


生物策略表

類別	生物策略 (Strategy)
生物策略 STRATEGY	溪流重塑改變生態系統 (Stream remodeling alters ecosystems)
生物系統 LIVING SYSTEM	美洲河狸 (American beaver)
功能類別 FUNCTIONS	#控制沖蝕及沉積 #維持生物多樣性 #調節水文流動 #Control erosion and sediment #Maintain biodiversity #Regulate hydrological flows
作用機制標題	河狸通過砍伐樹木和灌木來改變生態系統，並創建濕地，潮濕草甸和池塘鑲嵌區塊 (Beavers alter ecosystem by cutting trees and shrubs and creating mosaics of wetlands, moist meadows, and ponds)
生物系統/作用機制 示意圖	
作用機制摘要說明 (SUMMARY OF FUNCTIONING MECHANISMS)	
文獻引用 (REFERENCES)	
<p>「說到創造新的濕地 (wetland)、水禽 (waterfowl) 棲息地、魚類產卵池塘，及處理池塘沉積物的大規模溪流重塑設計，沒有人的成就能比得上河狸 (beavers)。 」(Baskin 1997: 95)</p> <p>「河狸提供了一個動物是如何以分級方式 (hierarchical fashion) 影響生態系統結構和動態的驚人例子。最初河狸通過砍伐木材和建造水壩來修改溪流形態和水文 (hydrology)，這些活動保留了河道中的沉積物和有機物質、創造和維持濕地、改變養分循環和分解動態、改變河岸帶的結構和動態、影響往下游運輸的水和物質的特性，並最終影響植物和動物群落組成和多樣性 (Naiman 和 Melillo 1984, Naiman et al. 1986)。除了</p>	

在生態系統層面的重要性之外，這些影響對景觀具有重大的影響，因為河狸的族群動態 (population dynamics) 會隨著干擾、食物供應、疾病和捕食而發生變化，這些影響必須在廣泛的空間和時間尺度上進行解釋。」 (Naiman et al. 1988: 753)

“For extensive stream remodeling that creates new wetlands, waterfowl habitat, fish spawning pools, and settling ponds for sediment, nothing matches the work of beavers.” (Baskin 1997: 95)

“Beaver (*Castor canadensis*) provide a striking example of how animals influence ecosystem structure and dynamics in a hierarchical fashion. Initially beaver modify stream morphology and hydrology by cutting wood and building dams. These activities retain sediment and organic matter in the channel, create and maintain wetlands, modify nutrient cycling and decomposition dynamics, modify the structure and dynamics of the riparian zone, influence the character of water and materials transported downstream, and ultimately influence plant and animal community composition and diversity (Naiman and Melillo 1984, Naiman et al. 1986). In addition to their importance at the ecosystem level, these effects have a significant impact on the landscape and must be interpreted over broad spatial and temporal scales as beaver population dynamics shift in response to disturbance, food supply, disease, and predation.” (Naiman et al. 1988: 753)

參考文獻清單與連結 (REFERENCE LIST)

Baskin, Y. (1997). *Work of nature: how the diversity of life sustains us*. Diane Pub Co.

Naiman, R. J., C. A. Johnston, and J. C. Kelley. (2006). Alteration of north American streams by beaver. *BioScience* 38: 753-762. (<https://doi.org/10.2307/1310784>)

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/North_American_beaver

撰寫/翻譯/編修者與日期

黃麗詩翻譯 (2019/04/29)；譚國鎔編修 (2020/04/16)；許秋容編修 (2020/11/26)

AskNature 原文連結

<https://asknature.org/strategy/stream-remodeling-alters-ecosystems/>