

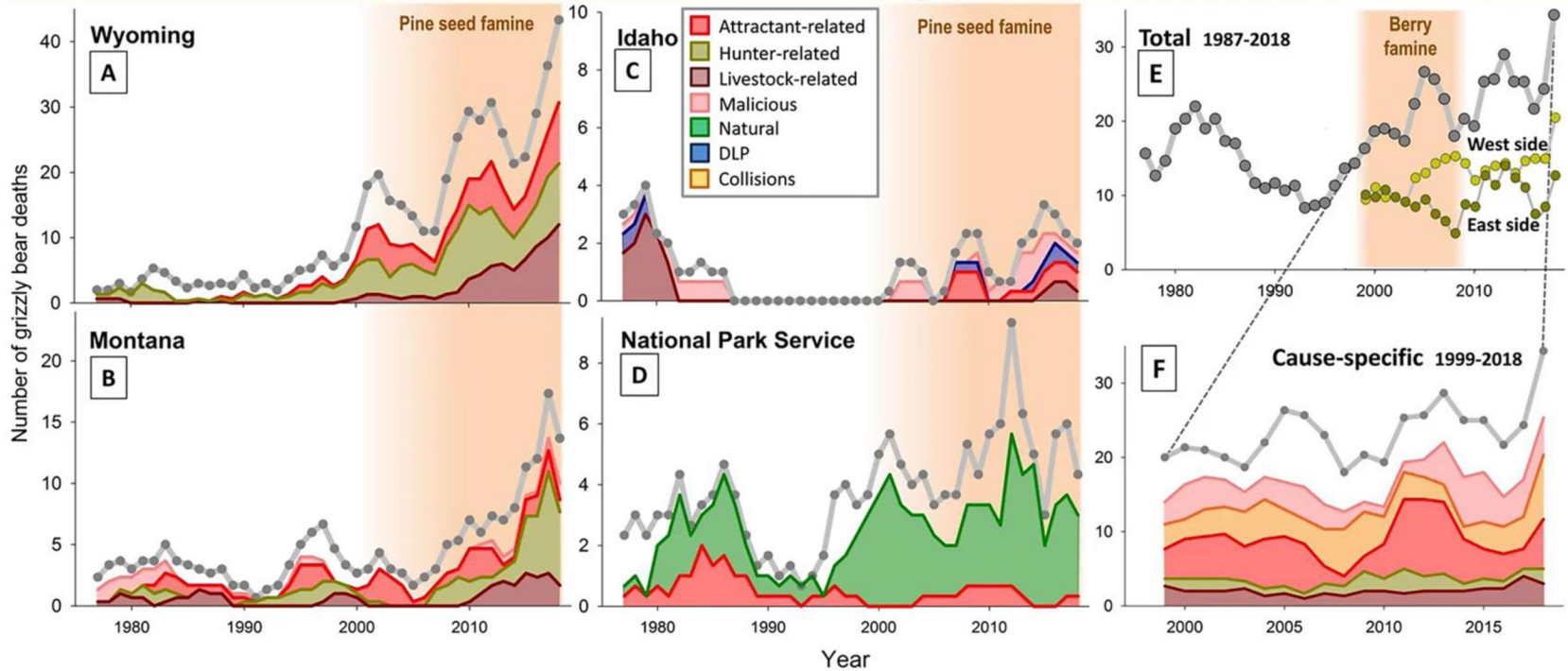
Trends in Grizzly Bear Mortality



by David Mattson

Greater Yellowstone

Northern Continental Divide



These graphs show trends in total numbers of known and probable grizzly bear mortalities, broken down by major causes, for the Greater Yellowstone (GYE) and Northern Continental Divide (NCDE) Ecosystems : in the GYE for (A) Wyoming, (B) Montana, (C) Idaho, and (D) National Park Service jurisdictions; in the NCDE for (D) the entire ecosystem, 1978-2018, differentiating deaths on the west and east sides, 1999-2018; and (E) by major causes for the entire ecosystem, 1999-2018. Gray lines and darker gray dots denote total mortality whereas each major cause is shown by different colored bands. Periods of major food shortages are shown by vertical bands of orange-colored shading, including the terminal decline in availability of whitebark pine seeds in the GYE and a period of widespread berry shortages (“berry famine”) in the NCDE. Note the substantial increase in bear mortalities in Wyoming and Montana portions of the GYE coincident with loss of whitebark pine seeds , driven largely by conflicts with humans over meat, and the spike in bear mortalities coincident with the berry famine, but driven largely by increases on the west side of the NCDE. Berries are a more important food source on the west compared to east sides of the NCDE. Data are from datasets obtained under Open Documents and Freedom-of-Information Act requests for 1959-2014 in the GYE and for 1999-2018 in the NCDE. Other data on mortalities come from Interagency Grizzly Bear Study Team Annual Reports for 2015-2018 and from Dood et al. (2006). Data for estimating abundance of whitebark pine seeds come from Macfarlane et al. (2013), Van Manen et al. (2016), and Interagency Grizzly Bear Study Team Annual Reports for 1979-2018. Data for estimating berry abundance come from McLellan (2015) and Kasworm et al. (2018).