©Lonely Planet Publications Pty Ltd

Understand Antarctica

©Lonely Planet Publications Pty Ltd

Antarctica Today

For a continent so far on the fringes of workaday human life, Antarctica is in the thick of plenty of crucial human developments. It is a central location for research into predictions about, and the effects of, climate change, and it is tops for high-caliber study in most fields of science. It is also one of the world's last largely untouched natural spaces, and so the challenge always remains: how best to protect it?

Best on Film

South (restored 1998) Directed by Frank Hurley.
Frozen Planet (2012) BBC series.
La Marche de l'Empereur (March of the Penguins; 2005)
The Thing (1982; with a lesser remake in 2011)
Encounters at the End of the World (2007) A Werner Herzog film.
Shackleton's Antarctic Adventure (2001) Imax film.
Scott of the Antarctic (1948) Starring John Mills.
Warren Miller's Storm (2003) Re-creation of Shackleton's South Georgia crossing.

Best in Print

Endurance: Shackleton's Incredible Voyage (Alfred Lansing; 1959) Page-turner survival story.
The South Pole (Roald Amundsen; 1913) Triumph at 90° South.
Scott's Last Expedition (Robert F Scott; 1913) Posthumous, firsthand account.
The Worst Journey in the World (Apsley Cherry-Garrard; 1922) Midwinter haul to Cape Crozier.
South (Ernest Shackleton; 1919) *Endurance* expedition from the leader's perspective.
At the Mountains of Madness (HP Lovecraft; 1936) Sci-fi on the Ice.

Antarctica & Climate Change

With global climate change melting its vast ice sheets, Antarctica – despite its remoteness – sits at the forefront of climate change research. News of the changes in the ice and ecosystems hits international media regularly.

In October 2011 NASA scientists discovered a rift in the Pine Island Glacier in West Antarctica that ultimately yielded 700-sq-km iceberg B-31, which is about the size of Singapore. Multiple rifts in the Antarctic Peninsula's Larsen C ice shelf were discovered from mid-2016 to early July 2017, before an A-68 iceberg the size of Delaware calved from shelf in mid-July 2017; the 5800-sq-km berg is 200m thick and weighs more than a trillion tons. When ice shelves break free, they cease to be buffers to inland ice, which then accelerates toward the ocean. Such events interlock with other complex systems (such as ice formation and ocean salinity and acidity), and there is a major push to better monitor and analyze these changes.

On the Ice, new eco-friendly science bases are being inaugurated, such as Belgium's zero-emission Princess Elisabeth Antarctica Station (opened in 2009) and Korea's Jang Bogo (2014), and facilities such as wind turbines are being added to existing stations (such as McMurdo and Scott Base) to offset power needs and carbon footprints.

Scientific Research

Antarctic science generates some of the world's most cutting-edge research in a multitude of disciplines. The continent is uniquely placed for research in astronomy and physics. The IceCube neutrino detector, buried one cubic km below the Pole, is making observations that refute long-held understandings of gamma-ray bursts.

New technologies and international cooperation are allowing previously inaccessible areas of Antarctica to be studied: sensors attached to animals gather data