Prévost started his military service at the age of thirteen when he was sent from Switzerland to England to attend military school. In the Seven Year War or the French and Indian War, he was a Major. In 1759, at the Battle of Quebec, he received a wound that left a circular scar on his temple and was nicknamed Old Bullet Head.

By the winter of 1778, Prévost was Brigadier-General in command of St. Augustine in British East Florida and had been given orders to invade Georgia. Prévost troops gladly raided and pillaged Georgia. Prévost took command of Savannah on 17 January 1779. Prévost had no grasp of the British veneration for property and had homes destroyed and property illegally requisitioned. He despised Loyalist officials upon whom British pacification was dependent. When South Carolina Loyalists arrived they were harshly received, as were all persons who had in any way submitted to the Patriots. Prévost was a soldier of fortune, bent on lining his pockets. His officers complained that at age fifty-six, he was too old and inactive for the service. Prévost agreed and requested to resign.

While Prévost waited to hear on his resignation, he turned his sights on South Carolina. On 30 April, his troops made their way to Charlestown; plundering as they went. On 10 May, Prévost was outside of Charlestown and thought that he was within days of capturing South Carolina. Negotiations for Charlestown’s surrender began and Prévost lost precious time. On 12 May, he learned that a large Patriot force was nearing Charlestown. Prévost slipped away to St. James Island and by the time Major General Benjamin Lincoln’s army attacked on 20 June, Prévost had built three strong redoubts and surrounded by an abatis. His Highlanders and Hessians fought fiercely and when the Americans retreated, he had twenty-six men dead and slipped back to Savannah with 163 of his men wounded.
After facing off with the Patriots for six months, Prévost was not happy with the results. He had gained Savannah, but failed to expand British control over the rest of Georgia. He established a base on Port Royal Island, half way between Savannah and Charlestown; however he had failed to capture Charlestown.

Prévost request for replacement was granted. Brigadier General George Garth was on his way from New York when he was captured by the French Navy at the mouth of the Savannah River. The French landed outside Savannah and Prévost was unprepared for an attack. The French and American allies would regret losing their best opportunity to take Savannah. After Prévost refused to surrender, he continued to strengthen his fortifications and they held up during the attack.

During the siege of Savannah, Prévost proved to be a quite capable operational and tactical commander, but he had no grasp of the political aspect of his duties. His treatment of Loyalist and plundering of property, Loyalist and Patriot alike, helped to alienate people against the Britain. Late that October, he for England and retired quite well, living off the plunder he had taken from America.