

Scenario 1 - Current practice and castration

Score sheet		Name of scorer: Expert 6						Comments	
								Bold means I'm confident with my score.	
Welfare principles	Welfare criteria	1st round score	90% certain lower bound	90% certain upper bound	2nd round score	90% certain lower bound	90% certain upper bound		
Good feeding	1 Provision and access to food. Animals should have appropriate access to the quantity and quality of appropriate foodstuffs for health and wellbeing.	65	50	80	65	50	80	90 Depends on pasture quality. Likely to be poor quality in winter. Improved pasture and forage crops likely to be monotonous. Broken mouthed ewes struggle to eat.	
	2 Provision and access to water. Animals should have appropriate access to the quantity and quality of water for health and wellbeing.	85	70	95	85	70	95	95 Access to streams may allow natural drinking behaviour. Trough drinkers less clean, fresh and natural.	
Good housing	3 Animals should have comfort when resting.	60	40	85	60	40	85	85 Large range - Depends on pasture quality, drainage and shelter from sun and cold/wet weather. Choice of resting location very limited in an open field. Probably better for lambs as they're slaughtered before the worst of the winter weather.	
	4 Animals should have thermal comfort being neither too hot nor too cold.	60	40	85	60	40	85	85 I find this very hard to separate from the criterion above. Same comments. Control over microclimate impossible in an open field.	
Good health	5 Animals should have sufficient space to move freely	80	70	95	80	70	95	95 Runging is restricted in an enclosed field and likely to be less than natural even on a hill, but unlikely this limitation causes suffering.	
	6 Animals should be free from injuries and disorders (e.g. skin conditions, lameness, bone fractures etc.)	65	40	80	60	35	75	75 Lameness is a major issue, e.g., scald and footrot. Scab is a serious issue for affected sheep. Tooth decay/loss likely to be painful. Other health issues dealt with in criterion below. Likely that welfare is affected for prolonged periods before detection and treatment/resolution. Most problematic in ewes, less so in lambs. Injuries are likely to go undetected/unresolved.	
	7 Animals should be free from disease, including metabolic conditions, with high standards of health care and hygiene.	70	45	85	65	40	80	80 Worms and fluke likely to lead to suffering. Mortality rate is significant from various causes. Health care and hygiene are hard to accommodate.	
	8 Animals should not suffer pain - for example as a result of poor management, handling, surgical or other procedures, slaughter etc.	60	50	70	50	40	60	60 Ear tagged, castrated (males only), tail docked without anaesthesia or analgesia. Acute and chronic pain, plus potential for further pain from infection. Chronic pain from these procedures likely to occur for a reasonable proportion of the life of a lamb - less so for adults. Overall, this would suggest that management pain is not a big issue, but I'm not comfortable assigning a high score, purely because the pain only occurs for a small part of the life of an average sheep. Pain from lameness dealt with above. Pain from injuries associated with poor maintenance of fences and other infrastructure.	
	9 Animals should be able to express normal, non-harmful social behaviours (such as grooming and social bonding).	80	70	85	70	60	75	75 Probably better on a hill where hefting behaviour can be shown. Weaning is abrupt and stressful for ewe and lamb.	
Appropriate behaviour	10 Animals should be able to express other normal behaviours (e.g. foraging, exploring).	75	70	80	75	70	80	90 Best on a hill. Opportunities for exploring limited in an enclosed field. Better than most livestock types, but fewer opportunities than natural. Foraging limited by monotonous sward type on improved pasture.	
	11 Animals should be handled well with positive and not negative animal-human relationships.	80	60	90	70	50	80	80 Rarely handled and stressful when it occurs. Dags are perceived as highly aversive stimuli. Unpleasant experience, but occupies only a tiny part of the animal's lives. May lead to injuries in some animals.	
	12 Additional aspects not already adequately covered above in relation to the balance between positive and negative affective states for animals.	65	50	75	65	50	75	75 Possible to have positive experiences associated with space for complex play and to enjoy being outdoors in favourable weather.	

Scenario 2 - Castration with pain relief

Score sheet		Name of scorer: Expert 6						Comments	
								Bold means I'm confident with my score.	
Welfare principles	Welfare criteria	1st round score	90% certain lower bound	90% certain upper bound	2nd round score	90% certain lower bound	90% certain upper bound		
Good feeding	1 Provision and access to food. Animals should have appropriate access to the quantity and quality of appropriate foodstuffs for health and wellbeing.	68	50	80	68	50	80	90 Depends on pasture quality. Likely to be poor quality in winter. Improved pasture and forage crops likely to be monotonous. Broken mouthed ewes struggle to eat. Score marginally increased over the no pain relief option as less castration pain means less disruption to suckling.	
	2 Provision and access to water. Animals should have appropriate access to the quantity and quality of water for health and wellbeing.	86	70	95	86	70	95	95 Access to streams may allow natural drinking behaviour. Trough drinkers less clean, fresh and natural. Score marginally increased over the no pain relief option as less castration pain means less disruption to suckling.	
Good housing	3 Animals should have comfort when resting.	60	40	85	61	40	85	85 Large range - Depends on pasture quality, drainage and shelter from sun and cold/wet weather. Choice of resting location very limited in an open field. Probably better for lambs as they're slaughtered before the worst of the winter weather.	
	4 Animals should have thermal comfort being neither too hot nor too cold.	60	40	85	60	40	85	85 I find this very hard to separate from the criterion above. Same comments. Control over microclimate impossible in an open field.	
Good health	5 Animals should have sufficient space to move freely	80	70	95	80	70	95	95 Runging is restricted in an enclosed field and likely to be less than natural even on a hill, but unlikely this limitation causes suffering.	
	6 Animals should be free from injuries and disorders (e.g. skin conditions, lameness, bone fractures etc.)	65	40	80	60	35	75	75 Lameness is a major issue, e.g., scald and footrot. Scab is a serious issue for affected sheep. Tooth decay/loss likely to be painful. Other health issues dealt with in criterion below. Likely that welfare is affected for prolonged periods before detection and treatment/resolution. Most problematic in ewes, less so in lambs. Injuries are likely to go undetected/unresolved.	
	7 Animals should be free from disease, including metabolic conditions, with high standards of health care and hygiene.	70	45	85	65	40	80	80 Worms and fluke likely to lead to suffering. Mortality rate is significant from various causes. Health care and hygiene are hard to accommodate.	
	8 Animals should not suffer pain - for example as a result of poor management, handling, surgical or other procedures, slaughter etc.	64	55	75	54	45	65	65 Ear tagged and tail docked without anaesthesia or analgesia leading to acute and chronic pain. Anaesthesia and analgesia will reduce acute pain from castration but do little for chronic pain that lasts more than a few hours - chronic pain is likely to be a bigger problem for rubber ring castration. Potential for further pain from infection. Chronic pain from these procedures likely to occur for a reasonable proportion of the life of a lamb - less so for adults. Overall, this would suggest that management pain is not a big issue, but I'm not comfortable assigning a high score purely because the pain only occurs for a small part of the life of an average sheep. Pain from lameness dealt with above. Pain from injuries associated with poor maintenance of fences and other infrastructure.	
	9 Animals should be able to express normal, non-harmful social behaviours (such as grooming and social bonding).	81	70	85	71	60	75	75 Probably better on a hill where hefting behaviour can be shown. Weaning is abrupt and stressful for ewe and lamb. Margin increase in score as pain relief may reduce disruption to behaviour caused by castration pain.	
Appropriate behaviour	10 Animals should be able to express other normal behaviours (e.g. foraging, exploring).	76	70	80	76	70	80	90 Best on a hill. Opportunities for exploring limited in an enclosed field. Better than most livestock types, but fewer opportunities than natural. Foraging limited by monotonous sward type on improved pasture. Margin increase in score as pain relief may reduce disruption to behaviour caused by castration.	
	11 Animals should be handled well with positive and not negative animal-human relationships.	80	60	90	70	50	80	80 Rarely handled and stressful when it occurs. Dags are perceived as highly aversive stimuli. Unpleasant experience, but occupies only a tiny part of the animal's lives. May lead to injuries in some animals.	
	12 Additional aspects not already adequately covered above in relation to the balance between positive and negative affective states for animals.	65	50	75	65	50	75	75 Possible to have positive experiences associated with space for complex play and to enjoy being outdoors in favourable weather.	

Scenario 3 - No castration

Score sheet		Name of scorer: Expert 6						Comments	
								Bold means I'm confident with my score.	
Welfare principles	Welfare criteria	1st round score	90% certain lower bound	90% certain upper bound	2nd round score	90% certain lower bound	90% certain upper bound		
Good feeding	1 Provision and access to food. Animals should have appropriate access to the quantity and quality of appropriate foodstuffs for health and wellbeing.	67	50	80	67	50	80	90 Depends on pasture quality. Likely to be poor quality in winter. Improved pasture and forage crops likely to be monotonous. Broken mouthed ewes struggle to eat. Score marginally increased over other scenarios as avoidance of castration pain means less disruption to suckling.	
	2 Provision and access to water. Animals should have appropriate access to the quantity and quality of water for health and wellbeing.	87	70	95	87	70	95	95 Access to streams may allow natural drinking behaviour. Trough drinkers less clean, fresh and natural. Score marginally increased over other scenarios as avoidance of castration pain means less disruption to suckling.	
Good housing	3 Animals should have comfort when resting.	60	40	85	62	40	85	85 Large range - Depends on pasture quality, drainage and shelter from sun and cold/wet weather. Choice of resting location very limited in an open field. Probably better for lambs as they're slaughtered before the worst of the winter weather.	
	4 Animals should have thermal comfort being neither too hot nor too cold.	60	40	85	62	40	85	85 I find this very hard to separate from the criterion above. Same comments. Control over microclimate impossible in an open field.	
Good health	5 Animals should have sufficient space to move freely	80	70	95	80	70	95	95 Runging is restricted in an enclosed field and likely to be less than natural even on a hill, but unlikely this limitation causes suffering.	
	6 Animals should be free from injuries and disorders (e.g. skin conditions, lameness, bone fractures etc.)	65	40	80	60	35	75	75 Lameness is a major issue, e.g., scald and footrot. Scab is a serious issue for affected sheep. Tooth decay/loss likely to be painful. Other health issues dealt with in criterion below. Likely that welfare is affected for prolonged periods before detection and treatment/resolution. Most problematic in ewes, less so in lambs. Injuries are likely to go undetected/unresolved.	
	7 Animals should be free from disease, including metabolic conditions, with high standards of health care and hygiene.	70	45	85	65	40	80	80 Worms and fluke likely to lead to suffering. Mortality rate is significant from various causes. Health care and hygiene are hard to accommodate.	
	8 Animals should not suffer pain - for example as a result of poor management, handling, surgical or other procedures, slaughter etc.	70	60	80	60	50	70	70 Ear tagged and tail docked without anaesthesia or analgesia leading to acute and chronic pain. Score increased over scenario 2 as chronic pain from castration is avoided. Pain from lameness dealt with above. Pain from injuries associated with poor maintenance of fences and other infrastructure.	
	9 Animals should be able to express normal, non-harmful social behaviours (such as grooming and social bonding).	82	70	85	70	60	75	75 Probably better on a hill where hefting behaviour can be shown. Weaning is abrupt and stressful for ewe and lamb. Margin increase in score as avoidance of castration reduces disruption to behaviour.	
Appropriate behaviour	10 Animals should be able to express other normal behaviours (e.g. foraging, exploring).	77	70	80	75	70	80	90 Best on a hill. Opportunities for exploring limited in an enclosed field. Better than most livestock types, but fewer opportunities than natural. Foraging limited by monotonous sward type on improved pasture. Margin increase in score as avoidance of castration reduces disruption to behaviour.	
	11 Animals should be handled well with positive and not negative animal-human relationships.	80	60	90	70	50	80	80 Rarely handled and stressful when it occurs. Dags are perceived as highly aversive stimuli. Unpleasant experience, but occupies only a tiny part of the animal's lives. May lead to injuries in some animals.	
	12 Additional aspects not already adequately covered above in relation to the balance between positive and negative affective states for animals.	65	50	75	65	50	75	75 Possible to have positive experiences associated with space for complex play and to enjoy being outdoors in favourable weather.	