

## Pine-tree Lappet Moth Outbreak Management Team

Minutes of Fourth Meeting held on 25 August 2010

Silvan House, Edinburgh

### **Present:**

Stewart Snape, Deputy Head of Plant Health (Chair)

Stuart A'Hara, Molecular Biologist, Forest Research

David Barbour, Consultant Entomologist

Roddie Burgess, Head of Plant Health

Hugh Clayden, Sustainable Forest Management, Forestry Commission Scot, Silvan House

Joan Cottrell, Programme Group Manager, Forest Research

Chris Inglis, Executive Director & Company Secretary, ConFor

David Jardine, Forest District Manager, Inverness Forest District

Roger Moore, Senior Scientific Officer, Forest Research

Paul Munro, Press Officer, Forestry Commission Scotland

Ian Murgatroyd, Regional Manager North, Plant Health

Tom Prescott, Species Conservation Officer, Butterfly Conservation

Bruce Sewell, Forest Management Officer, FE Head Office, Inverness

Athayde Tonhasca, Species Adviser, SNH

Richard Wallace, Development and Operations Advisor, Highland Conservancy (via telecon)

Debbie Erskine, Secretary

### **Agenda Item 1: Welcome and Introductions**

1. Stewart welcomed everyone to the meeting and gave apologies for Michael Petr.

### **Agenda Item 2: Minutes of the meeting held on 4 March 2010**

2. David J suggested that bullet point one of paragraph 5 should read "it was unlikely that "instant" pines and Scots pine plants were the pathway as the majority of plants had been imported from Ireland." The Team agreed.

### **Agenda Item 3: Matters Arising**

3. Action points outstanding from the third meeting held on 4 March 2010.

Agenda Item 3: Matters Arising

- David B had carried out further surveys funded by the FCS pests and pathogens contingency fund.
- Roger had prepared a proposal and cost for trapping programme for Hugh. This enabled FR to purchase light trapping equipment and fund Technical Support Unit resources to increase the number of sites monitored with light traps.

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- Roger and David B had met with Tom Prescott of Butterfly Conservation Scotland to discuss the programme for the coming year. Tom was now attending Pine-tree Lappet Moth Outbreak Management Team meetings.
- Stewart reported that an Economic Impact Assessment hadn't been taken forward due to a lack of resource in Economics Branch. Roddie would contact Pat Snowdon to rectify this.
- Roger had been in contact with Edinburgh University about new equipment which might enable remote sensing of tree canopies. He had arranged a meeting with them in October to discuss the possibility of carrying out remote sensing above the Pine-tree Lappet Moth outbreak area next year.

## **Action: Roddie to speak to Pat Snowdon about an Economic Impact Assessment.**

### Agenda Item 4: Situation Report

- Chris I and David J had passed what information could be found about machinery movement to overseas windblow sites to Richard Wallace.
- Roddie was awaiting a contribution from Duncan Ray to allow him to update the Climate Modelling Report. The Team agreed that this was an important issue which should be taken forward as quickly as possible. Stewart agreed to take this forward with Duncan and Joan.

## **Action: Stewart to meet Duncan and Joan about updating the Climate Modelling Report a.s.a.p.**

### Agenda Item 5: DNA Analysis (native-v-non-native)

- Stuart had arranged for copies of his DNA Analysis presentation to be sent to Team members and added that he would make an updated presentation at this meeting.

### Agenda Item 8: Control Options – draft consultation paper

- Richard would give an update on the meeting with stakeholders at agenda item 6.
- Hugh confirmed that the Ministerial submission had been sent. Roddie suggested a further submission be sent to notify Ministers about the stakeholder's meeting.

### Agenda Item 9: SNH Update

- Athayde confirmed that a draft paper had been prepared for SNH senior management and that he would take this forward with Robin Payne.

## **Action: Athayde to take forward draft paper for SNH senior management with Robin Payne.**

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## Agenda Item 10: Communications and Publicity

- Hugh reported that his meeting with Butterfly Conservation recorders was very successful and he had received useful feedback.
- Roddie confirmed that the Q&A on the website had been updated but could be brought further up to date to include data from this year's pheromone and light trapping.
- Contact had been made with Highland Biological Recording Group and the key people had reported a lot of activity, the Highlands and Islands Forestry Forum were planning to hold a plant health day and David B was planning to give a talk to the RSFS on 5 October.

**Action: Paul to update and re-publish the Q&A on the website.**

## Agenda Item 11: Any other business

- The Statutory Notice had been re-drafted.

## Agenda Item 4: Research Update

4. Stuart gave a PowerPoint presentation focusing on the results from sequencing the mitochondrial Cytochrome Oxidase (COI) gene in *Dendrolimus pini*. He explained that initial COI results showed differences between Scottish and German moths therefore a large effort was made to extend the geographic coverage of moth samples across Europe to provide as broad a range as possible for comparison. Additional samples had been requested from Russia, Greece, Denmark, Belgium, Italy and France. Sequences were generated and compared and no exact match had been found for the Scottish sequence. The closest match was to Italian and Russian moths which might be a new subspecies 'kilmez'. The other European samples were clearly different from the Scottish, Italian and Russian moths.

5. The Team discussed the results of the sequencing and noted that:

- it seems unlikely that the moth had come from central Europe but further research was needed to confirm this;
- samples from Sweden, Estonia and Latvia should be collected as these were the main countries where contractors' machinery had been used;
- it was highly unlikely that a hundred per cent match would be found as there were background variations within each population;
- it was important to establish whether Pine-tree Lappet was a pest or not; and
- Tom would try to obtain samples for testing from his contacts overseas. Joan would send Tom the names of the people she had already contacted.
- Hugh wanted the collection of further DNA samples to be given high priority and offered to help overcome any barriers should that be necessary (Stewart Snape has subsequently taken on that role).

**Action:**

**Tom to try to obtain samples from overseas contacts.**

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**Joan to send names to Tom.**

**Stewart to work closely with FR to expedite rapid collection of samples.**

6. Roger gave a PowerPoint presentation about the survey work he had carried out between mid-June and early-August in 2009 and 2010, up to 50 kilometres from Kiltarlity. He explained that:

- extensive pheromone trapping had taken place with six traps being placed at 47 sites – 282 traps in total;
- continuous monitoring had taken place between 22 June and 8 August in 2009 and 7 June and 12 August in 2010;
- the pheromone traps used in 2009 had not been very effective and over half of these had been replaced for the 2010 exercise;
- light traps had also been used in both years for limited monitoring at eight sites for a short period during June and July in 2009 and at 25 sites from early June until the end of July in 2010;
- moths were caught from a range of sites, most within a ten kilometre boundary of Kiltarlity;
- in 2009, 8 were captured in pheromone traps and 90 in light traps and in 2010, 40 were captured in pheromone traps – 6 in the original type of trap and 34 in the new type - and 135 in light traps;
- tree felling and glue banding had taken place at seven sites and a breeding population had been confirmed at five of these sites;
- captures had been made at two new sites in 2010 at Erchless and Birchwood near Muir of Ord; and
- the range did not appear to have expanded to any great extent.

7. The Team discussed the results of the surveys and noted that:

- the ten kilometre boundary may not be sufficient;
- the results of the 2009 and 2010 surveys concluded that the population was not expanding quickly;
- the population was likely to increase when climatic conditions were correct;
- the amateur entomologist, who had originally discovered the moth, had visited the area in the last four consecutive years and had captured two moths in the first year, six in the second, eleven in the third and three in the fourth year, which may indicate a decline in the population;
- the extreme winter could have affected the population;
- repeat surveys would remain an important management strategy;
- the Plant Health contingency fund budget had been cut, however funding for the DNA analysis had already been committed;
- FC Scotland would provide funding for this essential work and FE Scotland would provide some labour;
- not all caterpillars had completed development in one year which suggested that they may have a two-year life cycle or even a mixture of one and two year life cycles; and

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- glue banding in the core area would enable an assessment of how the breeding population was developing. FCS would be willing to help fund this.

## Agenda Item 5: FCS Update

8. Hugh reported that:

- this period had been important in terms of collating data;
- Chris Sydes' draft paper had indicated that SNH were supportive of the position FC Scotland were adopting;
- a different audience's views had been heard at the recorders' meeting;
- it was essential to have a consensus of analysis whether Pine-tree Lappet Moth was likely to be a native or non-native species;
- decisions on the timing of management approaches (from do nothing to 'treat') would be important as they needed to be taken while options were still open;
- good evidence was crucial to reach a decision on the way forward, if necessary FC Scotland would find funding for such work;
- a meeting with affected woodland owners/agents would be held on 5 October and a public forest health day would be held on 6 October; and
- notices needed to be served to introduce proportionate, precautionary measures to stop the unrestricted movement of material from the area during the active season of the moth unless it was bark free. Harvesting could continue during that period. Between December and the end of February, timber could leave the area unrestricted but the Commission reserved the right to inspect.

9. Richard reported that:

- 100 woodland owners had been identified within the area;
- the Notice had been adjusted from a ten kilometre zone to a three kilometre zone around each site;
- the Notices would be issued once details had been resolved;
- various community groups and agents would also be notified; and
- there was not much harvesting activity in the area at present.

10. David J circulated a map of the Forest Enterprise felling for the area and reported that:

- FES dispatches of timber from the area had been stopped, 600 tonnes would be dispatched during the winter;

Hugh clarified that trees felled in September, stockpiled until December could then be moved with bark on. Roddie suggested that, to avoid the risk of picking up brash which may contain caterpillars, logs should be stacked on bearers and this practice should be added to the biosecurity protocol.

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- Winter harvesting operations would have an effect on squirrels but particularly on badgers and SNH had confirmed that support for the issue of badger licences would be forthcoming in the event of an eradication programme being instigated; and
- the Beaulieu to Denny power line did not pass through Commission land in the FE felling area.

## Agenda Item 6: Public Meeting

11. Richard reiterated that a meeting for affected owners/agents had been arranged for 5 October. Letters, including an invitation to the public meeting, would be sent out to local landowners and interested parties within about two weeks. An agenda would be tabled on the day. Richard confirmed that the Statutory Notice was primarily meant for landowners. David J suggested that the generic details of the Notice should be provided to timber merchants, processors and hauliers for information at the customer liaison day the following week. The Team agreed and confirmed that there was no restriction on the movement of timber through the area during the remainder of the period.

**Action: Richard/David J liaise about providing Notice content to timber merchants, processors and hauliers.**

## Agenda Item 7: Discussion on Future Direction and Required Actions

12. Stewart asked the Team to consider the way forward. In response to a question from Roddie about removal of debris from mills, Richard explained that the Notice only covered the removal of wood from the felling site, it placed no responsibility on moving wood or on the sawmillers at the final destination. He added that the Notice put onus on whoever was in charge at the felling site to ensure that all vehicles and equipment had been cleaned and free of plant debris before leaving the premises. Roddie considered that the biosecurity protocol should include this practice. Roddie added that if it was decided to list Pine-tree Lappet Moth as a quarantine pest, then import controls would need to be put in place, it would need to be listed in the European Plant Health Directive and most of the UK would have to be declared as a protected zone to prevent further invasions.

**Action: Roddie to consider whether sawmillers' responsibilities should be included in the biosecurity protocol.**

13. Hugh was concerned whether the Team had adequate information to take action now and thought it was crucial to establish whether Pine-tree Lappet Moth was native or non-native. It was also important to determine the level of risk that the moth posed. The Team agreed that the DNA analysis carried out so far tended to indicate that Pine-tree Lappet Moth was more likely to be a non-native species and that it was critical to obtain further samples for testing. The Team agreed that further samples, especially from France, Spain and Sweden, were required. Richard stressed that an answer would be required for the public meeting on 5 October. Hugh added that if it was decided that the moth was an invasive, non-native species then the Invasive Non-Native Species protocol suggested that early action should be taken to attempt eradication. However, he stressed that further DNA analysis was

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required to provide sufficient evidence on which to come to an informed view and the Commission should push hard to obtain further samples for this critical work. The Team recognised that collecting samples from all over Europe was proving difficult. David B offered to telephone the Royal Museum for Scotland to ask about the availability of samples. Joan added that she would send a copy of the list of whom she had already contacted to Team members. Chris said that he had a colleague who had contacts in Latvia and Estonia who he would speak to and Tom offered to make enquiries with his Butterfly Conservation international contacts. Hugh agreed to take on board the drive to collect samples (Stewart Snape subsequently took on that role after the meeting). It was also considered that the climate mapping work was essential and needed to be progressed with vigour.

## **Action:**

**David B to telephone the Royal Museum for Scotland.**

**Joan to send a copy of the list of whom she had contacted to Team members.**

**Chris to speak to a colleague who has contacts in Latvia and Estonia.**

**Tom to make enquiries with Butterfly Conservation international contacts.**

**Hugh (now Stewart) to 'drive' the collection of samples.**

14. David J reported that an important issue of concern was that as 75 per cent of moths that had been found were in three woods, one of which was a Forest Enterprise wood, should a forest design plan be drawn up to remove pine during the period from December to February. The Team noted that:

- felling in woods where most of the larvae was would buy some time;
- spraying with insecticide was another option;
- the landowners of the other two sites should be encouraged to do the same;
- a rapid increase in the population size and spread was not expected;
- felling where the highest density of the outbreak was may create a bridge that the caterpillars may be unable to readily cross;
- agents in the area were aware that sanitation felling was a potential management option;
- felling in the epicentre may not have an impact as some caterpillars had already dispersed;
- voluntary cordon-sanitation felling from the external perimeter should be considered;
- spraying was potentially expensive, had to be repeated on a regular basis and did not completely eradicate the pest, the Beaulieu catchment was a key constraint;
- it is very difficult to completely eradicate a new outbreak and prompt action, if action was found to be needed, should therefore be taken to minimise the risk;
- the climate modelling work carried out to-date indicated that Pine-tree Lappet Moth would become a pest in the future, it was important to extend that work to the north, south, west and east;
- the proposed meeting would inform owners of the up-to-date position;
- the forestry sector were becoming increasingly concerned about the impact Pine-tree Lappet Moth could have on woodland owners and contractors and were also concerned that a delay in dealing with the outbreak would have a further impact on cost and price;

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- further information was required about the methods of spraying, types of spray and how effective it was;
- the time may not be right for a public meeting as there were still questions that could not be answered.

15. Stewart summarised the main areas that had been covered and the key areas of work which needed further investigation as:

- DNA analysis;
- climate modelling;
- voluntary cordon-sanitation felling;
- spraying; and
- seek the views of other statutory agencies.

He added that PHS would take forward an analysis of spraying methods and report to the next meeting.

**Action: Ian Murgatroyd to produce an analysis of spraying methods for the next meeting.**

16. Roddie explained that the Team had to decide whether Pine-tree Lappet Moth was likely to cause unacceptable injury or damage to trees either now or in the future and if the balance of probability was positive then a decision would have to be made about the next step, the options being:

- do nothing;
- sanitation felling;
- chemical intervention; and
- a combination of sanitation felling and chemical intervention.

Roddie added that he felt that at some stage in the future, the conditions would be right in about a decade for Pine-tree Lappet Moth to become a pest and the sooner action was taken to try to eradicate it, there was more chance of minimising damage to trees.

17. David J asked that SNH clarify whether the Strathfarrar native pinewoods were European designated and, if they were, the Pine-tree Lappet Moth would be a risk to them and action would have to be taken to preserve their status.

**Action: Athayde to clarify with SNH whether the Strathfarrar native pinewoods were European designated.**

18. Roddie explained that the Forestry Commission was the statutory competent authority in the area and that if no action was taken then they may be charged with negligence therefore the issue could not be overlooked. The Team noted that:

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- the question of whether Pine-tree Lappet Moth was native or non-native was important and that further DNA analysis was necessary;
- the first stage of positive action was that Statutory Notices were being issued;
- propose to the owners' meeting that a voluntary cordon sanitaire be established around the periphery of the outbreak and invite woodland owners to include their land;
- the draft consultation document presented to the last meeting had not been issued as there was not enough information available;
- there were two chemicals available for spraying, Bacillus Thuringiensis (BT) and deltamethrin;
- a felled cordon sanitaire would be more effective than a sprayed one;
- entomologists and other lepidopterists were doubtful whether eradication would be successful;
- there was a lack of information on the annual rate of spread however a one kilometre cordon sanitaire was considered to be sufficient;
- female samples of the species were very rare;
- the definition of a cordon sanitaire was a host free strip;
- if the Team could not agree on a unanimous way forward the options should be put to Ministers to make the decision;
- for the cordon sanitaire to be effective it should surround the full outbreak population;
- based on the knowledge the Team had it was considered that a voluntary cordon sanitaire would be a useful option to explore to allow time for further DNA and climate modelling analysis; and
- to ask a private woodland owner to fell timber which had no value would be problematic.

19. Roddie proposed that the Team should agree on a voluntary cordon sanitaire approach set at one kilometre wide, map and identify ownership in the area, explain the problem to the owners and ask whether they would be prepared to voluntarily clear pine within the particular area. If the majority of landowners did not support that approach the Team would have to decide whether to enforce it or not. Hugh was concerned that there would be resistance to wide spread sanitation felling based on the evidence currently available. The Team agreed that it would be useful to explore this option with owners and recommended that, if it was to be effective it would need to be completed quickly.

20. Roger added that it was important to continue monitoring by pheromone trapping within and outside the cordon sanitaire. Duncan Ray should be asked to carry out climate modelling for Boblainy, Culbin, Glen Affric, Strathfarrar and south west Black Isle.

**Action: Roger to ask Duncan Ray to carry out climate modelling for Boblainy, Culbin, Glen Affric, Strathfarrar and south west Black Isle.**

21. Roddie explained that if there was a consensus create a cordon sanitaire but a few landowners were opposed to the approach then it could be made a statutory requirement. Ministerial endorsement would be required. The cost of such work would fall to the landowner. If the owner failed to comply with the statutory notice the Commission or contractors could carry out the work and costs would be recovered from the owner as a civil

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debt. Roddie confirmed to David J that this approach would apply to the cordon sanitaire area even although it was free of pests. The Team considered that Ministers could be approached for funding if necessary.

**Action: Hugh/Stewart to discuss the cordon sanitaire and further action.**

22. The Team agreed that 5 October was too soon to hold a public meeting until further DNA analysis and climate modelling had been carried out and the position of the cordon sanitaire had been established.

**Action:**

**Hugh to inform Richard Wallace to postpone the 5 October public meeting (subsequent to the meeting it was agreed with Highland Conservancy that there was a need to meet affected owners so that they were aware of why precautionary restrictions on timber movements were being implemented) and to ask him to inform attendees at the customer liaison day that the Statutory Notice was being issued.**

**Roger to obtain information on the mechanisms of the outbreaks in Europe and how they were being dealt with, including spraying methods.**

**Roger/Stewart to discuss funding for further survey monitoring.**

**Roger to provide Hugh with costs for further tree band monitoring.**

## **Agenda Item 8: Any Other Business**

23. No other business was raised.

## **Agenda Item 9: Date of Next Meeting**

24. The Team agreed that the next meeting should be scheduled for the end of November.

**Action: Debbie to secure a date for the next meeting at the end of November.**

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## Summary of Actions

### Agenda Item 3: Matters Arising

**Roddie to speak to Pat Snowdon about an Economic Impact Assessment.**

Agenda Item 4: Situation Report

**Stewart to meet Duncan and Joan about updating the Climate Modelling Report a.s.a.p.**

Agenda Item 9: SNH Update

**Athayde to take forward draft paper for SNH senior management with Robin Payne.**

Agenda Item 10: Communications and Publicity

**Paul to update and re-publish the Q&A on the website.**

### Agenda Item 4: Research Update

**Tom to try to obtain samples from overseas contacts.**

**Joan to send names to Tom.**

**Stewart to work closely with FR to expedite rapid collection of samples.**

### Agenda Item 6: Public Meeting

**Richard/David J liaise about providing Notice content to timber merchants, processors and hauliers.**

### Agenda Item 7: Discussion on Future Direction and Required Actions

**Roddie to consider whether sawmillers' responsibilities should be included in the biosecurity protocol.**

**David B to telephone the Royal Museum for Scotland.**

**Joan to send a copy of the list of whom she had contacted to Team members.**

**Chris to speak to a colleague who has contacts in Latvia and Estonia.**

**Tom to make enquiries with Butterfly Conservation international contacts.**

**Hugh (now Stewart) to 'drive' the collection of samples.**

**Ian Murgatroyd to produce an analysis of spraying methods for the next meeting.**

**Athayde to clarify with SNH whether the Strathfarrar native pinewoods were European designated.**

**Roger to ask Duncan Ray to carry out climate modelling for Boblainy, Culbin, Glen Affric, Strathfarrar and south west Black Isle.**

**Hugh/Stewart to discuss the cordon sanitaire and further action.**

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Roger to obtain information on the mechanisms of the outbreaks in Europe and how they were being dealt with, including spraying methods.

Roger/Stewart to discuss funding for further survey monitoring.

Roger to provide Hugh with costs for further tree band monitoring.

### Agenda Item 9: Date of Next Meeting

Debbie to secure a date for the next meeting at the end of November.