

Coriolis effect



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Running Head: CORIOLIS EFFECT Coriolis Effect Coriolis Effect Coriolis effect is defined as the deflection of the path of an object due to the effect of a rotating force. This can be considered important in meteorology, geography and other physical sciences since it can influence the water and air circulations. Coriolis effect then can be considered as one of the driving forces in the weather systems due to the role in ocean circulation, atmospheric circulation and the formation of different surface actions due to the interaction between the water and the atmosphere (Gabler and others 2008, p 118). The first influence of the Coriolis effect is related to the ocean. It can influence the ocean through the interaction with other factors such as temperature and the physical characteristics of the ocean basin. Another important influence is related to the surface currents with broad circulatory patterns referred to as gyres. Basically, the Coriolis effect causes the clockwise movement of the gyres in the Northern Hemisphere and counterclockwise movement in the Southern Hemisphere. Surface currents though do not cross the equator but waters in the equatorial region are affected by the tropical easterlies or trade winds thus producing the Equatorial Current. The Coriolis effect then causes the movement of warm water to the pole while the cool water currents flow to the equatorial region (Gabler and others 2008, p. 133). The influence of Coriolis effect is also visible in the atmospheric phenomena such as the wind currents and other air currents and movements such as cyclones. Coriolis effect in relation to the wind currents can be related to different factors such as the force, the friction and pressure gradient. One example is the geostrophic wind which goes parallel to isobars and is affected by the friction and pressure gradient and turns 90 degrees due to Coriolis effect. Basically, the forces and the

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factors affecting the movement of air vary and these variations cause the different atmospheric phenomena (Gabler and others 2008, p. 119). The Coriolis effect can influence the two fluids in the planet, the water and the air. For that matter, it can also affect the interaction of the two. Basically, due to the association of the oceans and the atmosphere, it can be considered hard to separate the effects of the earth's rotation on the two fluids to create the global weather and climate. One example is in terms of cyclones, the temperature and moisture gradients initiate the start of a storm and the direction of the said phenomenon can greatly be affected by the multitude of factors including Coriolis effect, surface friction, etc. (Gabler and others 2008, p. 133). Conclusion Based on the data gathered, Coriolis effect is one of the most important forces in nature that can affect the weather systems due to its influence in the movement and circulation of the two main fluids in the planet, the water and the air. The water can be found in different water systems such as oceans and the air can be found in the atmosphere. Both fluids continue to circulate and move thus effects of the Coriolis force can be observed around the globe on the basis of different factors such as the temperature, pressure, location, etc. References Gabler, RE, Petersen, JF, Trapasso, LM. And Sack, D. 2008. Physical Geography. Cengage Learning.