

## Instructions sheet: "Winds, Currents, Upwelling and Blue Whales"

### 1) Read the "Upwelling factsheet"!

2) Use your printed map of AFRICA and AMERICA and follow the instructions:

- FOR AMERICA: One **arrow** is for wind blowing **from** (39°N, 135°W) **to** (27°N, 125°W);

The **other arrow** indicates a wind blowing **from** (33°N, 145°W) **to** (39°N, 118°W).

-FOR AFRICA: One **arrow** is for wind blowing **from** (30°S, 50°E) **to** (20°N, 70°E);

The **other arrow** indicates a wind blowing **from** (20°N, 50°E) **to** (30°S, 30°E).

You should color these arrows as follows: a **blue arrow** indicates the wind that blows **southward** and a **red arrow** indicates the wind that blows **northward**.

3) Indicate **on each map** with a **black arrow** the direction of the current **for both wind directions**.

4) Indicate **on each map** where there is **upwelling with the following symbol:**



5) Cut out the Blue Whale and put it **on the right spot** on the maps!

6) Color in **red, on each map**, the area that has **denser** seawater and in **blue** the area that has **less dense** seawater.

### Questions on upwelling and blue whales

- 1) What causes upwelling in the areas you have drawn in the map?
- 2) What is the difference between the Western US and East African coast?
- 3) What causes phytoplankton to grow in areas where there is upwelling?
- 4) Why would a blue whale come to an area where there is upwelling?

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