

Seafloor Character, Offshore of Carpinteria Map Area, California

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2013

DESCRIPTION OF MAP UNITS

DEPTH ZONE 2—INTERITAL TO 30 METERS WATER DEPTH

SLOPE CLASS 1—0 TO 5 DEGREES

	Fine- to medium-grained smooth sediment —Low backscatter, low rugosity; typically mud to medium-grained sand, often rippled and (or) burrowed
	Mixed smooth-grained sand —Moderate to very high backscatter, low rugosity; typically coarse-grained sand, gravel, cobbles, and bedrock
	Rock and boulder, rugose —High backscatter, high rugosity; typically boulders and rugose bedrock
	Rugged anthropogenic material —High backscatter, high rugosity; related to development by humans
	Smooth, hard anthropogenic material —High backscatter, low rugosity; related to development by humans

DEPTH ZONE 3—30 TO 100 METERS WATER DEPTH

SLOPE CLASS 1—0 TO 5 DEGREES

	Fine- to medium-grained smooth sediment —Low backscatter, low rugosity; typically mud to medium-grained sand, often rippled and (or) burrowed
	Mixed smooth-grained sand —Moderate to very high backscatter, low rugosity; typically coarse-grained sand, gravel, cobbles, and bedrock
	Rock and boulder, rugose —High backscatter, high rugosity; typically boulders and rugose bedrock
	Rugged anthropogenic material —High backscatter, high rugosity; related to development by humans
	Smooth, hard anthropogenic material —High backscatter, low rugosity; related to development by humans

EXPLANATION OF MAP SYMBOLS

	Area of "no data" —Areas near shoreline not mapped owing to insufficient high-resolution satellite mapping data; areas beyond 30-nautical-mile limit of California's State Waters were not mapped as part of California's Mapping Program
	3-nautical-mile limit of California's State Waters

DISCUSSION

This seafloor-character map of the Offshore of Carpinteria map area in southern California was produced using sidescan sonar, multibeam bathymetry, and backscatter (intensity of returns) data.

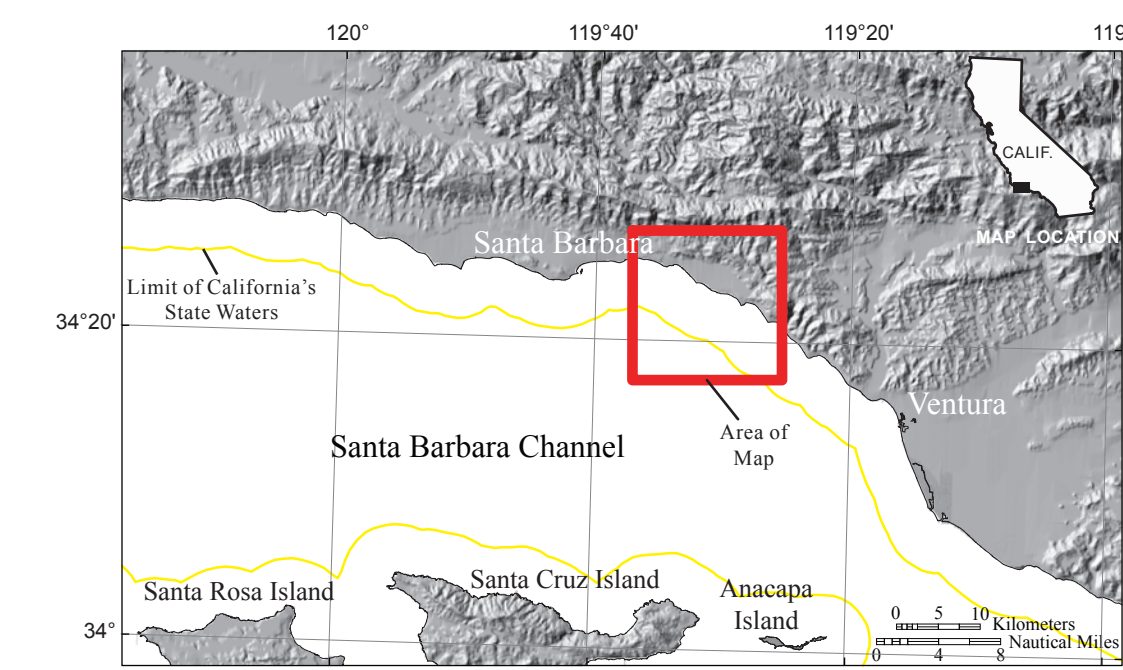


Table 1. Coverage of classified seafloor, in square kilometers (sq km) and percent of total area, broken into California Marine Life Protection Act Depth Zones 2 and 3.

	Total		Depth Zone 2 (water depth 0-30 m)		Depth Zone 3 (water depth 30-100 m)	
	percent	sq km	percent of total	sq km	percent of total	sq km
Fine- to medium-grained smooth sediment	98.0	139.1	33.1	47.0	64.9	92.1
Mixed smooth sediment and rock	1.6	2.3	0.8	1.2	0.8	1.1
Rock and boulder, rugose	0.3	0.4	0.2	0.4	0.1	0.1
Anthropogenic (rugose)	0.1	0.1	<0.1	<0.1	0.1	0.1
Anthropogenic (smooth-bath)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

DISCUSSION

This seafloor-carrier map of the offshore of Carpinteria map area in southern California was produced using video-enhanced, maximum-likelihood classification of the boughness and backscatter (intensity of return signals) from Seasat imagery (a summary of the video data and the classification of seafloor characteristics is shown in sheet 6). Rugosity (a GIS-derived characterization of roughness) and backscatter intensity were used as variables in the classification. The interpreted classification results were then draped over bathymetric topography (see Fig. 1) to produce a depth map. The map area has a total area of 1,000 km² and is divided into 100-m depth contours. The bathymetric data were collected by the U.S. Geological Survey's Marine Geospatial Data Node, Point Act in three depths: Depth Zone 1 (intertidal to 30 m), Depth Zone 2 (30 to 100 m), and Depth Zone 3 (100 to 1,000 m). In addition, the following bathymetric data were collected by the U.S. Geological Survey's Marine Geospatial Data Node, Point Act in three depths: Depth Zone 1 (intertidal, Depth Zone 2 (intertidal), Depth Zone 3 and 4 (greater than 100 m), and Depth Zone 5 (less than 2.4, greater than 5.1 (depth to vertical) are not present in this map area.

Seasat imagery was collected on 10/10/82, 10/11/82, 10/12/82, 10/13/82, 10/14/82, 10/15/82, 10/16/82, 10/17/82, 10/18/82, 10/19/82, 10/20/82, 10/21/82, 10/22/82, 10/23/82, 10/24/82, 10/25/82, 10/26/82, 10/27/82, 10/28/82, 10/29/82, 10/30/82, 10/31/82, 11/01/82, 11/02/82, 11/03/82, 11/04/82, 11/05/82, 11/06/82, 11/07/82, 11/08/82, 11/09/82, 11/10/82, 11/11/82, 11/12/82, 11/13/82, 11/14/82, 11/15/82, 11/16/82, 11/17/82, 11/18/82, 11/19/82, 11/20/82, 11/21/82, 11/22/82, 11/23/82, 11/24/82, 11/25/82, 11/26/82, 11/27/82, 11/28/82, 11/29/82, 11/30/82, 12/01/82, 12/02/82, 12/03/82, 12/04/82, 12/05/82, 12/06/82, 12/07/82, 12/08/82, 12/09/82, 12/10/82, 12/11/82, 12/12/82, 12/13/82, 12/14/82, 12/15/82, 12/16/82, 12/17/82, 12/18/82, 12/19/82, 12/20/82, 12/21/82, 12/22/82, 12/23/82, 12/24/82, 12/25/82, 12/26/82, 12/27/82, 12/28/82, 12/29/82, 12/30/82, 12/31/82, 01/01/83, 01/02/83, 01/03/83, 01/04/83, 01/05/83, 01/06/83, 01/07/83, 01/08/83, 01/09/83, 01/10/83, 01/11/83, 01/12/83, 01/13/83, 01/14/83, 01/15/83, 01/16/83, 01/17/83, 01/18/83, 01/19/83, 01/20/83, 01/21/83, 01/22/83, 01/23/83, 01/24/83, 01/25/83, 01/26/83, 01/27/83, 01/28/83, 01/29/83, 01/30/83, 01/31/83, 02/01/83, 02/02/83, 02/03/83, 02/04/83, 02/05/83, 02/06/83, 02/07/83, 02/08/83, 02/09/83, 02/10/83, 02/11/83, 02/12/83, 02/13/83, 02/14/83, 02/15/83, 02/16/83, 02/17/83, 02/18/83, 02/19/83, 02/20/83, 02/21/83, 02/22/83, 02/23/83, 02/24/83, 02/25/83, 02/26/83, 02/27/83, 02/28/83, 02/29/83, 02/30/83, 03/01/83, 03/02/83, 03/03/83, 03/04/83, 03/05/83, 03/06/83, 03/07/83, 03/08/83, 03/09/83, 03/10/83, 03/11/83, 03/12/83, 03/13/83, 03/14/83, 03/15/83, 03/16/83, 03/17/83, 03/18/83, 03/19/83, 03/20/83, 03/21/83, 03/22/83, 03/23/83, 03/24/83, 03/25/83, 03/26/83, 03/27/83, 03/28/83, 03/29/83, 03/30/83, 03/31/83, 04/01/83, 04/02/83, 04/03/83, 04/04/83, 04/05/83, 04/06/83, 04/07/83, 04/08/83, 04/09/83, 04/10/83, 04/11/83, 04/12/83, 04/13/83, 04/14/83, 04/15/83, 04/16/83, 04/17/83, 04/18/83, 04/19/83, 04/20/83, 04/21/83, 04/22/83, 04/23/83, 04/24/83, 04/25/83, 04/26/83, 04/27/83, 04/28/83, 04/29/83, 04/30/83, 05/01/83, 05/02/83, 05/03/83, 05/04/83, 05/05/83, 05/06/83, 05/07/83, 05/08/83, 05/09/83, 05/10/83, 05/11/83, 05/12/83, 05/13/83, 05/14/83, 05/15/83, 05/16/83, 05/17/83, 05/18/83, 05/19/83, 05/20/83, 05/21/83, 05/22/83, 05/23/83, 05/24/83, 05/25/83, 05/26/83, 05/27/83, 05/28/83, 05/29/83, 05/30/83, 05/31/83, 06/01/83, 06/02/83, 06/03/83, 06/04/83, 06/05/83, 06/06/83, 06/07/83, 06/08/83, 06/09/83, 06/10/83, 06/11/83, 06/12/83, 06/13/83, 06/14/83, 06/15/83, 06/16/83, 06/17/83, 06/18/83, 06/19/83, 06/20/83, 06/21/83, 06/22/83, 06/23/83, 06/24/83, 06/25/83, 06/26/83, 06/27/83, 06/28/83, 06/29/83, 06/30/83, 07/01/83, 07/02/83, 07/03/83, 07/04/83, 07/05/83, 07/06/83, 07/07/83, 07/08/83, 07/09/83, 07/10/83, 07/11/83, 07/12/83, 07/13/83, 07/14/83, 07/15/83, 07/16/83, 07/17/83, 07/18/83, 07/19/83, 07/20/83, 07/21/83, 07/22/83, 07/23/83, 07/24/83, 07/25/83, 07/26/83, 07/27/83, 07/28/83, 07/29/83, 07/30/83, 07/31/83, 08/01/83, 08/02/83, 08/03/83, 08/04/83, 08/05/83, 08/06/83, 08/07/83, 08/08/83, 08/09/83, 08/10/83, 08/11/83, 08/12/83, 08/13/83, 08/14/83, 08/15/83, 08/16/83, 08/17/83, 08/18/83, 08/19/83, 08/20/83, 08/21/83, 08/22/83, 08/23/83, 08/24/83, 08/25/83, 08/26/83, 08/27/83, 08/28/83, 08/29/83, 08/30/83, 08/31/83, 09/01/83, 09/02/83, 09/03/83, 09/04/83, 09/05/83, 09/06/83, 09/07/83, 09/08/83, 09/09/83, 09/10/83, 09/11/83, 09/12/83, 09/13/83, 09/14/83, 09/15/83, 09/16/83, 09/17/83, 09/18/83, 09/19/83, 09/20/83, 09/21/83, 09/22/83, 09/23/83, 09/24/83, 09/25/83, 09/26/83, 09/27/83, 09/28/83, 09/29/83, 09/30/83, 10/01/83, 10/02/83, 10/03/83, 10/04/83, 10/05/83, 10/06/83, 10/07/83, 10/08/83, 10/09/83, 10/10/83, 10/11/83, 10/12/83, 10/13/83, 10/14/83, 10/15/83, 10/16/83,

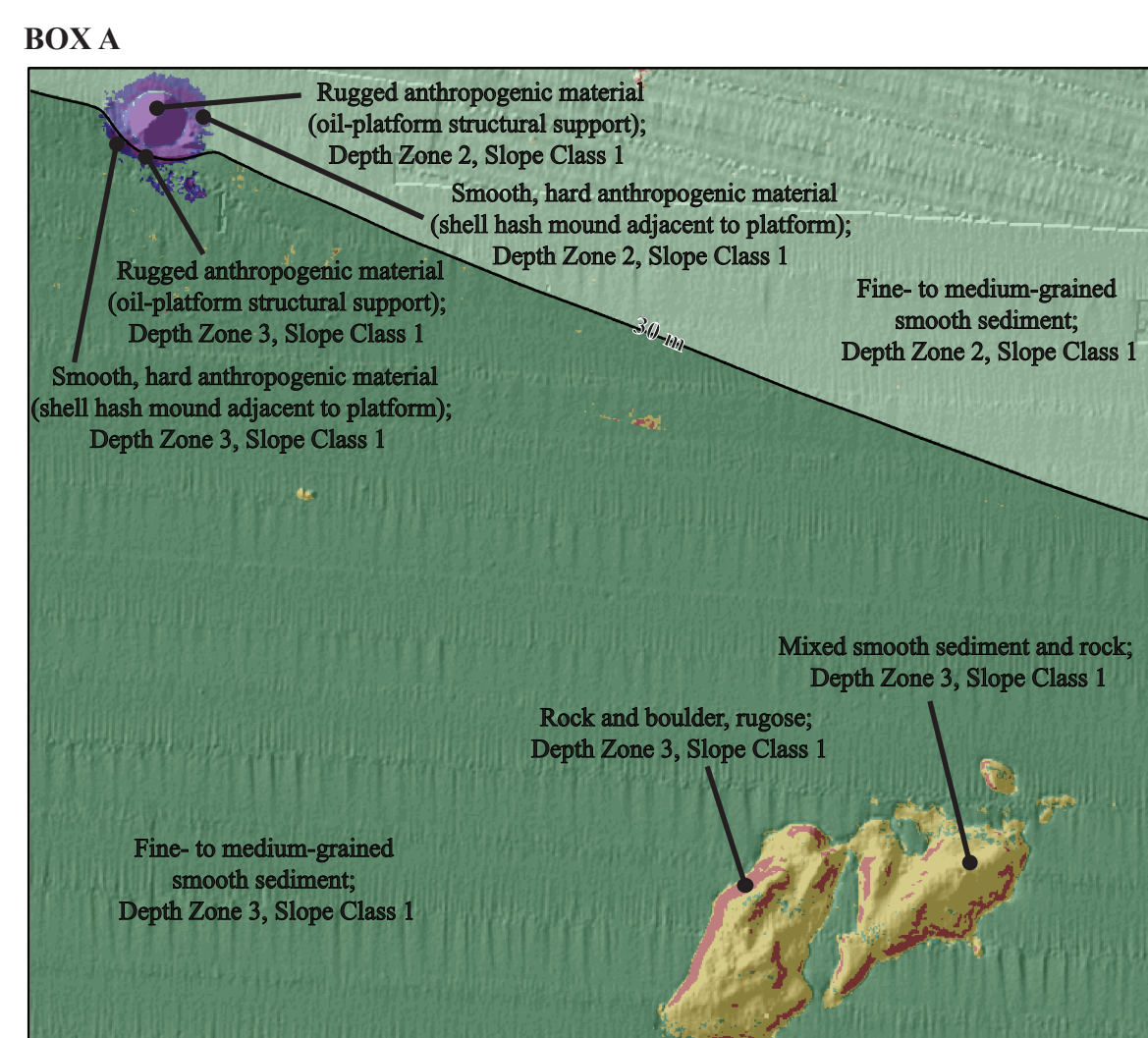


Figure 1. Detailed view of substrate classes mapped in area offshore of Carpinteria (see Box A, on map, for location). Depth Zones 2 and 3 (intertidal to 100 m), and Slope Class 1 (10° – 5°). Fine- to medium-grained smooth sediment is shown in shades of green; mixed smooth sediment and rock is shown in shades of tan; rock is shown in shades of pink; and both rugged anthropogenic material (oil-platform structural support) and smooth, hard anthropogenic material (shell hash mound adjacent to platform) are shown in shades of purple. Bathymetric contour (30 m) added for depth reference.

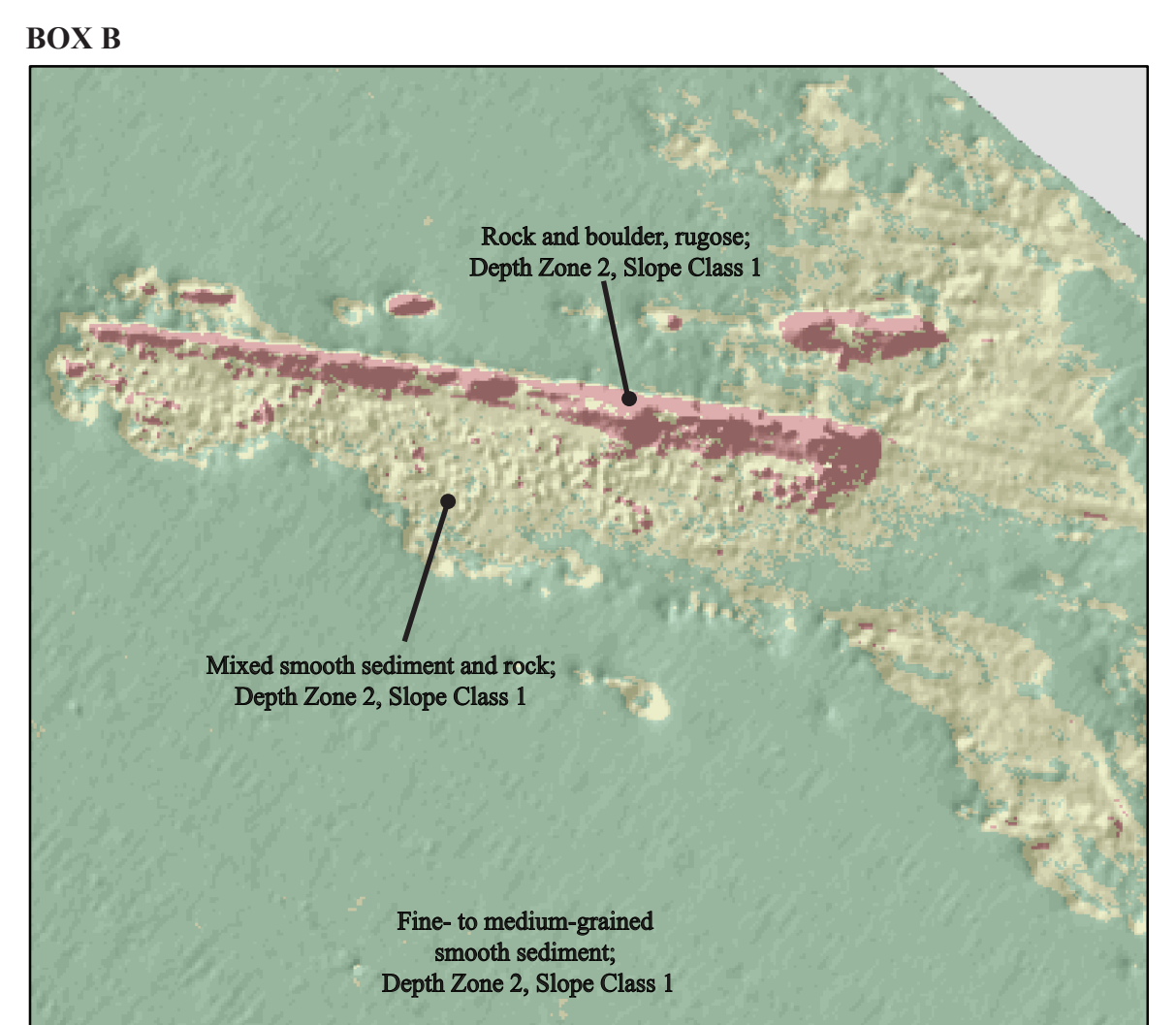


Figure 4. Detailed view of substrate classes mapped in area between Rincon Point and Rincon Island (see Box B, on map, for location). Depth Zone 2 (intertidal to 30 m), and Slope Class 1 (0° – 5°). Fine- to medium-grained smooth sediment is shown in shades of green; mixed smooth sediment and rock is shown in shades of tan; and rock is shown in shades of pink.

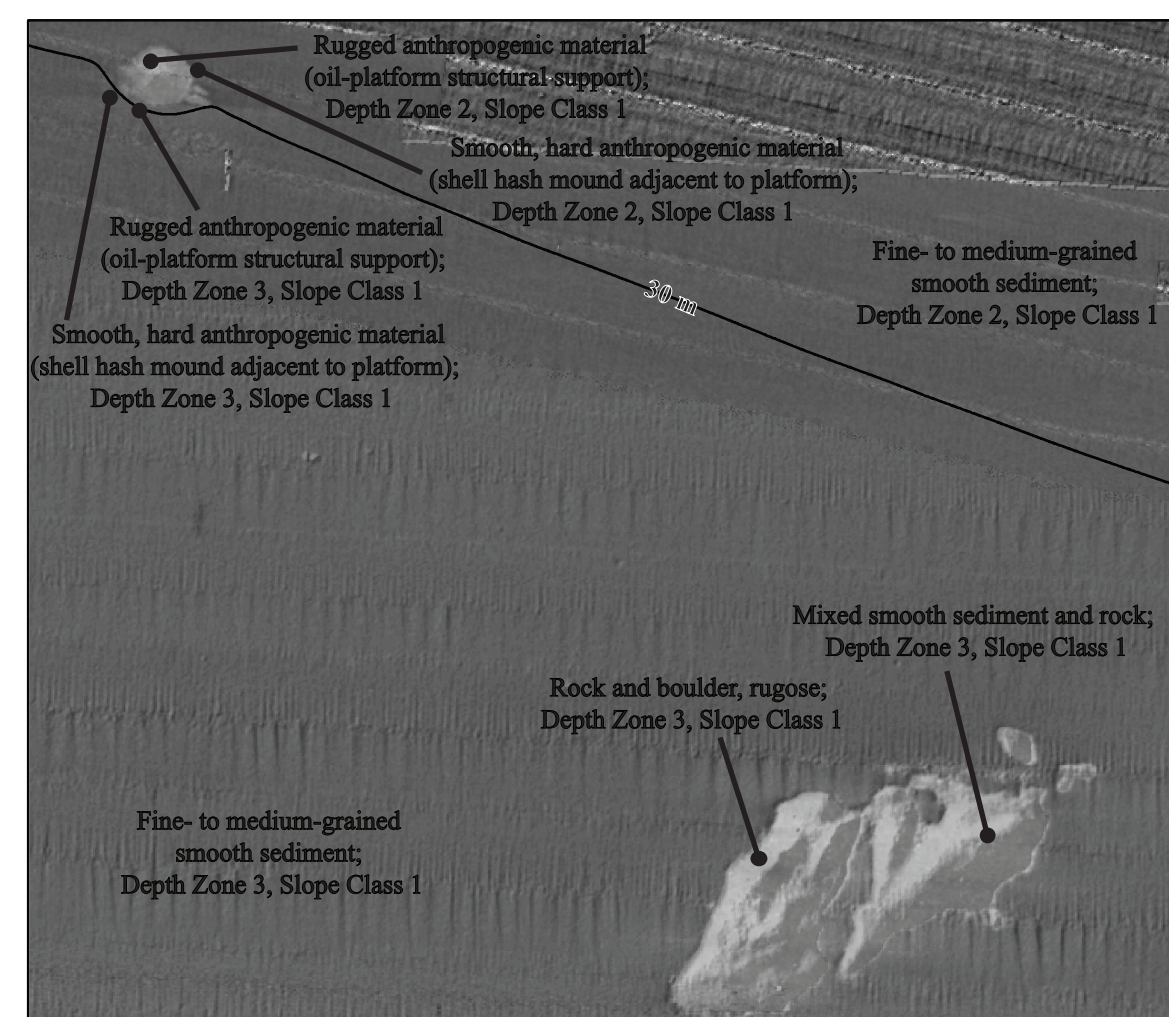


Figure 2. Acoustic-backscatter image (see sheet 3) draped over shaded-relief bathymetry (see sheet 2) for same area as figure 1 (Box A on map). Brighter areas indicate coarse-grained, rough, or hard seafloor; darker areas indicate unconsolidated (loosely packed) sediment. Interpreted substrate classes from figure 1 included for comparison. Bathymetric contour (30 m) added for depth reference.

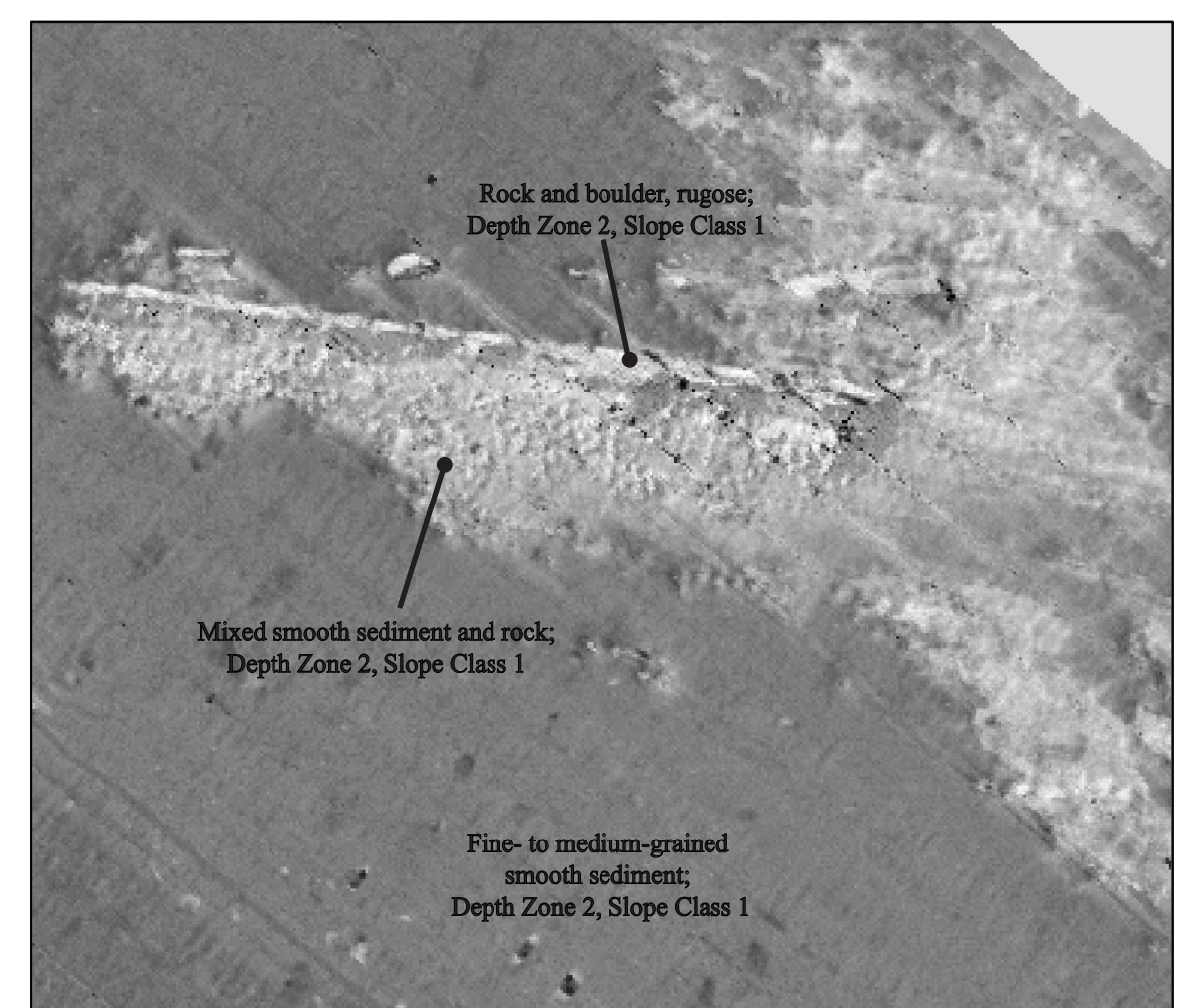


Figure 5. Acoustic-backscatter image (see sheet 3) draped over shaded-relief bathymetry (see sheet 2) for same area as figure 4 (Box B on map). Brighter areas indicate coarse-grained, rough, or hard seafloor; darker areas indicate unconsolidated (loosely packed) sediment; small black areas are data-processing artifacts. Interpreted substrate classes from figure 4 included for comparison.

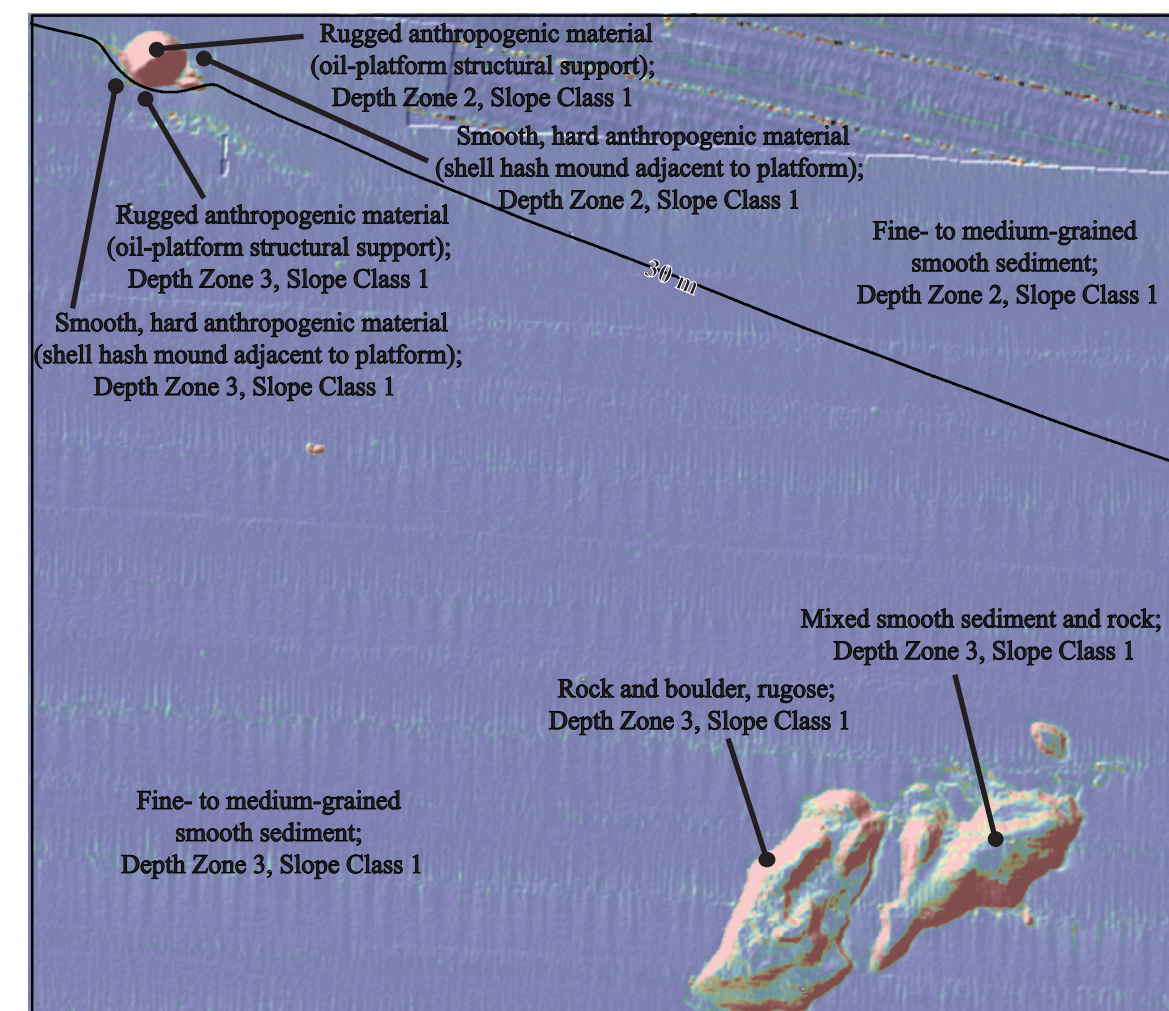


Figure 3. Rugosity (characterization of roughness derived from bathymetry) draped over shaded-relief bathymetry (see sheet 2) for same area as figure 1 (Box A on map). Rugosity values are displayed in muted "rainbow" color spectrum that ranges from purple (low rugosity) through green (medium rugosity) to red (high rugosity). Areas of high slope are indicated by high-rugosity values (red); areas of low slope, by medium- to low-rugosity values (gray to purple). Interpreted substrate classes from figure 1 included for comparison. Bathymetric contour (30 m) added for reference.

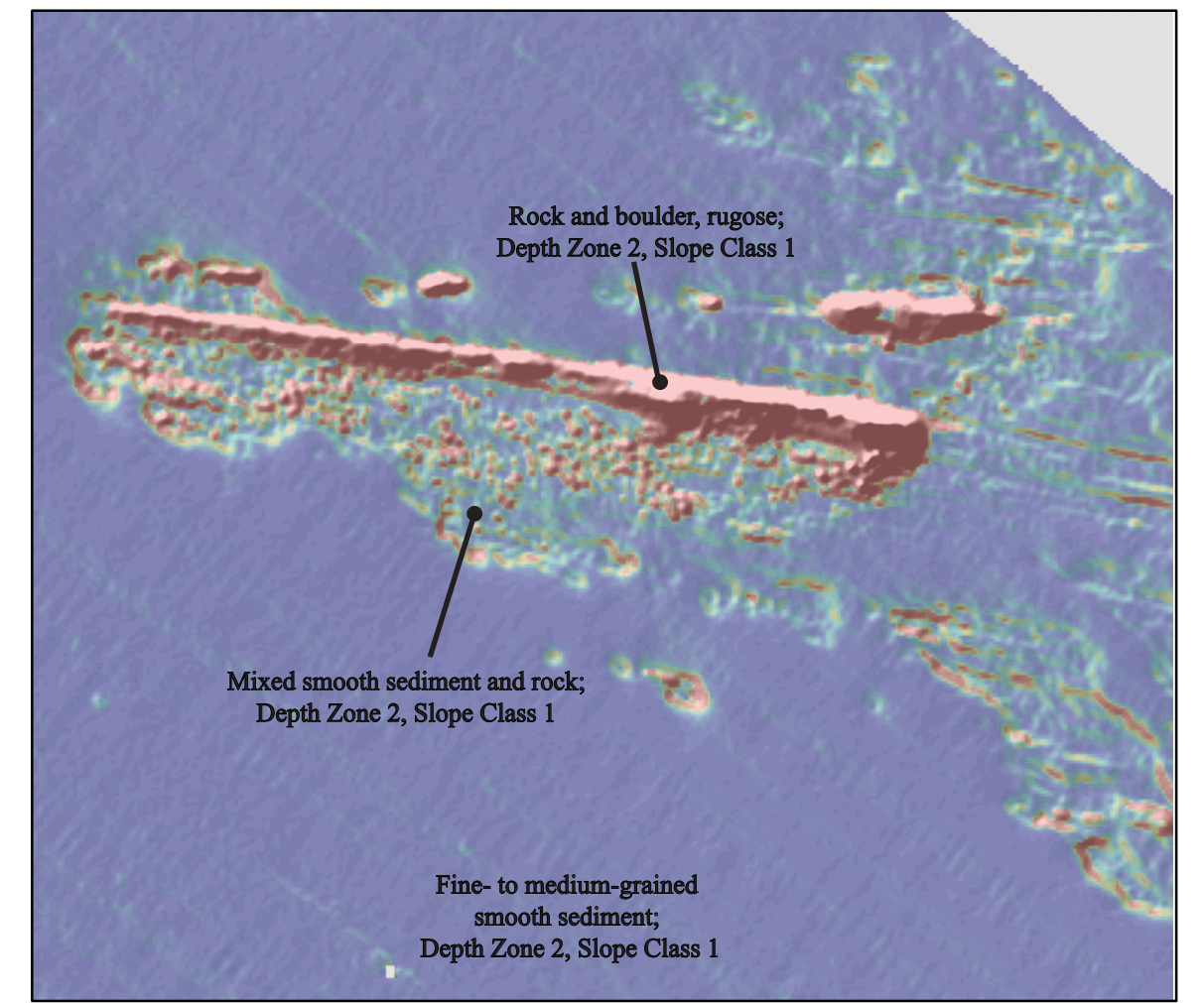


Figure 6. Rugosity (characterization of roughness derived from bathymetry) draped over shaded-relief bathymetry (see sheet 2) for same area as figure 4 (Box B on map). Rugosity values are displayed in muted “rainbow” color spectrum that ranges from purple (low rugosity) through green (medium rugosity) to red (high rugosity). Areas of high slope are indicated by high-rugosity values (red); areas of low slope, by medium- to low-rugosity values (green to purple). Interpreted substrate classes from figure 4 included for comparison.

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