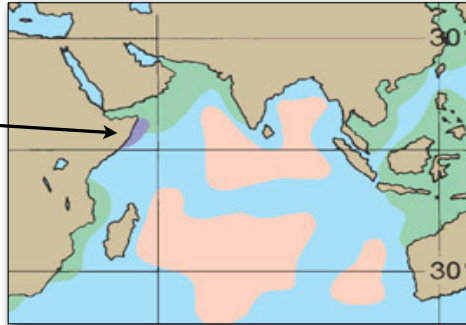


# The Indian Ocean



- Special case of atmospheric & oceanic circulation
  - Created by particular orientation and latitude of land & water in Africa & Asia
- What causes strong upwelling on the western boundary of the Indian Ocean?

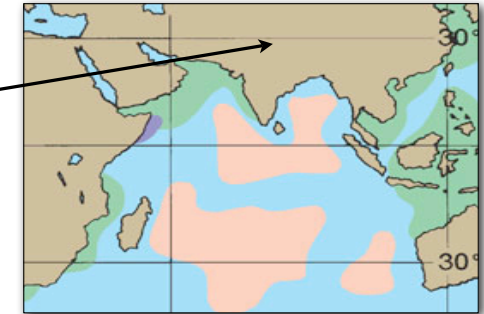


1

# The Indian Ocean



- Seasonal change in atmospheric pressure
  - Where would you find high & low atmospheric pressure in January?
  - Heat capacity of land is \_\_\_\_\_ than that of water
    - Lower
  - In January, air over Asia is \_\_\_\_\_ than air over the Indian Ocean.
    - Colder

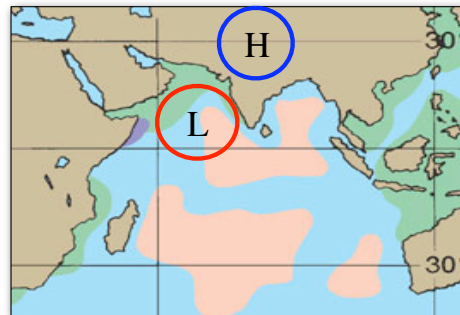


2

# The Indian Ocean



- Seasonal change in atmospheric pressure
  - Where would you find high & low atmospheric pressure in January?
  - Atmospheric pressure over Asia in January is \_\_\_\_\_
    - High
  - Atmospheric pressure over the Indian Ocean in January is \_\_\_\_\_
    - Low
  - Which way does the wind blow?

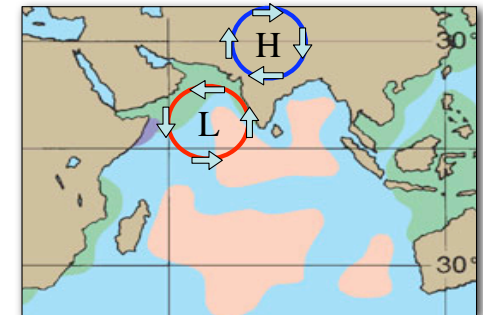


3

# The Indian Ocean



- Which way does the wind blow?
  - From High toward Low Pressure
  - Geostrophic clockwise around High pressure
  - Counterclockwise around Low Pressure

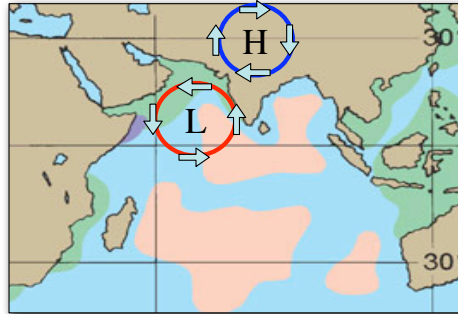


4

# The Indian Ocean



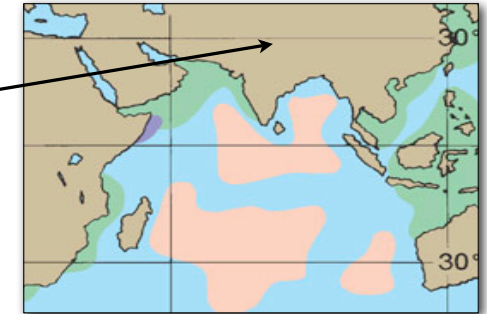
- Which way does the current flow?
  - Wind on the Somalia coast comes from the \_\_\_\_
    - North
  - Ekman transport acts to the \_\_\_\_ of the wind
    - Right
  - Ekman transport direction is \_\_\_\_ the coast
    - Toward
  - This produces \_\_\_\_
    - Downwelling



# The Indian Ocean



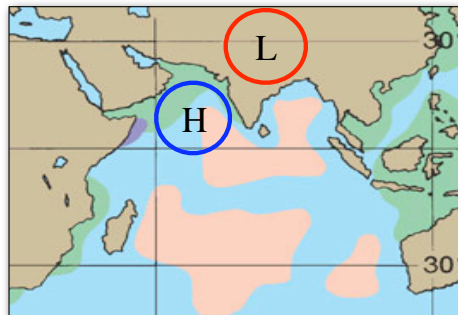
- Seasonal change in atmospheric pressure
  - Where would you find high & low atmospheric pressure in July?
  - Heat capacity of land is \_\_\_\_ than that of water
    - Lower
  - In July, air over Asia is \_\_\_\_ than air over the Indian Ocean.
    - Warmer



# The Indian Ocean



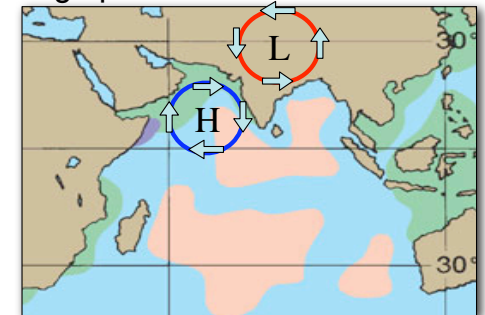
- Seasonal change in atmospheric pressure
  - Where would you find high & low atmospheric pressure in July?
  - Atmospheric pressure over Asia in July is \_\_\_\_
    - Lower
  - Atmospheric pressure over the Indian Ocean in July is \_\_\_\_
    - Higher
  - Which way does the wind blow?



# The Indian Ocean



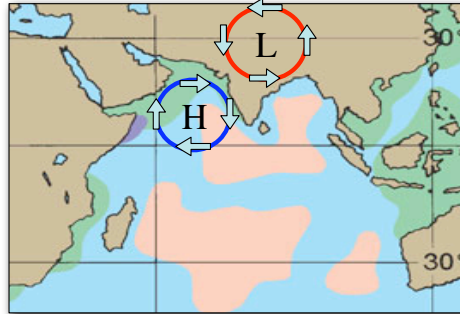
- Which way does the wind blow?
  - From High toward Low Pressure
  - Counterclockwise around Low Pressure
  - Clockwise around High pressure



# The Indian Ocean



- Which way does the current flow?
  - Wind on the Somalia coast comes from the \_\_\_\_
    - South
  - Ekman transport acts to the \_\_\_\_ of the wind
    - Right
  - Ekman transport direction is \_\_\_\_ the coast
    - Away from
  - This produces \_\_\_\_
    - Upwelling

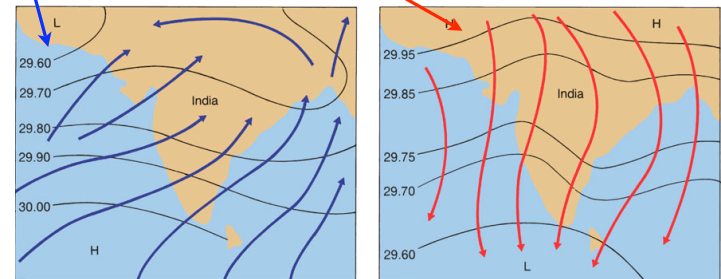


9

# The Monsoons



- Summer monsoon
  - Moist winds from off the ocean, heavy rain
- Winter monsoon
  - Dry winds from off the continent



10