~~PROPRIETARY & CONFIDENTIAL~~ 09 June, 2013 DAVE HUER
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Mychor Treatments

A novel business strategy to manage White Nose Syndrome (WNS, a Bat-killing Virus)

PROPOSED WNS TREATMENT "37B"

Instead of the academic strategy of studying the virus while bats go extinct…
Rearing bats in artificial, mass-produced HVAC-controlled hibernacula (hibernation roosts):

1) Purchasing off-the-shelf, mass-produced concrete sewer sections
2) Roughening inner facings to create creviced roosts
3) Installed using cut-and-cover tunnelling and backfill construction method
4) Temperature-managed using HVAC systems, monitored by techs with fieldcraft expertise
5) 1-to-2 units per county or census district across Eastern North America

Traditional scientists have not figured out a treatment, and their culture precludes moving quickly, with 30 years—for competitive and 'heroic scientist' branding reasons, not scientific reasons—being the norm. WNS is spreading. It has a 90-95% mortality rate and many species face extinction.

Testing Stages:

1) 6-to-8-month lab test (est: $11,000 for basic testing; $150-$200,000 for full battery of tests).
2) Controlled field-site studies:
    a. 2-to-3 seasons
    b. Applied with oversight by front-line U.S. Fish & Wildlife experts and third party experts
    c. Costs include purpose-built field station (est: $12.0 million + $250,000 operating costs/yr)

If proven out in field conditions, an initial program is estimated to produce 10 new seasonal jobs in each infected State & Province, plus 2 full-time monitoring jobs in each County or Census District.

Quick Comparison of Impact for USA

	Private Biotech Program	**Traditional Academic Research Program**
R&D ESTIMATE		
Duration (Total = Laboratory + Field-work)	3-5 years (1/2 + 3)	28 years (25 + 3)
Personnel (Scientists)	2	100 scientists
Personnel (Support Staff)	20 support staff	0
Total	**$12.86 million**	**$15.15 million**
NEW USA JOBS & WAGES IMPACT ESTIMATE – 30 YEARS	**Commencing Year 3**	**Commencing Year 29**
States & Counties infected by 2012	240 / 2,804	240 / 2,804
Nationwide Preventative Program- Jobs	510 / 6,264	510 / 6,264
Nationwide Preventative Program – 30 Year Wage Impact	**x 28 yr = $6,330 million**	**x 2 yr = $452.2 million**

Estimate of Potential Impact:

1) Prevent loss of biodiversity (species' extinction and effects on other species)
2) Minimize effect of infestation spread and concurrent impact to agriculture
3) Economic benefit (wages, training, veteran transition to civilian life)

Results:

1) Private entrepreneurial scientist complimented concept as a good test strategy
2) Warned that public academics would block scientific efforts that they could not control
3) Major university prospect stonewalled requirement to sign commercial NDA
4) So instead, open-sourced the proposal--alerting caving & veteran employment champions
5) Enabling federal insiders to privately test science strategy, at whatever pace they want
6) Putting bat recovery ahead of academic strategy of using glacial slowness to kill competitors

Detailed Comparison of Approaches

: Estimate for USA **– next page**
: Estimate for Canada not provided here

DETAILED COMPARISON OF APPROACHES WITH ASSUMPTIONS	PRIVATE BIOTECH PROGRAM	TRADITIONAL ACADEMIC PROGRAM
SCIENCE LABOUR ESTIMATE		
LABORATORY TESTS		
Duration	6 months	25 years
Number of Science Personnel	1	100
Science Salaries USD x 10% of Salaried Time	80,000[1] = $8,000	$80,000[1] = $8,000
Number of Associated Personnel	0	0
Non-Science Salaries USD	0	0
Subtotal – Labour	$8,000	$20 million
R&D Equipment & Related Costs, Per Year, Per Team of 10	$0	$100,000
Subtotal – Equipment	$150,000	$25.0 million
Laboratory Estimate	**$158,000**	**$45.0 million**
FIELD-WORK		
Duration	3 years	3 years
Number of Science Personnel x 10% of Salaried Time	2[2]	100[2]
Science Salaries USD	80,000[1] = $8,000	$80,000[1] = $8,000
Number of Associated Personnel x 100% of Salaried Time	20	0
Non-Science Salaries USD	$30,000	0
Subtotal – Labour	$608,000	$2.4 million
R&D Equipment & Related Costs		
USFWS Field-Center Control Site	$12.0 million (1 year)	$12.0 million (1 year)
Operating Costs (Labour covered by Study Teams)	$250,000	$250,000
Subtotal – Operating Costs	$12.75 million	$12.75 million
Field-Work Estimate	**$12.86 million**	**$15.15 million**
DURATION ESTIMATE	**3.5 years**	**28 Years**
R&D ESTIMATE TOTAL	**$12.77 million**	**$60.15 million**
JOBS ESTIMATE – PER YEAR, Years 1 to 30	**COMMENCING YEAR 3**	**COMMENCING YEAR 29**
New Jobs – States & Counties infected by 2012	240 / 2,804	240 / 2,804
Salaries' Impact ($14,000 seasonal, $35,000 Full-time)	$3.4 million / $98 million	$3.4 million / $98 million
New Jobs – Nationwide Preventative Program	510 / 6,264	510 / 6,264
Salaries' Impact ($14,000 seasonal, $35,000 Full-time)	$7.1 million / $219 million	$7.1 million / $219 million
Nationwide Preventative Program – 30 Year Wage Impact	**x 28 yr = $6,330 million**	**x 2 yr = $452.2 million**
RISK OF SPECIES' EXTINCTION FROM TIME COST		
Do Nothing		Highest
Traditional Academic Research Approach		High
Private Biotech Approach with Academic Control	Med to	High
Private Biotech Approach with USFWS Oversight	Low	

[1] Includes one Graduate Student wage per scientist.
[2] USFW scientist oversight costs to be negotiated.