

# LANDSCAPES AND LANDFORMS



## SNAPSHOT 3: Meandering Rivers

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Landscapes change over time due to natural geomorphic processes and cycles as well as from human activities.

### The Padma River

The size and shape of Bangladesh's Padma River (upper left to lower right) have been changing for decades as seen in these satellite images. The river meanders and straightens, braids and unbraids as the amount of water fluctuates and changing sediment deposits divert the flow. Every year, hundreds (sometimes thousands) of hectares of land erode and fall into the Padma River. Since 1967, more than 66,000 hectares have been lost.

### Source A: The Padma River, Bangladesh



<https://climate.nasa.gov/images-of-change?id=664#664-changeable-padma-river-in-bangladesh>

Over many years, researchers have observed an increase in braiding and sinuosity - the tendency of the river to snake back and forth in an S-shape across its plain. Rivers with high sinuosity are labelled "meandering." Sometimes meandering rivers leave scars where the water once flowed. Each twist and zigzag in the river tell a geologic story about the river.

Meandering rivers can turn into braided rivers, which have numerous channels that split and combine again. Braiding is linked to the amount of sediment a river carries. Where there is a lot of sediment, it piles up in places and diverts the water flow.

### Create a meandering River Flipbook

In this activity, you will make a flip book showing the change over time of two different rivers which we can observe using Landsat and other remote sensing instruments.

Follow the steps to create your own time series of Peru's meandering Ucayali River.

Colour-in the line art of Bolivia's Mamoré River on the back of the flipbook.

### FLIPBOOK DIRECTIONS

**Print out the Flipbook PDF.**

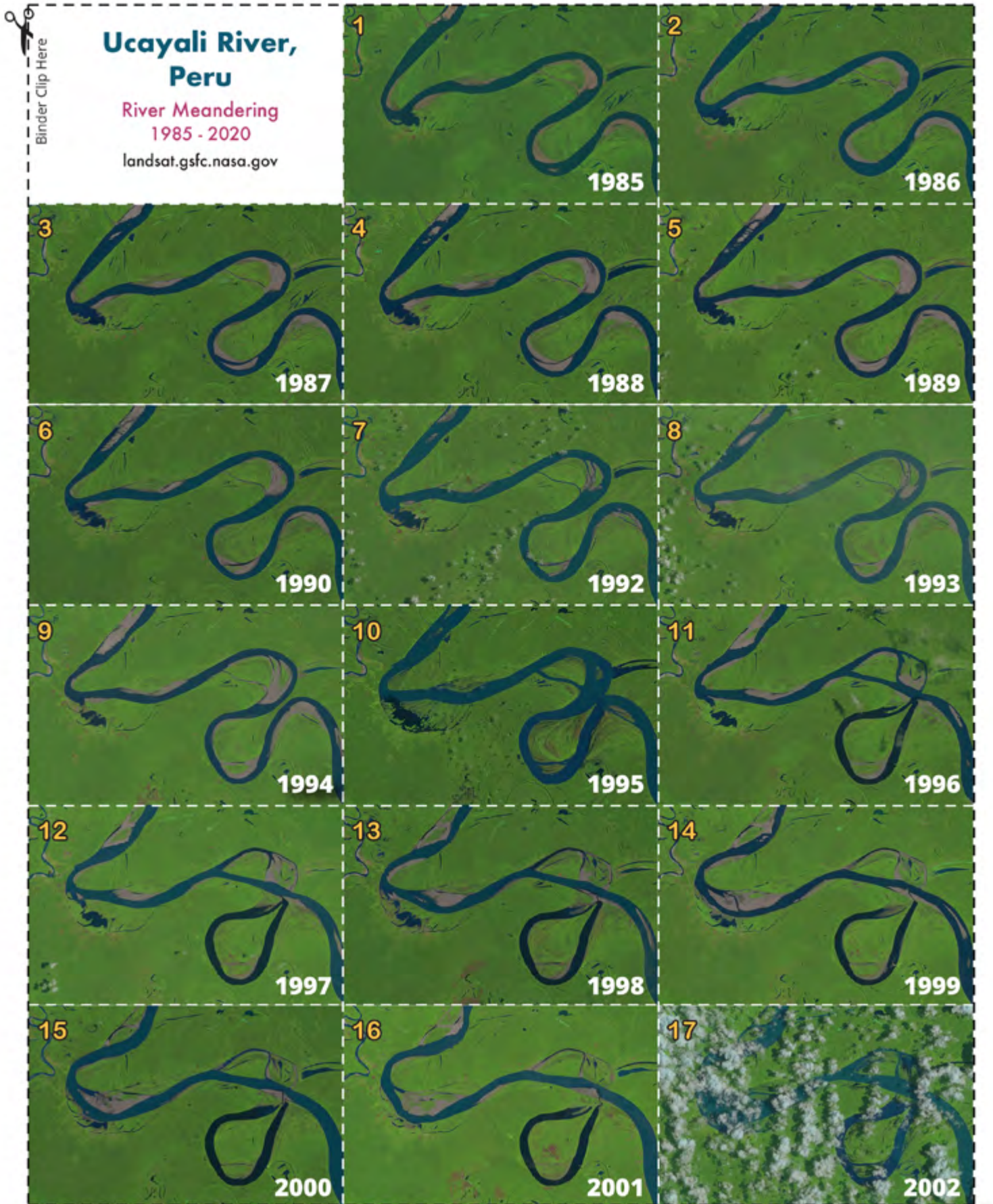
**Cut along the dotted lines. For best results, cut pages individually, do not stack.**

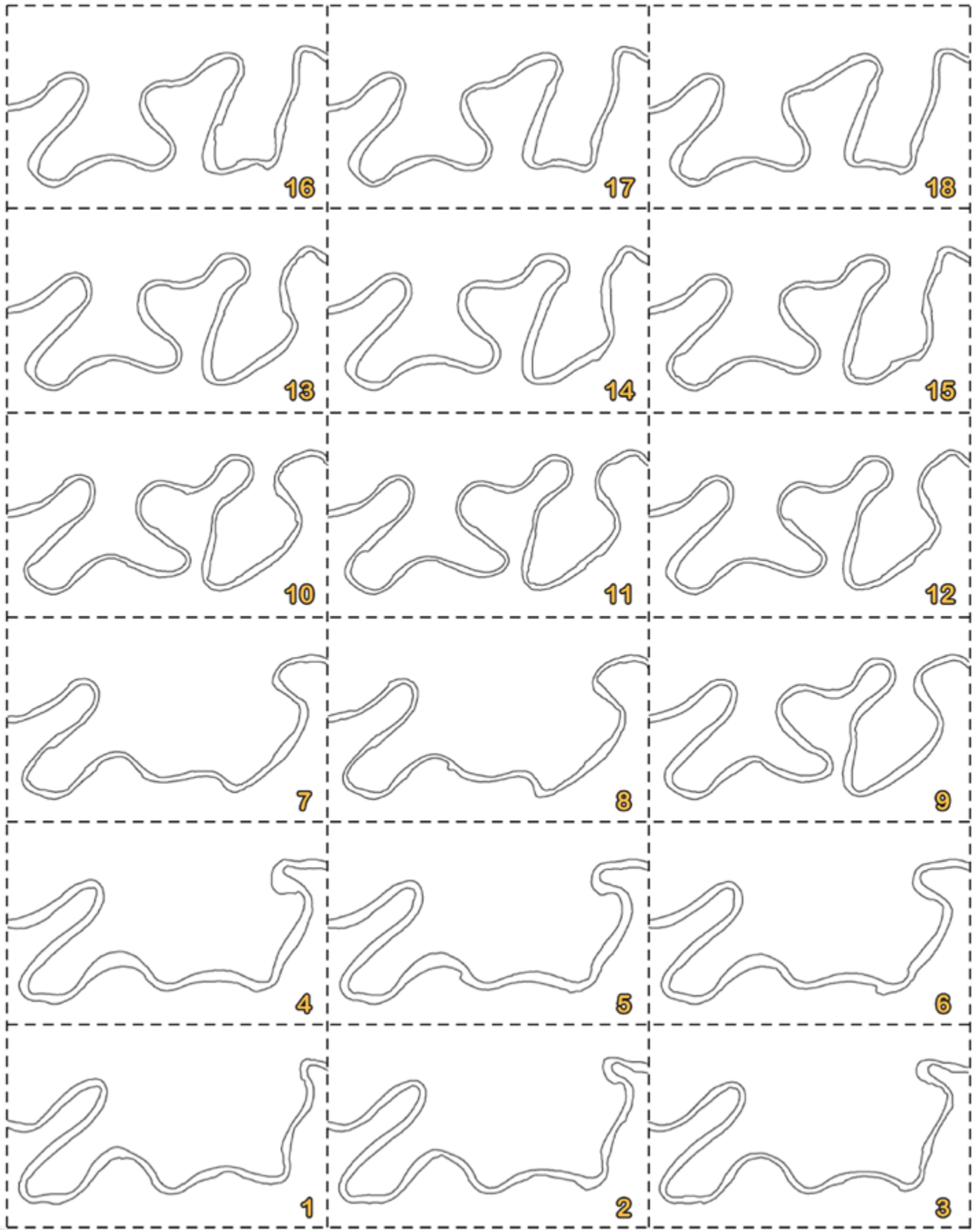
**Put images in order and align the images on right edge.**

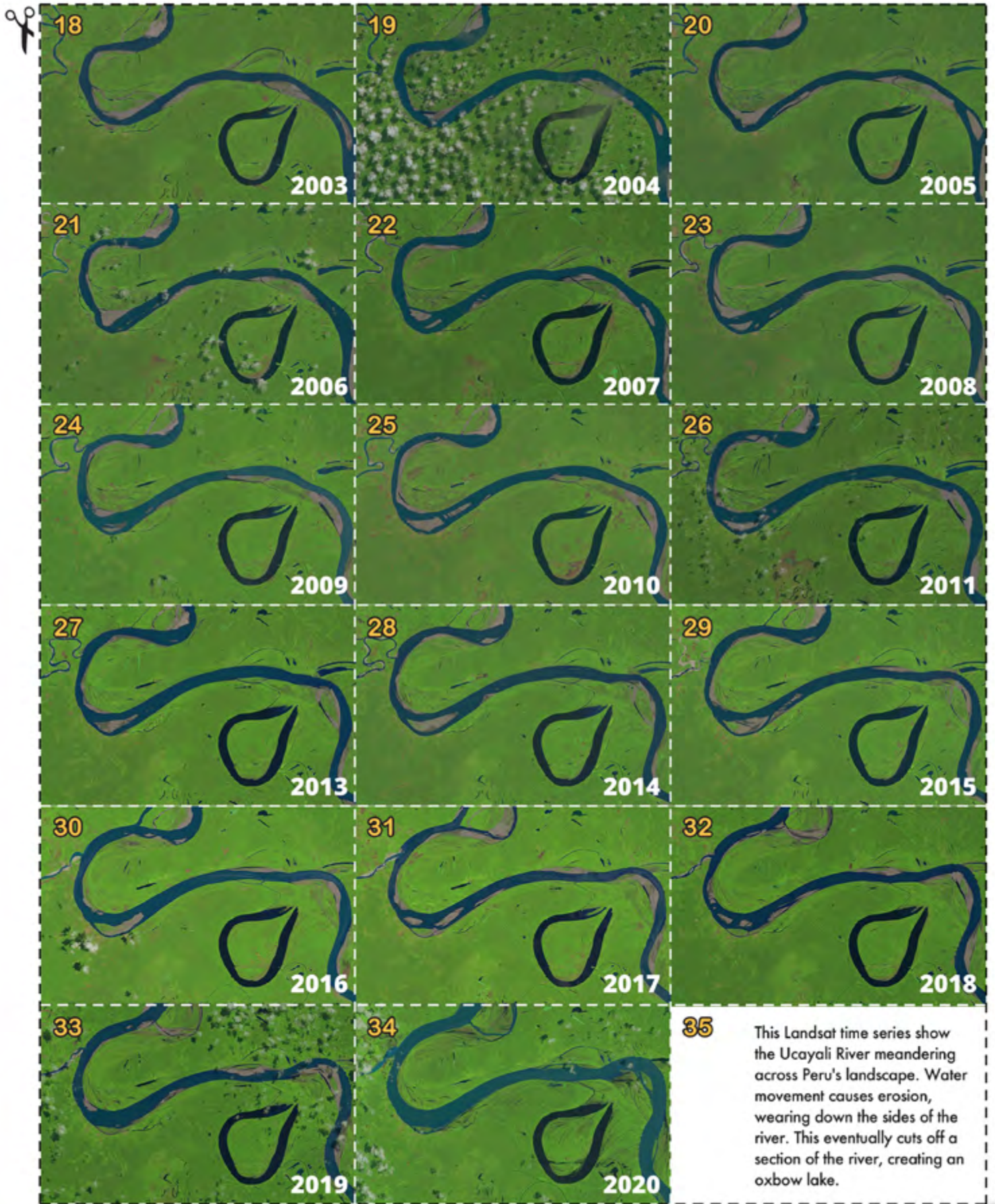
**Secure with binder clip and have fun flipping through time!**














# LANDSCAPES AND LANDFORMS: SNAPSHOT 3

Like a sinuous snake slithering over the landscape, rivers twist and turn to release energy as they journey to the sea. Make your own data visualization of the Ucayali River as it meanders through Peru.







 <p>31</p>	<p>Color in Bolivia's Mamoré River and watch as it winds and changes through time!</p>	<p>Image credit: Dr. Zoltan Sylvester, Geologist</p> <p>32</p>
 <p>28</p>	 <p>29</p>	 <p>30</p>
 <p>25</p>	 <p>26</p>	 <p>27</p>
 <p>22</p>	 <p>23</p>	 <p>24</p>
 <p>19</p>	 <p>20</p>	 <p>21</p>