Kent Downs
Area of Outstanding Natural Beauty

Landscapes for life .org.uk

FARMING FOR THE NATION
AONB Tests & Trials for the ELM Scheme

VINESCAPES
VINEYARD & WINERY CONSULTANTS

Proposed Actions for a Viticulture E.L.M.

This document is the culmination of a summer of research into best viticultural practice as well as workshops with growers and in-depth interviews with specific vineyards. This information has been summarised in the Viticulture E.L.M. Test and Trials Draft Recommendations report available at https://bit.ly/TandTRecommendations

These actions have subsequently been shared with industry and amended following feedback from workshops in November, December and February. This process is still ongoing and these actions will continue to evolve as we work towards submission to Defra in June 2021. Please send any comments to Pippa Palmar pippa.palmar@kentdowns.org.uk

It is anticipated that vineyards can enter into an E.L.M. agreement for a fixed term but have the option to add extra actions at certain points within the agreement if backed up by an amended Land Management Plan.

Action (and suggested component)	**Additional detail** *Suggested payment mechanism in italic*	**Outcomes**	**Link to research and recommendations**	**Public Good**
1. Vineyard Land Management Plan Sustainable Farming Incentive Local Nature Recovery	It is envisaged that Land Management Plans for vineyards will be co-developed between growers and suitably qualified bodies (either individuals such as ecologists and agronomists or organisations such as FWAG and Protected Landscape Authorities where vineyards are within protected landscapes). The Land Management Plan for the vineyard will consider and balance viticulture/vineyard management needs with opportunities for ecosystem services and enhancements and will be designed and implemented for a minimum period of 5 years but with opportunities for reviews during that period and annual Vineyard Surveys. A review and engagement (with the aforementioned body or process)	1. More vineyards working towards best practice and Public Goods. 2. Opportunity for vineyards, no matter what their size, to work with an expert who can give advice on improving environmental outcomes (training and support).	*See 3a (p20) "This includes vineyards developing a landscape plan which thinks about enhancing character but also removes detractors.'* *1a i (p12) – Healthy ecosystems* *3ai (p19) "Inspiration: Delivered through*	Whilst not delivered by the Plan alone, its design and subsequent implementation will be designed to deliver: • Clean air • Clean and plentiful water • Thriving plants and wildlife

Action (and suggested component)	**Additional detail** *Suggested payment mechanism in italic*	**Outcomes**	**Link to research and recommendations**	**Public Good**
	structure will allow for changes to the vineyard (e.g., additional planting, different viticulture practices, environmental challenges) to be accommodated into plans in a flexible way. Annual surveys will test the success of E.L.M.s interventions and impacts, i.e., away from the original 'benchmark'. Specific geographies, boundaries and physical limitations of the Plan (and associated vineyard) will be determined as part of developing the plan. However, the plan will cover both cultivated and uncultivated areas. The subsequent actions set out in a Land Management Plan will form the basis of an E.L.M. funding application. It is likely that Land Management Plans will be a compulsory element of the E.L.M. process. *Flat fee for land management plan* *Possibly annual sums for surveys identified in plan*	3. Closer engagement and understanding between environmental and landscape authorities and land managers. 4. A vineyard business fully integrated with E.L.M. and delivering a sustainable product.	*beauty, landscape enhancements and opportunity for engagement".*	• Protection from environmental hazards • Mitigation of and adaptation to climate change • Beauty, heritage and engagement
2. Farm Cluster Group Local Nature Recovery	Vineyard Managers and Workers join a defined (geographically or by production method, e.g., organic producers) cluster of other Vineyard Managers, Workers, Ecologists, Advisory groups, Landowners, Corporations etc to support them through best practice knowledge exchange. The Clusters could target E.L.M. funding for co-ordinated local activities such as Nature Recovery programs or educational access.	1. Stronger potential of achieving best practice and delivering Public Goods. 2. Knowledge enhancements. 3. Nature connectivity through an area. 4. Joint activities reducing duplication of efforts and administration.	Barriers to Adoption (p25) "*Provision is therefore required, within any Environmental Land Management scheme, to provide technical support to growers to research, plan, implement and maintain new areas of*	Shared actions developed through the cluster will deliver one or more of: • Clean air • Clean and plentiful water • Thriving plants and wildlife

Action (and suggested component)	**Additional detail** *Suggested payment mechanism in italic*	**Outcomes**	**Link to research and recommendations**	**Public Good**
	The Clusters could be new or formed as part of existing groups such as the Farm Clusters in the SDNP, the Surrey Hills Cluster, Kent Wildlife, or initiatives such as SWGB. This could be a mechanism for training. *Likely payments to facilitator and for group training sessions*	5. Of particular benefit to smaller and less established vineyards. 6. Trained land managers	*ecological restoration and enhanced provisioning, regulating and supporting ecosystems services. In addition, this support could complement or be used to facilitate 'grower-to-grower' meetings*."	• Protection from environmental hazards • Mitigation of and adaptation to climate change • Beauty, heritage and engagement
3. Participate in on site research into activities that may derive public goods Sustainable Farming Incentive Local Nature Recovery The Innovation Research and Development Scheme	There is a lack of scientific research and innovation that vineyards can rely on with regards specifically to enhancing Natures Services and Public Goods in UK Vineyards. Questions raised through workshops, which would require research, include: • Which native insectary plants would work well in a specific UK vineyard environment? • How productivity can be maintained or increased using Integrated Pest Management? • What effect natural Pest Predators could have on the wider environment if encouraged in UK vineyards? • What are the future climate change impacts going to be and how do we increase our resilience? • What are the appropriate wildflower mixes for a specific UK vineyard environment?	1. A greater understanding of new and emerging viticultural best practice and a likely increased uptake in activities that result in Public Goods.	1a i (p12) – Healthy ecosystems 3ai (p19) "*<u>Inspiration</u>: Delivered through beauty, landscape enhancements and opportunity for engagement*"	Research (depending on the subject matter and value) could deliver any or all of: • Clean air • Clean and plentiful water • Thriving plants and wildlife • Protection from environmental hazards • Mitigation of and adaptation

Action (and suggested component)	**Additional detail** *Suggested payment mechanism in italic*	**Outcomes**	**Link to research and recommendations**	**Public Good**
	• What is the most effective frost protection technology? To help address this knowledge gap E.L.M. could reward growers for participation in professional research and trials that use their vineyard space and risk their crop quality and quantity. *Payment rates likely to be decided through Innovation Research and Development Scheme but recommendation that payments made to growers where appropriate (i.e., if yield may be impacted)*			to climate change • Beauty, heritage and engagement
4. Capital grants to support technological advances. Sustainable Farming Incentive Local Nature Recovery The Farming Investment Fund is also likely to be a source of funding for viticulture and maybe the preferred	Payments made to support, amongst other things, the purchase of: • Vineyard equipment (tractors, ATVs, frost protection, weather sensors etc) powered by renewable energy. • Remote sensing technology to map, monitor and determine areas for targeted pesticide or other management interventions such as frost protection or nutrient additions. • Rainwater harvesting and storage infrastructure for vineyard, winery and related use. • Compost and/or grape marc storage/holding tanks and any required associated bunding. Applications where machinery will be shared between vineyards will be looked upon more favourably where this can be identified as part of a farm cluster.	1. Improved productivity. 2. Reduced carbon footprint. 3. Reduced use of pesticides. 4. Increased self-sufficiency of water (particularly valuable in NVZs).	2a ii (p19) "*<u>Renewable energy</u>: Installing charging points for electric vehicles including visitors' vehicles, tractors, ATVs; and using renewable energy powered vineyard equipment including Tractors, ATVs and Robotic vehicles."*	Capital good could deliver one or more of: • Clean air • Clean and plentiful water • Thriving plants and wildlife • Protection from environmental hazards • Mitigation of and adaptation to climate change • Beauty, heritage and engagement

Action (and suggested component)	**Additional detail** *Suggested payment mechanism in italic*	**Outcomes**	**Link to research and recommendations**	**Public Good**
mechanism for all capital funding.	*One off payments paying for a percentage of approved expenditure.*			
5. Soil regeneration Sustainable Farming Incentive	Soil management is a critical and common practice in UK vineyards. Soil is the medium through which water and nutrients 'feed' the vine via root systems. However, soil health in vineyards can remain low and its potential as a carbon sink often remains untapped. Payments can be made to reward the regeneration of soils and their increased carbon sequestration. The actions that will be paid for will be dictated by measures that are available to all through the Sustainable Farming Incentive. Defra press releases and documentation suggest strongly that soil regeneration actions will be available and the reason for adding them here is to emphasise the importance of these and that they should form part of the package of measures that are available for viticulturalists. It may be that these actions are covered elsewhere in this package of actions. (e.g., ground cover and restoration of species-rich grassland.) *TBC based on Sustainable Farming Incentive actions*	1. Removal of accumulated soil contaminants. 2. Improved carbon sequestration. 3. Improved water infiltration and reduced runoff	2a i (p18) *"Soil regeneration: Adopting and implementing practices that provide biocontrol and biodiversity-based ecosystem services and that also assist in regenerating vineyard soils. This includes phytoremediation".* 2a iii (p20) *"Sequestration: Through permanent ground cover, evergreen shrubs and trees, and mulching of prunings (rather than burning)."*	• Clean and plentiful water • Thriving plants and wildlife • Protection from environmental hazards • Mitigation of and adaptation to climate change
6. Ground cover Sustainable Farming Incentive	By encouraging permanent ground cover within vineyards, it is possible to both improve soils and increase biodiversity. This will also help reduce the amount of active pesticides that need to be applied by creating conditions that promote strong, healthy vine growth and the development of a functioning ecosystem where predatory insects can thrive and reduce the need for applying chemicals.	1. Reduction in pesticide applications. 2. Increased biodiversity 3. Reduced risk of run-off into watercourses. 4. Disease profiling	1a (p12) *"A fully integrated approach to pest management which includes the use of biocontrol, cultural, and targeted chemical*	• Clean and plentiful water • Thriving plants and wildlife • Protection from environmental hazards

Action (and suggested component)	**Additional detail** *Suggested payment mechanism in italic*	**Outcomes**	**Link to research and recommendations**	**Public Good**
	This action would encourage: • Reduction in tillage • Sowing and drilling insectary plants and plants beneficial to soil health • The regeneration and long-term management of species-rich native grasslands will be dealt with in a separate action. • The creation of a more diverse vegetation structure within headlands and hedgerows to benefit invertebrate diversity. This action will incentivise: • Planting vines without cultivating the entire field where the area to be planted is permanent grassland. This will not apply to cultivating vineyards on arable areas. This is an attempt to avoid losing high-quality grassland and long-developed soil profiles during the establishment of vineyards. • Maintaining ground cover without cultivating across the entire vineyard (lowest level of payment with no requirement to plant specific species but avoiding cultivating between plants on rows) as well as leaving areas of the vineyard unmown. • Sowing or drilling non-native insectary plants between rows and on headlands (higher level of payment) as identified in the land management plan. • Sowing or drilling native insectary plants between rows and on headlands (highest level of payment) as identified in the land management plan.	5. Increase in numbers of insects that predate on vineyard parasites. 6. Increase in number of pollinator species	*intervention (only if required) to reduce pest insect populations below damaging levels."* 1a i (p12) "*Establishment of locally adapted native insectary plants (in preference to introduced / non-native species) in and around vineyards in strategic locations to provide habitat for predatory species that contribute to the biocontrol of economically damaging insect pests."*	• Beauty, heritage and engagement with the environment

Action (and suggested component)	**Additional detail** *Suggested payment mechanism in italic*	**Outcomes**	**Link to research and recommendations**	**Public Good**
	One-off payment for planting on permanent grassland without ploughing on permanent grassland. *Annual payment for not cultivating or spraying herbicide under vines.* *One-off payment for establishing insectary plants.* *Annual payment for maintaining insectary plants.*			
7. Restoration and management of species-rich grass sward Local Nature Recovery Landscape Recovery	Where vineyards are on soils that have the potential to provide species rich grassland between rows and on headlands, payments can be made to regenerate the native flora and fauna. This can have benefits for biodiversity on site but can also help to create a functional network of grassland sites within priority areas. Restoration can happen either by: 1. Allowing the grass sward to regenerate by introducing suitable management techniques that encourage flowering plants (this can be either relaxing mowing between April and August to allow flowering and setting seed or by grazing the vineyard at strategic times of the year but excluding April to August). Inputs of fertiliser will be minimised or eliminated entirely. If a mowing regime is implemented then arisings must be removed. 2. By mowing hard, scarifying the soil and adding a species-rich meadow mix appropriate to the soils and geology. Mowing must be maintained initially to allow the seed to germinate but management will be as per item 1. Once a high-quality grass sward has been established, the management of species-rich grass sward is the natural follow on.	1. Increase in native flora and fauna on-site including the potential to include locally and/or nationally significant species. 2. The potential to connect or extend existing habitats. 3. Improved carbon sequestration when compared to many other land management techniques. 4. Increased predatory insect populations. 5. Reduced run off.	1b i (p15) *"Biodiversity/biocontrol: Incorporation of a diversity of native insectary plants to provide functional biodiversity benefits throughout the entire year. These plants include ground cover (grasses, forbs, and prostrate growing plants) shrub and tree species."*	• Thriving plants and wildlife • Mitigation of and adaptation to climate change • Beauty, heritage and engagement with the environment • Clean and plentiful water

Action (and suggested component)	**Additional detail** *Suggested payment mechanism in italic*	**Outcomes**	**Link to research and recommendations**	**Public Good**
	Management of established species-rich grass sward. Establish an agreed management regime which may include (as detailed in the regeneration of species-rich grassland): 1. Appropriate grazing regime 2. Mowing regime that enhances species-rich sward, including removal of arisings. N.B. These restoration and management techniques are well established and have been part of Higher Level Stewardship and Countryside Stewardship for many years. This is simply applying the same principles to vineyards. *Annual payments for hectarage managed in this method*			
8. Establishment and maintenance of native species windbreaks, trees and hedgerows Sustainable Farming Incentive	Where vineyards would benefit from or already have tree windbreaks, hedges (internal or boundary hedges), or areas of woodland that provide biodiversity, inspirational and/or cultural heritage values, pollination, carbon sequestration, erosion reduction, soil formation, nutrient cycling and wildlife corridors payments can be made for: The establishment and management of trees, windbreaks and areas of woodland on adjacent land, including replacement of missing or poor performing trees with native species. The opportunity to establish windbreaks, trees and hedges in and around the vineyard would be identified as part of the LMP, in conjunction with viticultural advice on need and placement.	1. Increase in insectivorous birds and predatory insects. 2. Increased carbon sequestration. 3. Increase in vineyard biodiversity. 4. Create habitats for nature recovery. 5. Can create wildlife corridors. 6. Contributes to landscape character enhancements and conservation.	1b ii (p15) "*Biodiversity/biocontrol: Incorporation of a diversity of native insectary plants to provide functional biodiversity benefits throughout the entire year. These plants include ground cover (grasses, forbs, and prostrate growing plants) shrub and tree species."*	• Beauty, heritage and engagement with the environment • Thriving plants and wildlife • Clean air • Mitigation of and adaptation to climate change

Action (and suggested component)	**Additional detail** *Suggested payment mechanism in italic*	**Outcomes**	**Link to research and recommendations**	**Public Good**
	Windbreaks should involve corridors to encourage biodiversity not only in the trees but at the base of the windbreak. The timber should be used for habitat piles for biodiversity. Hedgerows should consist of a mixture of different species that provide a long flowering range. Hazel, prunus species, willow and hawthorn could all be included but the species mix should reflect both the landscape character and the needs of nearby crops. Hedgerows should not be cut annually and vegetation left to grow at their bases. *One-off payments for establishing plants.* *Annual payments for maintenance.* *Annual payments for land lost to tree planting (if woodland planted)*	7. Can contribute to vineyard performance by reducing wind exposure.	2a iii (p20) "*Sequestration: Through permanent ground cover, evergreen shrubs and trees, and mulching of prunings (rather than burning)."* 1a iii (p13) "*Biocontrol: Incorporate the use of native insectary shrubs and trees that support populations of insectivorous birds"*	
9. Biodiversity features Sustainable Farming Incentive Local Nature Recovery	Installation of bird boxes, bat boxes, raptor perches to encourage both increased biodiversity and predators of pest species. These measures were specifically supported by project research and should be the highest priority. Best practice around biodiversity features that might be appropriate for vineyards might include the features below but there isn't evidence to support whether these will have a positive or negative impact on vine and fruit health and condition. • beetle banks • habitat piles • reptile hibernacula • badger gates • ponds and other freshwater habitats	1. Increased biodiversity due to the creation of micro habitats and shelter for specific species 2. Increased invertebrate diversity which may also assist integrated pest management. 3. Additional habitat types - greater structural diversity of vegetation 4. Reduced run-off	1a ii (p13) *"Biocontrol: Incorporate the use of species-specific predator perches and/or nesting boxes to support populations of predatory (including the endangered honey buzzard and tawny owl) and insectivorous birds."* 1a iv (p14)	• Thriving plants and wildlife • Beauty, heritage and engagement with the environment • Clean and plentiful water • Mitigation of and adaptation to climate change

Action (and suggested component)	**Additional detail** *Suggested payment mechanism in italic*	**Outcomes**	**Link to research and recommendations**	**Public Good**
	• pollinator strips • Areas of long grass and scrub These features are well suited to vineyards as they often have space where these could be placed. The choice of features can be determined during the creation of a Land Management Plan where both generic features and those that support wildlife populations known to be present locally and to be priorities can be integrated into vineyard management. *One-off payments for construction/installation* *Annual monitoring payments*		"*Biocontrol: Incorporate bat boxes to supplement natural habitat and boost the presence of bats in and around vineyards."*	
10. Interpretation Local Nature Recovery	Payment for the creation of interpretation panels or other features within the publicly accessible area of the vineyard telling: • How E.L.M. is being used to enhance sustainability features on the vineyard • The story of biodiversity on the site and how E.L.M. is assisting in this. • The story of the vineyard and wine production (this should be secondary to the above) Would only be made available to those that sign up to permissive access or have existing statutory public access. Should be linked to enhancing public access opportunities. *One-off payment to include funds to cover ongoing maintenance.*	1. Increased understanding of the public benefits of E.L.M. 2. Increased understanding of the landscape and how viticulture is becoming part of that landscape. 3. Better understanding locally about what the vineyard contributes to sustainability, biodiversity and local landscape character.	3a i (p22) *"Inspiration: Delivered through beauty, landscape enhancements and opportunity for engagement."*	• Beauty, heritage and engagement with the environment

Action (and suggested component)	**Additional detail** *Suggested payment mechanism in italic*	**Outcomes**	**Link to research and recommendations**	**Public Good**
11. Permissive access Local Nature Recovery	Create a new walking route in the vineyard or collaborate with a neighbour to create a walking route round and between the two vineyards and neighbouring farmland. The Enhancing Access opportunities Test and Trial run by the Kent Downs AONB Unit has looked in detail at payments for permissive access and has recommended that permissive and enhanced access should be paid for where there is a genuine public benefit. Access that E.L.M. pays for should either create a circular walking route, should address fragmentation issues within the public access network or provide good quality access to features in the countryside. Vineyards are well placed to offer good quality access as parking may be possible and there may be an incentive to have people visiting if on site sales are made. The kind of access that could be paid for might include: • permissive footpath access • permissive open access • permissive bridleway and cycling routes. • enhanced access features including access furniture that provides least restrictive access (e.g., replacing stile with kissing gate or, in the case of vineyards, removing access barriers completely • for paths that are well-used some basic surfacing options may be available. Any capital enhancements would be more likely to be paid for if they were on statutory access routes (i.e., public rights of way) Collaboration with neighbouring farms and vineyards will be encouraged.	1. Increased routes for local people to enjoy the vineyard. 2. A less fragmented public access network. 3. Enhanced access for those with limited mobility. 4. Public access to heritage features and viewpoints. 5. Increased footfall for vineyards that have wineries. 6. Legitimise currently unpermitted access and receive payments for doing so.	3a iv (p23) *"An integrated approach that builds on Recommendations 1 & 2 to target interventions and enhancements of the landscape (beauty), heritage and public engagement."*	• Beauty heritage and engagement with the environment

Action (and suggested component)	Additional detail *Suggested payment mechanism in italic*	Outcomes	Link to research and recommendations	Public Good
	Annual payments for permissive access. *One-off payments for capital improvements.*			
12. Educational access Local Nature Recovery	Create educational opportunities for people of all ages and backgrounds to learn about farming, wine production and the environmental benefits of E.L.M.s. These can be for both children as part of school visits or other interested groups (e.g., botanical survey/guided walk session) Activities for children linked to the school curriculum. Ideally, sample lesson plans created to assist vineyards to deliver sessions themselves. All sessions will be free to attend. Under plans being developed in another test and trial, facilitators may be available to help connect vineyards to people from groups that are under-represented in the countryside. *Annual base payment.* *Cost per session.*	1. Increased opportunities for people to learn about the countryside, sustainability issues and wine production. 2. Broaden the demographic base of people who get the opportunity to visit the countryside and learn about it. 3. An opportunity for vineyards to connect more fully with local communities.	3a iv (p23) *"An integrated approach that builds on Recommendations 1 & 2 to target interventions and enhancements of the landscape (beauty), heritage and public engagement."*	• Beauty heritage and engagement with the environment
13. Health activities Local Nature Recovery	This action is similar to educational access but the outcomes are driven by the health and wellbeing agenda rather than education. There has been a lot of work providing evidence that access to the outdoors, particularly green spaces, can have a measurable effect on people's physical and mental health. This action would pay for sessions that would benefit health and wellbeing. These sessions could include: • A mindfulness walk.	1. Increased opportunities for people to experience the benefits of being outdoors and improved health and wellbeing outcomes. 2. Broaden the demographic base of people who get the	3a iv (p23) *"An integrated approach that builds on Recommendations 1 & 2 to target interventions and enhancements of the landscape (beauty),*	• Beauty heritage and engagement with the environment

Action (and suggested component)	**Additional detail** *Suggested payment mechanism in italic*	**Outcomes**	**Link to research and recommendations**	**Public Good**
	• A practical volunteer session implementing some of the E.L.M. actions. • A nature connectedness session for people with trauma • Yoga *Cost per session plus annual base payment if not receiving for education*	opportunity to visit the countryside and learn about it. 3. An opportunity for vineyards to connect more fully with local communities.	*heritage and public engagement."*	
14. Organic conversion and management Sustainable Farming Incentive	A number of vineyards are already organic and there may be an appetite for others to convert to organic production. This production technique has been funded through Countryside Stewardship and is likely to continue into E.L.M. We recommend that grape production is included in the organic options. Currently there are top fruit organic options but fruit for the production of alcohol is excluded. We believe that organic wine producers should be rewarded for the public goods that they provide. *Annual payments per hectare*	1. Lower inputs of inorganic chemicals. 2. Higher organic content of soils. 3. Improved water quality	1a (p12) 2 "A fully integrated approach to pest management which includes the use of biocontrol, cultural, and targeted chemical intervention (only if required) to reduce pest insect populations below damaging levels."	• Clean air • Clean and plentiful water • Thriving plants and wildlife • Protection from environmental hazards • Mitigation of and adaptation to climate change