**Table 1: Tick-Borne Pathogens (TBP) That Have Been Directly or Indirectly Detected in Animals and/or the Ticks Feeding on Animals From Guam**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Pathogen | Method | Vector | Host | Reference |
| *Anaplasma platys* | PCR tick  PCR blood | *Rhipicephalus sanguineus* | dog  Philippine deer (*Rusa marianna)* | (28,29) |
| *Anaplasma marginale* | serology  PCR blood | *Rhipicephalus microplus* | cow, water buffalo  Philippine deer | (29,101) |
| *Anaplasma phagocytophilum* | PCR blood | *Rhipicephalus microplus,* +/- *Rhipicephalus sanguineus* | Philippine deer | (29) |
| *Babesia bovis* | serology | *Rhipicephalus microplus* | cow | (101) |
| *Babesia bigemina* | serology | *Rhipicephalus microplus* | cow | (101) |
| *Babesia canis vogeli* | PCR tick | *Rhipicephalus sanguineus* | dog | (28) |
| *Coxiella burnetii* | PCR tick,  serology | *Rhipicephalus sanguineus* | dog, goat, cow | (28,101) |
| *Ehrlichia canis* | serology | *Rhipicephalus sanguineus* | dog | Personal observation |
| *Hepatozoon canis* | PCR tick | *Rhipicephalus sanguineus* | dog | (28) |
| *Rickettsia amblyommatis* | PCR tick | *Rhipicephalus microplus,*  *Amblyomma breviscutatum* | Philippine deer  wild pig | (27) |
| *Rickettsia felis* | PCR tick | *Rhipicephalus microplus* | Philippine deer | (27) |

**Table 2: Landcover Classification System in Guam** (42)

|  |  |
| --- | --- |
| Landcover classification | Subcategories |
| Forest | acacia plantation, casuarina thicket, coastal strand, limestone forest, palma brava grove, ravine forest, scrub forest, mangrove swamp forest |
| Rangeland | savanna complex, strand vegetation, other shrub/grass |
| Urban | urban built-up, urban cultivated, agricultural land such as coconut plantations and agricultural field |
| Barren | badland (dry terrain with minimal vegetation), barren, sand beach, bare rocks |
| Water | water, wetland, marshland |

**Table 3: Primers Used in PCR Assays**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Pathogen | Gene Target | Primers | Amplicon Size | Reference |
| *Babesia*/ *Hepatozoon* | 18S rRNA | 5-22F (5’- GTTGATCCTGCCAGTAGT -3’)  1661R (5’- AACCTTGTTACGACTTCTC -3’) | 1655bp | (48) |
| *Ehrlichia canis* | 18S rRNA | 1:  ECC (5’- AGAACGAACGCTGGCGGCAAGCC-3’)  ECB (5’- CGTATTACCGCGGCTGCTGGCA -3’)  2:  ECA (5’- CAATTATTTATAGCCTCTGGCTATAGG-3’)  HE3 (5’- TATAGGTACCGTCATTATCTTCCCTAT -3’) | 400bp | (102) |
| *Anaplasma platys* | 16S rRNA | 1:  ECC (5’- AGAACGAACGCTGGCGGCAAGCC-3’)  ECB (5’- CGTATTACCGCGGCTGCTGGCA -3’)  PLA2 (5’- TTTGTCGTAGCTTGCTATG -3’)  GA1UR (5’- GAGTTTGCCGGGACTTCTTCT -3’) | 400bp | (102) |
| *Anaplasma phagocytophilum* | 16S rRNA | 1:  ECC (5’- AGAACGAACGCTGGCGGCAAGCC-3’)  ECB (5’- CGTATTACCGCGGCTGCTGGCA -3’)  GE9F (5’- AACGGATTATTCTTTATAGCTTGCT  -3’)  GA1UR (5’- GAGTTTGCCGGGACTTCTTCT -3’) | 400bp | (103) |
|  |  |  |  |  |