

虚位以待的“景观提白”： 发掘塑造大淹地的持久性因素

“Landscape Prompts” Awaiting Attendance: Uncovering the Persistent Factors That Shape the Drowned Lands

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摘要

美国纽约州的黑土农业区素以出产口味独特的洋葱闻名遐迩，而这得益于土壤中80%以上的有机质。但近年，当地僵化的经济模式制约了地区发展，同时本地农业生产也在日趋频繁的洪灾影响下愈发脆弱。当“盛产农作物”逐渐成为这一地区的标签时，人们便忽视了形成黑土农业区景观背后的持久性因素。而它的别名“大淹地”（the Drowned Lands）或许能更好地表征这片土地与水之间的纠葛关系。

本文立足于美国的乡村现状与历史沉积，将水文地质的动态与人的需求视为景观连续性与稳定性的两大因素，并重新勾勒出当地景观自末次冰盛期以来的图景。设计方案为黑土农业区开辟了一条兼具生态功能与游逸价值的复合路径。沿途的一系列“景观提白”讲述了鲜为人知的地质学知识与史前文化。通过设计干预，乡村景观的其他可能性获得了检验，农业用地的意义变得触手可及，更为和谐的人地关系得以修复。

关键词

持久性因素；（去）冰川化；水文地质学；景观演变；景观提白；气候变化；地质伦理

ABSTRACT

The Black Dirt Region in the State of New York has been well-known for the unique taste of its onions, which is attributed to the organic matter that weighs over 80% in the soil. In recent years, however, the rigid economic pattern restrains the development of this area. In the meantime, local agricultural production is more and more vulnerable to flooding. When this region is labeled as “highly productive of crops,” the persistent factors that have been shaping the black-dirt landscape are omitted. The other name of the place, “the Drowned Lands,” may better capture its entangled relationship with water.

In this article, hydrogeological dynamics and human desire are regarded as the factors that sustain landscape continuity and stability. Based on the research on historical sedimentation in the Drowned Lands, this article attempts to delineate a local scenario of covert landscape evolution since the Last Glacial Maximum. The proposal initiates a composite pathway of ecological functions and touristic values in the agricultural region. Within a series of “landscape prompts,” a lesser-known tale of local geology and prehistoric culture is told. Through design interventions, alternative possibilities of rural landscape are tested, embedded meaning of the agricultural land becomes tangible, and a more adaptive human-land relationship is restored.

KEYWORDS

Persistent Factor; (De)glaciation; Hydrogeology; Landscape Evolution; Landscape Prompt; Climate Change; Geological Ethics

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1 引言

如果说“可持续性”（sustainability）一词意味着具备自我更新能力的未来，那么“持久性”（persistence）则强调了发生在过去的事情。而相较于“永恒性”（perpetuity）这一客观存在的状态，“持久性”又更侧重于为了维系某事物长久存在所付出的人为“努力”。此外，假若将“地方性”（locality）理解为某一特定地方所演化而来的某些固有特征，那么持久性因素也应被考虑在内。

设计师有时会在有记载的场地历史上花费诸多精力，而这却会限制创造力的表达——因为从景观演变史的尺度上来看，被记载的场地历史不过毫厘。学者约翰·迪克森·亨特曾指出，地质、地形和气候这三个物理要素构成了设计的先决条件^[1]，保证了设计师的创造性分析基于“批判性理解的历史”。为了揭示更为根本和持久的场所精神，设计师需要认真研究场地地质变迁与其史前文化。

“持久性景观”究竟是什么？本文无法给出标准答案，亦无意为之。借助设计方案来试验上述思辨，从而勾勒出“持久性景观”的轮廓，或许更为实用。

2 场地的景观演化

设计区域位于美国纽约州奥尔治县，这是一块占地面积约为105km²的黑土农业区。18世纪初，英国人和荷兰人定居于此。这片被其冠以“大淹地”之名的季节性淹水沼泽，仅被他们用于放牧^[2]。直到随后迁居而来的波兰人和德国人发现这里的水下土壤与他们家乡的肥沃黑土类似，这才促使农耕被纳入当地的发展议程。此后，历经数代欧洲移民的努力，“大淹地”得以排干，在此期间，他们与下游磨坊主争夺河水控制权的冲突亦时有发生。^[2]如今由于土壤中含有高浓度的硫元素，这片黑土地所产的洋葱口味强劲并因此闻名遐迩（图1）。

相较于这方水土的漫长演化过程，今日所见的农业景观仅仅是流光瞬息。回望历史，大约20 000年前的更新世威斯康星冰期（与全球末次冰期同步），劳伦泰德冰盖曾经覆盖了北美洲近一半的面积，终碛远达纽约长岛（图2）^{[3]-[5]}。在晚更新世冰后期（大约18 000年前），厚约600m的冰盖开始融化，并由此引发了一系列的文化和生态事件（图3）^[2]。冰川融水形成了冰前湖，例如已被地质学



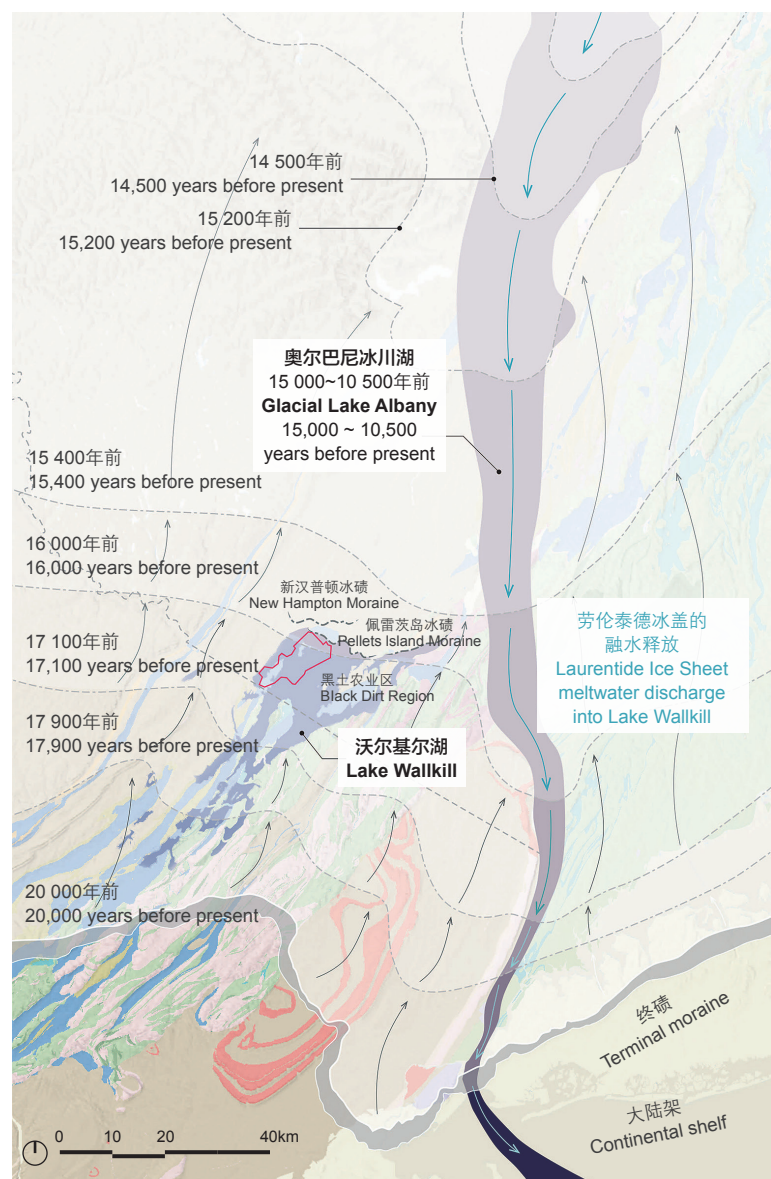
1. 一旦遭遇严重的洪灾事件，平坦的黑土地农田极易被完全淹没，由此造成的经济损失也会是毁灭性的。
2. 从两万年前开始，劳伦泰德冰盖逐渐后退；当时，由于大量的水积聚在陆地冰川上，新泽西州海岸线相较今日向东退后了80km左右（改绘自参考文献[5]）。

1. Once struck by a severe flooding event, the flat black dirt farmlands are extremely susceptible to complete inundation, and the engendered economic loss could be devastating.
2. Ice of Laurentide ice sheet has retreated since 20,000 years ago, when New Jersey's shoreline was 50 miles (approximately 80 km) to the East of the current one for so much water glaciated on land [Adaptation source: Ref. [5]].

① 本文采用通用表述“莱纳佩印第安人”来指代伦尼莱纳佩美洲土著。

家发现的奥尔巴尼冰川湖和沃尔基尔湖^[6]（图2）。如果我们在这片土地上截取一处剖面，将会发现农田周围的湖相淤泥、粘土，以及碳酸盐岩石——这些都标识着当年的冰前湖边界。

1966年，考古学家在达奇斯石洞内发现了古印第安人的岩棚，使得人类在沃尔基尔河谷的定居史进一步追溯至12 580年前^[2]。旧石器时代的人类用石尖长矛狩猎，用鱼叉捕鱼，并采集水果和坚果作为营养补充。而在接下来的9 000年里，莱纳佩文化相继经历了远古时代和疏林时代，保持着稳定发展，直至16世纪中叶，莱纳佩印第安人第一次遇见



沉积岩 Sedimentary rocks
碎屑岩 Clastic rocks
碳酸盐岩 Carbonate rocks
火成岩 Igneous rocks
火山岩 Volcanic rocks
侵入岩 Intrusive rocks
变质岩 Metamorphic rocks

欧洲移民^[4]。今天，人们在耕作期间发掘出了乳齿象与恐龙的遗骸，以及一枚枚箭簇与矛头，使得这片厚重的土层已然转变为“古生物学与古石器学的证据库”^[2]。

与此同时，水文也正发生着悄无声息的变化：地面随洪水涨退，时涝时旱；也随冬季风暴来去，时冻时融。同时，芦苇和莎草在此生长、腐烂，使湿地土壤逐渐肥沃，并以每年30cm的速度增厚^[7]。如今，沟渠承担着排涝的重任，一旦再现类似1955年洪灾或2011年艾琳飓风的极端天气，农业损失将是毁灭性的。当地政府已经建成数个“洪泛区梯台项

目”，但这些工程措施仅能将洪泛推迟几个小时，效果着实有限。而日益加剧的洪灾也将使农田变得愈发脆弱，因此，当下所推行的全面开发的农业模式是否具有可行性仍有待考证。

3 设计方案

鉴于场地丰富的演变史和活跃的水文动态，我们需要重新构想一种景观管理新途径。如若只是继续注重农业生产抵御力的提升，人们必将陷入与洪水永无休止的抗争中。因此，本文的设计方案试图寻求范式转变，主张更多地考虑场地的深时以寻求新的机遇。设计研究从地质调查开始，发现了不同种类的地质沉积物竟然会在意外的地点交汇^[8]。基于这一考虑，方案选择了4个代表性地点作为“景观提白”。在这里，特色各异的岩土材料汇于一处，并对各自的地面状况产生影响。（图4）

第一个提白名为“枫树沼泽”，位于一个岩溶含水层顶部，由一条表层岩溶带、一条包气带和一条潜水带构成，并分别对应了三种地下水类型：新鲜水、混合水和旧有水^[9]。现状场地四周散落着大小不一的冰川漂砾。本方案提出在场地上种植更多红枫，其根部从雨水下渗的反方向泵取水分，从其树干部分则可收集树液（图5，6）。另外，莱纳佩印第安人曾经在此教会了早期欧洲移民制作枫糖

浆，而枫糖浆的原料——树液只能在春寒料峭之时采集。本方案复现了这一生产糖浆的活动，试图将人们拉回至历史场景中（图7）。从隐喻的层面讲，这也是一个能让游客亲身体验“场所流动感”的机会——从分层地下水的形式到枫树韧皮部的树液，乃至树液蒸馏所得的甜美浆液。

第二个提白名为“废弃砂矿”，设置于西倚蛇形丘、东挡黑土田的砂砾高地之上（图8）。蛇形丘的东北走向即为沃尔基尔河谷中冰川消退的方向，冰体的剧烈摩擦在其陡峭坡面上留下了条痕。如今，我们仍可从空中识别出7个梯形采矿区，而这也表明此地曾经可能有过采矿作业。奇特的是，矿坑之中的水位要比周围农田高出3m左右，这可能是由于高耸的冰川将地面沉积物压成了混积结构，从而有效阻止了砂矿一侧的水体向另一侧渗透（图9）。

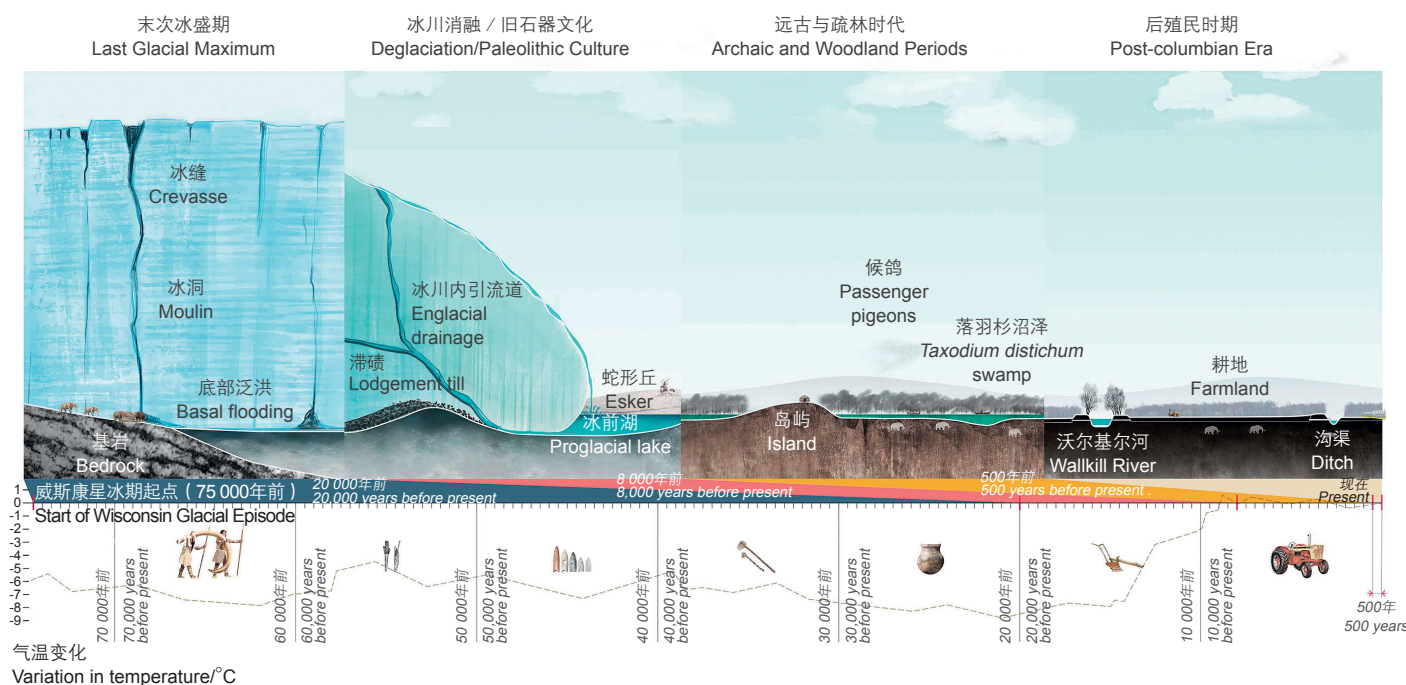
本方案设计了一个能提供观察制高点的瞭望塔，使游客拥有了观察矿坑水面高差的机会（图9）。随着人们从塔底爬上塔顶，矿坑水面和矿外土地之间的高度差会愈发明显。人们还可以在这片棕地内的池塘边钓鱼——这一看似奇特的活动实则在淹地自古有之（图10）。

第三个提白“旧牛轭河道”曾是瓦瓦杨达小溪的一部分。欧洲定居者开始农田排水工作后，牛轭河道便逐渐演变为月牙形的湿地草甸。而今，碧绿的莎草从枯死的植物堆中获得新生。在季节性洪水

和沟渠定期灌溉的双重作用下，牛轭河道中的黑土持续发酵。为了激活牛轭河道及其周围土地，本方案建立了一套与之相连的新型农业设施（图11）。新的沟渠网络使牛轭河道成为其子系统，并将河道中黑土的发酵过程用于可持续的农业生产（图12）。

第4个提白则是位于黑核桃岛一侧的“岛边地”（图13）。这座小岛是在劳伦泰德冰盖的极端重压下沉积、挤压形成的，也曾被莱纳佩印第安人用作钓鱼休憩场所。我们可以试想这样一个场景：渔民穿越落羽杉（*Taxodium distichum*）沼泽，将满载鱼贝的独木舟轻轻停靠在岸边，然后在岛上找到了一块稍稍干燥的地方小憩。为了还原并让人切身体会这一情景，本方案设计了几个硕大的独木舟形状的土方夯印在小岛边缘，其中一个土方被设计为适宜鸟类营巢的“纪念碑”。若从复植的落羽杉沼泽远眺小岛，人们会发现土方形状恰好呼应了其后的黑核桃岛和夏娃山的轮廓，而三者又都平行于冰川后退的方向（图14）。当洪水来临时，复植的森林湿地和低洼的地形能够容纳顺流自沟渠的雨水，从而减轻洪涝影响。

正如这4个景观提白所展示的，再现的情景转瞬即逝，但是对于景观持久性的表达又是因地制宜的。尽管每个提白不过只是对过往的匆匆一瞥，但它们的集合却勾勒出了这个地区的复杂图景。每个提白中的“索引”都为观者重温历史留出余地。只



3. 从更新世至今的区域景观演变：在全新世早期，冰川融水将此淹地，形成了湿地与泥沼；在大约一万年，地球的急剧升温，以及古印第安人的狩猎活动致使大型动物灭绝（参见参考文献[2]）。

3. Regional landscape evolution from Pleistocene to today: In the early Holocene, glacial meltwater submerged this terrain as wetlands and bogs; About 10,000 years ago, the drastic warming in the Earth had driven the mega-fauna to extinction, to which Paleo-Indians' hunting activity also contributed greatly [Source: Ref. [2]].

有当游客亲自参与劳作、登高瞭望场地、见证新土腐熟，又或以身作尺丈量时，这些编码在设计之中的意义才能完全获解。

从“再现”的角度上讲，每个提白都拥有一个整体全时性的情景，将想象中的过去和现在相连。正如法国哲学家阿兰·霍杰所言，通过再现自然而嵌入观看之中的媒介化过程（拉丁语“in visu”，意为“在观”）与在场地上进行实操的过程（拉丁语“in situ”，意为“在场”）是同等重要的；两者共同构成了“人化”的过程^②。对霍杰而言，视觉观察和在地设计是将土地转换为景观的两种方式。除非将自然“人化”，否则不应称之为景观。换言之，这些情景图卷所带来的文化想象达成了“景观”的总体意涵。

这些提白还从宏观上创造了一条复合的路径，使得4个景观提白连接为一个整体，并在其中编织了4条线索：一段泥路，一条拓宽的河，一排灌木丛和一片宽阔的河岸森林（图15）。作为一条生态廊道，引入的果树可为农民增加收成，同时增加的河岸森林面积又能丰富林冠线。

4 讨论

4.1 气候变化再思考

气候变化驱动了冰川的形成，随后的冰川消融又为表层地质赋形；而在深时的视野下，有机物和人类活动其实也在风化地表、塑造地形。可见，对上一次重大气候变化的理解有助于将当前的气候事件置入环境史的脉络中，以从宏观尺度考量气候变化这一现象。然而，激进的叙事话语往往忽略这一背景，而仅仅围绕着将气候变化归咎于现代技术进步的角度去展开其论述，这可能无益于环保主义者的政治议程。了解历史发展并非意味着削弱当前气候变化的灾难性与紧迫度；恰恰相反，这为更充分地认知这一问题提供了令人信服的事实依据。当前人类所处的间冰期比其前后的冰川期更短，且对于生命相对友好^①；由此看来，全球变暖实在是一个连续波动的一部分。景观提白将今天的冰川消融与发生在18 000年前的同类事件联系起来，为在地质年代尺度下思考景观演化提供了一个契机。

4.2 地质伦理

本方案将水文地质现象和人类需求视作两个重塑景观的持久性因素（图16）。不过，我们如何能

在“持久性景观”这一统一概念下撤销物质过程与主观体验之间的对立？哲学家曼努埃尔·德兰达在经典著作《千高原》的影响下，由其中关于“道德的地质学”的讨论，提出了一个引人注目的观点。^{①②}他的“地质伦理”思想为我们提供了一种从物理主义和唯物主义来认识“持久性景观”的独特视角。

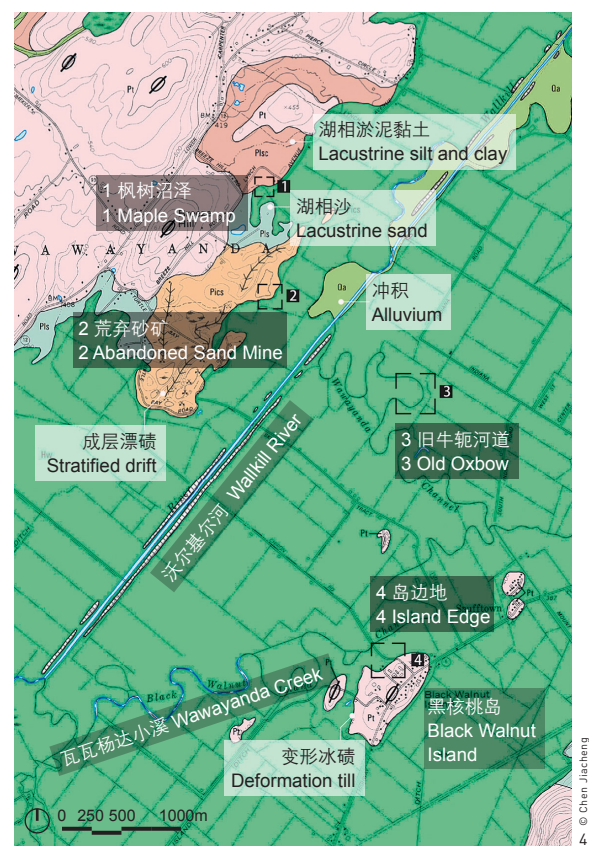
德兰达认为“岩石的智慧”事关寻找一个具有指导意义的方法，它能帮助人们倾听那富含创意与表达的物质流动^{①③}。他将这个基本思想进一步迁移至对食物链和社会等级的拣选与固化现象的描述中，并认为产生有意义变化的关键在于找到合适的“黏度和层理”，以匹配特定的社会流动^{①③}。根据地质伦理的假设，与工业化后的社会相比，原始社会的黏度与其同时代的生态系统更为一致，并且层理程度更低。这一见解使莱纳佩文化并未形成固化的社会组织的原因获得了合理解释——他们选择了游牧的生活方式，在山脊和大西洋沿海平原之间季节性地迁移^④。以“岩石的智慧”这一持久的自然现象观之，人类的需求不过是这一物质过程的某种抽象表达罢了，由此，其所内嵌的“主观性”得到了一种物理主义式的解释。

借此，德兰达号召社会改革者们行动起来，要求他们标绘出能引导社会流动中的动态行为的“吸子”^{①③}。而今，工业化的农业生产加剧了环境危机，亟待重整。本案将“寻求意义感的愿望”视作引导大淹地演化的新“吸子”；而一个生态更多样、人口更多元的社区方可反映适合于大淹地的新社会黏度。

5 结语

AMO在最近的展览“乡村，才是未来”中提醒公众，目前，全球一半以上的人口生活在仅占地表面积2%的地方，而其他的不足40亿的人口则栖居在占比98%的剩余土地上^④。不幸的是，今日我们所见的大部分乡村地带正在以同质化的发展模式变得日渐平庸。然而，正如本项目所希望揭示的那样，一处乡土一度可能是遍布奇景的所在，而且时至今日仍可以是设计师们深入其中重获灵感的地书。

气候变化来来去去，但其周期性是持久的；野生动植物的寿命不过一瞬，但物种的演化是持久的；一个人类社会可能会接替消亡的另一个，但“地质伦理”是持久的，一如我们人类的好奇心。因此，为了释放景观的潜力，设计师们需要锲而不舍地追问和实验，正如“持久性”一词所定义的那样。LAF



4. 场地本身的表层地质构成与代表性地点选择（改绘自参考文献[8]）与“景观提白”的具体区位。

4. Local surficial geology composition and site selection [Adaptation source: Ref. [8]], as well as the location of “landscape prompts.”

- ② “人化”（artialisation）是一个古法语词。霍杰的原话可以译为：“自然是不确定的，其只能在艺术中获得确定性：只有在‘（有主观观之的）风景的限定’下，乡土才可被称为景观，而这是借助两种‘人化’的方式实现的：即流动（in visu，即‘在观’）与附着（in situ，即‘在场’）。”（法语原文参见参考文献[10]第17-18页）
- ③ 德兰达在其《非有机生命》一书中指出了地质循环中所存在的两个具有特殊意义的过程：沉积（即选取原材料进行水力分选）与胶结（即分选后的材料固结为永久性结构）。这两个过程共同构成了宏观上的“层理”化的过程。
- ④ 请登录“所罗门·R·古根海姆基金会”官方网站了解更多信息。

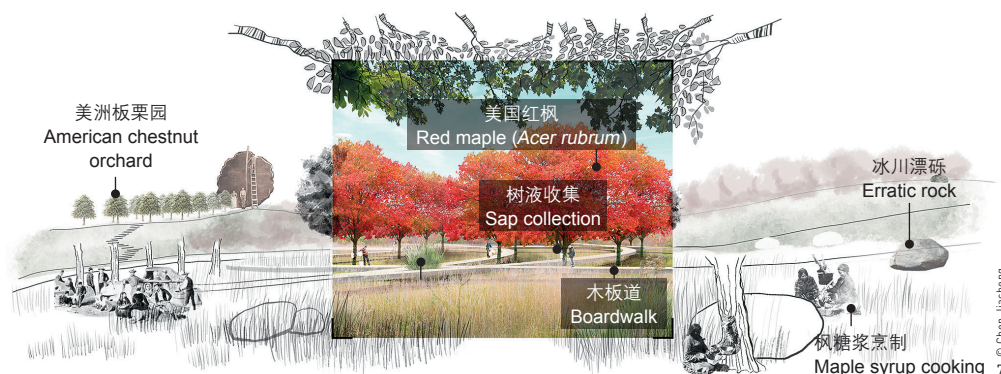
致谢

作者感谢艾伦·内塞斯教授对“大淹地”设计课的指导，以及设计课的小伙伴们从学期伊始至2020年5月网络期终评图期间的团结与互助。作者也感谢“大淹地”的当地居民，例如洋葱农户克里斯·帕维尔斯基，本地历史学家约翰·J·罗斯基维茨和考古学家比利·桑德；感谢他们慷慨地向课程参与者分享其对于本地的了解。



5. 提白1“枫树沼泽”的场地平面图
6. “枫树沼泽”的剖面图
7. “枫树沼泽”的全时情景图

5. Site plan of prompt 1 Maple Swamp
6. Section of Maple Swamp
7. Holistic scenario in Maple Swamp



1 Introduction

If “sustainability” suggests the trajectory of a self-renewable future, “persistence” could be nuanced as emphasizing occurrences in the past. Compared with “perpetuity,” persistence stresses a sense of “endeavor” that enables lasting existence, instead of just signifying a state of being. Furthermore, if “locality” were understood as some inherent character evolved in a particular place, persistent factors could be counted as one of the locality’s connotations.

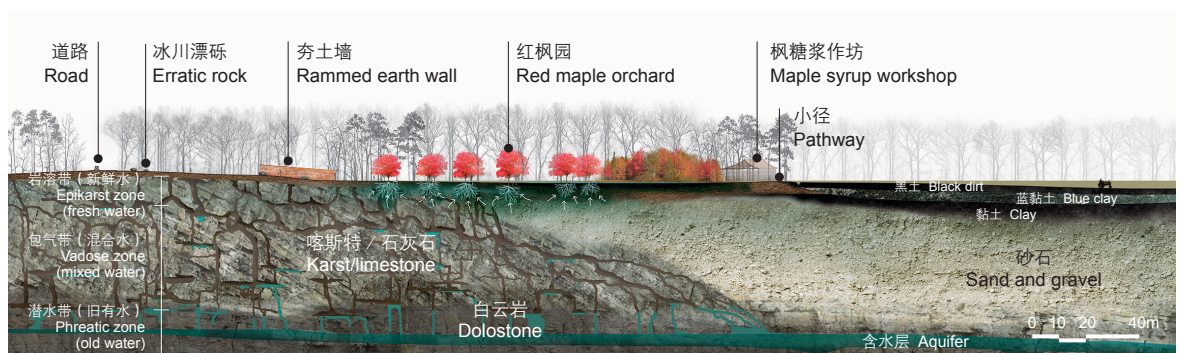
Sometimes, designers put much effort into the

recorded history of a site, which restrains their design palette, since written history pertains to a literate culture that lasts for a rather short time at the scale of landscape evolution. As scholar John Dixon Hunt pointed out, three physical elements—geology, topography, and climate—set up a precondition for designers to begin with^[1]. These fundamental elements promise the inventive analysis of a “critical history.” Indeed, to uncover a more fundamental and persistent spirit of a place, we designers need to spend more time studying geologic past and prehistoric culture of a site.

What exactly does “persistence landscape” mean? This article could hardly give a definitive answer, which is neither its intention. Rather, it is perhaps more useful to test the speculations mentioned above in a design proposal in the wish of giving “persistence landscape” a visible profile.

2 Landscape Evolution of the Site

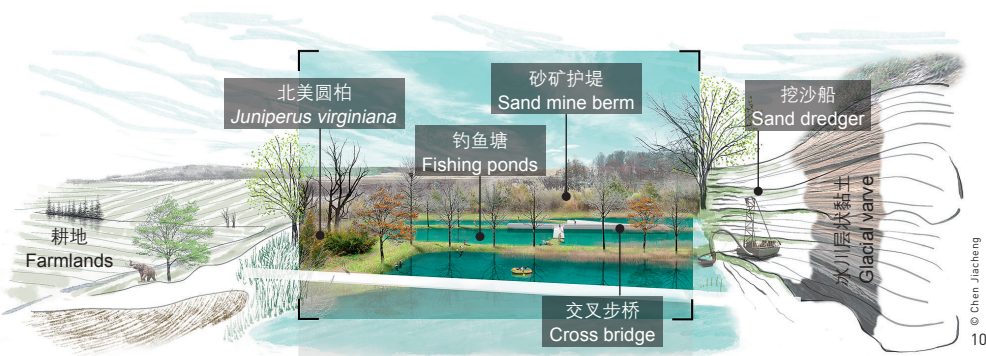
The area of interest is the Black Dirt Region (approximately 105 km² in size) in the Orange County of New York State, USA. When the British and Dutch people initially settled down in the early 18th century, the seasonally inundated swampland was named “the Drowned Lands” and used only for pasturage^[2]. It was the later arrival of Polish and German immigrants who found the soil underwater similar to the fertile chernozem in their homelands that included farming into the local agenda of development. Later on, generations of European immigrants strived to drain the swamp and fight against





8. 提白2“荒弃砂矿”的场地平面图
 9. “荒弃砂矿”的剖面图
 10. “荒弃砂矿”的全时情景图
8. Site plan of prompt 2 Abandoned Sand Mine
 9. Section of Abandoned Sand Mine
 10. Holistic scenario in Abandoned Sand Mine

① This article adopts the commonly accepted name “Lenape Indians” to refer Lenni-Lenape Native American people.



downstream millers to control the water.^[2] Today, this dark-surfaced area is renowned for the pungent taste of onions due to the high concentration of sulfur in the soil (Fig. 1).

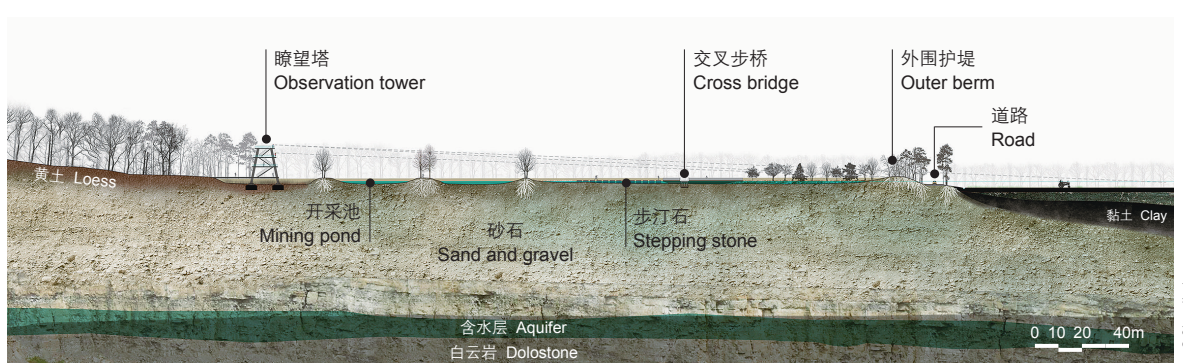
Today’s agricultural landscape, of course, only occupies a rather short time in a very long evolution of this place. Approximately 20,000 years ago in the Wisconsin Glacial Episode (last glacial period globally) of Pleistocene, the Laurentide Ice Sheet once covered half of North America and built the farthest terminal moraines in New York’s Long Island (Fig. 2)^{[3]-[5]}. During the post-glacial

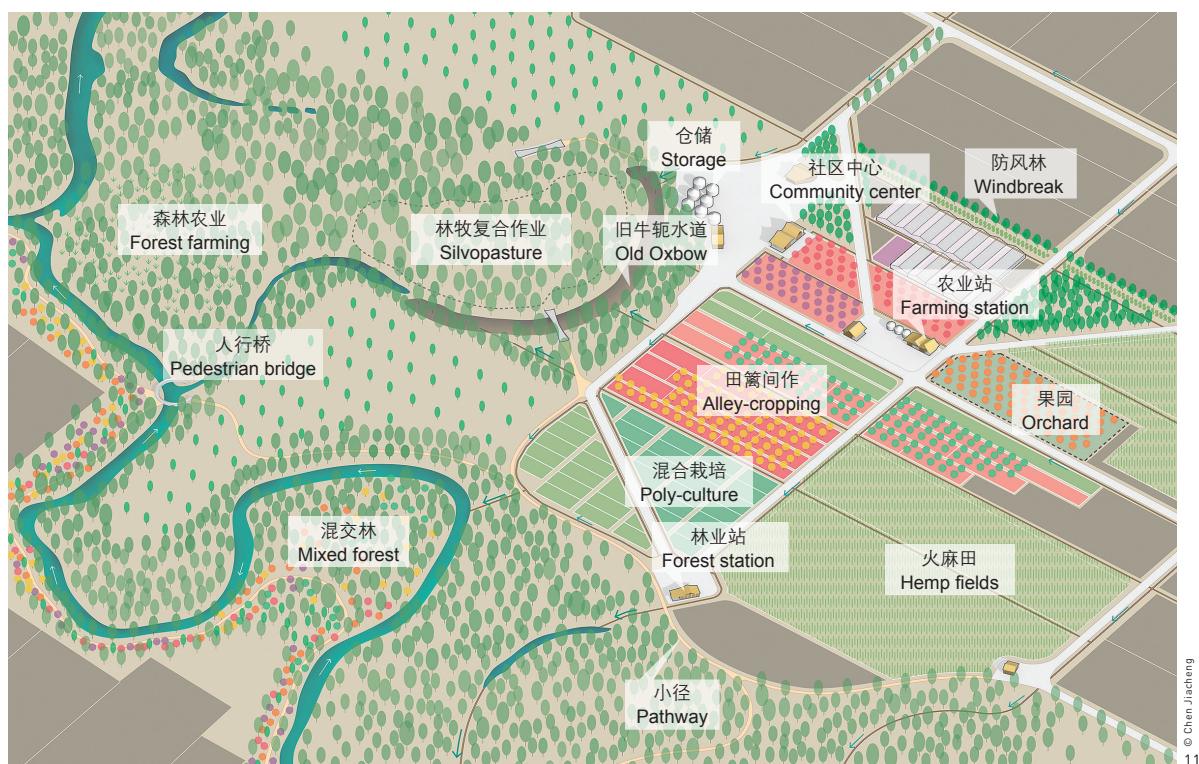
period of the late Pleistocene (about 18,000 years ago), the 600-meter-thick ice sheet started melting, which triggered a series of cultural and ecological events (Fig. 3)^[2]. Consequently, glacial meltwater was discharged and formed proglacial lakes, such as Glacial Lake Albany and Lake Wallkill that geologists have identified^[6] (Fig. 2). If we cut a section on site, lacustrine silt and clay will be found with carbonate rocks on the periphery of farmlands, indicating the edge of former proglacial lakes.

Human settlement in Wallkill River Valley is traced back to 12,580 years ago,

as archeologists discovered a rock shelter of Paleo-Indian in the Dutchess Quarry Cave in 1966^[2]. These Paleolithic people hunted with fluted stone points, fished with harpoons, and gathered fruits and nuts as a supplementary diet. For the next 9,000 years, the Lenape culture underwent Archaic Period and Woodland Period at a steady pace, until Lenape Indians first encountered European settlers in the mid-16th century^[4]. Today, the massive bowl of soil is “a repository of paleontological and Paleolithic evidence”, where bone relics of mastodons and dinosaurs were found during tillage, along with arrowheads and spear points^[2].

In juxtaposition, the hydrological dynamics continued silently. The ground is inundated during flooding and gets drained afterward. Winter storms freeze water to ice, and when temperature resumes, ground thaws. Meanwhile, reeds and sedges grow and decompose, which gradually enriches the wetland soil and elevated it by 30 cm per year^[7]. Today, the canal-ditch system endures





the cycle of draining and flooding. In extreme weather, such as the flooding in 1955 or Hurricane Irene in 2011, the agricultural loss could be devastating, as crops had to be left rotten in the field. The local government has built several Floodplain Bench Projects, but these engineering measures could delay the flood inundation for some hours at best. As farmlands will be more and more vulnerable due to increasingly frequent flooding events, it is not unreasonable to question the feasibility of preserving the current mode of comprehensive agricultural reclamation.

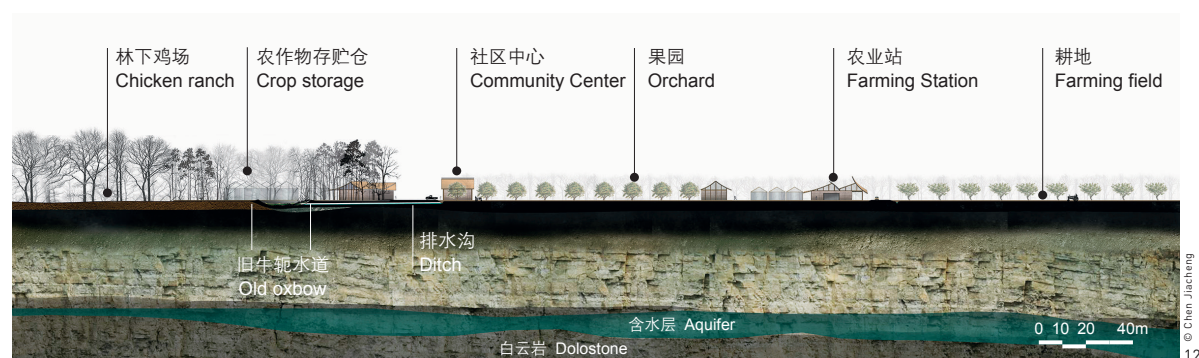
3 Design Proposal

Informed with the rich site evolution and vibrant hydrological dynamics, we need to reimagine a new kind of landscape stewardship. It could be a battle in a rabbit hole if we keep focusing solely on defending agricultural production against flooding threats. Alternatively, the design proposal calls for a paradigm shift to consider more on deep time in search of new opportunities. The research started with a geological survey and discovered that different kinds of geological sediments meet

in unexpected locations^[8]. Based on this finding, four liminal places are selected as “landscape prompts”, where distinctive geological materials meet and affect respective ground conditions. (Fig. 4)

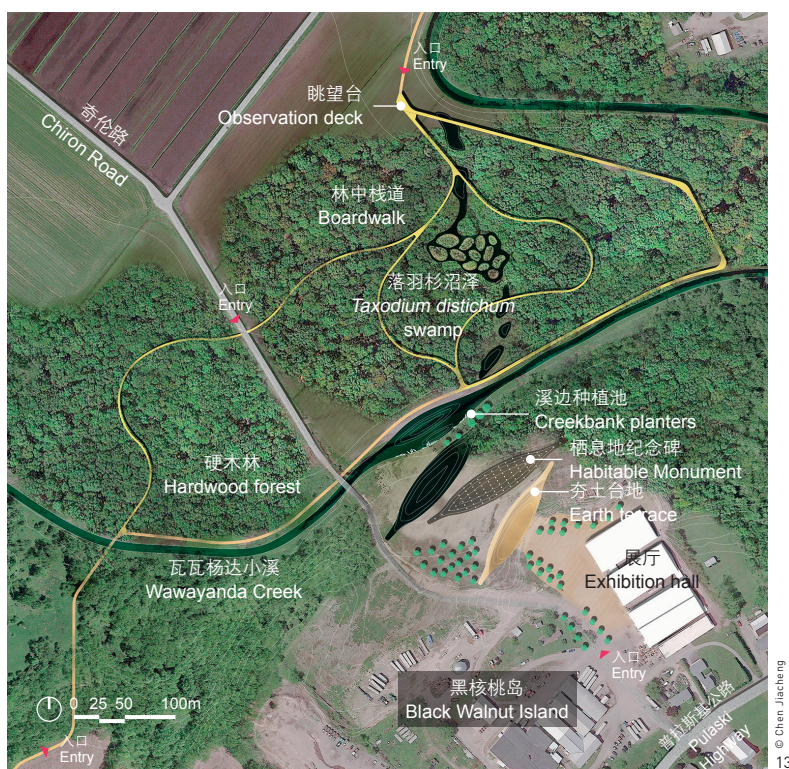
The first prompt, Maple Swamp, is on the top of a karst aquifer, which comprises an epikarst, a vadose, and a phreatic zone, stratifying three types of groundwater respectively: fresh water, mixed water, and old water^[9]. Erratic rocks in different sizes are deposited around on the site. In the proposal, more red maples are planted on-site for sap collection, whose roots pump water in the opposite direction of liquid’s penetration (Fig. 5, 6). Historically, Lenape Indians taught early European settlers how to make maple syrup, whose raw material, tree sap, could only be harnessed in the chilly early Spring. A new program of syrup production re-engages people with this historical scenario (Fig. 7). Metaphorically, it is an opportunity for visitors to engage with the fluidity of the site, which is manifested in the form of stratified groundwater and tree sap in maple tree’s phloem, ending in the finally distilled sweet syrup.

The second prompt, Abandoned Sand Mine, is on a higher ground of sands and gravels, with an esker hill on its west side and black-dirt farmlands outside of its berms on the east (Fig. 8). The North-East orientation of esker reveals the direction of ice retreat in the Wallkill River Valley. Striations were marked on the steep slope surface as the result of intensive ice body frictions. Seven trapezoid-shaped mining zones can still be



11. 提示3 “旧牛轭河道”：新型农业设施与可再生农业措施
12. “旧牛轭河道”的剖面图

11. Prompt 3 Old Oxbow: new farming facilities and regenerative agricultural practices
12. Section of Old Oxbow



13. 提白4“岛边地”的场地平面图
 14. “岛边地”的全时情景图。独木舟以漂浮种植池的形式再现于瓦瓦杨达小溪上，船内种植的浆果成为鸟类食物来源之一。

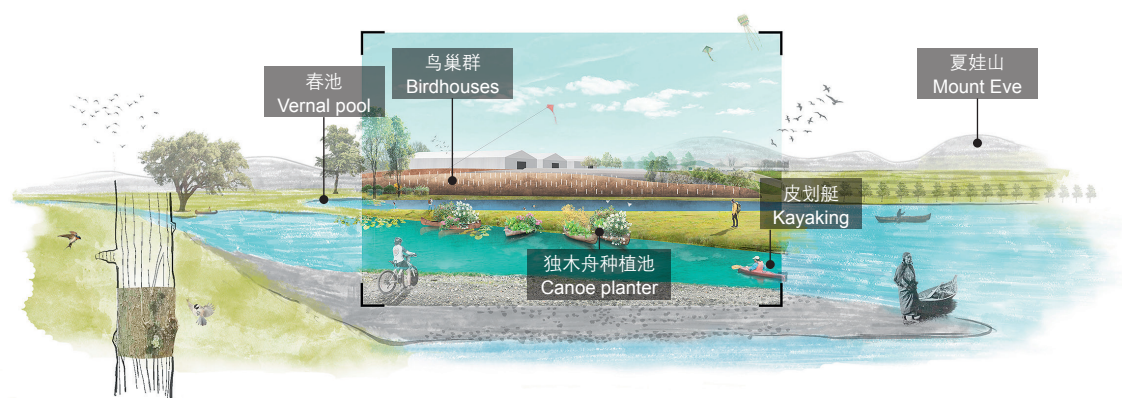
13. Site Plan of prompt 4 Island Edge
 14. Holistic scenario in Island Edge. In Wawayanda Creek, canoes reappear as floating planters that grow berries for birds.

recognized from the air, suggesting that there could have been industrial excavations for gravel and sand agglomerates. Peculiar enough, their water level is about 3 meters higher than that of the surrounding farmlands. This phenomenon is probably due to the intensive compaction by the humongous glacier, which turned ground sediments into diamicton under the waterbody. The new underground composition effectively obstructs water penetration from the sand mine side to the other (Fig. 9).

To enunciate this height difference of water planes, an observation tower is proposed to

offer a vantage point (Fig. 9). When one climbed up the tower from bottom to top, the height difference between the sand mine waterbody and the outside grounds would speak more and more for itself. People can fish by the ponds, participating in an activity that is peculiar for a brownfield but native to the Drowned Lands in history (Fig. 10).

The third prompt, Old Oxbow, used to be part of Wawayanda Creek. After Europeans settlers started draining farmlands, the Oxbow evolved into a crescent-shaped wet meadow. Today, green sedges grow out of dead ones.



Black soil is fermented in the Oxbow due to seasonal inundations, which also periodically catches irrigation water from the ditch network. To activate the Oxbow and its surrounding lands, the proposal offers to build new farming facilities that are attached to it (Fig. 11). The new ditch network integrates the Oxbow as a sub-system and turns the fermentation process productive for sustainable agriculture production (Fig. 12).

The fourth prompt is located on the Island Edge of Black Walnut Island (Fig. 13), a drumlin till that was deposited and compressed under the extreme weight of the Laurentide Ice Sheet. The island used to be a resting place for the Lenape during fishing in the daytime. We can imagine a scene, in which Lenape fishermen traversed *Taxodium distichum* swamps, docked their canoes with fish and mussels in them, and eventually found a rather dry place on the island for a halt. To register this scenario and put the human body in scale, several monumental shapes of the canoe are imprinted on the island edge. One of the earthy mounds is designed to be a habitable monument for birds to nest. Viewing afar from a restored *Taxodium distichum* swamp, one could find the silhouette of canoe-shaped earthwork doubling that of the Black Walnut Island and Mount Eve behind, all parallel with the direction of ice sheet retreat (Fig. 14). When floods came, the restored wetland forests and depressed topography would be able to catch stormwater from ditches, therefore attenuating the impact of flooding.

As the descriptions of 4 landscape prompts suggest, the moment of scenario revelation is transient, while the proof of landscape persistence is specific from place to place. Although each prompt is only a glimpse of perceiving the past, a collection of them renders a more complex picture of this area. Index in each prompt leaves room for projecting historical scenarios. The encoded meaning in design would be fully understood only when audiences are involved

to harvesting the nature, climbing up towers to observe it, witnessing how soil is fermented in it, or measuring their bodies against it.

In representation, each prompt has a holistic full-time scenario that bridges the past and the present in imagination. According to French philosopher Alain Roger, the mediation through looking by representing nature (“in visu”) is just as important as operating physically on site (“in situ”), while both constitute a process called artialisation^{②[10]}. To Roger, in visu and in situ are two modalities that transform lands (“du pays”) into the landscape (“le paysage”), and nature shall not be regarded as landscape unless the former is “artialised” by human. In another word, the cultural imagination that these scenario drawings may bring completes the overarching meaning of “landscape.”

At a macro-scale, these prompts are connected by a composite pathway that weaves 4 threads together: a dirt path, a widened river, a band of shrubs, and a belt of expansive riparian forests (Fig. 15). As an ecological corridor, the afforestation work thickens existing riparian forests and enriches forest canopies by introducing edible trees for farmers to harvest for extra income.

4 Discussion

4.1 Climate Change Reconsidered

Climate drives glaciation process, and the

subsequent deglaciation embodies the surficial geology. In the scope of deep time, organic matter and human activities are weathering forces that shape topographies. In conscience of the last major climate change event, it helps us to contextualize the current one in environmental history. Radical narrative, however, usually pivots around a total inculcation of modern technology advancement and omits a grander landscape perspective, which could be counterproductive against those environmentalists’ own political agenda. Catastrophic and imminent as the current climate change has shown, this historical understanding is not meant to undermine the seriousness of the issue, but instead, it allows for an adequate factual ground to better cognize the problem. The current interglacial period is a relatively benign period for life to thrive, which has been historically shorter than its glacial counterparts^[11]. In this regard, global warming is indeed part of a fluctuating continuum. The landscape prompts offer a chance to ponder the landscape evolution in the scale of geological time, which relates today’s deglaciation with the one that happened 18,000 years ago.

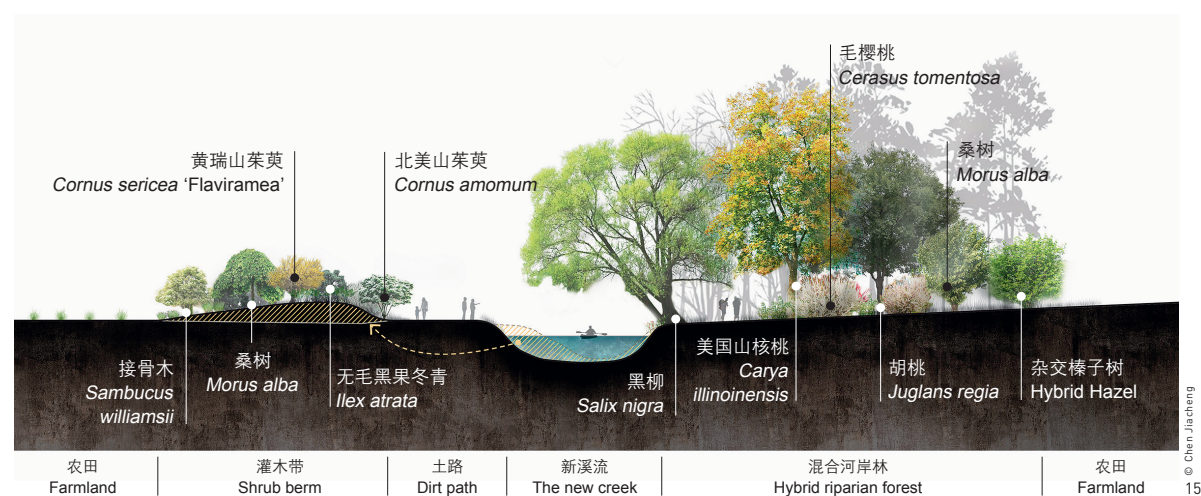
4.2 Geological Ethics

Hydrogeological phenomenon and human desire are recognized as two persistent factors that shape landscape in this proposal (Fig. 16). Still, how can we cancel the dichotomy between a material process and a subjective experience

under the unified concept of “persistent landscape”? Influenced by the discussion of “the geology of morals” in the classical book *A Thousand Plateau: Capitalism and Schizophrenia*, philosopher Manuel DeLanda has an appealing view to offer.^[12] His renewed idea of “geological ethics” provides us with a unique perspective to conceptualize “persistence landscape” in terms of physicalism and materialism.

To DeLanda, the “wisdom of rocks” is about finding a way of listening to a creative and expressive flow of matter for guidance^[13]. He further transfers this general idea to the sorting and hardening in food chains and social hierarchy, arguing that the key for meaningful changes is to find the right “degree of viscosity and stratification” that matches specific social fluxes^{③[13]}. According to the presumption of geological ethics, the viscosity of a primitive society is more coherent with its contemporary ecosystem and less stratified than an industrialized one. This insight justifies the Lenape culture’s resistance against organizational solidification of society. Instead, they chose to live a nomadic life and migrated between the mountain ridges and Atlantic coastal plain in a seasonal pattern^[4]. From the perspective of the “wisdom of rocks”, a persistent natural phenomenon, human desire is nothing more than a certain kind of abstract expression of a material process, through which its embedded subjectivity receives a physicalistic explanation.

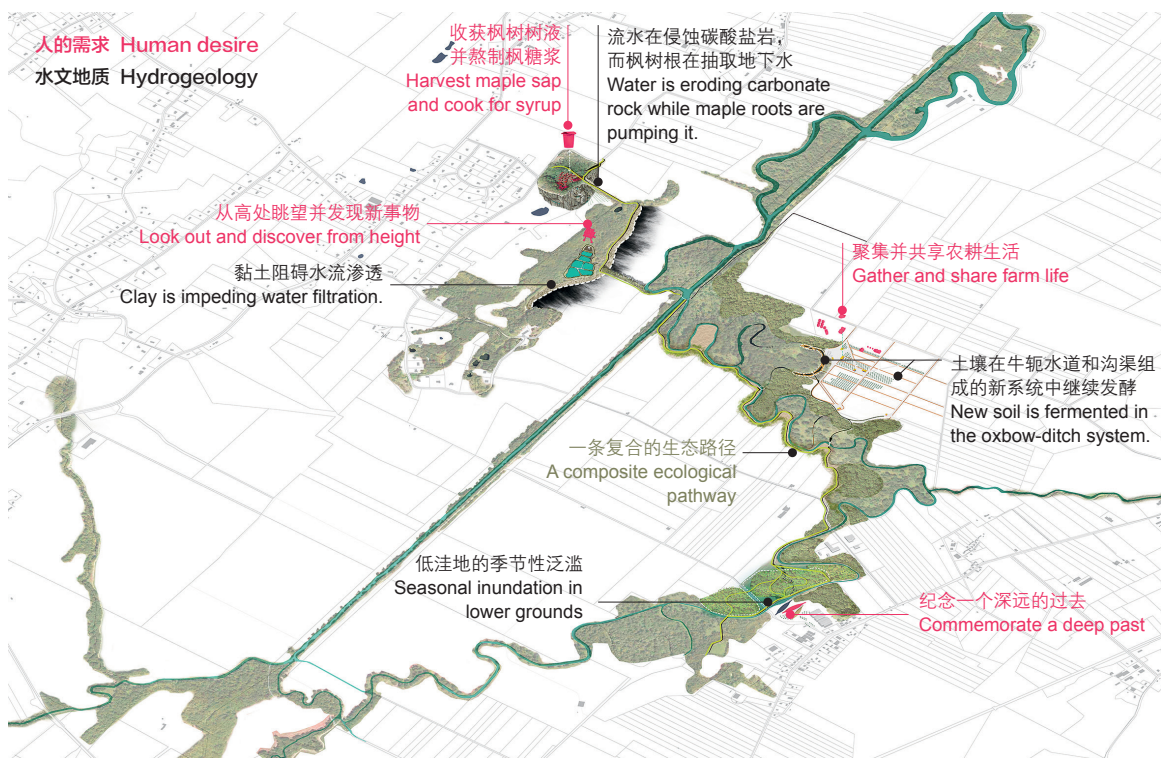
Calling for actions, DeLanda urges social reformers to map the “attractors” that orient the dynamical behavior of social flows^[13]. Industrialized agriculture has exacerbated today’s environmental crises and needs to be readjusted. In this proposal, the desire for finding meaning is conceived as the new attractor to orient the evolution of the Drowned Lands, while a more ecologically diverse and demographically plural community is considered to reflect a new befitting social viscosity for the Drowned Lands.



15. 一条以混合种植为特色的复合型生态路径
16. 两个持久性因素，即“人的渴求与水文地质的作用力”，被写入了各个景观促白中，以便游客一次次地参与其中。

15. A composite ecological pathway featuring hybridized planting
16. Two defined persistent factors, human desire and hydrological forces, are written in each landscape prompt for visitors to attend repeatedly.

- ② The word “artialisation” is an archaic French word. To quote Roger directly in English, “Nature is indeterminate and receives its determinations only from art: a country becomes a landscape only under ‘the condition of a landscape (paysage)’, and this is according to the two modalities of artialisation: mobile (in visu) and adherent (in situ).” (French quotation in Ref. [10] from page 17 to 18)
- ③ In his *Nonorganic Life*, DeLanda points out two processes in the geological cycle that have particular expandable implications: “sedimentation” (i.e. raw materials are selected and hydraulically sorted) and “cementation” (i.e. sorted materials are consolidated into permanent structures). These two stages pertain to a macroscale process of “stratification.”
- ④ Please find more information about the Solomon R. Guggenheim Foundation in its official website.



5 Epilogue

AMO's recent exhibition “Countryside, The Future” reminds the public that more than half of global population lives on 2% of the Earth surface, while less than 4 billions of the rest inhabit the residual 98%^④. Unfortunately, most countryside that we see today is becoming gradually banal in a rather homogeneous pattern. As what this project wishes to uncover, a rural site could have been a milieu of exciting spectacles and remains as a palimpsest until today for designers to retrieve inspirations in depth.

Climate change may come and go, but the cycle of their appearance persists; the lifespan of wildlife and plants may be short, but their evolution persists; one human society may be succeeded by another, but the “geological ethics” persists, and so does our curiosity. To unleash the potential of landscape, it requires designers to inquire and experiment persistently, an endeavor that precisely reflects how the word “persistence” itself is defined as. **LAF**

ACKNOWLEDGEMENTS

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