Units of measure in resource estimation are usually acres.
Area to Volume

1 Acre

1 ft

Volume to Tons

1800 short tons per acre/foot

But where does this come from?
The Weight of Coal

If one cubic foot of water weighs 62.6 lbs…

What does one cu. ft of coal weigh, if the specific gravity of the coal is 1.5?

\[ 62.5 \times 1.5 = 93.75 \text{ lbs} \]
The Weight of Coal, cont.

If one acre contains 43,560 cu ft
and
one short ton = 2000 lbs

What does one acre/foot of 1.5 SG coal weigh in short tons

\[(43,560 \text{ cu ft} \times 93.75 \text{ lbs}) / 2000 \text{ lbs/ton}\]
or
2041.8 short tons
But I said earlier 1800 tons per acre/foot…
What specific gravity is this based on?

\[
(1800 \text{ tons} \times 2000) = 3,600,000 \text{ lbs}
\]

\[
\frac{3,600,000 \text{ lbs}}{43,560 \text{ cu ft per acre}} = 82.64 \text{ lbs per cu ft}
\]

\[
\frac{82.64 \text{ lbs (coal)}}{62.6 \text{ lbs (water)}} = 1.32 \text{ SG}
\]

This magically appears in USGS Bull 891, Table 2 (p.22)
*Coal Resource Classification System of the U.S. Geological Survey*
by Wood and others
http://pubs.er.usgs.gov/pubs/cir/cir891
## Conversion Factors by Rank

<table>
<thead>
<tr>
<th>Rank</th>
<th>SG</th>
<th>Tons</th>
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</thead>
<tbody>
<tr>
<td>Anthracite</td>
<td>1.47</td>
<td>2,000</td>
</tr>
<tr>
<td>Bituminous</td>
<td>1.32</td>
<td>1,800</td>
</tr>
<tr>
<td>Subbituminous</td>
<td>1.30</td>
<td>1,770</td>
</tr>
<tr>
<td>Lignite</td>
<td>1.29</td>
<td>1,750</td>
</tr>
</tbody>
</table>

(Have no idea where the average SG’s came from!)