

Curt Everett Whitmire

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Curt.Whitmire@noaa.gov
Nationality: US Citizen

Education: Master of Science Degree (2003), Marine Resource Management
Double Minor in Earth Information Science & Technology and Fisheries & Wildlife
Oregon State University, Corvallis, OR

Bachelor of Science Degree (1997), Biology
Arizona State University, Tempe, AZ

Employment: Jan 2003 – Present, Information Technology Specialist
NOAA Fisheries, Northwest Fisheries Science Center, Newport, OR

- Process and evaluate data received from research surveys, fish tickets, logbooks, fishery observers, and other sources in order to provide analytical support for assessments of abundance and trends for west coast groundfish.
- Help design and conduct surveys of west coast groundfish to support assessments of abundance and trends.
- Maintain database on regional occurrences of deep-sea corals and other biogenic structure-forming invertebrates and provide analysis to inform conservation of these vulnerable resources.

Publications: Wakefield, W.W., J.E.R. Clemons, B.N. Tissot, **C.E. Whitmire**, and R.W. Embley. In Preparation. Habitat associations in demersal fishes on a deep-water rocky bank off Oregon.

Wakefield, W.W., B.N. Tissot, M.A. Hixon, D.L. Stein, W.H. Barss, N.P-F. Puniwai, K.J. York, and **C.E. Whitmire**. In Preparation. Long-term habitat-based assessment of changes in groundfish populations on Heceta Bank, Oregon derived from submersible surveys.

Whitmire, C.E. and Clarke M.E. 2007. State of Deep Coral Ecosystems of the U.S. Pacific Coast: California to Washington. pp. 109-154. In: S.E. Lumsden, Hourigan T.F., Bruckner A.W. and Dorr G. (eds.) The State of Deep Coral Ecosystems of the United States. NOAA Tech. Memo., CRCP-3, Silver Spring, MD 365 pp.

Whitmire, C.E., R.W. Embley, W.W. Wakefield, S.G. Merle, and B.N. Tissot. 2007. Characterizing benthic habitats at Heceta Bank, Oregon. In B. Todd and H.G. Greene, eds., Mapping the Seafloor for Habitat Characterization. Geological Association of Canada, Special Paper 47, 111-126.

Helser, T.E., I.J. Stewart, **C.E. Whitmire**, and B.H. Horness. 2007. Model-based estimates of abundance for 11 species from the NMFS slope surveys. U.S. Dept. Commer., NOAA Tech. Memo., NMFS-NWFSC-82, Seattle, WA 145 pp.

Wakefield, W.W., **C.E. Whitmire**, J.E.R. Clemons, B.N. Tissot. 2005. Fish habitat studies: Combining high-resolution geological and biological data. In Barnes, P.W., J.P. Thomas. (eds.) Benthic habitats and the effects of fishing. American Fisheries Society Symposium 41: 119-138.

Presentations: Bellman, M.A. and **C.E. Whitmire**. "Science to support complex decisions: US west coast groundfish fisheries." *NWFSC Science Symposium*, 25 February 2009, Northwest Fisheries Science Center, Seattle, WA (Poster presentation).

Bellman, M.A. and **C.E. Whitmire**. "Science to support complex decisions: US west coast groundfish fisheries." *ESRI International User's Conference*, 4-8 Aug 2008, San Diego, CA (Poster presentation).

Clarke, M.E., D. Chu, O. Hamel, I. Stewart, N. Tolimieri, **C.E. Whitmire**. "Seabed AUV surveys: from research to operation." *National Stock Assessment Workshop - 10*, 6-8 May 2008, Port Townsend, WA (Oral presentation by I. Stewart).

Clemons, J.E.R., W.W. Wakefield, **C.E. Whitmire**, R.W. Embley, B.N. Tissot, S.G. Merle, C. Goldfinger and C.G. Romsos. "Habitat characterization of Heceta Bank, Oregon, USA for use in estimates of groundfish assemblages on the bank." *Geohab*, 29 April – 2 May 2008, Sitka, AK (Oral presentation by J.E.R. Clemons).

Whitmire C.E. and M.E. Clarke. "Census of deep-sea/cold-water corals off the western coast of the United States." *PICES Annual Meeting*, Oct 26 – Nov 5, 2007, Victoria, BC (Poster presentation).

Whitmire, C.E., M.A. Bellman, J.D. Hastie. "Comparison of methods for estimating trawled area." *Western Groundfish Conference*, 30 Jan – 3 Feb 2006, Newport, OR (Poster presentation).

Whitmire, C.E., N. Tolimieri and M.E. Clarke. "Large-scale associations between habitat, fish and corals." *Third International Symposium on Deep-Sea Corals*, 28 November – 2 December 2005, University of Miami – Rosenstiel School of Marine and Atmospheric Science, Miami, FL (Oral presentation).

Clemons, J.E.R., W.W. Wakefield, **C.E. Whitmire**, B.N. Tissot, S.G. Merle. "Using video and sonar technologies with GIS tools to investigate fish habitat communities off the Oregon coast." *Annual Meeting of the American Fisheries Society and Lowell Wakefield Symposium on North Pacific Rockfishes*, 11-15 September 2005, Anchorage, AK (Oral presentation by W.W. Wakefield).

Wakefield, W.W. J.E.R. Clemons, B.N. Tissot, **C.E. Whitmire**, T.D. Hart, and R.W. Embley. "Habitat associations and diel activity in rockfishes on a deep-water bank off Oregon." *Annual Meeting of the American Fisheries Society and Lowell Wakefield Symposium on North Pacific Rockfishes*, 11-15 September 2005, Anchorage, AK (Oral presentation by W.W. Wakefield).

Whitmire, C.E., R.W. Embley, W.W. Wakefield, S.G. Merle, B.N. Tissot, N. Puniwai. "A quantitative approach for using multibeam sonar data to map benthic habitats." *GeoHab – Sixth International Symposium*, 4-6 May 2005, Sidney, BC (Oral presentation).

Whitmire, C.E., M.E. Clarke, W.W. Wakefield. "Mapping the distribution of cold-water corals and sponges off the U.S. West Coast." *GeoHab – Sixth International Symposium*, 4-6 May 2005, Sidney, BC (Poster presentation).

Whitmire, C.E. and M.E. Clarke. "Mapping the distribution of structure-forming invertebrates off the U.S. West Coast." *Managing Our Nations Fisheries*, 24-26 March 2005, Washington, DC (Poster presentation).

Whitmire, C.E., R.W. Embley, W.W. Wakefield, S.G. Merle, B.N. Tissot, N. Puniwai. "Quantitative Benthic Habitat Characterization at Heceta Bank, Oregon." *148th Meeting of the Acoustical Society of America*, 15-19 November 2004, San Diego, CA (Oral presentation).

Whitmire, C.E., M.E. Clarke, W.W. Wakefield, M.A. Hixon. "Mapping the distribution of structure-forming invertebrates off the U.S. West Coast." *Annual Meeting of the North Pacific Marine Science Organization (PICES)*, 18-22 October 2004, Honolulu, HI (Poster presentation).

Wakefield, W.W., J.E.R. Clemons, and **C.E. Whitmire**. "The application of in situ video in groundfish research at the NWFSC: field and laboratory techniques." *National Marine Fisheries Service Workshop on the Analysis of Underwater Video Observations*, 4-6 August, 2004, Alaska Fisheries Science Center, Seattle, Washington (Oral presentation by W.W. Wakefield).

Clemons, J.E.R., W.W. Wakefield, R.W. Embley, B.N. Tissot, M.M. Yoklavich, S.G. Merle, **C.E. Whitmire**, and W.H. Barss. "Microhabitat studies of groundfish at Heceta Bank, a rocky reef offshore Oregon." *GeoHab – Marine Geological and Biological Habitat Mapping*, 5-7 May 2004, Galway, Ireland (Oral presentation by J.E.R. Clemons).

Whitmire, C.E., R.W. Embley, W.W. Wakefield, S. Merle, B. N. Tissot., N. Puniwai. "Using remote sensing, in situ observations, and geographic information systems to map benthic habitats at Heceta Bank, Oregon." *Western Groundfish Conference*, 9-13 February 2004, Victoria, BC (Oral presentation).

Whitmire, C.E., W.W. Wakefield, R. Methot, B.N. Tissot, A. Bailey, L. Yengoyan, and C. Hansen. "Relating high-resolution submersible observational data to regional trawl survey data – a work in progress." *Western Groundfish Conference*, 9-13 February 2004, Victoria, BC (Poster presentation).

Clemons, J.E.R., W.W. Wakefield, R.W. Embley, B.N. Tissot, M.M. Yoklavich, T.D. Hart, S.G. Merle, **C.E. Whitmire**, and W.H. Barss. "Fish habitat studies at Heceta Bank on the Oregon continental shelf." *Western Groundfish Conference*, 9-13 February 2004, Victoria, BC (Oral presentation by J.E.R. Clemons).

Tissot, B.N., W.W. Wakefield, M.A. Hixon, D.L. Stein, W.H. Barss, N. Puniwai, K. York, and **C.E. Whitmire**. "Long-term habitat-based assessment of changes in groundfish populations on Heceta Bank, Oregon derived from submersible surveys." *Western Groundfish Conference*, 9-13 February 2004, Victoria, BC (Oral presentation by B.N. Tissot).

Whitmire, C.E., R.W. Embley, J.E.R. Clemons, S. Merle, N. Puniwai, B.N. Tissot, W.W. Wakefield, and M.M. Yoklavich. "Integration of high-resolution multibeam sonar imagery of the seafloor with direct observational data from occupied submersibles and ROVs to classify bottom types for habitat-based groundfish assessments at Heceta Bank, Oregon." *GeoHab*, 1-3 May 2002, Moss Landing Marine Laboratories, Moss Landing, CA (Poster presentation).

Wakefield, W.W., R.W. Embley, B.N. Tissot, M.M. Yoklavich, W.H. Barss, J. Bloeser, K.L. Bosley, J.E.R. Clemons, G.L. Hendler, M.A. Hixon, S. Merle, N.M. Nasby, J. Popp Noskov, N. Puniwai, D. Reese, Á. Valdés and **C.E. Whitmire**. "Fisheries habitat studies at Heceta Bank on the Oregon outer continental shelf: Combining high-resolution sonar and seafloor investigations with GIS techniques." *GeoHab*, 1-3 May 2002, Moss Landing Marine Laboratories, Moss Landing, CA (Poster presentation).

Whitmire, C.E., R.W. Embley, J.E.R. Clemons, S. Merle, N. Puniwai, B.N. Tissot, W.W. Wakefield, and M.M. Yoklavich. "Integration of high-resolution multibeam sonar imagery of the seafloor with direct observational data from occupied submersibles and ROVs to classify bottom types for habitat-based groundfish assessments at Heceta Bank, Oregon." *Western Groundfish Conference*, 12-14 February 2002, Ocean Shores, WA (Poster presentation).

Wakefield, W.W., J.E.R. Clemons, W.H. Barss, J. Bloeser, K.L. Bosley, R.W. Embley, G.L. Hendler, M.A. Hixon, S. Merle, N.M. Nasby, J. Popp Noskov, N. Puniwai, D. Reese, B.N. Tissot, Á. Valdés, **C.E. Whitmire** and M.M. Yoklavich. "Fisheries habitat studies at Heceta Bank on the Oregon outer continental shelf: combining high-resolution sonar and seafloor investigations with GIS techniques." *Western Groundfish Conference*, 12-14 February 2002, Ocean Shores, WA (Poster presentation).

Clemons, J.E.R., S. Merle, E. Baker, J. Bloeser, K.L. Bosley, E. Bowlby, M.S. Brancato, R.D. Brodeur, D. Douglas, R.W. Embley, R.L. Emmett, C. Goldfinger, G.L. Hendler, B. Myers, J. Popp Noskov, W.G. Percy, N. Puniwai, J. Resing, B.N. Tissot, W. Wakefield, **C.E. Whitmire**, K.L. Yamanaka and M.M. Yoklavich. "Continuing Lewis and Clark's Legacy: Exploring the habitats of Astoria Canyon, Oregon through NOAA's new Program in Ocean Exploration." *Western Groundfish Conference*, 12-14 February 2002, Ocean Shores, WA (Poster presentation).

Whitmire, C.E., R.W. Embley, J.E.R. Clemons, S. Merle, N. Puniwai, B.N. Tissot, W.W. Wakefield, and M.M. Yoklavich. "Integration of high-resolution multibeam sonar imagery of the seafloor with direct observational data from occupied submersibles and ROVs to classify bottom types for habitat-based groundfish assessments at Heceta Bank, Oregon." *2002 Ocean Sciences Meeting*, 11-15 February 2002, Honolulu, HI (Poster presentation).

Wakefield, W.W., J.E.R. Clemons, W.H. Barss, J. Bloeser, K.L. Bosley, R.W. Embley, G.L. Hendler, M.A. Hixon, S.G. Merle, N.M. Nasby, J. Popp Noskov, N. Puniwai, D. Reese, B.N. Tissot, Á. Valdés, **C.E. Whitmire** and M.M. Yoklavich. "Continuing Lewis and Clark's Legacy: Exploring the Habitats of Astoria Canyon, Oregon through NOAA's new Program in Ocean Exploration." *2002 Ocean Sciences Meeting*, 11-15 February 2002, Honolulu, HI (Poster presentation).

Field

Experience:

Seabed AUV Testing, Santa Barbara, CA, R/V <i>Shearwater</i>	Sep-Oct 2009
- Selected dive sites, planned AUV missions, assisted in assembly, launch and recovery of AUV.	
Seabed AUV Testing, Honolulu, HI, R/V <i>Huki Pono</i>	Aug-Sep 2009
- Assisted in assembly, launch and recovery of AUV.	
Southern California Hook-and-Line Survey, Southern California Bight, F/V <i>Mirage</i>	Sep 2008
- Assisted in survey design and deck operations.	
Southern California Hook-and-Line Survey, Southern California Bight, F/V <i>Mirage</i>	Oct 2007
- Assisted in survey design and deck operations.	
NWFSC Acoustics Survey for Pacific hake, off central/northern CA, FRV <i>Miller Freeman</i>	Jun 2007
- Assisted in fish sample processing.	
Southern California Hook-and-Line Survey, Southern California Bight, F/V <i>Aggressor</i>	Oct 2006

- Assisted in survey design and deck operations.
 Olympic Coast NMS Survey of Coral/Sponge Resources, Washington, R/V *McArthur II* May-Jun 2006
 - Assisted in annotation of ROV video and specimen collection.
 Southern California Hook-and-Line Survey, Southern California Bight, F/V *Aggressor* Sep-Oct 2005
 - Assisted in survey design and deck operations.
 NWFSC Advanced Technology cruise, off west coast of U.S, R/V *Thomas G. Thompson* Oct 2005
 - Assisted in deck operations for AUV and camera sled.
 NWFSC Advanced Technology cruise, off southern CA, R/V *Thomas G. Thompson* Oct 2004
 - Assisted in annotation of ROV video and specimen collection.
 NWFSC Acoustics Survey for Pacific hake, off central/northern CA, CCGS *W.E. Ricker* Jul 2003
 - Assisted in fish sample processing.
 Heceta Bank Submersible Cruise, Oregon, R/V *Velero* Sep 2002
 - Assisted in dive operations and annotation of submersible video.
 Ocean Exploration - Continuing the Legacy of Lewis & Clark, R/V *Thomas G. Thompson* Aug 2002
 - Assisted in multibeam sonar data processing.
 Ocean Exploration - Lewis & Clark Legacy Expedition, Oregon, R/V *Thomas G. Thompson* Jun-Jul 2001
 - Assisted in annotation of ROV video.
 Heceta Bank ROV Cruise, Oregon, R/V *Ronald H. Brown* Jun 2000
 - Assisted in annotation of ROV video.

Honors: 2008 Department of Commerce Bronze Medal
 "for advancing conservation through spearheading the first peer-reviewed assessment of the state of deep coral ecosystems of the United States."

Organizations: American Fisheries Society, Member
 Marine Technology Society, Member
 NOAA Deep-sea Coral Working Group, Member
 Hatfield Marine Science Center Sustainability Committee, Member

Qualifications: Advanced knowledge of Geographic Information Systems (GIS) software and science, specializing in marine GIS. Conduct spatial analyses and manage data from many disciplines (marine fisheries, research surveys, oceanography, and geology). Experience with ESRI ArcGIS 9.x, ArcInfo, Spatial Analyst, Tracking Analyst, 3D Analyst, Model Builder, advanced geoprocessing, relational databases, and Python scripting. Excellent analytical skills. Effective project oversight. Works comfortably independently or in team environment. Publish and present primary research with strong written and oral communication skills.

Proficiencies: Windows, Mac and Linux operating systems Microsoft Office
 Adobe Acrobat, Illustrator, Photoshop Myriax Eonfusion
 ESRI ArcGIS Python programming language
 Oracle SQL, Locator Sea Safety & Survival
 Adult CPR / AED / First Aid Recreational SCUBA diver

References:

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