

Le recul stratégique comme méthode de lutte face à l'érosion du littoral

Auteur : Verspieren, Sophie

Promoteur(s) : Bogaert, Jan; Menzel, Christoph Gotthard

Faculté : Gembloux Agro-Bio Tech (GxABT)

Diplôme : Master architecte paysagiste, à finalité spécialisée

Année académique : 2017-2018

URI/URL : <http://hdl.handle.net/2268.2/5039>

Avertissement à l'attention des usagers :

Tous les documents placés en accès ouvert sur le site le site MatheO sont protégés par le droit d'auteur. Conformément aux principes énoncés par la "Budapest Open Access Initiative"(BOAI, 2002), l'utilisateur du site peut lire, télécharger, copier, transmettre, imprimer, chercher ou faire un lien vers le texte intégral de ces documents, les disséquer pour les indexer, s'en servir de données pour un logiciel, ou s'en servir à toute autre fin légale (ou prévue par la réglementation relative au droit d'auteur). Toute utilisation du document à des fins commerciales est strictement interdite.

Par ailleurs, l'utilisateur s'engage à respecter les droits moraux de l'auteur, principalement le droit à l'intégrité de l'oeuvre et le droit de paternité et ce dans toute utilisation que l'utilisateur entreprend. Ainsi, à titre d'exemple, lorsqu'il reproduira un document par extrait ou dans son intégralité, l'utilisateur citera de manière complète les sources telles que mentionnées ci-dessus. Toute utilisation non explicitement autorisée ci-avant (telle que par exemple, la modification du document ou son résumé) nécessite l'autorisation préalable et expresse des auteurs ou de leurs ayants droit.

ANNEXES

ANNEXES 1: Vue aérienne de la brèche sur le site de Medmerry.

ANNEXES 2: Plan du drainage sur le site de Medmerry.

ANNEXES 3: Schéma des aménagements pour le projet de Medmerry.

ANNEXES 4: Plan des différents habitats intertidaux.

ANNEXES 5: Plan des différents habitats et accès.

ANNEXES 6: Photographies montrant la diminution de l'énergie des vagues.

ANNEXES 7: Photographies montrant le paysage à marée basse et marée haute.

ANNEXES 8: Questionnaire, réponses de Stephen Webster.

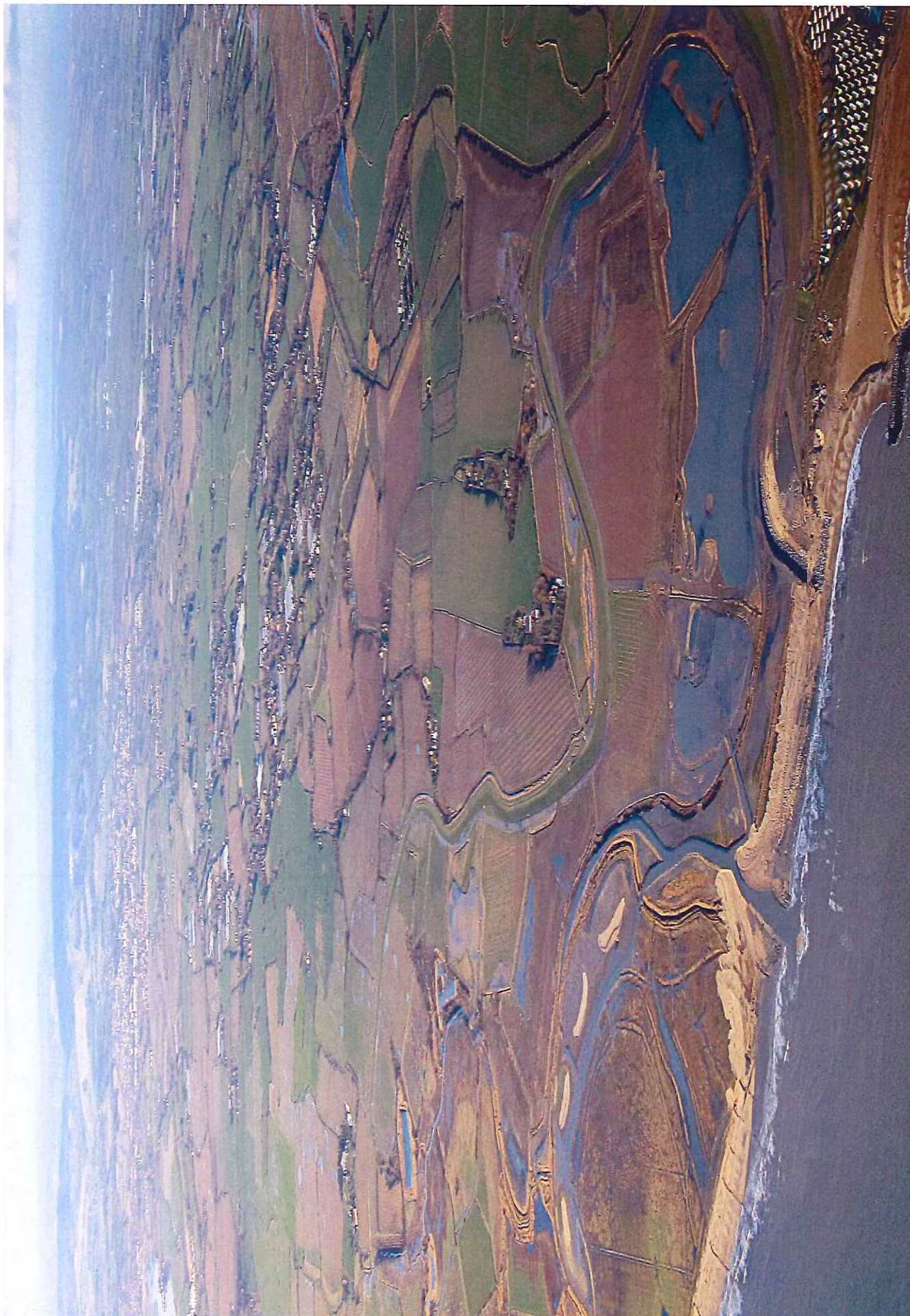
ANNEXES 9: Questionnaire, réponses de Jeremy Colbeck.

ANNEXES 10: Situation des photographies de la partie III.4.

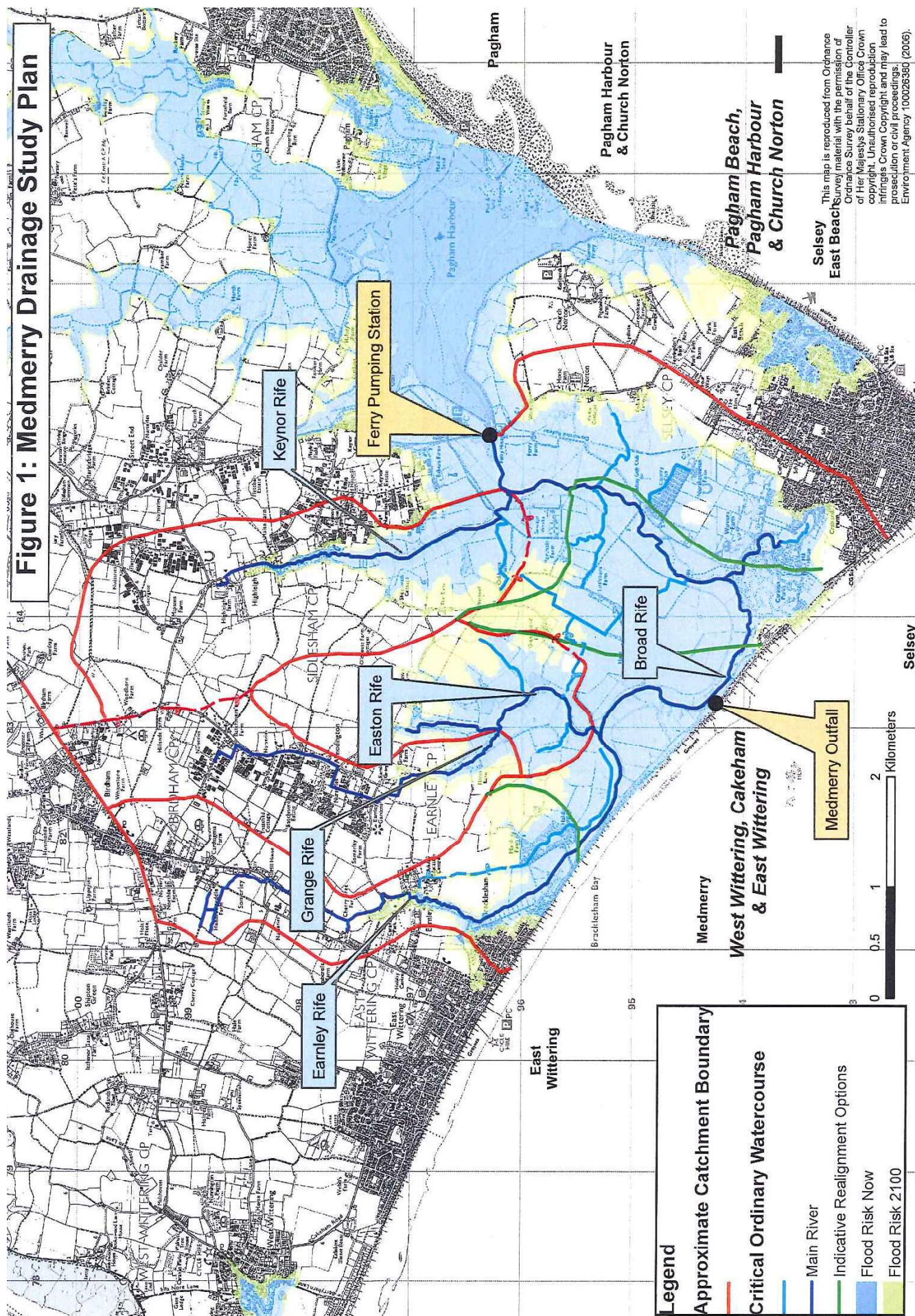
ANNEXES 11: Situation des autres sites de RS visités.

ANNEXES 12: Photographies des autres sites de RS visités.

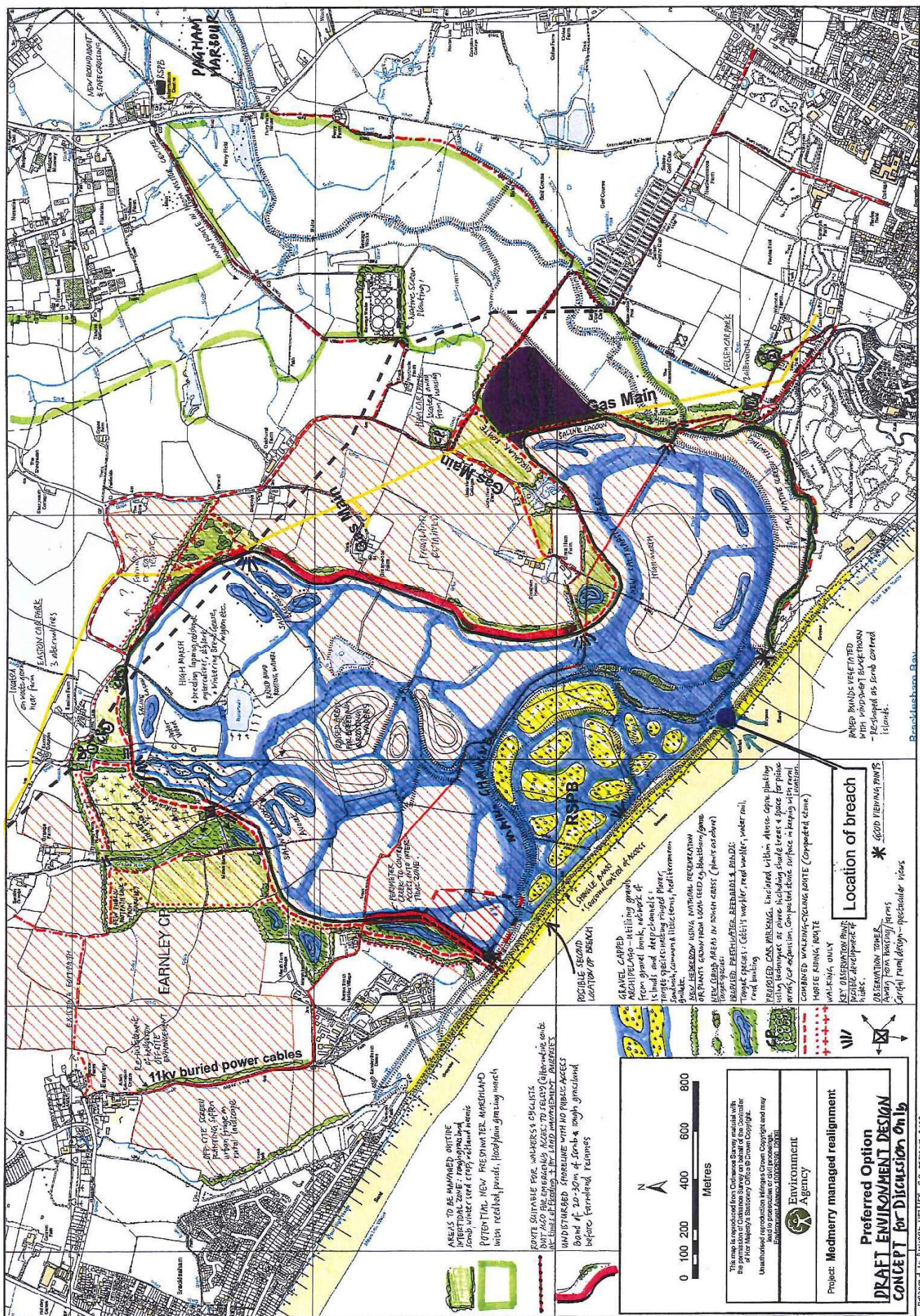
ANNEXES 1: Vue aérienne de la brèche sur le site de Medmerry.



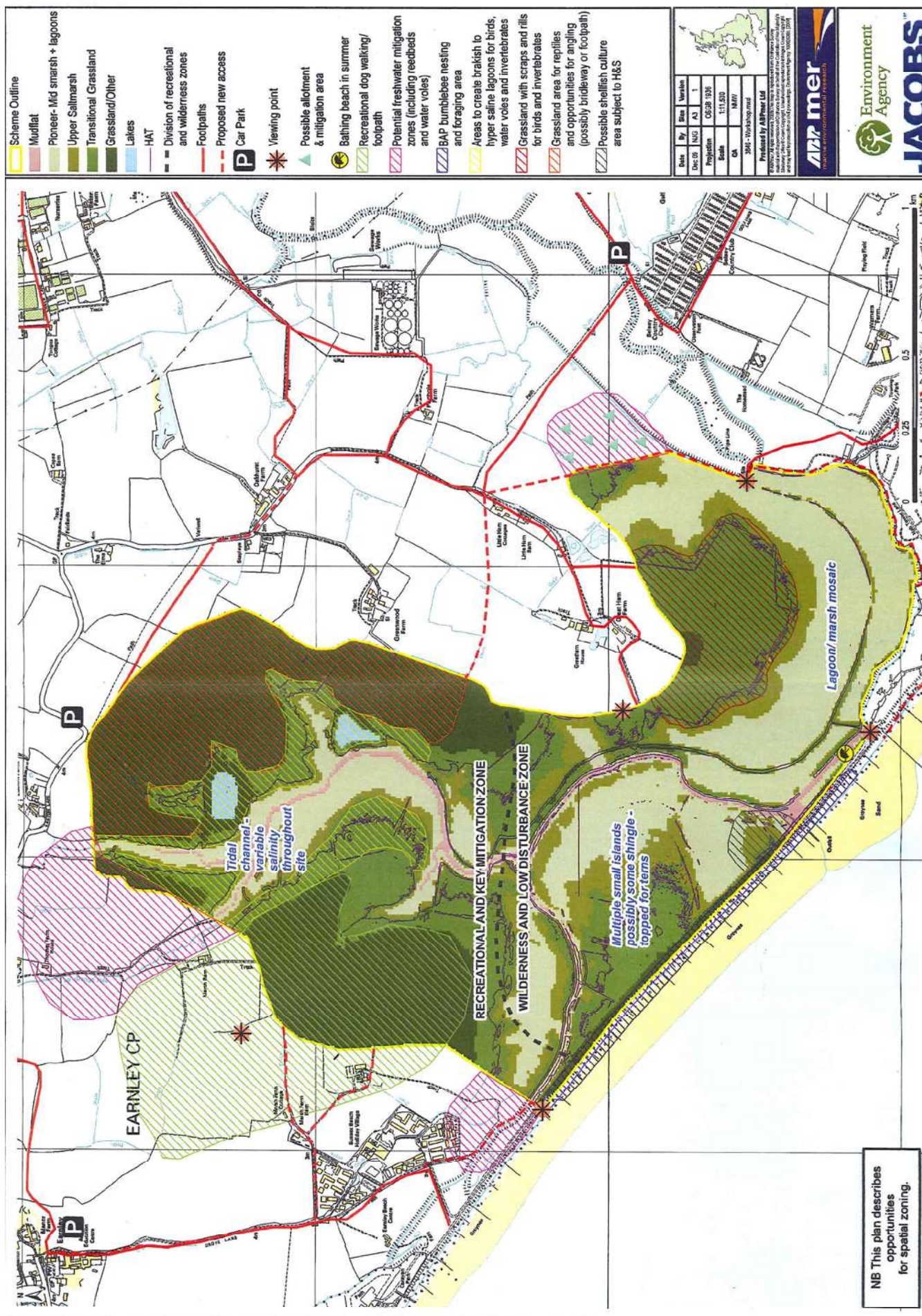
ANNEXES 2: Plan du drainage sur le site de Medmerry.



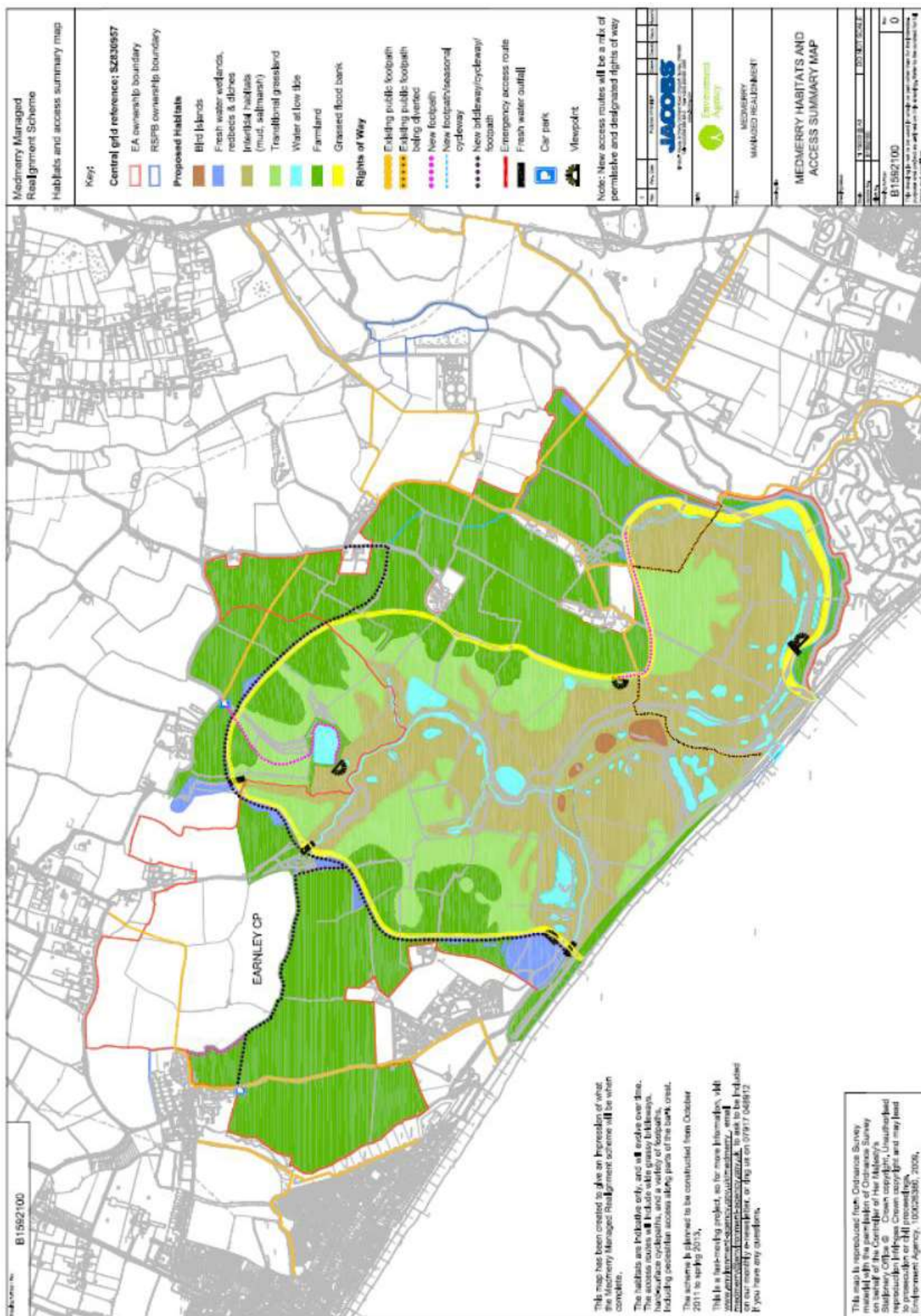
ANNEXES 3: Schéma des aménagements pour le projet de Medmerry.



ANNEXES 4: Plan des différents habitats intertidaux.



ANNEXES 5: Plan des différents habitats et accès.



ANNEXES 6: Photographies montrant la diminution de l'énergie des vagues.

01/01/2018 – Storm at Medmerry. Taken from the Eastern arm near Bunn Leisure.

Shows the wave energy being dissipated as it flows into Medmerry over the top of the old beach.



PHOTOGRAPH 1

01/01/2018 – Storm at Medmerry. Taken from the Eastern arm near Bunn Leisure.

Shows the wave energy being dissipated as it flows into Medmerry over the top of the old beach.



ANNEXES 7: Photographies montrant le paysage à marée basse et marée haute.



Difference in low tide (above) and a very high tide at one of the freshwater outfalls. Location shown on the map.



ANNEXES 8: Questionnaire, réponses de Stephen Webster.

1) What is the legal name of the space?

MEDINERRY MANAGED REALIGNMENT SCHEME

2) What are the goals concerning landscape and biodiversity?

Landscape: BETTER FLOOD PROTECTION FROM INLAND AND THE SEA.
LOW IMPACT ON THE LANDSCAPE FROM THE NEW FLOOD BANK.
MAINTAIN WIDE, OPEN, WILD LANDSCAPE - NO STRUCTURES.

Biodiversity: CREATE INTERTIDAL HABITATS TO REPLACE HABITAT
LOST FURTHER ALONG THE COAST - SALTMARSH/MUDFLATS (183 HECTARES)
KEEP THE WATER DOLE (ARVICOLA AMPHIBIUS) POPULATION.
INCREASE OPPORTUNITIES FOR BREEDING SEABIRDS (GULLS/TERNS) AND
WADERS (REDSHANK/LAWING/FLOCCERS)

3) Who is the administrative authority?

THE ENVIRONMENT AGENCY

4) What was the habitants' and farm owners' reactions to the announcement of the project?

SOME FEARS AROUND FLOODING/FUTURE FARMING OPPORTUNITIES/
IMPACT OF THE FLOOD BANK ON THE LANDSCAPE/INCREASED PRESSURE
FROM VISITORS TO THE NEW NATURE RESERVE/COMPENSATION FOR
LAND USED & LOST TO THE PROJECT.

5) What are the events that have cause the reduction of flood and erosion? (Sediments' accretion, mitigation of wave energy...) Have you some data?

THE VOLUME OF WATER MEDINERRY CAN TAKE FROM THE SEA IS
PREVENTING FLOODING. IT ALSO REMOVES WAVE ENERGY (PHOTOGRAPH 1)

SEDIMENTATION IS OCCURRING INSIDE AND OUTSIDE (SEA-WARD SIDE)
OF THE BREACH. CONCERN IS MOUNTING AS IT APPEARS THAT SILT
AND SEDIMENTS ARE COVERING AN EXISTING REEF.
(LOOK AT PAPER - "EVOLUTION OF EMBRYONIC CREEK SYSTEMS"....)

SEE PHOTOS 2

6) Have you some data about the economic criteria?

Before the project, do you have any idea what the economic cost was about inundation?

After the project, what have been the saving thanks to the ecotourism and local economy?

THE ENVIRONMENT AGENCY MIGHT HAVE THESE FIGURES.

OVERALL COST £26 million

PRIOR TO THE SCHEME - ANNUAL MAINTENANCE OF BEACH £100,000/YEAR

7) Is the project already profitable? If not, in how much time will it be?

NO INFORMATION

8) What are the legal legalisation to achieve such project?

WILDLIFE AND COUNTRY ~~DE~~ ACT

THE ENVIRONMENT AGENCY WILL KNOW ALL THE FLOOD/SEA DEFENCE LEGISLATION

9) Are legal legislations for a such project? For Medmerry, the objectives were just indicative or normative? What are the legal legislation for Medmerry?

AS ABOVE

10) Do you know, when could we be sure that the project is really answering to the meeting expectations?

JANUARY 2018 - A STORM EVENT FILLED MEDMERRY WITH MORE SEA WATER THAN ANYONE HAD EVER SEEN. IT WAS A COMBINATION OF A HIGH TIDE, STORM SURGE AND PREVAILING WIND. NO FLOODING OCCURED.

11) What are the management measures?

- SOME GRAZING BY CATTLE OF THE SALT MARSH.
- WATER LEVELS ARE NOT MANAGED - ALL NATURAL.
- PROTECTION OF GROUND NESTING BIRDS BY FENCING.
- IMPROVEMENT OF AGRICULTURAL OPERATIONS FOR WILDLIFE BY PLANTING FIELD CORNERS AND MARGINS WITH CROPS FOR BOWEN / SEED.

12) Did the new intertidal habitats on the site appear on their own or did you help colonize plant species?

ALL NATURAL REGENERATION - NO PLANTING OF SALT MARSH PLANTS.

13) What are the ecosystemic services about the project?

14) Have you some data about new vegetal and animal species?

REPORTS ENCLOSED

15) Is the project part of Natura 2000 zone?

YES - CANDIDATE SAC.

16) Who is making the maintenance of the site? Farm owner or administration? What are the restrictions for the owner?

ENVIRONMENT AGENCY AS OWNER

RSPB AS TENANT

FARMERS AS TENANTS OF RSPB

17) Does the Environmental agency always follow up?

YES

SOME DELAYS ON STARTING ROUTINE DITCH MANAGEMENT
AND HAND-OVER OF FINAL AREAS OF LAND TO ZSPB
TO MANAGE

18) Does IUCN make some decisions about the management?

NO

19) What maintenance do you make, and with what frequency?

FENCES TO PROTECT BREEDING BIRDS (ANNUALLY)

VEGETATION CUTTING ON SEA WALL (FIRST TIME WINTER 2017-18)

CLEARING AROUND VIEWPOINTS AND SEATS (MONTHLY IN SUMMER)

CAR PARK SURFACING (2-3 YEARS)

LITTER PICKING ON SITE (WEEKLY) ON BEACH (TWICE A YEAR)

20) The Pagham Harbour reserve next to Medmerry, is it part of the same project?

NO

21) In all documentation I read, one the reasons for the managed realignment is that the erosion has destroyed coastal habitat, what was it?

PARTLY.

ALSO DEVELOPMENT OF COASTAL HABITATS ALONG THE
COAST MEANT THAT ENVIRONMENT AGENCY HAD TO FIND
SOMEWHERE TO BUILD REPLACEMENT HABITAT.

RAISING SEA LEVELS

LOCAL FLOODING.

ANNEXES 9: Questionnaire, réponses de Jeremy Colbeck.

1) What is the legal name of the space?

NOW KNOWN AS NEDMERRY NATURE RESERVE

2) What are the goals concerning landscape and biodiversity?

Landscape:

TO PROMOTE THE PARTICIPATION OF COMMUNITIES DURING THE PLANNING AND DEVELOPMENT PHASE; REDUCE NEGATIVE IMPACTS
IMPROVE BENEFITS - RECREATION ETC.

Biodiversity:

AT HIGH LEVEL - TO CREATE INTERTIDAL HABITAT TO
OFFSET LOSSES ACROSS THE SOLENT

3) Who is the administrative authority?

CHICHESTER DISTRICT COUNCIL

4) What was the habitants' and farm owners' reactions to the announcement of the project?

THERE WAS A MIX OF ENTHUSIASM AND CONCERN ABOUT POTENTIAL IMPACTS
THE NEDMERRY STAKEHOLDER ADVISORY GROUP (MSLAG) WAS ESTABLISHED
TO ENSURE COMMUNITY PARTICIPATION IN SCHEME DEVELOPMENT

5) What are the events that have caused the reduction of flood and erosion? (Sediments' accretion, mitigation of wave energy...) Have you some data?

7KM OF NEW FLOOD BANKS WERE CONSTRUCTED INLAND
TO MAINTAIN AND IMPROVE DRAINAGE OF THE MIDER AREA 4
NEW FRESHWATER OUTFALL STRUCTURES WERE BUILT ALONG WITH
OVER 10KM OF NEW DRAINAGE DITCHES AND PONDS.
NEW SALT MARSH WILL ~~AND ACCRETION~~ OF HELP TO REDUCE
WAVE HEIGHT AND ENERGY WITHIN THE INTERTIDAL AREA.

6) Have you some data about the economic criteria?

Before the project, do you have any idea what the economic cost was about inundation?

After the project, what have been the saving thanks to the ecotourism and local economy?

SHINGLE BANK REGULARLY BREACHED BEFORE THE SCHEME.

A BREACH OCCURED ON 10 MARCH 2008 DURING A MAJOR STORM

THIS WAS ESTIMATED TO HAVE CAUSED OVER £5M DAMAGES TO LOCAL BUSINESSES

11) What are the management measures?

EMBANKMENTS AND OUTFALL STRUCTURES WILL BE MONITORED AND MAINTAINED.

12) Did the new intertidal habitats on the site appear on their own or did you help colonize plant species?

THE INTERTIDAL HABITATS WERE LEFT TO COLONISE NATURALLY

13) What are the ecosystemic services about the project?

ECOSYSTEM SERVICES BENEFITS WERE NOT CALCULATED. HOWEVER THERE ARE BENEFITS RELATED TO TOURISM, CARBON SEQUESTRATION, RECREATION AND FISHERIES IMPROVEMENTS (PROVISION OF NURSERY HABITAT)

14) Have you some data about new vegetal and animal species?

SEE MNR MONITORING UPDATE: SUMMER 2017 - UPLOADED TO SHAREFILE - LINK SHOWN ON EMAIL

15) Is the project part of Natura 2000 zone?

THE COASTLINE IS INCLUDED WITHIN THE SOLENT AND DORSET COAST SPA NATURAL ENGLAND (WITH ENVIRONMENT AGENCY AND RSPB ASSISTANCE) ARE PLANNING TO DESIGNATE THE NEW INTERTIDAL AREA

16) Who is making the maintenance of the site? Farm owner or administration? What are the restrictions for the owner?

ENVIRONMENT AGENCY MANAGE FLOOD DEFENCE ELEMENTS OF THE SITE
RSPB MANAGE OTHER ASPECTS OF THE SITE EG. RELATING TO VISITORS AND TENANT FARMERS.

MANAGEMENT IS SUBJECT TO ECOLOGICAL CONSTRAINTS SUCH AS THE WILDLIFE AND COUNTRYSIDE ACT (EG PROTECTED SPECIES), THE COUNTRYSIDE AND RIGHTS OF WAY ACT (RELATING TO SSSI'S) AND HABITAT REGULATIONS
INTERTIDAL AREA CONSIDERED AS SPECIAL PROTECTION AREA

17) Does the Environmental agency always follow up?

THE ENVIRONMENT ^{AGENCY} WERE REQUIRED TO UNDERTAKE SOME POST SCHEME MONITORING. WE HAVE PARTNERED WITH OTHER ORGANISATIONS TO COLLECT MONITORING

18) Does IUCN make some decisions about the management?

NOT INVOLVED AS FAR AS I'M AWARE. NATURAL ENGLAND AND THE RSPB ARE INVOLVED IN MANAGEMENT DECISIONS, ALONG WITH THE ENVIRONMENT AGENCY.

19) What maintenance do you make, and with what frequency?

EMBANKMENTS AND STRUCTURES ARE INSPECTED ANNUALLY. WORKS WILL BE UNDERTAKEN IF REQUIRED.

20) The Pagham Harbour reserve next to Medmerry, is it part of the same project?

NO - BUT THE RSPB MANAGE BOTH SITES.

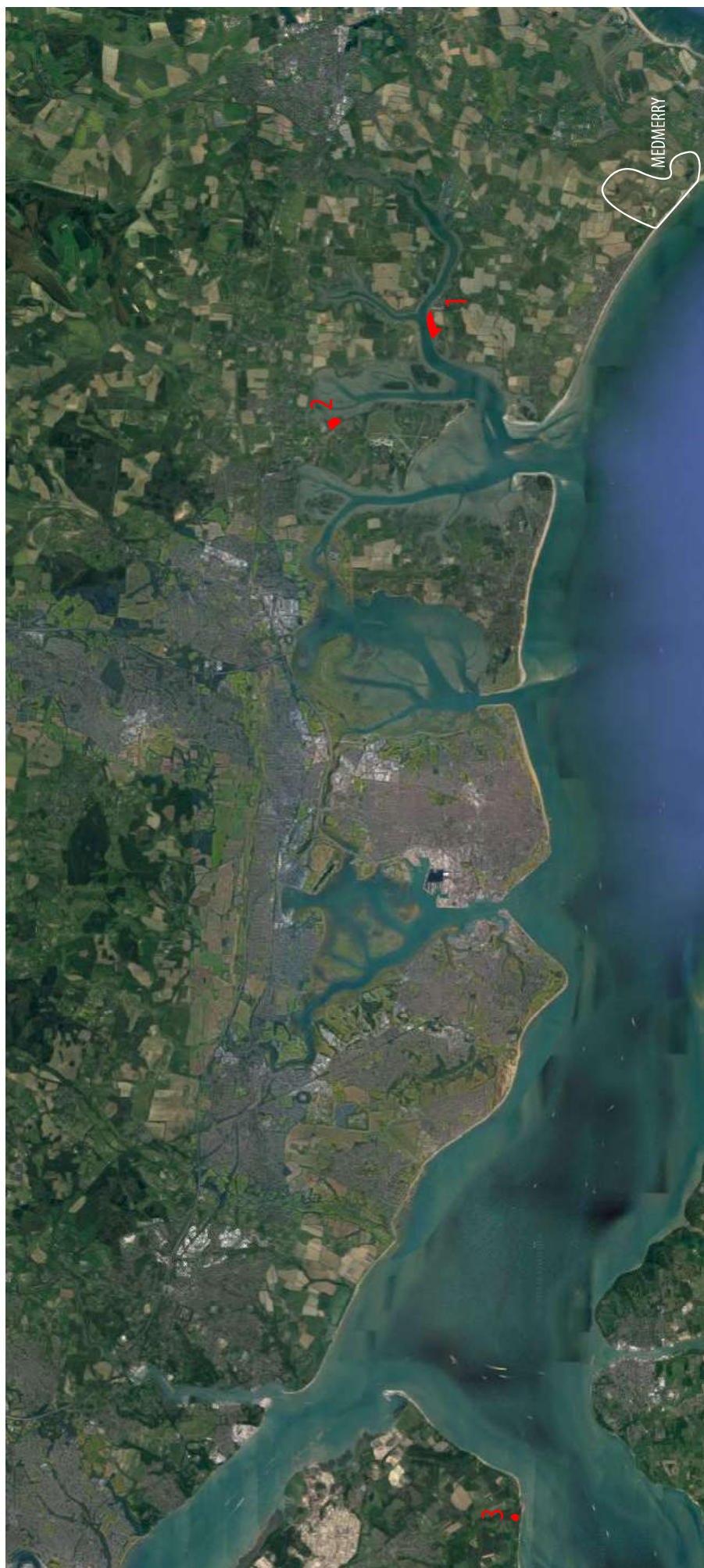
21) In all documentation I read, one the reasons for the managed realignment is that the erosion has destroyed coastal habitat, what was it?

BEFORE THE SCHEME THE BEACH WAS MANAGED BY BULLDOZING SHINGLE UP ON TO THE BEACH. THIS WAS EXPENSIVE AND PROVIDED A LOW STANDARD OF PROTECTION. BECAUSE OF THE SCHEME THIS ACTIVITY IS NO LONGER REQUIRED. THIS HAS RESULTED IN A MORE NATURALISED COASTAL HABITAT.

ANNEXES 10: Situation des photographies de la partie III.4.



ANNEXES 11: Situation des autres sites de recul stratégique visités.



ANNEXES 12: Photographies des autres sites de recul stratégique visités.

Site 1: Chalkdock Marsh. Controlled tidal restoration: 2000, Area: 3.2 ha, Zone : 31135 m²



Site 2: Thornham Point. Breach of defence: 1997, Area: 7 ha, Zone : 61153 m²



Site 3: Lepe-Darkwater, Controlled tidal restoration: 2007, Area: 5 ha, Zone : 31393 m²

