

生物策略表

類別	生物策略 (Strategy)
生物策略 STRATEGY	樹從霧中得到水分 (Trees comb water from fog)
生物系統 LIVING SYSTEM	海岸紅杉 <i>Sequoia sempervirens</i> (Coast redwood)
功能類別 FUNCTIONS	#獲取、吸收、或過濾液體 #Capture, absorb, or filter liquids
作用機制標題	許多海岸林的樹木會透過被稱為「霧滴」的過程，以針葉濃縮霧氣來增加水分的量 (Trees in many coastal forests increase water yield by condensing water from fog onto needles, a process known as "fog drip.")
生物系統/作用機制 示意圖	 <p>Source: https://asknature.org/strategy/trees-comb-water-from-fog/#.XLvsoZMzaUk</p>
作用機制摘要說明 (SUMMARY OF FUNCTIONING MECHANISMS)	
文獻引用 (REFERENCES)	
<p>「近四年來，我們在加州雷耶斯角半島上的三個地點收集霧和雨水，並以穩定性同位素分析。除此之外，為了說明霧滴水對於樹木植被的重要性，在1990年雨季末期和容易起霧季節末期時收集了土壤中的水與樹木內的水...樹木核心水分的同位素構成顯示樹木植被會以不同程度利用霧中的水氣。在大部分的海岸地區，植被似乎整年都在利用霧滴水。然而在其他地區，是屬於季節性的使用，至少會發生在夏天的霧季末期。在第三個地區的植被似乎只利用地下水，這可能或可能不包含霧水。」(Ingraham and Matthews 1995: 269)</p> <p>“Fog and rain were collected for stable isotopic analysis for nearly 4 years at three locations on the Point Reyes Peninsula in California. In addition, in 1990, soil water and tree water were collected at the end of the rainy season, and again at the end of the foggy season to determine the importance of fog-drip water to arboreal vegetation... The isotopic composition of</p>	

the tree core water indicates varying degrees of fog water use by the arboreal vegetation. At the most coastal location, the vegetation appears to use fog-drip water year-round. At another location, the use is seasonal, occurring at least during the end of the summer foggy season. At the third location the vegetation appears to use solely ground water, which may or may not contain fog water.” (Ingraham and Matthews 1995: 269)

參考文獻清單與連結 (REFERENCE LIST)

Ingraham, N. L. and R. A. Matthews. (1995). The importance of fog-drip water to vegetation: Point Reyes Peninsula, California. *Journal of Hydrology* 164: 269-285.
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Ham, R. D. (1982). Fog drip in the bull run municipal watershed, Oregon. *JAWRA* 18: 785-789.
(<https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1752-1688.1982.tb00073.x>)

Yoon, C. K. (24 November, 1998). Clues to redwoods' mighty growth emerge in fog. *The New York Times*. Retrieved from: <https://www.nytimes.com/1998/11/24/science/clues-to-redwoods-mighty-growth-emerge-in-fog.html>

延伸閱讀

生物系統延伸資訊連結 (LEARN MORE ABOUT THE LIVING SYSTEM/S)

https://en.wikipedia.org/wiki/Sequoia_sempervirens

撰寫/翻譯/編修者與日期

蕭慧萍翻譯 (2019/04/04)；譚國銜編修 (2020/04/20)；許秋容編修 (2020/11/25)

AskNature 原文連結

<https://asknature.org/strategy/trees-comb-water-from-fog/>