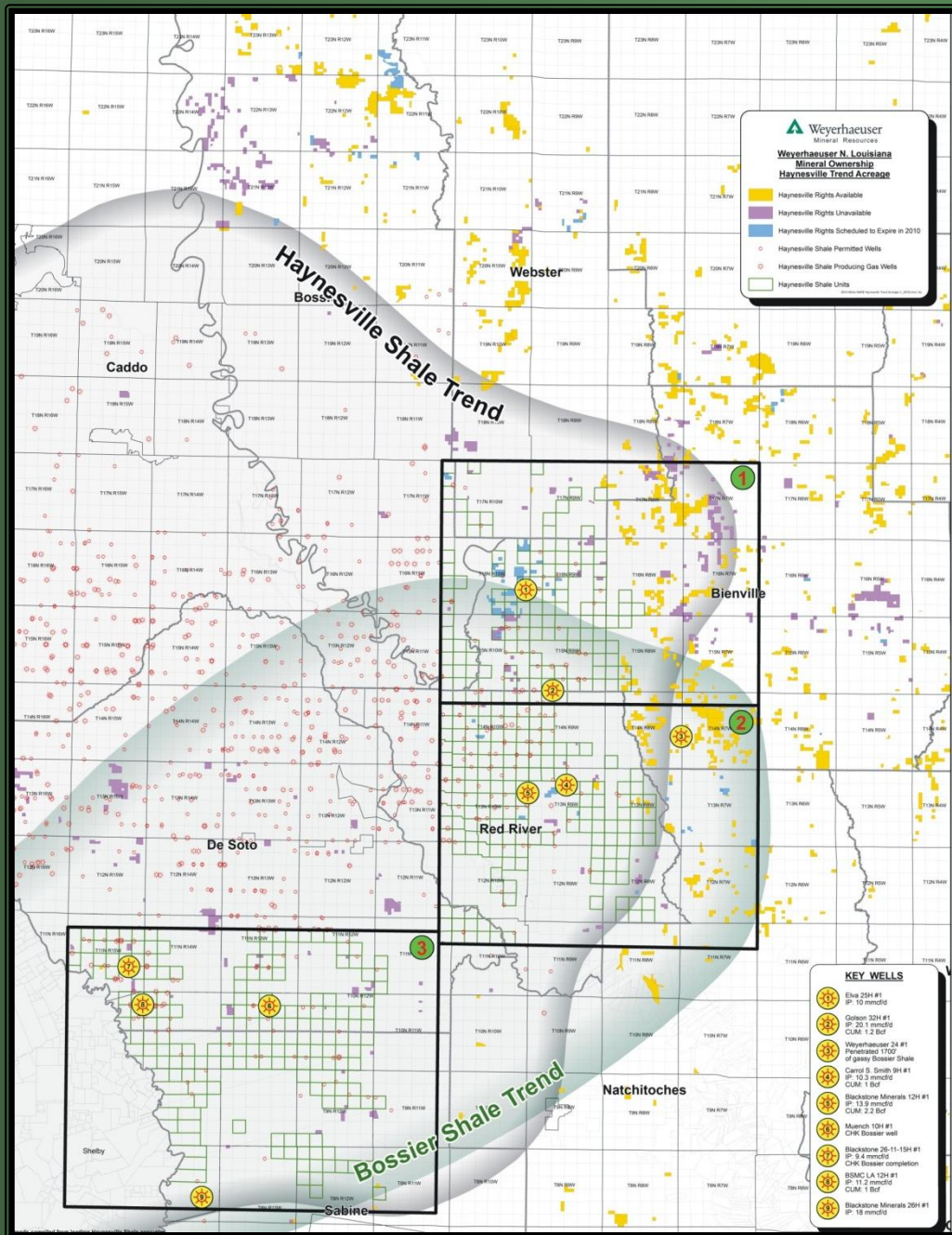




# Haynesville / Bossier Play Trend North Louisiana



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## **Executive Summary: N. Louisiana Bossier – Haynesville - Smackover Trends**

**Play Concept:** Natural gas production from widespread Jurassic shale reservoirs utilizing horizontal drilling/completion technologies with multi-staged frac stimulation.

**Drill Depths:** 10,500' - 13,500' TVD with a 3500'+ lateral

**Reserve Potential:** Multiple TCFG

**Primary Reservoir:** Haynesville & Bossier Shales

**Secondary Reservoir:** Smackover Formation

### **Geologic Overview:**

The Haynesville Shale Trend is one of the most active exploration plays in the lower 48. Recoverable gas reserves are anticipated to exceed 200 TCFG (Oil & Gas Investor, 2009) or about 7.5 BCFG per well. Since 2008, Chesapeake, Petrohawk, Encana and others have triggered a flurry of leasing and drilling activity across six parishes in north Louisiana specifically targeting the Haynesville Shale. Initial production rates exceeding 17 MMCFG/day are typical of completions in the Haynesville Shale making it the most prolific onshore shale reservoir discovered in the United States. The Haynesville Shale is an over-pressured, organic-rich calcareous shale with TOC > 3%. Matrix porosity from 8-13% has been reported in producing areas. The highest production is achieved through horizontal drilling utilizing long laterals and multi-stage fracs.

Due to the tremendous success of the Haynesville Shale Play in N. Louisiana and E. Texas, operators have begun to focus their exploration efforts on the Bossier Shale. Currently, exploration is primarily focused in areas where gassy Bossier Shale overlies the productive Haynesville Trend. Chesapeake recently announced a Bossier Shale completion for 9.4 MMCFGPD at Logansport Field. The well produced at an average rate of 8.1 MMCFGPD in its first 30 days of production. Chesapeake estimates per well recoveries from the Bossier Shale equal to 75% of their Haynesville Shale completions. Petrohawk recently announced participation in two Lower Bossier tests as a part of their LA and TX exploration programs. Petrohawk estimates recoverable Bossier Shale reserves of 5.5 BCFG per well.

Bossier sedimentary rocks thicken significantly in intra-salt basins which generally lay east of the current exploration Bossier/Haynesville fairway. Gassy Bossier shales were encountered over a 1700' interval at Castor Field in the Cabot #1-24 Weyerhaeuser. Gas shows exceeding 800 units were logged in the well with 17.4 ppg mud in the hole.

Additional development potential utilizing horizontal drilling exists in the Smackover Formation. Vertical Smackover completions have produced up to 5 BCFG within the overlying Haynesville and Mid-Bossier shale trends.