

# Bank and bed stability record sheet—Method 1

Date (dd/mm/yy)  
/ /  Monitor(s) \_\_\_\_\_  
 Site code \_\_\_\_\_ Tributary name \_\_\_\_\_

**1. Sketch** the entire reach length (aerial view) showing the locations of any instability types (erosion, slumping and aggradation—see below for definitions). Include in your sketch the flow direction, a north arrow and any additional prominent features of the site.

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Types of instability		
<b>Erosion:</b> The direct removal of sediment from the stream banks or bed by flowing water.	<b>Slumping:</b> When sections of the bank collapse into the stream as a consequence of stream bank erosion.	<b>Aggradation:</b> The build-up of bank or bed material through the deposition of sediments by water.

The water mark is a visible mark at the normal water level in the stream and divides the stream bank into upper and lower sections. The water mark can usually be identified by a change in the types of vegetation, erosion or sediment.

## 2. Bank instability types

For the left bank, then the right bank, assess which of the following instability categories are present. More than one category may be present on each bank. When a type is present, record it by marking the corresponding box.

Left bank	Instability types	Right bank
	Bare of vegetation	
	Eroding	
	Slumping	
	Aggrading	
	Stable	

## 3. Bank instability locations

For both the left and right banks, assess the locations of the instability types identified in step 2. When an instability type is present record it by marking the corresponding box for that type and bank.

Left bank	Instability locations	Right bank
	At bends	
	At floodplain scours	
	At obstacles	
	At seepage and run-off points	
	Irregular	
	All along	

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<p><b>4. Bank stability rating</b>                  Examine the following bank stability categories and, using the information previously collected and what you can see at the site, select and mark the box that best describes the condition of the banks at the site.</p>		
<p><b>Bank stable</b></p> <ul style="list-style-type: none"> <li>• no removal or deposition of bank sediments</li> <li>• banks continuously stable to water's edge</li> <li>• banks well-vegetated</li> <li>• bank slope very gentle</li> </ul>	5	
<p><b>Limited bank erosion</b></p> <ul style="list-style-type: none"> <li>• some isolated removal of bank sediments, mostly at bends and/or obstacles, though generally not at the water's edge</li> <li>• banks well-vegetated and gently sloping</li> </ul> <p>OR</p> <p><b>Limited bank aggradation</b></p> <ul style="list-style-type: none"> <li>• some isolated deposition of sediments extending the bank, mostly above the flood flow mark, generally not extending to the water's edge</li> <li>• gently sloping banks</li> </ul>	4	
<p><b>Moderate bank erosion</b></p> <ul style="list-style-type: none"> <li>• moderate removal of bank sediment, sometimes extending to the water's edge, but bank predominantly stable and vegetated</li> <li>• bank slope shows steepening or undercutting in places</li> <li>• evidence of isolated past slumping</li> </ul> <p>OR</p> <p><b>Moderate bank aggradation</b></p> <ul style="list-style-type: none"> <li>• moderate deposition of sediment onto the bank, sometimes extending to the water's edge, but bank predominantly stable and vegetated</li> <li>• banks show some extension and/or build-up of sediments</li> </ul>	3	
<p><b>Extensive bank erosion</b></p> <ul style="list-style-type: none"> <li>• obvious, extensive bank erosion and loss of sediments continuing to the water's edge</li> <li>• banks predominantly unstable</li> <li>• extensive areas bare of vegetation</li> <li>• obvious steepening of banks</li> <li>• evidence of past slumping</li> </ul> <p>OR</p> <p><b>Extensive bank aggradation</b></p> <ul style="list-style-type: none"> <li>• obvious, extensive bank aggradation with sediment deposits contiguous with the water's edge</li> <li>• bank sediments predominantly unstable and loose</li> <li>• obvious extension and/or build-up of sediments</li> </ul>	2	
<p><b>Severe bank erosion</b></p> <ul style="list-style-type: none"> <li>• sediment removal/erosion obvious along entire reach length</li> <li>• bank largely bare of vegetation</li> <li>• banks highly unstable with evidence of recent movement (bank material or trees may have fallen into stream)</li> <li>• banks very steep or severely undercut</li> <li>• recent slumping of banks</li> </ul> <p>OR</p> <p><b>Severe bank aggradation</b></p> <ul style="list-style-type: none"> <li>• sediment deposition/aggradation obvious along entire reach length</li> <li>• bank vegetation largely smothered</li> <li>• banks very built up and/or intruded into stream (causing channel restriction)</li> </ul>	1	
<p><b>5. Bed form</b>                  Examine the stream bed along the entire reach length and note the channel form. Select which of the three conditions listed best describes the stream bed at the site, and mark the corresponding box. This selects the dominant bed process at the site.</p>		
<ul style="list-style-type: none"> <li>■ No deposits of fine sediments above the watermark (bars)</li> <li>■ Little to no fine sediment in the stream bed</li> <li>■ Stream bed is generally steep and narrow</li> </ul> <div style="text-align: center; margin-top: 10px;"> <input type="checkbox"/> <b>Erosion</b> </div>	<ul style="list-style-type: none"> <li>■ Infrequent bars (fine sediment deposition above the water mark)</li> <li>■ Some fine sediment distributed unevenly over the bed</li> <li>■ Stream bed width and depth vary</li> </ul> <div style="text-align: center; margin-top: 10px;"> <input type="checkbox"/> <b>Stable</b> </div>	<ul style="list-style-type: none"> <li>■ Numerous bars (fine sediment deposited above the water mark)</li> <li>■ Fine sediments cover the entire stream bed</li> <li>■ Stream bed is generally shallow and flat</li> </ul> <div style="text-align: center; margin-top: 10px;"> <input type="checkbox"/> <b>Aggradation</b> </div>

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<p><b>6. Bed stability rating</b> Examine the following bank stability categories and, using the information previously collected and what you can see at the site, select and mark the box that best describes the condition of the banks at the site.</p>		
<p><b>Bed stable</b></p> <ul style="list-style-type: none"> <li>• no erosion or deposition of fine sediment (sand or silt)</li> <li>• bed sediments well-mixed, compacted and varying in size</li> <li>• sediment firm</li> <li>• channel widths and depths vary along the reach</li> </ul>	5	
<p><b>Limited bed erosion</b></p> <ul style="list-style-type: none"> <li>• some removal of mobile fine sediment (sand or silt) at obstructions</li> <li>• signs of bed deepening</li> </ul> <p>OR</p> <p><b>Limited bed aggradation</b></p> <ul style="list-style-type: none"> <li>• some build-up of fine sediments at obstructions</li> <li>• some small bars may be present</li> <li>• signs of bed flattening</li> </ul>	4	
<p><b>Moderate bed erosion</b></p> <ul style="list-style-type: none"> <li>• moderate removal of fine sediments, mostly at bends and obstacles</li> <li>• bed predominantly steep, deep and narrow</li> <li>• bed lacks fine sediments and substrate is unconsolidated</li> </ul> <p>OR</p> <p><b>Moderate bed aggradation</b></p> <ul style="list-style-type: none"> <li>• moderate deposition of fine sediments, mostly at bends and obstacles</li> <li>• obvious bar formation</li> <li>• bed tending to flat and uniform</li> <li>• some fine sediment deposited over substrate</li> </ul>	3	
<p><b>Extensive bed erosion</b></p> <ul style="list-style-type: none"> <li>• obvious loss of fine sediments throughout the reach</li> <li>• stream bed consistently deep and narrow with little variability</li> <li>• uncompacted substrate</li> </ul> <p>OR</p> <p><b>Extensive bed aggradation</b></p> <ul style="list-style-type: none"> <li>• obvious deposition of sediment throughout reach</li> <li>• bars large and plentiful</li> <li>• bed flattened, wide and shallow</li> <li>• substrate coated with fine sediments</li> </ul>	2	
<p><b>Severe bed erosion</b></p> <ul style="list-style-type: none"> <li>• no fine sediment in reach</li> <li>• evidence of recent sediment removal</li> <li>• bed very steep and deep with no variability</li> <li>• bed substrate mobile</li> </ul> <p>OR</p> <p><b>Severe bed aggradation</b></p> <ul style="list-style-type: none"> <li>• extensive deposition of sediments throughout reach, evidence of recent sediment deposition</li> <li>• extensive bars impeding flow</li> <li>• channel wide but shallow, bed flattened with no variability</li> <li>• thick silt layer over entire bed substrate</li> </ul>	1	
<p><b>7. Bank and bed stability score</b> Add together the numbers corresponding to the 'best fit' ratings selected in steps 4 and 6. The sum of these numbers is the bank and bed stability score for the site, with a best possible score of 10.</p>		
<div style="border: 1px solid black; padding: 5px; display: inline-block;"> <p><b>Bank and bed stability score ____ / 10</b></p> </div>		

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