

EcoLexicon: A Frame-Based Knowledge Base for the Environment



Arianne Reimerink and
Pamela Faber

Universidad de Granada (Spain)

<http://manila.ugr.es/visual/>

EcoLexicon: Introduction

A frame-based multilingual environmental resource

Objectives:

Produce new knowledge

Prove the consistency of existing knowledge

Enhance searches

Focus:

Conceptual organization

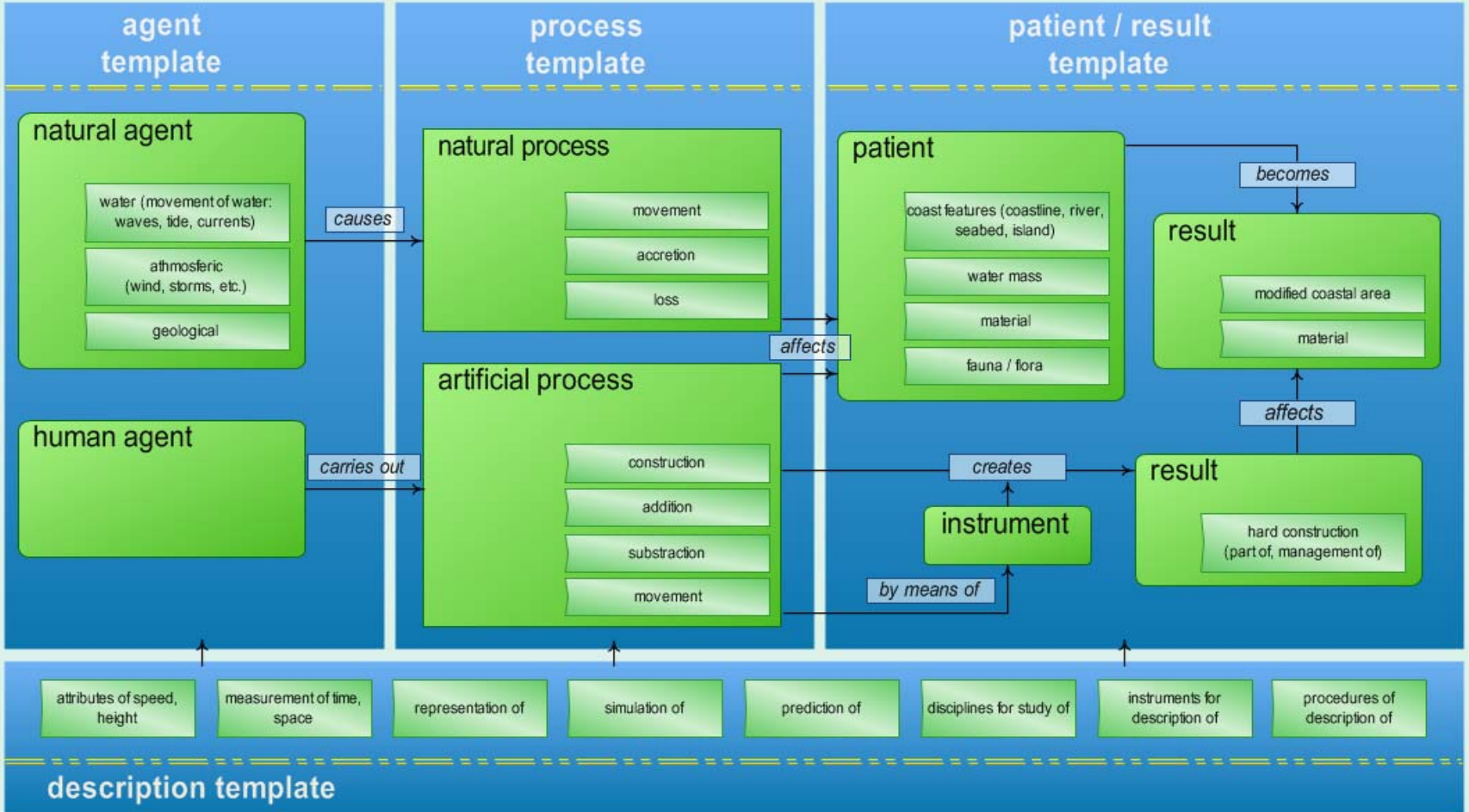
Multidimensional nature of terminological units

Extraction of semantic and syntactic information with multilingual corpora



EcoLexicon: Macrostructure

environmental event



Environmental Event

EcoLexicon: Microstructure

Conceptual relations

IS_A	RESULT_OF
PART_OF	AFFECTS
MADE_OF	EFFECTED_BY
DELIMITED_BY	HAS_FUNCTION
LOCATED_AT	MEASURES
TAKES_PLACE_IN	REPRESENTS
ATTRIBUTE_OF	STUDIES

EcoLexicon: Microstructure

Concept definitions

PROCESS: sequence of actions or steps that happen or take place.	ARTIFICIAL PROCESS: process taken in order to achieve a particular end (with an instrument).
<ul style="list-style-type: none">• ISA• (<u>PART OF</u>)	<ul style="list-style-type: none">• ISA• (<u>PART OF</u>)• (<u>HAS FUNCTION</u>)• (<u>EFFECTED BY</u>)

Process and artificial process templates [León, Reimerink, Faber 2008]

PURIFICATION: artificial process that eliminates contaminants from waste water by mechanical, biological, or physical-chemical methods.
<ul style="list-style-type: none">• Artificial process [ISA]• Sedimentation, etc. [<u>PART OF</u>]• Eliminate [<u>HAS FUNCTION</u>]• Mechanical methods [<u>EFFECTED BY</u>]• Waste water [<u>HAS PATIENT</u>]

Activation of the definitional template of artificial process in purification

EcoLexicon: Visual Thesaurus: contexts

Definitions and relations of dredger and dredge

DREDGER

Instrument [ISA] used for dredging operations [HAS_FUNCTION].

DREDGING/DREDGE

Removal of beach material from underwater [ACTION] by pumping, extracting and piping it [PHASES] by means of a dredger [EFFECTED_BY] in order to maintain water depths in rivers, canals or harbours and to obtain material for construction or beach nourishment [HAS_FUNCTION].

Context 1

Dredging is the operation of removing material from under water. In all but a few situations the excavation is undertaken by a specialist floating plant, known as a dredger.

Context 2

Dredging can be carried out wherever there is sufficient water depth to allow a dredger to operate. Thus dredgers can be found around the coasts, in rivers and in canals. They can be found in lakes and ponds far from the sea and they can be found in exposed offshore locations far from land.

EcoLexicon: Visual Thesaurus

Contextual information: concordances

BEACH NOURISHMENT: soft coastal defence action consisting of replenishing a beach with new dredged materials in order to protect the coastline from erosion, storms and floods.

- Soft coastal defence action [ISA]
- Replenishing, dredging [PART OF]
- Protect from erosion, storms and floods [HAS FUNCTION]
- Dredger [EFFECTED BY]
- Coastline [HAS PATIENT]
- Dredged materials [HAS PATIENT]

Linguistic activation of the category structure of beach nourishment



EcoLexicon: Visual Thesaurus

Contextual information: concordances

TYPE OF
soft" method for coastal protection Figure 4: HEACON, t, erosion control, volume, funding. The importance of data collection was sporadic, and the effectiveness of property or restore a recreational beach. The growth of ources in state waters are being depleted or polluted. nding upon the source (and thus the cost) of the sand. r with some system of beach control such as groins and age system.j. Beach nourishment and dune construction. dune-bluff. Feeding sand to a coast is referred to as "beach nourishment." Beach nourishment works by reducin beach nourishment over seawalls and other rigid structu beach nourishment, while also being temporary and needi

PART OF
tter-suction dredge or trailing suction hopper dredge. elative Physical Effects of Offshore Sand Dredging For re those that are more natural. The primary example is beach nourishment: mining sand offshore and placing on Beach Nourishment", this program was initiated in May 1 beach nourishment, which is the placement of sand on an

HAS PATIENT
as been identified as a viable sand resource site for in extracting large volumes of nearshore sediment for of concern as the extraction of offshore sediment for e environment. Thus, before this sand body is used for mportant when maintenance dredged material is used for offshore of the Atlantic coastline to obtain sand for and excavating sand from offshore borrow sources for rcial priority was given to "soft" techniques, such as beach nourishment along the southeastern virginia coast beach nourishment and construction purposes has increas beach nourishment, construction materials, and other pu beach nourishment, further coring is required to obtain beach nourishment. Minimum damage to beach animals will beach nourishment projects that restore sand lost from beach nourishment projects are the physical alteration beach nourishment using sand and gravel, and non-engine

EFFECTED BY
ial to the shoreface via the pipe network used for the beach nourishment and borrowed by the same cutter dredg

HAS FUNCTION
of survival will vary from location to location. (2) Beach nourishment creates new habitat that is uninhabit ent sand was coarse, $d_{50} = 0.57$ mm. The effect of the beach nourishment is that of a feeder berm and the effe facts of this accelerated erosion can be controlled by beach nourishment or beach-protecting structures like g aves and the previously eroding natural coast. Second, beach nourishment reduces erosion on adjacent propertie n spite of its long history, the technique -- known as beach nourishment -- remains controversial. Critics reg beach nourishment. This process usually consists of the beach nourishment to reestablish shoreline equilibrium. lot of communities have lost faith in the ability for beach nourishment to improve beach health due to poor d

EcoLexicon: Visual Thesaurus

Contextual information: concordances

PART OF

tter-suction dredge or trailing suction hopper dredge. Beach nourishment: mining sand offshore and placing on relative Physical Effects of Offshore Sand Dredging For Beach Nourishment", this program was initiated in May 1 re those that are more natural. The primary example is beach nourishment, which is the placement of sand on an

HAS PATIENT

as been identified as a viable sand resource site for beach nourishment along the southeastern Virginia coast in extracting large volumes of nearshore sediment for beach nourishment and construction purposes has increased of concern as the extraction of offshore sediment for beach nourishment, construction materials, and other purposes environment. Thus, before this sand body is used for beach nourishment, further coring is required to obtain important when maintenance dredged material is used for beach nourishment. Minimum damage to beach animals will offshore of the Atlantic coastline to obtain sand for beach nourishment projects that restore sand lost from and excavating sand from offshore borrow sources for beach nourishment projects are the physical alteration of beach nourishment using sand and gravel, and non-engine

Conceptual concordances: beach nourishment [León, Reimerink, Faber 2008]

EcoLexicon: Visual Thesaurus

Contextual information: images

Términos

Búsqueda

Detalle de recurso

Recurso
[beafil1f.jpg](#)

Título
Beach fill (replenishment/nourishment)

Descripción
Beaches are one of the most attractive and valued elements of shore...

Fuente
<http://www.dade.k12.fl.us/ohes/Bratcher/prevention.htm>

Regeneración de playas

- Dragado
- Regeneración artificial
- Playa
- Materia de grano grueso
- Materia de relleno
- Arena

A Sand pumped from sound to beach

B Sand dredged from offshore and placed on or near beach

BEACH FILL

Internet

Image representing regeneración de playas [beach nourishment]