

Reference List for 12-Month Finding on Two Petitions to List the Pinto Abalone (*Haliotis kamtschatkana*) under the Endangered Species Act

National Marine Fisheries Service, West Coast Region
Protected Resources Division, Long Beach, CA

December 2014

FEDERAL REGISTER NOTICES

U.S. Federal Register, Volume 68 No. 60. 68 FR 15100, March 28, 2003. Policy for evaluation of conservation efforts when making listing decisions.

U.S. Federal Register, Volume 69 No. 73. 69 FR 19975, 15 April 2004. Endangered and threatened species; Establishment of Species of Concern list, addition of species to Species of Concern list, description of factors for identifying Species of Concern, and revision of candidate species list under the Endangered Species Act.

U.S. Federal Register, Volume 78 No. 222. 78 FR 69033, 18 November 2013. Endangered and threatened wildlife: 90-day finding on petitions to list the pinto abalone as threatened or endangered under the Endangered Species Act.

U.S. Federal Register, Volume 79 No. 126. 79 FR 37578, 1 July 2014. Endangered and threatened wildlife: Final Policy on Interpretation of the Phrase “Significant Portion of Its Range” in the Endangered Species Act’s Definitions of “Endangered Species” and “Threatened Species.”

PERSONAL COMMUNICATIONS

Bird, Amanda. Masters Program, California State University, Fullerton (CSUF). July 26, 2014. Pers. comm. with Melissa Neuman (NMFS) regarding unpublished preliminary data from surveys to characterize the demographics of pinto abalone populations in nearshore San Diego kelp beds (Point Loma and La Jolla).

Boch, Charles. Stanford University. April 28, 2014. Pers. comm. with David Kushner (NPS) regarding estimated proportion of *H. kamtschatkana* in mixed assemblages of *H. sorenseni*/*H. kamtschatkana*.

Breen, Paul. DFO. Unpublished observations regarding maximum movement of tagged pinto abalone, cited in Sloan and Breen 1988.

Friedman, Carolyn. University of Washington, School of Aquatic and Fishery Sciences, Seattle, WA. April 29, 2014. Unpublished data on laboratory studies regarding effects of elevated pCO₂, varying temperature, and exposure to *Vibrio tubiashii* on early life stages of pinto abalone presented to SRT at team meeting.

Gee, P. and J. Lee. Simon Fraser University, Canada. Unpublished student reports on laboratory studies on pinto abalone algal feeding and preferences, cited in Sloan and Breen 1988.

- Groth, Scott. South Coast Shellfish Biologist, ODFW, Charleston, OR. 14 December 2009. Pers. comm., via phone call with Susan Wang (NMFS), regarding an observation of one live pinto abalone at Orford Reef the week of 7 December 2009 by an urchin diver. Cited in NMFS. 2009. 2009 NMFS West Coast Workshop on abalone Species of Concern. Prepared by the NMFS Southwest Region and Northwest Region. 1 September 2009. 25 pp. Available online at: http://www.nmfs.noaa.gov/pr/pdfs/species/abalone_workshop_soc2009.pdf.
- Groth, Scott. South Coast Shellfish Biologist, ODFW, Charleston, OR. 26 June 2014. Unpublished data, via pers. comm. (email) with Susan Wang (NMFS), regarding observations of live pinto abalone in Oregon.
- Hagey, William, *et al.* Pisces Design, Sept. 2013-Sept. 2014. Unpublished data on pinto abalone observations in Southern California reported to Melissa Neuman (NMFS).
- Hebert, Kyle. ADF&G. 25 September 2014. Pers. comm., via email with Sadie Wright (NMFS), regarding pinto abalone dive workshop and surveys conducted during the American Academy of Underwater Sciences (AAUS) conference in September 2014 in Sitka Sound.
- Hebert, Kyle. ADF&G. 26 March 2014. Pers. comm. and unpublished data shared with the SRT via a presentation on Northern Abalone Fishery Management in Southeast Alaska.
- Lessard, Joanne. Abalone Research Biologist, Fisheries and Oceans Canada, Nanaimo, BC. Pers. comm. in 2008 regarding pinto abalone aggregation studies and poaching in British Columbia, cited in COSEWIC 2009.
- Lessard, Joanne. Abalone Research Biologist, Fisheries and Oceans Canada, Nanaimo, BC. April 24, 2014. Pers. comm. with SRT via a presentation on pinto abalone in British Columbia.
- Neuman, M. *et al.* NMFS Protected Resources Division, Long Beach, CA. Jan.-Sept. 2014. Unpublished data on pinto abalone and habitat surveys in Southern California.
- Owen, Buzz and Rafferty, Arjay. Haliotidae taxonomist and shell collector. April 28, 2014. Pers. comm. with David Kushner (NPS) regarding pinto abalone specimens collected from both the northern and southern portions of the species' range that exhibiting morphologies representative of both subspecies.
- Park, Linda. NMFS NWFSC. March-May, 2014. Unpublished data and pers. comm. with Kristen Gruenthal (NWFSC) regarding genetic analysis of pinto abalone and other abalone species.
- Parnell, Ed. UCSD. July 27, 2014. Pers. comm. with David Kushner (NPS) regarding episodic nature of pinto abalone reproduction and recruitment off of Point Loma, CA.
- Rogers-Bennett, Laura. CDFW. Nov. 3, 2014. Unpublished data shared with the Melissa Neuman (NMFS) regarding status of pinto abalone in Northern California.
- Schwenke, Piper. NMFS NWFSC. March-May, 2014. Unpublished data and pers. comm. with Kristen Gruenthal (NWFSC) regarding genetic analysis of pinto abalone and other abalone species.

Taniguchi, Ian. CDFW. April 24, 2014. Unpublished data shared with the SRT via a presentation on threaded abalone in California.

Walker, Scott. ADF&G. 26 March 2014. Pers. comm. and unpublished data shared with the SRT via a presentation on Northern Abalone Fishery Management in Southeast Alaska.

LITERATURE CITED

Alaska Department of Fish and Game (ADF&G). 2014. Comments to NMFS on 90-day finding on petitions to list the pinto abalone as threatened or endangered under the ESA. Submitted on 17 January 2014 by Moira Ingle, ADF&G, Anchorage, AK. 7 pp. Available online at: www.regulations.gov (FDMS Docket ID: NOAA-NMFS-2013-0158-0012).

Ault, J. S. 1985. Species profiles: life histories and environmental requirements of coastal fishes and invertebrates (Pacific Southwest) -- black, green, and red abalones. U.S. Fish & Wildlife Service Biological Report 82 (11.32), U.S. Army Corps of Engineers, TR EL-82-4. U.S. Department of the Interior, Washington, D.C.

Babcock, R., and J. Keesing. 1999. Fertilization biology of the abalone *Haliotis laevis*: Laboratory and field studies. Canadian Journal of Fisheries and Aquatic Sciences 56:1668-1678.

Bargmann, G.G. 1984. Recreational diving in the State of Washington and the associated harvest of food fish and shellfish. Department of Fisheries Technical Report 82. Washington Department of Fisheries, Olympia, Washington.

B.C. Conservation Data Centre. 2014. BC Species and Ecosystems Explorer. B.C. Ministry of Environment, Victoria, B.C. Available: <http://a100.gov.bc.ca/pub/eswp/> (accessed 12 May 2014).

Boch, C., Saenz-Arroyo, A., Vazquez, L., and F. Micheli. 2014. Preliminary assessment of *Haliotis assimilis/sorenseni* in El Rosario, Baja California, Mexico. Unpublished data. 5 pp.

Bouma, J. V. 2007. Early life history dynamics of pinto abalone (*Haliotis kamtschatkana*) and implications for recovery in the San Juan archipelago, Washington State. Thesis (MS). School of Aquatic and Fisheries Science, University of Washington, Seattle, WA.

Bouma, J. V., D. P. Rothaus, K. M. Straus, B. Vadopalas, and C. S. Friedman. 2012. Low juvenile pinto abalone *Haliotis kamtschatkana kamtschatkana* abundance in the San Juan Archipelago, Washington State. Transactions of the American Fisheries Society 141: 76–83.

Boutillier, J. A., W. Carolsfeld, P.A. Breen, S. Farlinger, and K. Bates. 1985. Abalone resurvey in the southeast Queen Charlotte Islands, July 1984. Canadian Manuscript Report of Fisheries and Aquatic Sciences 1818. 87 p.

- Bowers, Hebert, Davidson, and Chadwick. 2011. Staff comments on regulatory proposals for SE Alaska and Yakutat Dungeness crab, king crab, Tanner crab, shrimp and miscellaneous shellfish for the Board of Fisheries Meeting, January 15-21, 2012. Regional information report No. 1J11-15. ADFG Divs. of Sport Fish and Commercial Fisheries.
- Brainard, R.E., C. Birkeland, C.M. Eakin, P. McElhany, M.W. Miller, M. Patterson, and G.A. Piniak. 2011. Status review report of 82 candidate coral species petitioned under the U.S. Endangered Species Act. U.S. Dept. Commerce, NOAA Tech. Memo. NMFS-PIFSC-27, 530 pp. + 1 Appendix. Available online at: http://www.nmfs.noaa.gov/stories/2012/05/07_coral_documents_page.html.
- Breen, P. A. 1980a. Muscled mollusk: the northern abalone. *Diver* 6(6): 26-28. Cited in Sloan and Breen, 1988. (Note: There is only one Breen 1980 referenced. The “a” was included in error)
- Breen, P. A. 1986. Management of the British Columbia fishery for northern abalone (*Haliotis kamtschatkana*). Pages 300–312 in G. S. Jamieson and N. Bourne, editors. North Pacific Workshop on stock assessment and management of invertebrates. Canadian Special Publication of Fisheries and Aquatic Sciences 92.
- Breen, P.A., and B. E. Adkins. 1979. A survey of abalone populations on the east coast of the Queen Charlotte Islands, August 1978. Fisheries and Marine Service Manuscript Report 1490. 125 p.
- Breen, P. A. and B. E. Adkins. 1980a. Spawning in a British Columbia population of northern abalone, *Haliotis kamtschatkana*. *The Veliger* 23 (2): 177-179. (Note: There is only one Breen and Adkins 1980 referenced. The “a” was included in error)
- California Department of Fish and Wildlife (Formerly California Department of Fish and Game). 2005. Abalone recovery and management plan. Prepared by the Marine Region. Adopted by the California Fish and Game Commission, 9 December 2005. 363 pp.
- Campbell, A. (ed.) 2000. Workshop on Rebuilding Abalone Stocks in British Columbia. Canadian Special Publication of Fisheries and Aquatic Sciences 130:158 pp.
- Campbell, A., I. Manley, and W. Carolsfeld. 1992. Size at maturity and fecundity of the abalone, *Haliotis kamtschatkana*, in northern British Columbia. Canadian Manuscript Report of Fisheries and Aquatic Sciences 2169:47-65.
- Chambers, M. D., H. Hurn, C. S. Friedman, and G. R. VanBlaricom. 2005. Drift card simulation of larval dispersal from San Nicolas Island, California, during black abalone spawning season. Pages 421-434 in D. K. Garcelon and C. A. Schwemm, editors. Proceedings of the Sixth California Islands Symposium, December 1-3, 2003, Ventura, CA. National Park Service Technical Publication CHIS-05-01, Institute for Wildlife Studies, Arcata, CA.
- Chambers, M. D., G. R. VanBlaricom, L. Hauser, F. Utter, and C. S. Friedman. 2006. Genetic structure of black abalone (*Haliotis cracherodii*) populations in the California islands and central California coast: Impacts of larval dispersal and decimation from withering syndrome. *Journal of Experimental Marine Biology and Ecology* 331:173-185.

- Cooper, J., M. Weiland, and A. Hines. 1977. Subtidal abalone populations in an area inhabited by sea otters. *Veliger* 20:163-167.
- COSEWIC (Committee on the Status of Endangered Wildlife in Canada). 2009. COSEWIC assessment and update status report on the northern abalone *Haliotis kamtschatkana* in Canada. Committee on the Status of Endangered Wildlife in Canada, Ottawa.
- Crim, R. N., J. M. Sunday, and C. D. G. Harley. 2011. Elevated seawater CO₂ concentrations impair larval development and reduce larval survival in endangered northern abalone (*Haliotis kamtschatkana*). *Journal of Experimental Marine Biology and Ecology* 400:272– 277.
- Croker, R. S. 1931. Abalones. Division of Fish and Game, Fish Bulletin 30:58-72.
- DFO (Fisheries and Oceans Canada). 2007. Recovery Strategy for the Northern Abalone (*Haliotis kamtschatkana*) in Canada [Proposed]. Species at Risk Act Recovery Strategy Series. Fisheries and Oceans Canada, Vancouver. vi + 31 p.
- DFO (Fisheries and Oceans Canada). 2012. Action Plan for the Northern Abalone (*Haliotis kamtschatkana*) in Canada Species at Risk Act Action Plan Series. Fisheries and Oceans Canada, Ottawa. vii + 65 p.
- Ebert, E.E. 1968. A food habits study of the southern sea otter *Enhydra lutris nereis*. *California Fish and Game* 54:33-42.
- Egli, T. P., and J. Lessard. 2011. Survey of northern abalone, *Haliotis kamtschatkana*, population in the Strait of Georgia, British Columbia, October 2009. Canadian Manuscript Report of Fisheries and Aquatic Sciences 2955. iii + 12 p.
- Estes, J. A., and G. R. VanBlaricom. 1985. Sea otters and shellfisheries. Pages 187-235 in R. Beverton, J. Beddington, and D. Lavigne, editors. *Conflicts between marine mammals and fisheries*. George, Allen, and Unwin, London, U.K.
- Fanshawe, S., G. R. VanBlaricom, and A. A. Shelly. 2003. Restored top carnivores as detriments to the performance of marine protected areas intended for fishery sustainability: A case study with red abalones and sea otters. *Conservation Biology* 17:273-283.
- Farlinger, S., and A. Campbell. 1992. Fisheries management and biology of northern abalone, *Haliotis kamtschatkana*, in the northeast Pacific. Pages 395–406 in Shepherd, S. A., Tegner, M. J., Guzmán del Prío, S.A., editor. *Abalone of the World - Biology, Fisheries and Culture*. Fishing News Books, Oxford.
- Fedorenko, A. Y., and P. E Sprout. 1982. Abalone biology, fishery regulations, commercial catch (1952–1980), and current state of resource in British Columbia. Canadian Manuscript Report of Fisheries and Aquatic Sciences 1658. 74 p.

- Feely, R.A., C.L. Sabine, K. Lee, W. Berelson, J. Kleypas, V.J. Fabry, and F.J. Millero. 2004. Impact of anthropogenic CO₂ on the CaCO₃ system in the oceans. *Science* 305(5682):362-366.
- Feely, R.A., C.L. Sabine, J.M. Hernandez-Ayon, D. Ianson, and B. Hales. 2008. Evidence for upwelling of corrosive “acidified” water onto the continental shelf. *Science* 320(5882):1490-1492.
- Feely, R.A., S.C. Doney, S.R. Cooley. 2009. Ocean Acidification. *Oceanography*, 22(4): 36-47.
- FEMAT (Forest Ecosystem Management Assessment Team). 1993. Forest ecosystem management: An ecological, economic, and social assessment. USDA Forest Service, BLM, USFWS, NOAA, EPA, and National Park Service, Portland, Oregon.
- Futuyma, D.J. 1986. *Evolutionary biology*, 2nd edition. Sinauer Associates Inc., Sunderland, Massachusetts.
- Garland, C.D., S.L. Cooke, J.F. Grant, and T.A. McMeekin. 1985. Ingestion of the bacteria on and the cuticle of crustose (non-articulated) coralline algae by post-larval and juvenile abalone (*Haliotis ruber* Leach) from Tasmanian waters. *Journal of Experimental Marine Biology and Ecology* 91:137-149. Cited in Sloan and Breen 1988.
- Gascoigne, J. and R. N. Lipcius (2004). "Allee effects in marine systems." *Marine Ecology Progress Series* 269: 49-59.
- Geiger, D. L. 1999. A total evidence cladistic analysis of the Family Haliotidae (Gastropoda: Vetigastropoda). PhD Dissertation. University of Southern California, Los Angeles.
- Geiger, D. L. 2000. Distribution and biogeography of the Haliotidae (Gastropoda: Vetigastropoda) world-wide. *Bollettino Malacologico* 35:57-120.
- Geiger, D. L. 2004. AbMap: The abalone mapping project. Online publication at: <http://www.vetigastropoda.com/ABMAP/text/index.htm>.
- Geiger, D.L. and B. Owen. 2012. *Abalone: World-wide Haliotidae*. Conchbooks, Hakenheim. Viii + 361 pp.
- Gesselbracht, L. 1991. Puget Sound recreational divers survey. Underwater Society of the Pacific Northwest, Seahurst, Washington.
- Griffiths, A.M. and L.A. Gosselin. 2008. Ontogenetic shift in susceptibility to predators in juvenile northern abalone, *Haliotis kamtschatkana*. *Journal of Experimental Marine Biology and Ecology* 360: 85–93.
- Gruenthal, K. M. 2007. Conservation genetics of California abalone species. Doctoral dissertation. University of California, San Diego, La Jolla, CA.
- Gruenthal, K.M. and R.S. Burton. 2005. Genetic diversity and species identification in the endangered white abalone (*Haliotis sorenseni*). *Conservation Genetics* 6: 929-939.
- Gruenthal, K.M., L.K. Acheson, and R.S. Burton. 2007. Genetic structure of natural populations of California red abalone (*Haliotis rufescens*) using multiple genetic markers. *Marine Biology* 152(6): 1237-1248.

- Hamm, D. E., and R. S. Burton. 2000. Population genetics of black abalone, *Haliotis cracherodii*, along the central California coast. *Journal of Experimental Marine Biology and Ecology* 254:235-247.
- Hauri, C., N. Gruber, G.K. Plattner, S. Alin, R.A. Feely, B. Hales, and P.A. Wheeler. 2009. Ocean acidification in the California current system. *Oceanography* 22(4):60-71.
- Hines, A. H., and J. S. Pearse. 1982. Abalones, shells, and sea otters: dynamics of prey populations in central California. *Ecology* 63:1547-1560.
- Hurn et al. 2005 (Note: This citation is an error. Hurn et al. 2005 should be Chambers et al. 2005).
- Ingle, M. 2014. Letter from Moira Ingle (ADF&G Division of Wildlife Conservation) to Sadie Wright (NMFS Alaska Region), regarding ADF&G abalone conservation measures. Dated October 6, 2014. 2pp.
- Intergovernmental Panel on Climate Change (IPCC). 2007. *Climate Change 2007: Synthesis Report. Contribution of Working Groups I, II, and III to the Fourth Assessment Report of the IPCC*. 52 pp. Available online at: http://www.ipcc.ch/publications_and_data/publications_ipcc_fourth_assessment_report_synthesis_report.htm.
- Johnson, M. D., V. W. Moriarty, and R. C. Carpenter. 2014. Acclimatization of the crustose coralline alga *Porolithon onkodes* to variable pCO₂. *PLoS ONE* 9(2): e87678. doi:10.1371/journal.pone.0087678
- Jones, R. 2000. Haida abalone issues. Pages 5–6 *in*: A. Campbell, editor, *Workshop on Rebuilding Abalone Stocks in British Columbia*. Canadian Special Publication of Fisheries and Aquatic Sciences, 130.
- Leighton, D. L. 1959. Diet and its relation to growth in the black abalone, *Haliotis cracherodii* Leach. Master's thesis. University of California, Los Angeles.
- Lessard, J., M. Atkins, and A. Campbell. 2007. Resurvey of northern abalone, *Haliotis kamtschatkana*, populations along the central coast of British Columbia, April 2001. Canadian Manuscript Report of Fisheries and Aquatic Sciences 2791. 35p.
- Lessard, J., and T. P. Egli. 2011. Survey of northern abalone, *Haliotis kamtschatkana*, population in Queen Charlotte Strait, British Columbia, May 2009. Canadian Manuscript Report of Fisheries and Aquatic Sciences 2959. iv + 17 p.
- Levitan, D. R. 1995. The ecology of fertilization in free-spawning invertebrates. Pages 123-156 in L. McEdward, editor. *Ecology of marine invertebrate larvae*. CRC Press, Boca Raton, FL.
- Levitan, D. R., and M. A. Sewell. 1998. Fertilization success in free-spawning marine invertebrates: review of the evidence and fisheries implications. Pages 159-164 in G. S. Jamieson and A. Campbell, editors. *Proceedings of the North Pacific Symposium on Invertebrate Stock Assessment and Management*. Canadian Special Publications in Fisheries and Aquatic Sciences 125.

- Lowry, L. F., and J. S. Pearse. 1973. Abalones and sea urchins in an area inhabited by sea otters. *Marine Biology* 23:213-219.
- McCoy, S. J. 2013. Morphology of the crustose coralline alga *Pseudolithophyllum muricatum* (Corallinales, Rhodophyta) responds to 30 years of ocean acidification in the northeast Pacific. *Journal of Phycology* 49: 830–837.
- McCoy, S. J., and F. Ragazzola. 2014. Skeletal trade-offs in coralline algae in response to ocean acidification. *Nature Climate Change* 4 (8): 719-723. doi:10.1038/nclimate2273.
- McDougall, P.T., Ploss, J. & Tuthill, J. 2006. *Haliotis kamtschatkana*. In: IUCN 2013. IUCN Red List of Threatened Species. Version 2013.2. <www.iucnredlist.org>. Downloaded on 02 May 2014.
- McElderry, H. I., and L. J. Richards. 1984. Recreational SCUBA diving in the Strait of Georgia: An analysis of the distribution of diving effort and the importance of collecting marine animals. Canadian Manuscript Report of Fisheries and Aquatic Sciences 1794. 61 p.
- McElhany, P., M. H. Ruckelshaus, M. J. Ford, T. C. Wainwright, and E. P. Bjorkstedt. 2000. Viable salmonid populations and the recovery of evolutionarily significant units. U.S. Department of Commerce, NOAA Tech. Memo. NMFS-NWFSC-42. Available online at: http://www.westcoast.fisheries.noaa.gov/publications/protected_species/salmon_steelhead/vsp_2000.pdf.
- McLean, J.H. 1966. West American Prosobranch Gastropoda: Superfamilies Patellacea, Pleurotomariacea, and Fissurellacea. Ph.D. dissertation, Stanford University, California. 272 pp.
- McShane, P. E. 1992. Early life history of abalone: A review. Pages 120-138 in S. A. Shepherd, M. J. Tegner, and S. A. Guzmán del Prío, editors. Abalone of the world. Biology, fisheries, culture. Proceedings of the 1st International Symposium on Abalone. Blackwell Scientific Publications Ltd., Oxford, U. K.
- McShane, P. E., K. P. Black, and M. G. Smith. 1988. Recruitment processes in *Haliotis rubra* (Mollusca: Gastropoda) and regional hydrodynamics in southeastern Australia imply localized dispersal of larvae. *Journal of Experimental Marine Biology and Ecology* 124:175-203.
- Morse, D.E. 1984. Biochemical and genetic-engineering for improved production of abalones and other valuable mollusks. *Aquaculture* 39(1-4):263-282.
- Morse, A. N. C., and D. E. Morse. 1984. Recruitment and metamorphosis of *Haliotis* larvae are induced by molecules uniquely available at the surfaces of crustose red algae. *Journal of Experimental Marine Biology and Ecology* 75:191-215.
- Morse, D. E. 1990. Recent progress in larval settlement and metamorphosis: Closing the gaps between molecular biology and ecology. *Bulletin of Marine Science* 46:465-483.
- Morse, D. E. 1992. Molecular mechanisms controlling metamorphosis and recruitment in abalone larvae. Pages 107-119 in S. A. Shepherd, M. J. Tegner, and S. A. Guzmán del Prío, editors. Abalone of the

world: Biology, fisheries, and culture. Proceedings of the 1st International Symposium on Abalone. Blackwell Scientific Publications Ltd., Oxford, U.K.

- Mote, P., A. K. Snover, S. Capalbo, S.D. Eigenbrode, P. Glick, J. Littell, R. Raymondi, and S. Reeder, 2014: Ch. 21: Northwest. Climate Change Impacts in the United States: The Third National Climate Assessment, J. M. Melillo, Terese (T.C.) Richmond, and G. W. Yohe, Eds., U.S. Global Change Research Program, 487-513. doi:10.7930/J04Q7RWX.
- Mowat, T. 1890. Appendix No. 9. British Columbia. Annual report on the fisheries of British Columbia for the year 1889, by Inspector Thomas Mowat. Pages 247–262 in Annual Report of The Department of Fisheries, Dominion of Canada, for the Calendar Year 1889. Brown Chamberlin Printer, Ottawa. Available at <http://www.dfo-mpo.gc.ca/Library/199178-1889.pdf> (accessed April 2014).
- National Marine Fisheries Service (NMFS). 2014. Status review report for pinto abalone (*Haliotis kamtschatkana*). Prepared by the Status Review Team for the NMFS West Coast Region, Long Beach, CA. 264 pp.
- Neuman, M.J., B. Tissot, and G.R. VanBlaricom. 2010. Overall status and threats assessment of black abalone (*Haliotis cracherodii* Leach, 1814) populations in California, USA. Journal of Shellfish Research 29: 577-586.
- Norman-Boudreau, K., D. Burns, C.A. Cooke, and A. Austin. 1986. A simple technique for detection of feeding in newly metamorphosed abalone. Aquaculture 51: 313-317. Cited in Sloan and Breen 1988.
- Olsen, S. 1984. Shellfish Enhancement Report. NOAA, NMFS, Final Report for Project 1-144-R. Washington State Department of Fisheries. 85 pp. (Mimeo) Cited in Sloan and Breen 1988
- Ostfeld, R. S. 1982. Foraging strategies and prey switching in the California sea otter. Oecologia 53:170-178.
- Paul, A.J. and J.M. Paul. 1998. Respiration rate and thermal tolerances of pinto abalone *Haliotis kamtschatkana*. Journal of Shellfish Research 17:743-745.
- Paul, A.J., J.M. Paul, D.W. Wood, and R.A. Neve. 1977. Observations on food preferences, daily ration requirements and growth of *Haliotis kamtschatkana* Jonas in captivity. Veliger 19:303-309.
- Pinkas, L. 1974. California Marine Fish Landings for 1972. Calif. Dept. Fish Game, Fish. Bull. 161:1–53. Cited in Rogers-Bennett et al. 2002. Available online at: <https://escholarship.org/uc/item/93g734v0>.
- Prince, J. D., T. L. Sellers, W. B. Ford, and S. R. Talbot. 1987. Experimental evidence for limited dispersal of haliotid larvae (genus: *Haliotis*: Gastropoda: Gastropoda). Journal of Experimental Marine Biology and Ecology 106:243-263.
- Prince, J. D., T. L. Sellers, W. B. Ford, and S. R. Talbot. 1988. Confirmation of a relationship between the localized abundance of breeding stock and recruitment for *Haliotis rubra* Leach (Mollusca: Gastropoda). Journal of Experimental Marine Biology and Ecology 122:91-104.

- Quayle, D. B. 1962. Abalones in British Columbia. Fisheries Research Board of Canada, Progress Reports of the Pacific Coast Stations. 114: 9–12.
- Quayle, D. B. 1971. Growth, morphometry and breeding in the British Columbia abalone (*Haliotis kamtschatkana* Jonas). Fisheries Research Board of Canada, Technical Report No. 279. 84 p.
- Read, K.D., M.A. Lemay, S. Acheson, and E.G. Boulding. 2012. Using molecular pedigree reconstruction to evaluate the long-term survival of outplanted hatchery-reared larval and juvenile northern abalone (*Haliotis kamtschatkana*). Conservation Genetics 13:801-810.
- Reimers, P. and D. Snow. 1975. Memo regarding rare and endangered species of marine invertebrates in Oregon. Prepared by ODFW and dated March 28, 1975. 2 pp.
- Rogers-Bennett, L., P. L. Haaker, T. O. Huff, and P. K. Dayton. 2002. Estimating baseline abundances of abalone in California for restoration. CalCOFI Reports 43:97-111.
- Rogers-Bennett, L. 2007. Is climate change contributing to range reductions and localized extinctions in northern (*Haliotis kamtschatkana*) and flat (*Haliotis walallensis*) abalones? Bulletin of Marine Science 81: 283–296.
- Rogers-Bennett, L., B. L. Allen, and D. P. Rothaus. 2011. Status and habitat associations of the threatened northern abalone: importance of kelp and coralline algae. Aquatic Conservation: Marine and Freshwater Ecosystems 21: 573–581.
- Rothaus, D. P., B. Vadopalas, and C. S. Friedman. 2008. Precipitous declines in pinto abalone (*Haliotis kamtschatkana kamtschatkana*) abundance in the San Juan Archipelago, Washington, USA, despite statewide fishery closure. Canadian Journal of Fisheries and Aquatic Sciences 65: 2703–2711.
- Rumble and Hebert. 2011. Report to the Board of Fisheries, Miscellaneous Dive Fisheries. Fishery Management Report No. 11-59. ADFG Divs. of Sport Fish and Commercial Fisheries.
- Seamone, C.B. and E.G. Boulding. 2011. Aggregation of the Northern abalone *Haliotis kamtschatkana* with respect to sex and spawning condition. Journal of Shellfish Research 30(3): 881-888.
- Shepherd, S. A., and P. A. Breen. 1992. Mortality of abalone: Its estimation, variability, and causes. Pages 276-304 in S. A. Shepherd, M. J. Tegner, and S. A. Guzmán del Prío, editors. Abalone of the world: Biology, fisheries, and culture. Blackwell Scientific Publications Ltd., Oxford, U.K.
- Shepherd, S.A., D. Woodby, J.M. Rumble, and M. Avalos-Borja. 2000. Microstructure, chronology and growth of the pinto abalone, *Haliotis kamtschatkana*, in Alaska. Journal of Shellfish Research 19:219-228.
- Shepherd, S. A., K. R. Rodda & K. M. Vargas. 2001. A chronicle of collapse in two abalone stocks with proposals for precautionary management. J. Shellfish Res. 20:843–856.

- Shepherd, S.A. and K.R. Rodda. 2001. Sustainability demands vigilance: Evidence for serial decline of the greenlip abalone fishery and a review of management. *Journal of Shellfish Research* 20(2):829-841.
- Sloan, N. A., and P. A. Breen. 1988. Northern abalone, *Haliotis kamtschatkana*, in British Columbia: fisheries and synopsis of life history information. Canadian Special Publication of Fisheries and Aquatic Sciences 103. 46 p.
- Stevick, B.C. 2010. Experimental rearing methods of pinto abalone (*Haliotis kamtschatkana*) and their effect on outplant survival in Washington State. Masters Thesis, University of Washington School of Aquatic and Fishery Sciences, Seattle, Washington. 61 pp.
- Strathmann, R. R. 1985. Feeding and nonfeeding larval development and life history evolution in marine invertebrates. *Annual Review of Ecology and Systematics* 16:339-361.
- Straus, K. M. 2010. Shellfish aquaculture and conservation of two Puget Sound molluscs: The pinto abalone (*Haliotis kamtschatkana kamtschatkana*) and the Pacific geoduck (*Panopea generosa*). PhD Dissertation, University of Washington School of Aquatic and Fishery Sciences, Seattle, Washington. 240 pp.
- Supernault, K.J., A. Demsky, A. Campbell, T.J. Ming, K.M. Miller, and R.E. Withler. 2010. Forensic genetic identification of abalone (*Haliotis* spp.) of the northeastern Pacific Ocean. *Conservation Genetics* 11:855-865.
- Tegner, M. J., and R. A. Butler. 1985. Drift-tube study of the dispersal potential of green abalone (*Haliotis fulgens*) in the Southern California Bight: Implications for recovery of depleted populations. *Marine Ecology Progress Series* 26:73-84.
- Thompson, W. F. 1914. Report on the abalone of British Columbia. Pages R126–R130 in Report of the Commissioner of Fisheries for the year ending December 31st, 1913 with appendices. William F. Cullen, Province of British Columbia, Victoria, B. C.
- Tomascik, T. and H. Holmes. 2003. Distribution and abundance of *Haliotis kamtschatkana* in relation to habitat, competitors and predators in the Broken Group Islands, Pacific Rim National Park Reserve of Canada. *Journal of Shellfish Research* 22: 831–838.
- Vadopalas, B. and J. Watson. 2013. Draft recovery plan for pinto abalone (*Haliotis kamtschatkana*) in Washington state (using a collaborative management approach). Puget Sound Restoration Fund. 51 pp.
- VanBlaricom, G., M. Neuman, J. Butler, A. DeVogelaere, R. Gustafson, C. Mobley, D. Richards, S. Rumsey, and B. Taylor. 2009. Status review of the black abalone (*Haliotis cracherodii*). Report to the National Marine Fisheries Service, Southwest Regional Office, Long Beach, CA. January, 2009. 135 p. Available online at: <http://www.nmfs.noaa.gov/pr/species/invertebrates/blackabalone.htm>.
- Waples, R.S., P.B. Adams, J. Bohnsack, and B.L. Taylor. 2007. A biological framework for evaluating whether a species is threatened or endangered in a significant portion of its range. *Conservation Biology* 21(4):964-974.

- Wendell, F. E. 1994. Relationship between sea otter range expansion and red abalone abundance and size distribution in central California. *California Fish and Game* 80:45-56.
- WDFW (Washington Department of Fish and Wildlife). 2014. Response Summary for Pinto Abalone Populations in Washington, January 15, 2014. WDFW staff contributors: Henry Carson, Ocean Eveningsong, Bob Sizemore, Bethany Stevick, Michael Ulrich. 33 p.
- Wild, P., and J. Ames. 1974. A report on the sea otter, *Enhydra lutris* [L.], in California. Marine Resources Technical Report California Department of Fish and Game, Sacramento.
- Withler, R.E., A. Campbell, S. Li, K.M. Miller, D. Brouwer, and B.G. Lucas. 2001. High levels of genetic variation in Northern Abalone *Haliotis kamtschatkana* of British Columbia. *Can. Sci. Adv. Secr. Res. Doc.* 2001/097. 27 pp.
- Woodby, D., R. Larson, and J. Rumble. 2000. Decline of the Alaska abalone (*Haliotis* spp.) fishery and prospects for rebuilding the stock. *Canadian Special Publication of Fisheries and Aquatic Sciences* 130:25-31.
- Zhang, Z., A. Campbell, and J. Lessard. 2007. Modeling northern abalone, *Haliotis kamtschatkana*, population stock and recruitment in British Columbia. *Journal of Shellfish Research* 26(4):1099-1107.