METABOLIC DESIGN.

DECREASING OF BIODIVERSITY
SHORTAGE OF NATURAL RESOURCES

AIR
LIGHT
NOISE
WATER

POLLUTION

RADIOACTIVE
SOIL

CONTAMINATION

OZON DEPLETION
GLOBAL WARMING

METHOD.

4 MAIN LAYERS OF OUR PLANET COMPARED WITH PARTS OF HUMAN ORGANISM

MAGNETOSPHERE

- BOW SHOCK
- MAGNETOSHEATH
- MAGNETOPAUSE
- MAGNETOTAIL

GEOMAGNETIC FIELD

NERVOUS SYSTEM

- CONTROLLING PART OF A BODY
EXTRACTS INFORMATION FROM THE ENVIRONMENT USING SENSORY RECEPTORS, SENDS SIGNALS, PROCESSES THE INFORMATION AND SENDS OUTPUT TO ACTIVATE A RESPONSE

ATMOSPHERE

- EXOSHPERE
- THERMOSPHERE
- MESOSPHERE
- STRATOSPHERE
- TROPOSPHERE

ATMOSPHERIC CIRCULATION

RESPIRATORY SYSTEM

- BIOLOGICAL SYSTEM OF STRUSTURES
PROCESSES RESPIRATION BY GLOBAL TRANSFER ~~OXYGEN AND CARBON DIOXIDE~~ HEAT AND MOISTURE

BIOSPHERE HYDROSPHERE

BIOTA

CIRCULATORY SYSTEM

- BIOLOGICAL SYSTEM
PERMITS TO TRANSPORT OXYGEN AND NUTRIENTS WITH THE WATER

GEOSPHERE

- CRUST
- UPPER MANTLE
- LOWER MANTLE
- OUTER CORE
- INNER CORE

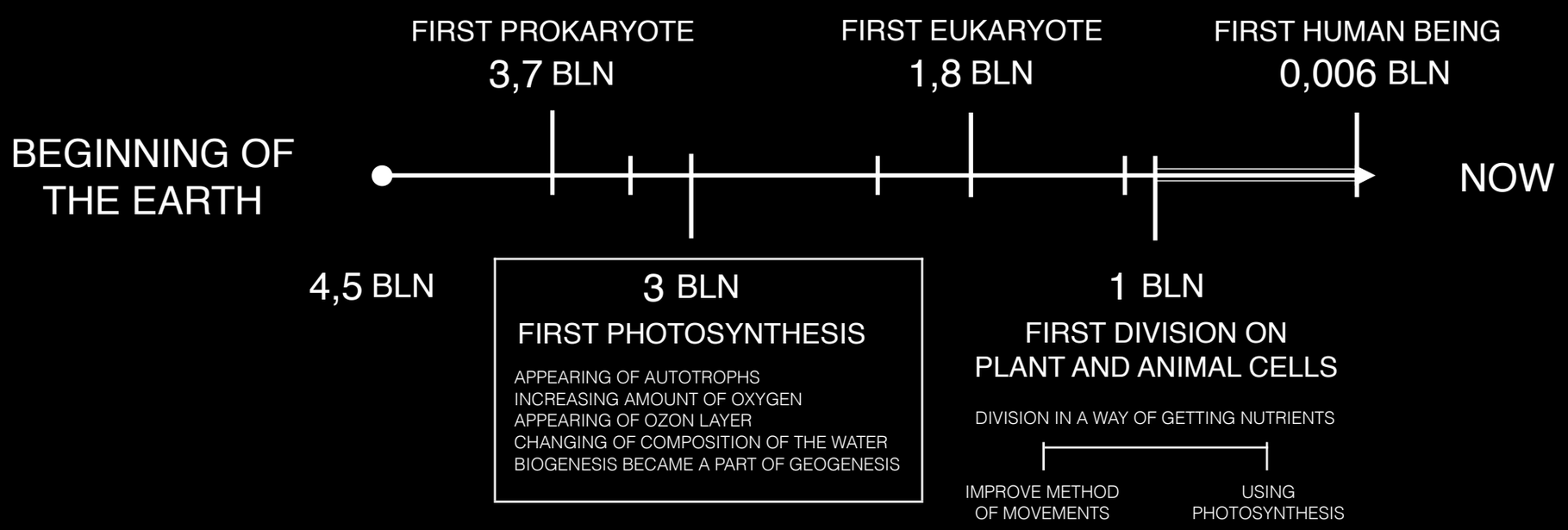
MUSCLES

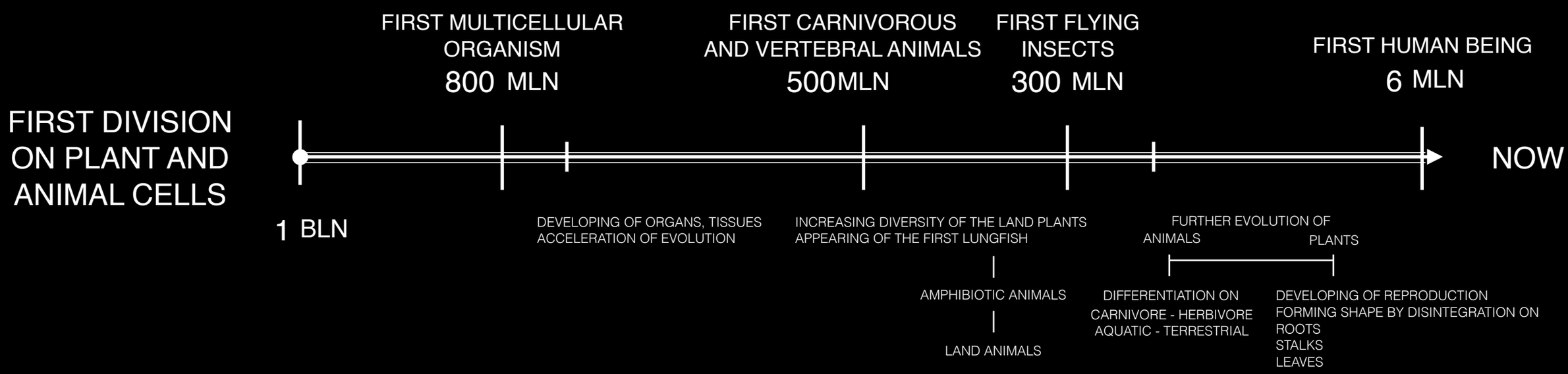
- SOFT TISSUE FOUND
SERVES PRODUCING FORCE AND MOTION

SKELETON

- INTERNAL FRAMEWORK OF THE ORGANISM
SERVES ONE MAIN FUNCTION OF CENTRALIZATION

EVOLUTION.


FIRST PROKARYOTE
3,7 BLN
FIRST EUKARYOTE
1,8 BLN
FIRST HUMAN BEING
0,006 BLN
BEGINNING OF THE EARTH
NOW
4,5 BLN
3 BLN
FIRST PHOTOSYNTHESIS
APPEARING OF AUTOTROPHS
INCREASING AMOUNT OF OXYGEN
APPEARING OF OZON LAYER
CHANGING OF COMPOSITION OF THE WATER
BIOGENESIS BECAME A PART OF GEOGENESIS
1 BLN
FIRST DIVISION ON PLANT AND ANIMAL CELLS
DIVISION IN A WAY OF GETTING NUTRIENTS
IMPROVE METHOD OF MOVEMENTS
USING PHOTOSYNTHESIS


FIRST MULTICELLULAR ORGANISM
800 MLN
FIRST CARNIVOROUS AND VERTEBRAL ANIMALS
500MLN
FIRST FLYING INSECTS
300 MLN
FIRST HUMAN BEING
6 MLN
FIRST DIVISION ON PLANT AND ANIMAL CELLS
NOW
1 BLN
DEVELOPING OF ORGANS, TISSUES
ACCELERATION OF EVOLUTION
INCREASING DIVERSITY OF THE LAND PLANTS
APPEARING OF THE FIRST LUNGFISH
FURTHER EVOLUTION OF
ANIMALS
PLANTS
AMPHIBIOTIC ANIMALS
LAND ANIMALS
DIFFERENTIATION ON
CARNIVORE - HERBIVORE
AQUATIC - TERRESTRIAL
DEVELOPING OF REPRODUCTION
FORMING SHAPE BY DISINTEGRATION ON
ROOTS
STALKS
LEAVES

METABOLIC PIXEL?

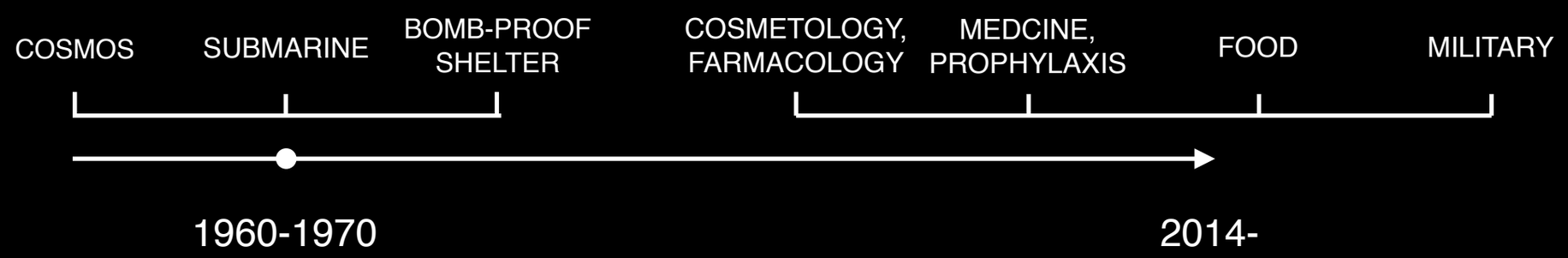
ALGAE

CAPACITY FOR FIXATION CO2 FROM THE ATMOSPHERE AND TRANSFORMATION IT IN DIFFERENT KINDS OF SUBSTANCES (BIOMASS) WITH RELEASING OXYGEN

ALGAE BENEFITS

GROW FASTER THAN ORDINARY PLANTS

DON'T DEMAND AN AGRICULTURE AREA



DEVELOPMENT OF RESEARCHING AREAS USING ALGAE

2 MAIN METHODS OF PRODUCTION

OPEN

IN POOLS OR RESERVOIRS UNDER THE SUN

PRODUCTION OF BIOMASS

ANIMAL FOOD, BIOFUEL, BIOOIL ETC.

CLOSE

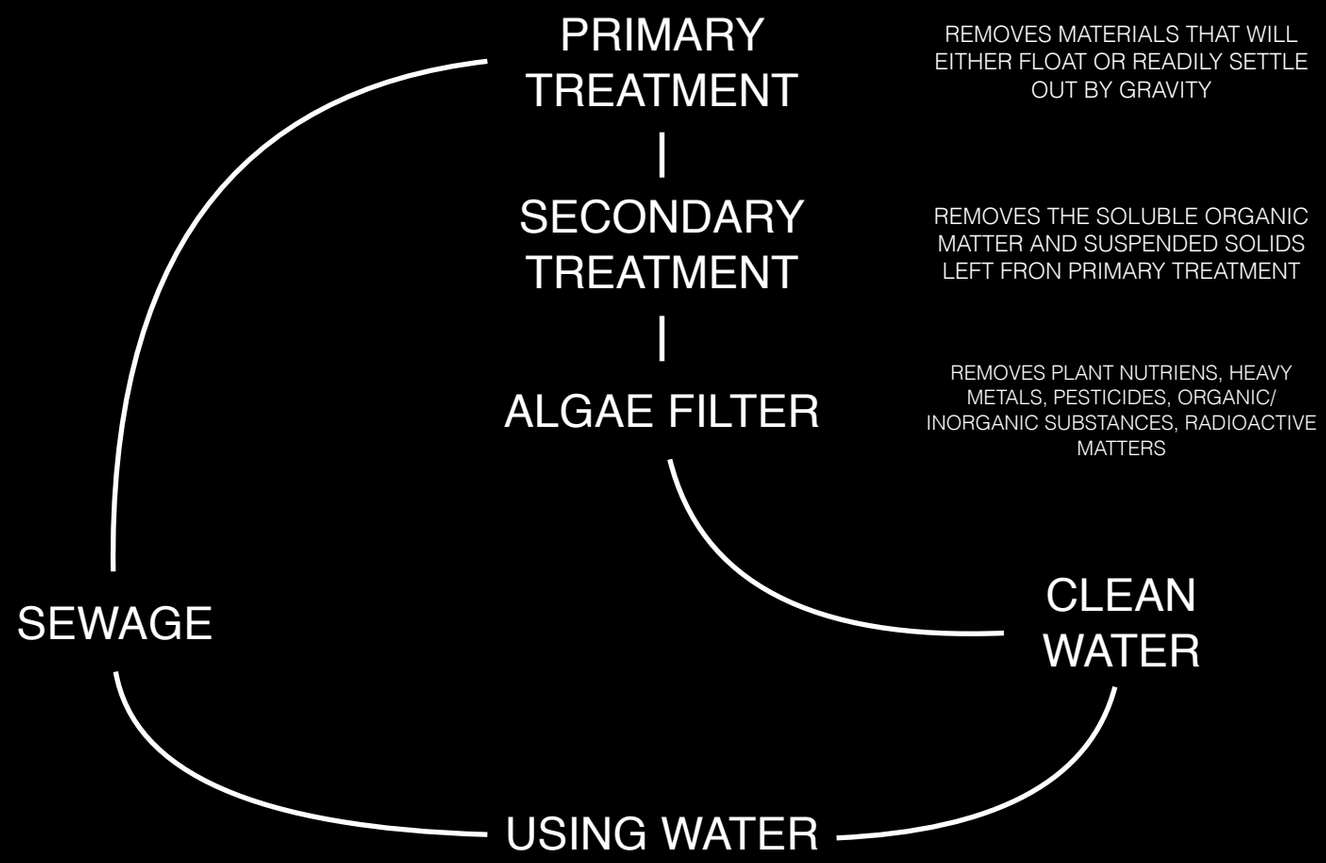
USING ARTIFICIAL LIGHT

PRODUCTION OF CERTAIN SUBSTANCES

USING CERTAIN AMOUNT OF LIGHT, TEMPERATURE, COMPOSITION OF AN ENVIRONMENT, CO2 ETC.

VALLDAURA LAB

PART 1. WASTEWATER TREATMENT



ALGAE FILTER

OR «FACULTATIVE POUND»

2.5 METERS

WASTE ARE STABILIZED

- AEROBIC BACTERIA
- FACULTATIVE BACTERIA

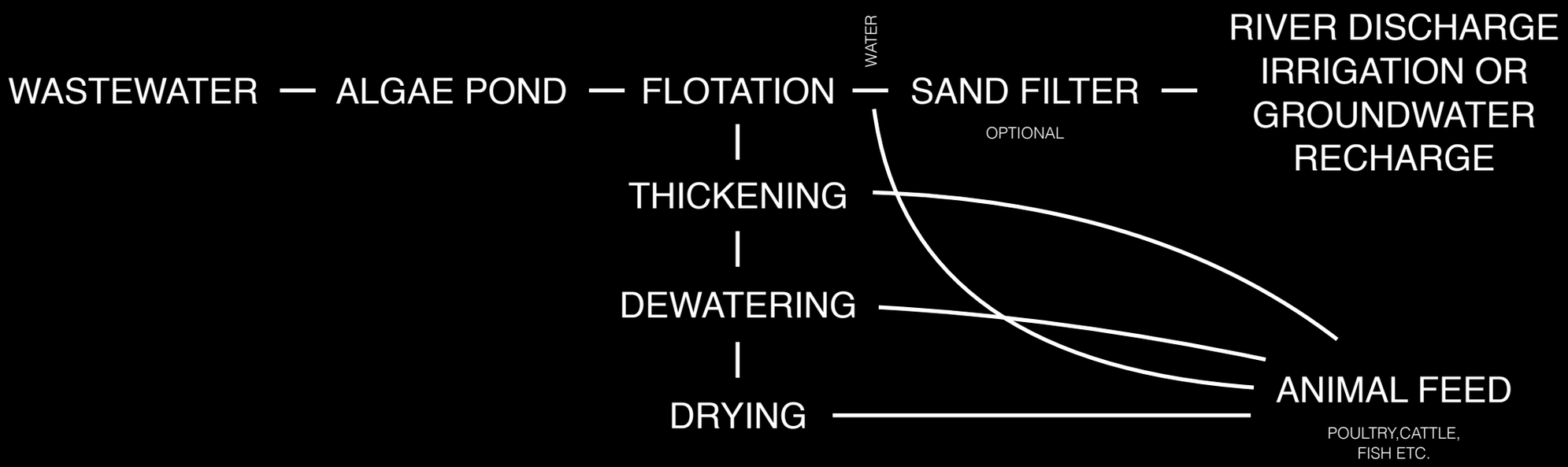
DEGRADED BY ANAEROBIC BACTERIA

5-30 DAYS

DEPENDING ON FACTORS SUCH AS: CLIMATE, TEMPERATURE, WIND AND SURFACE AREA

VALLDAURA LAB

PART 2. FOOD HARVESTING



ALGAE CHLORELLA

DRY BIOMASS

50% - 60% PROTEIN

INCLUDING ALL ESSENTIAL AMINOACIDS

10% - 20% CARBOHYDRATES

20% - 30% LIPIDS

CHEMICAL STRUCTURE SUFFICIENTLY STABLE, BUT CHLORELLA HAS HIGH FLEXIBILITY OF METABOLISM AND CAPACITY FOR RADICAL CHANGING OF PHOTOSYNTHESIS MECHANISM ACCORDING ENVIRONMENTAL CONDITIONS