

Nathan Meehan is a professor of Petroleum Engineering at Texas A&M University. He holds a Ph.D. in Petroleum Engineering from Stanford University.

What are the current estimates of oil and gas reserves remaining the Eagle Ford Shale?

There's an old saying attributed to one of the Saudis that the Stone Age didn't end because we ran out of rocks, and the Oil Age is not going to end because [we've run out of oil](#). Well, the Eagle Ford trend's not going to [run out of locations to drill anytime soon](#). It's not endless, but we have more than a decade worth of drilling at our current pace, possibly a couple of decades.

What are the key challenges facing producers in the Eagle Ford, and how are they navigating them?

There are lots of headwinds, and one of them is the low price of natural gas. Another one is going to be in the question about how successful people will be with enhanced oil recovery. The recovery factor for these wells is low in terms of percentage of the oil in place. There have been lots of experiments done where people inject rich natural gas, even carbon dioxide, increase the pressure, produce it back and get more oil, and then recycle that a few times. The economics are still not fantastic for that, but it certainly seems to work, at least technically, and the potential is really large.

Another question mark is related to CO2 emissions. The source of CO2 emissions for the Eagle Ford are widespread. I did some work comparing the emissions from drilling the well to the refinery, and there has been a lot of work how much emissions happen from, as we like to say, the "refinery to wheels." There's a lot of emissions there. There are emissions associated with production from fugitive flaring and venting that all need to be minimized, and right now we have some incentives to capture carbon and store it, but there are not many sticks. There are not that many penalties for CO2 emissions. And depending on what happens politically, ... at some point there definitely will be pushback, and we're already seeing that in terms of some regulatory things. And there will be more problems there.

Todd Staples, President, Texas Oil and Gas Association

Todd Staples is the President of the TXOGA, the largest oil and gas trade association in Texas. He is also a former state senator and from 2007 to 2014 served as the 11th Texas Commissioner of Agriculture.

What are the current estimates of oil and gas reserves remaining in the Eagle Ford Shale?

The Eagle Ford is [the second-most prolific oil field in Texas](#). (It) plays a very important role. Current production as of March of 2024 was about 1.16 million barrels per day of oil and about 7.4 billion cubic feet of natural gas, and this is based on U.S. Energy Information Administration data, which is the best and what we use. We looked at the USGS – the U.S. Geological Survey's data – and the most recent assessment of the Eagle Ford estimated that there were about 8.5 billion barrels of oil, 66 trillion cubic feet of natural gas, and 1.9 billion barrels of natural gas liquids that are considered technically recoverable resources.

Putting a firm number on a basin's productivity is difficult because ... technology is so rapidly changing. But based on what we know today, it's easy to say that the Eagle Ford should have a strong future through 2050.

How has production in the Eagle Ford changed over the past five years, and what might that indicate about the future of the field?

The Eagle Ford Shale has been actively drilled and completed and produced, but there's another layer that's active, like the Austin Chalk, that is also a part of certain counties in the Eagle Ford. So this will certainly help productivity. 2023 Eagle Ford production in terms of oil grew by 6.8% year over year, and then natural gas grew 13.4% year over year. So if you look at an energy equivalent basis of oil and gas combined, that combined expanded output grew by more than 10% in 2023. And, I think it's important to point out that productivity grew while rig count fell in the region by 8.5%, and that's again due to technological advances.

Tim McMahon, Project Manager and Principal Investigator, **Bureau of Economic Geology**

Tim McMahon is the project manager and principal investigator for the Tight Oil Research Assessment Consortium, the premier entity researching U.S. unconventional resource plays and their production capabilities.

What are the current estimates of oil and gas reserves remaining in the Eagle Ford Shale?

We haven't taken a close look at the Eagle Ford or haven't done an update on it since around 2019-2020, but based on the assumptions that we had in there – and we were predicting high end oil prices lower than it is now, ... it was still doing 300 million barrels a year in 2035. I think there's plenty of resource there. We estimate that, currently, maybe about a third of the recoverable resource has been produced. Now that, I will say, is 'technically' recoverable, not necessarily economic. But the other thing is technically recoverable (oil) usually grows as technology improves. So, I think there's quite a bit still there for it to last easily to 2040, possibly to 2050 and beyond.

At what price point of oil does extraction continue to remain economically viable in the Eagle Ford?

I would say that in the Eagle Ford, ... if you drop below \$50 a barrel, it's probably going to drop off pretty rapidly. But somewhere around \$60, some areas are still going to be doing OK, (while) others will drop off. It really just

depends. It's not a monolithic thing. There's probably areas that are still going to be profitable at \$50, but there's going to be fewer of those areas. So as the price goes up, you expand the amount of the area or the size of the area where you can make a profit.

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