Born in 1834 at Killingworth Hall, Northumberland, he was the youngest son of Nicholas Wood, colliery owner and engineer who worked alongside George Stephenson during the early years of locomotive development as well as experimenting with a miners' safety lamp.

He was educated at Kepier Grammar School, Houghton-le-Spring and Kings College ,London. He served an apprenticeship as a mining engineer while working at the Hetton Collieries owned by the Hetton Coal Company. His father was manager of the Hetton Collieries and in 1858 Lindsay was appointed viewer (manager) of the North Hetton Colliery (Moorsley Pit). Shortly afterwards he became assistant to his father as manager of Hetton Collieries and when his father died in 1866 he became Managing Director of the Hetton Collieries which comprised the Lyons Colliery, Moorsley Colliery, the Hazard Pit as well as Eppleton and Elemore Collieries. He continued in this position until the company was sold in 1911 to Lord Joicey's company.

Lindsay Wood was married in 1873 to Emma Barrett of Heighington Hall near Darlington. They initially lived at Hetton Hall but moved to The Hermitage at Chester-le-Street. They had four sons and two daughters the eldest son being Mr. Arthur, Nicholas Lindsay Wood born in 1875. Mr Wood, like his father became a mining engineer and was also a captain in The Northumberland Artillery, a territorial regiment. In 1891 Mrs Emma Wood died suddenly in the late spring at the Hermitage, a great loss to the family.

BY the 1870s Lindsay Wood was a managing partner in the North Hetton Coal Company as well as the Harton Coal Company. He was also serving as Director on the Boards of a number of companies including John Bowes and Partners who owned collieries in the Gateshead area, the Netherton Coal Company in Northumberland, The Newcastle Electric Supply Company, Hendon paper Mills and the Durham Collieries Electric Supply Company.

He actively took an interest like his father in the safety in mines and served on a number of Royal Commissions particularly "Accidents in Mines" which ran from 1870 until 1886. He became President of the North of England Institute of Mining and Mechanical Engineers in 1875 and this lasted for three years.

Lindsay Wood had a good working relationship with both coal owners and miners' leaders and was chairman of the Durham Coalowners' Association for many years as well as chairman of the Durham Colliery Owners' Mutual Protection Association. He was instrumental in carrying out reforms in education among the Durham villages where his pits were situated and before the Education Act of 1870 he had already made provisions for schools in many of the villages.

He was a Justice of the Peace and Deputy-lieutenant of the County. He became Sheriff in 1889 and was made a baronet for his public service in 1897.

He took an active interest in his family who all did well with their education and social positions. In his later life he took a more active interest in politics albeit at only a County level with various Conservative Associations. He continued to live at the Hermitage for more than 30 years until his death in 1920.