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TITLE: Coral islands defy sea-level rise over the past century: Records from a central Pacific atoll

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ABSTRACT:

Research Article| June 01, 2015 Coral islands defy sea-level rise over the past century: Records from a central Pacific atoll P.S. Kench; P.S. Kench 1School of Environment, The University of Auckland, Private Bag 92019, Auckland 1142, New Zealand Search for other works by this author on: GSW Google Scholar D. Thompson; D. Thompson 1School of Environment, The University of Auckland, Private Bag 92019, Auckland 1142, New Zealand Search for other works by this author on: GSW Google Scholar M.R. Ford; M.R. Ford 1School of Environment, The University of Auckland, Private Bag 92019, Auckland 1142, New Zealand Search for other works by this author on: GSW Google Scholar H. Ogawa; H. Ogawa 1School of Environment, The University of Auckland, Private Bag 92019, Auckland 1142, New Zealand Search for other works by this author on: GSW Google Scholar R.F. McLean R.F. McLean 2School of Physical, Environmental and Mathematical Sciences, University of New South Wales, Canberra, ACT 2600, Australia Search for other works by this author on: GSW Google Scholar Author and Article Information P.S. Kench 1School of Environment, The University of Auckland, Private Bag 92019, Auckland 1142, New Zealand D. Thompson 1School of Environment, The University of Auckland, Private Bag 92019, Auckland 1142, New Zealand M.R. Ford 1School of Environment, The University of Auckland, Private Bag 92019, Auckland 1142, New Zealand H. Ogawa 1School of Environment, The University of Auckland, Private Bag 92019, Auckland 1142, New Zealand R.F. McLean 2School of Physical, Environmental and Mathematical Sciences, University of New South Wales, Canberra, ACT 2600, Australia Publisher: Geological Society of America Received: 22 Dec 2014 Revision Received: 24 Mar 2015 Accepted: 26 Mar 2015 First Online: 09 Mar 2017 Online ISSN: 1943-2682 Print ISSN: 0091-7613 © 2015 Geological Society of America Geology (2015) 43 (6): 515?518. https://doi.org/10.1130/G36555.1 Article history Received: 22 Dec 2014 Revision Received: 24 Mar 2015 Accepted: 26 Mar 2015 First Online: 09 Mar 2017 Cite View This Citation Add to Citation Manager Share Icon Share Facebook Twitter LinkedIn Email Permissions Search Site Citation P.S. Kench, D. Thompson, M.R. Ford, H. Ogawa, R.F. McLean; Coral islands defy sea-level rise over the past century: Records from a central Pacific atoll. Geology 2015;; 43 (6): 515?518. doi: https://doi.org/10.1130/G36555.1 Download citation file: Ris (Zotero) Refmanager EasyBib Bookends Mendeley Papers EndNote RefWorks BibTex toolbar search Search Dropdown Menu toolbar search search input Search input auto suggest filter your search All ContentBy SocietyGeology Search Advanced Search Abstract The geological stability and existence of low-lying atoll nations is threatened by sea-level rise and climate change. Funafuti Atoll, in the tropical Pacific Ocean, has experienced some of the highest rates of sea-level rise (?5.1 ± 0.7 mm/yr), totaling ?0.30 ± 0.04 m over the past 60 yr. We analyzed six time slices of shoreline position over the past 118 yr at 29 islands of Funafuti Atoll to determine their physical response to recent sea-level rise. Despite the magnitude of this rise, no islands have been lost, the majority have enlarged, and there has been a 7.3% increase in net island area over the past century (A.D. 1897?2013). There is no evidence of heightened erosion over the past half-century as sea-level rise accelerated. Reef islands in Funafuti continually adjust their size, shape, and position in response to variations in boundary conditions, including storms, sediment supply, as well as sea level. Results suggest a more optimistic prognosis for the habitability of atoll nations and demonstrate the importance of resolving recent rates and styles of island change to inform adaptation strategies. You do not have access to this content, please speak to your institutional administrator if you feel you should have access.

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